704 FORTRAN II
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SAP LISTINGS OF THE 4K AND 8K DRUM VERSIONS.

THESE LISTINGS CONSTITUTE THE ENTIRE FINAL VERSION OF 704 FORTRAN II. LISTINGS OF ASSOCIATED PROGRAMS, SUCH AS THE EDITOR, HAVE ALSO BEEN INCLUDED. THE LISTINGS HAVE BEEN ARRANGED SO THAT THERE IS A CLOSE CORRESPONDENCE WITH THE RECORDS ON THE FINAL FORTRAN II MASTER TAPE. WHEREVER, ON THE MASTER TAPE, A SINGLE FORTRAN RECORD MUST APPEAR AS SEPARATE 4K AND 8K VERSIONS, THE MAIN LISTINGS SEQUENCE INCLUDES THE 4K VERSION. THE 8K RECORDS, THEREFORE, APPEAR AT THE END. FURTHER INFORMATION PERTINENT TO THESE LISTINGS AND THE FORTRAN II MASTER TAPE CAN BE FOUND IN THE OPERATIONS MANUAL, PARTICULARLY ON PAGES 5 THROUGH 15.

THE FOLLOWING FORTRAN II RECORDS ARE DIAGNOSTIC CALL-IN RECORDS AND ARE BASICALLY THE SAME. FOR THIS REASON THEY HAVE BEEN OMITTED FROM THE MAIN LISTINGS. AN EXAMPLE OF A DIAGNOSTIC CALL-IN RECORD CAN BE FOUND ON PAGE 969 OF THESE LISTINGS.

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```
1
1          REM 704 FORTRAN SELF LOADING RECORD 1 TO CS.
                                704 FORTRAN SELF LOADING RECORD 1 TO CS.
00000   0 53400 1 00000        LXA 0,1
00001   0 70000 1 00002        CPY 2,1
00002   1 00001 1 00001        TXI 1,1,1
00003   0 70000 1 00031        CPY 25,1
00004   0 00000 0 00003        HTR 3
00005   0 10000 0 00000        TZE 0
00006   0 76000 0 00006        COM
00007   0 36100 0 00002        ACL 2
00010   0 76000 0 00006        COM
00011   0 02000 0 00027        TRA 23
00012  -0 76000 0 00012        RTT
00013   0 76600 0 00333        IOD
00014   0 00000 0 00000        HTR 0
00015   1 77777 1 00015        TXI 13,1,-1
00016  -0 70000 1 00000        CAD 0,1
00017  -0 50000 0 00017        CAL 15
00020   0 62100 0 00026        STA 22
00021   0 77100 0 00022        ARS 18
00022   0 62100 0 00015        STA 13
00023  -0 50000 0 00017        CAL 15
00024   0 70000 0 00017        CPY 15
00025   0 70000 0 00002        CPY 2
00026   0 76200 0 00221        RTB 1
00027  -0 53400 1 00027        LXD 23,1
00030   0 70000 0 00003        CPY 3
00031  -0 76000 0 00007        LTM
00032   0 76400 0 00221        BST 145
A.                  00000      END
```

	IN MEMORY	IT LOOKS
0	00	LXA 0,1
1	01	CPY 25,1
2	02	LTM
3	03	BST 145
4	04	LXD 23,1
5	05	RTB 1
6	06	CPY 2
7	07	CPY 15
8	10	CAL 15
9	11	STA 13
10	12	ARS 18
11	13	STA 22
12	14	CAL 15
13	15	CAD 0,1
14	16	TXI 13,1,-1
15	17	HTR 0
16	20	IOD
17	21	RTT
18	22	TRA 23
19	23	COM
20	24	ACL 2
21	25	COM
22	26	TZE 0
23	27	HTR 3

Enter 2 04 to read next record.

Word 1 in = check sum
" 2 address = starting core loc word 3
2 decrement = transfer location

```
1          REM FORTRAN II CARD-TO-TAPE
1                                          FORTRAN II CARD-TO-TAPE
                        00110          ORG 72
      00110  0 76200 0 00321  BEGIN RCD 1
      00111 -0 53400 1 00125         LXD ADD01,1
      00112 -0 53400 2 00127         LXD ADD02,2
      00113  0 70000 0 00340  ADD23 CPY L9ROW              COPY 92
TD    00114 -3 00000 0 00116         TXL ADD03,
      00115  0 02000 4 00002         TRA 2,4                EOF TR
      00116 -0 60000 0 00332  ADD03 STQ DATA1              STORE 9L
      00117 -0 63400 1 00125         SXD ADD01,1
      00120 -0 63400 2 00127         SXD ADD02,2
      00121 -0 53400 1 00135         LXD ADD04,1
      00122  0 70000 0 00341         CPY R9ROW              COPY 9R
      00123 -0 60000 0 00333         STQ DATA2              STORE 9R
      00124  0 07400 2 00265         TSX SUB1,2             EXIT ENTRY1 SUB1
TD    00125 -3 00000 0 00130  ADD01 TXL ADD05              RETURN1
      00126  0 76700 0 00001         ALS 1                  RETURN2
TD    00127 -3 00000 0 00317  ADD02 TXL ADD06              EXIT TO ENTRY2 SUB1
      00130  0 70000 0 00334 ADD05  CPY DATA3
      00131 -0 60000 0 00332         STQ DATA1
      00132  0 70000 0 00335         CPY DATA4              COPY RIGHT
      00133 -0 60000 0 00333         STQ DATA2
      00134  0 07400 2 00265         TSX SUB1,2
      00135 -3 00010 0 00140  ADD04 TXL ADD07,0,8          RETURN1
      00136  0 76700 0 00003         ALS 3                  RETURN2
TD    00137 -3 00000 0 00316         TXL ADD08
      00140 -0 50000 0 00340  ADD07 CAL L9ROW
      00141  0 60200 0 00332         SLW DATA1
      00142 -0 50000 0 00341         CAL R9ROW
      00143  0 60200 0 00333         SLW DATA2
      00144 -3 00001 1 00170  ADD14 TXL ADD09,1,1
      00145  0 70000 0 00340  ADD15 CPY L9ROW
TD    00146 -3 00000 0 00151         TXL ADD10
      00147  0 00000 0 00110  ADD12 HTR BEGIN              EOF
TD    00150 -3 00000 0 00210         TXL ADD11              EOR
      00151 -0 50000 0 00340  ADD10 CAL L9ROW
      00152 -0 32000 0 00332         ANA DATA1
      00153 -0 10000 0 00147         TNZ ADD12
      00154 -0 50000 0 00340         CAL L9ROW
      00155 -0 60200 0 00332         ORS DATA1
      00156  0 70000 0 00341         CPY R9ROW
      00157 -0 50000 0 00341         CAL R9ROW
      00160 -0 32000 0 00333         ANA DATA2
      00161 -0 10000 0 00147         TNZ ADD12
      00162 -0 50000 0 00341         CAL R9ROW
      00163 -0 60200 0 00333         ORS DATA2
      00164 -2 00001 1 00204         TNX ADD13,1,1
      00165  0 07400 2 00265         TSX SUB1,2
TD    00166 -3 00000 0 00144         TXL ADD14              RETURN1
TD    00167 -3 00000 0 00316         TXL ADD08              RETURN2
      00170 -0 50000 0 00334  ADD09 CAL DATA3
      00171 -0 50100 0 00332         ORA DATA1
      00172  0 60200 0 00334         SLW DATA3
```

```
        00173   0 70000 0 00336         CPY DATA5
        00174  -0 32000 0 00336         ANA DATA5
        00175   0 60200 0 00332         SLW DATA1
        00176  -0 50000 0 00335         CAL DATA4
        00177  -0 50100 0 00333         ORA DATA2
        00200   0 60200 0 00335         SLW DATA4
        00201   0 70000 0 00337         CPY DATA6
        00202  -0 32000 0 00337         ANA DATA6
        00203   0 60200 0 00333         SLW DATA2
        00204   0 07400 2 00265  ADD13  TSX SUB1,2
TD      00205  -3 00000 0 00145         TXL ADD15          RETURN1
        00206   0 76700 0 00004         ALS 4              RETURN2
TD      00207  -3 00000 0 00316         TXL ADD08
        00210  -0 50000 0 00332  ADD11  CAL DATA1
        00211   0 60200 0 00340         SLW L9ROW
        00212  -0 50000 0 00334         CAL DATA3
        00213   0 76000 0 00006         COM
        00214  -0 32000 0 00336         ANA DATA5
        00215   0 32000 0 00332         ANS DATA1
        00216  -0 50000 0 00333         CAL DATA2
        00217   0 60200 0 00341         SLW R9ROW
        00220  -0 50000 0 00335         CAL DATA4
        00221   0 76000 0 00006         COM
        00222  -0 32000 0 00337         ANA DATA6
        00223   0 32000 0 00333         ANS DATA2
        00224   0 07400 2 00265         TSX SUB1,2
TD      00225  -3 00000 0 00233         TXL ADD16          RETURN1
        00226   0 60200 0 00331         SLW DATA0          RETURN2
        00227   0 76700 0 00002         ALS 2
        00230   0 36100 0 00331         ACL DATA0
        00231   0 76700 0 00001         ALS 1
TD      00232  -3 00000 0 00316         TXL ADD08
        00233  -0 50000 0 00334  ADD16  CAL DATA3
        00234   0 76000 0 00166         SWT 6
        00235   0 02000 0 00241         TRA ADD34
TD      00236  -3 00000 0 00407 ADD32   TXL ADD31
        00237   0 76600 0 00205 ADD33   WTD 5
        00240   0 02000 0 00242         TRA ADD29
        00241   0 76600 0 00202 ADD34   WTD 2
        00242  -0 50100 0 00336 ADD29   ORA DATA5
        00243  -0 50100 0 00340         ORA L9ROW
        00244   0 76000 0 00006         COM
        00245   0 60200 0 00332         SLW DATA1
        00246  -0 50000 0 00335         CAL DATA4
        00247  -0 50100 0 00337         ORA DATA6
        00250  -0 50100 0 00341         ORA R9ROW
        00251   0 76000 0 00006         COM
        00252   0 60200 0 00333         SLW DATA2
        00253   0 07400 2 00265         TSX SUB1,2
TD      00254  -3 00000 0 00262         TXL ADD17          RETURN1
        00255   0 60200 0 00331         SLW DATA0          RETURN2
        00256   0 76700 0 00001         ALS 1
        00257   0 36100 0 00331         ACL DATA0
        00260   0 76700 0 00004         ALS 4
```

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TD    00261 -3 00000 0 00316         TXL ADD08
      00262 -0 53400 1 00125  ADD17  LXD ADD01,1
      00263 -0 53400 2 00127         LXD ADD02,2
      00264  0 02000 4 00003         TRA 3,4
      00265 -0 63400 1 00327  SUB1   SXD ADD18,1
      00266  0 76000 0 00141         SLN 1
      00267 -0 50000 4 00001         CAL 1,4
      00270  0 40000 0 00330         ADD CONS1
      00271  0 56000 0 00332         LDQ DATA1
      00272  0 62100 0 00317  ADD22  STA ADD06
      00273  0 62100 0 00316         STA ADD08
      00274  3 00001 1 00300         TXH ADD19,1,1
      00275 -0 60000 0 00331         STQ DATA0              INDEX=1
      00276 -0 50000 0 00331         CAL DATA0
      00277  0 10000 0 00322         TZE ADD20
      00300  0 53400 1 00330  ADD19  LXA CONS1,1
T     00301 -0 75400 0 00014  ADD21  PXD 12                 CLEAN ACC
      00302 -0 76300 0 00001         LGL 1                  1ST IN ACC
      00303  0 76700 0 00005         ALS 5                  100000
      00304 -0 76300 0 00001         LGL 1                  1000001
      00305  0 76700 0 00005         ALS 5                  100000100000
      00306 -0 76300 0 00001         LGL 1                  1000001000001
      00307  0 76700 0 00005         ALS 5
      00310 -0 76300 0 00001         LGL 1
      00311  0 76700 0 00005         ALS 5
      00312 -0 76300 0 00001         LGL 1
      00313  0 76700 0 00005         ALS 5
      00314 -0 76300 0 00001         LGL 1
      00315  0 02000 2 00002         TRA 2,2                100000100001000001000001000001
      00316  0 36100 1 00000  ADD08  ACL 0,1                ADDRESS COMPUTED AT ADD22 IN ADDRESS
      00317  0 60200 1 00000  ADD06  SLW 0,1                ENTRY2 ADDRESS PREV. COMPUTED AT ADD22
      00320  2 00001 1 00301         TIX ADD21,1,1
      00321 -0 53400 1 00327         LXD ADD18,1
      00322 -0 76000 0 00141  ADD20  SLT 1
      00323  0 02000 2 00001         TRA 1,2                OFF
      00324  0 56000 0 00333         LDQ DATA2              SENSE LIGHT ON
      00325 -0 50000 4 00001         CAL 1,4
      00326  0 40100 0 00301         ADM ADD21
      00327 -3 00000 0 00272  ADD18  TXL ADD22,0,**         IR1 STORED IN DECREMENT
      00330  0 00000 0 00006  CONS1  HTR 6
A     00331  0 00000 0 00000  DATA0  HTR
A     00332  0 00000 0 00000  DATA1  HTR                    9L ROW
A     00333  0 00000 0 00000  DATA2  HTR                    9R ROW
A     00334  0 00000 0 00000  DATA3  HTR
A     00335  0 00000 0 00000  DATA4  HTR
A     00336  0 00000 0 00000  DATA5  HTR
A     00337  0 00000 0 00000  DATA6  HTR
A     00340  0 00000 0 00000  L9ROW  HTR
A     00341  0 00000 0 00000  R9ROW  HTR
      00342  0 77200 0 00202 START   REW 2
      00343  0 76000 0 00140         SLN 0
      00344  0 76200 0 00321  ADD27  RCD 1
      00345  0 07400 4 00113         TSX ADD23,4
      00346  0 00000 0 00373         HTR RECOR
```

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TD    00347 -3 00000 0 00355         TXL  ADD24          RETURN3
      00350  0 76000 0 00142         SLN  2              RETURN4
      00351 -0 53400 4 00354         LXD  ADD25,4
      00352  0 70000 4 00407  ADD26  CPY  BLOCK,4
      00353  2 00001 4 00352         TIX  ADD26,4,1
      00354 -3 00014 0 00344  ADD25  TXL  ADD27,0,12
      00355 -0 76000 0 00142  ADD24  SLT  2
      00356  0 02000 0 00363         TRA  ADD28          OFF
      00357  0 76000 0 00166         SWT  6
      00360  0 02000 0 00414         TRA  ADD30
      00361  0 77000 0 00205         WEF  5
      00362  0 77200 0 00205         REW  5
      00363  0 76200 0 00221  ADD28  RTB  1
      00364  0 70000 0 00373         CPY  RECOR
      00365  0 02000 0 00363         TRA  ADD28
      00366  0 02000 0 00004         TRA  4              EOF
      00367  0 77200 0 00201         REW  1
      00370  0 76200 0 00221         RTB  1
      00371  0 76200 0 00221         RTB  1
      00372  0 07400 4 00004         TSX  4,4
A     00373  0 00000 0 00000  RECOR  HTR
                       00407 BLOCK  BES  11
      00407  0 77200 0 00205 ADD31   REW  5
      00410  0 50200 0 00236         CLS  ADD32
      00411  0 60100 0 00236         STO  ADD32
      00412 -0 50000 0 00334         CAL  DATA3
      00413  0 02000 0 00237         TRA  ADD33
      00414  0 77000 0 00202 ADD30   WEF  2
      00415  0 77200 0 00202         REW  2
      00416  0 02000 0 00363         TRA  ADD28
A                      00000         END
```

```
1          AST
1                                    ************* FORTRAN II SECTION SIX ************************F6R00010
                                     FORTRAN 2   RECORD 0003  -  CIT TO SAP CONVERSION.           F6R00011
                                                                                                  F6R00012
                                     CIT TO SAP CONVERSION                                        F6R00020
                        00210        ORG 136                                                      F6R00030
M     00210  0 50000 0 00162  START  CLA ONE                                                      F6R00040
      00211  0 34000 0 00200         CAS SW2                                                      F6R00050
      00212  0 02000 0 00700         TRA ADD01         SW2 EQUAL ZERO, ASSUME SWITCH TWO UP,      F6R00060
      00213  0 02000 0 00216         TRA LIB1          SW2 EQUAL ONE, ASSUME SWITCH TWO DOWN,     F6R00070
      00214  0 76000 0 00162         SWT 2             EQUAL TWO. TEST SWITCH TWO                 F6R00080
      00215  0 02000 0 00700         TRA ADD01                                                    F6R00090
      00216  0 77200 0 00204  LIB1   REW 4             SW TWO DOWN.                               F6R00100
      00217  0 77000 0 00202         WEF 2                                                        F6R00110
      00220 -0 53400 2 00221         LXD ADD02,2       SET READ ERROR COUNTER.                    F6R00120
      00221  1 00005 0 00223  ADD02  TXI ADD03,0,5                                                F6R00130
      00222  0 76400 0 00204  ADD05  BST 4                                                        F6R00140
      00223  0 76200 0 00224  ADD03  RTB 4             READ TAPE 4                                F6R00150
      00224  0 53400 1 00726         LXA DATA1,1                                                  F6R00160
      00225  0 70000 1 01162  ADD04  CPY REC03,1       CPY INTO REC-1, REC-2,---                  F6R00170
      00226  1 00001 1 00225         TXI ADD04,1,1                                                F6R00180
      00227  0 02000 0 00700         TRA ADD01         END OF FILE ON TAPE 4.                     F6R00190
      00230  0 77100 0 00377         ARS 255                                                      F6R00200
      00231  0 77100 0 00377         ARS 0255                                                     F6R00210
      00232 -0 76000 0 00012         RTT                                                          F6R00220
      00233  2 00001 2 00222         TIX ADD05,2,1     IF ERROR.                                  F6R00230
      00234 -0 63400 1 00440         SXD ADD06,1       SAVE COUNT OF NO. OF WORDS READ IN.        F6R00240
      00235  0 53400 1 00677         LXA ADD07,1       SET XR1=0                                  F6R00250
      00236 -0 63400 1 00442  IN207  SXD ADD08,1       SAVE XR1.                                  F6R00260
      00237 -0 50000 1 01163         CAL RECOR,1       STORE SL IN DATA2                          F6R00270
      00240  0 60200 0 00775         SLW DATA2         STORE OP IN DATA3                          F6R00280
      00241 -0 50000 1 01162         CAL REC03,1                                                  F6R00290
      00242  0 60200 0 00776         SLW DATA3                                                    F6R00300
      00243 -0 50000 1 01161         CAL REC02,1       STORE SA IN DATA4                          F6R00310
      00244  0 60200 0 00777         SLW DATA4                                                    F6R00320
      00245 -0 50000 1 01160         CAL REC01,1       STORE RA IN DATA5                          F6R00330
      00246  0 60200 0 01000         SLW DATA5                                                    F6R00340
      00247  0 56000 0 00710         LDQ DATA6                                                    F6R00350
      00250 -0 60000 0 01007         STQ E1005         STORE BLANKS IN E1006,1007,1010,1005.      F6R00360
      00251 -0 60000 0 01010         STQ E1006                                                    F6R00370
      00252 -0 60000 0 01011         STQ E1007                                                    F6R00380
      00253 -0 60000 0 01012         STQ E1010                                                    F6R00390
      00254 -0 50000 0 00775         CAL DATA2         TEST SYMBOLIC LOCATION.                    F6R00400
      00255  0 10000 0 00305         TZE ADD09         IF ZERO, GO TO ADD09.                      F6R00410
      00256  0 76500 0 00036         LRS 30            NOT ZERO. SEE IF SL(1) EQUAL ZERO.         F6R00420
      00257  0 10000 0 00303         TZE ADD10         SL(1) EQUAL ZERO, GO TO ADD10.             F6R00430
      00260  0 40200 0 00722         SUB DATA7         SL(1) NOT EQUAL ZERO. SEE IF EQUAL 15.     F6R00440
      00261 -0 10000 0 00264         TNZ ADD11         SL(1) NOT EQUAL 15. GO TO ADD11            F6R00450
      00262 -0 50000 0 00710         CAL DATA6         SL(1) EQUAL 15. PUT BLANKS IN AC AND       F6R00460
      00263  0 02000 0 00306         TRA ADD12         GO TO ADD12                                F6R00470
      00264  0 40000 0 00722  ADD11  ADD DATA7         RESTORE SL(1) IN AC.                       F6R00480
      00265  0 40200 0 00614         SUB LIB3                                                     F6R00490
      00266  0 10000 0 00612         TZE LIB2          IF SL(1)=$, GO TO LIB2                     F6R00500
      00267  0 40000 0 00614         ADD LIB3                                                     F6R00510
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00270  0 40200 0 00616          SUB LIB5                                                    F6R00520
00271  0 10000 0 00617          TZE LIB6        IF SL(1)=(,GO TO LIB6                       F6R00530
00272  0 40000 0 00616          ADD LIB5                                                    F6R00540
00273  0 40200 0 00722          SUB DATA7                                                   F6R00550
00274  0 12000 0 00301          TPL ME1         GO TO ME1 IF SL(1) GREATER THAN 15 (I.E.,ALPHA-F6R00560
00275  0 40000 0 00722          ADD DATA7                                                   F6R00570
00276 -0 77300 0 00001          RQL 1           SL(1) LESS THAN 15, NOT ZERO, ASSEMBLE SYMBOL. F6R00580
00277  0 07400 1 00603          TSX SUB1,1      AND GO TO SUB1 (TIV TYPE ENTRY).            F6R00590
00300  0 02000 0 00306          TRA ADD12                                                   F6R00600
00301 -0 50000 0 00775  ME1     CAL DATA2                                                   F6R00610
00302  0 02000 0 00306          TRA ADD12                                                   F6R00620
00303 -0 76300 0 00015  ADD10   LGL 13          IFN. ASSEMBLE SYMBOL AND GO TO SUB2.        F6R00630
00304  0 07400 1 00654          TSX SUB2,1                                                  F6R00640
00305 -0 76300 0 00044  ADD09   LGL 36          SYMBOLIC LOC EQUAL ZERO. PUT BLANKS IN ACC. F6R00650
00306  0 60200 0 01005  ADD12   SLW E1003       STORE ACC. IN E1003.                        F6R00660
00307  0 56000 0 00776  IN245   LDQ DATA3       SELECT OP IN MQ.                            F6R00670
00310  0 50200 0 00717          CLS DATA8                                                   F6R00680
00311 -0 76300 0 00022          LGL 18                                                      F6R00690
00312 -0 60000 0 01001          STQ E0777       STORE DECREMENT IN E0777.                   F6R00700
00313  0 56000 0 00710          LDQ DATA6       LOAD MQ WITH BLANKS                         F6R00710
00314 -0 76300 0 00006          LGL 6                                                       F6R00720
00315  0 76700 0 00006          ALS 6                                                       F6R00730
00316  0 60100 0 01006          STO E1004       STORE IN E1004.                             F6R00740
00317  0 34000 0 00707          CAS DATA9       IS OP EQUAL OCT.                            F6R00750
00320  0 02000 0 00325          TRA ADD13       OP LESS THAN OCT                            F6R00760
00321  0 02000 0 00566          TRA ADD14       OP EQUAL OCT. GO TO ADD14.                  F6R00770
00322  0 34000 0 00706          CAS DAT10       OP GREATER THAN OCT. SEE IF OP=BCD.         F6R00780
00323  0 02000 0 00325          TRA ADD13                                                   F6R00790
00324  0 02000 0 00525          TRA ADD15       OP EQUAL BCD. GO TO ADD15.                  F6R00800
00325  0 56000 0 00777  ADD13   LDQ DATA4       OP NOT BCD OR OCT.                          F6R00810
T 00326 -0 75400 0 00000        PXD             SELECT SA IN MQ.                            F6R00820
00327 -0 76300 0 00006          LGL 6                                                       F6R00830
00330 -0 10000 0 00343          TNZ IN301       SA(1) NOT EQUAL ZERO. GO TO IN301.          F6R00840
00331 -0 76300 0 00014          LGL 12          SA(1) EQUAL ZERO. TEST FOR INTERNAL         F6R00850
00332 -0 10000 0 00352          TNZ IN310       FORMULA NUMBER TYPE. IF YES, GO TO IN310.   F6R00860
00333  0 56000 0 00710          LDQ DATA6       SA(1),SA(2),SA(3) EQUAL ZERO. LOAD MQ WITH  F6R00870
00334  0 50000 0 01000          CLA DATA5       TEST FOR NOW-ZERO TAG OR RELATIVE ADDRESS.  F6R00880
00335 -0 10000 0 00510          TNZ IN446       NOT EQUAL ZERO. GO TO IN446                 F6R00890
00336  0 50000 0 01001          CLA E0777       RA EQUAL ZERO. TEST FOR NON-ZERO DECREMENT. F6R00900
00337 -0 10000 0 00362          TNZ IN320       NOT ZERO, GO TO IN320                       F6R00910
00340 -0 50000 0 00715          CAL DT713       ZERO, OR A BLANK TO RT-HAND END OF E1004.   F6R00920
00341 -0 60200 0 01006          ORS E1004                                                   F6R00930
00342  0 02000 0 00431          TRA IN367                                                   F6R00940
00343  0 34000 0 00717  IN301   CAS DATA8       TEST IF SA(1)=16.                           F6R00950
00344  0 02000 0 00355          TRA IN313       GREATER THAN 16(TRUE SYMBOL). GO TO IN313.  F6R00960
00345  0 07400 4 00004          TSX 4,4         EQUAL IS ERROR.                             F6R00970
00346  0 07400 1 00603          TSX SUB1,1      LESS THAN 16 (TIV ENTRY TYPE). GO TO SUB1.  F6R00980
00347  0 76500 0 00036          LRS 30          RETURN FROM SUB1.                           F6R00990
00350 -0 77300 0 00001          RQL 1                                                       F6R01000
00351  0 02000 0 00355          TRA IN313                                                   F6R01010
00352  0 07400 1 00654  IN310   TSX SUB2,1      INTERNAL FORMULA NO. TYPE.                  F6R01020
T 00353 -0 75400 0 00000        PXD                                                         F6R01030
00354 -0 76300 0 00006          LGL 6                                                       F6R01040
00355 -0 60200 0 01006  IN313   ORS E1004                                                   F6R01050
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00356 -0 60000 0 01002          STQ E1000                                                  F6R01060
00357 -0 50000 0 00715          CAL DT713                                                  F6R01070
00360 -0 60200 0 01002          ORS E1000                                                  F6R01080
00361  0 56000 0 01002          LDQ E1000                                                  F6R01090
00362 -0 50000 0 00355   IN320  CAL IN313                                                  F6R01100
00363  0 07400 1 00445          TSX IN403,1                                                F6R01110
00364  0 50000 0 01000          CLA DATA5        SELECT RELATIVE ADDRESS.                  F6R01120
00365  0 77100 0 00022          ARS 18                                                     F6R01130
00366  0 10000 0 00377          TZE IN335        RA EQUAL ZERO, GO TO IN335                F6R01140
00367  0 56000 0 00710          LDQ DATA6        RA NOT EQUAL ZERO, LOAD MQ WITH BLANKS AND F6R01150
00370  0 07400 1 00464          TSX IN422,1      GO TO IN422                               F6R01160
00371  0 50000 0 01000          CLA DATA5        SET ACC. EQUAL RA.                        F6R01170
00372  0 12000 0 00375          TPL IN333        IF RA POSITIVE, GO TO IN333.              F6R01180
00373 -0 50000 0 00716          CAL DT714        IF RA NEGATIVE, SELECT OCTAL 40 (MINUS)   F6R01190
00374  0 02000 0 00376          TRA IN334        AND GO TO IN334.                          F6R01200
00375 -0 50000 0 00717   IN333  CAL DATA8        SELECT OCTAL 20 (PLUS)                    F6R01210
00376  0 07400 1 00460   IN334  TSX IN416,1                                                F6R01220
00377  0 50000 0 01000   IN335  CLA DATA5        SET ACC. EQUAL RA. ANA OCTAL 77777        F6R01230
00400 -0 32000 0 00726          ANA DATA1                                                  F6R01240
00401 -0 10000 0 00406          TNZ IN344        IF NOT ZERO, GO TO IN344.                 F6R01250
00402  0 50000 0 01001          CLA E0777        ZERO. TEST IF E0777 EQUAL ZERO.           F6R01260
00403  0 10000 0 00425          TZE IN363        IF ZERO, GO TO IN363.                     F6R01270
00404  0 56000 0 00713          LDQ DT711        NOT ZERO, LOAD MQ WITH 0 IN 1ST CHARAC, REST F6R01280
00405  0 02000 0 00414          TRA IN352        AND GO TO IN 352                          F6R01290
00406  0 56000 0 00712   IN344  LDQ DT710                                                  F6R01300
00407  0 34000 0 00724          CAS DT722                                                  F6R01310
00410  0 02000 0 00413          TRA IN351                                                  F6R01320
00411  0 02000 0 00413          TRA IN351                                                  F6R01330
00412  0 56000 0 00710          LDQ DATA6                                                  F6R01340
00413  0 07400 1 00464   IN351  TSX IN422,1                                                F6R01350
00414  0 50000 0 00714   IN352  CLA DT712                                                  F6R01360
00415  0 07400 1 00460          TSX IN416,1                                                F6R01370
00416  0 50000 0 01001          CLA E0777                                                  F6R01380
00417  0 10000 0 00425          TZE IN363                                                  F6R01390
00420  0 77100 0 00022          ARS 18                                                     F6R01400
00421  0 56000 0 00710          LDQ DATA6                                                  F6R01410
00422  0 07400 1 00464          TSX IN422,1                                                F6R01420
00423  0 50000 0 00714          CLA DT712                                                  F6R01430
00424  0 07400 1 00460          TSX IN416,1                                                F6R01440
00425 -0 75400 0 00006   IN363  PXD 6                                                      F6R01450
00426  0 56000 0 00710          LDQ DATA6                                                  F6R01460
00427 -0 76300 2 00044          LGL 36,2                                                   F6R01470
00430 -0 60200 0 00430   IN366  ORS *                                                      F6R01480
00431  0 76600 0 00202   IN367  WTD 2                                                      F6R01490
00432  0 53400 1 00425          LXA IN363,1                                                F6R01500
00433  0 70000 1 01013   IN371  CPY E1011,1                                                F6R01510
00434  2 00001 1 00433          TIX IN371,1,1                                              F6R01520
00435  0 76600 0 00333          IOD                                                        F6R01530
00436 -0 53400 1 00442          LXD ADD08,1                                                F6R01540
00437  1 00004 1 00440          TXI ADD06,1,4                                              F6R01550
00440 -3 00440 1 00236   ADD06  TXL IN207,1,*                                              F6R01560
00441 -0 53400 2 00221          LXD ADD02,2                                                F6R01570
00442  1 00442 0 00223   ADD08  TXI ADD03,0,*                                              F6R01580
00443 -3 00036 2 00454   IN401  TXL IN412,2,30   IF SHIFT LESS THAN OR EQUAL 30, GO TO SELECT F6R01590
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00444 -0 50000 0 00461        CAL IN417          SHIFT GREATER THAN 30. PREPARE TO MODIFY ADDRESF6R01600
00445  0 40000 0 00725 IN403  ADD DT723          COMPUTE ADDRESS FOR STORING WORD.          F6R01610
00446  0 62100 0 00461        STA IN417                                                     F6R01620
00447  0 62100 0 00430        STA IN366                                                     F6R01630
00450  0 62100 0 00452        STA IN410                                                     F6R01640
T 00451 -0 75400 0 00000       PXD                CLEAR ACC.                              F6R01650
00452  0 60200 0 00452 IN410  SLW *              STORE ZERO IN WORD.                       F6R01660
00453 -0 73400 2 00000        PDX 0,2            SET XR2 EQUAL TO ZERO.                    F6R01670
00454 -0 76300 0 00006 IN412  LGL 6              SELECT CHARACTER                          F6R01680
00455  0 34000 0 00715        CAS DT713          IS CHARACTER BLANK.                       F6R01690
00456  0 02000 0 00460        TRA IN416          NO.                                       F6R01700
00457  0 02000 1 00001        TRA 1,1            YES, RETURN TO PROGRAM                    F6R01710
00460  0 76700 2 00036 IN416  ALS 30,2           NO, SHIFT CHARACTER                       F6R01720
00461 -0 60200 0 00461 IN417  ORS *                                                        F6R01730
T 00462 -0 75400 0 00000       PXD                                                        F6R01740
00463  1 00006 2 00443        TXI IN401,2,6      ADJUST XR2 SHIFT AND GO TO IN401.         F6R01750
00464 -0 60000 0 01004 IN422  STQ E1002                                                    F6R01760
00465 -0 63400 1 00774        SXD DT772,1                                                 F6R01770
00466  0 76500 0 00043 IN424  LRS 35                                                      F6R01780
00467 -0 73400 1 00000        PDX 0,1                                                     F6R01790
00470  0 60200 0 01003        SLW E1001                                                   F6R01800
00471  0 22100 0 00723 IN427  DVP DT721                                                   F6R01810
00472  0 76700 1 00000        ALS 0,1                                                     F6R01820
00473 -0 60200 0 01003        ORS E1001                                                   F6R01830
00474 -0 60000 0 01002        STQ E1000                                                   F6R01840
00475  0 50000 0 01002        CLA E1000                                                   F6R01850
00476  0 10000 0 00501        TZE IN437                                                   F6R01860
00477  0 76000 0 00000        CLM 0                                                       F6R01870
00500  1 77772 1 00471        TXI IN427,1,-6                                              F6R01880
00501 -0 50000 0 01003 IN437  CAL E1001                                                   F6R01890
00502  0 56000 0 01004        LDQ E1002                                                   F6R01900
00503 -0 76300 0 00001        LGL 1                                                       F6R01910
00504  0 56000 0 01004 IN442  LDQ E1002                                                   F6R01920
00505  0 76500 1 00006        LRS 6,1                                                     F6R01930
00506 -0 53400 1 00774        LXD DT772,1                                                 F6R01940
00507  0 02000 1 00001        TRA 1,1                                                     F6R01950
00510  0 77100 0 00022 IN446  ARS 18                                                      F6R01960
00511  0 10000 0 00362        TZE IN320                                                   F6R01970
00512  0 07400 1 00464        TSX IN422,1                                                 F6R01980
00513  0 50000 0 01000        CLA DATA5                                                   F6R01990
00514  0 12000 0 00517        TPL IN455                                                   F6R02000
00515 -0 50000 0 00716        CAL DT714                                                   F6R02010
00516  0 02000 0 00521        TRA IN457                                                   F6R02020
T 00517 -0 75400 0 00000 IN455 PXD                                                       F6R02030
00520 -0 76300 0 00006        LGL 6                                                       F6R02040
00521 -0 60200 0 01006 IN457  ORS E1004                                                   F6R02050
00522 -0 50000 0 00355        CAL IN313                                                   F6R02060
00523  0 07400 1 00445        TSX IN403,1                                                 F6R02070
00524  0 02000 0 00377        TRA IN335                                                   F6R02080
00525  0 56000 0 00777 ADD15  LDQ DATA4                                                   F6R02090
00526 -0 50000 0 00717        CAL DATA8                                                   F6R02100
00527  0 16200 0 00532        TQP IN470                                                   F6R02110
00530  0 40000 0 00717        ADD DATA8                                                   F6R02120
00531  0 76500 0 00000        LRS 0                                                       F6R02130
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00532 -0 60200 0 01006  IN470 ORS E1004                                  F6R02140
00533  0 76700 0 00003          ALS 3                                    F6R02150
00534 -0 76300 0 00003          LGL 3                                    F6R02160
00535  0 76700 0 00003          ALS 3                                    F6R02170
00536 -0 76300 0 00003          LGL 3                                    F6R02180
00537  0 76700 0 00003          ALS 3                                    F6R02190
00540 -0 76300 0 00003          LGL 3                                    F6R02200
00541  0 76700 0 00003          ALS 3                                    F6R02210
00542 -0 76300 0 00003          LGL 3                                    F6R02220
00543  0 76700 0 00003          ALS 3                                    F6R02230
00544 -0 76300 0 00003          LGL 3                                    F6R02240
00545  0 76700 0 00003          ALS 3                                    F6R02250
00546 -0 76300 0 00003          LGL 3                                    F6R02260
00547  0 60200 0 01007          SLW E1005                                F6R02270
00550  0 76700 0 00003          ALS 3                                    F6R02280
00551 -0 76300 0 00003          LGL 3                                    F6R02290
00552  0 76700 0 00003          ALS 3                                    F6R02300
00553 -0 76300 0 00003          LGL 3                                    F6R02310
00554  0 76700 0 00003          ALS 3                                    F6R02320
00555 -0 76300 0 00003          LGL 3                                    F6R02330
00556  0 76700 0 00003          ALS 3                                    F6R02340
00557 -0 76300 0 00003          LGL 3                                    F6R02350
00560  0 76700 0 00003          ALS 3                                    F6R02360
00561 -0 76300 0 00003          LGL 3                                    F6R02370
00562  0 76700 0 00003          ALS 3                                    F6R02380
00563 -0 76300 0 00003          LGL 3                                    F6R02390
00564  0 60200 0 01010          SLW E1006                                F6R02400
00565  0 02000 0 00431          TRA IN367                                F6R02410
00566  0 50000 0 00777  ADD14  CLA DATA4                                 F6R02420
00567  0 40200 0 00721          SUB DT717                                F6R02430
00570 -0 10000 0 00574          TNZ IN532                                F6R02440
00571 -0 50000 0 00706          CAL DAT10                                F6R02450
00572  0 60200 0 01006          SLW E1004                                F6R02460
00573  0 02000 0 00525          TRA ADD15                                F6R02470
00574 -0 50000 0 00725  IN532  CAL DT723                                 F6R02480
00575 -0 60200 0 01006          ORS E1004                                F6R02490
00576 -0 50000 0 00777          CAL DATA4                                F6R02500
00577  0 60200 0 01007          SLW E1005                                F6R02510
00600 -0 50000 0 00710          CAL DATA6                                F6R02520
00601  0 60200 0 01010          SLW E1006                                F6R02530
00602  0 02000 0 00431          TRA IN367                                F6R02540
00603 -0 63400 1 00705  SUB1   SXD DT703,1     SAVE XR1 FOR RETURN       F6R02550
00604  0 73400 4 00000          PAX 0,4         STORE CHARACTER IN XR4    F6R02560
00605  0 40200 0 00722          SUB DATA7       IS CHARACTER *.           F6R02570
00606 -0 10000 0 00621          TNZ IN550       NO, GO TO IN 550.         F6R02580
00607 -0 50000 0 00720          CAL DT716       YES, SELECT *.            F6R02590
00610  0 56000 0 00710          LDQ DATA6       LOAD MQ WITH BLANKS.      F6R02600
00611  0 02000 0 00355          TRA IN313       GO TO IN 313.             F6R02610
00612  0 02000 0 01164  LIB2   TRA RPCH1                                  F6R02620
00613  0 02000 0 00306          TRA ADD12                                 F6R02630
00614  000000000053     LIB3   BCD 100000$                               F6R02640
00615  536060606060     LIB4   BCD 1$                                    F6R02650
00616  000000000074     LIB5   BCD 100000(                               F6R02660
00617 -0 50000 0 00775  LIB6   CAL DATA2                                 F6R02670
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00620  0 02000 0 00306          TRA ADD12                                                  F6R02680
00621 -0 50000 4 00772  IN550   CAL DT770,4      SELECT APPROPRIATE NUMBERIC OR ALPHABETIC  F6R02690
00622  0 76700 0 00006          ALS 6            CHARACTER.                                 F6R02700
00623 -0 50100 0 00773          ORA DT771        FOLLOWED BY LEFT PARENTHESIS               F6R02710
00624  0 76700 0 00030          ALS 24           AND SHIFT INTO PROPER POSITION.            F6R02720
00625  0 60200 0 01002          SLW E1000                                                   F6R02730
00626  0 53400 3 00636          LXA IN565,3                                                 F6R02740
00627 -0 77300 0 00014          RQL 12                                                      F6R02750
T 00630 -0 75400 0 00000        PXD 0                                                       F6R02760
00631 -0 76300 0 00003          LGL 3            TAG BITS INTO ACC. ADDRESS                 F6R02770
00632 -0 10000 0 00636          TNZ IN565        TAG BITS EQUAL ZERO. NO, GO TO IN565       F6R02780
00633 -2 00001 1 00646  IN562   TNX IN575,1,1    YES. IF FINISHED WITH WORD, GO TO IN 575   F6R02790
00634 -0 76300 0 00005          LGL 5            NOT FINISHED WITH WORD. TEST ADDRESS BITS  F6R02800
00635  0 10000 0 00633          TZE IN562        ADDRESS BITS ZERO.                         F6R02810
00636  0 73400 4 00004  IN565   PAX 4,4          ADDRESS BITS NOT ZERO.                     F6R02820
00637 -0 50000 4 00772          CAL DT770,4      SELECT CHARACTER.                          F6R02830
00640 -2 00001 1 00647          TNX IN576,1,1                                               F6R02840
00641  0 76700 2 00026          ALS 22,2         SHIFT INTO PROPER POSITION.                F6R02850
00642 -0 60200 0 01002          ORS E1000                                                   F6R02860
T 00643 -0 75400 0 00000        PXD                                                         F6R02870
00644 -0 76300 0 00005          LGL 5                                                       F6R02880
00645  1 00006 2 00636          TXI IN565,2,6    ADJUST SHIFT.                              F6R02890
00646 -0 50000 0 00715  IN575   CAL DT713                                                   F6R02900
00647  0 56000 0 00710  IN576   LDQ DATA6                                                   F6R02910
00650 -0 76300 2 00026          LGL 22,2                                                    F6R02920
00651 -0 50100 0 01002          ORA E1000                                                   F6R02930
00652 -0 53400 1 00705          LXD DT703,1                                                 F6R02940
00653  0 02000 1 00001          TRA 1,1                                                     F6R02950
00654  0 60100 0 01002  SUB2    STO E1000                                                   F6R02960
00655 -0 76300 0 00010          LGL 8                                                       F6R02970
T 00656 -0 75400 0 00000        PXD 0                                                       F6R02980
00657  0 76500 0 00035          LRS 29                                                      F6R02990
00660  0 22100 0 00723          DVP DT721                                                   F6R03000
00661 -0 10000 0 00663          TNZ IN612                                                   F6R03010
00662 -0 50000 0 00715          CAL DT713        IF SUBSIDIARY NO. IS ZERO, SELECT A BLANK. F6R03020
00663  0 60200 0 01004  IN612   SLW E1002                                                   F6R03030
00664 -0 76300 0 00044          LGL 36                                                      F6R03040
00665 -0 63400 1 00774          SXD DT772,1                                                 F6R03050
00666  0 73400 1 00000          PAX 0,1                                                     F6R03060
00667 -0 50000 1 00760          CAL IN756,1      SELECT ALPHABETIC CHARACTER.               F6R03070
00670  0 76700 0 00006          ALS 6                                                       F6R03080
00671 -0 50100 0 01004          ORA E1002                                                   F6R03090
00672  0 56000 0 00710          LDQ DATA6                                                   F6R03100
00673 -0 76300 0 00030          LGL 24                                                      F6R03110
00674  0 60200 0 01004          SLW E1002                                                   F6R03120
00675  0 50000 0 01002          CLA E1000                                                   F6R03130
00676  0 02000 0 00466          TRA IN424                                                   F6R03140
00677  0 00000 0 00000  ADD07   HTR 0                                                       F6R03150
00700  0 77000 0 00202  ADD01   WEF 2                                                       F6R03160
00701  0 77200 0 00204          REW 4                                                       F6R03170
00702  0 77200 0 00202          REW 2                                                       F6R03180
00703  0 76200 0 00221          RTB 1                                                       F6R03190
00704  0 02000 0 00004          TRA 4                                                       F6R03200
00705  0 00000 0 00000  DT703   HTR 0                                                       F6R03210
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00706 -204623636000     DAT10 OCT 604623636000
00707 -202223246000     DATA9 OCT 602223246000
00710 -206060606060     DATA6 OCT 606060606060
00711 +336060606060     DT707 OCT 336060606060
00712 -236060606060     DT710 OCT 636060606060
00713 +006060606060     DT711 OCT 006060606060
00714 +000000000073     DT712 OCT 73
00715 +000000000060     DT713 OCT 60
00716 +000000000040     DT714 OCT 40
00717 +000000000020     DATA8 OCT 20
00720 +000000000054     DT716 OCT 54
00721 -377777777777     DT717 OCT 777777777777
00722 +000000000017     DATA7 OCT 17
00723 +000000000012     DT721 OCT 12
00724 +000000000005     DT722 OCT 5
00725 +000000000001     DT723 OCT 1
00726 +000000077777     DATA1 OCT 77777
00727 +000000000071     DT725 OCT 71
00730 +000000000070           OCT 70
00731 +000000000067           OCT 67
00732 +000000000066           OCT 66
00733 +000000000065           OCT 65
00734 +000000000064           OCT 64
00735 +000000000063           OCT 63
00736 +000000000062           OCT 62
00737 +000000000051     DT735 OCT 51
00740 +000000000050           OCT 50
00741 +000000000047           OCT 47
00742 +000000000046           OCT 46
00743 +000000000045           OCT 45
00744 +000000000044           OCT 44
00745 +000000000043           OCT 43
00746 +000000000042           OCT 42
00747 +000000000041           OCT 41
00750 +000000000031           OCT 31
00751 +000000000030           OCT 30
00752 +000000000027           OCT 27
00753 +000000000026           OCT 26
00754 +000000000025           OCT 25
00755 +000000000024           OCT 24
00756 +000000000023           OCT 23
00757 +000000000022           OCT 22
00760 +000000000021     IN756 OCT 21
00761 +000000000011           OCT 11
00762 +000000000010           OCT 10
00763 +000000000007           OCT 7
00764 +000000000006           OCT 6
00765 +000000000005           OCT 5
00766 +000000000004           OCT 4
00767 +000000000003           OCT 3
00770 +000000000002           OCT 2
00771 +000000000001           OCT 1
00772 +000000000000     DT770 OCT 0
00773 +000000000034     DT771 OCT 34
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F6R03220
F6R03230
F6R03240
F6R03250
F6R03260
F6R03270
F6R03280
F6R03290
F6R03300
F6R03310
F6R03320
F6R03330
F6R03340
F6R03350
F6R03360
F6R03370
F6R03380
F6R03390
F6R03400
F6R03410
F6R03420
F6R03430
F6R03440
F6R03450
F6R03460
F6R03470
F6R03480
F6R03490
F6R03500
F6R03510
F6R03520
F6R03530
F6R03540
F6R03550
F6R03560
F6R03570
F6R03580
F6R03590
F6R03600
F6R03610
F6R03620
F6R03630
F6R03640
F6R03650
F6R03660
F6R03670
F6R03680
F6R03690
F6R03700
F6R03710
F6R03720
F6R03730
F6R03740
F6R03750
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00774   0 00000 0 00000   DT772 HTR 0                                        F6R03760
00775   0 00000 0 00000   DATA2 HTR 0                                        F6R03770
00776   0 00000 0 00000   DATA3 HTR 0                                        F6R03780
00777   0 00000 0 00000   DATA4 HTR 0                                        F6R03790
01000   0 00000 0 00000   DATA5 HTR 0                                        F6R03800
01001   0 00000 0 00000   E0777 HTR 0                                        F6R03810
01002   0 00000 0 00000   E1000 HTR 0                                        F6R03820
01003   0 00000 0 00000   E1001 HTR 0                                        F6R03830
01004   0 00000 0 00000   E1002 HTR 0                                        F6R03840
01005   0 00000 0 00000   E1003 HTR 0                                        F6R03850
01006   0 00000 0 00000   E1004 HTR 0                                        F6R03860
01007   0 00000 0 00000   E1005 HTR 0                                        F6R03870
01010   0 00000 0 00000   E1006 HTR 0                                        F6R03880
01011   0 00000 0 00000   E1007 HTR 0                                        F6R03890
01012   0 00000 0 00000   E1010 HTR 0                                        F6R03900
01013   0 00000 0 00000   E1011 HTR 0                                        F6R03910
01014   0 00000 0 00000         HTR 0                                        F6R03920
01015   0 00000 0 00000         HTR 0                                        F6R03930
01016   0 00000 0 00000         HTR 0                                        F6R03940
01017   0 00000 0 00000   E1015 HTR 0                                        F6R03950
                  01164   REC   BES 100                                      F6R03960
01164   0 76300 0 00006   RPCH1 LLS 6                                        F6R03961
01165   0 40200 0 00614         SUB LIB3                                     F6R03962
01166   0 10000 0 01171         TZE LIB2A                                    F6R03963
01167  -0 50000 0 00615         CAL LIB4      SINGLE DOLLAR SIGN             F6R03964
01170   0 02000 0 00306         TRA ADD12                                    F6R03965
01171  -0 50000 0 01173   LIB2A CAL DOL2      DOUBLE DOLLAR SIGN.            F6R03966
01172   0 02000 0 00306         TRA ADD12                                    F6R03967
01173   535360606060    DOL2  BCD 1$$                                        F6R03968
                  01160   RECO1 SYN REC-4                                    F6R03970
                  01161   RECO2 SYN REC-3                                    F6R03980
                  01162   RECO3 SYN REC-2                                    F6R03990
                  01163   RECOR SYN REC-1                                    F6R04000
A                 00000         END                                          F6R04010
A                             OSTART 00210,00210
```

```
1          AST
1                                   ************* FORTRAN II SECTION SIX ************************F6S00010
                                    FORTRAN 2   RECORD 005  -  ON-LINE PRINT.                    F6S00011
                                                                                                 F6S00012
                                    MODIFICATIONS TO TPH1 TO PRINT WITH                          F6S00020
                                    SENSE SWITCH CHANGES                                         F6S00030
                     00210        ORG 136                                                        F6S00040
      00210  0 77200 0 00202        REW 2                                                         F6S00050
      00211 -0 53400 1 00225        LXD FILES,1                                                   F6S00060
      00212  0 50000 0 00162        CLA ONE                                                       F6S00070
      00213  0 34000 0 00200        CAS SW2          TEST SENSE SWITCH TWO.                       F6S00080
      00214  0 02000 0 00217        TRA LIB1         UP                                           F6S00090
      00215  0 02000 0 00220        TRA ASKER        DOWN                                         F6S00100
      00216  0 76000 0 00162        SWT 2                                                         F6S00110
      00217 -2 00001 1 00234  LIB1  TNX CARDS,1,1    UP, ANY FILES TO DO. GO RETURN TO LOADER IF NOTF6S00120
      00220  0 50000 0 00162  ASKER CLA ONE          SWITCH 2 DOWN (OR UP BUT FILES TO DO)        F6S00130
      00221  0 34000 0 00201        CAS SW3          TEST SENSE SWITCH THREE.                     F6S00140
      00222  0 02000 0 00225        TRA FILES        UP, GO TO RETURN TO LOADER                   F6S00150
      00223  0 02000 0 00226        TRA LIB2         DOWN.                                        F6S00160
      00224  0 76000 0 00163        SWT 3                                                         F6S00170
      00225  1 00003 0 00234  FILES TXI CARDS,,3     UP, GO RETURN TO LOADER.                     F6S00180
      00226 -0 63400 1 00231  LIB2  SXD COUNT,1      SWITCH THREE DOWN.                           F6S00190
      00227  0 76600 0 00361        WPR              TO PRINT FILE OF TAPE TWO.                   F6S00200
      00230  0 76000 0 00361        SPR 1                                                         F6S00210
TD    00231  1 00000 0 00237  COUNT TXI PRINT                                                     F6S00220
      00232 -0 53400 1 00231  PARTS LXD COUNT,1                                                   F6S00230
      00233  2 00001 1 00220        TIX ASKER,1,1                                                 F6S00240
      00234  0 76200 0 00221  CARDS RTB 1            RETURN TO LOADER                             F6S00250
      00235  0 02000 0 00004        TRA 4                                                         F6S00260
      00236  0 00000 0 00005  ME8   HTR 5                                                         F6S00270
      00237 -0 76000 0 00012  PRINT RTT                                                           F6S00280
      00240  0 76100 0 00000        NOP                                                           F6S00290
      00241 -0 53400 4 00236  ME9   LXD ME8,4                                                     F6S00300
      00242 -0 53400 2 00246  I113  LXD I117,2       SET RECORD LENGTH EQUAL 20                   F6S00310
      00243  0 76000 0 00141        SLN 1            TURN ON SENSE LIGHT 1                        F6S00320
      00244  0 76200 0 00202        RTD 2            SELECT TAPE TWO IN BCD MODE                  F6S00330
      00245  0 70000 2 00551  I116  CPY D65,2        AND COPY RECORD.                             F6S00340
      00246 -3 00024 0 00261  I117  TXL I132,,20                                                  F6S00350
      00247  0 02000 0 00232        TRA PARTS        END OF FILE.                                 F6S00360
      00250  1 00001 2 00251  I121  TXI I122,2,1                                                  F6S00370
      00251 -0 75400 2 00000  I122  PXD 0,2                                                       F6S00380
      00252 -0 76000 0 00012        RTT              TEST TAPE CHECK.                             F6S00390
      00253 -3 00000 0 00263        TXL I134,0,0     ERROR.                                       F6S00400
      00254  0 40000 0 00260  I125  ADD I131         PRINT THIS RECORD.                           F6S00410
      00255  0 62200 0 00257        STD I130                                                      F6S00420
      00256  0 07400 4 00267        TSX I143,4                                                    F6S00430
      00257  0 00000 0 00525  I130  HTR D41+1                                                     F6S00440
      00260 -3 00551 0 00241  I131  TXL ME9,0,D65                                                 F6S00450
      00261  2 00001 2 00245  I132  TIX I116,2,1     NEXT WORD BUT NO                             F6S00460
      00262 -3 00000 0 00251        TXL I122,0,0     MORE THAN 20.                                F6S00470
      00263  2 00001 4 00265  I134  TIX I136,4,1     TEST FOR ANOTHER TRY.                        F6S00480
      00264  0 07400 4 00004        TSX 4,4                                                       F6S00490
      00265  0 76400 0 00202  I136  BST 2            TRY AGAIN.                                   F6S00500
      00266 -3 00000 0 00242        TXL I113,0,0                                                  F6S00510
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00267  0 50000 4 00001  I143  CLA 1,4              SUBSTITUTE CODING.          F6S00520
00270  0 62200 0 00432        STD I302                                        F6S00530
00271  0 77100 0 00022        ARS 18                                          F6S00540
00272  0 40000 0 00432        ADD I302                                        F6S00550
00273  0 62100 0 00305        STA I161                                        F6S00560
00274  0 62100 0 00341        STA I211                                        F6S00570
00275  0 40200 4 00001        SUB 1,4                                         F6S00580
00276 -0 63400 4 00432        SXD I302,4                                      F6S00590
00277  0 73400 4 00000        PAX 0,4                                         F6S00600
00300 -0 63400 4 00301        SXD I155,4                                      F6S00610
00301  3 00301 0 00000  I155  TXH 0,0,*                                      F6S00620
00302  0 76600 0 00361        WPR                 SELECT PRINTER              F6S00630
00303  0 50000 0 00431        CLA I301            FIND LAST NON-BLANK GROUP.  F6S00640
00304 -0 53400 4 00354        LXD I224,4                                      F6S00650
00305  0 34000 4 00305  I161  CAS *,4                                         F6S00660
00306  1 77777 4 00311        TXI I165,4,-1                                   F6S00670
00307  1 00001 4 00305  I163  TXI I161,4,1                                    F6S00680
00310  1 77777 4 00311        TXI I165,4,-1                                   F6S00690
00311 -0 63400 4 00360  I165  SXD I230,4          STORE END TEST.             F6S00700
00312 -0 63400 4 00372        SXD I242,4                                      F6S00710
00313 -0 63400 4 00316        SXD I172,4                                      F6S00720
00314 -0 63400 4 00421        SXD I271,4                                      F6S00730
00315 -0 53400 4 00301        LXD I155,4                                      F6S00740
D 00316 -2 00000 4 00322  I172  TNX I176,4                                    F6S00750
00317 -3 00014 4 00321        TXL I175,4,12                                   F6S00760
00320  0 76000 0 00370        SPR 8               FIRST CYCLE.                F6S00770
00321 -0 53400 4 00301  I175  LXD I155,4          INITIALIZE GROUP COUNT.     F6S00780
00322  0 53400 2 00333  I176  LXA I203,2          INITIALIZE LEFT SETUP.      F6S00790
00323 -0 53400 1 00375        LXD I245,1                                      F6S00800
00324  0 50000 0 00162        CLA ONE                                         F6S00810
00325  0 34000 0 00202        CAS SW4                                         F6S00820
00326  0 02000 0 00331        TRA I201                                        F6S00830
00327  0 02000 0 00332        TRA LIB5                                        F6S00840
00330  0 76000 0 00164        SWT 4                                           F6S00850
00331 -3 00331 0 00333  I201  TXL I203,0,*                                    F6S00860
00332  0 76100 0 00000  LIB5  NOP                                            F6S00870
T 00333 -0 75400 0 00000  I203  PXD                                           F6S00880
00334  0 60200 1 00524  I204  SLW D41,1           CLEAR CARD IMAGE.           F6S00890
00335  0 60200 1 00504        SLW D21,1                                       F6S00900
00336  2 00001 1 00334        TIX I204,1,1                                    F6S00910
00337 -0 50000 0 00433  I207  CAL I303            INITIALIZE COLUMN INDICATOR. F6S00920
00340  0 60200 0 00000  I210  SLW 0                                          F6S00930
00341  0 56000 4 00341  I211  LDQ *,4             OBTAIN GROUP.               F6S00940
00342 -0 63400 4 00331        SXD I201,4          STORE GROUP COUNT.          F6S00950
00343  0 53400 4 00345        LXA I215,4          SET CHARACTER COUNT.        F6S00960
T 00344 -0 75400 0 00000  I214  PXD                                           F6S00970
00345 -0 76300 0 00006  I215  LGL 6                                           F6S00980
00346  0 73400 1 00000        PAX 0,1                                         F6S00990
00347 -0 50000 0 00000        CAL 0               POSITION COLUMN INDICATOR.  F6S01000
00350  0 77100 4 00006        ARS 6,4                                         F6S01010
00351  2 00020 1 00375        TIX I245,1,16       TEST FOR DIGIT.             F6S01020
00352  3 00017 1 00400        TXH I250,1,15       TEST FOR Y-Z ONE            F6S01030
00353 -0 60200 3 00521        ORS D36,3           STORE DIGIT.                F6S01040
00354  2 00001 4 00344  I224  TIX I214,4,1        COUNT CHARACTERS.           F6S01050
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      00355   0 77100 0 00001  I225  ARS 1          SHIFT AND TEST COLUMN.
      00356  -0 53400 4 00331        LXD I201,4      RESTORE GROUP COUNT.
      00357   1 77777 4 00360        TXI I230,4,-1   COUNT GROUPS.
D     00360  -3 00000 4 00362  I230  TXL I232,4      TEST FOR LAST NON-BLANK GROUP.
      00361  -0 10000 0 00340        TNZ I210        TEST FOR END OF ROW.
      00362  -0 50000 2 00506  I232  CAL D23,2       FORM TRUE 8,4
      00363  -0 60200 2 00511        ORS D26,2       AND 3 ROWS AND
      00364  -0 60200 2 00516        ORS D33,2       MOVE 8,4 AND 8,3
      00365   0 60200 2 00507        SLW D24,2       ROWS.
      00366  -0 50000 2 00505        CAL D22,2
      00367  -0 60200 2 00511        ORS D26,2
      00370  -0 60200 2 00515        ORS D32,2
      00371   0 60200 2 00506        SLW D23,2
D     00372  -3 00000 4 00415  I242  TXL I265,4      TEST FOR END.
      00373   3 00017 2 00415        TXH I265,2,15   TEST FOR RIGHT HALF.
      00374   1 00020 2 00337        TXI I207,2,16   INITIALIZE RIGHT HALF.
      00375   2 00020 1 00403  I245  TIX I253,1,16   TEST FOR 16/CH/32
      00376   3 00017 1 00406        TXH I256,1,15   TEST FOR X-ZONE
      00377  -0 60200 3 00521        ORS D36,3       STORE DIGIT.
      00400  -0 60200 2 00523  I250  ORS D40,2       STORE Y-ZONE.
      00401   2 00001 4 00344        TIX I214,4,1    COUNT CHARACTERS.
TD    00402  -3 00000 0 00355  I252  TXL I225        OBTAIN NEXT GROUP.
      00403   2 00020 1 00411  I253  TIX I261,1,16   TEST FOR 32/CH/48.
      00404   3 00017 1 00354        TXH I224,1,15   TEST FOR BLANK.
      00405  -0 60200 3 00521        ORS D36,3       STORE DIGIT.
      00406  -0 60200 2 00522  I256  ORS D37,2       STORE X-ZONE.
      00407   2 00001 4 00344        TIX I214,4,1    COUNT CHARACTERS.
TD    00410  -3 00000 0 00355  I260  TXL I225        OBTAIN NEXT GROUP.
      00411  -0 60200 2 00521  I261  ORS D36,2       STORE 0-ZONE.
      00412  -0 60200 3 00521        ORS D36,3       STORE DIGIT.
      00413   2 00001 4 00344        TIX I214,4,1    COUNT CHARACTERS.
TD    00414  -3 00000 0 00355        TXL I225
      00415  -0 53400 1 00430  I265  LXD I300,1      COPY LOOP.
      00416   0 70000 1 00524  I266  CPY D41,1       CARD IMAGE COPIES.
      00417   0 70000 1 00504        CPY D21,1
      00420   2 00001 1 00416        TIX I266,1,1    COUNT COPIES.
D     00421   3 00000 4 00426  I271  TXH I276,4      TEST FOR SECOND CYCLE.
      00422  -0 53400 1 00402        LXD I252,1      NO, RELOAD INDEX REGISTERS
      00423  -0 53400 2 00410        LXD I260,2      AND RETURN.
      00424  -0 53400 4 00432        LXD I302,4
      00425   0 02000 4 00002        TRA 2,4
      00426   0 76600 0 00361  I276  WPR             SELECT PRINTER AGAIN.
      00427   0 76000 0 00371        SPR 9           SECOND CYCLE.
      00430  -3 00014 0 00322  I300  TXL I176,0,12   CONVERT REST OF LINE
      00431   606060606060   I301  BCD 1
      00432   0 00000 0 00001  I302  HTR 1
      00433  -0 00000 0 00000  I303  MZE
                       00504        BES 40
      00504   0 00000 0 00000  D21   HTR 0
      00505   0 00000 0 00000  D22   HTR 0
      00506   0 00000 0 00000  D23   HTR 0
      00507   0 00000 0 00000  D24   HTR 0
      00510   0 00000 0 00000  D25   HTR 0
      00511   0 00000 0 00000  D26   HTR 0
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F6S01060
F6S01070
F6S01080
F6S01090
F6S01100
F6S01110
F6S01120
F6S01130
F6S01140
F6S01150
F6S01160
F6S01170
F6S01180
F6S01190
F6S01200
F6S01210
F6S01220
F6S01230
F6S01240
F6S01250
F6S01260
F6S01270
F6S01280
F6S01290
F6S01300
F6S01310
F6S01320
F6S01330
F6S01340
F6S01350
F6S01360
F6S01370
F6S01380
F6S01390
F6S01400
F6S01410
F6S01420
F6S01430
F6S01440
F6S01450
F6S01460
F6S01470
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F6S01490
F6S01500
F6S01510
F6S01520
F6S01530
F6S01540
F6S01550
F6S01560
F6S01570
F6S01580
F6S01590

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00512  0 00000 0 00000   D27    HTR 0                    F6S01600
00513  0 00000 0 00000   D30    HTR 0                    F6S01610
00514  0 00000 0 00000   D31    HTR 0                    F6S01620
00515  0 00000 0 00000   D32    HTR 0                    F6S01630
00516  0 00000 0 00000   D33    HTR 0                    F6S01640
00517  0 00000 0 00000   D34    HTR 0                    F6S01650
00520  0 00000 0 00000   D35    HTR 0                    F6S01660
00521  0 00000 0 00000   D36    HTR 0                    F6S01670
00522  0 00000 0 00000   D37    HTR 0                    F6S01680
00523  0 00000 0 00000   D40    HTR 0                    F6S01690
00524  0 00000 0 00000   D41    HTR 0                    F6S01700
                         00551  D65    BES 20           F6S01710
A                        00000         END              F6S01720
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1        REM ************* FORTRAN II SECTION SIX ************************F6T00010
1                                 ************* FORTRAN II SECTION SIX ************************F6T00010
                                  FORTRAN 2   RECORD 007  -  TAPE 3,7 TO 2,6.                   F6T00011
                                                                                                F6T00012

                  00161  ZERO   EQU 113
                  00162  ONE    EQU 114
                  00177  SW1    EQU 127
                  00200  SW2    EQU 128
                                  DUMP TAPE2 ONTO TAPE6 AND TAPE3 ONTO                          F6T00020
                                  TAPE7 IF BATCH COMPILING                                      F6T00030
                                                                                                F6T00040
                  00210         ORG 136                                                         F6T00050
00210  0 77200 0 00202          REW 2            REWIND TAPES TWO AND THREE.                    F6T00060
00211  0 77200 0 00203          REW 3                                                           F6T00070
00212 -0 53400 1 00161          LXD ZERO,1                                                      F6T00080
00213  0 76000 0 00166          SWT 6            TEST SENSE SWITCH 6 TO SEE IF BATCH COMPILING. F6T00090
00214  0 02000 0 00317          TRA FINI         UP. DO NOT DUMP TAPES BUT GO TO FINI.          F6T00100
00215 -0 76000 0 00012  A11     RTT                                                             F6T00110
00216  0 76100 0 00000          NOP                                                             F6T00120
00217 -0 53400 4 00242  A6      LXD SEVEN,4      SET READ ERROR COUNTER.                        F6T00130
00220 -0 53400 2 00161  A2      LXD ZERO,2                                                      F6T00140
00221  0 76200 0 00202          RTD 2            READ A RECORD OF TAPE TWO.                     F6T00150
00222  0 70000 2 01371  A1      CPY REC-1,2                                                     F6T00160
00223  1 00001 2 00222          TXI A1,2,1                                                      F6T00170
00224  0 02000 0 00247          TRA EOF          EOF                                            F6T00180
00225  0 77100 0 00377          ARS 255                                                         F6T00190
00226  0 77100 0 00377          ARS 255                                                         F6T00200
00227 -0 76000 0 00012          RTT                                                             F6T00210
00230  0 02000 0 00243          TRA ERROR        ERROR                                          F6T00220
00231  1 77777 2 00232          TXI NEXT2,2,-1                                                  F6T00230
00232 -0 63400 2 00237  NEXT2   SXD A4,2         SAVE WORD COUNT OF RECORD TO USE WHEN WRITING. F6T00240
00233 -0 53400 2 00161          LXD ZERO,2                ONTO TAPE6                            F6T00250
00234  0 76600 0 00206          WTD 6            WRITE RECORD JUST READ ONTO TAPE SIX           F6T00260
00235  0 70000 2 01371  A3      CPY REC-1,2                                                     F6T00270
00236  1 00001 2 00237          TXI A4,2,1                                                      F6T00280
00237 -3 00237 2 00235  A4      TXL A3,2,*                                                      F6T00290
00240  0 76600 0 00333          IOD                                                             F6T00300
00241  0 02000 0 00215          TRA A11          GO READ NEXT RECORD FROM TAPE TWO.             F6T00310
00242  0 00005 0 00000  SEVEN       0,0,5                                                       F6T00320
00243  0 76400 0 00202  ERROR   BST 2            READ ERROR PROCEDURE.                          F6T00330
00244  2 00001 4 00220          TIX A2,4,1                                                      F6T00340
00245  0 07400 4 00004          TSX 4,4                                                         F6T00350
00246  0 00000 0 00246  ER      HTR ER                                                          F6T00360
00247  0 77000 0 00206  EOF     WEF 6            AT END OF FILE ON TAPE TWO, WRITE END OF FILE  F6T00370
00250  1 00001 1 00251          TXI A5,1,1                                                      F6T00371
                                                 ON TAPE SIX.                                   F6T00380
00251  3 00001 1 00324  A5      TXH TEST2,1,1    TWO FILES DONE. YES, GO TEST SWITCH TWO.       F6T00390
00252  0 76200 0 00202          RTD 2            NO                                             F6T00400
00253  0 02000 0 00217          TRA A6                                                          F6T00410
00254  0 50000 0 00162  TAPE7   CLA ONE          TEST SENSE SWITCH ONE.                         F6T00420
00255  0 34000 0 00177          CAS SW1                                                         F6T00430
00256  0 02000 0 00314          TRA EOF3+1                                                      F6T00440
00257  0 02000 0 00262          TRA A7                                                          F6T00450
00260  0 76000 0 00161          SWT 1                                                           F6T00460
00261  0 02000 0 00314          TRA EOF3+1
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00262 -0 53400 4 00242  A7     LXD SEVEN,4        DOWN. SET READ ERROR COUNTER.          F6T00470
00263 -0 53400 2 00161  A12    LXD ZERO,2               ONTO TAPE7                       F6T00480
00264  0 76200 0 00223          RTB 3              READ A RECORD FROM TAPE THREE          F6T00490
00265  0 70000 2 01371  A8     CPY REC-1,2                                               F6T00500
00266  1 00001 2 00265          TXI A8,2,1                                                F6T00510
00267  0 02000 0 00313          TRA EOF3           END OF FILE.                           F6T00520
00270  0 77100 0 00377          ARS 255            END OF RECORD.                         F6T00530
00271  0 77100 0 00377          ARS 255                                                   F6T00540
00272 -0 76000 0 00012          RTT                                                       F6T00550
00273  0 02000 0 00307          TRA ERR3           ERROR.                                 F6T00560
00274  1 77777 2 00275          TXI NEXT1,2,-1                                            F6T00570
00275 -0 63400 2 00302  NEXT1  SXD A10,2          SAVE WORD COUNT OF RECORD.             F6T00580
00276 -0 53400 2 00161          LXD ZERO,2                                                F6T00590
00277  0 76600 0 00227          WTB 7              WRITE THE RECORD ONTO TAPE SEVEN.      F6T00600
00300  0 70000 2 01371  A9     CPY REC-1,2                                               F6T00610
00301  1 00001 2 00302          TXI A10,2,1                                               F6T00620
00302 -3 00302 2 00300  A10    TXL A9,2,*         TEST END OF RECORD.                    F6T00630
00303  0 76600 0 00333          IOD                                                       F6T00640
00304 -0 76000 0 00012          RTT                                                       F6T00650
00305  0 76100 0 00000          NOP                                                       F6T00660
00306  0 02000 0 00262          TRA A7             GO READ NEXT RECORD.                   F6T00670
00307  0 76400 0 00203  ERR3   BST 3                                                     F6T00680
00310  2 00001 4 00263          TIX A12,4,1        READ ERROR PROCEDURE.                  F6T00690
00311  0 07400 4 00004          TSX 4,4                                                   F6T00700
00312  0 00000 0 00312  ERR4   HTR ERR4                                                  F6T00710
00313  0 77000 0 00207  EOF3   WEF 7              AT EOF ON 3, WRITE EOF ON 7.           F6T00720
00314  0 76200 0 00221          RTB 1                                                     F6T00721
00315  0 76200 0 00221          RTB 1                                                     F6T00722
00316  0 76200 0 00221          RTB 1                                                     F6T00723
00317  0 77200 0 00202  FIN1   REW 2              REWINDS TAPES 2,3, AND 4 AND           F6T00730
00320  0 77200 0 00203          REW 3              RETURNS TO LOADER.                     F6T00740
00321  0 77200 0 00204          REW 4                                                     F6T00750
00322  0 76200 0 00221          RTB 1                                                     F6T00760
00323  0 02000 0 00004          TRA 4                                                     F6T00770
00324  0 50000 0 00162  TEST2  CLA ONE            AFTER 2ND FILE FROM 2 TO 6,            F6T00780
00325  0 34000 0 00200          CAS SW2            TEST SENSE SWITCH 2.                   F6T00790
00326  0 02000 0 00254          TRA TAPE7                                                 F6T00800
00327  0 02000 0 00332          TRA WT3                                                   F6T00810
00330  0 76000 0 00162          SWT 2                                                     F6T00820
00331  0 02000 0 00254          TRA TAPE7          UP. GO TEST SWITCH 1.                  F6T00830
00332 -0 53400 1 00251  WT3    LXD A5,1           DOWN. RESET INDEX REGISTER 1 TO 1.     F6T00840
00333  0 50000 0 00331          CLA WT3-1          CHANGE A5 TRANSFER ADDRESS TO TAPE7.   F6T00850
00334  0 62100 0 00251          STA A5                                                    F6T00860
00335  0 02000 0 00217          TRA A6             AND GO READ FINAL FILE.                F6T00870
                  00336          BSS 40                                                  F6T00880
                  01372  REC     BES 500                                                 F6T00890
                  00000          END                                                     F6T00900
```

A

```
1          REM SUCCESSFUL COMPILATION RECORD                                F1SC0010
1                                   SUCCESSFUL COMPILATION RECORD                                F1SC0010
                                    CONTROL IS RETURNED TO THIS RECORD AT THE COMPLETION OF A    F1SC0020
                                    SINGLE PROBLEM COMPILATION, OR AT THE END OF BATCH           F1SC0030
                                    COMPILATION.  TAPE 1 IS REWOUND AND A LOAD BUTTON            F1SC0040
                                    SEQUENCE IS EXECUTED AT THE CARD READER.                     F1SC0050
                                    AN INSTALLATION MAY CHANGE THIS RECORD TO SUIT ITS OWN       F1SC0060
                                    OPERATING NEEDS.                                             F1SC0070
                                                                                                 F1SC0080
                                    MASTER RECORD CARD = F0090000.                               F1SC0090
                    00030        ORG 24                                                          F1SC0100
00030 -0 76000 0 00007 START  LTM                                                                F1SC0110
00031  0 77200 0 00201        REW 1                                                             F1SC0120
00032  0 76200 0 00321        RCD 209            CARD READER LOAD BUTTON SEQUENCE.              F1SC0130
00033  0 70000 0 00000        CPY 0                                                             F1SC0140
00034  0 02000 0 00036        TRA SECCPY                                                        F1SC0150
00035  0 00000 0 77777        HTR 32767          CARD READER EMPTY, HALT.                       F1SC0160
00036  0 70000 0 00001 SECCPY CPY 1                                                             F1SC0170
00037  0 02000 0 00000        TRA 0                                                             F1SC0180
                    00030        END 24                                                          F1SC0190
```

```
1          REM SOURCE PROGRAM ERROR RECORD.  THIS RECORD TESTS SL3 AND SL6  F1SPE010
1                                   SOURCE PROGRAM ERROR RECORD.  THIS RECORD TESTS SL3 AND SL6  F1SPE010
                                    TO DETERMINE IF A CARD READER LOAD BUTTON SEQUENCE IS TO BE  F1SPE020
                                    EXECUTED, OR IF THE NEXT PROGRAM IS TO BE COMPILED.  SL3-ON  F1SPE030
                                    IF TAPE 5 CANNOT BE READ OR EOF ON TAPE 5 BEFORE END CARD    F1SPE040
                                    IS FOUND.  SS6-ON IF IN BATCH COMPILE MODE.                  F1SPE050
                                                                                                 F1SPE060
                                    MASTER RECORD CARD = F0100000.                               F1SPE070
                    00030         ORG 24                                                         F1SPE080
00030 -0 76000 0 00007            LTM                                                            F1SPE090
00031 -0 76000 0 00141            SLT 1              SL1-ON IF PROGRAM TO BE RE-TRIED.           F1SPE100
00032  0 02000 0 00034            TRA SS6TST                                                     F1SPE110
00033  0 02000 0 00053            TRA SKIPCM         SKIP TO COMMON RECORD                       F1SPE120
00034  0 76000 0 00166 SS6TST     SWT 6              SS6-ON IF IN BATCH MODE.                    F1SPE130
00035  0 02000 0 00041            TRA READCD         SINGLE COMPILATION. READ CARD READER SEQ.   F1SPE140
00036 -0 76000 0 00143            SLT 3              ON IF END CARD ERROR FOUND BY BATCH MONITOR F1SPE150
00037  0 02000 0 00055            TRA SKIPBM         SKIP TO BATCH MONITOR RECORD                F1SPE160
00040  0 77200 0 00206            REW 6                                                          F1SPE170
00041  0 77200 0 00204 READCD     REW 4                                                          F1SPE180
00042  0 77200 0 00203            REW 3                                                          F1SPE190
00043  0 77200 0 00202            REW 2                                                          F1SPE200
00044  0 77200 0 00201            REW 1                                                          F1SPE210
00045  0 76200 0 00321            RCD 209            CARD READER LOAD BUTTON SEQUENCE.           F1SPE220
00046  0 70000 0 00000            CPY 0                                                          F1SPE230
00047  0 02000 0 00051            TRA SECCPY                                                     F1SPE240
00050  0 00000 0 77777            HTR 32767          CARD READER EMPTY.                          F1SPE250
00051  0 70000 0 00001 SECCPY     CPY 1                                                          F1SPE260
00052  0 02000 0 00000            TRA 0                                                          F1SPE270
00053  0 76200 0 00221 SKIPCM     RTB 1              SKIP OVER FILE 1 MARK TO BATCH MONITOR.     F1SPE280
00054  0 76200 0 00221            RTB 1              SKIP OVER BATCH MONITOR RECORD              F1SPE290
00055  0 76200 0 00221 SKIPBM     RTB 1              AND/OR SKIP MACHINE ERROR RECORD            F1SPE300
00056  0 02000 0 00004            TRA 4              TO 1-CS TO READ NEXT RECORD                 F1SPE310
                    00030         END 24                                                         F1SPE320
```

```
1          REM  MONITOR PROGRAM FOR BATCH COMPILATION                          F1BM0010
1                                  MONITOR PROGRAM FOR BATCH COMPILATION                                F1BM0010
                                                                                                        F1BM0020
                                   MASTER RECORD CARD F0120000
                        00030          ORG 24                                                           F1BM0030
00030  0 76000 0 00166 START   SWT 6                          TEST SW6, UP = SINGLE PROBLEM,            F1BM0040
00031  0 02000 0 00146         TRA ADD93+1          SKIP OVER MACHINE ERROR RECORD AND GO TO SEC1F1BM0050
00032  0 76000 0 00140         SLN 0                          TURN OFF LIGHTS                           F1BM0060
00033  0 53400 4 00237 ADD01   LXA L(5),4           COUNTER FOR 5 TRIES TO READ TAPE 5.                  F1BM0070
00034 -0 50000 0 00245         CAL BLANKS                                                               F1BM0080
00035  0 60200 0 00233         SLW BUFFER-1                                                             F1BM0090
00036  0 60200 0 00232         SLW BUFFER-2                                                             F1BM0100
00037 -0 76000 0 00012         RTT                            TURN OFF INDICATOR                        F1BM0110
00040  0 76100 0 00000         NOP                                                                      F1BM0120
00041  0 76200 0 00205 ADD015  RTD 5                                                                    F1BM0130
00042  0 53400 3 00243         LXA L(14),3                    ASSUME 14 WORDS PER RECORD                F1BM0140
00043  0 70000 1 00234 ADD02   CPY BUFFER,1                                                             F1BM0150
00044  0 02000 0 00047         TRA ADD03                                                                F1BM0160
00045  0 02000 0 00161         TRA ADD90                      EOF                                       F1BM0170
00046  0 02000 0 00050         TRA ADD04                      EOR                                       F1BM0180
00047  2 00001 1 00043 ADD03   TIX ADD02,1,1                                                            F1BM0190
00050  0 77100 0 00377 ADD04   ARS 255                                                                  F1BM0200
00051  0 77100 0 00377         ARS 255                                                                  F1BM0210
00052 -0 76000 0 00012         RTT                            TEST TAPE INDICATOR                       F1BM0220
00053  0 02000 0 00150         TRA ADD80                      ON, PREPARE TO READ AGAIN                 F1BM0230
00054  0 76600 0 00202         WTD 2                          OFF, WRITE THIS RECORD ON TAPE 2          F1BM0240
00055  0 70000 2 00234 ADD05   CPY BUFFER,2                                                             F1BM0250
00056  2 00001 2 00055         TIX ADD05,2,1                                                            F1BM0260
00057  0 76600 0 00333         IOD                                                                      F1BM0270
00060 -0 76000 0 00012         RTT                                                                      F1BM0280
00061  0 76100 0 00000         NOP                                                                      F1BM0290
D 00062  3 00000 0 00074 ADD70   TXH ADD71,0          ROUTINE TO RESTORE PRINTER CARRIAGE AND PRINTF1BM0300
00063  0 07400 4 00332         TSX PRINT,C          FIRST STATEMENT OF CURRENT SOURCE PROGRAM           F1BM0310
00064  0 00234 0 00215         PZE RESTR,0,BUFFER                                                       F1BM0320
00065  0 76600 0 00361         WPR                                                                      F1BM0330
00066  0 76600 0 00361         WPR                                                                      F1BM0330
00067  0 76600 0 00361         WPR                                                                      F1BM0330
00070  0 76600 0 00361         WPR                                                                      F1BM0330
00071  0 76600 0 00361         WPR                                                                      F1BM0330
00072  0 50200 0 00062         CLS ADD70            CHANGE TXH TO TXL                                   F1BM0350
00073  0 60100 0 00062         STO ADD70                                                                F1BM0360
00074  0 76000 0 00141 ADD71   SLN 1                SL1-ON IF AT LEAST 1 SOURCE STATEMENT ON TP 2F1BM0370
00075 -0 75400 0 00000         PXD 0,0                        EXISTS                                    F1BM0380
00076  0 56000 0 00216         LDQ BUFFER-14                  TEST FOR COMMENT CARD                     F1BM0390
00077 -0 76300 0 00006         LGL 6                                                                    F1BM0400
00100  0 40200 0 00244         SUB L(C)                                                                 F1BM0410
00101  0 10000 0 00033         TZE ADD01                      YES, GO READ NEXT TAPE RECORD             F1BM0420
00102 -0 76300 0 00030         LGL 24                         DISCARD FORMULA NUMBER                    F1BM0430
00103 -0 75400 0 00000         PXD 0,0                                                                  F1BM0440
00104 -0 76300 0 00006         LGL 6                                                                    F1BM0450
00105  0 10000 0 00110         TZE ADD06                      TEST FOR CONTINUATION CARD                F1BM0460
00106  0 40200 0 00246         SUB BLANK                                                                F1BM0470
00107 -0 10000 0 00033         TNZ ADD01                      YES, GO READ NEXT TAPE RECORD             F1BM0480
00110  0 53400 1 00242 ADD06   LXA L(12),1                    THIS RECORD IS OF FIRST CARD OF A         F1BM0490
```

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00111   0 53400 2 00241          LXA L(7),2
00112   0 50000 0 00234          CLA BUFFER
00113   0 60100 0 00232          STO BUFFER-2
00114   0 56000 0 00217          LDQ BUFFER-13
00115   0 07400 4 00200          TSX SUB1,4
00116   0 40200 0 00247          SUB L(E)
00117  -0 10000 0 00033          TNZ ADD01
00120   0 07400 4 00200          TSX SUB1,4
00121   0 40200 0 00250          SUB L(N)
00122  -0 10000 0 00033          TNZ ADD01
00123   0 07400 4 00200          TSX SUB1,4
00124   0 40200 0 00251          SUB L(D)
00125  -0 10000 0 00033          TNZ ADD01
00126   0 07400 4 00200          TSX SUB1,4
00127   0 40200 0 00252          SUB L(()
00130  -0 10000 0 00033          TNZ ADD01
00131   0 07400 4 00200          TSX SUB1,4
00132   0 07400 4 00200          TSX SUB1,4
00133   0 40200 0 00253          SUB COMMA
00134  -0 10000 0 00033          TNZ ADD01
00135   0 07400 4 00200          TSX SUB1,4
00136   0 07400 4 00200          TSX SUB1,4
00137   0 40200 0 00253          SUB COMMA
00140  -0 10000 0 00033          TNZ ADD01
00141   0 07400 4 00200          TSX SUB1,4
00142   0 07400 4 00200          TSX SUB1,4
00143   0 40200 0 00253          SUB COMMA
00144  -0 10000 0 00033          TNZ ADD01
00145   0 77000 0 00202 ADD93    WEF 2
00146   0 76200 0 00221          RTB 1
00147   0 02000 0 00004          TRA 4
00150   0 76400 0 00205 ADD80    BST 5
00151   2 00001 4 00041          TIX ADD015,4,1
00152   0 07400 4 00332          TSX PRINT,4
00153   0 00301 0 00254              TP5ERR,0,TP5END
00154   0 76000 0 00143 SPROER   SLN 3
00155   0 76400 0 00201 BSTRTN   BST 1
00156   0 76400 0 00201          BST 1
00157   0 76400 0 00201          BST 1
00160   0 02000 0 00004          TRA 4
00161  -0 76000 0 00141 ADD90    SLT 1
00162   0 02000 0 00167          TRA ADD91
00163   0 07400 4 00332          TSX PRINT,4
00164   0 00315 0 00301              ENDCD,0,CDTEND
00165   0 77200 0 00205          REW 5
00166   0 02000 0 00154          TRA SPROER
00167   0 76400 0 00201 ADD91    BST 1
00170   0 77200 0 00206          REW 6
00171   0 77200 0 00205          REW 5
00172   0 07400 4 00332          TSX PRINT,C
00173   0 00332 0 00315              REMA,0,ENDA
00174   0 07400 4 00332          TSX PRINT,C
00175   0 00216 0 00215          HTR RESTR,0,RESTR+1
00176   0 16100 0 00177          TQO *+1
```

```
                FORTRAN STATEMENT. PREPARE TO TEST F1BM0500
                FOR END(..,...,...,...) CARD       F1BM0510
                POSITION ENDMARK                   F1BM0520
                                                   F1BM0530
                                                   F1BM0540
                TEST FIRST CHAR FOR E              F1BM0550
                                                   F1BM0560
                                                   F1BM0570
                TEST SECOND CHAR FOR N             F1BM0580
                                                   F1BM0590
                                                   F1BM0600
                TEST THIRD CHAR FOR D              F1BM0610
                                                   F1BM0620
                                                   F1BM0630
                TEST FOURTH CHAR FOR (             F1BM0640
                                                   F1BM0650
                                                   F1BM0660
                                                   F1BM0670
                TEST SIXTH CHAR FOR ,              F1BM0680
                                                   F1BM0690
                                                   F1BM0700
                                                   F1BM0710
                TEST EIGHTH CHAR FOR ,             F1BM0720
                                                   F1BM0730
                                                   F1BM0740
                                                   F1BM0750
                TEST TENTH CHAR FOR COMMA          F1BM0760
                                                   F1BM0770
                THIS IS END CARD, TERMINATE FILE   F1BM0780
SKIP OVER       MACHINE ERROR RECORD.              F1BM0790
                GO TO 1-CS FOR SECTION ONE         F1BM0800
                TAPE ERROR                         F1BM0810
                                                   F1BM0820
                                                   F1BM0830
                                                   F1BM0840
SL3-ON IF       TAPE 5 CANNOT BE READ OR END CARD  F1BM0850
                                                   F1BM0860
TROUBLE.
BACKSPACE       SYSTEM TAPE TO SOURCE PROGRAM ERRORF1BM0870
                                                   F1BM0880
RECORD.                                            F1BM0890
CALL IN 1 - CS.
                IS THERE A PROBLEM TO BE COMPILED  F1BM0900
                FINISHED, REWIND ALL TAPES         F1BM0910
                                                   F1BM0920
                                                   F1BM0930
                                                   F1BM0940
                                                   F1BM0950
                                                   F1BM0970
                                                   F1BM0974
                                                   F1BM0976
                                                   F1BM0980
                                                   F1BM0990
                                                   F1BM1000
                                                   F1BM1010
                                                   F1BM1020
```

```
00177  0 02000 0 00155          TRA BSTRTN                                                    F1BM1030
00200 -0 75400 0 00000 SUB1     PXD 0,0                  SUBROUTINE TO BRING NEXT NON BLANK   F1BM1040
00201  2 00001 2 00205          TIX ADD50,2,1            CHAR OF BUFFER REGION TO AC.         F1BM1050
00202  0 53400 2 00240          LXA L(6),2                                                    F1BM1060
00203  0 56000 1 00234          LDQ BUFFER,1                                                  F1BM1070
00204  1 77777 1 00205          TXI ADD50,1,-1                                                F1BM1080
00205 -0 76300 0 00006 ADD50    LGL 6                                                         F1BM1090
00206  0 34000 0 00246          CAS BLANK                                                     F1BM1100
00207  0 02000 0 00211          TRA ADD51                                                     F1BM1110
00210  0 02000 0 00200          TRA SUB1                                                      F1BM1120
00211  0 34000 0 00235 ADD51    CAS ENDMK                                                     F1BM1130
00212  0 02000 4 00001          TRA 1,4                                                       F1BM1140
00213  0 02000 0 00033          TRA ADD01                                                     F1BM1150
00214  0 02000 4 00001          TRA 1,4                                                       F1BM1160
00215  016060606060     RESTR   BCD 11                                                        F1BM1165
                  00234 BUFFER  BES 14                                                        F1BM1170
00234 -377777777777             OCT 777777777777                                            F1BM1180
00235 +000000000077     ENDMK   OCT 77                                                        F1BM1190
00236  0 00000 0 00003 L(3)          3                                                      F1BM1200
00237  0 00000 0 00005 L(5)          5                                                      F1BM1210
00240  0 00000 0 00006 L(6)          6                                                      F1BM1220
00241  0 00000 0 00007 L(7)          7                                                      F1BM1230
00242  0 00000 0 00014 L(12)         12                                                     F1BM1240
00243  0 00000 0 00016 L(14)         14                                                     F1BM1250
00244  000000000023     L(C)    BCD 100000C                                                 F1BM1260
00245  606060606060     BLANKS  BCD 1                                                       F1BM1270
00246  000000000060     BLANK   BCD 100000                                                  F1BM1280
00247  000000000025     L(E)    BCD 100000E                                                 F1BM1290
00250  000000000045     L(N)    BCD 100000N                                                 F1BM1300
00251  000000000024     L(D)    BCD 100000D                                                 F1BM1310
00252  000000000074     L(()    BCD 100000(                                                 F1BM1320
00253  000000000073     COMMA   BCD 100000,                                                 F1BM1330
00254  006060606060     TP5ERR  BCD 90     TAPE 5 CONTAINING SOURCE SUBPROGRAM READ 5 TIMES  F1BM1340
00255  632147256005
00256  602346456321
00257  314531452760
00260  624664512325
00261  606264224751
00262  462751214460
00263  512521246005
00264  606331442562
00265  606445626423             BCD 9 UNSUCCESSFULLY. TAPE 5 NOW POSITIONED AT RECORD WHICH  F1BM1350
00266  232562622664
00267  434370336063
00270  214725600560
00271  454666604746
00272  623163314645
00273  252460216360
00274  512523465124
00275  606630312330
00276  602321454546             BCD 3 CANNOT BE  READ.                                      F1BM1360
00277  636022256060
00300  512521243360
                  00301 TP5END  BSS 0                                                       F1BM1370
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00301  006060606060     ENDCD  BCD 90     END CARD MISSING OR MISPUNCHED FOR LAST SUBPROGR      F1BM1380
00302  254524602321
00303  512460443162
00304  623145276046
00305  516044316247
00306  644523302524
00307  602646516043
00310  216263606264
00311  224751462751
00312  214460222531            BCD 3AM BEING COMPILED.                                       F1BM1390
00313  452760234644
00314  473143252433
                     00315 CDTEND BSS 0                                                      F1BM1400
00315  016060606060     REMA   BCD 71                                                        F1BM1410
00316  606060606060
00317  606060606060
00320  606060606060
00321  606060606060
00322  606060606060
00323  606060606060
00324  606330256043            BCD 6 THE LAST PROBLEM HAS BEEN PROCESSED.                    F1BM1420
00325  216263604751
00326  462243254460
00327  302162602225
00330  254560475146
00331  232562622524
                     00332 ENDA   BSS 0                                                      F1BM1430
                                                                                             F1BM1450
                                  PRINT CONTROL SUBROUTINE.                                  F1BM1460
                     00001  A     EQU 1                                                     F1BM1470
                     00002  B     EQU 2                                                     F1BM1480
                     00004  C     EQU 4                                                     F1BM1490
                     00332 PRINT  BSS 0                                                     F1BM1500
00332  0 50000 4 00001  RAN    CLA 1,4                                                      F1BM1510
00333  0 62100 0 00374         STA RNA                                                      F1BM1520
00334  0 77100 0 00022         ARS 18                                                       F1BM1530
00335  0 60100 0 00375         STO RNB                                                      F1BM1540
00336 -0 63400 4 00376         SXD RNC,4                                                    F1BM1550
00337  0 50000 0 00374  RN40   CLA RNA                                                      F1BM1560
00340  0 40000 0 00377         ADD RND                                                      F1BM1570
00341  0 34000 0 00375         CAS RNB                                                      F1BM1580
00342  0 76100 0 00000         NOP                                                          F1BM1590
00343  0 02000 0 00364         TRA RN50                                                     F1BM1600
00344  0 76700 0 00022         ALS 18                                                       F1BM1610
00345  0 40000 0 00374         ADD RNA                                                      F1BM1620
00346  0 60100 0 00350         STO RAN10                                                    F1BM1630
00347  0 07400 4 00401         TSX WOT,C                                                    F1BM1640
A
00350  0 00000 0 00000  RAN10  HTR                                                         F1BM1650
00351  0 50000 0 00350         CLA RAN10                                                    F1BM1660
00352  0 77100 0 00022         ARS 18                                                       F1BM1670
00353  0 40200 0 00400         SUB RNE                                                      F1BM1680
00354  0 62100 0 00361         STA RN20                                                     F1BM1690
00355  0 40200 0 00400         SUB RNE                                                      F1BM1700
00356  0 62100 0 00362         STA RN30                                                     F1BM1710
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        00357  0 62100 0 00374        STA RNA                                  F1BM1720
        00360  0 50000 0 00613        CLA BLNKS                                F1BM1730
A       00361  0 60100 0 00000  RN20  STO                                      F1BM1740
A       00362  0 60100 0 00000  RN30  STO                                      F1BM1750
        00363  0 02000 0 00337        TRA RN40                                 F1BM1760
        00364  0 50000 0 00375  RN50  CLA RNB                                  F1BM1770
        00365  0 76700 0 00022        ALS 18                                   F1BM1780
        00366  0 40000 0 00374        ADD RNA                                  F1BM1790
        00367  0 60100 0 00371        STO RN60                                 F1BM1800
        00370  0 07400 4 00401        TSX WOT,C                                F1BM1810
A       00371  0 00000 0 00000  RN60  HTR                                      F1BM1820
        00372 -0 53400 4 00376        LXD RNC,C                                F1BM1830
        00373  0 02000 4 00002        TRA 2,C                                  F1BM1840
A       00374  0 00000 0 00000  RNA   HTR                                      F1BM1850
A       00375  0 00000 0 00000  RNB   HTR                                      F1BM1860
A       00376  0 00000 0 00000  RNC   HTR                                      F1BM1870
        00377  0 00000 0 00024  RND   HTR 20                                   F1BM1880
        00400  0 00000 0 00001  RNE   HTR 1                                    F1BM1890
                                                                               F1BM1900
                                          PRINT SUBROUTINE.                    F1BM1910
        00401 -0 63400 1 00551  WOT   SXD X1,1                                 F1BM1920
        00402 -0 63400 2 00557        SXD X2,2                                 F1BM1930
        00403  0 50000 4 00001        CLA 1,4          PRINT ROUTINE           F1BM1940
        00404  0 62100 0 00432        STA T5           X                       F1BM1950
        00405  0 62200 0 00614        STD X4           X                       F1BM1960
        00406  0 77100 0 00022        ARS 18           X                       F1BM1970
        00407  0 40000 0 00614        ADD X4           X                       F1BM1980
        00410  0 62100 0 00463        STA PR2          X                       F1BM1990
        00411  0 62100 0 00510        STA CI9          X                       F1BM2000
        00412  0 40200 4 00001        SUB 1,4          B-A+1 IN AC             F1BM2010
        00413  0 10000 4 00002        TZE 2,4                                  F1BM2020
        00414 -0 12000 4 00002        TMI 2,4                                  F1BM2030
        00415 -0 63400 4 00614        SXD X4,4                                 F1BM2040
        00416  0 73400 4 00013  L11   PAX 11,4                                 F1BM2050
        00417 -0 63400 4 00422        SXD PR6,4                                F1BM2060
        00420 -0 50000 0 00564        CAL WP           INITIALIZE SWITCH       F1BM2070
        00421  0 60100 0 00564        STO WP           X                       F1BM2080
TD      00422  3 00000 0 00423  PR6   TXH T4                                   F1BM2090
        00423  0 76600 0 00361  T4    WPR                                      F1BM2100
TD      00424 -3 00000 0 00430  Z2    TXL S3                                   F1BM2110
ATD     00425 -3 00000 0 00000  OZ2   TXL                                      F1BM2120
        00426  0 76000 0 00364  SP4   SPR 4                                    F1BM2130
TD      00427 -3 00000 0 00461        TXL RPR+2                                F1BM2140
        00430  0 50200 0 00564  S3    CLS WP           SET SWITCH FOR MASKING  F1BM2150
        00431  0 60100 0 00564        STO WP           CHARACTER FROM TYPE WHEEL 1 F1BM2160
        00432 -0 50000 0 00432  T5    CAL *            OBTAIN FIRST CHARACTER  F1BM2170
        00433  0 77100 0 00036        ARS 30           X                       F1BM2180
        00434  0 10000 0 00426        TZE SP4          DOUBLE SPACE IF ZERO    F1BM2190
        00435  0 34000 0 00615        CAS YZONE        TEST FOR SPACE SUPPRESS F1BM2200
TD      00436 -3 00000 0 00440        TXL BK           NO                      F1BM2210
TD      00437 -3 00000 0 00460        TXL RPR+1        SUPPRESS SPACE          F1BM2220
        00440  0 34000 0 00616  BK    CAS BNK          TEST FOR BLANK          F1BM2230
TD      00441 -3 00000 0 00443        TXL DIGF         NO                      F1BM2240
TD      00442 -3 00000 0 00461        TXL RPR+2        BLANK                   F1BM2250
```

```
00443   0 76000 0 00372  DIGF  SPR 10          SET CHANNEL SKIP                    F1BM2260
00444  -0 32000 0 00445        ANA MK          MASK OUT ZONE                       F1BM2270
00445   0 73400 1 00017  MK    PAX 15,1        OBTAIN SPR COMBINATION              F1BM2280
00446   1 00001 1 00447        TXI N2,1,1      X                                   F1BM2290
00447  -2 00010 1 00451  N2    TNX N3,1,8      X                                   F1BM2300
00450   0 76000 0 00370        SPR 8           X                                   F1BM2310
00451  -2 00004 1 00453  N3    TNX N4,1,4      X                                   F1BM2320
00452   0 76000 0 00364        SPR 4           X                                   F1BM2330
00453  -2 00002 1 00455  N4    TNX N5,1,2      X                                   F1BM2340
00454   0 76000 0 00362        SPR 2           X                                   F1BM2350
00455  -2 00001 1 00457  N5    TNX RPR,1,1     X                                   F1BM2360
00456   0 76000 0 00361        SPR 1           X                                   F1BM2370
00457   0 76600 0 00361  RPR   WPR                                                 F1BM2380
00460   0 76000 0 00365        SPR 5           SUPPRESS SPACE                      F1BM2390
00461   0 50000 0 00613        CLA BLNKS       FIND LAST NON-BLANK GROUP           F1BM2400
00462  -0 53400 4 00523        LXD CI4,4       X                                   F1BM2410
00463   0 34000 4 00000  PR2   CAS 0,4         X                                   F1BM2420
00464   1 77777 4 00467        TXI PR1,4,-1    X                                   F1BM2430
00465   1 00001 4 00463        TXI PR2,4,1     X                                   F1BM2440
00466   1 77777 4 00467        TXI PR1,4,-1    X                                   F1BM2450
00467  -0 63400 4 00527  PR1   SXD CI6,4       STORE END TEST                      F1BM2460
00470  -0 63400 4 00541        SXD CI8,4       X                                   F1BM2470
00471  -0 63400 4 00474        SXD PR8,4       X                                   F1BM2480
00472  -0 63400 4 00601        SXD WP4,4       X                                   F1BM2490
00473  -0 53400 4 00422        LXD PR6,4       X                                   F1BM2500
D 00474  -2 00000 4 00500  PR8   TNX PR5,4                                        F1BM2510
00475  -3 00014 4 00477        TXL PR3,4,12                                        F1BM2520
00476   0 76000 0 00370        SPR 8           FIRST CYCLE                         F1BM2530
00477  -0 53400 4 00422  PR3   LXD PR6,4       INITIALIZE GROUP COUNT              F1BM2540
00500   0 53400 2 00502  PR5   LXA PR7,2       INITIALIZE LEFT SETUP               F1BM2550
00501  -0 53400 1 00544        LXD YZ1,1       CLEAR CARD IMAGE                    F1BM2560
T 00502  -0 75400 0 00000  PR7   PXD           X                                   F1BM2570
00503   0 60200 1 00662  PR4   SLW LT,1        X                                   F1BM2580
00504   0 60200 1 00642        SLW RT,1        X                                   F1BM2590
00505   2 00001 1 00503        TIX PR4,1,1     X                                   F1BM2600
00506  -0 50000 0 00620  CIR   CAL COL1        INITIALIZE COLUMN INDICATOR         F1BM2610
00507   0 60200 0 00621  CI2   SLW COL         X                                   F1BM2620
00510   0 56000 4 00000  CI9   LDQ 0,4         OBTAIN GROUP                        F1BM2630
00511  -0 63400 4 00425        SXD OZ2,4       STORE GROUP COUNT                   F1BM2640
00512   0 53400 4 00514        LXA Q6,4        SET CHARACTER COUNT                 F1BM2650
T 00513  -0 75400 0 00000  CI1   PXD                                             F1BM2660
00514  -0 76300 0 00006  Q6    LGL 6                                               F1BM2670
00515   0 73400 1 00000        PAX 0,1                                             F1BM2680
00516  -0 50000 0 00621        CAL COL         POSITION COLUMN INDICATOR           F1BM2690
00517   0 77100 4 00006        ARS 6,4         X                                   F1BM2700
00520   2 00020 1 00544        TIX YZ1,1,16    TEST FOR DIGIT                      F1BM2710
00521   3 00017 1 00547        TXH YZ2,1,15    TEST FOR Y-ZONE                     F1BM2720
00522  -0 60200 3 00657  CI5   ORS D,3         STORE DIGIT                         F1BM2730
00523   2 00001 4 00513  CI4   TIX CI1,4,1     COUNT CHARACTERS                    F1BM2740
00524   0 77100 0 00001  CI3   ARS 1           SHIFT AND TEST COLUMN               F1BM2750
00525  -0 53400 4 00425        LXD OZ2,4       RESTORE GROUP COUNT                 F1BM2760
00526   1 77777 4 00527        TXI CI6,4,-1    COUNT GROUPS                        F1BM2770
D 00527  -3 00000 4 00531  CI6   TXL CI7,4      TEST FOR LAST NON-BLANK GROUP       F1BM2780
00530  -0 10000 0 00507        TNZ CI2         TEST FOR END OF ROW                 F1BM2790
```

```
      00531 -0 50000 2 00644  CI7   CAL 8.3,2        FORM TRUE 8,4                                  F1BM2800
      00532 -0 60200 2 00647        ORS D-8,2        AND 3 ROWS AND                                 F1BM2810
      00533 -0 60200 2 00654        ORS D-3,2        MOVE 8.4 AND 8.3                               F1BM2820
      00534  0 60200 2 00645        SLW 8.2,2        ROWS                                           F1BM2830
      00535 -0 50000 2 00643        CAL 8.4,2        FORM TRUE 8.4                                  F1BM2840
      00536 -0 60200 2 00647        ORS D-8,2        X                                              F1BM2850
      00537 -0 60200 2 00653        ORS D-4,2        X                                              F1BM2860
      00540  0 60200 2 00644        SLW 8.3,2        X                                              F1BM2870
D     00541 -3 00000 4 00564  CI8   TXL WP,4         TEST FOR END                                   F1BM2880
      00542  3 00017 2 00564        TXH WP,2,15      TEST FOR RIGHT HALF                            F1BM2890
      00543  1 00020 2 00506        TXI CIR,2,16     INITIALIZE RIGHT HALF                          F1BM2900
      00544  2 00020 1 00552  YZ1   TIX XZ1,1,16     TEST FOR 16/CH/32                              F1BM2910
      00545  3 00017 1 00555        TXH XZ2,1,15     TEST FOR X-ZONE                                F1BM2920
      00546 -0 60200 3 00657        ORS D,3          STORE DIGIT                                    F1BM2930
      00547 -0 60200 2 00661  YZ2   ORS Y,2          STORE Y-ZONE                                   F1BM2940
      00550  2 00001 4 00513        TIX CI1,4,1      COUNT CHARACTERS                               F1BM2950
TD    00551 -3 00000 0 00524  X1    TXL CI3          OBTAIN NEXT GROUP                              F1BM2960
      00552  2 00020 1 00560  XZ1   TIX OZ1,1,16     TEST FOR 32/CH/48                              F1BM2970
      00553  3 00017 1 00523        TXH CI4,1,15     TEST FOR BLANK                                 F1BM2980
      00554 -0 60200 3 00657        ORS D,3          STORE DIGIT                                    F1BM2990
      00555 -0 60200 2 00660  XZ2   ORS X,2          STORE X-ZONE                                   F1BM3000
      00556  2 00001 4 00513        TIX CI1,4,1      COUNT CHARACTERS                               F1BM3010
TD    00557 -3 00000 0 00524  X2    TXL CI3          OBTAIN NEXT GROUP                              F1BM3020
      00560 -0 60200 2 00657  OZ1   ORS Z,2          STORE 0-ZONE                                   F1BM3030
      00561 -0 60200 3 00657        ORS D,3          STORE DIGIT                                    F1BM3040
      00562  2 00001 4 00513        TIX CI1,4,1      COUNT CHARACTERS                               F1BM3050
TD    00563 -3 00000 0 00524        TXL CI3                                                         F1BM3060
TD    00564  3 00000 0 00566  WP    TXH WP9          INVERTED TO TXL IF PROGRAM CARRIAGE CONTROL    F1BM3070
TD    00565 -3 00000 0 00572        TXL WP7          NO PROGRAM                                     F1BM3080
      00566 -0 53400 1 00612  WP9   LXD WP2,1        MASK OUT FIRST COL. OF CARD IMAGE              F1BM3090
      00567 -0 50000 0 00617        CAL MK2          X                                              F1BM3100
      00570  0 32000 1 00662  ANS   ANS LT,1         X                                              F1BM3110
      00571  2 00001 1 00570        TIX ANS,1,1      X                                              F1BM3120
      00572 -0 53400 1 00424  WP7   LXD Z2,1         COPY LOOP                                      F1BM3130
      00573  0 70000 1 00646  CRAN  CPY LT-12,1                                                      F1BM3140
      00574  0 70000 1 00626        CPY RT-12,1      X                                              F1BM3150
      00575  1 77777 1 00576        TXI T2,1,-1                                                     F1BM3160
      00576  3 77764 1 00573  T2    TXH CRAN,1,-12                                                  F1BM3170
      00577 -0 50000 0 00564        CAL WP           RESET SWITCH FOR SECOND CYCLE                  F1BM3180
      00600  0 60100 0 00564        STO WP           X                                              F1BM3190
D     00601  3 00000 4 00610  WP4   TXH WP5,4                                                       F1BM3200
      00602 -0 53400 1 00551        LXD X1,1         NO, RELOAD INDEX REGISTERS AND RETURN          F1BM3210
      00603 -0 53400 2 00557        LXD X2,2         X                                              F1BM3220
      00604 -0 53400 4 00614  WT2   LXD X4,4         X                                              F1BM3230
      00605  0 02000 4 00002  L2    TRA 2,4          X                                              F1BM3240
      00606  0 76600 0 00361  RPR2  WPR                                                             F1BM3250
TD    00607 -3 00000 0 00461        TXL PR2-2                                                       F1BM3260
      00610  0 76600 0 00361  WP5   WPR                                                             F1BM3270
      00611  0 76000 0 00371        SPR 9            SECOND CYCLE                                   F1BM3280
      00612 -3 00014 0 00500  WP2   TXL PR5,0,12     CONVERT REST OF LINE                           F1BM3290
      00613  606060606060     BLNKS BCD 1                                                           F1BM3300
A     00614  0 00000 0 00000  X4    HTR                                                             F1BM3310
      00615 +000000000020     YZONE OCT 20                                                          F1BM3320
      00616 +000000000060     BNK   OCT 60                                                          F1BM3330
```

```
00617 +377777777777     MK2    OCT 377777777777
00620 -0 00000 0 00000  COL1   MZE
                 00621  COL    BSS 1
                 00642  RT     BES 16
                 00642  8.5    BSS 1
                 00643  8.4    BSS 1
                 00644  8.3    BSS 1
                 00645  8.2    BSS 1
                 00657  D      BES 9
                 00657  Z      BSS 1
                 00660  X      BSS 1
                 00661  Y      BSS 1
                 00662  LT     SYN Y+1
                 00644  8.4L   SYN LT-14
                 00624  8.4R   SYN RT-14
                 00662          BSS 27
                 00030          END 24
```

```
F1BM3340
F1BM3350
F1BM3360
F1BM3370
F1BM3380
F1BM3390
F1BM3400
F1BM3410
F1BM3420
F1BM3430
F1BM3440
F1BM3450
F1BM3460
F1BM3470
F1BM3480
F1BM3490
F1BM3500
```

```
1          REM MACHINE ERROR RECORD.  THIS RECORD HALTS TO PERMIT OPERATOR  F1ME0010
1                                     MACHINE ERROR RECORD.  THIS RECORD HALTS TO PERMIT OPERATOR  F1ME0010
                                      INTERVENTION.  IF THE SAME SOURCE PROGRAM IS TO BE RE-TRIED, F1ME0020
                                      OPERATOR SHOULD PRESS START.  IF NEXT SOURCE PROGRAM IS TO BEF1ME0030
                                      COMPILED, THE OPERATOR MUST MANUALLY TURN SL1-ON, AND PRESS  F1ME0040
                                      START.                                                       F1ME0050
                                                                                                   F1ME0060
00000   0 00000 0 00000                                                                            F1ME0070
                                      MASTER RECORD CARD = F0130000.                               F1ME0080
                  00030         ORG 24                                                           F1ME0090
00030   0 00000 0 00031         HTR NEXTIN                                                       F1ME0100
00031  -0 76000 0 00141 NEXTIN  SLT 1                                                            F1ME0110
00032   0 02000 0 00004         TRA 4              GO TO 1 - CS TO REPEAT PROBLEM.               F1ME0120
00033   0 76400 0 00201         BST 1              BACKSPACE OVER MACHINE ERROR RECORD.          F1ME0130
00034   0 76400 0 00201         BST 1              BACKSPACE OVER BATCH MONITOR.                 F1ME0160
00035   0 02000 0 00004         TRA 4              TO 1-CS TO READ NEXT RECORD.                  F1ME0170
                  00030         END 24
```

```
1          PST
1                                   APPLIED PROGRAMMING, IBM , L. MAY AND A. S. NOBLE JR.
                                    704 FORTRAN II / SECTION ONE.                    29 OCT 58

                                    SECTION 1= READS IN AND CLASSIFIES STATEMENTS. FOR ARITHMETIC4F10000
                                    FORMULAS, COMPILES THE OBJECT (OUTPUT) INSTRUCTIONS. FOR     4F10001
                                    NONARITHMETIC STATEMENTS INCLUDING INPUT-OUTPUT, DOES A      4F10002
                                    PARTIAL COMPILATION, AND RECORDS THE REMAINING INFORMATION   4F10003
                                    IN TABLES.                                                   4F10004
                                              THE FIVE MAJOR DIVISIONS OF SECTION 1 ARE=         4F10005
                                    COMMON, STATES A, B, C, AND D. COMMON REMAINS IN LOWER MEMORY4F10006
                                    THROUGHOUT SECTION1. STATE A READS IN AND CLASSIFIES ALL     4F10007
                                    STATEMENTS, AND TREATS NONARITHMETIC STATEMENTS. STATES B,   4F10008
                                    C, AND D TREAT ARITHMETIC FORMULAS.                          4F10009
                                                                                                 4F10010
                                    SECTION 1 / COMMON =                                         4F10011
                                    704 FORTRAN MASTER RECORD CARD / COMMON = F0140000.          4F10012
                     00000       ORG 0                                                           4F100121
00000  0 00004 0 00030           PZE ORGCOM,,1TOCS                                               4F100122
00001  0 00000 0 03437           PZE ORGA-1                                                      4F100123
                                                                                                 4F10013
                                    PART 1 / WORKING STORAGE, BUFFERS, AND TABLE PARAMETERS=     4F10014
                                                              EIFNO AND SENSE SWITCH SIMULATORS. 4F10015
                                                              TAPE TABLE BUFFERS.                4F10016
                                                              TAPE TABLE PARAMETERS - INTET.     4F10017
                                                              DRUM TABLE PARAMETERS.             4F10018
                                                              FORSUB COUNT AND BUFFER.           4F10019
                                                              CIB BUFFER AND PARAMETERS.         4F10020
                                                              REMAINING WORKING STORAGE.         4F10021
                                    PART 2 / CONSTANTS USED BY SECTION ONE.                      4F10022
                                    PART 3 / SUBROUTINES USED BY SECTION ONE=                    4F10023
                                    NAME                      FUNCTION                           4F10024
                                    C0150,2                   SCAN, AND CONVERT NUMERICS.        4F10025
                                    C0160,2                   SCAN CHARACTERS.                   4F10026
                                    C0180,2                   CONVERT NUMERICS.                  4F10027
                                    C0190X,4                  INITIALIZE C0190 TO 1ST WORD OF F. 4F10028
                                    C0390,4                   INSERT CHARACTER.                  4F10029
                                    C0190,4                   OBTAIN NEXT NON-BLANK CHAR IN AC.  4F10030
                                    CIT00,4                   COMPILED INSTRUCTION TABLE ENTRIES.4F10031
                                    DIM.SR,4                  DIMENSION TABLE SEARCH.            4F10032
                                    DRTABS(,4)                DRUM TABLE ENTRIES.                4F10033
                                    GETIFN,4                  GET INTERNAL FORMULA NUMBER.       4F10034
                                    JIF(GIF),4                JUMPS (GETS) IFN IN SL AND TL.     4F10035
                                    MTR000                    MONITOR STATES FROM DRUM.          4F10036
                                    RA000,4                   COMPUTE RELATIVE ADDRESS.          4F10037
                                    RDRX,4                    READ DRUM INTO BUFR.               4F10038
                                    SR6DC1,1                  CONVERT 6 BCD DIGITS TO 1 BINARY.  4F10039
                                    SS000,4                   SCAN AND PROCESS SUBSCRIPTS.       4F10040
                                    SUBX00,4                  ADD BLANKS TO SUBROUTINE NAMES.    4F10041
                                    TESTFX,1                  TEST FOR FIXED OR FLOATING POINT.  4F10042
                                    TEST..,4                  TEST CHARACTER IN THE AC.          4F10043
                                    TET00,1                   TAPE TABLE ENTRIES.                4F10044
                                                                                                 4F10045
                                    DIAG                      DIAGNOSTIC CALLERS.                4F10046
```

```
                                                                                                  4F10047
                                    THE FOLLOWING CONVENTIONS ARE USED IN THIS LISTING=           4F10048
                                                                                                  4F10049
                                    ** IN THE ADDRESS, TAG, OR DECREMENT OF AN INSTRUCTION        4F10050
                                    INDICATES THAT THIS FIELD WILL BE MODIFIED BY THE PROGRAM.    4F10051
                                    * IN COL/36 INDICATES THE INSTRUCTION IS A TRANSFER OUT OF    4F10052
                                    THIS LOGICAL BLOCK OR SUBROUTINE.                             4F10053
                                    C IN COL/34 INDICATES THE INSTRUCTION WAS CORRECTED.          4F10054
                                    P IN COL/32 INDICATES THE INSTRUCTION WAS INSERTED (PATCH).   4F10055
                                                                                                  4F10056
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10057
                                                                                                  4F10058
                                    COMMON/1-WORKING STORAGE, BUFFERS, AND TABLE PARAMETERS=      4F10059
                 00030 ORGCOM ORG 24                                                              4F10060
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10061
                                                                                                  4F10062
                                    EIFNO AND SENSE SWITCH SIMULATORS.                            4F10063
00030  0 00000 0 00000 EIFNO  PZE **,,**                    EXTERNAL,,INTERNAL FORMULA NUMBER.  4F10064
00031  0 00000 0 00002 ENDI1  PZE 2                         SIMULATOR FOR SENSE SWITCH 1.       4F10065
00032  0 00000 0 00002 ENDI2  PZE 2                         SIMULATOR FOR SENSE SWITCH 2.       4F10066
00033  0 00000 0 00002 ENDI3  PZE 2                         SIMULATOR FOR SENSE SWITCH 3.       4F10067
00034  0 00000 0 00002 ENDI4  PZE 2                         SIMULATOR FOR SENSE SWITCH 4.       4F10068
00035  0 00000 0 00002 ENDI5  PZE 2                         SIMULATOR FOR SENSE SWITCH 5.       4F10069
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10070
                                                                                                  4F10071
                                    BUFFERS USED BY TET00 FOR THE TAPE TABLES.                    4F10072
                 00036 TEIFNO BSS 10                        EXTERNAL,,INTERNAL FORMULA NUMBERS.4F10073
                 00050 TDO    BSS 10                        DO STATEMENTS.                      4F10074
                 00062 TIFGO  BSS 10                        IF AND GO TO STATEMENTS.            4F10075
                 00074 TRAD   BSS 10                        IF AND GO TO TRANSFER ADDRESSES.    4F10076
                 00106 FORTAG BSS 10                        INDEXES TO TAU AND SIGMA TABLES.    4F10077
                 00120 FORVAR BSS 10                        RIGHT - NON-SUB. FX. PT. VARIABLES.4F10078
                 00132 FORVAL BSS 10                        LEFT  - NON-SUB. FX. PT. VARIABLES.4F10079
                 00144 FRET   BSS 10                        FREQUENCY STATEMENTS.               4F10080
                 00156 EQUIT  BSS 10                        EQUIVALENCE STATEMENTS.             4F10081
                 00170 CLOSUB BSS 10                        NAMES OF SUBROUTINES.               4F10082
                 00202 FORMAT BSS 10                        FORMAT STATEMENTS.                  4F10083
                 00214 SUBDEF BSS 10                        SUBROUTINE DEFINITION STATEMENTS.   4F10084
                 00226 COMMON BSS 10                        UPPER MEMORY STORAGE STATEMENTS.    4F10085
                 00240 HOLARG BSS 10                        HOLLERITH ARGUMENTS FOR SUBROUTINE.4F10086
                 00252 NONEXC BSS 10                        NON-EXECUTED STATEMENTS.            4F10087
                 00264 TSTOPS BSS 10                        STOP STATEMENTS.                    4F10088
                 00276 CALLFN BSS 10                        1ST / LAST IFN FOR CALL STATEMENTS.4F10089
                 00310 FMTEFN BSS 10                        TABLE OF FORMAT EXTERNAL FORMNOS.   4F10090
                                    END OF THE TAPE TABLE BUFFERS.                                4F10091
                                   * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10092
                                                                                                  4F10093
                                   INTET/ TABLE PARAMETERS USED BY TET00, WHERE                   4F10094
                                                           O = ORIGIN OF TABLE BUFFER,            4F10095
                                                           B = BUFFER CAPACITY,                   4F10096
                                                           A = ADDRESS OF TABLE ENTRY,            4F10097
                                                           E = ENTRY LENGTH IN WORDS,             4F10098
                                                           C = COUNT OF BLOCKS PUT ON TAPE,       4F10099
                                                           P = PORTION OF BUFFER THAT IS FULL.4F10100
```

```
00322  0 00012 0 00036 INTET  PZE TEIFNO,,10
00323  0 00001 0 00030        PZE EIFNO,,1
00324  0 00000 0 00000        PZE **,,**

00325  0 00012 0 00050        PZE TDO,,10
00326  0 00005 0 01105        PZE 1C,,5
00327  0 00000 0 00000        PZE **,,**

00330  0 00012 0 00062        PZE TIFGO,,10
00331  0 00002 0 01105        PZE 1C,,2
00332  0 00000 0 00000        PZE **,,**

00333  0 00012 0 00074        PZE TRAD,,10
00334  0 00001 0 01112        PZE 1G,,1
00335  0 00000 0 00000        PZE **,,**

00336  0 00012 0 00106        PZE FORTAG,,10
00337  0 00001 0 01347        PZE G,,1
00340  0 00000 0 00000        PZE **,,**

00341  0 00012 0 00120        PZE FORVAR,,10
00342  0 00002 0 01347        PZE G,,2
00343  0 00000 0 00000        PZE **,,**

00344  0 00012 0 00132        PZE FORVAL,,10
00345  0 00002 0 01347        PZE G,,2
00346  0 00000 0 00000        PZE **,,**

00347  0 00012 0 00144        PZE FRET,,10
00350  0 00001 0 01112        PZE 1G,,1
00351  0 00000 0 00000        PZE **,,**

00352  0 00012 0 00156        PZE EQUIT,,10
00353  0 00002 0 01105        PZE 1C,,2
00354  0 00000 0 00000        PZE **,,**

00355  0 00012 0 00170        PZE CLOSUB,,10
00356  0 00001 0 01347        PZE G,,1
00357  0 00000 0 00000        PZE **,,**

00360  0 00012 0 00202        PZE FORMAT,,10
00361  0 00002 0 01347        PZE G,,2
00362  0 00000 0 00000        PZE **,,**

00363  0 00012 0 00214        PZE SUBDEF,,10
00364  0 00001 0 01112        PZE 1G,,1
00365  0 00000 0 00000 SBDFCN PZE **,,**

00366  0 00012 0 00226        PZE COMMON,,10
00367  0 00001 0 01112        PZE 1G,,1
00370  0 00000 0 00000        PZE **,,**

00371  0 00012 0 00240        PZE HOLARG,,10
```

```
00) O,,B.
    A,,E.
    C,,P.

01) O,,B.
    A,,E.
    C,,P.

02) O,,B.
    A,,E.
    C,,P.

03) O,,B.
    A,,E.
    C,,P.

04) O,,B.
    A,,E.
    C,,P.

05) O,,B.
    A,,E.
    C,,P.

06) O,,B.
    A,,E.
    C,,P.

07) O,,B.
    A,,E.
    C,,P.

08) O,,B.
    A,,E.
    C,,P.

09) O,,B.
    A,,E.
    C,,P.

10) O,,B.
    A,,E.
    C,,P.

11) O,,B.
    A,,E.
    C,,P.

12) O,,B.
    A,,E.
    C,,P.

13) O,,B.
```

```
4F10101
4F10102
4F10103
4F10104
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00372  0 00001 0 01112        PZE 1G,,1                          A,,E.                          4F10155
00373  0 00000 0 00000        PZE **,,**                         C,,P.                          4F10156
                                                                                                4F10157
00374  0 00012 0 00252        PZE NONEXC,,10                 14) O,,B.                          4F10158
00375  0 00001 0 00030        PZE EIFNO,,1                       A,,E.                          4F10159
00376  0 00000 0 00000        PZE **,,**                         C,,P.                          4F10160
                                                                                                4F10161
00377  0 00012 0 00264        PZE TSTOPS,,10                 15) O,,B.                          4F10162
00400  0 00001 0 00030        PZE EIFNO,,1                       A,,E.                          4F10163
00401  0 00000 0 00000        PZE **,,**                         C,,P.                          4F10164
                                                                                                4F10165
00402  0 00012 0 00276        PZE CALLFN,,10                 16) O,,B.                          4F10166
00403  0 00001 0 01123        PZE CALLNM,,1                      A,,E.                          4F10167
00404  0 00000 0 00000        PZE **,,**                         C,,P.                          4F10168
                                                                                                4F10169
00405  0 00012 0 00310        PZE FMTEFN,,10                 17) O,,B.                          4F10170
00406  0 00001 0 01366        PZE SET,,1                         A,,E.                          4F10171
00407  0 00000 0 00000        PZE **,,**                         C,,P.                          4F10172
                                                                                                4F10173
                 00410        BSS 3                          EXPANSION SPACE FOR INTET.         4F10174
                                  END OF TAPE TABLE PARAMETERS.                                 4F10175
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10176
                                                                                                4F10177
                                 ....IX/ TABLE PARAMETERS USED BY DRTABS, WHERE                 4F10178
                                                          ARG1 = 1ST LOCATION OF ARGUMENT,      4F10179
                                                          L    = LENGTH OF ARGUMENT IN WORDS,4F10180
                                                          TDA  = LOC. OF NEXT DRUM ENTRY,       4F10181
                                                          N    = NO. OF ENTRIES ON DRUM,        4F10182
                                                          ***  = TXL FOR ENTRY SUM TABLES,      4F10183
                                                          ***  = TXH FOR BLOCK SUM TAB(FLCN),4F10184
                                                          FDA  = LOC. OF 1ST DRUM ENTRY,        4F10185
                                                          K    = BUFFER CAPACITY IN ENTRIES,    4F10186
                                                          DBL  = K*(L+1) FOR ENTRY SUM TABLE,4F10187
                                                          DBL  = K*L+1   FOR BLOCK SUM TABLE,4F10188
                                                          J    = DRUM CAPACITY IN ENTRIES,      4F10189
                                                          I    = 5 - DRUM NUMBER.               4F10190
                                                                                                4F10191
00413  0 00001 0 01350        PZE G+1,,1                     FIXCON) ARG1+L,,L                   4F10192
00414  0 00000 0 00002        PZE FIXCON,,**                         TDA,,N                      4F10193
00415 -3 00062 0 00002 TXLOP  TXL FIXCON,,50*1                  *** FDA,,K*L                    4F10194
00416  0 00144 0 00144        PZE 50*2,,100                          DBL,,J                      4F10195
00417  1 00003 0 02073 FXCNIX TXI ALT,,5-2                       TXI ALT,,I                      4F10196
                                                                                                4F10197
00420  0 00001 0 01350        PZE G+1,,1                     FLOCON) ARG1+L,,L                   4F10198
00421  0 00000 0 00312        PZE FLOCON,,**                         TDA,,N                      4F10199
00422  3 00062 0 00312 TXHOP  TXH FLOCON,,50*1                  *** FDA,,K*L                    4F10200
00423  0 00702 0 00063        PZE 50*1+1,,450                        DBL,,J                      4F10201
00424  1 00003 0 02073 FLCNIX TXI ALT,,5-2                       TXI ALT,,I                      4F10202
                                                                                                4F10203
00425  0 00002 0 01133        PZE E+3+2,,2                   TAU1  ) ARG1+L,,L                   4F10204
00426  0 00000 0 00000        PZE TAU1,,**                           TDA,,N                      4F10205
00427 -3 00062 0 00000        TXL TAU1,,25*2                     *** FDA,,K*L                    4F10206
00430  0 00144 0 00113        PZE 25*3,,100                          DBL,,J                      4F10207
00431  1 00001 0 02073 TAU1IX TXI ALT,,5-4                       TXI ALT,,I                      4F10208
```

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                                                                                                  4F10209
00432  0 00004 0 01135        PZE E+3+4,,4                 TAU2  ) ARG1+L,,L                      4F10210
00433  0 00000 0 00454        PZE TAU2,,**                         TDA,,N                         4F10211
00434 -3 00060 0 00454        TXL TAU2,,12*4                   *** FDA,,K*L                       4F10212
00435  0 00132 0 00074        PZE 12*5,,90                         DBL,,J                         4F10213
00436  1 00001 0 02073 TAU2IX TXI ALT,,5-4                     TXI ALT,,I                         4F10214
                                                                                                  4F10215
00437  0 00006 0 01137        PZE E+3+6,,6                 TAU3  ) ARG1+L,,L                      4F10216
00440  0 00000 0 01356        PZE TAU3,,**                         TDA,,N                         4F10217
00441 -3 00060 0 01356        TXL TAU3,,8*6                    *** FDA,,K*L                       4F10218
00442  0 00113 0 00070        PZE 8*7,,75                          DBL,,J                         4F10219
00443  1 00001 0 02073 TAU3IX TXI ALT,,5-4                     TXI ALT,,I                         4F10220
                                                                                                  4F10221
00444  0 00001 0 01142        PZE E+11+1,,1                SIGMA1) ARG1+L,,L                      4F10222
00445  0 00001 0 01230        PZE SIGMA1+2,,1                      TDA,,N                         4F10223
00446 -3 00036 0 01226        TXL SIGMA1,,30*1                 *** FDA,,K*L                       4F10224
00447  0 00036 0 00074        PZE 30*2,,30                         DBL,,J                         4F10225
00450  1 00003 0 02073 SIG1IX TXI ALT,,5-2                     TXI ALT,,I                         4F10226
                                                                                                  4F10227
00451  0 00002 0 01107        PZE 1C+2,,2                  DIM1  ) ARG1+L,,L                      4F10228
00452  0 00000 0 00310        PZE DIM1,,**                         TDA,,N                         4F10229
00453 -3 00000 0 00310 ORGDM1 TXL DIM1,,0                      *** FDA,,K*L                       4F10230
00454  0 00144 0 00000        PZE 0,,100                           DBL,,J                         4F10231
00455  1 00002 0 02071 DIM1IX TXI DIMALT,,5-3                  TXI ALT,,I                         4F10232
                                                                                                  4F10233
00456  0 00002 0 01107        PZE 1C+2,,2                  DIM2  ) ARG1+L,,L                      4F10234
00457  0 00000 0 00764        PZE DIM2,,**                         TDA,,N                         4F10235
00460 -3 00000 0 00764 ORGDM2 TXL DIM2,,0                      *** FDA,,K*L                       4F10236
00461  0 00144 0 00000        PZE 0,,100                           DBL,,J                         4F10237
00462  1 00002 0 02071 DIM2IX TXI DIMALT,,5-3                  TXI ALT,,I                         4F10238
                                                                                                  4F10239
00463  0 00003 0 01110        PZE 1C+3,,3                  DIM3  ) ARG1+L,,L                      4F10240
00464  0 00000 0 01440        PZE DIM3,,**                         TDA,,N                         4F10241
00465 -3 00000 0 01440 ORGDM3 TXL DIM3,,0                      *** FDA,,K*L                       4F10242
00466  0 00132 0 00000        PZE 0,,90                            DBL,,J                         4F10243
00467  1 00002 0 02071 DIM3IX TXI DIMALT,,5-3                  TXI ALT,,I                         4F10244
                                  END OF DRUM TABLE PARAMETERS.                                   4F10245
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10246
                                                                                                  4F10247
                                 COUNT AND BUFFER FOR TABLE OF FUNCTION NAMES AND DEGREES.        4F10248
                 00470 BK     BSS 1                        FORSUB COUNTER.                        4F10249
                 00471 FORSUB BSS 100                      NAMES AND DEGREES OF FUNCTIONS.        4F10250
                                  END OF FUNCTION COUNT AND BUFFER.                               4F10251
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10252
                                                                                                  4F10253
                                 PARAMETERS AND BUFFER FOR COMPILED INSTRUCTION TABLE.            4F10254
00635  0 00144 0 00000 BS     PZE ,,100                    CIB CAPACITY (4 * 25).                 4F10255
00636  0 00000 0 00000 EC     PZE ,,**                     ENTRY COUNT = NO. WORDS IN CIB.        4F10256
00637  0 00000 0 00000 BBOX   PZE ,,**                     2S COMPLEMENT OF THE ENTRY COUNT.      4F10257
                 00640 CIB    BSS 100                      COMPILED INSTRUCTION BUFFER.           4F10258
                                  END OF CIT PARAMETERS AND BUFFER.                               4F10259
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10260
                                                                                                  4F10261
                                 ALL OF THE ABOVE BUFFERS AND PARAMETERS ARE USED BY 1 PRIME.     4F10262
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                    01100          ORG 576
                    01100 ERASE    BSS 5          COMMON WORKING STORAGE.                    4F10263
                    01105 1C       BSS 5          COMMON WORKING STORAGE.                    4F10264
                    01112 1G       BSS 1          COMMON WORKING STORAGE.                    4F10265
                    01113 2G       BSS 1          COMMON WORKING STORAGE FOR STATE A.        4F10266
                    01114 3G       BSS 1                                                     4F10267
                    01115 1H       BSS 1                                                     4F10268
                    01116 2H       BSS 1                                                     4F10269
                    01117 3LBAR    BSS 1          STORAGE USED BY ARITHMETIC.                4F10270
                    01120 ARERAS   BSS 1          STORAGE USED BY ARITHMETIC.                4F10271
01121 -0 00001 0 00004 ARGCNT  MZE 4,,1           ARGUMENT COUNTER USED BY C30,C32.          4F10272
                    01122 ARGCTR   BSS 1          STORAGE USED BY ARITHMETIC.                4F10273
01123  0 00000 0 00000 CALLNM  PZE **,,**                                                    4F10274
                    01124 CHSAVE   BSS 1          WORKING STORAGE USED BY ROYCNV.            4F10275
                    01125 DIMSAV   BSS 1          WORKING STORAGE USED BY SS000.             4F10276
                    01126 E        BSS 14         WORKING STORAGE USED BY SS000.             4F10277
                    01144 EPSM3    BSS 3                                                     4F10278
                    01147  EPS     BSS 1          EPSILON - VARIABLE USED BY RA000.          4F10279
                    01150 E1C      BSS 1          COMMON WORKING STORAGE.                    4F10280
                    01151  EFN.    BSS 1          EXTERNAL FORMULA NUMBER (F-1).             4F10281
                    01152 F        BSS 111        ASSEMBLED STATEMENT REGION.                4F10282
                    01331 FIRSTC   BSS 1          USED BY SS000,TESTFX,C3000.                4F10283
                    01332 FSNAME   BSS 1          NAME OF FUNCTION.                          4F10284
                    01333 FT       BSS 12         SOURCE PROGRAM INPUT BUFFER.               4F10285
                    01347 G        BSS 2                                                     4F10286
                    01351  GTAG    BSS 1          VARIABLE USED BY IOT, RA.                  4F10287
01352  307400000000     HOLCNT  BCD 1H(0000       WORKING STORAGE USED BY C3300.             4F10288
                    01353 I        BSS 1                                                     4F10289
                    01354 LEFT     BSS 3          STORAGE USED BY ARITHMETIC.                4F10290
01357  0 00000 0 00000 LENGTH  PZE **,,**                                                    4F10291
                    01360 NBAR     BSS 1          STORAGE USED BY ARITHMETIC.                4F10292
                    01361  N2      BSS 1                                                     4F10293
                    01362 OPNWRD   BSS 1          ERASABLE USED BY STATE D.                  4F10294
01363  0 00000 0 00000 PHI(I)  PZE **,,**                                                    4F10295
01364  0 00000 0 00010  RAT    PZE 8,,**          VARIABLE USED BY IOT.                      4F10296
                    01365 RESIDU   BSS 1          REMAINDER OF F-REGION WORD.(C0190)         4F10297
01366  1 00000 0 00000  SET    PON  ,,                                                        4F10298
                    01367  SL      BSS 1                                                     4F10299
                    01370 SYMBOL   BSS 1          WORKING STORAGE USED BY SS000.             4F10300
01371  0 00000 0 00370  TL     PZE 31*8,,**                                                   4F10301
01372  0 00000 0 00000 TLINE  PZE **              VARIABLE USED BY IOT.                      4F10302
                     END OF COMMON WORKING STORAGE, BUFFERS, AND PARAMETERS.                 4F10303
                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *  4F10304
                                                                                            4F10305
                    COMMON/2-CONSTANTS USED BY SECTION ONE=                                 4F10306
                                                                                            4F10307
01373 +000000000012     TEN    OCT 12          (1010) - CTEST-11                           4F10308
01374 +000000000077     ENDMK  OCT 77          111111 - CTEST-10                           4F10309
01375 +000000000074     OPEN   OCT 74          (      - CTEST-9                            4F10310
01376 +000000000073     COMMA  OCT 73          ,      - CTEST-8                            4F10311
01377 +000000000034     CLOS   OCT 34          )      - CTEST-7                            4F10312
01400 +000000000013     EQUAL  OCT 13          =      - CTEST-6                            4F10313
01401 +000000000040     11Z    OCT 40          -      - CTEST-5                            4F10314
01402 +000000000061     SLASH  OCT 61          /      - CTEST-4                            4F10315
```

```
01403 +000000000033     POINT   OCT 33
01404 +000000000020     12Z     OCT 20
01405 +000000000054     STAR    OCT 54
                 01406  CTEST   BSS 0

01406  000000000000     L(0)    BCD 1000000
01407  000000000001     L(1)    BCD 1000001
01410  000000000002     L(2)    BCD 1000002
01411  000000000003     L(3)    BCD 1000003
01412  000000000004     L(4)    BCD 1000004
01413  000000000005     L(5)    BCD 1000005
01414  000000000006     L(6)    BCD 1000006
01415  000000000007     L(7)    BCD 1000007
01416  000000000010     L(8)    BCD 1000008
01417  000000000011     L(9)    BCD 1000009
01420 +000000000014     MINUS   OCT 14
01421  000000000023     L(C)    BCD 100000C
01422  000000000026     L(F)    BCD 100000F
01423  000000000030     L(H)    BCD 100000H
01424 +000000000032     CHAR2   OCT 32
01425  000000000046     L(O)    BCD 1000000
01426 +000000000052     CHAR3   OCT 52
01427 +000000000053     SPECOP  OCT 53
01430 +000000000060     BLANK   OCT 60
01431  000000000062     L(S)    BCD 100000S
01432  000000000063     L(T)    BCD 100000T
01433  000000000067     L(X)    BCD 100000X
01434  000000000071     L(Z)    BCD 100000Z
01435 +000000000072     PM      OCT 72
01436 +000000000100     BIT29   OCT 100
01437 +000000000121      A81    DEC 81
01440 +000000000140     L(96)   OCT 140
01441 +000000000160     L(112)  OCT 160
01442 +000000000777     MASK3   OCT 777
01443 +000000001000     1E9     OCT 1000
01444  000000002174     L(A()   BCD 10000A(
01445  000000003074     L(H()   BCD 10000H(
01446  000000003174     L(I()   BCD 10000I(
01447 +000000006212     SAPSYM  OCT 6212
01450 +000000006712     IFSYM   OCT 6712
01451 +000000007112     CALLER  OCT 7112
01452 +000000077777     MASK2   OCT 77777
01453 +000000400000     2E17    OCT 400000
01454 +000001000000     2E18    OCT 1000000
01455   0 00001 0 00001  DECR1   PZE 1,,1
01456 +000001000002     ABTAG2  OCT 1000002
01457   0 00002 0 00000   D2     PZE ,,2
01460 +000002000004     ABTAG3  OCT 2000004
01461   0 00003 0 00000  D3CN    PZE ,,3
01462 +000003077775     BETAD2  OCT 3077775
01463   0 00006 0 00000   D6     PZE ,,6
01464   0 00020 0 00000  FSIND   PZE ,,16
01465   0 00021 0 00000  DEC17   PZE ,,17
01466   0 00022 0 00000  DEC18   PZE ,,18
```

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*       - CTEST-3                       4F10316
+       - CTEST-2                       4F10317
*       - CTEST-1                       4F10318
ADDRESS USED FOR INDEXING ABOVE.        4F10319
                                        4F10320
0                                       4F10321
1                                       4F10322
2                                       4F10323
3                                       4F10324
4                                       4F10325
5                                       4F10326
6                                       4F10327
7                                       4F10328
8                                       4F10329
9                                       4F10330
-                                       4F10331
C                                       4F10332
F                                       4F10333
H                                       4F10334
CONSTANT USED BY CD000.                 4F10335
0 (ALPHABETIC)                          4F10336
CONSTANT USED BY CD000.                 4F10337
00000$                                  4F10338
000000000060                            4F10339
S                                       4F10340
T                                       4F10341
X                                       4F10342
Z                                       4F10343
RECORD MARK (ILLEGAL) -CD000            4F10344
                                        4F10345
CONSTANT USED BY IOT.                   4F10346
USED BY C0500.                          4F10347
USED BY C0400.                          4F10348
                    -ARITHMETIC.        4F10349
ADDRESS=8                               4F10350
INTERNAL FLO-PT VARIABLE PREFIX.        4F10351
                                        4F10352
INTERNAL FXD-PT VARIABLE PREFIX.        4F10353
                                        4F10354
                                        4F10355
                                        4F10356
2**15-1             -ARITHMETIC.        4F10357
TAG=4                                   4F10358
DECREMENT=1                             4F10359
CONSTANT USED BY DRTABS.                4F10360
CONSTANT USED BY C3200.                 4F10361
CONSTANT USED BY IOT.                   4F10362
CONSTANT USED BY C3200.                 4F10363
CONSTANT USED BY IOT.                   4F10364
3*2**18+(-3)        -ARITHMETIC.        4F10365
CONSTANT USED BY IOT.                   4F10366
                                        4F10367
                                        4F10368
                                        4F10369
```

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+000032000000     PZ      OCT 32000000                PLUS ZERO -CD000.                    4F10370
+000037777600     MASK5   OCT 37777600                                  -ARITHMETIC.     4F10371
 0 00040 0 00000  FNIND   PZE ,,32                                                         4F10372
 0 00043 0 00000  DEC35   PZE ,,35                                                         4F10373
+000052000000     MZ      OCT 52000000                MINUS ZERO -CD000.                   4F10374
+000200000000     NGTBIT  OCT 000200000000                                                  4F10375
 0 00220 0 00000   BTA    PZE ,,144                   CONSTANT USED BY IOT.                4F10376
 0 00300 0 00000  BDA     PZE 0,0,192                 CONSTANT USED BY IOT.                4F10377
 006060606060     5BLANS  BCD 10                      006060606060                         4F10378
 010000000000     E(      BCD 1100000                                  -ARITHMETIC.     4F10379
 020000000000     I(      BCD 1200000                                  -ARITHMETIC.     4F10380
 030000000000     A(      BCD 1300000                                  -ARITHMETIC.     4F10381
 040000000000     P(      BCD 1400000                                  -ARITHMETIC.     4F10382
 060000000000     O(      BCD 1600000                                  -ARITHMETIC.     4F10383
 070000000000     X(      BCD 1700000                                  -ARITHMETIC.     4F10384
+077775077775     BETAD1  OCT 77775077775             (-3(*2**18+(-3)    -ARITHMETIC.     4F10385
+077777000000     1BAR    OCT 77777000000             (2**15-1)*2**18DECREMENT MASK.      4F10386
+170000000000      15P    DEC 15B5                    CONSTANT USED BY IOT.                4F10387
+176060606060     PROCTR  OCT 176060606060                                                  4F10388
+200000000000     ADPLUS  OCT 200000000000            ADDITION SIGN -ARITHMETIC.           4F10389
 217400000000     FLOVAR  BCD 1A(0000                 A( INTERNAL FLOATING PT. VARIABLE.   4F10390
 256747740160     FXFX    BCD 1EXP(1                                                       4F10391
 256747740260     FLFX    BCD 1EXP(2                                                       4F10392
 256747740360     FLFL    BCD 1EXP(3                                                       4F10393
 317400000000     FIXVAR  BCD 1I(0000                 I( INTERNAL FIXED PT. VARIABLE.      4F10394
-0 00000 0 00000  MINUS0  MZE 0                                                            4F10395
-0 00002 0 00000  DECMI2  MZE ,,2                                                          4F10396
-130000000000     ADSPOP  OCT 530000000000            $00000                               4F10397
-136000000000     DOLSGN  OCT 536000000000            CONSTANT USED BY C32000              4F10398
-140000000000     ADSTAR  OCT -140000000000           MULTIPLICATION SIGN -ARITHMETIC.     4F10399
-145400000000     STRSTR  OCT -145400000000           EXPONENTIATION SIGN -ARITHMETIC.     4F10400
 606060606060     BLANKS  BCD 1                       606060606060                         4F10401
-377777700000     MASK1   OCT -377777700000           -(2**20-U.*2**15   -ARITHMETIC.      4F10402
-377777777737     MASK4   OCT -377777777737                              -ARITHMETIC.     4F10403
-377777777777     ALL1    OCT -377777777777           END OF STATEMENT WORD.               4F10404
                                                                                           4F10405
 212424000000     L(ADD)  BCD 1ADD000                 SYMBOLIC OPERATION CODE.             4F10406
 214362000000     L(ALS)  BCD 1ALS000                 SYMBOLIC OPERATION CODE.             4F10407
 214521000000     L(ANA)  BCD 1ANA000                 SYMBOLIC OPERATION CODE.             4F10408
 215162000000     L(ARS)  BCD 1ARS000                 SYMBOLIC OPERATION CODE.             4F10409
 226262000000     L(BSS)  BCD 1BSS000                 SYMBOLIC OPERATION CODE.             4F10410
 232143000000     L(CAL)  BCD 1CAL000                                                      4F10411
 233062000000     L(CHS)  BCD 1CHS000                 SYMBOLIC OPERATION CODE.             4F10412
 234321000000     L(CLA)  BCD 1CLA000                 SYMBOLIC OPERATION CODE.             4F10413
 234344000000     L(CLM)  BCD 1CLM000                 SYMBOLIC OPERATION CODE.             4F10414
 234362000000     L(CLS)  BCD 1CLS000                 SYMBOLIC OPERATION CODE.             4F10415
 234770000000     L(CPY)  BCD 1CPY000                                                      4F10416
 242363000000     L(DCT)  BCD 1DCT000                 SYMBOLIC OPERATION CODE.             4F10417
 242524000000     L(DED)  BCD 1DED000                                                      4F10418
 246547000000     L(DVP)  BCD 1DVP000                 SYMBOLIC OPERATION CODE.             4F10419
 262124000000     L(FAD)  BCD 1FAD000                 SYMBOLIC OPERATION CODE.             4F10420
 262447000000     L(FDP)  BCD 1FDP000                 SYMBOLIC OPERATION CODE.             4F10421
 264447000000     L(FMP)  BCD 1FMP000                 SYMBOLIC OPERATION CODE.             4F10422
 266222000000     L(FSB)  BCD 1FSB000                 SYMBOLIC OPERATION CODE.             4F10423
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01554  304751000000     L(HPR) BCD 1HPR000                    SYMBOLIC OPERATION CODE.          4F10424
01555  432421000000     L(LDA) BCD 1LDA000                                                      4F10425
01556  432450000000     L(LDQ) BCD 1LDQ000                    SYMBOLIC OPERATION CODE.          4F10426
01557  434362000000     L(LLS) BCD 1LLS000                    SYMBOLIC OPERATION CODE.          4F10427
01560  435162000000     L(LRS) BCD 1LRS000                    SYMBOLIC OPERATION CODE.          4F10428
01561  436724000000     L(LXD) BCD 1LXD000                    SYMBOLIC OPERATION CODE.          4F10429
01562  444770000000     L(MPY) BCD 1MPY000                    SYMBOLIC OPERATION CODE.          4F10430
01563  446225000000     L(MSE) BCD 1MSE000                    SYMBOLIC OPERATION CODE.          4F10431
01564  465121000000     L(ORA) BCD 1ORA000                    SYMBOLIC OPERATION CODE.          4F10432
01565  476225000000     L(PSE) BCD 1PSE000                    SYMBOLIC OPERATION CODE.          4F10433
01566  476724000000     L(PXD) BCD 1PXD000                    SYMBOLIC OPERATION CODE.          4F10434
01567  504751000000     L(QPR) BCD 1QPR000                    CONSTANT USED BY C3200.           4F10435
01570  506724000000     L(QXD) BCD 1QXD000                    CONSTANT USED BY C3200.           4F10436
01571  626321000000     L(STA) BCD 1STA000                    SYMBOLIC OPERATION CODE.          4F10437
01572  626346000000     L(STO) BCD 1STO000                    SYMBOLIC OPERATION CODE.          4F10438
01573  626350000000     L(STQ) BCD 1STQ000                    SYMBOLIC OPERATION CODE.          4F10439
01574  626422000000     L(SUB) BCD 1SUB000                    SYMBOLIC OPERATION CODE.          4F10440
01575  626724000000     L(SXD) BCD 1SXD000                    SYMBOLIC OPERATION CODE.          4F10441
01576  633167000001     L(TIX) BCD 1TIX001                                                      4F10442
01577  634665000000     L(TOV) BCD 1TOV000                    SYMBOLIC OPERATION CODE.          4F10443
01600  635046000000     L(TQO) BCD 1TQO000                    SYMBOLIC OPERATION CODE.          4F10444
01601  635121000000     L(TRA) BCD 1TRA000                    SYMBOLIC OPERATION CODE.          4F10445
01602  636267000000     L(TSX) BCD 1TSX000                    SYMBOLIC OPERATION CODE.          4F10446
01603  642621000000     L(UFA) BCD 1UFA000                    SYMBOLIC OPERATION CODE.          4F10447
                                 END OF COMMON CONSTANTS USED BY SECTION ONE.                  4F10448
                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10449
                                                                                               4F10450
                        COMMON/3-SUBROUTINES USED BY SECTION ONE=                              4F10451
                                                                                               4F10452
                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10453
                                                                                               4F10454
                        C0150,2/ CALLS=C0190,DIAG,C0180,C0160. CALLER=C0100.                   4F10455
                        C0150 INSPECTS 1ST NB CHAR STARTING IN MQ. IF NUMERIC, SETS I4F10456
                        = 0, AND CONVERTS SUCCESSIVE NUMERICS TO BINARY. IF NON-               4F10457
                        NUMERIC, SETS I = -0, AND PACKS INTO 1G SUCCESSIVE CHARACTERS4F10458
                        UNTIL A ,()= OR ENDMK IS MET, AND LEFT IN THE AC.                      4F10459
01604 -0 63400 2 01607 C0150   SXD C015X,2                    SAVE THE C(XR2).                  4F10460
01605  0 07400 4 01707         TSX C0190,4                  * TEST 1ST NON-BLANK CHARACTER       4F10461
01606  0 34000 0 01417         CAS L(9)                       FOR NUMERIC OR NON-NUMERIC.       4F10462
01607  1 00000 0 01615 C015X   TXI C0151,0,**                 IF NON-NUMERIC, TRANSFER.         4F10463
01610  0 76100 0 00000         NOP                            IF NUMERIC, THEN                  4F10464
01611  0 07400 2 01655         TSX C0180,2                  * GO CONVERT TO BINARY.             4F10465
01612  0 60100 0 01113         STO 2G                         SAVE NEXT NON-NUMERIC CHARACTER.  4F10466
01613  0 50000 0 01406         CLA L(0)                       PREPARE TO SET I TO +0.           4F10467
01614  1 00000 0 01620  FWA    TXI C0152,0,**                 GO SET I FOR NUMERIC.             4F10468
01615  0 07400 2 01624 C0151   TSX C0160,2                  * ASSEMBLE NON-NUMERICS IN 1G.      4F10469
01616  0 60100 0 01113         STO 2G                         SAVE PUNCTUATION MARK, AND        4F10470
01617  0 50200 0 01406         CLS L(0)                       PREPARE TO SET I TO -0.           4F10471
01620  0 60100 0 01353 C0152   STO I                          SET I = +0, OR -0.                4F10472
01621  0 50000 0 01113         CLA 2G                         PICKUP NEXT CHARACTER,            4F10473
01622 -0 53400 2 01607         LXD C015X,2                    RESTORE THE C(XR2), AND           4F10474
01623  0 02000 2 00001         TRA 1,2                      * RETURN TO CALLER.                 4F10475
                                 END OF PROGRAM C0150.                                         4F10476
                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10477
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                                                                                                                  4F10478
                                                C0160,2/ CALLS=C0190,DIAG. CALLERS=C0100,C0200,C1000,C1200,  4F10479
                                                C1500,C3000,C3100,C0150.                                      4F10480
                                                C0160 ASSEMBLES LEFT-ADJUSTED IN 1G, THE CHAR IN THE AC AND  4F10481
                                                SUCCESSIVE NB CHARS STARTING IN THE MQ, UNTIL A ,()= OR ENDMK4F10482
                                                IS MET AND LEFT IN THE AC. ALSO MARKS END OF WORD WITH A     4F10483
                                                BLANK, IF LESS THAN 6 CHARACTERS.                             4F10484
      01624 -0 63400 2 01631 C0160  SXD C016X,2                  SAVE THE C(XR2), AND                 4F10485
      01625  0 53400 2 01406        LXA L(0),2                   SET XR2 TO CONTROL SHIFTING.         4F10486
      01626  0 60000 0 01112        STZ 1G                       CLEAR WORKING STORAGE.               4F10487
      01627  0 53400 4 02652 C0161  LXA CTESTX,4                 TEST                                 4F10488
      01630  0 34000 4 01406 C0162  CAS CTEST,4                  CHARACTER                            4F10489
      01631  1 00000 0 01633 C016X  TXI C0163,0,**               IN THE AC                            4F10490
D     01632  1 00000 0 01642        TXI C0165,0                  AGAINST                              4F10491
      01633  2 00001 4 01630 C0163  TIX C0162,4,1                ALL PUNCTUATION.                     4F10492
      01634 -3 00036 2 01636        TXL C0164,2,30               IF SYMBOL EXCEEDS 6 CHARACTERS,      4F10493
      01635  0 07400 4 03400        TSX DIAG,4                 * GO TO THE DIAGNOSTIC.                4F10494
      01636  0 76700 2 00036 C0164  ALS 30,2                     BUILD LEFT-ADJUSTED                  4F10495
      01637 -0 60200 0 01112        ORS 1G                       SYMBOL IN WORKING STORAGE.           4F10496
      01640  0 07400 4 01707        TSX C0190,4                * GET NEXT NB CHARACTER IN THE AC.     4F10497
      01641  1 00006 2 01627        TXI C0161,2,6                UPDATE SHIFT COUNT, AND CONTINUE.    4F10498
      01642  3 00000 2 01644 C0165  TXH C0167,2,0                IF PUNCTUATION IS 1ST CHARACTER,     4F10499
      01643  0 07400 4 03400 C0166  TSX DIAG,4                 * OR ILLEGAL, GO TO THE DIAGNOSTIC.    4F10500
      01644 -3 00005 4 01643 C0167  TXL C0166,4,5                IF LEGAL PUNCTUATION, THEN           4F10501
      01645  0 60100 0 01115        STO 1H                       SAVE, AND                            4F10502
      01646  0 50000 0 01430        CLA BLANK                    ADD A BLANK                          4F10503
      01647  0 76700 2 00036        ALS 30,2                     TO SYMBOLS THAT ARE LESS             4F10504
      01650 -0 60200 0 01112        ORS 1G                       THAN 6 CHARACTERS IN LENGTH.         4F10505
      01651  0 50000 0 01115        CLA 1H                       PICKUP PUNCTUATION MARK,             4F10506
      01652 -0 53400 2 01631        LXD C016X,2                  RESTORE THE C(XR2), AND              4F10507
      01653  0 02000 2 00001        TRA 1,2                    * RETURN TO CALLER.                    4F10508
                                         END OF PROGRAM C0160.                                        4F10509
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10510
                                                                                                      4F10511
                                                C0180,2/ CALLS=C0190,DIAG. CALLERS=C0100,C0200,C0300,C0400,  4F10512
                                                C1000,C1100,C1200,C1400,C1500,C0150.                          4F10513
                                                C0180 CONVERTS SUCCESSIVE NUMERICS STARTING IN THE MQ TO     4F10514
                                                BINARY, PLACES RESULT IN 1G, AND LEAVES 1ST NON-NUMERIC IN   4F10515
                                                THE AC. 1ST NUMERIC IS ASSUMED TO BE ALREADY IN THE AC.      4F10516
      01654  0 07400 4 01707 C0180X TSX C0190,4                * OBTAIN 1ST NUMERIC IN THE AC.      4F105165
      01655  0 60100 0 01112 C0180  STO 1G                       PLACE 1ST NUMERIC IN 1G.             4F10517
      01656  0 07400 4 01707        TSX C0190,4                * EXAMINE NEXT NON-BLANK CHARACTER,    4F10518
      01657  0 34000 0 01417        CAS L(9)                     AND IF NON-NUMERIC, THEN             4F10519
      01660  0 02000 2 00001        TRA 1,2                    * RETURN TO CALLER.                    4F10520
      01661  0 76100 0 00000        NOP                          IF NUMERIC, THEN                     4F10521
      01662  0 60100 0 01113        STO 2G                       SAVE DIGIT IN 2G.                    4F10522
      01663  0 50000 0 01112        CLA 1G                       MULTIPLY                             4F10523
      01664  0 76700 0 00002        ALS 2                        C(1G)                                4F10524
      01665  0 40000 0 01112        ADD 1G                       BY                                   4F10525
      01666  0 76700 0 00001        ALS 1                        10,                                  4F10526
      01667  0 40000 0 01113        ADD 2G                       AND ADD CURRENT DIGIT.               4F10527
      01670  1 76626 0 01655  DCF   TXI C0180,0,-F               REPEAT PROCESS FOR NEXT CHARACTER.   4F10528
                                         END OF PROGRAM C0180.                                        4F10529
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10530
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                                                                                                  4F10531
                                    C0190X,4/ CALLERS=CD000,CB000,CC000,C0300,C3300.              4F10532
                                    C0190X INITIALIZES C0190 TO OBTAIN 1ST WORD OF FORMULA IN F.  4F10533
01671  0 50000 0 01670 C0190X CLA DCF                      SET FORMULA WORD                    4F10534
01672  0 62200 0 01614        STD FWA                      ADDRESS = -(F-REGION ADDRESS),      4F10535
01673 -0 63400 0 01724        SXD CHCTR,0                  SET CHARACTER COUNT = 0,            4F10536
01674  0 02000 4 00001        TRA 1,4                    * RETURN TO MAIN ROUTINE.             4F10537
                                     END OF PROGRAM C0190X.                                       4F10538
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10539
                                                                                                  4F10540
                                    C0390,4/ CALLERS=C0300,C3300.                                 4F10541
                                    C0390 INSERTS THE CHARACTER IN THE AC INTO THE 1ST POSITION   4F10542
                                    TO THE LEFT OF THAT DEFINED BY FWA AND XR1.                   4F10543
01675  0 50000 0 01374 C0390  CLA ENDMK                    PREPARE TO CHANGE                   4F10544
01676 -0 53400 2 01614        LXD FWA,2                    THE PROPER CHARACTER                4F10545
01677 -0 53400 1 01724        LXD CHCTR,1                  IN THE F-REGION.                    4F10546
01700 -2 00001 1 01703        TNX C0393,1,1                ADJUST MASK                         4F10547
01701 -0 76300 0 00006 C0392  LGL 6                        TO POSITION                         4F10548
01702  2 00001 1 01701        TIX C0392,1,1                CHARACTER.                          4F10549
01703  0 76000 0 00006 C0393  COM                          INVERT MASK, AND                    4F10550
01704  0 32000 2 77777        ANS -1,2                     ERASE PROPER CHARACTER.             4F10551
01705 -0 76300 0 00044        LGL 36                       ADJUST CHARACTER, AND               4F10552
01706 -0 60200 2 77777        ORS -1,2                     INSERT IN ERASED POSITION.          4F10553
                                    C0390 CONTINUES BY USING C0190.                               4F10554
                                                                                                  4F10555
                                    C0190,4/ CALLERS=CD000,CB000,CC000,C0100,C0200,C0300,C0400,   4F10556
                                    C0900,C1000,C1100,C1200,C1400,C1500,C1600,C3000,C3100,C3200,  4F10557
                                    C3300,C3400,C0150,C0160,C0180,SS000,ROYCNV,RSC,LPR.           4F10558
                                    C0190 OBTAINS IN AC THE NEXT NON-BLANK CHARACTER OF FORMULA.  4F10559
01707 -0 63400 1 01723 C0190  SXD C0194,1                  SAVE THE C(XR1), AND                4F10560
01710 -0 53400 1 01724        LXD CHCTR,1                  SET XR1 = CHARACTER COUNT.          4F10561
01711  0 56000 0 01365        LDQ RESIDU                   PICK UP ANY REMAINING CHARACTERS.   4F10562
01712  2 00001 1 01720 C0191  TIX C0193,1,1                IF NONE,                            4F10563
01713 -0 53400 1 01614        LXD FWA,1                    PICK UP NEXT FORMULA                4F10564
01714  0 56000 1 00000        LDQ 0,1                      WORD FROM F-REGION,                 4F10565
01715  1 77777 1 01716        TXI C0192,1,-1               AND INCREASE                        4F10566
01716 -0 63400 1 01614 C0192  SXD FWA,1                    FORMULA WORD ADDRESS BY 1.          4F10567
01717  0 53400 1 01414        LXA L(6),1                   RESET XR1 FOR 6 NEW CHARACTERS.     4F10568
01720 -0 75400 0 00000 C0193  PXD ,0                       EXAMINE                             4F10569
01721 -0 76300 0 00006        LGL 6                        NEXT CHARACTER                      4F10570
01722  0 34000 0 01430        CAS BLANK                    AND COMPARE WITH A BLANK.           4F10571
01723  1 00000 0 01725 C0194  TXI C0195,0,**               IF BLANK,                           4F10572
01724  1 00000 0 01712 CHCTR  TXI C0191,0,**               GO EXAMINE NEXT CHARACTER.          4F10573
01725 -0 63400 1 01724 C0195  SXD CHCTR,1                  IF NOT BLANK, RESET CHAR COUNT,     4F10574
01726 -0 60000 0 01365        STQ RESIDU                   SAVE ANY REMAINING CHARACTERS,      4F10575
01727 -0 53400 1 01723        LXD C0194,1                  RESTORE THE C(XR1), AND             4F10576
01730  0 02000 4 00001        TRA 1,4                    * RETURN TO MAIN ROUTINE.             4F10577
                                     END OF PROGRAM C0190.                                        4F10578
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10579
                                                                                                  4F10580
                                    CIT00,4/ CALLERS=C0200,C0400,C0900,C1000,C1100,C1300,C1600,   4F10581
                                    C3200,RDC,WBT,RBT,WRD,BRW,EFT,LPR,CMA,EMK,INPUT(OUTPUT),      4F10582
                                    ETMSW(LTMSW),LIB,VRA(VRD).                                    4F10583
                                    CIT00 MAKES ENTRIES IN THE COMPILED INSTRUCTION TABLE. WHEN   4F10584
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                                        THE BUFFER IS FULL IT IS WRITTEN AS A RECORD ONTO TAPE 3.    4F10585
01731 -0 63400 2 01102 CIT00  SXD CITXR2,2                    SAVE THE C(XR2).                       4F10586
01732 -0 63400 1 01101        SXD CITXR1,1                    SAVE THE C(XR1).                       4F10587
01733 -0 60000 0 01150        STQ CITMQR                      SAVE THE C(MQR).                       4F10588
01734 -0 53400 2 00637        LXD BBOX,2                      SET XR2 = 2S COMPL OF NO-WRDS-ENTD.    4F10589
01735  0 50000 0 00635        CLA BS                          COMPARE BLOCK SIZE                     4F10590
01736  0 40200 0 00636        SUB EC                          WITH ENTRY COUNT.                      4F10591
01737 -0 10000 0 01747        TNZ CIT04                       IF BLOCK IS NOT FULL,GO MAKE ENTRY.    4F10592
01740  0 76600 0 00223        WRS CITTAP                      PREPARE TO WRITE BLOCK ON CIT TAPE.    4F10593
01741  0 73400 1 00000        PAX ,1                          SET XR1 = 0, AND                       4F10594
01742  0 70000 1 00640 CIT01  CPY CIB,1                       COPY SUCCESSIVE                        4F10595
01743  1 77777 1 01744        TXI CIT02,1,-1                  WORDS OF BLOCK                         4F10596
01744  1 00001 2 01745 CIT02  TXI CIT03,2,1                   AND CONTINUE                           4F10597
01745  3 00001 2 01742 CIT03  TXH CIT01,2,1                   UNTIL XR2 = 0.                         4F10598
01746  0 76600 0 00333        IOD                             WHEN DONE,                             4F10599
01747  0 53400 1 01412 CIT04  LXA L(4),1                      SET XR1 = ENTRY SIZE.                  4F10600
01750  1 77777 4 01751 CIT05  TXI CIT05+1,4,-1                SET XR4 = -(ADDR OF NEXT ENTRY WRD)    4F10601
01751  0 50000 4 00000        CLA 0,4                         AND PICK UP ADDRESS OF NEXT ENTRY      4F10602
01752  0 62100 0 01753        STA CIT06                       TO SET NEXT ADDRESS.                   4F10603
01753  0 50000 0 00000 CIT06  CLA **                          MOVE ENTRY                             4F10604
01754  0 60100 2 00640        STO CIB,2                       INTO CIB BUFFER,                       4F10605
01755  1 77777 2 01756        TXI CIT07,2,-1                  AND COUNT -1 FOR EACH WORD ENTERED.    4F10606
01756  2 00001 1 01750 CIT07  TIX CIT05,1,1                   WHEN DONE,                             4F10607
01757 -0 63400 2 00637        SXD BBOX,2                      SAVE THE C(XR2), AND                   4F10608
01760 -0 75400 2 02032 DMSR99 PXD DMSR05+1,2                  COMPUTE THE                            4F10609
01761  0 76000 0 00006        COM                             REAL NUMBER                            4F10610
01762  0 40000 0 01454        ADD 2E18                        OF WORDS ENTERED                       4F10611
01763 -0 73400 2 02031 DMSR98 PDX DMSR05,2                    IN CIB BUFFER, AND                     4F10612
01764 -0 63400 2 00636        SXD EC,2                        SAVE IN EC.                            4F10613
01765  0 56000 0 01150        LDQ CITMQR                      RESTORE THE C(MQR),                    4F10614
01766 -0 53400 1 01101        LXD CITXR1,1                    RESTORE THE C(XR1),                    4F10615
01767 -0 53400 2 01102        LXD CITXR2,2                    RESTORE THE C(XR2), AND                4F10616
01770  0 02000 4 00001        TRA 1,4                       * EXIT TO MAIN ROUTINE (5TH WRD CS).     4F10617
                               END OF PROGRAM CIT00.                                                4F10618
                              * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10619
                                                                                                     4F10620
                              DIM.SR,4/ CALLS=DIAG. CALLERS=C1200,SS000,CMA.                         4F10621
                              DIM.SR SEARCHS THE DIMENSION TABLES. ENTRANCE IS TO DIM1SR,            4F10622
                              DIM2SR, OR DIM3SR ACCORDING TO THE DIMENSION.                          4F10623
                              DIM1SR= ENTRY POINT FOR 1 DIMENSION TABLE.                             4F10624
01771 -0 63400 4 01774 DIM1SR SXD DMSR00,4                    SAVE THE C(XR4) FOR RETURN,            4F10625
01772 -0 53400 4 00452        LXD DIM1IX-3,4                  SET XR4 = NUMBER OF ENTRIES IN DIM1    4F10626
01773  0 50000 0 00453        CLA ORGDM1                      AND PICK UP 1ST ADDRESS OF DIM1 TO     4F10627
01774  1 00000 0 02000 DMSR00 TXI DMSR01,0,**                 GO SET DRUM ADDRESS.                   4F10628
                              DIM2SR= ENTRY POINT FOR 2 DIMENSION TABLE.                             4F10629
01775 -0 63400 4 01774 DIM2SR SXD DMSR00,4                    SAVE THE C(XR4) FOR RETURN,            4F10630
01776 -0 53400 4 00457        LXD DIM2IX-3,4                  SET XR4 = NUMBER OF ENTRIES IN DIM2    4F10631
01777  0 50000 0 00460        CLA ORGDM2                      AND PICK UP 1ST ADDRESS OF DIM2 TO     4F10632
02000  0 62100 0 01104 DMSR01 STA DRMADR                      SET DRUM ADDRESS.                      4F10633
02001  0 50000 0 01760        CLA DMSR99                      SET LOOP ADDRESS TO                    4F10634
02002  0 62100 0 02041        STA DMSR15                      DMSR05+1 FOR DIM1 AND DIM2.            4F10635
02003 -0 50000 0 02065        CAL DMCN12                      (STZ D3)                               4F10636
02004  1 00000 0 02014 DMSR11 TXI DMSR02,0,**                 GO SET OP FOR DIM1 AND DIM2.           4F10637
                              DIM3SR= ENTRY POINT FOR 3 DIMENSION TABLE.                             4F10638
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02005 -0 63400 4 01774 DIM3SR SXD DMSR00,4
02006 -0 53400 4 00464        LXD DIM3IX-3,4
02007  0 50000 0 00465        CLA ORGDM3
02010  0 62100 0 01104        STA DRMADR
02011  0 50000 0 01763        CLA DMSR98
02012  0 62100 0 02041        STA DMSR15
02013 -0 50000 0 02066        CAL DMCN3
02014  0 60200 0 02031 DMSR02 SLW DMSR05
02015  0 60200 0 02044        SLW DMSR07
02016 -3 00000 4 02047        TXL DMSR08,4,0
02017 -0 63400 4 02004        SXD DMSR11,4
02020  0 53400 4 01413 DMSR14 LXA L(5),4
02021 -0 63400 4 02035 DMSR13 SXD DMSR12,4
02022 -0 53400 4 02004        LXD DMSR11,4
02023  0 76200 0 00303        RDR 3
02024  0 50000 0 01130        CLA E+2
02025  0 46000 0 01104        LDA DRMADR
02026  0 70000 0 01100 DMSR04 CPY DRSYM
02027  0 04000 0 02043        TLQ DMSR06
02030  0 70000 0 01101        CPY D12
02031  0 00000 0 01102 DMSR05 PZE D3
02032  0 70000 0 01103        CPY DRCKSM
02033  0 34000 0 01100        CAS DRSYM
02034  0 07400 4 03400        TSX DIAG,4
02035  1 00000 0 02051 DMSR12 TXI DMSR09,0,**
02036  0 70000 0 01100        CPY DRSYM
02037  0 04000 0 02043        TLQ DMSR06
02040  0 70000 0 01101        CPY D12
02041  2 00001 4 00000 DMSR15 TIX **,4,1
D 02042  1 00000 0 02047      TXI DMSR08,0
02043  0 70000 0 01101 DMSR06 CPY D12
02044  0 00000 0 01102 DMSR07 PZE D3
02045  0 70000 0 01103        CPY DRCKSM
02046  2 00001 4 02026        TIX DMSR04,4,1
02047 -0 53400 4 01774 DMSR08 LXD DMSR00,4
02050  0 02000 4 00001        TRA 1,4
02051 -0 50000 0 01100 DMSR09 CAL DRSYM
02052  0 36100 0 01101        ACL D12
02053  0 36100 0 01102        ACL D3
02054  0 76000 0 00006        COM
02055  0 36100 0 01103        ACL DRCKSM
02056  0 76000 0 00006        COM
02057  0 10000 0 02063        TZE DMSR10
02060 -0 53400 4 02035        LXD DMSR12,4
02061  2 00001 4 02021        TIX DMSR13,4,1
02062  0 07400 4 03400        TSX DIAG,4
02063 -0 53400 4 01774 DMSR10 LXD DMSR00,4
02064  0 02000 4 00002        TRA 2,4

02065  0 60000 0 01102 DMCN12 STZ D3
02066  0 70000 0 01102 DMCN3  CPY D3
02067  456351000000    ENT    BCD 1NTR000
02070  477125000000    NZE    BCD 1PZE000
                              END OF PROGRAM DIM.SR.
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SAVE THE C(XR4) FOR RETURN.                    4F10639
SET XR4 = NUMBER OF ENTRIES IN DIM3            4F10640
AND PICK UP 1ST ADDRESS OF DIM3 TO             4F10641
SET DRUM ADDRESS.                              4F10642
SET LOOP ADDRESS TO                            4F10643
DMSR05 FOR DIM3.                               4F10644
(CPY D3)                                       4F10645
SET OP CODES ACCORDING                         4F10646
TO DIMENSION.                                  4F10647
IF TABLE IS EMPTY, GO OUT.                     4F10648
SAVE ENTRY COUNT IN CASE OF ERROR.             4F10649
SET ERROR COUNTER FOR 5 ATTEMPTS.              4F10650
SAVE ERROR COUNTER, AND                        4F10651
RESET ENTRY COUNT.                             4F10652
SELECT DRUM.                                   4F10653
GET NAME OF VARIABLE.                          4F10654
LOAD CURRENT DRUM ADDRESS, AND                 4F10655
COPY DRUM SYMBOL.                              4F10656
COMPARE WITH NAME OF VARIABLE, AND             4F10657
IF NOT LESS, COPY N1 AND N2.                   4F10658
(DIM1 AND DIM2 = STZ , DIM3 = CPY).            4F10659
COPY CHECKSUM.                                 4F10660
COMPARE DRUM SYMBOL WITH NAME OF V.            4F10661
* GO TO DIAGNOSTIC - MACHINE ERROR.            4F10662
IF NOT EQUAL, THEN                             4F10663
CONTINUE                                       4F10664
PROCESS                                        4F10665
UNTIL                                          4F10666
TABLE                                          4F10667
IS EXHAUSTED.                                  4F10668
PASS OVER ENTRY                                4F10669
(DIM1 AND DIM2 = STZ, DIM3 = CPY).             4F10670
AND CHECKSUM, AND                              4F10671
REPEAT LOOP.                                   4F10672
RESTORE THE C(XR4), AND                        4F10673
* TAKE NOT FOUND EXIT.                         4F10674
COMPUTE A                                      4F10675
NEW                                            4F10676
LOGICAL CHECKSUM                               4F10677
FOR ENTRY, AND                                 4F10678
COMPARE WITH                                   4F10679
DRUM CHECKSUM.                                 4F10680
IF NOT EQUAL, THEN                             4F10681
REPEAT ATTEMPT,                                4F10682
UNLESS PROCESS                                 4F10683
* FAILED 5 TIMES IN READING DRUM.              4F10684
RESTORE THE C(XR4), AND                        4F10685
* TAKE FOUND EXIT TO MAIN ROUTINE.             4F10686
                                               4F10687
CONSTANT USED BY DIM.SR.                       4F10688
CONSTANT USED BY DIM.SR.                       4F10689
VARIABLE USED BY IO AND FL.                    4F10690
VARIABLE USED BY FL.                           4F10691
                                               4F10692
```

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                                                  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10693
                                                                                                                4F10694
                                                  DRTABS(,4)/ CALLS=RDRX,DIAG. CALLERS=C1200,SS000,ROYCNV,CMA, 4F10695
                                                  VRA(VRD).                                                     4F10696
                                                  DRTABS IS CALLED BY TSX ....IX,4 -WHERE .... IS THE NAME OF  4F10697
                                                  THE DRUM TABLE REFERRED TO. DRTABS MAKES ENTRIES IN THE DRUM 4F10698
                                                  TABLES, AND ALSO SEARCHES THE DRUM TABLES FOR INFORMATION.   4F10699
                                                  DIMALT= ENTRY POINT FOR DIMENSION TABLES.                     4F10700
     02071 -0 50000 0 00415 DIMALT CAL TXLOP                    PICK UP SWITCH CONTROL,                        4F10701
D    02072  1 00000 0 02074        TXI DRTABS,0                 AND GO SET SWITCH FOR DIM TABLES.              4F10702
                                        ALT= ENTRY POINT FOR ALL OTHER DRUM TABLES.                             4F10703
     02073  0 50000 0 00422 ALT    CLA TXHOP                    PICK UP SWITCH CONTROL,                        4F10704
     02074  0 63000 0 02135 DRTABS STP DIMSW                    SET SWITCH.                                    4F10705
     02075  0 50000 4 00000        CLA 0,4                      GET CALLER (TSX ....IX,4) IN AC.               4F10706
     02076 -0 63400 1 02535        SXD XR1,1                    SAVE THE C(XR1),                               4F10707
     02077 -0 63400 2 02173        SXD XR2,2                    SAVE THE C(XR2),                               4F10708
     02100 -0 63400 4 02215        SXD XR4,4                    SAVE THE C(XR4), AND                           4F10709
     02101 -0 60000 0 02357        STQ MQ                       SAVE THE C(MQR).                               4F10710
     02102  0 40000 0 01407        ADD L(1)                     PREPARE TO MOVE PARAMETERS                     4F10711
     02103  0 62100 0 02107        STA MOVE                     INTO WORKING STORAGE.                          4F10712
     02104  0 40200 0 01412        SUB L(4)                     PREPARE TO UPDATE                              4F10713
     02105  0 62100 0 02213        STA UPDATE                   PERMANENT PARAMETER.                           4F10714
     02106  0 53400 1 01413        LXA L(5),1                   MOVE 5 WORDS                                   4F10715
     02107 -0 50000 1 00000 MOVE   CAL **,1                     (....IX+1)                                     4F10716
     02110  0 60200 1 02365        SLW TEMP,1                   OF PARAMETERS                                  4F10717
     02111  2 00001 1 02107        TIX MOVE,1,1                 INTO WORKING STORAGE.                          4F10718
     02112  0 50200 0 02360        CLS NAR                      INITIALIZE                                     4F10719
     02113  0 62100 0 02221        STA TRY                      ALL                                            4F10720
     02114  0 40000 0 01407        ADD L(1)                     GENERAL                                        4F10721
     02115  0 62100 0 02200        STA ESUM1                    INSTRUCTIONS=                                  4F10722
     02116  0 62100 0 02202        STA ESUM2                    X                                              4F10723
     02117  0 77100 0 00021        ARS 17                       X                                              4F10724
     02120  0 40100 0 02526        ADM BIAS                     X                                              4F10725
     02121  0 62100 0 02530        STA JUMP1                    X                                              4F10726
     02122  0 62100 0 02555        STA JUMP2                    X                                              4F10727
     02123 -0 50000 0 02362        CAL FDA                      X                                              4F10728
     02124  0 62200 0 02235        STD COMPR                    X                                              4F10729
     02125  0 63000 0 02530        STP JUMP1                    X                                              4F10730
     02126  0 63000 0 02152        STP SW                       X                                              4F10731
     02127  0 63000 0 02210        STP RX4                      X                                              4F10732
     02130  0 50000 0 02533        CLA LBUF                     X                                              4F10733
     02131  0 62100 0 02222        STA BUFL                     X                                              4F10734
     02132  0 50000 0 02361        CLA TDA                      X                                              4F10735
     02133 -0 53400 2 02361        LXD TDA,2                    X                                              4F10736
     02134 -0 63400 2 02146        SXD BUFF+1,2                 X                                              4F10737
D    02135 -3 00000 0 02145 DIMSW  TXL BUFF,0                   IF DIM TABLE, SKIP SEARCH.                     4F10738
     02136 -3 00000 2 02150        TXL XERR01+1,2,0             SKIP IF TABLE IS EMPTY.                        4F10739
     02137 -0 53400 1 02360        LXD NAR,1                                                                   4F10740
     02140 -0 63400 2 02223        SXD NC,2                                                                    4F10741
     02141 -0 63400 2 02143        SXD ADD01,2                                                                 4F10742
     02142 -2 00001 1 02235 ADD02  TNX COMPR,1,1                COMPUTES (N*L).                                4F10743
     02143  1 00000 2 02142 ADD01  TXI ADD02,2,**               (N)                                            4F10744
     02144 -0 53400 2 02362 BUFFM1 LXD FDA,2                                                                   4F10745
     02145 -0 53400 1 02363 BUFF   LXD DBL,1                    L(J)                                           4F10746
```

```
      02146   2 00000 1 02150         TIX BUFF+3,1,**
D     02147   1 00000 0 02256 XERR01  TXI WHICH,0
      02150  -0 53400 1 02364         LXD DI,1
      02151   0 76600 1 00305         WDR 5,1
D     02152  -3 00000 0 02174 SW      TXL EBLK,0
      02153  -3 00000 2 02156         TXL ADD04,2,0
      02154   1 00001 2 02155         TXI ADD03,2,1
      02155  -2 00062 2 02163 ADD03   TNX ADD05,2,50
      02156   0 60000 0 02365 ADD04   STZ DUMP
      02157   0 50000 0 02361         CLA TDA
      02160   0 62100 0 02362         STA FDA
      02161   0 40000 0 01407         ADD L(1)
      02162   0 62100 0 02361         STA TDA
      02163  -0 50000 0 02365 ADD05   CAL DUMP
      02164   0 36100 0 01347         ACL G
      02165   0 60200 0 02365         SLW DUMP
      02166   0 46000 0 02362         LDA FDA
      02167   0 70000 0 02365         CPY DUMP
      02170   0 76600 1 00305         WDR 5,1
      02171   0 46000 0 02361         LDA TDA
      02172   0 70000 0 01347         CPY G
      02173   1 00000 0 02205 XR2     TXI NOWIN,0,**
      02174  -0 75400 0 00000 EBLK    PXD ,0
      02175  -0 53400 2 02360         LXD NAR,2
      02176   0 46000 0 02361         LDA TDA
      02177  -2 00001 2 02202         TNX ESUM2,2,1
      02200  -0 70000 2 00000 ESUM1   CAD **,2
      02201   2 00001 2 02200         TIX ESUM1,2,1
      02202  -0 70000 0 00000 ESUM2   CAD **
      02203   0 60200 0 02365         SLW DUMP
      02204   0 70000 0 02365         CPY DUMP
      02205  -0 50000 0 02360 NOWIN   CAL NAR
      02206   0 77100 0 00022         ARS 18
      02207   0 40000 0 01455         ADD DECR1
      02210  -3 00000 0 02212 RX4     TXL RX4+2,0,**
      02211   0 40200 0 01407         SUB L(1)
      02212   0 40100 0 02361         ADM TDA
      02213   0 60100 0 00000 UPDATE  STO **
      02214  -0 53400 2 02361         LXD TDA,2
      02215   1 00000 0 02247 XR4     TXI OUT,0,**
      02216  -0 53400 4 02223 NXBLK   LXD NC,4
      02217  -0 53400 2 02362         LXD FDA,2
      02220  -0 53400 1 02360 NEW     LXD NAR,1
      02221   0 50000 1 00000 TRY     CLA **,1
      02222   0 34000 2 00000 BUFL    CAS **,2
      02223   1 00000 0 02225 NC      TXI NC+2,0,**
      02224   1 77777 2 02242         TXI YEA,2,-1
      02225  -2 00001 4 02144         TNX BUFFM1,4,1
      02226  -0 63400 1 02227         SXD NC+4,1
      02227   2 00000 2 02220         TIX NEW,2,**
      02230  -0 63400 4 02223         SXD NC,4
      02231  -0 50000 0 02363         CAL DBL
      02232   0 40100 0 02362         ADM FDA
      02233   0 62100 0 02362         STA FDA
```

```
(N) TEST FOR TABLE OVERFLOW.                    4F10747
GO FIND OUT WHICH TABLE OVERFLOWED.             4F10748
                                                4F10749
                                                4F10750
ENTRY SUM=TXL, BLOCK SUM=TXH.                   4F10751
SKIP IF TABLE IS EMPTY.                         4F10752
                                                4F10753
SKIP IF BLOCK IS NOT YET FULL.                  4F10754
START NEW BLOCK CHECKSUM.                       4F10755
CHANGE CHECKSUM ADDRESS.                        4F10756
                                                4F10757
SET ENTRY ADDR = CHECKSUM ADDR +1.              4F10758
                                                4F10759
                                                4F10760
ADD NEW FLOCON TO                               4F10761
CHECKSUM FOR THIS BLOCK.                        4F10762
                                                4F10763
WRITE BLOCK CHECKSUM ON DRUM.                   4F10764
                                                4F10765
                                                4F10766
WRITE NEW FLOCON ON DRUM.                       4F10767
GO UPDATE FLOCON PARAMETER.                     4F10768
FOR ALL TABLES EXCEPT FLOCON=                   4F10769
(L)                                             4F10770
NEXT DRUM ENTRY ADDRESS.                        4F10771
IF L = 1,                                       4F10772
(ARG1+L-1) WRITE NEW                            4F10773
ENTRY ON DRUM.                                  4F10774
(ARG1+L-1)                                      4F10775
COMPUTE AND                                     4F10776
WRITE CHECKSUM FOR NEW ENTRY.                   4F10777
UPDATE PERMANENT                                4F10778
PARAMETERS FOR ENTRY                            4F10779
JUST ADDED TO TABLE.                            4F10780
IF TABLE WAS FLOCON,                            4F10781
READJUST.                                       4F10782
N=N+1,TDA=TDA+(L+1) OR (L).                     4F10783
(....IX-3)                                      4F10784
L(N)                                            4F10785
GET TAG AND EXIT.                               4F10786
                                                4F10787
L(K*L),K=K.                                     4F10788
L(L)                                            4F10789
(ARG1+L)                                        4F10790
(BUFR OR CTABL)                                 4F10791
NOT FOUND.                                      4F10792
K*L = K*L-1.                                    4F10793
N = N-1 OR ITEM NOT IN TABLE.                   4F10794
                                                4F10795
K = K-1.                                        4F10796
SAVE CURRENT VALUE OF N,                        4F10797
AND GET NEW BLOCK.                              4F10798
                                                4F10799
                                                4F10800
```

```
02234 -0 53400 2 02241          LXD NTL,2
02235  2 00000 2 02237 COMPR    TIX COMPR+2,2,**
02236 -0 63400 2 02362          SXD FDA,2
02237 -0 63400 2 02241          SXD NTL,2
02240  0 07400 4 02520          TSX RDRX,4
02241  1 00000 0 02216 NTL      TXI NXBLK,0,**
02242  2 00001 1 02221 YEA      TIX TRY,1,1
02243 -0 53400 2 02361          LXD TDA,2
02244 -0 63400 4 02245          SXD YEA+3,4
02245  2 00000 2 02247          TIX OUT,2,**
02246  0 53400 2 01406          LXA L(0),2
02247 -0 75400 2 00000 OUT      PXD ,2
02250  0 77100 0 00022          ARS 18
02251 -0 53400 2 02173          LXD XR2,2
02252 -0 53400 4 02215          LXD XR4,4
02253 -0 53400 1 02535          LXD XR1,1
02254  0 56000 0 02357          LDQ MQ
02255  0 02000 4 00001          TRA 1,4
02256 -0 53400 4 02215 WHICH    LXD XR4,4
02257  0 50000 4 00000          CLA 0,4
02260 -0 32000 0 01452          ANA MASK2
02261  0 40200 0 02274          SUB CONX
02262  0 53400 4 01417          LXA L(9),4
02263  0 40200 0 01413 COMPUT   SUB L(5)
02264  0 10000 0 02267          TZE WHICHX
02265  2 00001 4 02263          TIX COMPUT,4,1
02266  0 07400 4 03400          TSX DIAG,4
02267 -0 75400 4 00000 WHICHX   PXD ,4
02270  0 76000 0 00006          COM
02271  0 40000 0 01454          ADD 2E18
02272 -0 73400 4 00000          PDX ,4
D   02273  1 00000 0 03400          TXI DIAG,0

02274  0 00000 0 00412 CONX     PZE FXCNIX-5
                   02357 BUFR    BES 50
                   02357 MQ      BSS 1
                   02360 NAR     BSS 1
                   02361 TDA     BSS 1
                   02362 FDA     BSS 1
                   02363 DBL     BSS 1
                   02364 DI      BSS 1
                   02365 TEMP    BSS 0
                   02365 DUMP    BSS 1
                                  END OF PROGRAM DRTABS.
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                                 GETIFN,4/ CALLERS=C0100,C0200,C1000,C1100,C1600,C3200.
                                 GETIFN PLACES THE INTERNAL FORMULA NUMBER IN AC AND IN 1C.
02366 -0 53400 1 00030 GETIFN LXD EIFNO,1                PLACE THE INTERNAL FORMULA
02367 -0 75400 1 00000          PXD ,1                   NUMBER IN XR1, IN THE DECREMENT
02370  0 60100 0 01105          STO 1C                   OF THE AC, AND IN 1C. THEN
02371  0 02000 4 00001          TRA 1,4                * RETURN TO CALLER.
                                  END OF PROGRAM GETIFN.
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

```
                                                                                4F10801
                                                                                4F10802
                                   (K*L)                                        4F10803
                                   K*L = (N*L)MOD K*L IF N*L IS                 4F10804
                                   LESS THAN K*L, OTHERWISE K*L = K*L.          4F10805
                                 * GO READ NEXT BLOCK INTO BUFFER.              4F10806
                                   (N*L,N*L-K*L,N*L-2*K*L,...(N*L)MOD           4F10807
                                   K*L). TEST NEXT WORD OF ARG. L=L-1.          4F10808
                                   (N)                                          4F10809
                                                                                4F10810
                                   COMPUTE TAG.                                 4F10811
                                                                                4F10812
                                   EXIT WITH TAG IN THE AC.                     4F10813
                                   (TAG = NUMBER OF ENTRIES                     4F10814
                                   WHICH PRECEED THE ENTRY                      4F10815
                                   WHICH EQUALS THE ARGUMENT.                   4F10816
                                   RESTORE THE C(XR1,XR2,XR4),                  4F10817
                                   RESTORE THE C(MQR), AND                      4F10818
                                 * RETURN TO MAIN ROUTINE.                      4F10819
                                   GET ALPHA BAR, AND                           4F10820
                                   AND PICK UP ALPHA (TSX ...NIX,4).            4F10821
                                   BLANK ALL BUT ...NIX.                        4F10822
                                   (...NIX) - (ADDR OF FXCNIX-5).               4F10823
                                   SET XR4 FOR  9 TABLES.                       4F10824
                                   COMPUTE WHICH                                4F10825
                                   TABLE OVERFLOWED.                            4F10826
                                   IF TABLE IS NOT FOUND,                       4F10827
                                 * GO TO DIAGNOSTIC.                            4F10828
                                   OTHERWISE,                                   4F10829
                                   CONVERT 2S COMPLEMENT                        4F10830
                                   OF NUMBER,                                   4F10831
                                   PLACE IN XR4, AND                            4F10832
                                 * GO TO DIAGNOSTIC.                            4F10833
                                                                                4F10834
                                   CONSTANT USED BY DRTABS.                     4F10835
                                   DRUM TABLE BUFFER.                           4F10836
                                   WORKING STORAGE USED BY DRTABS.              4F10837
                                   WORKING STORAGE USED BY DRTABS.              4F10838
                                   WORKING STORAGE USED BY DRTABS.              4F10839
                                   WORKING STORAGE USED BY DRTABS.              4F10840
                                   WORKING STORAGE USED BY DRTABS.              4F10841
                                   INDEXING ADDRESS FOR ABOVE -DRTABS.          4F10842
                                   WORKING STORAGE USED BY DRTABS.              4F10843
                                                                                4F10844
                                                                                4F10845
                                                                                4F10846
                                                                                4F10847
                                                                                4F10848
                                                                                4F10849
                                                                                4F10850
                                                                                4F10851
                                 * RETURN TO CALLER.                            4F10852
                                                                                4F10853
                                                                                4F10854
```

```
                                                                                                4F10855
                                    JIF(GIF),4/ CALLERS=RDC,EFT,LPR,SPC,CMA,EMK,INPUT(OUTPUT),   4F10856
                                    VRA(VRD),C3200.                                             4F10857
                                    JIF = ENTRY POINT USED BY RDC,LPR,SPC,CMA,EMK,VRA(VRD),C3200.4F10858
02372 -0 50000 0 00030 JIF     CAL EIFNO                    INCREASE THE                      4F10859
02373  0 40000 0 01454         ADD D1                       INTERNAL FORMULA NUMBER           4F10860
02374  0 62200 0 00030         STD EIFNO                    BY 1.                             4F10861
                                    GIF = ENTRY POINT USED BY EFT,INPUT(OUTPUT).                4F10862
02375 -0 50000 0 00030 GIF     CAL EIFNO                    PICKUP IFN,                       4F10863
02376 -0 32000 0 01507         ANA 1BAR                     CLEAR SL, AND                     4F10864
02377  0 60200 0 01367 L(SL)   SLW SL                       PLACE IFN IN THE DECREMENTS       4F10865
02400  0 62200 0 01371 L(TL)   STD TL                       OF SL AND TL.                     4F10866
02401  0 02000 4 00001         TRA 1,4                    * EXIT TO CALLER.                   4F10867
                                     END OF PROGRAM JIF(GIF).                                   4F10868
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10869
                                                                                                4F10870
                                    MTR000/ MONITOR ROUTINE FOR CALLING STATES FROM DRUM.       4F10871
                                    STATEA= ENTRY POINT FOR STATE A.                            4F10872
02402  0 53400 4 01412 STATEA LXA L(4),4                    SET C(XR4) = 4, THEN              4F10873
D 02403  1 00000 0 02411         TXI MTR1,0                   GO GET PARAMETERS.                4F10874
                                    STATEB= ENTRY POINT FOR STATE B.                            4F10875
02404  0 53400 4 01410 STATEB LXA L(2),4                    SET C(XR4) = 2, THEN              4F10876
D 02405  1 00000 0 02411         TXI MTR1,0                   GO GET PARAMETERS.                4F10877
                                    STATEC= ENTRY POINT FOR STATE C.                            4F10878
02406  0 53400 4 01407 STATEC LXA L(1),4                    SET C(XR4) = 1, THEN              4F10879
02407  1 00000 0 02411 MTRCSL TXI MTR1,0,**                 GO GET PARAMETERS.                4F10880
                                    STATED= ENTRY POINT FOR STATE D.                            4F10881
02410  0 53400 4 01411 STATED LXA L(3),4                    SET C(XR4) = 3, THEN              4F10882
02411  0 50000 4 02437 MTR1    CLA ZETA+4,4                 OBTAIN THE NUMBER OF WORDS IN THE 4F10883
02412  0 62200 0 02407         STD MTRCSL                   CURRENT STATE, AND SAVE.          4F10884
02413  0 77100 0 00022         ARS 18                       ADD THE NUMBER OF WORDS IN THE    4F10885
02414  0 40000 0 02430         ADD MTR3                     CURRENT STATE TO THE MEMORY ORIGIN 4F10886
02415  0 62100 0 02425         STA MTR2                     TO SET ADDRESS OF COPY LOOP.      4F10887
02416  0 53400 1 01413         LXA DRMERC,1                 SET FOR FIVE ATTEMPTS.            4F10888
02417  0 76200 4 00305 MTR15   RDR 5,4                      READ SELECT CURRENT LOGICAL DRUM. 4F10889
02420 -0 53400 2 02407         LXD MTRCSL,2                 LENGTH OF CURRENT STATE TO XR2.   4F10890
02421  0 46000 4 02437         LDA ZETA+4,4                 THEN COPY                         4F10891
02422 -0 75400 0 00000         PXD ,0                       CURRENT STATE                     4F10892
02423 -0 70000 0 01103         CAD DRCKSM                   FROM DRUM                         4F10893
02424  0 76000 0 00006         COM                          INTO MEMORY                       4F10894
02425 -0 70000 2 00000 MTR2    CAD **,2                     WHILE COMPUTING                   4F10895
02426  2 00001 2 02425         TIX MTR2,2,1                 LOGICAL CHECKSUM.                 4F10896
02427  0 76000 0 00006         COM                          IF THIS EQUALS DRUM CHECKSUM,     4F10897
02430  0 10000 0 03440 MTR3    TZE MEMORG                 * THEN ENTER CURRENT STATE.         4F10898
02431  2 00001 1 02417         TIX MTR15,1,1                CHECKSUM FAILED, TRY UP TO 5 TIMES.4F10899
02432  1 75346 4 03400 MTRERR TXI DIAG,4,-MTRERR          * GO TO DIAGNOSTIC AFTER 5 FAILURES. 4F10900
                                                                                                4F10901
02433  0 02663 0 00000 ZETA    PZE DEL(A),,ENDADR-ORGA                                          4F10902
02434  0 01607 0 01322         PZE DEL(D),,ENDDDR-ORGD                                          4F10903
02435  0 01302 0 02210         PZE DEL(B),,ENDBDR-ORGB                                          4F10904
02436  0 01330 0 02373         PZE DEL(C),,ENDCDR-ORGC                                          4F10905
                                     END OF PROGRAM MTR000.                                     4F10906
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10907
                                                                                                4F10908
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                                    RA000,4/ CALLERS=LPR,ARITH.                                  4F10909
                                    RA000 COMPUTES RELATIVE ADDRESS.                             4F10910
02437 -0 63400 4 01100 RA000   SXD RAXR4,4                  SAVE THE C(XR4) FOR RETURN.         4F10911
02440  0 60000 0 01147         STZ EPS                      CLEAR EPSILON (WORKING STORAGE).    4F10912
02441  0 50000 0 01125         CLA DIMSAV                   EXAMINE THE                         4F10913
02442  0 73400 4 01132  ED2    PAX E+4,4                    DIMENSION COUNT, AND                4F10914
02443 -3 00002 4 02445         TXL ED1,4,2                  IF 3 DIMENSION,                     4F10915
02444  0 40000 0 01407         ADD L(1)                     INCREASE IT 1.                      4F10916
02445  0 40100 0 02442 ED1     ADM ED2                      THEN SET                            4F10917
02446  0 62100 0 02447         STA ED3                      ED3 ADDRESS TO                      4F10918
02447  0 50000 4 00000  ED3    CLA **,4                     EXAMINE SUCCESSIVE                  4F10919
02450  0 56000 0 01454         LDQ D1                       SUBSCRIPT                           4F10920
02451  0 10000 0 02454         TZE ED4                      VARIABLES, AND                      4F10921
02452 -0 60000 0 01147         STQ EPS                      ACCORDINGLY SET                     4F10922
02453  0 56000 0 01406         LDQ L(0)                     EPSILON AND                         4F10923
02454 -0 60000 4 01147  ED4    STQ EPS,4                    EPSILON SUB I                       4F10924
02455  2 00001 4 02447         TIX ED3,4,1                  TO 1 OR TO 0. WHEN DONE,            4F10925
02456  0 50000 0 01454         CLA D1                       IF 1 DIMENSION, PICKUP DECREMENT 1,4F10926
02457  0 53400 4 01125         LXA DIMSAV,4                 AND GO SUBTRACT ADDEND 1.           4F10927
02460 -3 00001 4 02511         TXL 1D1,4,1                  IF 2 OR 3 DIMENSION, THEN           4F10928
02461  0 56000 0 01141         LDQ E+11                     PICKUP ADDENDS 1 AND 2,             4F10929
02462  0 60000 0 01141         STZ E+11                     CLEAR E+11, AND                     4F10930
02463 -0 62000 0 01141         SLQ E+11                     RESTORE ADDEND 1 TO E+11.           4F10931
02464 -0 76300 0 00022         LGL 18                       ADJUST AND PLACE                    4F10932
02465 -0 60000 0 01361         STQ N2                       ADDEND 2 IN N2.                     4F10933
02466  0 56000 0 01134         LDQ E+6                      AND, IF 2 DIMENSION                 4F10934
02467  0 50000 0 01146         CLA EPS-1                    PICKUP EPSILON SUB 1,               4F10935
02470 -3 00002 4 02503         TXL 2D1,4,2                  AND GO SUBTRACT ADDEND 2.           4F10936
02471  0 40200 0 01142         SUB E+12                     IF 3 DIMENSION, SET GTAG            4F10937
02472  0 60100 0 01351         STO GTAG                     TO EPSILON SUB 1 - ADDEND 3.        4F10938
02473  0 56000 0 01136         LDQ E+8                      PICKUP DIMENSIONS 1 AND 2,          4F10939
02474  0 60000 0 01136         STZ E+8                      CLEAR E+8, AND                      4F10940
02475 -0 62000 0 01136         SLQ E+8                      RESTORE DIMENSION 1 TO E+8.         4F10941
02476 -0 76300 0 00022         LGL 18                       ADJUST, AND MULTIPLY                4F10942
02477  0 20000 0 01351         MPY GTAG                     DIMENSION 2 TIMES GTAG.             4F10943
02500  0 76700 0 00021         ALS 17                       THEN ADD                            4F10944
02501  0 40000 0 01145         ADD EPS-2                    EPSILON SUB 2                       4F10945
02502  0 56000 0 01136         LDQ E+8                      TO THE PRODUCT, AND                 4F10946
02503  0 40200 0 01361 2D1     SUB N2                       SUBTRACT ADDEND 2.                  4F10947
02504  0 60100 0 01351         STO GTAG                     MULTIPLY                            4F10948
02505  0 20000 0 01351         MPY GTAG                     THE RESULT                          4F10949
02506  0 76700 0 00021         ALS 17                       TIMES                               4F10950
02507  0 40000 4 01147         ADD EPS,4                    DIMENSION 1, AND ADD IN EPSILON     4F10951
02510  0 40000 0 01147         ADD EPS                      SUB I AND EPSILON.                  4F10952
02511  0 40200 0 01141  1D1    SUB E+11                     SUBTRACT ADDEND 1,                  4F10953
02512  0 60100 0 01351         STO GTAG                     AND PLACE THE RESULT                4F10954
02513 -0 50000 0 01126         CAL E                        IN THE DECREMENT OF GTAG,           4F10955
02514  0 77100 0 00030         ARS 24                       WITH I-TAUTAG                       4F10956
02515  0 62100 0 01351         STA GTAG                     IN THE ADDRESS.                     4F10957
02516 -0 53400 4 01100         LXD RAXR4,4                  RESTORE THE C(XR4), AND             4F10958
02517  0 02000 4 00001         TRA 1,4                    * EXIT TO CALLER.                     4F10959
                                    END OF PROGRAM RA000.                                        4F10960
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F10961
                                                                                                 4F10962
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                                        RDRX,4/ CALLS=DIAG. CALLER=DRTABS.                                  4F10963
                                        RDRX READS A BLOCK OF DRUM ENTRIES INTO 50 WORD BUFR.               4F10964
02520  0 53400 1 01413 RDRX    LXA DRMERC,1                  SET FOR 5 ATTEMPTS TO READ DRUM.          4F10965
02521 -0 53400 2 02364 REP     LXD DI,2                      SET XR2 = (5-DRUM NUMBER).                4F10966
02522  3 00000 2 02524         TXH BIAS-2,2,0                IF NOT GREATER THAN ZERO,                 4F10967
02523  0 07400 4 03400         TSX DIAG,4                  * GO TO DIAGNOSTIC.                         4F10968
02524  0 76200 2 00305         RDR 5,2                       SELECT CURRENT DRUM.                      4F10969
02525 -0 53400 2 02362         LXD FDA,2                     SET XR2 = NO. OF WORDS TO COPY.           4F10970
02526 -0 75400 0 02554 BIAS    PXD ETSUM,0                   CLEAR THE AC.                             4F10971
02527  0 46000 0 02362         LDA FDA                       DRUM ORIGIN OF CURRENT BLOCK.             4F10972
TD 02530 -3 00000 0 00000 JUMP1  TXL **                        (ETSUM-2*L) TXL=ENTRY,TXH=BLOCK.          4F10973
02531 -0 70000 0 02365         CAD DUMP                      READ                                      4F10974
02532  0 76000 0 00006         COM                           FLOCON BLOCK                              4F10975
02533 -0 70000 2 02357 LBUF    CAD BUFR,2                    AND COMPUTE                               4F10976
02534  2 00001 2 02533         TIX LBUF,2,1                  LOGICAL CHECKSUM.                         4F10977
02535  1 00000 0 02562 XR1     TXI PROVE,0,**                GO TEST CHECKSUM.                         4F10978
02536  0 70000 2 02357         CPY BUFR,2                    COPY LOOP                                 4F10979
02537 -2 00001 2 02564         TNX ERR,2,1                   FOR ALL                                   4F10980
02540  0 70000 2 02357         CPY BUFR,2                    TABLES                                    4F10981
02541 -2 00001 2 02564         TNX ERR,2,1                   EXCEPT                                    4F10982
02542  0 70000 2 02357         CPY BUFR,2                    FLOCON=                                   4F10983
02543 -2 00001 2 02564         TNX ERR,2,1                   X                                         4F10984
02544  0 70000 2 02357         CPY BUFR,2                    X                                         4F10985
02545 -2 00001 2 02564         TNX ERR,2,1                   X                                         4F10986
02546  0 70000 2 02357         CPY BUFR,2                    X                                         4F10987
02547 -2 00001 2 02564         TNX ERR,2,1                   X                                         4F10988
02550  0 70000 2 02357         CPY BUFR,2                    X                                         4F10989
02551 -2 00001 2 02564         TNX ERR,2,1                   X                                         4F10990
02552  0 70000 2 02357         CPY BUFR,2                    X                                         4F10991
02553  0 76100 0 00000         NOP                           X                                         4F10992
02554 -0 70000 0 02365 ETSUM   CAD DUMP                      SUM CHECKSUMS.                            4F10993
02555  2 00001 2 00000 JUMP2   TIX **,2,1                    (ETSUM-2*L) TEST END OF BLOCK.            4F10994
02556 -0 53400 2 02362 RDRXCR  LXD FDA,2                     COMPUTE                                   4F10995
02557  0 76000 0 00006         COM                           NEW                                       4F10996
02560  0 36100 2 02357         ACL BUFR,2                    LOGICAL                                   4F10997
02561  2 00001 2 02560         TIX RDRXCR+2,2,1              CHECKSUM, AND                             4F10998
02562  0 76000 0 00006 PROVE   COM                           IF CHECKSUMS COMPARE                      4F10999
02563  0 10000 4 00001         TZE 1,4                     * RETURN TO MAIN ROUTINE.                   4F11000
02564  2 00001 1 02521 ERR     TIX REP,1,1                   OTHERWISE, REPEAT UP TO 5 TIMES.          4F11001
02565  0 07400 4 03400         TSX DIAG,4                  * FAILED 5 TIMES IN READING DRUM.           4F11002
                                         END OF PROGRAM RDRX.                                             4F11003
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11004
                                                                                                          4F11005
                                        SR6DC1,1/ CALLS=DIAG. CALLERS=CA000,SS000.                          4F11006
                                        SR6DC1 CONVERTS UP TO 6 BCD DIGITS TO THEIR BINARY EQUIV.           4F11007
02566 -0 63400 2 02574 SR6DC1  SXD SR6XR2,2                  SAVE THE C(XR2), AND                      4F11008
02567  0 53400 2 01414         LXA L(6),2                    SET TO COUNT 6 CHARACTERS.                4F11009
02570  0 60000 0 01101         STZ SR6WRK                    INITIALIZE OUTPUT CELL TO 0.              4F11010
02571 -0 75400 0 00000 SR6DC2  PXD ,0                        OBTAIN NEXT CHARACTER                     4F11011
02572 -0 76300 0 00006         LGL 6                         IN AC AND                                 4F11012
02573  0 34000 0 01430         CAS ABLANK                    TEST FOR BLANK.                           4F11013
02574  1 00000 0 02576 SR6XR2  TXI SR6DC3,0,**               IF NOT BLANK,                             4F11014
02575  1 77777 0 02610 ENDWRD  TXI SR6DC4,0,-1               (DECR= END OF PROBLEM INDICATOR)          4F11015
02576  0 34000 0 01417 SR6DC3  CAS L(9)                      TEST FOR NUMERIC.                         4F11016
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02577   0 07400 4 03400          TSX DIAG,4                 * IF NON-NUMERIC - GO TO DIAGNOSTIC. 4F11017
02600   0 76100 0 00000   NOP    NOP                          IF NUMERIC,                          4F11018
02601   0 60100 0 01102          STO SR6WRK+1                 SAVE DIGIT, AND                      4F11019
02602   0 50000 0 01101          CLA SR6WRK                   MULTIPLY PREVIOUS PARTIAL            4F11020
02603   0 76700 0 00002          ALS 2                        RESULT BY 10,                        4F11021
02604   0 40000 0 01101          ADD SR6WRK                   AND ADD IN                           4F11022
02605   0 76700 0 00001          ALS 1                        CURRENT DIGIT, SAVING                4F11023
02606   0 40000 0 01102          ADD SR6WRK+1                 NEW PARTIAL RESULT.                  4F11024
02607   0 60100 0 01101          STO SR6WRK                   THEN ADJUST COUNT, AND               4F11025
02610   2 00001 2 02571 SR6DC4   TIX SR6DC2,2,1               WHEN 6 CHARS HAVE BEEN TREATED,      4F11026
02611   0 50000 0 01101          CLA SR6WRK                   LEAVE OUTPUT IN AC,                  4F11027
02612  -0 53400 2 02574          LXD SR6XR2,2                 RESTORE THE C(XR2), AND              4F11028
02613   0 02000 1 00001   TRA    TRA 1,1                    * EXIT TO MAIN ROUTINE.                4F11029
                                  END OF PROGRAM SR6DC1.                                          4F11030
                                  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11031
                                                                                                  4F11032
                                  SS000,4/ CALLS=C0190,DIAG,SR6DC1,DIM.SR,DRTABS,TET00,TESTFX.    4F11033
                                  CALLERS=ARITH,LPR,C0200.                                        4F11034
                                  SS000 SCANS SUBSCRIPT COMBINATIONS AND MAKES TABLE ENTRIES.     4F11035
02614  -0 63400 2 02731 SS000    SXD SXR2,2                   SAVE C(XR2),                         4F11036
02615  -0 63400 1 02730          SXD SXR1,1                   SAVE C(XR1),                         4F11037
02616  -0 63400 4 02732          SXD SXR4,4                   SAVE C(XR4), AND                     4F11038
02617   0 60000 0 01100          STZ DIMCTR                   SET DIMCTR = 0.                      4F11039
02620   0 53400 4 01414          LXA L(6),4                   INITIALIZE                           4F11040
02621  -0 63400 4 02726          SXD SBS2,4                   FOR EACH SUBSCRIPT MEMBER.           4F11041
02622  -0 50000 0 00422          CAL TXHOP                    PICK UP TXH OP, AND                  4F11042
02623   0 63000 0 02776          STP SBC6                     SET OP                               4F11043
02624   0 63000 0 02777          STP SBC8                     SWITCHES.                            4F11044
02625  -0 50000 0 00415          CAL TXLOP                    PICK UP TXL OP, AND                  4F11045
02626   0 63000 0 03014          STP SBC4                     SET OP SWITCH.                       4F11046
02627   0 53400 3 01414 SS001    LXA L(6),3                   SET FOR 6 CHARACTERS OF MULTIPLIER.  4F11047
02630   0 60000 0 01370          STZ SYMBOL                   CLEAR WORKING STORAGE.               4F11048
02631   0 07400 4 01707          TSX C0190,4                * GET FIRST NON BLANK CHAR IN THE AC.  4F11049
02632   0 34000 0 01417          CAS L(9)                     COMPARE IT WITH 9.                   4F11050
D  02633   1 00000 0 02704          TXI SS0045,0               RETURN TO EXPLICIT CODING.           4F11051
02634   0 76100 0 00000          NOP                          IF NUMERIC,                          4F11052
02635   0 60100 0 01331          STO FIRSTC                   SAVE RIGHT-ADJUSTED DIGIT, AND       4F11053
02636   0 76700 2 00044 SS0012   ALS 36,2                     LEFT-ADJUST DIGIT TO                 4F11054
02637  -0 60200 0 01370          ORS SYMBOL                   BUILD SYMBOL.                        4F11055
02640   1 00006 2 02641          TXI SS0013,2,6               UPDATE SHIFT DECREMENT, AND          4F11056
02641   1 77777 1 02642 SS0013   TXI SS0014,1,-1              UPDATE COUNT OF CHARS COLLECTED.     4F11057
02642   0 07400 4 01707 SS0014   TSX C0190,4                * GET NEXT NB CHARACTER IN THE AC.     4F11058
02643   0 53400 4 02652          LXA CTESTX,4                 SET XR4 = NO. OF PUNCTUATION MARKS.  4F11059
02644   0 34000 4 01406 SS0015   CAS CTEST,4                  TEST THIS CHARACTER AGAINST          4F11060
D  02645   1 00000 0 02647          TXI SS0016,0               ALL PUNCTUATION.                     4F11061
02646   0 02000 4 02733          TRA SUBTR,4                  IF EQUALITY IS FOUND, TRANSFER.      4F11062
02647   2 00001 4 02644 SS0016   TIX SS0015,4,1               IF NOT FOUND TO BE PUNCTUATION,      4F11063
02650   0 34000 0 01417          CAS L(9)                     TEST FOR NUMERIC.                    4F11064
D  02651   1 00000 0 02655          TXI SS0017,0               AND IF                               4F11065
02652   0 76100 0 00012 CTESTX   NOP CTEST-ENDMK              FOUND TO BE NUMERIC,                 4F11066
02653   3 00000 1 02636          TXH SS0012,1,0               CONTINUE BUILDING SYMBOL. BUT IF     4F11067
D  02654   1 00000 0 02720          TXI STOP49,0               SEVENTH CHAR, GO TO DIAGNOSTIC.      4F11068
02655   0 07400 1 03242 SS0017   TSX TESTFX+1,1             * GO TEST FOR FIXED POINT VARIABLE.    4F11069
02656   0 07400 4 03400          TSX DIAG,4                 * NOT FIXED POINT --GO TO DIAGNOSTIC. 4F11070
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02657 -0 76300 0 00036         LGL 30                    RESTORE FIXED POINT VARIABLE        4F11071
02660  0 60200 0 01365         SLW RESIDU                TO RESIDU, AND                      4F11072
02661 -0 53400 4 01724         LXD CHCTR,4               RESET CHARACTER COUNTER             4F11073
02662  1 00001 4 02663         TXI SS0018,4,1            TO BEGIN PROCESSING                 4F11074
02663 -0 63400 4 01724 SS0018  SXD CHCTR,4               SUBSCRIPT MULTIPLIER.               4F11075
02664  0 50200 0 02776  SBX    CLS SBC6                  TEST FOR                            4F11076
02665 -0 12000 0 02667         TMI SBX1                  PREVIOUS MULTIPLIER.                4F11077
02666  0 07400 4 03400         TSX DIAG,4              * DOUBLE MULTIPLIER FOR SUBSCRIPT.    4F11078
02667  0 60100 0 02776  SBX1   STO SBC6                 RESET MULTIPLIER SWITCH.            4F11079
02670  0 50000 0 01331         CLA FIRSTC                TEST                                4F11080
02671  0 40200 0 01373         SUB L(10)                 MULTIPLIER                          4F11081
02672 -0 12000 0 02674         TMI SBX2                  FOR CONSTANT.                       4F11082
02673  0 07400 4 03400         TSX DIAG,4              * SUBS-MULTIPLIER NOT A CONSTANT.     4F11083
02674 -0 50000 0 01370 SBX2    CAL SYMBOL                ADJUST MULTIPLIER                   4F11084
02675  0 77100 2 00052         ARS 42,2                  TO LOW ORDER POSITION.              4F11085
02676 -0 53400 4 02726         LXD SBS2,4                GET STORING TAG,                    4F11086
02677  0 60200 4 01137         SLW E+9,4                 AND STORE MULTIPLIER.               4F11087
02700  0 60000 4 01145         STZ E+15,4                SET ADDEND = 0.                     4F11088
02701  0 53400 3 01414 SS003   LXA L(6),3                SET FOR 6 CHARS OF VARIABLE/ADDEND. 4F11089
02702  0 60000 0 01370         STZ SYMBOL                CLEAR WORKING STORAGE.              4F11090
02703  0 07400 4 01707 SS004   TSX C0190,4             * GO GET NEXT NB CHARACTER IN THE AC. 4F11091
02704  0 53400 4 02652 SS0045  LXA CTESTX,4              COMPARE CHARACTER                   4F11092
02705  0 34000 4 01406 SS005   CAS CTEST,4               TO ALL                              4F11093
D      02706  1 00000 0 02710         TXI SS006,0       PUNCTUATION.                        4F11094
02707  0 02000 4 02733         TRA SUBTR,4               IF EQUALITY IS FOUND, TRANSFER.     4F11095
02710  2 00001 4 02705 SS006   TIX SS005,4,1             IF NOT FOUND TO BE PUNCTUATION,     4F11096
02711 -3 00005 1 02713         TXL SS008,1,5             IF 1ST CHARACTER OF VARIABLE OR     4F11097
02712  0 60100 0 01331         STO FIRSTC                ADDEND, SAVE FOR LATER TESTS.       4F11098
02713  0 76700 2 00044 SS008   ALS 36,2                  POSITION EACH CHARACTER. BUT        4F11099
02714 -3 00000 1 02720 SS009   TXL STOP49,1,0          * ON 7TH CHARACTER, GO TO STOP.       4F11100
02715 -0 60200 0 01370         ORS SYMBOL                BUILD SYMBOL.                       4F11101
02716  1 00006 2 02717         TXI SS007,2,6             UPDATE EFFECTIVE ADDRESS OF SHIFT.  4F11102
02717  1 77777 1 02703 SS007   TXI SS004,1,-1            UPDATE FOR ANOTHER CHAR COLLECTED.  4F11103
02720  0 07400 4 03400 STOP49  TSX DIAG,4              * GO TO DIAGNOSTIC ON 7TH CHARACTER.  4F11104
                               SUBTR/ CONTROL TRANSFERS FOR SUBSCRIPT SCAN=                 4F11105
D      02721  1 00000 0 02722         TXI ISC,0         EMK (ILLEGAL IN LIST SUBSCRIPT).    4F11106
02722  0 07400 4 03400  ISC    TSX DIAG,4              * (   (ILLEGAL IN LIST SUBSCRIPT).    4F11107
D      02723  1 00000 0 02772         TXI SBC,0         ,                                   4F11108
D      02724  1 00000 0 02770         TXI SBR,0         )                                   4F11109
D      02725  1 00000 0 02722         TXI ISC,0         =   (ILLEGAL IN LIST SUBSCRIPT).    4F11110
02726  1 00000 0 02733 SBS2    TXI SBM,0,**              - ,,SUBSCRIPT ELEMENT COUNTER.      4F11111
D      02727  1 00000 0 02722         TXI ISC,0         /   (ILLEGAL IN LIST SUBSCRIPT).    4F11112
02730  1 00000 0 02722 SXR1    TXI ISC,0,**              .   (ILLEGAL IN LIST SUBSCRIPT).    4F11113
02731  1 00000 0 02734 SXR2    TXI SBP,0,**              +                                   4F11114
02732  1 00000 0 02664 SXR4    TXI SBX,0,**              *                                   4F11115
                       02733 SUBTR  BSS 0               INDEXING ADDRESS FOR ABOVE LIST.    4F11116
02733 -0 76000 0 00003  SBM    SSM                       MINUS ADDEND.                       4F11117
02734  0 76000 0 00000  SBP    CLM                       PLUS ADDEND.                        4F11118
02735 -0 53400 4 02726         LXD SBS2,4                GET STORING TAG, AND                4F11119
02736  0 60100 4 01145         STO E+15,4                STORE SIGN OF ADDEND.               4F11120
02737  0 50200 0 02777         CLS SBC8                  TEST SWITCH                         4F11121
02740 -0 12000 0 02742         TMI SBP1                  FOR PREVIOUS ADDEND.                4F11122
02741  0 07400 4 03400         TSX DIAG,4              * DOUBLE ADDEND FOR SUBSCRIPT.        4F11123
02742  0 60100 0 02777  SBP1   STO SBC8                 RESET ADDEND SWITCH.                4F11124
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02743  0 07400 1 03241          TSX TESTFX,1          * GO TO TEST FOR FIXED POINT.          4F11125
02744  0 07400 4 03400          TSX DIAG,4            * NOT FIXED POINT --GO TO DIAGNOSTIC.4F11126
02745 -0 53400 4 02726          LXD SBS2,4              GET STORING TAG, AND                 4F11127
02746  0 50200 0 02776          CLS SBC6                TEST SWITCH                          4F11128
02747  0 12000 0 02754          TPL SBP2                FOR PREVIOUS MULTIPLIER.             4F11129
02750  0 50000 0 01407          CLA L(1)                IF NONE,                             4F11130
02751  0 60100 4 01137          STO E+9,4               SET MULTIPLIER                       4F11131
D 02752  1 00000 0 02755        TXI SBP4,0              TO 1, AND CONTINUE.                  4F11132
02753  0 50200 0 02776  SBC1   CLS SBC6                RESET MULTIPLIER                     4F11133
02754  0 60100 0 02776 SBP2    STO SBC6                OP SWITCH.                           4F11134
02755 -0 50000 0 01370 SBP4    CAL SYMBOL              IF VARIABLE SUBSCRIPT,               4F11135
02756  3 00044 2 02762          TXH SBP41,2,36          ADD A BLANK                          4F11136
02757 -0 50000 0 01430          CAL BLANK               IF LESS                              4F11137
02760  0 76700 2 00044          ALS 36,2                THAN 6                               4F11138
02761 -0 50100 0 01370          ORA SYMBOL              CHARACTERS, AND                      4F11139
02762  0 60200 4 01140  SBP41  SLW E+10,4              PLACE IN E-REGION.                   4F11140
02763  0 07400 1 03241          TSX TESTFX,1          * GO TO TEST FOR FIXED POINT.          4F11141
02764  0 07400 4 03400          TSX DIAG,4            * NOT FIXED POINT --GO TO DIAGNOSTIC.4F11142
02765  0 50000 0 02777          CLA SBC8                IF THERE IS AN ADDEND,               4F11143
02766 -0 12000 0 02701          TMI SS003               GO COLLECT, OTHERWISE                4F11144
D 02767  1 00000 0 03012        TXI SBC7,0              GO UPDATE STORING TAG.               4F11145
02770  0 50200 0 03014 SBR     CLS SBC4                SET SWITCH                           4F11146
02771  0 60100 0 03014          STO SBC4                FOR CLOSING PARENTHESIS.             4F11147
02772 -0 50000 0 01100 SBC     CAL DIMCTR              UPDATE                               4F11148
02773  0 40000 0 01407          ADD L(1)                DIMENSION COUNTER                    4F11149
02774  0 62100 0 01100          STA DIMCTR              BY 1.                                4F11150
02775 -0 53400 4 02726          LXD SBS2,4              GET STORING TAG.                     4F11151
D 02776  3 00000 0 02753 SBC6   TXH SBC1,0              SWITCH-IF NO MULTIPLIER, AND         4F11152
D 02777  3 00000 0 03016 SBC8   TXH SBC2,0              SWITCH-IF NO ADDEND, THEN            4F11153
03000  0 50000 0 01407          CLA L(1)                SET                                  4F11154
03001  0 60100 4 01137          STO E+9,4               MULTIPLIER = 1.                      4F11155
03002  0 60000 4 01145          STZ E+15,4              SET ADDEND = 0.                      4F11156
03003  0 50000 0 01331          CLA FIRSTC              TEST FOR                             4F11157
03004  0 40200 0 01373          SUB L(10)               CONSTANT OR VARIABLE.                4F11158
03005  0 12000 0 02755          TPL SBP4                IF CONSTANT, THEN                    4F11159
03006  0 60000 4 01140          STZ E+10,4              SET VARIABLE = 0.                    4F11160
03007 -0 50000 0 01370 SBC9    CAL SYMBOL              ADJUST                               4F11161
03010  0 77100 2 00052          ARS 42,2                CONSTANT                             4F11162
03011 -0 60200 4 01145          ORS E+15,4              TO LOW ORDER POSITION.               4F11163
03012 -2 00002 4 03024 SBC7    TNX SBC3,4,2            UPDATE STORING TAG                   4F11164
03013 -0 63400 4 02726          SXD SBS2,4              BY -2, AND SAVE.                     4F11165
D 03014 -3 00000 0 02627 SBC4   TXL SS001,0             SWITCH-REPEAT FOR NEXT SUB-COMB.     4F11166
D 03015  1 00000 0 03030        TXI SA000,0             GO MAKE TABLE ENTRIES AND GET TAG.   4F11167
03016  0 50200 0 02777  SBC2   CLS SBC8                RESET ADDEND                         4F11168
03017  0 60100 0 02777          STO SBC8                OP SWITCH.                           4F11169
03020  0 50200 0 01373          CLS L(10)               TEST                                 4F11170
03021  0 40000 0 01331          ADD FIRSTC              ADDEND                               4F11171
03022 -0 12000 0 03007          TMI SBC9                FOR CONSTANT.                        4F11172
03023  0 07400 4 03400          TSX DIAG,4            * SUBSCRIPT ADDEND NOT A CONSTANT.     4F11173
03024  0 50200 0 03014 SBC3    CLS SBC4                AFTER SCANNING 3 SUBSCRIPTS,         4F11174
03025 -0 12000 0 03030          TMI SA000               GO MAKE TABLE ENTRIES AND GET TAG.   4F11175
03026  0 07400 4 03400          TSX DIAG,4            * GO TO DIAG - NO ) AFTER 3RD SUBS.    4F11176
                                    CSA000= ENTRY POINT USED BY C0200 (GO TO ROUTINE).       4F11177
03027 -0 63400 4 02732 CSA000  SXD SXR4,4              SAVE C(XR4) FOR RETURN TO C0200.     4F11178
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03030  0 50000 0 01100 SA000  CLA DIMCTR          SAVE                                4F11179
03031  0 60100 0 01125        STO DIMSAV          THE CONTENTS OF DIMCTR.             4F11180
03032  0 76700 0 00041        ALS 33              POSITION AND                        4F11181
03033  0 60100 0 01126        STO E               STORE I TAG.                        4F11182
03034  0 50000 0 01141        CLA E+11            MOVE SUBSCRIPT ADDENDS              4F11183
03035  0 60100 0 01142        STO E+12            INTO POSITION                       4F11184
03036  0 50000 0 01137        CLA E+9             FOR FOLLOWING                       4F11185
03037  0 60100 0 01141        STO E+11            PROGRAM.                            4F11186
03040  0 50000 0 01410        CLA L(2)            EXAMINE DIMCTR                      4F11187
03041  0 34000 0 01100        CAS DIMCTR          TO DETERMINE                        4F11188
D 03042  1 00000 0 03174        TXI 1D0000,0        WHETHER DIMENSION OF                4F11189
D 03043  1 00000 0 03131        TXI 2D0000,0        VARIABLE IS 1, 2, OR 3.             4F11190
03044  0 53400 4 01414 3D0000 LXA L(6),4          PREPARE TO PICK UP 3 COEFFICIENTS.  4F11191
03045  0 56000 4 01137 3D0001 LDQ E+9,4           CONVERT THEM FROM BCD TO BINARY     4F11192
03046  0 07400 1 02566        TSX SR6DC1,1        * IN E+3,5,7, AND                     4F11193
03047  0 60100 4 01137        STO E+9,4           STORE BACK IN E+3,5,7.              4F11194
03050  2 00002 4 03045        TIX 3D0001,4,2      WHEN DONE, PREPARE                  4F11195
03051  0 53400 4 01411        LXA L(3),4          TO PICK UP 3 ADDENDS.               4F11196
03052  0 50000 4 01144 3D0002 CLA E+14,4          CONVERT ADDENDS (BCD TO BINARY)=    4F11197
03053  0 60200 0 01347        SLW G               STRIP OFF                           4F11198
03054  0 56000 0 01347        LDQ G               SIGN,                               4F11199
03055  0 07400 1 02566        TSX SR6DC1,1        * CONVERT ADDENDS IN E+11,12,13,      4F11200
03056  0 56000 4 01144        LDQ E+14,4          PUT SIGN IN S-BIT OF MQ, AND        4F11201
03057  0 16200 0 03061        TQP 3D0040          IF PLUS--SKIP NEXT,                 4F11202
03060 -0 50100 0 01453        ORA 2E17            IF MINUS--OR SIGN INTO BIT 18,      4F11203
03061  0 60100 4 01144 3D0040 STO E+14,4          AND STORE BACK INTO E+11,12,13.     4F11204
03062  2 00001 4 03052        TIX 3D0002,4,1      WHEN DONE,                          4F11205
03063  0 07400 4 02005        TSX DIM3SR,4        * GO SEARCH DIM3 TABLE.               4F11206
03064  0 07400 4 03400        TSX DIAG,4          * --ERROR...NOT ON DRUM.              4F11207
03065  0 50000 0 01131 3D0060 CLA E+3             REFORMATIZE E-STRING =              4F11208
03066  0 76700 0 00022        ALS 18              PACK TOGETHER COEFFICIENTS 1 AND 2  4F11209
03067  0 40000 0 01133        ADD E+5             AND STORE THEM                      4F11210
03070  0 60100 0 01131        STO E+3             IN E+3.                             4F11211
03071  0 50000 0 01132        CLA E+4             MOVE SUBSCRIPT 1                    4F11212
03072  0 60100 0 01133        STO E+5             TO E+5.                             4F11213
03073  0 50000 0 01135        CLA E+7             AND MOVE                            4F11214
03074  0 76700 0 00022        ALS 18              COEFFICIENT 3                       4F11215
03075  0 60100 0 01132        STO E+4             INTO E+4.                           4F11216
03076  0 50000 0 01136        CLA E+8             MOVE SUBSCRIPT 3 INTO E+7,          4F11217
03077  0 60100 0 01135        STO E+7             NEXT TO SUBSCRIPT 2 IN E+6.         4F11218
03100  0 50000 0 01101        CLA D12             MOVE DIMENSIONS 1 AND 2             4F11219
03101  0 60100 0 01136        STO E+8             INTO E+8.                           4F11220
03102 -0 50000 0 01141        CAL E+11            PACK TOGETHER                       4F11221
03103  0 76700 0 00022        ALS 18              ADDENDS 1 AND 2                     4F11222
03104 -0 50100 0 01142        ORA E+12            AND                                 4F11223
03105  0 60200 0 01141        SLW E+11            STORE THEM IN E+11.                 4F11224
03106 -0 50000 0 01143        CAL E+13            MOVE                                4F11225
03107  0 76700 0 00022        ALS 18              ADDEND 3                            4F11226
03110  0 60200 0 01142        SLW E+12            INTO E+12.                          4F11227
03111  0 07400 4 00443        TSX TAU3IX,4        * GO SEARCH TAU3 TABLE.               4F11228
03112  0 76700 0 00030        ALS 24              POSITION TAU3 TAG, AND              4F11229
03113 -0 60200 0 01126        ORS E               PLACE TAU3 TAG IN TAG WORD.         4F11230
03114 -0 50000 0 01135        CAL E+7             COMBINE                             4F11231
03115 -0 50100 0 01134        ORA E+6             SUBSCRIPTS 3,2, AND 1,              4F11232
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03116 -0 50100 0 01133 3D0340 ORA E+5
03117  0 10000 0 03216 3D0350 TZE NOTAG
03120 -0 50000 0 00030 FTG000 CAL EIFNO
03121 -0 32000 0 01527        ANA MASK1
03122  0 60200 0 01347        SLW G
03123 -0 50000 0 01126        CAL E
03124  0 77100 0 00030        ARS 24
03125 -0 60200 0 01347        ORS G
03126  0 07400 1 03321        TSX TET00,1
03127  0 00000 0 00004        PZE 4
D     03130  1 00000 0 03220        TXI SAEXIT,0
03131  0 53400 4 01412 2D0000 LXA L(4),4
03132  0 56000 4 01135 2D0001 LDQ E+7,4
03133  0 07400 1 02566        TSX SR6DC1,1
03134  0 60100 4 01135        STO E+7,4
03135  2 00002 4 03132        TIX 2D0001,4,2
03136  0 53400 4 01410        LXA L(2),4
03137  0 50000 4 01143 2D0002 CLA E+13,4
03140  0 60200 0 01347        SLW G
03141  0 56000 0 01347        LDQ G
03142  0 07400 1 02566        TSX SR6DC1,1
03143  0 56000 4 01143        LDQ E+13,4
03144  0 16200 0 03146        TQP 2D0040
03145 -0 50100 0 01453        ORA 2E17
03146  0 60100 4 01143 2D0040 STO E+13,4
03147  2 00001 4 03137        TIX 2D0002,4,1
03150  0 07400 4 01775        TSX DIM2SR,4
03151  0 07400 4 03400        TSX DIAG,4
03152  0 50000 0 01131 2D0060 CLA E+3
03153  0 76700 0 00022        ALS 18
03154  0 40000 0 01133        ADD E+5
03155  0 60100 0 01131        STO E+3
03156  0 50000 0 01134        CLA E+6
03157  0 60100 0 01133        STO E+5
03160  0 50000 0 01101        CLA D12
03161 -0 32000 0 01527        ANA MASK1
03162  0 60100 0 01134        STO E+6
03163 -0 50000 0 01141        CAL E+11
03164  0 76700 0 00022        ALS 18
03165 -0 50100 0 01142        ORA E+12
03166  0 60200 0 01141        SLW E+11
03167  0 07400 4 00436        TSX TAU2IX,4
03170  0 76700 0 00030        ALS 24
03171 -0 60200 0 01126        ORS E
03172 -0 50000 0 01132        CAL E+4
D     03173  1 00000 0 03116        TXI 3D0340,0
03174  0 56000 0 01131 1D0000 LDQ E+3
03175  0 07400 1 02566        TSX SR6DC1,1
03176  0 76700 0 00022        ALS 18
03177  0 60100 0 01131        STO E+3
03200  0 50000 0 01141        CLA E+11
03201  0 60200 0 01347        SLW G
03202  0 56000 0 01347        LDQ G
03203  0 07400 1 02566        TSX SR6DC1,1
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      AND IF THEY ARE ALL ZERO,                4F11233
      --DON,T ENTER FORTAG.                    4F11234
      ENTER FORTAG=                            4F11235
      BRING UP ALPHA (INTFORMNO)               4F11236
      AND STORE IN G.                          4F11237
      BRING UP TAUTAG FOR I,                   4F11238
      ADJUST, AND                              4F11239
      PLACE IN G WITH ALPHA.  THEN             4F11240
*     ENTER INTO FORTAG TABLE                  4F11241
      (TET TABLE 4).                           4F11242
      GO TO EXIT.                              4F11243
      THEN PICKUP AND                          4F11244
      CONVERT COEFFICIENTS                     4F11245
*     (BCD TO BINARY),                         4F11246
      AND STORE BACK IN E+3 AND E+5.           4F11247
      WHEN DONE,                               4F11248
      PREPARE TO                               4F11249
      PICKUP THE TWO ADDENDS.                  4F11250
      STRIP OFF                                4F11251
      THEIR SIGNS,                             4F11252
*     CONVERT THEM FROM BCD TO BINARY,         4F11253
      PUT SIGN IN S-BIT OF MQ, AND             4F11254
      IF PLUS--SKIP NEXT,                      4F11255
      IF MINUS--OR SIGN INTO BIT 18,           4F11256
      AND STORE BACK IN E+11 AND E+12.         4F11257
      WHEN DONE,                               4F11258
*     GO SEARCH DIM2 TABLE.                    4F11259
*     --ERROR...NOT ON DRUM.                   4F11260
      REFORMATIZE E-STRING =                   4F11261
      PACK TOGETHER                            4F11262
      COEFFICIENTS 1 AND 2,                    4F11263
      AND STORE THEM IN E+3.                   4F11264
      MOVE SUBSCRIPT 2 INTO E+5                4F11265
      (NEXT TO SUBSCRIPT 1 IN E+4).            4F11266
      OBTAIN                                   4F11267
      DIMENSION 1, AND MOVE IT                 4F11268
      INTO E+6.                                4F11269
      PACK TOGETHER                            4F11270
      ADDENDS 1 AND 2,                         4F11271
      AND STORE THEM                           4F11272
      IN E+11.                                 4F11273
*     GO SEARCH TAU2 TABLE.                    4F11274
      POSITION TAU2 TAG, AND                   4F11275
      PLACE TAU2 TAG IN TAG WORD.              4F11276
      COMBINE SUBSCRIPTS 1 AND 2, AND          4F11277
      GO TO FORTAG SECTION.                    4F11278
      PICKUP AND CONVERT COEFFICIENTS          4F11279
*     (BCD TO BINARY), AND                     4F11280
      THEN ADJUST THEM,                        4F11281
      AND STORE THEM BACK IN E+3.              4F11282
      PICKUP ADDEND,                           4F11283
      STRIP OFF SIGN,                          4F11284
      CONVERT ADDEND                           4F11285
*     (BCD TO BINARY), AND THEN                4F11286
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03204   0 56000 0 01141         LDQ E+11                        PUT SIGN IN S-BIT OF MQ, AND       4F11287
03205   0 16200 0 03207         TQP 1D0001                      IF PLUS--SKIP NEXT,                4F11288
03206  -0 50100 0 01453         ORA 2E17                        IF MINUS--OR SIGN INTO BIT 18.     4F11289
03207   0 76700 0 00022 1D0001  ALS 18                          THEN ADJUST AND STORE              4F11290
03210   0 60200 0 01141         SLW E+11                        BACK INTO E+11.                    4F11291
03211   0 07400 4 00431         TSX TAU1IX,4                  * GO SEARCH TAU1 TABLE.              4F11292
03212   0 76700 0 00030         ALS 24                          POSITION TAU1 TAG, AND             4F11293
03213  -0 60200 0 01126         ORS E                           PLACE TAU1 TAG IN TAG WORD.        4F11294
03214  -0 50000 0 01132         CAL E+4                         TAKE SUBSCRIPT, AND                4F11295
D   03215   1 00000 0 03117         TXI 3D0350,0                    GO TO FORTAG SECTION.              4F11296
03216  -0 50000 0 01471 NOTAG   CAL FNIND                       POSITION SIGMA1 TAG, AND           4F11297
03217  -0 60200 0 01126         ORS E                           PLACE SIGMA1 TAG IN TAG WORD.      4F11298
03220  -0 53400 1 02730 SAEXIT  LXD SXR1,1                      RESTORE THE C(XR1),                4F11299
03221  -0 53400 2 02731         LXD SXR2,2                      RESTORE THE C(XR2),                4F11300
03222  -0 53400 4 02732         LXD SXR4,4                      RESTORE THE C(XR4), AND            4F11301
03223   0 02000 4 00001         TRA 1,4                       * EXIT TO MAIN ROUTINE.              4F11302
                                 END OF PROGRAM SS000.                                            4F11303
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11304
                                                                                                  4F11305
                                SUBX00,4/ CALLERS=C3000,C3300.                                    4F11306
                                SUBX00 ADDS BLANKS TO THE NAMES OF SUBROUTINES.                   4F11307
03224   0 53400 3 01414 SUBX00  LXA L(6),3                      PREPARE TO COUNT CHARS AND SHIFTS. 4F11308
03225   0 56000 0 01112         LDQ 1G                          PICKUP SUBROUTINE NAME.            4F11309
03226  -0 75400 0 00000 SUBX01  PXD ,0                         CLEAR THE AC, AND                  4F11310
03227  -0 76300 0 00006         LGL 6                           SEARCH FOR A BLANK                 4F11311
03230   0 40200 0 01430         SUB BLANK                       CHARACTER IN THIS NAME.            4F11312
03231   0 10000 0 03235         TZE SUBX03                      IF NOT BLANK, THEN                 4F11313
03232   1 00006 1 03233         TXI SUBX02,1,6                  UPDATE SHIFT COUNT, AND            4F11314
03233   2 00001 2 03226 SUBX02  TIX SUBX01,2,1                  CONTINUE UNTIL 6 CHARS ARE COUNTED.4F11315
03234   0 02000 4 00001         TRA 1,4                       * RETURN TO CALLER AFTER 6TH CHAR.   4F11316
03235   0 56000 0 01526 SUBX03  LDQ BLANKS                      IF LESS THAN 6 CHARACTERS IN NAME, 4F11317
03236  -0 76300 1 00044         LGL 36,1                        SHIFT ENOUGH BLANKS INTO THE AC,   4F11318
03237  -0 60200 0 01112         ORS 1G                          AND FILL OUT NAME WITH BLANKS.     4F11319
03240   0 02000 4 00001         TRA 1,4                       * RETURN TO CALLER.                  4F11320
                                 END OF PROGRAM SUBX00.                                           4F11321
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11322
                                                                                                  4F11323
                                TESTFX,1/ CALLERS=SS000,C3000,IFFIX.                              4F11324
                                TESTFX TESTS FOR FIXED OR FLOATING POINT VARIABLES.               4F11325
03241  -0 50000 0 01331 TESTFX  CAL FIRSTC                      COMPARE FIRST CHARACTER            4F11326
03242   0 34000 0 01423         CAS L(H)                        WITH H.                            4F11327
03243   0 34000 0 01425         CAS L(O)                        IF GREATER THAN H, COMPARE WITH O. 4F11328
03244   0 02000 1 00001         TRA 1,1                       * IF NOT GREATER THAN H, LESS THAN O,4F11329
03245   0 02000 1 00001         TRA 1,1                       * THEN TAKE FLOATING POINT EXIT.     4F11330
03246   0 02000 1 00002         TRA 2,1                       * OTHERWISE, TAKE FIXED POINT EXIT.  4F11331
                                 END OF PROGRAM TESTFX.                                           4F11332
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11333
                                                                                                  4F11334
                                TEST..,4/ CALLS=DIAG. CALLERS=C0100,C0200,C0300,C0400,C1000,      4F11335
                                C1100,C1200,C1400,C1500,C1600,C3000,C3100,C3200,C3400,LPR.        4F11336
                                TEST.. TESTS THE CHARACTER IN THE AC(30-35).                      4F11337
                                TEST CHARACTER IN THE AC FOR COMMA OR ENDMARK.                     4F11338
03247   0 34000 0 01376 TESTA0  CAS COMMA                                                         4F11339
03250   0 02000 0 03252         TRA TESTA1                                                        4F11340
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03251  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11341
03252  0 40200 0 01374 TESTA1   SUB ENDMK                                                        4F11342
03253  0 10000 4 00001          TZE 1,4                    * RETURN TO CALLER.                  4F11343
03254  0 07400 4 03400          TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11344
                                   TEST CHARACTER IN THE AC FOR COMMA OR CLOSED PARENTHESIS.    4F11345
03255  0 34000 0 01376 TESTB0   CAS COMMA                                                        4F11346
03256  0 02000 0 03260          TRA TESTB1                                                       4F11347
03257  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11348
03260  0 40200 0 01377 TESTB1   SUB CLOS                                                         4F11349
03261  0 10000 4 00001          TZE 1,4                    * RETURN TO CALLER.                  4F11350
03262  0 07400 4 03400          TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11351
                                   TEST CHARACTER IN THE AC FOR OPEN PARENTHESIS OR ENDMARK.    4F11352
03263  0 34000 0 01375 TESTC0   CAS OPEN                                                         4F11353
03264  0 02000 0 03266          TRA TESTC1                                                       4F11354
03265  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11355
03266  0 40200 0 01374 TESTC1   SUB ENDMK                                                        4F11356
03267  0 10000 4 00001          TZE 1,4                    * RETURN TO CALLER.                  4F11357
03270  0 07400 4 03400          TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11358
                                   TEST CHARACTER IN THE AC FOR ENDMARK.                        4F11359
03271  0 34000 0 01374 TESTD0   CAS ENDMK                                                        4F11360
03272  0 07400 4 03400 ERR77P   TSX DIAG,4                 * MACHINE ERROR, GO TO DIAGNOSTIC.   4F11361
03273  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11362
03274  0 07400 4 03400          TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11363
                                   TEST CHARACTER IN THE AC FOR OPEN PARENTHESIS.               4F11364
03275  0 34000 0 01375 TESTE0   CAS OPEN                                                         4F11365
03276  0 02000 0 03300          TRA TESTE1                                                       4F11366
03277  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11367
03300  0 07400 4 03400 TESTE1   TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11368
                                   TEST CHARACTER IN THE AC FOR CLOSED PARENTHESIS.             4F11369
03301  0 34000 0 01377 TESTF0   CAS CLOS                                                         4F11370
03302  0 02000 0 03304          TRA TESTF1                                                       4F11371
03303  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11372
03304  0 07400 4 03400 TESTF1   TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11373
                                   TEST CHARACTER IN THE AC FOR COMMA.                          4F11374
03305  0 34000 0 01376 TESTG0   CAS COMMA                                                        4F11375
03306  0 02000 0 03310          TRA TESTG1                                                       4F11376
03307  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11377
03310  0 07400 4 03400 TESTG1   TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11378
                                   TEST CHARACTER IN THE AC FOR NON-NUMERIC.                    4F11379
03311  0 34000 0 01417 TESTH0   CAS L(9)                                                         4F11380
03312  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11381
03313  0 76100 0 00000          NOP                                                              4F11382
03314  0 07400 4 03400          TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11383
                                   TEST CHARACTER IN THE AC FOR NUMERIC.                        4F11384
03315  0 34000 0 01417 TESTI0   CAS L(9)                                                         4F11385
03316  0 07400 4 03400          TSX DIAG,4                 * ERROR -- GO TO DIAGNOSTIC.         4F11386
03317  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11387
03320  0 02000 4 00001          TRA 1,4                    * RETURN TO CALLER.                  4F11388
                                    END OF PROGRAM TEST...                                      4F11389
                                   * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11390
                                                                                                4F11391
                                   TET00,1/ CALLERS=CA000,CC000,C0100,C0200,C0300,C1300,C1400,  4F11392
                                   C1500,C3000,C3100,SS000,FOR,SPC,CMA,EMK,LIB,VRA(VRD).        4F11393
                                   TET00 MAKES ENTRIES IN THE TAPE TABLES. WHEN A BUFFER IS     4F11394
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                                        FULL IT IS WRITTEN AS A RECORD ONTO TAPE 4.                      4F11395
03321 -0 63400 2 01100 TET00   SXD TETXR2,2          SAVE THE C(XR2),                                    4F11396
03322 -0 63400 4 01101         SXD TETXR4,4          SAVE THE C(XR4), AND                                4F11397
03323 -0 60000 0 01103         STQ TETMQR            SAVE THE C(MQR).                                    4F11398
03324  0 50000 1 00001         CLA 1,1               COMPUTE TABLE NUMBER                                4F11399
03325  0 76700 0 00001         ALS 1                 TIMES 3                                             4F11400
03326  0 40000 1 00001         ADD 1,1               AND                                                 4F11401
03327  0 76000 0 00006         COM                   PLACE THE 2S COMPLEMENT                             4F11402
03330  0 40000 0 01407         ADD L(1)              OF THIS                                             4F11403
03331  0 73400 2 00000         PAX ,2                IN XR2.                                             4F11404
03332  0 50000 2 00322         CLA INTET,2           OBTAIN THE CURRENT                                  4F11405
03333  0 77100 0 00022         ARS 18                B (BUFFER CAPACITY),                                4F11406
03334  0 60100 0 01102         STO TETWRK            AND SAVE IT. THEN                                   4F11407
03335  0 50000 2 00324         CLA INTET+2,2         GET P (PORTION OF BUFFER FULL),                     4F11408
03336  0 77100 0 00022         ARS 18                AND                                                 4F11409
03337  0 40200 0 01102         SUB TETWRK            COMPARE TO B.                                       4F11410
03340 -0 10000 0 03356         TNZ TET03             IF BUFFER IS FULL,                                  4F11411
03341  0 62200 2 00324         STD INTET+2,2         SET P = 0, AND                                      4F11412
03342  0 76600 0 00224 TET01   WRS TABTAP            PREPARE TO WRITE BLOCK ON TABTAP.                   4F11413
03343  0 53400 4 01102         LXA TETWRK,4          SET XR4 = BLOCK SIZE (B).                           4F11414
03344  0 50000 0 01102         CLA TETWRK            ADD BLOCK SIZE TO                                   4F11415
03345  0 40000 2 00322         ADD INTET,2           ORIGIN OF CURRENT BLOCK (0),                        4F11416
03346  0 62100 0 03350         STA TET02             AND SET ADDRESS OF COPY LOOP (0+B).                 4F11417
03347  0 70000 1 00001         CPY 1,1               COPY TABLE NUM FOR IDENTIFICATION.                  4F11418
03350  0 70000 4 00000 TET02   CPY **,4              WRITE BLOCK ONTO                                    4F11419
03351  2 00001 4 03350         TIX TET02,4,1         TABLE TAPE, AND                                     4F11420
03352  0 76600 0 00333         IOD                   WHEN DONE,                                          4F11421
03353  0 50000 2 00324         CLA INTET+2,2         INCREASE C (BLOCK COUNT)                            4F11422
03354  0 40000 0 01407         ADD L(1)              BY 1 FOR                                            4F11423
03355  0 62100 2 00324         STA INTET+2,2         BLOCK JUST WRITTEN ON TABLE TAPE.                   4F11424
03356  0 50000 2 00324 TET03   CLA INTET+2,2         ADD P (PORTION OF BUFFER FULL)                      4F11425
03357  0 77100 0 00022         ARS 18                TO 0 (ORIGIN OF CURRENT TABLE                       4F11426
03360  0 40000 2 00322         ADD INTET,2           BUFFER) TO SET                                      4F11427
03361  0 62100 0 03371         STA TET05             ADDRESS OF ENTRY LOOP (P+0).                        4F11428
03362  0 50000 2 00323         CLA INTET+1,2         OBTAIN CURRENT A (ENTRY ADDRESS),                   4F11429
03363  0 62100 0 03370         STA TET04             AND SET ADDRESS OF ENTRY LOOP.                      4F11430
03364 -0 73400 4 00000         PDX ,4                SET XR4 = E (ENTRY LENGTH IN WRDS).                 4F11431
03365  0 40000 2 00324         ADD INTET+2,2         INCREASE P BY E TO ACCOUNT                          4F11432
03366  0 62200 2 00324         STD INTET+2,2         FOR FOLLOWING ENTRY.                                4F11433
03367 -0 53400 2 01406         LXD L(0),2            SET XR2 = 0. THEN                                   4F11434
03370  0 50000 2 00000 TET04   CLA **,2              MOVE THE CURRENT ENTRY                              4F11435
03371  0 60100 2 00000 TET05   STO **,2              INTO THE CURRENT TABLE BUFFER, AND                  4F11436
03372  1 77777 2 03373         TXI TET06,2,-1        WHEN                                                4F11437
03373  2 00001 4 03370 TET06   TIX TET04,4,1         DONE,                                               4F11438
03374  0 56000 0 01103         LDQ TETMQR            RESTORE ORIGINAL C(MQR),                            4F11439
03375 -0 53400 2 01100         LXD TETXR2,2          RESTORE ORIGINAL C(XR2),                            4F11440
03376 -0 53400 4 01101         LXD TETXR4,4          RESTORE ORIGINAL C(XR4), AND                        4F11441
03377  0 02000 1 00002         TRA 2,1             * EXIT TO MAIN ROUTINE.                               4F11442
                                END OF PROGRAM TET00.                                                    4F11443
                               * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * 4F11444
                                                                                                         4F11445
                               DIAGNOSTIC CALLERS=CD000,CB000,CC000,CA100,C0200,C0300,C0900,             4F11446
                               C1000,C1200,C3000,C3100,C3200,C3400,C0150,C0160,C0180,TEST..,             4F11447
                               SR6DC1,DRTABS,RDRX,DIM.SR,SS000,ROYCNV,RDC,RSC,LPR,EQS,RPR,               4F11448
```

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                                        CMA,EMK,BEG(TYP),VRA(VRD).                                          4F11449
                                        (CA000 ALSO CALLS THE DIAGNOSTIC AFTER ALL STATEMENTS HAVE          4F11450
                                        BEEN PROCESSED.  IF THERE HAVE BEEN NO PREVIOUS CALLS TO            4F11451
                                        THE DIAGNOSTIC DURING SECTION ONE, THEN 1PRIME IS CALLED.)          4F11452
D     03400  1 00000 0 00004 DIAG   TXI 4,0                  * GO GET THE DIAGNOSTIC.                      4F11453
                                         END OF DIAGNOSTIC CALLERS.                                         4F11454
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11455
                                                                                                            4F11456
                                        ROUTINE TO COMPILE FLOW TRACING INSTRUCTIONS.                       4F11457
      03401 -0 63400 4 03437 FLTR00 SXD FLTR05,4          SAVE CALLING TAG.                                 4F114571
      03402  0 50000 0 00030        CLA EIFNO             GET LAST INTERNAL AND EXTERNAL FORMULA NOS.       4F114572
      03403  0 62100 0 02067        STA ENT               PLACE LAST EFN IN DEC OF NTR INSTRUCTION.         4F114573
                                                                                                            4F114574
      03404  0 77100 0 00022        ARS 18                                                                  4F114575
      03405  0 62100 0 02070        STA NZE               PLACE LAST IFN IN DEC OF PZE                      4F114576
      03406 -0 53400 4 01122        LXD ARGCTR,4                                                            4F114577
      03407 -3 00000 4 03413        TXL FLTR01,4,0        IS THIS AN FN FUNCTION, NO SKIP.                  4F114578
      03410  0 60000 0 01107        STZ 1C+2                                                                4F114579
      03411  0 50200 0 01454        CLS 2E18              SET ADDRESS TO -1                                 4F11457A
      03412  0 02000 0 03423        TRA FLTR03                                                              4F11457B
      03413  0 50000 0 00365 FLTR01 CLA SBDFCN           IS THIS A MAIN PROGRAM OR SUBPROGRAM.             4F11457C
      03414 -0 10000 0 03420        TNZ FLTR02            SKIP ON SUBPROGRAM                                4F11457D
      03415  0 60000 0 01107        STZ 1C+2              SET ADDRESS TO 0                                  4F11457E
      03416  0 60000 0 01110        STZ 1C+3                                                                4F11457F
      03417  0 02000 0 03424        TRA FLTR04                                                              4F11457G
      03420  0 50000 0 01523 FLTR02 CLA DOLSGN           SET ADDRESS TO $+2                                4F11457H
      03421  0 60100 0 01107        STO 1C+2                                                                4F11457I
      03422  0 50000 0 01457        CLA D2                                                                  4F11457J
      03423  0 60100 0 01110 FLTR03 STO 1C+3             SET RELATIVE ADDRESS WORD OF CIT.                 4F11457K
      03424  0 07400 4 01731 FLTR04 TSX CIT00,4                                                            4F11457L
      03425  0 00000 0 01406        PZE L(0)              COMPILE      NTR  *+2,0,EFN                       4F11457M
      03426  0 00000 0 02067        PZE ENT                                                                 4F11457N
      03427  0 00000 0 01510        PZE 15P                                                                 4F11457O
      03430  0 00000 0 01457        PZE D2                                                                  4F11457P
      03431  0 07400 4 01731        TSX CIT00,4                                                             4F11457Q
      03432  0 00000 0 01406        PZE L(0)              COMPILE    PZE  ALPHA,0,IFN                       4F11457R
      03433  0 00000 0 02070        PZE NZE               WHERE ALPHA IS 0 FOR MAIN PROGRAM, $+2 FOR        4F11457S
      03434  0 00000 0 01107        PZE 1C+2              SUBPROGRAM, OR -1 FOR FN FUNCTION IN EITHER       4F11457T
      03435  0 00000 0 01110        PZE 1C+3              MAIN OR SUBPROGRAM.                               4F11457U
      03436 -0 53400 4 03437        LXD FLTR05,4                                                            4F11457V
      03437  1 00000 0 01731 FLTR05 TXI CIT00,0,**       GO COMPILE    LXD M(,4  OR  7(TYPE=,4             4F11457W
                                                                                                            4F11458
                                         END OF THE COMMON PART OF SECTION ONE.                             4F11459
                                                                                                            4F11460
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11461
                                                                                                            4F11462
                                        SECTION 1 / INITIALIZATION =                                        4F11463
                                        704 FORTRAN MASTER RECORD CARD / INITIALIZATION = F0150000.         4F11464
                          00000         ORG 0                                                               4F114641
      00000  0 00004 0 00471        PZE FORSUB,,1TOCS                                                       4F114642
      00001  0 00000 0 00600        PZE DMWR98                                                              4F114643
                          00471         ORG FORSUB                                                          4F11465
                                        INITIALIZATION OCCUPIES FORSUB BUFFER AND IS WRITTEN OVER            4F11466
                                        BY FORSUB ENTRIES IF THERE ARE ANY FORTRAN FUNCTIONS IN THE          4F11467
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                                    PROGRAM.                                                    4F11468
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11469
                                                                                                4F11470
                                    PART 1 / CLEAR DRUMS 1,2,3,4, AND REWIND TAPES 2,3,4 =      4F11471
00471  0 53400 1 00575 CLDR00 LXA CLDR07,1                  CLEAR DRUMS 1,2,3,4 TO +0.          4F11472
00472  0 76600 1 00305 CLDR01 WRS 197,1                     X                                   4F11473
00473 -0 53400 2 00575        LXD CLDR07,2                  X                                   4F11474
00474  0 70000 0 00576 CLDR03 CPY CLDR08                    X                                   4F11475
00475  2 00001 2 00474        TIX CLDR03,2,1                X                                   4F11476
00476  2 00001 1 00472        TIX CLDR01,1,1                X                                   4F11477
00477  0 77200 0 00222        REW 146                       REWIND WORKING TAPES 2,3,4.         4F11478
00500  0 77200 0 00223        REW 147                       X                                   4F11479
00501  0 77200 0 00224        REW 148                       X                                   4F11480
                                     END OF INITIALIZATION / PART 1.                            4F11481
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11482
                                                                                                4F11483
                                    PART 2 / WRITE STATES A,B,C,D ON DRUMS1,3,4,2=              4F11484
00502  0 53400 4 01411 DMWR01 LXA L(3),4                    PREPARE TO WRITE STATE D ON DRUM 2.4F11485
00503  0 02000 0 00513        TRA DMWR11                    X                                   4F11486
00504  0 53400 4 01407 DMWR03 LXA L(1),4                    PREPARE TO WRITE STATE C ON DRUM 4.4F11487
00505  0 02000 0 00513        TRA DMWR11                    X                                   4F11488
00506  0 53400 4 01410 DMWR06 LXA L(2),4                    PREPARE TO WRITE STATE B ON DRUM 3.4F11489
00507  0 02000 0 00513        TRA DMWR11                    X                                   4F11490
00510  0 53400 4 01412 DMWR09 LXA L(4),4                    PREPARE TO WRITE STATE A ON DRUM 1.4F11491
00511  0 50000 0 00600        CLA DMWR98                    THIS IS FINAL STATE TO BE WRITTEN, 4F11492
00512  0 62100 0 00546        STA DMWR40                    CHANGE ADDRESS TO GET OUT OF LOOP. 4F11493
00513  0 50000 4 02437 DMWR11 CLA ZETA+4,4                  GET LENGTH OF CURRENT STATE.        4F11494
00514 -0 73400 2 00000        PDX ,2                        LENGTH OF STATE TO IR2.             4F11495
00515 -0 63400 2 00574        SXD CHECK,2                   SAVE LENGTH.                        4F11496
00516  0 77100 0 00022        ARS 18                        LENGTH + ORIGIN TO PREPARE FOR CK   4F11497
00517  0 40000 0 02430        ADD MTR3                      SUM AND COPY LOOPS.                 4F11498
00520  0 62100 0 00523        STA DMWR20                    X                                   4F11499
00521  0 62100 0 00533        STA DMWR26                    X                                   4F11500
00522 -0 75400 0 00000        PXD ,0                        CLEAR AC AND COMPUTE CK SUM.        4F11501
00523  0 36100 2 00000 DMWR20 ACL **,2                      X                                   4F11502
00524  2 00001 2 00523        TIX DMWR20,2,1                X                                   4F11503
00525  0 60200 0 01103        SLW DRCKSM                    X                                   4F11504
00526  0 53400 1 01413        LXA DRMERC,1                  SET FOR FIVE ATTEMPTS.              4F11505
00527  0 76600 4 00305 DMWR23 WDR 5,4                       PREPARE TO WRITE DRUM.              4F11506
00530 -0 53400 2 00574        LXD CHECK,2                   X                                   4F11507
00531  0 46000 4 02437        LDA ZETA+4,4                  X                                   4F11508
00532  0 70000 0 01103        CPY DRCKSM                    WRITE CK SUM ON DRUM.               4F11509
00533  0 70000 2 00000 DMWR26 CPY **,2                      WRITE STATE ON DRUM.                4F11510
00534  2 00001 2 00533        TIX DMWR26,2,1                X                                   4F11511
00535  0 76200 4 00305        RDR 5,4                       PREPARE TO READ STATE BACK.         4F11512
00536 -0 53400 2 00574        LXD CHECK,2                   X                                   4F11513
00537  0 46000 4 02437        LDA ZETA+4,4                  X                                   4F11514
00540 -0 75400 0 00000        PXD ,0                        CLEAR AC AND READ BACK CK SUM AND   4F11515
00541 -0 70000 0 00573        CAD GARBGE                    STATE.                              4F11516
00542  0 76000 0 00006        COM                           X                                   4F11517
00543 -0 70000 0 00573 DMWR32 CAD GARBGE                    RECOMPUTE CK SUM.                   4F11518
00544  2 00001 2 00543        TIX DMWR32,2,1                X                                   4F11519
00545  0 76000 0 00006        COM                           X                                   4F11520
00546  0 10000 0 00004 DMWR40 TZE 1TOCS                   * CK SUMS AGREE, GO GET NEXT STATE.   4F11521
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00547  2 00001 1 00527         TIX DMWR23,1,1                CK SUM FAILED, TRY UP TO 5 TIMES.  4F11522
00550  0 50000 0 00577         CLA DMWR89                    SET MONITOR TO RETURN TO THIS      4F11523
00551  0 60100 0 02402         STO STATEA                    PROGRAM INSTEAD OF TO STATE A.     4F11524
00552 -3 00003 4 00554         TXL DMWR80,4,3                TEST FOR STATE A IN PROGRESS.      4F11525
00553  0 07400 4 03400         TSX DIAG,4                  * STATE A CANNOT BE WRITTEN ON DRUM1.4F11526
00554 -3 00002 4 00561 DMWR80  TXL DMWR82,4,2                TEST FOR STATE D IN PROGRESS.      4F11527
00555  0 76200 0 00221         RTB 1                         SPACE OVER STATE C RECORD.         4F11528
00556  0 76200 0 00221         RTB 1                         SPACE OVER STATE B RECORD.         4F11529
00557  0 76200 0 00221         RTB 1                         SPACE OVER STATE A RECORD.         4F11530
00560  0 07400 4 03400         TSX DIAG,4                  * STATE D CANNOT BE WRITTEN ON DRUM2.4F11531
00561 -3 00001 4 00564 DMWR82  TXL DMWR84,4,1                TEST FOR STATE B IN PROGRESS.      4F11532
00562  0 76200 0 00221         RTB 1                         SPACE OVER STATE A RECORD.         4F11533
00563  0 07400 4 03400         TSX DIAG,4                  * STATE B CANNOT BE WRITTEN ON DRUM3.4F11534
00564  0 76200 0 00221 DMWR84  RTB 1                         SPACE OVER STATE B RECORD.         4F11535
00565  0 76200 0 00221         RTB 1                         SPACE OVER STATE A RECORD.         4F11536
00566  0 07400 4 03400         TSX DIAG,4                  * STATE C CANNOT BE WRITTEN ON DRUM4.4F11537
00567  0 53400 4 01406 DMWR88  LXA L(0),4                    SET IR4 TO 0 TO CAUSE DIAGNOSTIC TO4F11538
00570  0 02000 0 03400         TRA DIAG                    * PRINT END LINE AND STOP.           4F11539
00571  0 07400 4 05702 DMWR99  TSX CA100,4                 * GO TO SUBROUTINE TO LOAD FT REGION.4F11540
00572  0 02000 0 03440         TRA CA010                   * GO BEGIN STATE A OF SECTION ONE.   4F11541
                                END OF INITIALIZATION / PART 2.                                  4F11542
                               * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11543
                                                                                                 4F11544
                               PART 3 / VARIABLES AND CONSTANTS USED BY INITIALIZATION=           4F11545
       00573 GARBGE BSS 1                                ERASABLE STORAGE.                       4F11546
00574  0 00000 0 00000 CHECK   PZE ,,**                  SAVING CELL FOR LENGTH OF STATE.        4F11547
00575  0 04000 0 00004 CLDR07  PZE 4,,2048               CONSTANT FOR CLEARING DRUMS.            4F11548
00576  0 00000 0 00000 CLDR08  PZE 0                     CONSTANT FOR CLEARING DRUMS.            4F11549
00577  0 02000 0 00567 DMWR89  TRA DMWR88                CONSTANT FOR ERROR ROUTINE.             4F11550
00600  0 00000 0 00571 DMWR98  PZE DMWR99                CONSTANT FOR ADDRESS MODIFICATION.      4F11551
                                END OF INITIALIZATION / PART 3.                                  4F11552
                               * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11553
                                                                                                 4F11554
                                                                                                 4F11555
                               SECTION 1 / STATEA =                                              4F11556
                               704 FORTRAN MASTER RECORD CARD / STATE A = F0190000.              4F11557
       00000           ORG 0                                                                     4F115571
00000  0 00510 0 03440  PZE ORGA,,DMWR09                                                        4F115572
00001  0 00000 0 07306  PZE ENDA-1                                                              4F115573
                                                                                                 4F11558
                               NAME                        FUNCTION                              4F11559
                               PART 1 / ASSEMBLE AND CLASSIFY ALL STATEMENTS=                    4F11560
                               CA000                       ASSEMBLE STATEMENT.                   4F11561
                               CD000                       SCAN FOR HOLLERITH AND ILLEGAL CHS.   4F11562
                               CB000                       CLASSIFY=ARITHMETIC/NON-ARITHMETIC.   4F11563
                               CC000                       CLASSIFY=WHICH NON-ARITHMETIC.        4F11564
                               PART 2 / PROCESS CONTROL AND SPECIFICATION STATEMENTS=            4F11565
                               C0100                       DO.                                   4F11566
                               C0200                       GO TO.                                4F11567
                               C0300                       IF.                                   4F11568
                               C0400                       IF (SENSE SWITCH.                     4F11569
                               C0500                       IF (SENSE LIGHT.                      4F11570
                               C0600                       IF DIVIDE CHECK.                      4F11571
                               C0700                       IF AC OVERFLOW.                       4F11572
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C0800                          IF MQ OVERFLOW.                          4F11573
C0900                          PAUSE.                                   4F11574
C1000                          ASSIGN.                                  4F11575
C1100                          SENSE LIGHT.                             4F11576
C1200                          DIMENSION.                               4F11577
C1300                          STOP.                                    4F11578
C1400                          FREQUENCY.                               4F11579
C1500                          EQUIVALENCE.                             4F11580
C1600                          CONTINUE.                                4F11581
C3000(C3500)                   SUBROUTINE / FUNCTION.                   4F11582
C3100                          COMMON.                                  4F11583
C3200                          RETURN.                                  4F11584
C3300                          CALL.                                    4F11585
C3400                          END.                                     4F11586
PART 3 / PROCESS INPUT-OUTPUT STATEMENTS=                               4F11587
RDC                            READ CARD.                               4F11588
RIT                            READ INPUT TAPE.                         4F11589
RDP                            PRINT.                                   4F11590
WOT                            WRITE OUTPUT TAPE.                       4F11591
PDC                            PUNCH.                                   4F11592
WBT                            WRITE TAPE.                              4F11593
RBT                            READ TAPE.                               4F11594
WRD                            WRITE DRUM.                              4F11595
RDD                            READ DRUM.                               4F11596
EFT                            END FILE.                                4F11597
RWN                            REWIND.                                  4F11598
BSP                            BACKSPACE.                               4F11599
FOR                            FORMAT.                                  4F11600
RSC                            RESET AND SCAN.                          4F11601
LISTR                          CONTROL FOR LIST SCAN.                   4F11602
LPR                            LEFT PARENTHESIS IN LIST SCAN.           4F11603
EQS                            EQUAL SIGN IN LIST SCAN.                 4F11604
SPCTR                          CONTROL FOR SPECIFICATION SCAN.          4F11605
SPC                            SUBSCRIPT SPECIFICATIONS.                4F11606
RPR                            RIGHT PARENTHESIS IN LIST SCAN.          4F11607
CMA                            COMMA IN LIST SCAN.                      4F11608
EMK                            ENDMARK IN LIST SCAN.                    4F11609
PART 4 / SUBROUTINES USED BY STATE A=                                   4F11610
BEG(TYP),4                     BEGINNING SCAN AND TYPE TEST.            4F11611
BEGTR                          CONTROL FOR BEGINNING SCAN.              4F11612
BRW,4                          BINARY READ OR WRITE COMPILER.           4F11613
BSS,2                          COMPILES= IFN BSS 0.                     4F11614
CA100,4                        READ SOURCE PROGRAM TAPE.                4F11615
CC500,4                        SCAN DICTIONARY.                         4F11616
ETM(LTM)SW,4                   IF SW=NOP, COMPILES ETM(LTM). SL=0.      4F11617
IFFIX,1                        SETS UP FORVAR OR FORVAL ENTRY.          4F11618
IN(OUT)PUT,2                   COMPILES CAL *, AND XIT (LEV).           4F11619
LIB,1                          MAKES CLOSUB ENTRY, COMPILES CIT.        4F11620
VRA(VRD),4                     MAKES FORVAR, FIXCON, CIT ENTRIES.       4F11621
PART 5 / CONSTANTS AND VARIABLES USED BY STATE A.                       4F11622
DIC                            DICTIONARY.                              4F11623
T                              TRANSFER TABLE.                          4F11624
                                                                        4F11625
THE FOLLOWING CONVENTIONS ARE USED IN THIS LISTING=                     4F11626
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                                                                                                  4F11627
                                    ** IN THE ADDRESS, TAG, OR DECREMENT OF AN INSTRUCTION        4F11628
                                    INDICATES THAT THIS FIELD WILL BE MODIFIED BY THE PROGRAM.    4F11629
                                    * IN COL/36 INDICATES THE INSTRUCTION IS A TRANSFER OUT OF    4F11630
                                    THIS LOGICAL BLOCK OR SUBROUTINE.                             4F11631
                                    C IN COL/34 INDICATES THE INSTRUCTION WAS CORRECTED.          4F11632
                                    P IN COL/32 INDICATES THE INSTRUCTION WAS INSERTED (PATCH).   4F11633
                                                                                                  4F11634
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11635
                                                                                                  4F11636
                                    STATEA/1-ASSEMBLE AND CLASSIFY ALL STATEMENTS=                4F11637
                03440 ORGA    ORG 1824                                                            4F11638
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11639
                                                                                                  4F11640
                                    CA000/ CALLS=CA100,SR6DC1,TET00,DIAG.                         4F11641
                                    CA000 ASSEMBLES STATEMENT IN THE F-REGION AND ASSIGNS AN IFN.4F11642
03440 -0 53400 4 02575 CA010  LXD ENDWRD,4                  IF THE FINAL STATEMENT HAS BEEN     4F11643
03441 -3 00000 4 03400        TXL DIAG,4,0                * PROCESSED, THEN GO CALL DIAGNOSTIC.4F11644
03442 -0 53400 1 00030        LXD EIFNO,1                   KEEP INTERNAL FORMULA NUMBER        4F11645
03443  1 00001 1 03444        TXI CA013,1,1                 (DECR PART OF EIFNO)                4F11646
03444 -0 63400 1 00030 CA013  SXD EIFNO,1                   UP TO DATE BY ADDING 1.             4F11647
03445 -0 50000 0 01333        CAL FT                        OBTAIN HOLLERITH CODED 5-DIGIT      4F11648
03446  0 77100 0 00006        ARS 6                         EXTERNAL FORMULA NO IN ACC,         4F11649
03447  0 60200 0 01151        SLW F-1                       AND RETAIN IN F-01.                 4F11650
03450 -0 53400 1 01670        LXD DCF,1                     INITIALIZE INDEX A TO COMPL OF F.   4F11651
03451  0 53400 2 01400 CA018  LXA L(11),2                   SET UP LOOP FOR 11 CYCLES.          4F11652
03452  0 56000 2 01347 CA019  LDQ FT+12,2                   MOVE WORD FROM REGION FT            4F11653
03453 -0 60000 1 00000        STQ 0,1                       TO REGION F.                        4F11654
03454  2 00001 1 03455        TIX CA020,1,1                 KEEP F-REGION ADDRESS UP-TO-DATE.   4F11655
03455  2 00001 2 03452 CA020  TIX CA019,2,1                 TEST END OF LOOP.                   4F11656
03456  0 07400 4 05702        TSX CA100,4                 * GO READ NEXT NON-BLANK CARD.        4F11657
03457 -0 50000 0 01333        CAL FT                        TEST RIGHTMOST CHARACTER OF         4F11658
03460 -0 32000 0 01374        ANA L(63)                     FIRST WORD FOR CONTINUATION MARK,   4F11659
03461  0 10000 0 03464        TZE CA021                     IF ZERO OR BLANK,                   4F11660
03462  0 40200 0 01430        SUB ABLANK                    DISCONTINUE READING,                4F11661
03463 -0 10000 0 03451        TNZ CA018                     OTHERWISE CONTINUE.                 4F11662
03464  0 50000 0 01526 CA021  CLA BLANKS                    BEGIN SCANNING REGION F BACKWARDS   4F11663
03465  0 34000 1 77777 CA022  CAS -1,1                      TO FIND FIRST NON BLANK WORD.       4F11664
03466  0 02000 0 03470        TRA CA023                     NOT BLANK.                          4F11665
03467  1 00001 1 03465        TXI CA022,1,1                 BLANK, SO CONTINUE SCAN.            4F11666
03470  0 56000 0 01531 CA023  LDQ 36ONES                    PLACE BINARY ONES IN FIRST WORD     4F11667
03471 -0 60000 1 00000        STQ 0,1                       FOLLOWING RIGHTMOST NONBLANK WORD.  4F11668
03472 -0 50000 0 01151        CAL F-1                       PICK UP EXTERNAL FORMULA NUMBER AND4F11669
03473  0 34000 0 01477        CAS 5BLANS                    COMPARE WITH /0     /.              4F11670
03474  0 02000 0 03476        TRA CA015                     NOT COMPARE.                        4F11671
03475  0 02000 0 03503        TRA CD000                   * TAKE EXTFORMNO, IF ANY, AND         4F11672
03476  0 76500 0 00043 CA015  LRS 35                        GO TO CONVERSION SUBROUTINE AND     4F11673
03477  0 07400 1 02566        TSX SR6DC1,1                * RETURN HERE WITH RESULT IN ACC.     4F11674
03500  0 62100 0 00030        STA EIFNO                     STORE RESULT IN ADDRESS OF EIFNO.   4F11675
03501  0 07400 1 03321        TSX TET00,1                 * GO TO PROGRAM TET TO ENTER EIFNO    4F11676
03502  0 00000 0 00000        PZE 0                         INTO TABLE TEIFNO (TABLE O).        4F11677
                                     END OF PROGRAM CA000.                                        4F11678
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11679
                                                                                                  4F11680
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                                                CD000/ CALLS=C0190X,C0190,DIAG.                                  4F11681
                                                CD000 SCANS FOR HOLLERITH AND ILLEGAL CHARACTERS.                4F11682
      03503  0 07400 4 01671 CD000  TSX C0190X,4                  * SET SCAN TO PICK UP 1ST CHARACTER.  4F11683
      03504  0 07400 1 03534 CD001  TSX CD900,1                   * IF NOT ENDMARK OR ILLEGAL CHARACTER4F11684
      03505  0 34000 0 01376        CAS COMMA                       SCAN                                  4F11685
D     03506  1 00000 0 03510        TXI CD002,0                     FOR                                   4F11686
D     03507  1 00000 0 03512        TXI CD003,0                     HOLLERITH                             4F11687
      03510  0 40200 0 01375 CD002  SUB OPEN                        SPECIFICATION                         4F11688
      03511 -0 10000 0 03504        TNZ CD001                       WHICH                                 4F11689
      03512  0 07400 1 03534 CD003  TSX CD900,1                   * CAN BE=                               4F11690
      03513  0 40200 0 01373        SUB L(10)                       , N H                                 4F11691
      03514  0 12000 0 03504        TPL CD001                       OR = ( N H.                           4F11692
      03515  0 07400 1 03534 CD004  TSX CD900,1                   * IF NOT ENDMARK OR ILLEGAL CHARACTER4F11693
      03516  0 34000 0 01417        CAS L(9)                        CONTINUE SCAN.                        4F11694
D     03517  1 00000 0 03522        TXI CD005,0                     N                                     4F11695
D     03520  1 00000 0 03515        TXI CD004,0                     IS                                    4F11696
D     03521  1 00000 0 03515        TXI CD004,0                     A                                     4F11697
      03522  0 34000 0 01423 CD005  CAS L(H)                        FIXED                                 4F11698
D     03523  1 00000 0 03505        TXI CD001+1,0                   POINT                                 4F11699
D     03524  1 00000 0 03526        TXI CD700,0                     INTEGER.                              4F11700
D     03525  1 00000 0 03505        TXI CD001+1,0                   X                                     4F11701
      03526  0 07400 4 01707 CD700  TSX C0190,4                   * GO GET NEXT NONBLANK CHARACTER,       4F11702
      03527  0 34000 0 01374        CAS ENDMK                       AND IF ENDMARK,                       4F11703
D     03530  1 00000 0 03532        TXI CD701,0                     THEN SKIP                             4F11704
D     03531  1 00000 0 03616        TXI CC000,0                   * TO NON-ARITHMETIC CLASSIFICATION.     4F11705
      03532  0 07400 1 03543 CD701  TSX CD600,1                   * SINCE HOLLERITH HAS BEEN FOUND,       4F11706
D     03533  1 00000 0 03526        TXI CD700,0                     THEN $ IS LEGAL IN FORMAT TEXT.       4F11707
      03534  0 07400 4 01707 CD900  TSX C0190,4                   * OBTAIN NEXT NONBLANK CHARACTER,       4F11708
      03535  0 34000 0 01374        CAS ENDMK                       AND IF NOT                            4F11709
D     03536  1 00000 0 03540        TXI CD800,0                     ENDMARK, THEN SKIP                    4F11710
D     03537  1 00000 0 03562        TXI CB000,0                   * EXIT TO ARITH/NON-ARITH SCAN.         4F11711
      03540  0 34000 0 01427 CD800  CAS SPECOP                      CHECK FOR $                           4F11712
D     03541  1 00000 0 03546        TXI CD601,0                     WHICH, UNLESS HOLLERITH, IS AN        4F11713
      03542  0 07400 4 03400        TSX DIAG,4                    * ERROR -- GO TO DIAGNOSTIC.            4F11714
      03543  0 34000 0 01435 CD600  CAS PM                          CHECK FOR RECORD MARK                 4F11715
      03544  0 02000 1 00001        TRA 1,1                         WHICH IS AN                           4F11716
      03545  0 07400 4 03400        TSX DIAG,4                    * ERROR -- GO TO DIAGNOSTIC.            4F11717
      03546  0 34000 0 01426 CD601  CAS CHAR3                       CHECK FOR MINUS ZERO                  4F11718
      03547  0 02000 1 00001        TRA 1,1                         WHICH IS AN                           4F11719
      03550  0 07400 4 03400        TSX DIAG,4                    * ERROR -- GO TO DIAGNOSTIC.            4F11720
      03551  0 34000 0 01424        CAS CHAR2                       CHECK FOR PLUS ZERO                   4F11721
      03552  0 02000 1 00001        TRA 1,1                         WHICH IS AN                           4F11722
      03553  0 07400 4 03400        TSX DIAG,4                    * ERROR -- GO TO DIAGNOSTIC.            4F11723
      03554  0 34000 0 01420        CAS MINUS                       CHECK FOR MINUS SIGN                  4F11724
      03555  0 02000 1 00001        TRA 1,1                         WHICH IS AN                           4F11725
      03556  0 07400 4 03400        TSX DIAG,4                    * ERROR -- GO TO DIAGNOSTIC.            4F11726
      03557  0 40200 0 01373        SUB TEN                         CHECK FOR TEN                         4F11727
      03560 -0 10000 1 00001        TNZ 1,1                         WHICH IS AN                           4F11728
      03561  0 07400 4 03400        TSX DIAG,4                    * ERROR -- GO TO DIAGNOSTIC.            4F11729
                                                 END OF PROGRAM CD000.                                         4F11730
                                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11731
                                                                                                              4F11732
                                                CB000/ CALLS=C0190X,C0190,DIAG.                                  4F11733
                                                CB000 CLASSIFIES STATEMENT AS ARITHMETIC OR NON-ARITHMETIC.     4F11734
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                03562   0 53400 1 01407 CB000   LXA L(1),1                    SET XR1 TO COUNT PARENTHESES.          4F11735
                03563   0 07400 4 01671          TSX C0190X,4                * RESET CHCTR AND FWA TO BEGIN SCAN.     4F11736
                03564   0 07400 4 01707 CB001    TSX C0190,4                 * EXAMINE NEXT NON-BLANK CHARACTER.      4F11737
                03565   0 34000 0 01400          CAS AEQUAL                    IF AN EQUAL SIGN,                      4F11738
          D     03566   1 00000 0 03570          TXI CB005,0                   THEN                                   4F11739
          D     03567   1 00000 0 03601          TXI CB200,0                   GO TEST PAREN-COUNT.                   4F11740
                03570   0 34000 0 01375 CB005    CAS ALPAR                     IF A LEFT PARENTHESIS,                 4F11741
          D     03571   1 00000 0 03573          TXI CB006,0                   THEN                                   4F11742
                03572   1 00001 1 03564          TXI CB001,1,1                 UPDATE PAREN-COUNT BY 1.               4F11743
                03573   0 34000 0 01377 CB006    CAS ARPAR                     IF A RIGHT PARENTHESIS,                4F11744
          D     03574   1 00000 0 03576          TXI CB007,0                   THEN                                   4F11745
          D     03575   1 00000 0 03614          TXI CB500,0                   GO TEST PAREN-COUNT.                   4F11746
                03576  -0 40200 0 01374 CB007    SUB ENDMK                     IF NOT ENDMARK, THEN                   4F11747
                03577 -0 10000 0 03564          TNZ CB001                     GO EXAMINE NEXT CHARACTER.             4F11748
          D     03600   1 00000 0 03616          TXI CC000,0                 * OTHERWISE, GO TO DIC LOOK-UP.          4F11749
                03601   2 00001 1 03616 CB200    TIX CC000,1,1               * IF EQUAL WAS NOT WITHIN PARENS,        4F11750
                03602   0 07400 4 01707 CB201    TSX C0190,4                 * THEN EXAMINE NEXT CHARACTER.           4F11751
                03603   0 34000 0 01375          CAS ALPAR                     IF LEFT PARENTHESIS,                   4F11752
          D     03604   1 00000 0 03606          TXI CB205,0                   THEN                                   4F11753
          D     03605   1 00000 0 02404          TXI ARITH,0                 * THIS IS AN ARITHMETIC FORMULA.         4F11754
                03606   0 34000 0 01376 CB205    CAS ACOMMA                    IF A COMMA,                            4F11755
          D     03607   1 00000 0 03611          TXI CB206,0                   THEN                                   4F11756
          D     03610   1 00000 0 03616          TXI CC000,0                 * GO TO NON-ARITHMETIC DIC LOOK-UP.      4F11757
                03611   0 40200 0 01374 CB206    SUB ENDMK                     IF NOT ENDMARK, THEN                   4F11758
                03612  -0 10000 0 03602          TNZ CB201                     GO EXAMINE NEXT CHARACTER.             4F11759
          D     03613   1 00000 0 02404          TXI ARITH,0                 * THIS IS AN ARITHMETIC FORMULA.         4F11760
                03614   2 00001 1 03564 CB500    TIX CB001,1,1                 IF PAREN-COUNT DOES NOT BALANCE,       4F11761
                03615   0 07400 4 03400          TSX DIAG,4                  * ERROR-GO TO DIAGNOSTIC ROUTINE.        4F11762
                                                   END OF PROGRAM CB000.                                          4F11763
                                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11764
                                                                                                                  4F11765
                                                 CC000/ CALLS=CC500,C0190X,DIAG,C0190,TET00.                    4F11766
                                                 CC000 CLASSIFIES STATEMENT AS TO WHICH NON-ARITHMETIC.         4F11767
                03616   0 60000 0 01113 CC000    STZ 2G                        SET DICTIONARY WORD TAG, AND           4F11768
                03617   0 53400 3 01406          LXA L(0),3                    CHARACTER COUNT AND ENTRY COUNT.       4F11769
                03620   0 07400 4 01671 CC001    TSX C0190X,4                * RESET CHCTR AND FWA TO BEGIN SCAN.     4F11770
                03621   0 07400 4 05743          TSX CC500,4                 * EXAMINE NEXT DICTIONARY CHARACTER.     4F11771
                03622   0 34000 0 01374          CAS ENDMK                     TEST FOR CONSECUTIVE ENDMARKS.         4F11772
                03623   0 02000 0 03272          TRA ERR77P                  * MACHINE ERROR, GO TO DIAGNOSTIC.       4F11773
                03624   0 07400 4 03400          TSX DIAG,4                  * ERROR = NOT FOUND IN DICTIONARY.       4F11774
          D     03625   1 00000 0 03632          TXI CC004,0                   GO BEGIN COMPARISON.                   4F11775
                03626   0 07400 4 05743 CC002    TSX CC500,4                 * EXAMINE NEXT DICTIONARY CHARACTER.     4F11776
                03627   0 34000 0 01374          CAS ENDMK                     TEST FOR END OF DIC ENTRY.             4F11777
          D     03630   1 00000 0 03272          TXI ERR77P,0                * MACHINE ERROR, GO TO DIAGNOSTIC.       4F11778
          D     03631   1 00000 0 03644          TXI CC007,0                   IF END OF ENTRY, LOOK NO FURTHER.      4F11779
                03632   0 60100 0 01105 CC004    STO 1C                        OTHERWISE, SAVE CHARACTER              4F11780
                03633  -0 60000 0 01106          STQ 1C+1                      AND REMAINDER OF DICTIONARY WORD.      4F11781
                03634   0 07400 4 01707          TSX C0190,4                 * GO GET NEXT FORMULA CHARACTER,         4F11782
                03635   0 56000 0 01106          LDQ 1C+1                      AND RESTORE DICTIONARY WORD.           4F11783
                03636   0 40200 0 01105          SUB 1C                        IF CHARACTERS ARE EQUAL,               4F11784
                03637   0 10000 0 03626          TZE CC002                     THEN GO COMPARE NEXT CHARACTERS.       4F11785
                03640   0 07400 4 05743 CC005    TSX CC500,4                 * OTHERWISE, EXAMINE NEXT DIC CHAR.      4F11786
                03641   0 40200 0 01374          SUB ENDMK                     CONTINUE UNTIL AN ENDMARK IS           4F11787
                03642  -0 10000 0 03640          TNZ CC005                     FOUND, THEN                            4F11788
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03643   1 77777 1 03620         TXI CC001,1,-1                  COUNT ENTRY, AND BEGIN AGAIN.       4F11789
03644   0 50000 1 06246 CC007   CLA T,1                         IF THE CURRENT STATEMENT IS         4F11790
03645   0 12000 1 06246         TPL T,1                         OF THE NON-EXECUTABLE TYPE,         4F11791
03646  -0 63400 1 01107         SXD 1C+2,1                      THEN                                4F11792
03647   0 07400 1 03321         TSX TET00,1                   * GO ENTER EIFNO IN THE               4F11793
03650   0 00000 0 00016         PZE 14                          NONEXC TABLE.                       4F11794
03651  -0 53400 1 01107         LXD 1C+2,1                      AND THEN                            4F11795
03652   0 02000 1 06246 CC008   TRA T,1                       * TAKE INDICATED TRANSFER.            4F11796
                                 END OF PROGRAM CC000.                                             4F11797
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11798
                                                                                                    4F11799
                                STATEA/2-PROCESS CONTROL AND SPECIFICATION STATEMENTS=              4F11800
                                                                                                    4F11801
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11802
                                                                                                    4F11803
                                C0100/ CALLS=GETIFN,C0190,TEST..,C0180,C0160,C0150,TET00.           4F11804
                                C0100 PROCESSES DO STATEMENTS.                                      4F11805
03653   0 07400 4 02366 C0100   TSX GETIFN,4                  * GET INTERNAL FORMULA NUMBER IN 1C.  4F11806
03654   0 07400 4 01707         TSX C0190,4                   * OBTAIN 1ST NON-BLANK CHARACTER      4F11807
03655   0 07400 4 03315         TSX TESTI0,4                  * WHICH SHOULD BE NUMERIC.           4F11808
03656   0 07400 2 01655         TSX C0180,2                   * OBTAIN IN 1G THE BIN EQUIV OF BETA.4F11809
03657   0 60100 0 01113         STO 2G                          SAVE THE 1ST CHAR OF SUBSCRIPT.     4F11810
03660   0 50000 0 01112         CLA 1G                          TAKE CONVERTED RESULT FOR BETA      4F11811
03661   0 62100 0 01105         STA 1C                          AND STORE IN ADDR OF 1C.            4F11812
03662   0 50000 0 01113         CLA 2G                          1C IS NOW COMPLETE EXCEPT FOR TAG.  4F11813
03663   0 07400 2 01624         TSX C0160,2                   * OBTAIN IN 1G THE SUBSCRIPT.         4F11814
03664   0 50000 0 01112         CLA 1G                          STORE SUBSCRIPT                     4F11815
03665   0 60100 0 01106         STO 1C+1                        IN 1C+1.                            4F11816
03666   0 07400 2 01604         TSX C0150,2                   * OBTAIN IN 1G THE PROPER N1.         4F11817
03667   0 50000 0 01112         CLA 1G                          STORE N1                            4F11818
03670   0 60100 0 01107         STO 1C+2                        IN 1C+2.                            4F11819
03671  -0 50000 0 01353         CAL I                           OBTAIN I IN LOGICAL ACC AND         4F11820
03672   0 77100 0 00022         ARS 18                          STORE IN POS 18 OF 1C               4F11821
03673  -0 60200 0 01105         ORS 1C                          0 IF NUMERIC, OR 1 IF NON-NUMERIC.  4F11822
03674   0 07400 2 01604         TSX C0150,2                   * OBTAIN IN 1G THE PROPER N2.         4F11823
03675   0 07400 4 03247         TSX TESTA0,4                  * TEST THE AC FOR COMMA OR ENDMARK.   4F11824
03676  -0 10000 0 03701         TNZ C0113                       IF ENDMARK, THEN                    4F11825
03677  -0 77300 0 00037         RQL 31                          CREATE ONE IN MQ FOR N3             4F11826
03700  -0 60000 0 01365         STQ RESIDU                      AND PLACE IN RESIDU.                4F11827
03701   0 50000 0 01112 C0113   CLA 1G                          STORE N2                            4F11828
03702   0 60100 0 01110         STO 1C+3                        IN 1C+3.                            4F11829
03703  -0 50000 0 01353         CAL I                           OBTAIN I IN LOG ACC AND             4F11830
03704   0 77100 0 00023         ARS 19                          STORE IN POS 19 OF 1C               4F11831
03705  -0 60200 0 01105         ORS 1C                          0 IF NUMERIC, OR 1 IF NON-NUMERIC.  4F11832
03706   0 07400 2 01604         TSX C0150,2                   * OBTAIN IN 1G THE PROPER N3.         4F11833
03707   0 07400 4 03271         TSX TESTD0,4                  * THE AC SHOULD CONTAIN AN ENDMARK.   4F11834
03710   0 50000 0 01112         CLA 1G                          STORE N3                            4F11835
03711   0 60100 0 01111         STO 1C+4                        IN 1C+4.                            4F11836
03712  -0 50000 0 01353         CAL I                           OBTAIN I IN LOG ACC AND             4F11837
03713   0 77100 0 00024         ARS 20                          STORE IN POS 20 OF 1C               4F11838
03714  -0 60200 0 01105         ORS 1C                          0 IF NUMERIC, OR 1 IF NON-NUMERIC.  4F11839
03715   0 07400 1 03321         TSX TET00,1                   * GO TO TET PROGRAM TO ENTER          4F11840
03716   0 00000 0 00001         PZE 1                           1C,1C+1,..1C+4 IN TDO TABLE 1.      4F11841
03717   1 00000 0 03440         TXI CA010,0                   * EXIT TO PROCESS NEXT STATEMENT.     4F11842
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                                                END OF PROGRAM C0100.                                                    4F11843
                                               * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11844
                                                                                                                         4F11845
                                                C0200/ CALLS=GETIFN,DIAG,TEST...,C0190,C0180,TET00,C0160,               4F11846
                                                CIT00,SS000(CSA000).                                                     4F11847
                                                C0200 PROCESSES GO TO STATEMENTS.                                        4F11848
      03720   0 07400 4 02366 C0200   TSX GETIFN,4                 * GET INTERNAL FORMULA NUMBER IN 1C                 4F11849
      03721   0 60100 0 01107         STO 1C+2                       AND IN 1C+2.                                      4F11850
      03722   0 07400 4 01707         TSX C0190,4                  * OBTAIN IN ACC NEXT NB CHARACTER                   4F11851
      03723   0 34000 0 01417         CAS L(9)                       AND COMPARE IT WITH 9.                            4F11852
D     03724   1 00000 0 03733         TXI C0205,0                    IF NON-NUMERIC, GO COMPARE WITH (.                4F11853
      03725   0 76100 0 00000         NOP                            IF NUMERIC, THEN                                  4F11854
      03726   0 07400 2 01655         TSX C0180,2                  * OBTAIN IN 1G THE BINARY EQUV BETA.                4F11855
      03727   0 07400 4 03271         TSX TESTD0,4                 * THE AC SHOULD CONTAIN AN ENDMARK.                 4F11856
      03730   0 50000 0 01112         CLA 1G                         STORE BETA IN 1C+1 TO CONSTRUCT                   4F11857
      03731   0 60100 0 01106         STO 1C+1                       THE 2ND WORD OF TIFGO TABLE ENTRY.                4F11858
D     03732   1 00000 0 04030         TXI C0202,0                    GO TO ENTER 1C,1C+1 INTO TIFGO.                   4F11859
      03733   0 34000 0 01375 C0205   CAS ALPAR                      TEST CHARACTER FOR ALPHABETIC.                    4F11860
D     03734   1 00000 0 03736         TXI C0210,0                    IF NOT ALPHABETIC, THEN                           4F11861
D     03735   1 00000 0 03746         TXI C0212,0                    THIS IS TYPE= GO TO ( ), I.                       4F11862
      03736   0 07400 2 01624 C0210   TSX C0160,2                  * TYPE= GO TO N,(),SO OBTAIN IN 1G N                4F11863
      03737   0 07400 4 03305         TSX TESTG0,4                 * WHICH SHOULD BE FOLLOWED BY COMMA.                4F11864
      03740   0 50000 0 01112         CLA 1G                         SAVE THE SYMBOL N IN 1C+3                         4F11865
      03741   0 60100 0 01110         STO 1C+3                       FOR COMPILED INSTRUCTION.                         4F11866
      03742   0 07400 4 01707         TSX C0190,4                  * OBTAIN IN ACC NEXT NB CHARACTER,                  4F11867
      03743   0 07400 4 03275         TSX TESTE0,4                 * WHICH SHOULD BE A LPAREN.                         4F11868
      03744   0 50000 0 01407         CLA L(1)                       PREPARE TO SET ADDRESS PART OF 1C                 4F11869
      03745   0 02000 0 03747         TRA C0213                      TO 1 TO INDICATE CLASS OF TRANSFER.               4F11870
      03746   0 50000 0 01410 C0212   CLA L(2)                       PREPARE TO SET ADDR OF 1C TO 2.                   4F11871
      03747   0 62100 0 01105 C0213   STA 1C                         STORE 1 OR 2 IN ADDR OF 1C.                       4F11872
      03750  -0 53400 2 04032         LXD CTRAD,2                    OBTAIN 250-(NO. TRAD ENTRIES), AND                4F11873
      03751  -0 75400 2 00000         PXD ,2                         PLACE IN THE DECREMENT OF THE AC                  4F11874
      03752   0 60100 0 01106         STO 1C+1                       AND STORE IN 1C+1.                                4F11875
      03753   0 07400 4 01707 C0215   TSX C0190,4                  * OBTAIN IN ACC NEXT NB CHAR.                       4F11876
      03754   0 07400 2 01655         TSX C0180,2                  * OBTAIN IN 1G THE BIN EQU OF BETA.                 4F11877
      03755   0 60100 0 01113         STO 2G                         SAVE CHAR IN ACC.                                 4F11878
      03756   0 07400 1 03321         TSX TET00,1                  * GO TO ENTER 1G                                    4F11879
      03757   0 00000 0 00003         PZE 3                          INTO TRAD TABLE (TABLE 3).                        4F11880
      03760  -0 53400 2 04032         LXD CTRAD,2                    REDUCE COUNTER                                    4F11881
      03761   2 00001 2 03762         TIX C0216,2,1                  CTRAD                                             4F11882
      03762  -0 63400 2 04032 C0216   SXD CTRAD,2                    BY 1.                                             4F11883
      03763   0 50000 0 01113         CLA 2G                         RESTORE CHAR TO ACC.                              4F11884
      03764   0 07400 4 03255         TSX TESTB0,4                 * TEST FOR COMMA OR RPAREN.                         4F11885
      03765  -0 10000 0 03753         TNZ C0215                      IF RIGHT PARENTHESIS, THEN                        4F11886
      03766   0 50000 0 04032         CLA CTRAD                      OBTAIN IN ADDR OF ACC 250-NO. OF                  4F11887
      03767   0 77100 0 00022         ARS 18                         ENTRIES IN TRAD TABLE,AND STORE                   4F11888
      03770   0 62100 0 01106         STA 1C+1                       IN ADDR OF 1C+1.                                  4F11889
      03771   0 50000 0 01105         CLA 1C                         OBTAIN 1C IN ACC                                  4F11890
      03772   0 76000 0 00001         LBT                            AND TEST LOW ORDER BIT.                           4F11891
      03773   0 02000 0 04004         TRA C0220                      THIS IS A TYPE GO TO (),I FORMULA.                4F11892
      03774   0 07400 4 01707         TSX C0190,4                  * OBTAIN NEXT NB CHAR AND                           4F11893
      03775   0 07400 4 03271         TSX TESTD0,4                 * TEST FOR ENDMK.                                   4F11894
      03776   0 07400 4 01731         TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=                  4F11895
      03777   0 00000 0 01107         PZE 1C+2                       WORD 1--DECR= INTFORMNO (LOCATION)                4F11896
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04000  0 00000 0 01601        PZE L(TRA)                    WORD 2--TRA000 (OP AND DECR)        4F11897
04001  0 00000 0 01110        PZE 1C+3                      WORD 3--VARIABLE N (ADDRESS)        4F11898
04002  0 00000 0 01406        PZE L(0)                      WORD 4--000000 (REL ADDR AND TAG).  4F11899
04003  0 02000 0 04030        TRA C0202                     GO TO ENTER 1C,1C+1 INTO TIFGO.     4F11900
04004  0 07400 4 01707 C0220  TSX C0190,4                 * EXAMINE NEXT NB CHARACTER,        4F11901
04005  0 07400 4 03305        TSX TESTG0,4                * WHICH SHOULD BE A COMMA.          4F11902
04006  0 07400 4 01707        TSX C0190,4                 * OBTAIN IN ACC NEXT NB CHAR, AND   4F11903
04007  0 07400 2 01624        TSX C0160,2                 * OBTAIN IN 1G THE FXD-PT. VARIABLE, 4F11904
04010  0 07400 4 03271        TSX TESTD0,4                * WHICH SHOULD BE FOLLOWED BY ENDMK. 4F11905
04011  0 50000 0 01407        CLA L(1)                      PREPARE PROPER FORM OF SUBSCRIPT    4F11906
04012  0 60100 0 01131        STO E+3                       COMBINATION AS                      4F11907
04013  0 60100 0 01100        STO DIMCTR                    INPUT TO SUBSCRIPT ANALYSIS=        4F11908
04014  0 50000 0 01112        CLA 1G                        E+3 = 1ST COEFFICIENT,              4F11909
04015  0 60100 0 01132        STO E+4                       E+4 = 1ST SUBSCRIPT VARIABLE,       4F11910
04016  0 60000 0 01137        STZ E+9                       E+9 = ADDEND OF SUBSCRIPT,          4F11911
04017  0 07400 4 03027        TSX CSA000,4                * DIMCTR = DIMENSION OF VARIABLE.     4F11912
04020  0 50000 0 01126        CLA E                         OUTPUT FROM CSA IS FOUND IN         4F11913
04021  0 77100 0 00030        ARS 24                        E = I--TAUTAG (GENERAL TAG) 1-11.   4F11914
04022  0 60100 0 01113        STO 2G                        ADJUST AND SAVE FOR COMP. INSTR.    4F11915
04023  0 07400 4 01731        TSX CIT00,4                 * GO MAKE THE FOLLOWING CIT ENTRY=    4F11916
04024  0 00000 0 01107        PZE 1C+2                      WORD 1--DECR-INTFORMNO(LOCATION)    4F11917
04025  0 00000 0 01601        PZE L(TRA)                    WORD 2--TRA000(OP AND DECR)         4F11918
04026  0 00000 0 01406        PZE L(0)                      WORD 3--000000(ADDRESS)             4F11919
04027  0 00000 0 01113        PZE 2G                        WORD 4--ADDR = TAUTAG FOR I         4F11920
                              C0200= ENTRY POINT USED BY C0400,C1000.                           4F11921
04030  0 07400 1 03321 C0202  TSX TET00,1                 * GO TO TET TO ENTER 1C AND 1C+1      4F11922
04031  0 00000 0 00002        PZE 2                         INTO TIFGO TABLE (TABLE 2).         4F11923
04032  1 00372 0 03440  CTRAD TXI CA010,0,250              * EXIT TO PROCESS NEXT STATEMENT.     4F11924
                               END OF PROGRAM C0200.                                          4F11925
                              * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11926
                                                                                              4F11927
                              C0300/ CALLS=C0190X,C0190,C0390,TEST**,DIAG,C0180,TET00,       4F11928
                              STATEB.                                                         4F11929
                              C0300 PROCESSES IF STATEMENTS.                                  4F11930
04033 -0 53400 4 00030 C0300  LXD EIFNO,4                   PLACE THE CURRENT INTERNAL FORMULA  4F11931
04034 -0 75400 4 00000        PXD ,4                        NUMBER IN THE DECREMENT OF 1C       4F11932
04035 -0 76000 0 00003        SSM                           WITH SIGN SET TO MINUS              4F11933
04036  0 60100 0 01105        STO 1C                        FOR FUTURE TIFGO ENTRY.             4F11934
04037  0 07400 4 01671        TSX C0190X,4                * SET CHCTR AND FWA TO BEGIN SCAN.    4F11935
04040  0 07400 4 01707        TSX C0190,4                 * OBTAIN IN AC THE 1ST NB CHAR (I).   4F11936
04041  0 56000 0 01433        LDQ L(X)                      REPLACE THE CHARACTER I             4F11937
04042  0 07400 4 01675        TSX C0390,4                 * WITH THE CHARACTER X.               4F11938
04043  0 56000 0 01373        LDQ L(10)                     REPLACE THE CHARACTER F             4F11939
04044  0 07400 4 01675        TSX C0390,4                 * WITH THE CHARACTER 001010.          4F11940
04045  0 07400 4 03275        TSX TESTE0,4                * IF NOT LPAREN -- THEN ERROR.        4F11941
04046  0 56000 0 01400        LDQ AEQUAL                    REPLACE THE CHARACTER LPAREN        4F11942
04047  0 07400 4 01675        TSX C0390,4                 * WITH THE CHARACTER EQUAL.           4F11943
04050  0 53400 2 01407        LXA L(1),2                    SET XR2 FOR COUNTING PARENTHESES.   4F11944
04051  0 02000 0 04053        TRA *+2                                                           4F11945
04052  0 07400 4 01707 C0302  TSX C0190,4                 * MAKE SURE THAT NEXT NB CHARACTER    4F11946
04053  0 34000 0 01374        CAS ENDMK                     IS NOT AN ENDMARK.                  4F11947
04054  0 02000 0 03272        TRA ERR77P                  * MACHINE ERROR, GO TO DIAGNOSTIC.    4F11948
04055  0 07400 4 03400        TSX DIAG,4                  * PROGRAM ERROR, GO TO DIAGNOSTIC.    4F11949
04056  0 34000 0 01375        CAS ALPAR                     IF IT IS A LPAREN,                  4F11950
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D     04057  1 00000 0 04061          TXI C0303,0                  THEN ADD 1 TO PAREN COUNT, AND      4F11951
      04060  1 00001 2 04052          TXI C0302,2,1                GO EXAMINE NEXT CHARACTER.          4F11952
      04061  0 40200 0 01377 C0303    SUB ARPAR                    IF IT IS A RPAREN,                  4F11953
      04062 -0 10000 0 04052          TNZ C0302                    THEN TEST PAREN COUNT, AND IF IT    4F11954
      04063  2 00001 2 04052          TIX C0302,2,1                CAN NOT BE REDUCED,MATE IS FOUND.   4F11955
      04064  0 56000 0 01374          LDQ ENDMK                    SO REPLACE THE CHARACTER RPAREN     4F11956
      04065  0 07400 4 01675          TSX C0390,4                * WITH THE CHARACTER ENDMK.           4F11957
      04066  0 07400 2 01655          TSX C0180,2                * BINARY EQUIVALENT OF BETA 1.        4F11958
      04067  0 07400 4 03305          TSX TESTG0,4               * THIS SHOULD BE FOLLOWED BY A COMMA.4F11959
      04070  0 50000 0 01112          CLA 1G                       MOVE BETA1                          4F11960
      04071  0 62100 0 01105          STA 1C                       TO ADDRESS OF 1C.                   4F11961
      04072  0 07400 4 01707          TSX C0190,4                * AND PROCEED TO FORM                 4F11962
      04073  0 07400 2 01655          TSX C0180,2                * THE BINARY EQUIVALENT OF BETA 2.    4F11963
      04074  0 07400 4 03305          TSX TESTG0,4               * THIS SHOULD BE FOLLOWED BY A COMMA.4F11964
      04075  0 50000 0 01112          CLA 1G                       MOVE BETA2                          4F11965
      04076  0 76700 0 00022          ALS 18                       TO DECR PART                        4F11966
      04077  0 60100 0 01106          STO 1C+1                     OF 1C+1.                            4F11967
      04100  0 07400 4 01707          TSX C0190,4                * AND PROCEED TO FORM                 4F11968
      04101  0 07400 2 01655          TSX C0180,2                * THE BINARY EQUIVALENT OF BETA 3.    4F11969
      04102  0 07400 4 03271          TSX TESTD0,4               * THIS SHOULD BE FOLLOWED BY ENDMARK.4F11970
      04103  0 50000 0 01112          CLA 1G                       MOVE BETA3                          4F11971
      04104  0 62100 0 01106          STA 1C+1                     TO ADDRESS OF 1C+1.                 4F11972
D     04105  1 00000 0 02404          TXI ARITH,0                * EXIT TO ARITH FOR FINAL PROCESSING.4F11973
                                          END OF PROGRAM C0300.                                       4F11974
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F11975
                                                                                                      4F11976
                                        C0400/ CALLS=C0190,C0180,TEST..,CIT00,C0200.                  4F11977
                                        C0400 PROCESSES IF (SENSE SWITCH STATEMENTS.                  4F11978
      04106  0 50000 0 01441 C0400    CLA L(112)                   FOR SENSE SWITCH                    4F11979
      04107  0 60100 0 01115          STO 1H                       SET 1H TO 112, AND PREPARE TO       4F11980
      04110  0 50000 0 01565          CLA L(PSE)                   SET 2H TO PSE.                      4F11981
                                        C0401= ENTRY POINT USED BY C0500.                             4F11982
      04111  0 60100 0 01116 C0401    STO 2H                       SET 2H FOR SENSE SWITCH OR LIGHT.   4F11983
      04112  0 07400 4 01707          TSX C0190,4                * PROCEED TO FORM THE BINARY          4F11984
      04113  0 07400 2 01655          TSX C0180,2                * EQUIVALENT OF SW OR SL NUMBER.      4F11985
      04114  0 07400 4 03301          TSX TESTF0,4               * THIS SHOULD BE FOLLOWED BY RPAREN. 4F11986
      04115  0 50000 0 01411          CLA L(3)                     STORE 3                             4F11987
      04116  0 60100 0 01105          STO 1C                       IN ADDRESS OF 1C.                   4F11988
      04117  0 50000 0 01112          CLA 1G                       ADD THE PROPER INCREMENT TO THE     4F11989
      04120  0 40000 0 01115          ADD 1H                       NUMBER OF SENSE SWITCH OR LIGHT,    4F11990
      04121  0 76700 0 00022          ALS 18                       AND ADJUST TO THE DECREMENT.        4F11991
                                        C0402= ENTRY POINT USED BY C0600.                             4F11992
      04122  0 60100 0 01110 C0402    STO 1C+3                     SET 1C+3 FOR CIT ENTRY.             4F11993
      04123 -0 53400 4 00030          LXD EIFNO,4                  PLACE THE CURRENT INTERNAL FORMULA 4F11994
      04124 -0 75400 4 00000          PXD ,4                       NUMBER IN THE DECREMENT OF          4F11995
      04125  0 62200 0 01105          STD 1C                       1C FOR FUTURE TIFGO ENTRY, AND      4F11996
      04126  0 60100 0 01107          STO 1C+2                     1C+2 FOR FUTURE CIT ENTRY.          4F11997
      04127  0 07400 4 01707          TSX C0190,4                * PROCEED TO FORM THE BINARY          4F11998
      04130  0 07400 2 01655          TSX C0180,2                * EQUIVALENT OF BETA 1,               4F11999
      04131  0 07400 4 03305          TSX TESTG0,4               * WHICH SHOULD BE FOLLOWED BY COMMA. 4F12000
      04132  0 50000 0 01112          CLA 1G                       BRING UP,                           4F12001
      04133  0 76700 0 00022          ALS 18                       ADJUST AND                          4F12002
      04134  0 60100 0 01106          STO 1C+1                     STORE BETA1 IN DECR OF 1C+1.        4F12003
      04135  0 07400 4 01707          TSX C0190,4                * PROCEED TO FORM THE BINARY          4F12004
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04136   0 07400 2 01655          TSX C0180,2                 * EQUIVALENT OF BETA 2,                4F12005
04137   0 07400 4 03271          TSX TESTDO,4                * WHICH SHOULD BE FOLLOWED BY ENDMK.   4F12006
04140   0 50000 0 01112          CLA 1G                        BRING UP AND                         4F12007
04141   0 62100 0 01106          STA 1C+1                      STORE BETA2 IN ADDR OF 1C+1.         4F12008
04142   0 07400 4 01731          TSX CITOO,4                 * GO MAKE THE FOLLOWING CIT ENTRY=     4F12009
04143   0 00000 0 01107          PZE 1C+2                      WORD1--DECR = INTFORMNO (LOCATION)   4F12010
04144   0 00000 0 01116          PZE 2H                        WORD2--PSE,MSE,DCT,TOV,OR TQO.       4F12011
04145   0 00000 0 01406          PZE L(0)                      WORD3--000000 (ADDRESS)              4F12012
04146   0 00000 0 01110          PZE 1C+3                      WORD4--DECR=SS OR SL NO., OR 0000004F12013
D  04147   1 00000 0 04030          TXI C0202,0                 * MAKE TIFGO ENTRY, AND RETURN TO CA.4F12014
                                     END OF PROGRAM C0400.                                          4F12015
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12016
                                                                                                    4F12017
                                    C0500/ USES=C0400.                                              4F12018
                                    C0500 PROCESSES IF (SENSE LIGHT STATEMENTS.                     4F12019
04150   0 50000 0 01440 C0500    CLA L(96)                     STORE 96 IN                          4F12020
04151   0 60100 0 01115          STO 1H                        1H AND                               4F12021
04152   0 50000 0 01563          CLA L(MSE)                    OBTAIN (MSE000) IN ACC.              4F12022
04153   0 02000 0 04111          TRA C0401                   * AND CONTINUE BY USING PROGRAM C04.   4F12023
                                     END OF PROGRAM C0500.                                          4F12024
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12025
                                                                                                    4F12026
                                    C0600/ USES=C0400.                                              4F12027
                                    C0600 PROCESSES IF DIVIDE CHECK STATEMENTS.                     4F12028
04154   0 50000 0 01545 C0600    CLA L(DCT)                    STORE (DCT000)                       4F12029
04155   0 60100 0 01116          STO 2H                        IN 2H                                4F12030
04156   0 50000 0 01412          CLA L(4)                      AND PICK UP 4 TO SET 1C.             4F12031
                                    C0601= ENTRY POINT USED BY C0700.                               4F12032
04157   0 60100 0 01105 C0601    STO 1C                        SET 1C FOR FUTURE TIFGO ENTRY.       4F12033
04160  -0 75400 0 00000          PXD ,0                        CLEAR THE AC,                        4F12034
04161   0 02000 0 04122          TRA C0402                   * AND CONTINUE BY USING PROGRAM C04.   4F12035
                                     END OF PROGRAM C0600.                                          4F12036
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12037
                                                                                                    4F12038
                                    C0700/ USES C0600.                                              4F12039
                                    C0700 PROCESSES IF AC OVERFLOW STATEMENTS.                      4F12040
04162   0 50000 0 01577 C0700    CLA L(TOV)                    PICKUP TOV000 TO SET 2H.             4F12041
                                    C0701= ENTRY POINT USED BY C0800.                               4F12042
04163   0 60100 0 01116 C0701    STO 2H                        SET 2H FOR FUTURE CIT ENTRY.         4F12043
04164   0 50000 0 01413          CLA L(5)                      PICKUP 5 TO SET 1C, AND              4F12044
04165   0 02000 0 04157          TRA C0601                   * CONTINUE BY USING PROGRAM C06.       4F12045
                                     END OF PROGRAM C0700.                                          4F12046
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12047
                                                                                                    4F12048
                                    C0800/ USES=C0700.                                              4F12049
                                    C0800 PROCESSES IF MQ OVERFLOW STATEMENTS.                      4F12050
04166   0 50000 0 01600 C0800    CLA L(TQO)                    PICKUP TQO000 TO SET 2H,             4F12051
04167   0 02000 0 04163          TRA C0701                   * AND CONTINUE BY USING PROGRAM C07.   4F12052
                                     END OF PROGRAM C0800.                                          4F12053
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12054
                                                                                                    4F12055
                                    C0900/ CALLS=C0190,CITOO,DIAG. CALLER=C1300.                    4F12056
                                    C0900 PROCESSES PAUSE STATEMENTS.                               4F12057
04170  -0 53400 2 04175 C0900    LXD C090X,2                   SET XR2 FOR EXIT TO CA000.           4F12058
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                                    C0901= ENTRY POINT USED BY C1300.                                  4F12059
                                      CLEAR 1G.                                                        4F12060
04171  0 60000 0 01112 C0901  STZ 1G                      * TEST NEXT NON-BLANK CHARACTER              4F12061
04172  0 07400 4 01707 C0902  TSX C0190,4                   FOR END OF STATEMENT MARK.                 4F12062
04173  0 34000 0 01374        CAS ENDMK                   * MACHINE ERROR, GO TO DIAGNOSTIC.           4F12063
04174  0 02000 0 03272        TRA ERR77P                    IF NOT END OF STATEMENT, THEN              4F12064
04175  1 74341 0 04202 C090X  TXI C0903,0,-CA010+1          ADD 1G TO DIGIT,                           4F12065
04176  0 40000 0 01112        ADD 1G                        MULTIPLY BY 8,                             4F12066
04177  0 76700 0 00003        ALS 3                         AND STORE BACK IN 1G.                      4F12067
04200  0 60100 0 01112        STO 1G                        CONTINUE UNTIL END OF STATEMENT.           4F12068
D      04201  1 00000 0 04172 TXI C0902,0                   THEN PLACE OCTAL ALPHA                     4F12069
04202  0 50000 0 01112 C0903  CLA 1G                        IN THE DECREMENT                           4F12070
04203  0 76700 0 00017        ALS 15                        OF 1C FOR FUTURE CIT ENTRY.                4F12071
04204  0 60100 0 01105        STO 1C                        PLACE THE CURRENT INTERNAL FORMULA         4F12072
04205 -0 53400 4 00030        LXD EIFNO,4                   NUMBER IN THE DECREMENT                    4F12073
04206 -0 75400 4 00000        PXD ,4                        OF 1C+1,WITH ZEROS ELSEWHERE.              4F12074
04207  0 60100 0 01106        STO 1C+1                    * GO MAKE THE FOLLOWING CIT ENTRY=           4F12075
04210  0 07400 4 01731        TSX CIT00,4                   WORD1--DECR = INTFORMNO (LOCATION)         4F12076
04211  0 00000 0 01106        PZE 1C+1                      WORD2--HPR000 (OP AND DECR)                4F12077
04212  0 00000 0 01554        PZE L(HPR)                    WORD3--000000 (ADDRESS)                    4F12078
04213  0 00000 0 01406        PZE L(0)                      WORD4--DECR = ALPHA, REST ZEROS.           4F12079
04214  0 00000 0 01105        PZE 1C                      * EXIT TO CA000, OR TO C1300.                4F12080
04215  0 02000 2 00001        TRA 1,2                                                                  4F12081
                                    END OF PROGRAM C0900.
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12082
                                                                                                       4F12083
                                    C1000/ USES=C0200. CALLS=GETIFN,C0190,C0180,DIAG,C0160,TEST..    4F12084
                                    CIT00.                                                             4F12085
                                    C1000 PROCESSES ASSIGN STATEMENTS.                                 4F12086
04216  0 07400 4 02366 C1000  TSX GETIFN,4                * GET INTERNAL FORMULA NUMBER IN 1C          4F12087
04217  0 60100 0 01107        STO 1C+2                      AND 1C+2,WITH ZEROS ELSEWHERE.             4F12088
04220  0 50000 0 01414        CLA L(6)                      STORE 6 IN                                 4F12089
04221  0 62100 0 01105        STA 1C                        ADDRESS OF 1C.                             4F12090
04222  0 07400 2 01654        TSX C0180X,2                * GO FORM BINARY EQUIV OF ALPHA.             4F12091
04223  0 40200 0 01432        SUB L(T)                      IF NEXT CHARACTER IS NOT T, THEN           4F12093
04224  0 10000 0 04226        TZE *+2                       THIS IS AN                                 4F12094
04225  0 07400 4 03400        TSX DIAG,4                  * ERROR - GO TO THE DIAGNOSTIC.              4F12095
04226  0 07400 4 01707        TSX C0190,4                 * EXAMINE NEXT NON-BLANK CHARACTER           4F12096
04227  0 40200 0 01425        SUB L(0)                      AND IF IT IS NOT 0, THEN                   4F12097
04230 -0 10000 0 04225        TNZ *-3                       ERROR, GO TO DIAGNOSTIC.                   4F12098
04231  0 50000 0 01112        CLA 1G                        PUT BIN EQUIV OF ALPHA                     4F12099
04232  0 60100 0 01106        STO 1C+1                      IN ADDRESS OF 1C+1.                        4F12100
04233  0 07400 4 01707        TSX C0190,4                 * PROCEED TO ASSEMBLE IN 1G                  4F12101
04234  0 07400 2 01624        TSX C0160,2                 * THE SYMBOL N.                              4F12102
04235  0 07400 4 03271        TSX TESTD0,4                * THE NEXT NB CHAR SHOULD BE ENDMK.          4F12103
04236  0 07400 4 01731        TSX CIT00,4                 * GO MAKE THE FOLLOWING CIT ENTRY=           4F12104
04237  0 00000 0 01107        PZE 1C+2                      WORD1--DECR = INTFORMNO (LOCATION)         4F12105
04240  0 00000 0 01541        PZE L(CLA)                    WORD2--CLA000 (OP AND DECR)                4F12106
04241  0 00000 0 01406        PZE L(0)                      WORD3--000000 (ADDRESS)                    4F12107
04242  0 00000 0 01406        PZE L(0)                      WORD4--000000 (RELADDR AND TAG).           4F12108
04243  0 07400 4 01731        TSX CIT00,4                 * STORE SECOND COMPILED INSTRUCTION=         4F12109
04244  0 00000 0 01406        PZE L(0)                      WORD1--000000  (ALL ZEROS)                 4F12110
04245  0 00000 0 01572        PZE L(STO)                    WORD2--STO000 (OP AND DECR)                4F12111
04246  0 00000 0 01112        PZE 1G                        WORD3--SYMBOL N (ADDRESS)                  4F12112
04247  0 00000 0 01406        PZE L(0)                      WORD4--000000 (REL ADDR AND TAG).          4F12113
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04250  0 02000 0 04030        TRA C0202                    * CONTINUE BY USING PROGRAM C02.     4F12114
                               END OF PROGRAM C1000.                                             4F12115
                               * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12116
                                                                                                 4F12117
                               C1100/ CALLS=C0190,C0180,TEST...,GETIFN,CIT00.                    4F12118
                               C1100 PROCESSES SENSE LIGHT STATEMENTS.                           4F12119
04251  0 07400 2 01654 C1100   TSX C0180X,2                 * GO FORM BINARY EQUIV OF SL NUMBER. 4F12120
04252  0 07400 4 03271         TSX TESTD0,4                 * THE NEXT NB CHARACTER SHD BE ENDMK.4F12122
04253  0 50000 0 01112         CLA 1G                         STORE SENSE LIGHT NUMBER           4F12123
04254  0 40000 0 01440         ADD L(96)                      PLUS 96                            4F12124
04255  0 76700 0 00022         ALS 18                         IN DECR                            4F12125
04256  0 60100 0 01112         STO 1G                         OF 1G.                             4F12126
04257  0 07400 4 02366         TSX GETIFN,4                 * GET INTERNAL FORMULA NUMBER IN 1C. 4F12127
04260  0 07400 4 01731         TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=   4F12128
04261  0 00000 0 01105         PZE 1C                         WORD1--DECR = INTFORMNO (LOCATION) 4F12129
04262  0 00000 0 01565         PZE L(PSE)                     WORD2--PSE000 (OP AND DECREMENT)   4F12130
04263  0 00000 0 01406         PZE L(0)                       WORD3--000000 (ADDRESS PART)       4F12131
04264  0 00000 0 01112         PZE 1G                         WORD4--DECR = 96+ALPHA,REST ZEROS. 4F12132
D      04265  1 00000 0 03440  TXI CA010,0                  * EXIT TO PROCESS NEXT STATEMENT.    4F12133
                               END OF PROGRAM C1100.                                             4F12134
                               * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12135
                                                                                                 4F12136
                               C1200/ CALLS=C0190,C0160,TEST...,DIM.SR,DIAG,C0180,DRTABS.        4F12137
                               C1200 PROCESSES DIMENSION STATEMENTS.                             4F12138
04266  0 07400 4 01707 C1200   TSX C0190,4                  * PROCEED TO ASSEMBLE IN 1G          4F12139
04267  0 07400 2 01624         TSX C0160,2                  * THE VARIABLE SYMBOL.               4F12140
04270  0 07400 4 03275         TSX TESTE0,4                 * NEXT NB CHARACTER SHOULD BE LPAREN.4F12141
04271  0 50000 0 01112         CLA 1G                         PUT VARIABLE SYMBOL                4F12142
04272  0 60100 0 01105         STO 1C                         IN 1C.                             4F12143
04273  0 60100 0 01130         STO E+2                        ALSO IN E+2. THEN                  4F12144
04274  0 07400 4 01771         TSX DIM1SR,4                 * GO SEARCH DIM1 TABLE.              4F12145
04275  0 02000 0 04277         TRA C1280                      THEN IF NOT                        4F12146
04276  0 02000 0 04304         TRA C1299                      FOUND,                             4F12147
04277  0 07400 4 01775 C1280   TSX DIM2SR,4                 * GO SEARCH DIM2 TABLE.              4F12148
04300  0 02000 0 04302         TRA C1281                      THEN IF NOT                        4F12149
04301  0 02000 0 04304         TRA C1299                      FOUND,                             4F12150
04302  0 07400 4 02005 C1281   TSX DIM3SR,4                 * GO SEARCH DIM3 TABLE.              4F12151
04303  0 02000 0 04305         TRA C1282                      DO NOT CONTINUE IF                 4F12152
04304  0 07400 4 03400 C1299   TSX DIAG,4                  * VARIABLE PREVIOUSLY APPEARED.      4F12153
04305  0 07400 2 01654 C1282   TSX C0180X,2                * GO FORM BINARY EQUIV OF D1.        4F12154
04306  0 40200 0 01377         SUB CLOS                       IF NOT 1 DIMENSION,                4F12156
04307  0 10000 0 04330         TZE C1210                      THEN                               4F12157
04310  0 50000 0 01112         CLA 1G                         PUT D1                             4F12158
04311  0 76700 0 00022         ALS 18                         IN DECR                            4F12159
04312  0 60100 0 01106         STO 1C+1                       OF 1C+1.                           4F12160
04313  0 07400 2 01654         TSX C0180X,2                 * GO FORM BINARY EQUIV OF D2.        4F12161
04314  0 40200 0 01377         SUB CLOS                       IF NOT 2 DIMENSION,                4F12163
04315  0 10000 0 04334         TZE C1220                      THEN                               4F12164
04316  0 50000 0 01112         CLA 1G                         PUT D2                             4F12165
04317  0 62100 0 01106         STA 1C+1                       IN ADDRESS OF 1C+1.                4F12166
04320  0 07400 2 01654         TSX C0180X,2                 * GO FORM BINARY EQUIV OF D3.        4F12168
04321  0 40200 0 01377         SUB CLOS                       IF MORE THAN 3 DIMENSION,          4F12169
04322  0 10000 0 04324         TZE *+2                        THIS IS AN                         4F12170
04323  0 07400 4 03400         TSX DIAG,4                   * ERROR - GO TO THE DIAGNOSTIC.      4F12171
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04324  0 50000 0 01112        CLA 1G                          IF 3 DIMENSION, PUT D3                4F12172
04325  0 60100 0 01107        STO 1C+2                        IN 1C+2, AND                          4F12173
04326  0 07400 4 00467        TSX DIM3IX,4                  * GO MAKE DIM3 ENTRY.                   4F12174
D 04327  1 00000 0 04337        TXI C1201,0                     GO TO TEST FOR END OF STATEMENT.      4F12175
04330  0 50000 0 01112 C1210  CLA 1G                          IF 1 DIMENSION, PUT D1                4F12176
04331  0 60100 0 01106        STO 1C+1                        IN 1C+1, AND                          4F12177
04332  0 07400 4 00455        TSX DIM1IX,4                  * GO MAKE DIM1 ENTRY. THEN              4F12178
D 04333  1 00000 0 04337        TXI C1201,0                     GO TO TEST FOR END OF STATEMENT.      4F12179
04334  0 50000 0 01112 C1220  CLA 1G                          IF 2 DIMENSION, PUT D2 IN             4F12180
04335  0 62100 0 01106        STA 1C+1                        ADDRESS PART OF 1C+1. AND             4F12181
04336  0 07400 4 00462        TSX DIM2IX,4                  * GO MAKE DIM2 ENTRY. THEN              4F12182
04337  0 07400 4 01707 C1201  TSX C0190,4                   * OBTAIN NB CHAR FOLLOWING RPAREN.      4F12183
04340  0 07400 4 03247        TSX TESTA0,4                  * TEST FOR COMMA OR ENDMARK.            4F12184
04341 -0 10000 0 04266        TNZ C1200                       IF CHARACTER IS ENDMARK, THEN         4F12185
D 04342  1 00000 0 03440        TXI CA010,0                   * EXIT TO PROCESS NEXT STATEMENT.       4F12186
                                  END OF PROGRAM C1200.                                             4F12187
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12188
                                                                                                    4F12189
                                C1300/ CALLS=C0901,TET00,CIT00.                                     4F12190
                                C1300 PROCESSES STOP STATEMENTS.                                    4F12191
04343  0 07400 1 03321 C1300  TSX TET00,1                   * GO MAKE EIFNO ENTRY                   4F12192
04344  0 00000 0 00017        PZE 15                          IN TSTOP TABLE.                       4F12193
04345  0 07400 2 04171        TSX C0901,2                   * USE C0900 TO BEGIN PROCESSING.        4F12194
04346  0 07400 4 01731        TSX CIT00,4                   * GO MAKE FOLLOWING CIT ENTRY=          4F12195
04347  0 00000 0 01406        PZE L(0)                        WORD1--ALL ZEROS                      4F12196
04350  0 00000 0 01601        PZE L(TRA)                      WORD2--TRA000 (OP+DECR)               4F12197
04351  0 00000 0 01106        PZE 1C+1                        WORD3--DECR = INTFORMNO (SYMBOL)      4F12198
04352  0 00000 0 01406        PZE L(0)                        WORD4--ZEROS (REL ADDR AND TAG)       4F12199
D 04353  1 00000 0 03440        TXI CA010,0                   * EXIT TO PROCESS NEXT STATEMENT.       4F12200
                                  END OF PROGRAM C1300.                                             4F12201
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12202
                                                                                                    4F12203
                                C1400/ CALLS=C0190,C0180,TEST..,TET00.                              4F12204
                                C1400 PROCESSES FREQUENCY STATEMENTS.                               4F12205
04354  0 07400 2 01654 C1400  TSX C0180X,2                  * GO FORM BINARY EQUIV OF EFN.          4F122006
04355  0 07400 4 03275        TSX TESTE0,4                  * CHARACTER SHOULD BE A LPAREN.         4F12208
04356  0 50200 0 01112        CLS 1G                          CHANGE SIGN OF SYMBOL                 4F12209
04357  0 60100 0 01112        STO 1G                          TO MINUS.                             4F12210
04360  0 07400 1 03321        TSX TET00,1                   * GO TO PROGRAM TET TO ENTER            4F12211
04361  0 00000 0 00007        PZE 7                           SYMBOL INTO FRET (TABLE 7), AND       4F12212
04362  0 07400 2 01654 C1401  TSX C0180X,2                  * GO FORM BINARY EQUIV OF M(1).         4F12213
04363  0 60100 0 01105        STO 1C                          SAVE CHAR IN ACC.                     4F12215
04364  0 07400 1 03321        TSX TET00,1                   * GO TO PROGRAM TET TO ENTER M(1)       4F12216
04365  0 00000 0 00007        PZE 7                           INTO TABLE FRET (TABLE7), AND         4F12217
04366  0 50000 0 01105        CLA 1C                          RESTORE CHAR IN ACC, AND              4F12218
04367  0 07400 4 03255        TSX TESTB0,4                  * TEST FOR , OR ).                      4F12219
04370 -0 10000 0 04362        TNZ C1401                       IF RIGHT PARENTHESIS, THEN            4F12220
04371  0 07400 4 01707        TSX C0190,4                   * OBTAIN IN ACC NEXT NBCHAR, AND        4F12221
04372  0 07400 4 03247        TSX TESTA0,4                  * TEST FOR COMMA OR ENDMARK.            4F12222
04373 -0 10000 0 04354        TNZ C1400                       IF ENDMARK, THIS STATEMENT IS DONE.4F12223
D 04374  1 00000 0 03440        TXI CA010,0                   * EXIT TO PROCESS NEXT STATEMENT.       4F12224
                                  END OF PROGRAM C1400.                                             4F12225
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12226
                                                                                                    4F12227
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                                        C1500/ CALLS=C0190,TEST..,C0160,C0180,TET00.                    4F12228
                                        C1500 PROCESSES EQUIVALENCE STATEMENTS.                         4F12229
04375  0 07400 4 01707 C1500   TSX C0190,4          * OBTAIN NEXT NBCHAR IN ACC.                       4F12230
04376  0 07400 4 03275         TSX TESTE0,4         * CHARACTER SHOULD BE A LPAREN.                    4F12231
04377  0 50000 0 01407 C1501   CLA L(1)               INITIALIZE 1C                                    4F12232
04400  0 60100 0 01106         STO 1C+1               TO 1.                                            4F12233
04401  0 07400 4 01707         TSX C0190,4          * OBTAIN NEXT NBCHAR IN ACC AND                    4F12234
04402  0 07400 2 01624         TSX C0160,2          * OBTAIN IN 1G THE SYMBOL V.                       4F12235
04403  0 56000 0 01112         LDQ 1G                 MOVE V                                           4F12236
04404 -0 60000 0 01105         STQ 1C                 INTO 1C.                                         4F12237
04405  0 34000 0 01375         CAS ALPAR              EXAMINE CHARACTER LEFT IN THE AC,                4F12238
D      04406  1 00000 0 04416  TXI C1503,0            AND IF                                           4F12239
D      04407  1 00000 0 04411  TXI C1502,0            CHARACTER IS A LEFT PARENTHESIS,                 4F12240
D      04410  1 00000 0 04416  TXI C1503,0            THEN                                             4F12241
04411  0 07400 2 01654 C1502   TSX C0180X,2         * GO FORM BINARY EQUIV OF N.                       4F12242
04412  0 07400 4 03301         TSX TESTF0,4         * 1ST NON-NUMERIC SHOULD BE A RPAREN.              4F12244
04413  0 50000 0 01112         CLA 1G                 PUT BIN EQUIV OF N                               4F12245
04414  0 60100 0 01106         STO 1C+1               IN 1C+1.                                         4F12246
04415  0 07400 4 01707         TSX C0190,4          * OBTAIN NEXT NBCHAR IN AC, AND                    4F12247
04416  0 07400 4 03255 C1503   TSX TESTB0,4         * TEST FOR COMMA OR RPAREN.                        4F12248
04417  0 10000 0 04423         TZE C1504              IF COMMA, THEN                                   4F12249
04420  0 07400 1 03321         TSX TET00,1          * GO TO PROGRAM TET TO ENTER SYMBOL                4F12250
04421  0 00000 0 00010         PZE 8                  AND N IN EQUIT (TABLE 8), AND                    4F12251
D      04422  1 00000 0 04377  TXI C1501,0            RETURN TO CONTINUE PROCESSING X.                 4F12252
04423  0 50200 0 01106 C1504   CLS 1C+1              MAKE SIGN OF N MINUS SINCE                       4F12253
04424  0 60100 0 01106         STO 1C+1               THIS IS LAST ITEM.                               4F12254
04425  0 07400 1 03321         TSX TET00,1          * GO TO PROGRAM TET TO ENTER SYMBOL                4F12255
04426  0 00000 0 00010         PZE 8                  AND N IN EQUIT (TABLE 8), AND                    4F12256
04427  0 07400 4 01707         TSX C0190,4          * OBTAIN NEXT NBCHAR IN ACC, AND                   4F12257
04430  0 07400 4 03247         TSX TESTA0,4         * TEST FOR COMMA OR ENDMARK.                       4F12258
04431 -0 10000 0 04375         TNZ C1500              IF ENDMARK, THEN                                 4F12259
D      04432  1 00000 0 03440  TXI CA010,0          * EXIT TO PROCESS NEXT STATEMENT.                  4F12260
                                         END OF PROGRAM C1500.                                          4F12261
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *   4F12262
                                                                                                        4F12263
                                        C1600/ CALLS=C0190,TEST..,GIF,BSS.                              4F12264
                                        C1600 PROCESSES CONTINUE STATEMENTS.                            4F12265
04433  0 07400 4 01707 C1600   TSX C0190,4          * OBTAIN NEXT NBCHAR IN ACC.                       4F12266
04434  0 07400 4 03271         TSX TESTD0,4         * CHARACTER SHOULD BE AN ENDMARK.                  4F12267
04435  0 07400 4 02375         TSX GIF,4            * GET INTERNAL FORMULA NUMBER, AND                 4F12268
04436  0 07400 2 05674         TSX BSS,2            * GO COMPILE= IFN BSS 0.                           4F12269
D      04437  1 00000 0 03440  TXI CA010,0          * EXIT TO PROCESS NEXT STATEMENT.                  4F12270
                                         END OF PROGRAM C1600.                                          4F12271
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *   4F12272
                                                                                                        4F12273
                                        C3000/ CALLS=DIAG,C0190,C0160,TEST..,SUBX00,TET00,TESTFX.       4F12274
                                        C3000 PROCESSES SUBROUTINE AND FUNCTION STATEMENTS.             4F12275
                                                                                                        4F12276
                                                                                                        4F12277
04440 -0 50000 0 00422 C3500   CAL TXHOP                                                               4F12278
04441  0 63000 0 04454         STP C3003              EXAMINE INTERNAL FORMULA NO., AND                4F12279
04442 -0 53400 4 00030 C3000   LXD EIFNO,4            IF NOT THE 1ST STATEMENT, THEN                   4F12280
04443 -3 00001 4 04445         TXL *+2,4,1          * ERROR - GO TO THE DIAGNOSTIC.                    4F12281
04444  0 07400 4 03400         TSX DIAG,4             SET ARGCNT TO INDICATE TO LATER                  4F12282
04445  0 50000 0 01121         CLA ARGCNT             RETURN THAT THERE WAS A PRECEEDING
04446  0 76000 0 00003         SSP
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04447  0 60100 0 01121        STO ARGCNT                  SUBROUTINE OR FUNCTION STATEMENT.  4F12283
04450  0 07400 4 01707        TSX C0190,4               * IF 1ST CHARACTER OF NAME IS        4F12284
04451  0 07400 4 03311        TSX TESTH0,4              * NUMERIC, THEN GO TO THE DIAGNOSTIC.4F12285
04452  0 07400 2 01624        TSX C0160,2               * ASSEMBLE NAME IN 1G.               4F12286
04453  0 07400 4 03263        TSX TESTC0,4              * NEXT CHAR SHD BE LPAREN OR ENDMARK.4F12287
D 04454 -3 00000 0 04457 C3003 TXL *+3,0                                                      4F12288
04455  0 50000 0 01112        CLA 1G                                                          4F12289
04456  0 60100 0 01332        STO FSNAME                                                      4F12290
04457  0 07400 4 03224        TSX SUBX00,4              * FILL OUT NAME WITH BLANKS.         4F12291
04460  0 07400 1 03321        TSX TET00,1               * GO ENTER NAME                      4F12292
04461  0 00000 0 00013        PZE 11                      IN SUBDEF TABLE.                   4F12293
04462 -0 53400 4 00030        LXD EIFN0,4                 PLACE                              4F12294
04463 -0 75400 4 00000        PXD ,4                      INTERNAL FORMULA NUMBER            4F12295
04464  0 60100 0 01347        STO G                       IN G.                              4F12296
D 04465  1 00000 0 04506        TXI C3002,0                 GO TEST FOR END OF STATEMENT.      4F12297
04466  0 40000 0 01374 C3001  ADD ENDMK                   IF NOT ENDMARK, RESTORE CHARACTER  4F12298
04467  0 07400 4 03311        TSX TESTH0,4              * WHICH SHOULD BE NON-NUMERIC        4F12299
04470  0 60100 0 01331        STO FIRSTC                  1ST CHARACTER OF ARGUMENT.         4F12300
04471  0 07400 2 01624        TSX C0160,2               * ASSEMBLE ARGUMENT IN 1G.           4F12301
04472  0 07400 4 03255        TSX TESTB0,4              * NEXT CHAR SHD BE COMMA OR RPAREN.  4F12302
04473  0 50000 0 01112        CLA 1G                      MOVE ARGUMENT                      4F12303
04474  0 60100 0 01350        STO G+1                     INTO G+1.                          4F12304
04475  0 07400 1 03241        TSX TESTFX,1              * GO TEST FOR FIXED OR FLOATING PT.  4F12305
D 04476  1 00000 0 04501        TXI C3004,0                 IF FLOATING PT., SKIP FORVAL ENTRY.4F12306
04477  0 07400 1 03321        TSX TET00,1               * IF FIXED POINT, GO MAKE ENTRY      4F12307
04500  0 00000 0 00006        PZE 6                       IN FORVAL TABLE.                   4F12308
04501  0 07400 1 03321 C3004  TSX TET00,1               * IN BOTH CASES, MAKE ENTRIES IN     4F12309
04502  0 00000 0 00013        PZE 11                      SUBDEF TABLE.                      4F12310
04503  0 50000 0 01121        CLA ARGCNT                  UPDATE                             4F12311
04504  0 40000 0 01454        ADD D1                      ARGUMENT COUNT                     4F12312
04505  0 60100 0 01121        STO ARGCNT                  BY 1.  AND                         4F12313
04506  0 07400 4 01707 C3002  TSX C0190,4               * EXAMINE NEXT NON-BLANK CHARACTER.  4F12314
04507  0 40200 0 01374        SUB ENDMK                   IF NOT ENDMARK, THEN               4F12315
04510 -0 10000 0 04466        TNZ C3001                   GO PROCESS NEXT ARGUMENT.          4F12316
D 04511  1 00000 0 03440        TXI CA010,0               * OTHERWISE, EXIT TO CA000.          4F12317
                                  END OF PROGRAM C3000.                                       4F12318
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12319
                                                                                              4F12320
                                C3100/ CALLS=C0190,DIAG,TEST..,C0160,TET00.                   4F12321
                                C3100 PROCESSES COMMON STATEMENTS.                            4F12322
04512  0 07400 4 01707 C3100  TSX C0190,4               * GET FIRST NON-BLANK CHAR OF SYMBOL 4F12323
04513  0 07400 4 03311        TSX TESTH0,4              * WHICH SHOULD BE NON-NUMERIC.       4F12324
04514  0 07400 2 01624        TSX C0160,2               * ASSEMBLE SYMBOL IN 1G, AND TEST    4F12325
04515  0 07400 4 03247        TSX TESTA0,4              * NEXT CHARACTER FOR COMMA OR ENDMK. 4F12326
04516  0 73400 4 00000        PAX ,4                      SAVE RESULT OF TEST IN XR4, AND    4F12327
04517  0 07400 1 03321        TSX TET00,1               * GO ENTER THIS SYMBOL               4F12328
04520  0 00000 0 00014        PZE 12                      IN COMMON TABLE.                   4F12329
04521  0 50000 0 00365        CLA SBDFCN                  ANY ENTRIES IN SUBDEF              4F123291
04522  0 10000 0 04534        TZE C3101                   INDICATE THIS IS NOT A             4F123292
04523  0 50000 0 01454        CLA 2E18                    MAIN PROGRAM. SINCE THIS           4F123293
04524  0 60100 0 01347        STO G                       IS A COMMON                        4F123294
04525 -0 50000 0 01112        CAL 1G                      STATEMENT WHICH                    4F123296
04526  0 60200 0 01350        SLW G+1                     APPEARS IN A SUBPROGRAM            4F123297
04527  0 77100 0 00036        ARS 30                      ENTER ANY                          4F123298
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04530  0 07400 1 03242        TSX TESTFX+1,1              * FIXED POINT                          4F123299
04531  0 02000 0 04534        TRA C3101                     VARIABLES                            4F12330
04532  0 07400 1 03321        TSX TET00,1                 * IN                                   4F123301
04533  0 00000 0 00006        PZE 6                         FORVAL TABLE.                        4F123302
04534  3 00000 4 04512  C3101 TXH C3100,4,0                 IF CHARACTER WAS COMMA, REPEAT.      4F123303
D      04535  1 00000 0 03440        TXI CA010,0           * IF ENDMK, EXIT TO CA000.             4F12331
                                                                                                  4F12332
                                     END OF PROGRAM C3100.
                                     * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12333
                                                                                                  4F12334
                                     C3200/ CALLS=C0190,TEST..,GETIFN,DIAG,CIT00,JIF(GIF).        4F12335
                                     C3200 PROCESSES RETURN STATEMENTS.                           4F12336
04536  0 07400 4 01707 C3200  TSX C0190,4                 * EXAMINE NEXT NON-BLANK CHARACTER,     4F12337
04537  0 07400 4 03271        TSX TESTD0,4                 * WHICH SHOULD BE AN ENDMARK.          4F12338
04540  0 07400 4 02366        TSX GETIFN,4                 * GET INTERNAL FORMULA NUMBER IN 1C.   4F12339
04541  0 07400 4 02372        TSX JIF,4                    * SET SL TO ALPHA+1.                   4F12340
04542  0 50000 0 01121        CLA ARGCNT                     TEST ARGCNT FOR PRECEEDING           4F12341
04543  0 12000 0 04545        TPL *+2                        SUBROUTINE - IF NONE, THEN           4F12342
04544  0 07400 4 03400        TSX DIAG,4                   * ERROR - GO TO THE DIAGNOSTIC.        4F12343
04545  0 50000 0 01332        CLA FSNAME                                                          4F12344
04546  0 10000 0 04555        TZE *+7                                                             4F12345
04547  0 07400 4 01731        TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=     4F12346
04550  0 00000 0 01105        PZE 1C                         WORD1--0(IFN)000                     4F12347
04551  0 00000 0 01541        PZE L(CLA)                     WORD2--CLA000                        4F12348
04552  0 00000 0 01332        PZE FSNAME                     WORD3--NAME OF FUNCTION              4F12349
04553  0 00000 0 01406        PZE L(0)                       WORD4--000000                        4F12350
04554  0 60000 0 01105        STZ 1C                         CLEAR 1C.                            4F12351
04555  0 07400 4 01731        TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=     4F12352
04556  0 00000 0 01105        PZE 1C                         WORD1--0(IFN)000                     4F12353
04557  0 00000 0 01561        PZE L(LXD)                     WORD2--LXD000                        4F12354
04560  0 00000 0 01523        PZE DOLSGN                     WORD3--$                             4F12355
04561  0 00000 0 01407        PZE L(1)                       WORD4--000001                        4F12356
04562  0 07400 4 01731        TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=     4F12357
04563  0 00000 0 01406        PZE L(0)                       WORD1--000000                        4F12358
04564  0 00000 0 01561        PZE L(LXD)                     WORD2--LXD000                        4F12359
04565  0 00000 0 01523        PZE DOLSGN                     WORD3--$                             4F12360
04566  0 00000 0 01456        PZE ABTAG2                     WORD4--001002                        4F12361
04567  0 07400 4 01731        TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=     4F12362
04570  0 00000 0 01406        PZE L(0)                       WORD1--000000                        4F12363
04571  0 00000 0 01570        PZE L(QXD)                     WORD2--QXD000                        4F12364
04572  0 00000 0 01523        PZE DOLSGN                     WORD3--$                             4F12365
04573  0 00000 0 01460        PZE ABTAG3                     WORD4--002000                        4F12366
04574  0 07400 4 01731        TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=     4F12367
04575  0 00000 0 01367        PZE SL                         WORD1--0(IFN+1)000                   4F12368
04576  0 00000 0 01567        PZE L(QPR)                     WORD2--QPR000                        4F12369
04577  0 00000 0 01406        PZE L(0)                       WORD3--000000                        4F12370
04600  0 00000 0 01121        PZE ARGCNT                     WORD4--0(N+1)004                     4F12371
04601  0 07400 4 01731        TSX CIT00,4                  * GO MAKE THE FOLLOWING CIT ENTRY=     4F12372
04602  0 00000 0 01406        PZE L(0)                       WORD1--000000                        4F12373
04603  0 00000 0 01601        PZE L(TRA)                     WORD2--TRA000                        4F12374
04604  0 00000 0 01367        PZE SL                         WORD3--0(IFN+1)000                   4F12375
04605  0 00000 0 01406        PZE L(0)                       WORD4--000000                        4F12376
D      04606  1 00000 0 03440        TXI CA010,0           * EXIT TO PROCESS NEXT STATEMENT.      4F12377
                                                                                                  4F12378
                                     END OF PROGRAM C3200.
                                     * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12379
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                                                                                                                4F12380
                                        C3300/ CALLS=C0390,C0190X,C0190,TEST**,ARITH,SUBX00.                     4F12381
                                        C3300 PROCESSES CALL STATEMENTS.                                        4F12382
04607  0 07400 4 01707 C3300   TSX C0190,4              * IF 1ST CHARACTER OF NAME IS                           4F12383
04610  0 07400 4 03311         TSX TESTH0,4             * NUMERIC, THEN GO TO THE DIAGNOSTIC.                   4F12384
04611  0 07400 2 01624         TSX C0160,2              * COLLECT THE REST OF THE NAME, WHICH                   4F12385
04612  0 07400 4 03263         TSX TESTC0,4             * SHD BE FOLLOWED BY LPAREN OR ENDMK.                   4F12386
04613  0 10000 0 04632         TZE C3301                  IF LPAREN, THEN CHANGE CALL TO A                      4F12387
04614  0 07400 4 01671         TSX C0190X,4             * PSEUDO-ARITHMETIC FORMULA (Z10=).                     4F12388
04615  0 07400 4 01707         TSX C0190,4              * PICKUP THE CHARACTER C,                               4F12389
04616  0 56000 0 01434         LDQ L(Z)                   AND                                                   4F12390
04617  0 07400 4 01675         TSX C0390,4              * REPLACE C WITH Z.                                     4F12391
04620  0 56000 0 01373         LDQ L(10)                  AND                                                   4F12392
04621  0 07400 4 01675         TSX C0390,4              * REPLACE A WITH TEN.                                   4F12393
04622  0 56000 0 01400         LDQ EQUAL                  AND                                                   4F12394
04623  0 07400 4 01675         TSX C0390,4              * REPLACE FIRST L WITH =.                               4F12395
04624  0 56000 0 01430         LDQ BLANK                  AND                                                   4F12396
04625  0 07400 4 01675         TSX C0390,4              * REPLACE SECOND L WITH BLANK.                          4F12397
04626  0 50000 0 00030         CLA EIFNO                  PUT 1ST IFN OF THIS CALL IN CALLNM                    4F12398
04627  0 77100 0 00022         ARS 18                     FOR LATER TABLE ENTRY OF                              4F12399
04630  0 62100 0 01123         STA CALLNM                 FIRST / LAST NUMBERS OF CALLS.                        4F12400
D      04631  1 00000 0 02404  TXI ARITH,0             * THEN EXIT TO ARITH TO PROCESS.                        4F12401
04632  0 07400 4 03224 C3301   TSX SUBX00,4             * IF THERE ARE NO ARGUMENTS, THEN                       4F12402
04633  0 50000 0 01112         CLA 1G                     AFTER COMPLETING NAME WITH BLANKS,                    4F12403
04634  0 60100 0 01347         STO G                      MOVE IT INTO G, AND                                   4F12404
04635  0 07400 1 03321         TSX TET00,1              * GO ENTER NAME                                         4F12405
04636  0 00000 0 00011         PZE 9                      IN CLOSUB TABLE.                                      4F12406
04637  0 07400 4 02366         TSX GETIFN,4             * PUT INTERNAL FORMULA NUMBER IN 1C.                    4F12407
04640  0 07400 4 01731         TSX CIT00,4              * GO MAKE THE FOLLOWING CIT ENTRY=                      4F12408
04641  0 00000 0 01105         PZE 1C                     WORD1--0(IFN)000                                      4F12409
04642  0 00000 0 01575         PZE L(SXD)                 WORD2--SXD000                                         4F12410
04643  0 00000 0 01505         PZE X(                     WORD3--700000                                         4F12411
04644  0 00000 0 01412         PZE L(4)                   WORD4--000004                                         4F12412
04645  0 07400 4 01731         TSX CIT00,4              * GO MAKE THE FOLLOWING CIT ENTRY=                      4F12413
04646  0 00000 0 01406         PZE L(0)                   WORD1--000000                                         4F12414
04647  0 00000 0 01602         PZE L(TSX)                 WORD2--TSX000                                         4F12415
04650  0 00000 0 01112         PZE 1G                     WORD3--(NAME)                                         4F12416
04651  0 00000 0 01412         PZE L(4)                   WORD4--000004                                         4F12417
04652  0 07400 4 03401         TSX FLTR00,4             * GO MAKE FLOW TRACING INSTRUCTIONS.                    4F12418
04653  0 00000 0 01406         PZE L(0)                   WORD1--000000                                         4F12419
04654  0 00000 0 01561         PZE L(LXD)                 WORD2--LXD000                                         4F12420
04655  0 00000 0 01505         PZE X(                     WORD3--700000                                         4F12421
04656  0 00000 0 01412         PZE L(4)                   WORD4--000004                                         4F12422
D      04657  1 00000 0 03440  TXI CA010,0              * EXIT TO PROCESS NEXT STATEMENT.                       4F12423
                                    END OF PROGRAM C3300.                                                       4F12424
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *  4F12425
                                                                                                                4F12426
                                        C3400/ CALLS=C0190,DIAG,TEST***                                         4F12427
                                        C3400 PROCESSES END STATEMENTS.                                         4F12428
04660  0 53400 2 01413 C3400   LXA L(5),2                 PREPARE TO SET 5 SS SIMULATORS.                      4F12429
04661  0 07400 4 01707 C3405   TSX C0190,4              * PICKUP CONSTANT,                                      4F12430
04662  0 34000 0 01410         CAS L(2)                   WHICH SHOULD BE 0,1, OR 2.                           4F12431
04663  0 07400 4 03400         TSX DIAG,4               * OTHERWISE, GO TO THE DIAGNOSTIC.                      4F12432
D      04664  1 00000 0 04666  TXI C3410,0                SIMULATOR IS PRESET TO 2.                            4F12433
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04665   0 60100 2 00036          STO ENDI1+5,2                IF 0 OR 1, SET PROPER SIMULATOR.   4F12434
04666   0 07400 4 01707 C3410    TSX C0190,4                * SKIP NEXT NON-BLANK CHARACTER, AND 4F12435
04667   2 00001 2 04661          TIX C3405,2,1                REPEAT PROCESS FOR 5 CONSTANTS.    4F12436
04670   0 07400 4 01707          TSX C0190,4                * EXAMINE NEXT NON-BLANK CHARACTER, 4F12437
04671   0 07400 4 03271          TSX TESTD0,4               * WHICH SHOULD BE AN ENDMK.        4F12438
D 04672 1 00000 0 03440          TXI CA010,0                * EXIT TO PROCESS NEXT STATEMENT.  4F12439
                                  END OF PROGRAM C3400.                                        4F12440
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12441
                                                                                               4F12442
                                 STATEA/3-PROCESS INPUT-OUTPUT STATEMENTS=                     4F12443
                                                                                               4F12444
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12445
                                                                                               4F12446
                                 RDC/ CALLS=INPUT,BEG,DIAG,ETMSW,LIB,CIT,JIF.                  4F12447
                                 RDC PROCESSES READ STATEMENTS.                                4F12448
04673   0 50000 0 01437 RDC      CLA A81                      SET THE ADDRESS FIELD OF          4F12449
04674   0 62100 0 02067          STA ENT                      ENT (NTR000) TO 81.               4F12450
04675   0 07400 2 06002          TSX INPUT,2                * GO COMPILE CAL *, AND XIT (LEV).  4F12451
04676   0 50000 0 06127          CLA CSH                      PICKUP (CSH) TO                   4F12452
                                  TSC= ENTRY POINT USED BY RIT.                                4F12453
04677   0 60100 0 06143 TSC      STO TSA                      SET TSA.                          4F12454
04700  -0 50000 0 06133          CAL RTN                      MOVE (RTN)                        4F12455
04701   0 60200 0 06141          SLW END                      INTO END.                         4F12456
04702   0 50000 0 06130          CLA DBC                      PICKUP (DBC) TO                   4F12457
                                  TTC= ENTRY POINT USED BY RDP.                                4F12458
04703   0 60100 0 06144 TTC      STO TTA                      SET TTA.                          4F12459
04704   0 07400 4 05603          TSX BEG,4                  * CONVERT CONSTANT FORMAT NUMBER.   4F12460
04705   0 07400 4 03400          TSX DIAG,4                 * ATTEMPT TO USE VARIABLE FORMAT NO. 4F12461
04706  -0 10000 4 00004          TNZ 4,4                      GO TO THE DIAGNOSTIC, IF THERE WAS 4F12462
04707   0 07400 4 03400          TSX DIAG,4                 * NO FORMAT NUMBER GIVEN.           4F12463
04710   0 62100 0 01366          STA SET                      MOVE BINARY FORMAT NUMBER INTO SET.4F12464
04711  -0 50000 0 06114          CAL NTR                      MOVE NTR000                       4F12465
04712   0 60200 0 07401          SLW OP                       INTO OP.                          4F12466
04713   0 50000 0 00415          CLA TXLOP                    SET OP-SWITCHES,                  4F12467
04714   0 63000 0 05754          STP ETMSW                    ETMSW AND LTMSW,                  4F12468
04715   0 63000 0 05757          STP LTMSW                    TO NO TRANSFER CASE.              4F12469
04716   0 07400 4 05754          TSX ETMSW,4                * GO COMPILE ETM.                   4F12470
04717   0 07400 4 06023          TSX LIB,4                  * MAKE CLOSUB ENTRY, AND COMPILE=   4F12471
04720   0 00000 0 01406          PZE L(0)                     WORD1--000000                     4F12472
04721   0 00000 0 01537          PZE CAL                      WORD2--CAL000                     4F12473
04722   0 00000 0 06144          PZE TTA                      WORD3--(DBC) OR (BDC)             4F12474
04723   0 00000 0 01406          PZE L(0)                     WORD4--000000                     4F12475
04724   0 07400 4 01731          TSX CIT,4                  * GO MAKE THE FOLLOWING CIT ENTRY=  4F12476
04725   0 00000 0 01406          PZE L(0)                     WORD1--000000                     4F12477
04726   0 00000 0 06120          PZE SLW                      WORD2--SLW000                     4F12478
04727   0 00000 0 01406          PZE L(0)                     WORD3--000000                     4F12479
04730   0 00000 0 01454          PZE D1                       WORD4--001000                     4F12480
04731   0 07400 4 06023          TSX LIB,4                  * MAKE CLOSUB ENTRY, AND COMPILE=   4F12481
04732   0 00000 0 01406          PZE L(0)                     WORD1--000000                     4F12482
04733   0 00000 0 01537          PZE CAL                      WORD2--CAL000                     4F12483
04734   0 00000 0 06143          PZE TSA                      WORD3--(CSH) OR (TSH)             4F12484
04735   0 00000 0 01406          PZE L(0)                     WORD4--000000                     4F12485
04736   0 07400 4 01731          TSX CIT,4                  * GO MAKE THE FOLLOWING CIT ENTRY=  4F12486
04737   0 00000 0 01371          PZE TL                       WORD1--0(IFN)0(248)               4F12487
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     04740  0 00000 0 02067        PZE ENT                        WORD2--NTR0(81, OR UNIT, OR 00)    4F12488
     04741  0 00000 0 01366        PZE SET                        WORD3--800(FORMAT NUMBER)          4F12489
     04742  0 00000 0 01406        PZE L(0)                       WORD4--000000                      4F12490
     04743  0 07400 4 02372        TSX JIF,4                    * GO JUMP IFN, AND SET SL AND TL.    4F12491
                                       BXT = EXIT SWITCH TO RSC OR LAST, USED BY WBT,RBT,WRD.       4F12492
D    04744  1 00000 0 05141 BXT    TXI RSC,0                    * EXIT TO SCAN LIST, IF THERE IS ONE.4F12493
                                        END OF PROGRAM RDC.                                         4F12494
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12495
                                                                                                    4F12496
                                       RIT/ CALLS=INPUT,BEG,VRD. USES=RDC.                          4F12497
                                       RIT PROCESSES READ INPUT TAPE STATEMENTS.                    4F12498
     04745  0 07400 2 06002 RIT    TSX INPUT,2                  * GO COMPILE CAL *, AND XIT (LEV).   4F12499
     04746  0 07400 4 05603        TSX BEG,4                    * SCAN AND TEST TYPE OF UNIT SYMBOL. 4F12500
     04747  0 07400 4 06036        TSX VRD,4                    * IF VARIABLE, ENTER FORVAR AND CITS.4F12501
     04750  0 62100 0 02067        STA ENT                        IF CONSTANT, SET ENT= NTR0(UNIT).  4F12502
     04751  0 50000 0 06137        CLA TSH                        PICKUP (TSH) TO SET TSA, AND       4F12503
D    04752  1 00000 0 04677        TXI TSC,0                    * CONTINUE BY USING PROGRAM RDC.     4F12504
                                        END OF PROGRAM RIT.                                         4F12505
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12506
                                                                                                    4F12507
                                       RDP/ CALLS=OUTPUT. USES=RDC.                                 4F12508
                                       RDP PROCESSES PRINT STATEMENTS.                              4F12509
     04753 -0 75400 0 00000 RDP    PXD ,0                         RESET ENT                          4F12510
     04754  0 62100 0 02067        STA ENT                        TO NTR000.                         4F12511
     04755  0 07400 2 06004        TSX OUTPUT,2                 * GO COMPILE CAL *, AND XIT (LEV).   4F12512
     04756  0 50000 0 06135        CLA SPH                        PICKUP (SPH), AND                  4F12513
                                       TSD= ENTRY POINT USED BY WOT, PDC.                           4F12514
     04757  0 60100 0 06143 TSD    STO TSA                        SET TSA.                           4F12515
     04760 -0 50000 0 06131        CAL FIL                        MOVE (FIL)                         4F12516
     04761  0 60200 0 06141        SLW END                        INTO END.                          4F12517
     04762  0 50000 0 06126        CLA BDC                        PICKUP (BDC) TO SET TTA, AND       4F12518
D    04763  1 00000 0 04703        TXI TTC,0                    * CONTINUE BY USING PROGRAM RDC.     4F12519
                                        END OF PROGRAM RDP.                                         4F12520
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12521
                                                                                                    4F12522
                                       WOT/ CALLS=OUTPUT,BEG,VRD. USES=RDP.                         4F12523
                                       WOT PROCESSES WRITE OUTPUT TAPE STATEMENTS.                  4F12524
     04764  0 07400 2 06004 WOT    TSX OUTPUT,2                 * GO COMPILE CAL *, AND XIT (LEV).   4F12525
     04765  0 07400 4 05603        TSX BEG,4                    * SCAN AND TEST TYPE OF UNIT SYMBOL. 4F12526
     04766  0 07400 4 06036        TSX VRD,4                    * IF VARIABLE, ENTER FORVAR AND CITS.4F12527
     04767  0 62100 0 02067        STA ENT                        IF CONSTANT, SET ENT= NTR0(UNIT).  4F12528
     04770  0 50000 0 06136        CLA STH                        PICKUP (STH) TO SET TSA, AND       4F12529
D    04771  1 00000 0 04757        TXI TSD,0                    * CONTINUE BY USING PROGRAM RDP.     4F12530
                                        END OF PROGRAM WOT.                                         4F12531
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12532
                                                                                                    4F12533
                                       PDC/ CALLS=OUTPUT. USES=RDP.                                 4F12534
                                       PDC PROCESSES PUNCH STATEMENTS.                              4F12535
     04772 -0 75400 0 00000 PDC    PXD ,0                         RESET ENT                          4F12536
     04773  0 62100 0 02067        STA ENT                        TO NTR000.                         4F12537
     04774  0 07400 2 06004        TSX OUTPUT,2                 * GO COMPILE CAL *, AND XIT (LEV).   4F12538
     04775  0 50000 0 06134        CLA SCH                        PICKUP (SCH) TO SET TSA, AND       4F12539
D    04776  1 00000 0 04757        TXI TSD,0                    * CONTINUE BY USING PROGRAM RDP.     4F12540
                                        END OF PROGRAM PDC.                                         4F12541
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                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12542
                                                                                                       4F12543
                                    WBT/ CALLS=OUTPUT,BRW,CIT.                                         4F12544
                                    WBT PROCESSES WRITE TAPE STATEMENTS.                               4F12545
04777 -0 50000 0 06124 WBT     CAL  WTB                        MOVE WTB000                             4F12546
05000  0 60200 0 07401         SLW  OP                         INTO OP.                                4F12547
05001  0 07400 2 06004         TSX  OUTPUT,2                 * GO COMPILE CAL *, AND XIT (LEV).        4F12548
05002 -0 50000 0 01475         CAL  BTA                        PICKUP BINARY TAPE ADDRESS, AND         4F12549
05003  0 07400 4 05646         TSX  BRW,4                    * COMPILE INSTRS TO SET UNIT DESIG.       4F12550
05004  0 07400 4 01731         TSX  CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=        4F12551
05005  0 00000 0 01406         PZE  L(0)                       WORD1--000000                           4F12552
05006  0 00000 0 01544         PZE  CPY                        WORD2--CPY000                           4F12553
05007  0 00000 0 01504         PZE  ZER                        WORD3--600000                           4F12554
05010  0 00000 0 01457         PZE  D2                         WORD4--002000                           4F12555
D      05011  1 00000 0 04744  TXI  BXT,0                    * EXIT TO SCAN LIST, IF THERE IS ONE.     4F12556
                                     END OF PROGRAM WBT.                                               4F12557
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12558
                                                                                                       4F12559
                                    RBT/ CALLS=INPUT,BRW,CIT.                                          4F12560
                                    RBT PROCESSES READ TAPE STATEMENTS.                                4F12561
05012 -0 50000 0 06117 RBT     CAL  RTB                        MOVE RTB000                             4F12562
05013  0 60200 0 07401         SLW  OP                         INTO OP.                                4F12563
05014  0 07400 2 06002         TSX  INPUT,2                  * GO COMPILE CAL *, AND XIT (LEV).        4F12564
05015 -0 50000 0 01475         CAL  BTA                        PICKUP BINARY TAPE ADDRESS, AND         4F12565
05016  0 07400 4 05646         TSX  BRW,4                    * COMPILE INSTRS TO SET UNIT DESIG.       4F12566
05017  0 07400 4 01731         TSX  CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=        4F12567
05020  0 00000 0 01406         PZE  L(0)                       WORD1--000000                           4F12568
05021  0 00000 0 01544         PZE  CPY                        WORD2--CPY000                           4F12569
05022  0 00000 0 01500         PZE  DMP                        WORD3--100000                           4F12570
05023  0 00000 0 01406         PZE  L(0)                       WORD4--000000                           4F12571
05024  0 07400 4 01731         TSX  CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=        4F12572
05025  0 00000 0 01406         PZE  L(0)                       WORD1--000000                           4F12573
05026  0 00000 0 06125         PZE  XIT                        WORD2--XIT000                           4F12574
05027  0 00000 0 01510         PZE  15P                        WORD3--*00000                           4F12575
05030  0 00000 0 01461         PZE  D3CN                       WORD4--003000                           4F12576
05031  0 07400 4 01731         TSX  CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=        4F12577
05032  0 00000 0 01406         PZE  L(0)                       WORD1--000000                           4F12578
05033  0 00000 0 01554         PZE  HPR                        WORD2--HPR000                           4F12579
05034  0 00000 0 01406         PZE  L(0)                       WORD3--000000                           4F12580
05035  0 00000 0 01406         PZE  L(0)                       WORD4--000000                           4F12581
05036  0 07400 4 01731         TSX  CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=        4F12582
05037  0 00000 0 01406         PZE  L(0)                       WORD1--000000                           4F12583
05040  0 00000 0 06125         PZE  XIT                        WORD2--XIT000                           4F12584
05041  0 00000 0 01371         PZE  TL                         WORD3--0(IFN)0(248)                     4F12585
05042  0 00000 0 01406         PZE  L(0)                       WORD4--000000                           4F12586
D      05043  1 00000 0 04744  TXI  BXT,0                    * EXIT TO SCAN LIST, IF THERE IS ONE.     4F12587
                                     END OF PROGRAM RBT.                                               4F12588
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12589
                                                                                                       4F12590
                                    WRD/ CALLS=OUTPUT,BRW,CIT.                                         4F12591
                                    WRD PROCESSES WRITE DRUM STATEMENTS.                               4F12592
05044  0 07400 2 06004 WRD     TSX  OUTPUT,2                 * GO COMPILE CAL *, AND XIT (LEV).        4F12593
05045 -0 50000 0 06122         CAL  WDR                        PICKUP WDR000, AND                      4F12594
                                    XDR= ENTRY POINT USED BY RDD.                                      4F12595
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05046  0 60200 0 07401  XDR   SLW OP                          SET OP.                                  4F12596
05047 -0 50000 0 01476        CAL BDA                         PICKUP BINARY DRUM ADDRESS, AND          4F12597
05050  0 07400 4 05646        TSX BRW,4                     * COMPILE INSTRS TO SET UNIT DESIG.        4F12598
05051 -0 50000 0 01566        CAL PXD                         MOVE PXD000                              4F12599
05052  0 60200 0 07401        SLW OP                          INTO OP.                                 4F12600
05053 -0 75400 0 00000        PXD ,0                          CLEAR THE AC, AND                        4F12601
05054  0 07400 4 05646        TSX BRW,4                     * COMPILE INSTRS TO SET DRUM LOC.          4F12602
05055  0 07400 4 01731        TSX CIT,4                     * GO MAKE THE FOLLOWING CIT ENTRY=         4F12603
05056  0 00000 0 01406        PZE L(0)                        WORD1--000000                            4F12604
05057  0 00000 0 01555        PZE LDA                         WORD2--LDA000                            4F12605
05060  0 00000 0 01371        PZE TL                          WORD3--0(IFN)0(248)                      4F12606
05061  0 00000 0 01406        PZE L(0)                        WORD4--000000                            4F12607
D 05062  1 00000 0 04744        TXI BXT,0                     * EXIT TO SCAN LIST, IF THERE IS ONE.4F12608
                                 END OF PROGRAM WRD.                                                   4F12609
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12610
                                                                                                       4F12611
                                RDD/ CALLS=INPUT. USES=WRD.                                            4F12612
                                RDD PROCESSES READ DRUM STATEMENTS.                                    4F12613
05063  0 07400 2 06002 RDD    TSX INPUT,2                   * GO COMPILE CAL *, AND XIT (LEV).         4F12614
05064 -0 50000 0 06115        CAL RDR                         PICKUP RDR000 TO SET OP, AND             4F12615
D 05065  1 00000 0 05046        TXI XDR,0                     * CONTINUE BY USING PROGRAM WRD.           4F12616
                                 END OF PROGRAM RDD.                                                   4F12617
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12618
                                                                                                       4F12619
                                EFT/ CALLS=GIF,BEG,VRAX,CIT.                                           4F12620
                                EFT PROCESSES WRITE END OF FILE STATEMENTS.                            4F12621
05066 -0 50000 0 06123 EFT    CAL WEF                         PICKUP WEF000, AND                       4F12622
                                TPO= ENTRY POINT USED BY RWN, BSP.                                     4F12623
05067  0 60200 0 07401 TPO    SLW OP                          SET OP.                                  4F12624
05070 -0 50000 0 01475        CAL BTA                         MOVE BINARY TAPE ADDRESS                 4F12625
05071  0 60200 0 06140        SLW CON                         INTO CON.                                4F12626
05072  0 07400 4 02375        TSX GIF,4                     * GET IFN INTO SL AND TL.                  4F12627
05073  0 50000 0 02377        CLA L(SL)                       RESET TPOA ADDRESS                       4F12628
05074  0 62100 0 05102        STA TPOA                        TO SL.                                   4F12629
05075  0 07400 4 05603        TSX BEG,4                     * SCAN AND TEST TYPE OF UNIT SYMBOL.       4F12630
05076  0 07400 4 06032        TSX VRA,4                     * IF VARIABLE, ENTER FORVAR AND CITS.4F12631
05077  0 76700 0 00022        ALS 18                          IF CONSTANT, ADJUST AND                  4F12632
05100  0 60100 0 07402        STO RA                          PLACE IN THE DECREMENT OF RA.            4F12633
05101  0 07400 4 01731        TSX CIT,4                     * GO MAKE THE FOLLOWING CIT ENTRY=         4F12634
05102  0 00000 0 01367 TPOA   PZE SL                          WORD1--0(IFN)000 OR 0(IFN)0(248)         4F12635
05103  0 00000 0 07401        PZE OP                          WORD2--(WEF,REW,OR BSP)000               4F12636
05104  0 00000 0 01406        PZE L(0)                        WORD3--000000                            4F12637
05105  0 00000 0 07402        PZE RA                          WORD4--0(CON)000 OR 000000               4F12638
D 05106  1 00000 0 05567        TXI FINI,0                    * GO RESET BXT, AND TEST FOR EFN.          4F12639
                                 END OF PROGRAM EFT.                                                   4F12640
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12641
                                                                                                       4F12642
                                RWN/ USES=EFT.                                                         4F12643
                                RWN PROCESSES REWIND TAPE STATEMENTS.                                  4F12644
05107 -0 50000 0 06116 RWN    CAL REW                         PICKUP REW000 TO SET OP, AND             4F12645
D 05110  1 00000 0 05067        TXI TPO,0                     * CONTINUE BY USING PROGRAM EFT.           4F12646
                                 END OF PROGRAM RWN.                                                   4F12647
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12648
                                                                                                       4F12649
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                                        BSP/ USES=EFT.                                                          4F12650
                                        BSP PROCESSES BACKSPACE TAPE STATEMENTS.                                4F12651
05111 -0 50000 0 06111 BSP      CAL BST                         PICKUP BST000 TO SET OP, AND                    4F12652
D   05112  1 00000 0 05067          TXI TPO,0                   * CONTINUE BY USING PROGRAM EFT.                4F12653
                                     END OF PROGRAM BSP.                                                        4F12654
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12655
                                                                                                                4F12657
                                        FOR/ CALLS=TET00.                                                       4F12658
                                        FOR PROCESSES FORMAT STATEMENTS.                                        4F12659
05113 -0 50000 0 00030 FOR      CAL EIFNO                       MOVE EXTERNAL FORMULA NUMBER                    4F12660
05114  0 62100 0 01366          STA SET                         INTO THE ADDRESS OF SET,                        4F12661
05115 -0 50000 0 01366          CAL SET                         AND MOVE SET (8000(EFN))                        4F12662
05116  0 60200 0 01347          SLW G                           INTO G.                                         4F12663
05117 -0 53400 1 01724          LXD CHCTR,1                     SET XR1 = CHARACTER COUNT.                      4F12664
05120 -0 53400 2 01614          LXD FWA,2                       SET XR2 = -(CURRENT F-WORD ADDR).               4F12665
05121 -3 00001 1 05137          TXL NFFW,1,1                    UNLESS POSITIONED AT THE                        4F12666
05122  1 77777 1 05123          TXI *+1,1,-1                    BEGINNING OF A FORMAT WORD,                     4F12667
05123  0 56000 0 01365          LDQ RESIDU                      THEN PICKUP AND                                 4F12668
05124 -0 50000 0 01526          CAL BLANKS                      PRECEED WITH BLANKS ANY                         4F12669
05125 -0 76300 0 00006  NFC     LGL 6                           CHARACTERS                                      4F12670
05126  2 00001 1 05125          TIX NFC,1,1                     REMAINING IN THE MQ, AND                        4F12671
05127  0 60200 0 01350  NFW     SLW G+1                         MOVE FORMAT WORDS INTO G+1.                     4F12672
05130  0 07400 1 03321          TSX TET00,1                   * GO ENTER THEN IN                                4F12673
05131  0 00000 0 00012          PZE 10                          THE FORMAT TABLE.                               4F12674
05132 -0 50000 0 01350          CAL G+1                         WHEN THE                                        4F12675
05133 -0 32000 0 01374          ANA ENDMK                       END OF STATEMENT MARK                           4F12676
05134  0 40200 0 01374          SUB ENDMK                       HAS BEEN ENTERED,                               4F12677
05135  0 10000 0 03440          TZE CA010                     * EXIT TO PROCESS NEXT STATEMENT.                 4F12678
05136  0 60000 0 01347          STZ G                           PRECEED ALL BUT 1ST ENTRY WITH 0.               4F12679
05137 -0 50000 2 00000  NFFW    CAL 0,2                         PICKUP NEXT FORMAT WORD,                        4F12680
05140  1 77777 2 05127          TXI NFW,2,-1                    UPDATE SCAN INDEX, AND CONTINUE.                4F12681
                                     END OF PROGRAM FOR.                                                        4F12682
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12683
                                                                                                                4F12684
                                        RSC/ CALLS=C0190,DIAG.                                                  4F12685
                                        RSC SCANS EACH CHARACTER IN A STATEMENT UNTIL EQUALITY IS               4F12686
                                        FOUND ON ONE OF THE PUNCTUATION MARKS IN THE CTEST BLOCK IN             4F12687
                                        COMMON. THEN A TAGGED EXIT IS MADE THROUGH THE BLOCK OF                 4F12688
                                        CONTROL TRANSFERS INDICATED BY THE ADDRESS STORED IN CEXIT.             4F12689
                                        RSC = ENTRY POINT FROM THE BXT SWITCH IN RDC, AND FROM SPC.             4F12690
05141 -0 50000 0 05361 RSC      CAL FLINE                       RESET TEMPORARY                                 4F12691
05142  0 62100 0 01372          STA TLINE                       TABLE LINE COUNTER.                             4F12692
05143  0 60000 0 07400          STZ DOLEV                       CLEAR DO LEVEL COUNTER.                         4F12693
05144  0 60000 0 01351          STZ GTAG                        CLEAR GENERALIZED TAG.                          4F12694
                                        LSC = ENTRY POINT FROM SPC.                                             4F12695
05145 -0 50000 0 05204 LSC      CAL LISTR                       SET CONTROL TRANSFER                            4F12696
                                        CXS = ENTRY POINT FROM EQS, BEG.                                        4F12697
05146  0 62100 0 05156 CXS      STA CEXIT                       FOR LIST SCAN.                                  4F12698
                                        NXS = ENTRY POINT FROM LPR, SPC, CMA.                                   4F12699
05147  0 53400 2 01414 NXS      LXA L(6),2                      RESET SYMBOL CHARACTER COUNT                    4F12700
05150 -0 63400 2 05637          SXD CSJ,2                       AND SHIFT COUNT.                                4F12701
05151  0 60000 0 07404          STZ SYM                         CLEAR SYMBOL WORKING STORAGE.                   4F12702
                                        NXC = ENTRY POINT FROM CMA.                                             4F12703
05152  0 07400 4 01707 NXC      TSX C0190,4                   * OBTAIN NEXT NB CHARACTER IN THE AC.             4F12704
05153  0 53400 4 02652 CLOAD    LXA CTESTX,4                    SET XR4 TO PICK CONTROL CHARACTERS.
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      05154  0 34000 4 01406 CCOMP   CAS CTEST,4                    COMPARE CHARACTER WITH CONSTANTS.  4F12705
D     05155 -3 00000 0 05160          TXL BUILD,0                    IF EQUALITY IS FOUND ON SOME      4F12706
      05156  0 02000 4 00000 CEXIT   TRA **,4                     * CONTROL CHAR, EXIT TO TRA LIST.   4F12707
      05157  2 00001 4 05154          TIX CCOMP,4,1                  CONTINUE THROUGH PUNCTUATION.     4F12708
      05160 -0 53400 4 05637  BUILD  LXD CSJ,4                      BUILD A                           4F12709
      05161  0 60100 4 07316          STO CHR,4                      SYMBOL                            4F12710
      05162 -2 00001 4 05167          TNX LCT,4,1                    COMPOSED OF                       4F12711
      05163  0 76700 2 00044          ALS 36,2                       SIX OR LESS CHARACTERS.           4F12712
      05164 -0 63400 4 05637  CSZ    SXD CSJ,4                      SAVE SYMBOL CHARACTER COUNT.      4F12713
      05165 -0 60200 0 07404          ORS SYM                        ALSO, SAVE EACH                   4F12714
      05166  1 00006 2 05152          TXI NXC,2,6                    CHARACTER SEPARATELY.             4F12715
      05167 -3 00044 2 05171 LCT      TXL LCS,2,36                   GO TO DIAGNOSTIC IF               4F12716
      05170  0 07400 4 03400          TSX DIAG,4                   * MORE THAN 6 CHARACTERS IN SYMBOL. 4F12717
      05171  1 77777 4 05164 LCS      TXI CSZ,4,-1                   ADJUST COUNT, AND CONTINUE SCAN.  4F12718
                                       END OF PROGRAM RSC.                                            4F12719
                                      * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12720
                                                                                                      4F12721
                                      LISTR/ CONTROL TRANSFERS FOR LIST SCAN=                         4F12722
D     05172  1 00000 0 05547          TXI EMK,0                    * ENDMARK                          4F12723
D     05173  1 00000 0 05205          TXI LPR,0                    * (                                4F12724
D     05174  1 00000 0 05413          TXI CMA,0                    * ,                                4F12725
D     05175  1 00000 0 05377          TXI RPR,0                    * )                                4F12726
D     05176  1 00000 0 05261          TXI EQS,0                    * =                                4F12727
D     05177  1 00000 0 05200          TXI ILC,0                      - (ILLEGAL CHARACTER IN I/O LIST). 4F12728
      05200  0 07400 4 03400 ILC      TSX DIAG,4                   * / (ILLEGAL CHARACTER IN I/O LIST). 4F12729
D     05201  1 00000 0 05200          TXI ILC,0                      . (ILLEGAL CHARACTER IN I/O LIST). 4F12730
D     05202  1 00000 0 05200          TXI ILC,0                      + (ILLEGAL CHARACTER IN I/O LIST). 4F12731
D     05203  1 00000 0 05200          TXI ILC,0                      * (ILLEGAL CHARACTER IN I/O LIST). 4F12732
      05204  0 00000 0 05204  LISTR PZE LISTR                        INDEXING ADDRESS FOR ABOVE LIST.  4F12733
                                      * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12734
                                                                                                      4F12735
                                      LPR/ CALLS=TYP,SS000,RA000,C0190,TEST..,LTMSW,CIT,JIF,DIAG,    4F12736
                                      BSS. USES=CMA,RSC.                                             4F12737
                                      LPR = ENTRY POINT TAKEN WHEN LPAREN IS MET IN LIST SCAN.       4F12738
      05205 -0 50000 0 07404 LPR      CAL SYM                        TEST FOR SUBSCRIPT OR DO NEST.    4F12739
      05206  0 10000 0 05230          TZE LPRD                       IF SUBSCRIPT, THEN                4F12740
      05207  0 07400 4 05624          TSX TYP,4                    * IF VARIABLE SYMBOL CONTAINS LESS  4F12741
      05210  0 02000 4 00003          TRA 3,4                        THAN 6 CHARACTERS, ADD A BLANK.   4F12742
D     05211  1 00000 0 05416          TXI ERRC,0                   * ON CONSTANT RETURN, GO TO DIAG.   4F12743
      05212 -0 50000 0 07404          CAL SYM                        MOVE SYMBOL                       4F12744
      05213  0 60200 0 01130          SLW E+2                        INTO E+2, AND                     4F12745
      05214  0 60200 0 07403          SLW SA                         COMPILE SYMBOLIC ADDRESS.         4F12746
      05215  0 07400 4 02614          TSX SS000,4                  * GO SCAN AND PROCESS SUBSCRIPT.    4F12747
      05216  0 07400 4 02437          TSX RA000,4                  * THEN GO COMPUTE RELATIVE ADDRESS. 4F12748
      05217  0 07400 4 01707          TSX C0190,4                  * EXAMINE NEXT NON-BLANK CHARACTER  4F12749
      05220  0 34000 0 01377          CAS CLOS                                                         4F12750
      05221  0 02000 0 05226          TRA *+5                                                          4F12751
      05222  0 02000 0 05224          TRA *+2                                                          4F12752
      05223  0 02000 0 05226          TRA *+3                                                          4F12753
      05224  0 60000 0 07400          STZ DOLEV                                                        4F12754
      05225  0 07400 4 01707          TSX C0190,4                                                      4F12755
      05226  0 07400 4 03247          TSX TESTA0,4                 * FOR EITHER COMMA OR ENDMARK.      4F12756
D     05227  1 00000 0 05421          TXI CMA7,0                   * AND CONTINUE BY USING PROGRAM CMA. 4F12757
      05230 -0 50000 0 07400 LPRD     CAL DOLEV                      IF THE BEGINNING OF A DO NEST.    4F12758
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05231   0 10000 0 05242          TZE LPR3                    AND DOLEV IS NOT ZERO, THEN        4F12759
05232   0 53400 4 07400          LXA DOLEV,4                 TEST FOR NULL FORMULA.             4F12760
05233  -3 00000 4 05236          TXL LPRE,4,0                IF NULL, GO ESTABLISH POSITION.    4F12761
05234   0 07400 4 05757          TSX LTMSW,4               * OTHERWISE, COMPILE LTM, AND        4F12762
D  05235   1 00000 0 05241          TXI LPR4,0                  AND GO JUMP IFN.                   4F12763
05236  -0 50000 0 01367  LPRE    CAL SL                      IF C(SL) DO NOT = 0,               4F12764
05237   0 10000 0 05241          TZE *+2                     THEN                               4F12765
05240   0 07400 2 05674          TSX BSS,2                 * GO COMPILE= IFN BSS 0.             4F12766
05241   0 07400 4 02372 LPR4     TSX JIF,4                 * GO JUMP IFN, AND SET SL AND TL.    4F12767
05242  -0 53400 4 07400 LPR3     LXD DOLEV,4                 INCREASE THE C(DOLEV D)            4F12768
05243   1 00001 4 05244          TXI LPR1,4,1                BY 1, AND                          4F12769
05244  -0 75400 4 00000 LPR1     PXD ,4                      SET THE C(DOLEV A)                 4F12770
05245   0 60200 0 07400          SLW DOLEV                   TO ZERO.                           4F12771
05246  -0 50000 0 01372          CAL TLINE                   NOTE AT                            4F12772
05247   0 62100 0 05254          STA LPR2                    THIS LEVEL                         4F12773
05250   0 60100 4 07400          STO DOLEV,4                 THE LOCATION IN TLDO               4F12774
05251   0 40000 0 01413          ADD L(5)                    OF THIS DO FORMULA                 4F12775
05252   0 62100 0 01372          STA TLINE                   AND INCREASE LINE IN TLINE.        4F12776
05253   0 50200 0 01371          CLS TL                      MOVE -(0(IFN)0(248)) INTO THE      4F12777
05254   0 60100 0 00000 LPR2     STO **                      LOCATION WORD OF CURRENT TEMP DO.  4F12778
05255   0 07400 4 02372          TSX JIF,4                 * GO JUMP IFN, AND SET SL AND TL.    4F12779
05256  -0 53400 4 07400          LXD DOLEV,4                 IF 3 OR FEWER LEVELS IN LIST DO,   4F12780
05257  -3 00003 4 05147          TXL NXS,4,3               * RETURN TO LIST SCAN.               4F12781
05260   0 07400 4 03400          TSX DIAG,4                * OTHERWISE, GO TO DIAGNOSTIC.       4F12782
                                   END OF PROGRAM LPR.                                          4F12783
                                  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12784
                                                                                                 4F12785
                                  EQS/ CALLS=DIAG. USES=RSC.                                     4F12786
                                  EQS = ENTRY POINT WHEN EQUAL SIGN IS MET IN LIST CAN.          4F12787
05261  -0 53400 4 07400 EQS      LXD DOLEV,4                 TEST THE LEGALITY OF EQUAL SIGN,   4F12788
05262   3 00000 4 05264          TXH EQS2,4,0                AND GO TO DIAG ON THE ATTEMPT TO   4F12789
05263   0 07400 4 03400          TSX DIAG,4                * SPECIFY SUBSCRIPT RANGE WITHOUT (. 4F12790
05264  -0 50000 4 07400 EQS2     CAL DOLEV,4                 INITIALIZE SPECIFICATION           4F12791
05265   0 62100 0 05331          STA SPC2                    OF GENERATED DO FORMULA            4F12792
05266   0 62100 0 05345          STA SPC5                    AT CURRENT LEVEL.                  4F12793
05267   0 40000 0 01407          ADD L(1)                    PREPARE TO ENTER FORMULA NUMBERS   4F12794
05270   0 62100 0 05302          STA EQS1                    IN LOCATION WORD,SUBSCRIPT IN      4F12795
05271   0 40000 0 01412          ADD L(4)                    SYMBOL WORD, AND SUBSCRIPT SPECS   4F12796
05272   0 62100 0 05333          STA SPC3                    IN TEMPDO ENTRY.                   4F12797
05273   0 53400 4 01411          LXA L(3),4                  PREPARE TO COUNT THE               4F12798
05274  -0 63400 4 05304          SXD NSJ,4                   NUMBER OF SPECIFICATIONS.          4F12799
05275  -0 50000 0 07404          CAL SYM                     OBTAIN SUBSCRIPT                   4F12800
05276   3 00044 2 05302          TXH EQS1,2,36               FOR THIS DO, AND                   4F12801
05277  -0 50000 0 01430          CAL BLANK                   STORE IN PROPER                    4F12802
05300   0 76700 2 00044          ALS 36,2                    LINE OF TEMPORARY                  4F12803
05301  -0 50100 0 07404          ORA SYM                     LIST DO TABLE.                     4F12804
05302   0 60200 0 00000 EQS1     SLW **                      (SUBSCRIPT SYMBOL WORD)            4F12805
05303  -0 50000 0 05317          CAL SPCTR                   SET CONTROL LOOP FOR               4F12806
05304   1 00000 0 05146 NSJ      TXI CXS,0,**              * EXIT TO SPECIFICATION.             4F12807
                                   END OF PROGRAM EQS.                                          4F12808
                                  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12809
                                                                                                 4F12810
                                  SPCTR/ CONTROL TRANSFERS FOR SPECIFICATION SCAN=               4F12811
05305   0 07400 4 03400          TSX DIAG,4                * E (ILLEGAL IN CONTROL FOR LIST DO).4F12812
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     05306  0 07400 4 03400 ICC     TSX DIAG,4                 * ( (ILLEGAL IN CONTROL FOR LIST DO).4F12813
                                                               * ,                                   4F12814
D    05307  1 00000 0 05322         TXI SPC,0                  * )                                   4F12815
D    05310  1 00000 0 05320         TXI SPCX,0                   = (ILLEGAL IN CONTROL FOR LIST DO).4F12816
D    05311  1 00000 0 05306         TXI ICC,0                    - (ILLEGAL IN CONTROL FOR LIST DO).4F12817
D    05312  1 00000 0 05306         TXI ICC,0                    / (ILLEGAL IN CONTROL FOR LIST DO).4F12818
D    05313  1 00000 0 05306         TXI ICC,0                    . (ILLEGAL IN CONTROL FOR LIST DO).4F12819
D    05314  1 00000 0 05306         TXI ICC,0                    + (ILLEGAL IN CONTROL FOR LIST DO).4F12820
D    05315  1 00000 0 05306         TXI ICC,0                    * (ILLEGAL IN CONTROL FOR LIST DO).4F12821
D    05316  1 00000 0 05306         TXI ICC,0                    INDEXING ADDRESS FOR ABOVE LIST.  4F12822
     05317  0 00000 0 05317  SPCTR PZE SPCTR                     * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12823
                                                                                                     4F12824
                                      SPC/ CALLS=TYP,LTMSW,JIF,TET00. USES=RSC.                      4F12825
                                      SPCX = ENTRY POINT WHEN RPAREN IS MET IN SPECIFICATION SCAN.   4F12826
     05320 -0 50000 0 05336 SPCX    CAL SPC1                     PREPARE FOR END OF SPECIFICATION.  4F12827
     05321  0 60100 0 05336         STO SPC1                     SET SPC1 OP-SWITCH TO NOP CASE.    4F12828
                                      SPC = ENTRY POINT WHEN COMMA IS MET IN SPECIFICATION SCAN.     4F12829
     05322  0 07400 4 05624  SPC    TSX TYP,4                  * GO TEST TYPE OF SUBSCRIPT SPEC.    4F12830
D    05323  1 00000 0 05326         TXI SPCS,0                   IF FIXED POINT CONSTANT,           4F12831
     05324 -0 53400 4 05304         LXD NSJ,4                    SET C(XR4) = SPECIFICATION COUNT,  4F12832
D    05325  1 00000 0 05333         TXI SPC3,0                   AND GO ENTER CONSTANT IN TABLE.    4F12833
     05326 -0 53400 4 05304  SPCS   LXD NSJ,4                    OTHERWISE, SET SPEC COUNT AND      4F12834
     05327 -0 50000 0 01453         CAL TAG4                     IF VARIABLE, NOTE BY               4F12835
     05330  0 77100 4 00003         ARS 3,4                      PLACING BIT IN TAG FIELD           4F12836
     05331 -0 60200 0 00000  SPC2   ORS **                       OF TABLE ENTRY.                    4F12837
     05332 -0 50000 0 07404         CAL SYM                      PICKUP VARIABLE SYMBOL AND         4F12838
     05333  0 60200 4 00000 SPC3   SLW **,4                     ENTER N SUB J IN TABLE.            4F12839
     05334 -2 00001 4 05341         TNX SPC4,4,1                 REDUCE J.                          4F12840
     05335 -0 63400 4 05304         SXD NSJ,4                    SAVE SPEC COUNT, AND               4F12841
D    05336 -3 00000 0 05147 SPC1    TXL NXS,0                  * EXIT TO SCAN, IF SWITCH IS TXL.    4F12842
     05337 -0 50000 0 01407         CAL L(1)                     SET N SUB 3 = 1 IF NOT             4F12843
D    05340  1 00000 0 05333         TXI SPC3,0                   OTHERWISE SPECIFIED.               4F12844
     05341  0 50200 0 05336 SPC4   CLS SPC1                     RESTORE SPC1 EXIT.                 4F12845
     05342  0 60100 0 05336         STO SPC1                     (3 SPECS HAVE BEEN TREATED)        4F12846
     05343 -0 50000 0 00030         CAL EIFNO                    ALSO RESTORE INTERNAL FORMULA NO.  4F12847
     05344  0 77100 0 00022         ARS 18                       (PUT BETA IN TEMPDO TABLE)         4F12848
                                      SPC5 = ENTRY POINT USED BY RPR.                                4F12849
     05345  0 62100 0 00000 SPC5   STA **                       SET BETA EQUAL TO IFNO.            4F12850
     05346  0 53400 4 07400         LXA DOLEV,4                  EXAMINE DOLEV ADDRESS FOR ZERO TO  4F12851
     05347 -3 00000 4 05352         TXL SPCR,4,0                 TEST NEED FOR LTM, JIF AFTER ).    4F12852
     05350  0 07400 4 05757         TSX LTMSW,4                * GO COMPILE LTM.                    4F12853
     05351  0 07400 4 02372         TSX JIF,4                  * GO JUMP IFN, AND SET SL AND TL.    4F12854
     05352 -0 53400 4 07400 SPCR    LXD DOLEV,4                  DECREASE DOLEV D                   4F12855
     05353  1 77777 4 05354         TXI SPC6,4,-1                BY 1, AND INDICATE A TREATED LEVEL.4F12856
     05354 -0 75400 4 00000  SPC6   PXD ,4                       IF NOT ZERO,                       4F12857
     05355  0 60200 0 07400         SLW DOLEV                    THEN ALL LEVELS ARE NOT TREATED.   4F12858
     05356  3 00000 4 05145         TXH LSC,4,0                * RETURN TO SCAN NEXT LEVEL.         4F12859
     05357  0 50000 0 01372         CLA TLINE                    IF LEVEL IS ZERO                   4F12860
     05360  0 62100 0 05364         STA SPC7                     ENTER GENERATED                    4F12861
     05361  0 73400 2 07405 FLINE   PAX TLDOS,2                  DO FORMULAS IN TDO BY              4F12862
     05362  1 70373 2 05363         TXI *+1,2,-TLDOS             SUBROUTINE TET.                    4F12863
     05363  0 53400 4 01413 SPC9   LXA L(5),4                   (MOVE EACH                         4F12864
     05364  0 50000 2 00000 SPC7   CLA **,2                     TEMPDO TABLE ENTRY                 4F12865
     05365  0 60100 4 01112         STO 1C+5,4                   INTO 1C...1C+4,                    4F12866
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05366 -2 00001 2 05370          TNX SPC8,2,1                  AND THEN                          4F12867
05367  2 00001 4 05364          TIX SPC7,4,1                  WHEN DONE,                        4F12868
05370  0 53400 4 01105 SPC8     LXA 1C,4                      TEST TO SKIP                      4F12869
05371 -3 00000 4 05374          TXL SPCT,4,0                  NULL DO.                          4F12870
05372  0 07400 1 03321          TSX TET00,1                 * GO MAKE AN ENTRY                  4F12871
05373  0 00000 0 00001          PZE 1                         IN TDO TABLE.)AND WHEN THE WHOLE  4F12872
05374  3 00001 2 05363 SPCT     TXH SPC9,2,1                  DO NEST HAS BEEN ENTERED,         4F12873
05375  0 07400 4 02372          TSX JIF,4                   * GO JUMP IFN, AND SET SL AND TL.   4F12874
D 05376  1 00000 0 05141 RESET  TXI RSC,0                   * THEN EXIT TO CONTINUE LIST SCAN.  4F12875
                                  END OF PROGRAM SPC.                                           4F12876
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12877
                                                                                                4F12878
                                RPR/ CALLS=DIAG. USES=CMA,SPC.                                  4F12879
                                RPR = ENTRY POINT WHEN RPAREN IS MET IN LIST SCAN.              4F12880
05377 -0 53400 4 07400 RPR      LXD DOLEV,4                   TEST LEGALITY OF ).                4F12881
05400  3 00000 4 05402          TXH RPS,4,0                   IF THERE ARE TOO MANY ) IN LIST,   4F12882
05401  0 07400 4 03400          TSX DIAG,4                  * GO TO THE DIAGNOSTIC.             4F12883
05402 -0 50000 4 07400 RPS      CAL DOLEV,4                   NULLIFY DO AT CURRENT LEVEL.       4F12884
05403  0 62100 0 05345          STA SPC5                      SET SPC5 ADDRESS,                  4F12885
05404  0 50000 0 05411          CLA RPA                       SET CMA3 SWITCH TO RETURN TO       4F12886
05405  0 62100 0 05546          STA CMA3                      RPT, AND IF ANY CHARACTERS         4F12887
05406  3 00006 2 05414          TXH CMA1,2,6                * WERE COLLECTED, EXIT TO CMA.       4F12888
                                RPT = REENTRY POINT USED BY CMA.                                4F12889
05407  0 50000 0 05336 RPT      CLA SPC1                      RESET CMA3 SWITCH                  4F12890
05410  0 62100 0 05546          STA CMA3                      TO NXS,                            4F12891
05411 -0 75400 0 05407 RPA      PXD RPT,0                     CLEAR THE AC, AND                  4F12892
D 05412  1 00000 0 05345          TXI SPC5,0                  * CONTINUE BY USING PROGRAM SPC.    4F12893
                                  END OF PROGRAM RPR.                                           4F12894
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12895
                                                                                                4F12896
                                CMA/ CALLS=TYP,DIAG,ETMSW,DIM.SR,IFFIX,TET00,DRTABS,JIF,CIT,  4F12897
                                LTMSW. USES=RSC.                                                4F12898
                                CMA = ENTRY POINT WHEN COMMA IS MET IN LIST SCAN.               4F12899
05413 -3 00006 2 05152 CMA      TXL NXC,2,6                 * IF NOTHING COLLECTED, RETURN -SCAN.4F12900
                                CMA1 = ENTRY POINT USED BY EMK.                                 4F12901
05414  0 07400 4 05624 CMA1     TSX TYP,4                   * TYPE TEST FOR NON-SUBSCR. VAR.    4F12902
05415  0 02000 4 00003          TRA 3,4                       ILLEGAL USE OF CONSTANT IN LIST,   4F12903
05416  0 07400 4 03400 ERRC     TSX DIAG,4                  * GO TO THE DIAGNOSTIC.             4F12904
05417 -0 50000 0 07404          CAL SYM                       MOVE VARIABLE SYMBOL               4F12905
05420  0 60200 0 07403 CMA4     SLW SA                        INTO SA. AND                       4F12906
                                CMA7 = ENTRY POINT USED BY LPR.                                 4F12907
05421  0 53400 4 07400 CMA7     LXA DOLEV,4                   IF DOLEV ADDRESS = 0, AND IF       4F12908
05422  3 00000 4 05424          TXH CMA6,4,0                  ETMSW IS SET TO TXH (NOP CASE),    4F12909
05423  0 07400 4 05754          TSX ETMSW,4                 * GO COMPILE ETM, AND CLEAR SL.     4F12910
05424 -0 50000 0 07400 CMA6     CAL DOLEV                     IN ANY CASE,                       4F12911
05425  0 40000 0 01407          ADD L(1)                      UPDATE DOLEV ADDRESS               4F12912
05426  0 60100 0 07400          STO DOLEV                     BY 1, AND THEN                     4F12913
05427  0 50000 0 01351          CLA GTAG                      SET GENERALIZED TAG.               4F12914
05430  0 60100 0 07402          STO RA                        (RELATIVE ADDRESS)                 4F12915
05431  0 10000 0 05436          TZE DIMSR                     IF THIS VARIABLE HAS A SUBSCRIPT,  4F12916
05432  0 50000 0 01147          CLA EPS                       AND IF SUBSCRIPT                   4F12917
05433 -0 10000 0 05537          TNZ CMA5                      IS A CONSTANT,                     4F12918
05434  0 62100 0 07402          STA RA                        THEN CLEAR THE ADDRESS OF RA.      4F12919
D 05435  1 00000 0 05537          TXI CMA5,0                    THEN GO MAKE CIT ENTRY.            4F12920
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                05436 -0 50000 0 07403 DIMSR  CAL  SA
                05437  0 60200 0 01130        SLW  E+2
                05440  0 07400 4 01771 RD1    TSX  DIM1SR,4
D               05441  1 00000 0 05444        TXI  RD2,0
                05442  0 50000 0 01101 CS1    CLA  D12
D               05443  1 00000 0 05467        TXI  DVS,0
                05444  0 07400 4 01775 RD2    TSX  DIM2SR,4
D               05445  1 00000 0 05455        TXI  RD3,0
                05446  0 56000 0 01101 CS2    LDQ  D12
                05447  0 60000 0 01361        STZ  N2
                05450 -0 62000 0 01361        SLQ  N2
                05451 -0 76300 0 00022        LGL  18
                05452  0 20000 0 01361        MPY  N2
                05453  0 77100 0 00001        ARS  1
D               05454  1 00000 0 05467        TXI  DVS,0
                05455  0 07400 4 02005 RD3    TSX  DIM3SR,4
D               05456  1 00000 0 05533        TXI  NODIM,0
                05457  0 56000 0 01101 CS3    LDQ  D12
                05460  0 60000 0 01361        STZ  N2
                05461 -0 62000 0 01361        SLQ  N2
                05462 -0 76300 0 00022        LGL  18
                05463  0 20000 0 01361        MPY  N2
                05464  0 76500 0 00022        LRS  18
                05465  0 20000 0 01102        MPY  D3
                05466  0 76300 0 00021        LLS  17
                05467  0 40200 0 01407  DVS    SUB  L(1)
                05470  0 10000 0 05533        TZE  NODIM
                05471  0 76700 0 00022        ALS  18
                05472  0 60100 0 01347        STO  G
                05473  0 07400 4 00417        TSX  FXCNIX,4
                05474  0 76700 0 00022        ALS  18
                05475  0 62200 0 01364        STD  RAT
                05476  0 07400 4 02372        TSX  JIF,4
                05477  0 07400 4 01731        TSX  CIT,4
                05500  0 00000 0 01367        PZE  SL
                05501  0 00000 0 01561        PZE  LXD
                05502  0 00000 0 01501        PZE  2P
                05503  0 00000 0 01364        PZE  RAT
                05504  0 07400 4 02372        TSX  JIF,4
                05505  0 07400 4 05754        TSX  ETMSW,4
                05506  0 07400 4 01731        TSX  CIT,4
                05507  0 00000 0 01367        PZE  SL
                05510  0 00000 0 07401        PZE  OP
                05511  0 00000 0 07403        PZE  SA
                05512  0 00000 0 01416        PZE  ST
                05513  0 60000 0 01367        STZ  SL
                05514  0 07400 4 05757        TSX  LTMSW,4
                05515  0 07400 4 02375        TSX  GIF,4
                05516  0 07400 4 01731        TSX  CIT,4
                05517  0 00000 0 01406        PZE  L(0)
                05520  0 00000 0 01576        PZE  TIX
                05521  0 00000 0 01367        PZE  SL
                05522  0 00000 0 01416        PZE  ST
                05523  0 60000 0 01367        STZ  SL
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                IF THIS VARIABLE                          4F12921
                DOES NOT HAVE A SUBSCRIPT, THEN           4F12922
              * GO SEARCH DIM1 TABLE.                      4F12923
                IF FOUND, THEN                            4F12924
                PICKUP DIMENSION 1                        4F12925
                AND GO TEST SIZE. OTHERWISE,              4F12926
              * GO SEARCH DIM2 TABLE.                      4F12927
                AND IF FOUND,                             4F12928
                PICKUP                                    4F12929
                DIMENSION 1 AND                           4F12930
                DIMENSION 2                               4F12931
                AND MULTIPLY                              4F12932
                THEM TOGETHER.                            4F12933
                THEN                                      4F12934
                GO TEST THE PRODUCT. OTHERWISE,           4F12935
              * GO SEARCH DIM3 TABLE.                      4F12936
                AND IF FOUND,                             4F12937
                PICKUP                                    4F12938
                DIMENSION 1,                              4F12939
                DIMENSION 2,                              4F12940
                AND DIMENSION 3.                          4F12941
                MULTIPLY                                  4F12942
                THEM TOGETHER,                            4F12943
                AND IF                                    4F12944
                THEIR                                     4F12945
                PRODUCT IS                                4F12946
                GREATER THAN 1, THEN                      4F12947
                PLACE DIMENSION-1 IN THE                  4F12948
                DECREMENT OF G, AND                       4F12949
              * GO ENTER IN FIXCON, AND GET TAG.          4F12950
                ADJUST, AND STORE TAG IN THE              4F12951
                DECREMENT OF RAT. THEN                    4F12952
              * GO JUMP IFN, AND SET SL AND TL.            4F12953
              * GO MAKE THE FOLLOWING CIT ENTRY=           4F12954
                WORD1--0(IFN)000                          4F12955
                WORD2--LXD000                             4F12956
                WORD3--200000                             4F12957
                WORD4--0(FIXCON TAG)008                   4F12958
              * GO JUMP IFN, AND SET SL AND TL.            4F12959
              * IF ETMSW = NOP, COMPILE ETM, SL=0.         4F12960
              * GO MAKE THE FOLLOWING CIT ENTRY=           4F12961
                WORD1--0(IFN)000 OR 000000                4F12962
                WORD2--(OPERATION CODE)                   4F12963
                WORD3--(SYMBOLIC ADDRESS)                 4F12964
                WORD4--000008                             4F12965
                CLEAR SL, AND                             4F12966
              * IF LTMSW = NOP, COMPILE LTM. SL=0.         4F12967
              * GET IFN IN SL AND TL.                      4F12968
              * GO MAKE THE FOLLOWING CIT ENTRY=           4F12969
                WORD1--000000                             4F12970
                WORD2--TIX001                             4F12971
                WORD3--0(IFN)000                          4F12972
                WORD4--000008                             4F12973
                CLEAR SL, AND                             4F12974
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05524  0 07400 4 05754          TSX ETMSW,4                  * IF ETMSW = NOP, COMPILE ETM, SL=0.  4F12975
05525  0 07400 4 01731          TSX CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=    4F12976
05526  0 00000 0 01406          PZE L(0)                       WORD1--000000                       4F12977
05527  0 00000 0 01546          PZE DED                        WORD2--DED000                       4F12978
05530  0 00000 0 01406          PZE L(0)                       WORD3--000000                       4F12979
05531  0 00000 0 01416          PZE ST                         WORD4--000008                       4F12980
D 05532  1 00000 0 05537          TXI CMA5,0                     IF THE PRODUCT OF DIMENSIONS IS     4F12981
05533  0 07400 1 05773  NODIM   TSX IFFIX,1                  * LESS THAN 2, TEST TYPE OF VARIABLE,4F12982
D 05534  1 00000 0 05537          TXI CMA5,0                     AND IF FIXED POINT,                 4F12983
05535  0 07400 1 03321          TSX TET00,1                  * GO ENTER VARIABLE IN                4F12984
05536  0 00000 0 00000  INOUT   PZE **                         EITHER FORVAL OR FORVAR TABLE.      4F12985
05537  0 07400 4 01731  CMA5    TSX CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=    4F12986
05540  0 00000 0 01367          PZE SL                         WORD1--0(IFN)000 OR 000000          4F12987
05541  0 00000 0 07401          PZE OP                         WORD2--NTR000 OR CPY000             4F12988
05542  0 00000 0 07403          PZE SA                         WORD3--(SYMBOL)                     4F12989
05543  0 00000 0 07402          PZE RA                         WORD4--(RELATIVE ADDRESS)           4F12990
05544  0 60000 0 01367          STZ SL                         CLEAR SL, AND                       4F12991
05545  0 60000 0 01351          STZ GTAG                       CLEAR GTAG. THEN TAKE EXIT          4F12992
D 05546  1 00000 0 05147  CMA3    TXI NXS,0                    * SWITCH TO RPT OR NXS.               4F12993
                                    END OF PROGRAM CMA.                                             4F12994
                                  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F12995
                                                                                                    4F12996
                                  EMK/ CALLS=DIAG,LTMSW,JIF,CIT,LIB,TET00. USES=CMA.              4F12997
                                  EMK = ENTRY POINT WHEN AN ENDMARK IS MET IN LIST SCAN.          4F12998
05547  3 00006 2 05414  EMK     TXH CMA1,2,6                 * IF NO CHARACTERS REMAIN, THEN       4F12999
05550 -0 53400 4 07400          LXD DOLEV,4                    CHECK THE NUMBER OF PARENTHESES.    4F13000
05551 -3 00000 4 05553          TXL FIN,4,0                    IF THERE ARE TOO MANY LPARENS,      4F13001
05552  0 07400 4 03400          TSX DIAG,4                   * GO TO THE DIAGNOSTIC. OTHERWISE,    4F13002
05553  0 07400 4 05757  FIN     TSX LTMSW,4                  * IF LTMSW = NOP, COMPILE LTM. SL=0.  4F13003
05554  0 07400 4 02372          TSX JIF,4                    * GO JUMP IFN, AND SET SL AND TL.     4F13004
                                  LAST = ENTRY POINT SET BY BXT SWITCH.                           4F13005
05555  0 07400 4 01731  LAST    TSX CIT,4                    * GO MAKE THE FOLLOWING CIT ENTRY=    4F13006
05556  0 00000 0 01367          PZE SL                         WORD1--0(IFN)000                    4F13007
05557  0 00000 0 01537          PZE CAL                        WORD2--CAL000                       4F13008
05560  0 00000 0 01510          PZE 15P                        WORD3--*00000                       4F13009
05561  0 00000 0 01406          PZE L(0)                       WORD4--000000                       4F13010
05562  0 07400 4 06023          TSX LIB,4                    * MAKE CLOSUB ENTRY, AND COMPILE=     4F13011
05563  0 00000 0 01406          PZE L(0)                       WORD1--000000                       4F13012
05564  0 00000 0 06125          PZE XIT                        WORD2--XIT000                       4F13013
05565  0 00000 0 06141          PZE END                        WORD3--(RTN) OR (FIL)               4F13014
05566  0 00000 0 01406          PZE L(0)                       WORD4--000000                       4F13015
                                  FINI = ENTRY POINT USED BY EFT.                                 4F13016
05567  0 50000 0 05376  FINI    CLA RESET                      RESET BXT SWITCH                    4F13017
05570  0 62100 0 04744          STA BXT                        TO RSC.                             4F13018
05571  0 50000 0 01151          CLA F-1                        TEST FOR AN EXTERNAL                4F13019
05572  0 40200 0 01477          SUB 5BLANS                     STATEMENT NUMBER, AND IF NONE,      4F13020
05573  0 10000 0 03440          TZE CA010                    * EXIT TO PROCESS NEXT STATEMENT.     4F13021
05574 -0 50000 0 01520          CAL MINUS0                     OTHERWISE, SET THE SIGN             4F13022
05575 -0 60200 0 00030          ORS EIFNO                      OF EIFNO TO MINUS, AND              4F13023
05576  0 07400 1 03321          TSX TET00,1                  * GO ENTER -(EIFNO)                   4F13024
05577  0 00000 0 00000          PZE 0                          IN THE TEIFNO TABLE.                4F13025
05600 -0 50000 0 00030          CAL EIFNO                      THEN RESTORE                        4F13026
05601  0 60100 0 00030          STO EIFNO                      EIFNO, AND                          4F13027
D 05602  1 00000 0 03440          TXI CA010,0                  * EXIT TO PROCESS NEXT STATEMENT.     4F13028
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                                        END OF PROGRAM EMK.                                          4F13029
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13030
                                                                                                      4F13031
                                       STATEA/4-SUBROUTINES USED BY STATE A=                          4F13032

                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
                                                                                                      4F13033
                                       BEG(TYP),4/ CALLS=DIAG. USES RSC.                              4F13034
                                       BEG = ENTRY POINT USED BY RDC,RIT,WOT,EFT.                     4F13035
      05603 -0 63400 4 05605 BEG    SXD BEX,4                    SAVE C(XR4) FOR RETURN,               4F13036
      05604 -0 50000 0 05620        CAL BEGTR                    SET CONTROL TRANSFER                  4F13037
      05605  1 00000 0 05146 BEX    TXI CXS,0,**               * AND GO EXECUTE BEGINNING SCAN.        4F13038
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13039
                                                                                                      4F13040
                                       BEGTR/ CONTROL TRANSFERS FOR BEGINNING SCAN=                   4F13041
D     05606  1 00000 0 05621        TXI NLS,0                  * ENDMARK (NO LIST SCAN)                4F13042
      05607  0 07400 4 03400 IBC    TSX DIAG,4                 * ( (ILLEGAL CHARACTER IN I/O SETUP).4F13043
D     05610  1 00000 0 05623        TXI CMB,0                  * ,                                     4F13044
D     05611  1 00000 0 05607        TXI IBC,0                    ) (ILLEGAL CHARACTER IN I/O SETUP).4F13045
D     05612  1 00000 0 05607        TXI IBC,0                    = (ILLEGAL CHARACTER IN I/O SETUP).4F13046
D     05613  1 00000 0 05607        TXI IBC,0                    - (ILLEGAL CHARACTER IN I/O SETUP).4F13047
D     05614  1 00000 0 05607        TXI IBC,0                    / (ILLEGAL CHARACTER IN I/O SETUP).4F13048
D     05615  1 00000 0 05607        TXI IBC,0                    . (ILLEGAL CHARACTER IN I/O SETUP).4F13049
D     05616  1 00000 0 05607        TXI IBC,0                    + (ILLEGAL CHARACTER IN I/O SETUP).4F13050
D     05617  1 00000 0 05607        TXI IBC,0                    * (ILLEGAL CHARACTER IN I/O SETUP).4F13051
      05620  0 00000 0 05620  BEGTR PZE BEGTR                    INDEXING ADDRESS FOR ABOVE LIST.      4F13052
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13053
                                                                                                      4F13054
                                       NLS = ENTRY POINT WHEN AN ENDMARK IS MET IN BEGINNING SCAN.    4F13055
      05621  0 50000 0 06105  NLS   CLA NLA                      IF ENDMARK IS MET,                   4F13056
      05622  0 62100 0 04744        STA BXT                      SET BXT SWITCH TO LAST.              4F13057
                                       CMB = ENTRY POINT WHEN A COMMA IS MET IN BEGINNING SCAN.       4F13058
      05623 -0 53400 4 05605  CMB   LXD BEX,4                    RESTORE THE C(XR4), AND              4F13059
                                       TYP = ENTRY POINT USED BY LPR,SPC,CMA.                         4F13060
      05624  0 50000 0 07310 TYP    CLA CHR-6                    TEST FIRST CHARACTER                 4F13061
      05625  0 40200 0 01404        SUB PLUS                     FOR VARIABLE                         4F13062
      05626 -0 12000 0 05634        TMI ABS                      OR CONSTANT.                         4F13063
      05627  3 00044 2 05633        TXH SMB,2,36                 IF VARIABLE,                         4F13064
      05630 -0 50000 0 01430        CAL BLANK                    ADD A BLANK                          4F13065
      05631  0 76700 2 00044        ALS 36,2                     IF SYMBOL CONTAINS                   4F13066
      05632 -0 60200 0 07404        ORS SYM                      LESS THAN 6 CHARACTERS, AND          4F13067
      05633  0 02000 4 00001 SMB    TRA 1,4                    * TAKE VARIABLE EXIT TO CALLER.        4F13068
      05634  0 53400 2 01413 ABS    LXA L(5),2                   IF CONSTANT,                         4F13069
      05635  0 50000 2 07315        CLA CHR-1,2                  THEN                                 4F13070
      05636  0 60100 0 07307        STO BIN                      CONVERT                              4F13071
      05637 -3 00000 2 05645 CSJ    TXL INT,2,**                 BCD                                  4F13072
      05640  0 76700 0 00002        ALS 2                        DIGITS                               4F13073
      05641  0 40000 0 07307        ADD BIN                      TO THEIR                             4F13074
      05642  0 76700 0 00001        ALS 1                        BINARY                               4F13075
      05643  0 40000 2 07316        ADD CHR,2                    EQUIVALENT,                          4F13076
      05644  1 77777 2 05636        TXI CSJ-1,2,-1               AND WHEN DONE,                       4F13077
      05645  0 02000 4 00002  INT   TRA 2,4                    * TAKE CONSTANT EXIT TO CALLER.        4F13078
                                        END OF PROGRAM BEG(TYP).                                      4F13079
                                       * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13080
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                                                                                                                    4F13081
                                    BRW,4/ CALLS=JIF,BEG,VRA,CIT. CALLERS=WBT,RBT,WRD.                              4F13082
05646 -0 63400 4 06054 BRW     SXD XRW,4                    SAVE THE C(XR4), AND                                    4F13083
05647  0 60200 0 06140         SLW CON                      SET CON = 0 OR ,,144 OR ,,192.                          4F13084
05650  0 07400 4 02372         TSX JIF,4                  * GO JUMP IFN, AND SET SL AND TL.                         4F13085
05651  0 07400 4 05603         TSX BEG,4                  * GO SCAN AND TEST TYPE OF SYMBOL.                        4F13086
05652  0 07400 4 06032         TSX VRA,4                  * IF VARIABLE, ENTER FORVAR AND CITS.                     4F13087
05653  0 76700 0 00022         ALS 18                       IF CONSTANT, ADJUST CONVERTED                           4F13088
05654  0 60100 0 07402         STO RA                       NUMBER, AND SET RA.                                     4F13089
05655  0 07400 4 01731         TSX CIT,4                  * GO MAKE THE FOLLOWING CIT ENTRY=                        4F13090
05656  0 00000 0 01371         PZE TL                       WORD1--0(IFN)0(248)                                     4F13091
05657  0 00000 0 07401         PZE OP                       WORD2--(WTB,RBT,WRD,RDD)000                             4F13092
05660  0 00000 0 01406         PZE L(0)                     WORD3--000000                                           4F13093
05661  0 00000 0 07402         PZE RA                       WORD4--000000 OR 0(UNIT)000                             4F13094
05662 -0 50000 0 01544         CAL CPY                      MOVE CPY000                                             4F13095
05663  0 60200 0 07401         SLW OP                       INTO OP.                                                4F13096
05664 -0 50000 0 00415         CAL TXLOP                    SET OP-SWITCHES,                                        4F13097
05665  0 63000 0 05754         STP ETMSW                    ETMSW AND LTMSW,                                        4F13098
05666  0 63000 0 05757         STP LTMSW                    TO THE TRA CASE.                                        4F13099
05667 -0 50000 0 06133         CAL RTN                      MOVE (RTN)                                              4F13100
05670  0 60200 0 06141         SLW END                      INTO END.                                               4F13101
05671  0 60000 0 01367         STZ SL                       CLEAR SL,                                               4F13102
05672 -0 53400 4 06054         LXD XRW,4                    RESTORE THE C(XR4), AND                                 4F13103
05673  0 02000 4 00001         TRA 1,4                    * EXIT TO CALLER.                                         4F13104
                                END OF PROGRAM BRW.                                                             4F13105
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13106
                                                                                                                    4F13107
                                    BSS,2/ CALLS=CIT00. CALLERS=LPR,C1600.                                      4F13108
                                    BSS COMPILES= IFN BSS 0.                                                    4F13109
05674  0 07400 4 01731  BSS    TSX CIT00,4                  * GO MAKE FOLLOWING CIT ENTRY=                        4F13110
05675  0 00000 0 01367         PZE SL                       WORD1--0(IFN)000                                        4F13111
05676  0 00000 0 01536         PZE L(BSS)                   WORD2--BSS000                                           4F13112
05677  0 00000 0 01406         PZE L(0)                     WORD3--000000                                           4F13113
05700  0 00000 0 01406         PZE L(0)                     WORD4--000000                                           4F13114
05701  0 02000 2 00001         TRA 1,2                    * EXIT TO CALLER+1.                                       4F13115
                                END OF PROGRAM BSS.                                                             4F13116
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13117
                                                                                                                    4F13118
                                    CA100,4/ CALLS=DIAG. CALLER=CA000.                                          4F13119
                                    CA100 READS NEXT SOURCE PROGRAM CARD (1 TAPE RECORD).                       4F13120
05702  0 53400 2 01413 CA100   LXA TERC,2                     PREPARE TO COUNT                                    4F13121
05703 -0 63400 2 01112         SXD 1G,2                     TAPE READING ERRORS.                                    4F13122
05704 -0 76000 0 00012         RTT                          TURN OFF TAPE CHECK INDICATOR.                          4F13123
05705  0 76100 0 00000         NOP                          PROCEED TO NEXT INSTRUCTION.                            4F13124
05706  0 76200 0 00202 CA101   RDS 130                      SELECT SOURCE TAPE FOR READING.                         4F13125
05707  0 53400 2 01420         LXA L(12),2                  INITIALIZE INDEX B FOR 12 CYCLES OF                     4F13126
                                                            COPY LOOP.                                              4F13127
05710  0 70000 2 01347 CA102   CPY FT+12,2                  COPY INTO FT REGION                                     4F13128
05711  0 02000 0 05721         TRA CA103                    NEXT SOURCE PROGRAM CARD.                               4F13129
05712  0 02000 0 05740         TRA CA120                    END OF FILE, GO FINISH LAST STATEM.                     4F13130
05713 -0 53400 2 01112 CA130   LXD 1G,2                     TEST TAPE ERROR COUNTER                                 4F13131
05714  2 00001 2 05716         TIX CA131,2,1                BY TRYING TO REDUCE BY 1.                               4F13132
05715  0 07400 4 03400         TSX DIAG,4                 * FAILED 5 TIMES IN READING TAPE 2.                       4F13133
05716 -0 63400 2 01112 CA131   SXD 1G,2                     SAVE REDUCED VALUE IN COUNTER.                          4F13134
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05717  0 76400 0 00202          BST 130                      BACKSPACE FORMULA TAPE,          4F13135
05720  0 02000 0 05706          TRA CA101                    AND GO BACK TO READ AGAIN.       4F13136
05721  2 00001 2 05710 CA103    TIX CA102,2,1                TEST EXIT FROM LOOP.             4F13137
05722  0 76600 0 00333          IOD                          DELAY UNTIL TAPE DISCONNECTS.    4F13138
05723 -0 76000 0 00012          RTT                          CHECK READING OF TAPE.           4F13139
D 05724  1 00000 0 05713        TXI CA130,0                  IF INCORRECT, GO CHECK ERROR COUNT.4F13140
05725  0 53400 2 01420          LXA L(12),2                  PREPARE TO SCAN 12 WORDS OF CARD. 4F13141
05726  0 50000 0 01526 CA112    CLA BLANKS                   TEST                             4F13142
05727  0 40200 2 01347          SUB FT+12,2                  FOR                              4F13143
05730 -0 10000 0 05733          TNZ CA113                    BLANK                            4F13144
05731  2 00001 2 05726          TIX CA112,2,1                CARD.                            4F13145
05732  0 02000 0 05702          TRA CA100                    IF BLANK, GO TO READ NEXT CARD.  4F13146
05733 -0 50000 0 01333 CA113    CAL FT                       IF NOT BLANK,                    4F13147
05734  0 77100 0 00036          ARS 30                       EXAMINE FIRST                    4F13148
05735  0 40200 0 01421          SUB L(C)                     CHARACTER TO                     4F13149
05736  0 10000 0 05702          TZE CA100                    TEST FOR COMMENT CARD.           4F13150
05737  0 02000 4 00001          TRA 1,4                    * EXIT IF NEITHER BLANK NOR COMMENT. 4F13151
05740  0 60000 0 01333 CA120    STZ FT                       INDICATE THAT FINAL              4F13152
05741 -0 63400 0 02575          SXD ENDWRD,0                 STATEMENT HAS BEEN READ IN.      4F13153
05742  0 02000 4 00001          TRA 1,4                    * EXIT TO MAIN ROUTINE TO FINISH.  4F13154
                                  END OF PROGRAM CA100.                                       4F13155
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13156
                                                                                              4F13157
                                CC500,4/ CALLER=CC000.                                        4F13158
                                CC500 BRINGS NEXT CHARACTER OF DICTIONARY INTO AC(30-35).   4F13159
05743 -0 75400 0 00000 CC500    PXD ,0                       CLEAR THE AC.                    4F13160
05744  2 00001 2 05752          TIX CC502,2,1                IF NO DICTIONARY CHARACTERS      4F13161
05745 -0 53400 2 01113          LXD 2G,2                     REMAIN IN THE MQ, THEN           4F13162
05746  0 56000 2 06145          LDQ DIC,2                    REFILL WITH NEXT DICTIONARY WORD. 4F13163
05747  1 77777 2 05750          TXI CC501,2,-1               RESET THE                        4F13164
05750 -0 63400 2 01113 CC501    SXD 2G,2                     DICTIONARY WORD TAG, AND         4F13165
05751  0 53400 2 01414          LXA L(6),2                   SET THE CHARACTER COUNT = 6.     4F13166
05752 -0 76300 0 00006 CC502    LGL 6                        SHIFT CHAR INTO AC(30-35),       4F13167
05753  0 02000 4 00001          TRA 1,4                    * AND RETURN TO CALLER.            4F13168
                                  END OF PROGRAM CC500.                                       4F13169
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13170
                                                                                              4F13171
                                ETMSW(LTMSW),4/ CALLS=CIT. CALLERS=RDC,LPR,SPC,CMA,EMK.     4F13172
                                ETMSW = ENTRY POINT USED BY RDC,CMA.                        4F13173
D 05754 -3 00000 0 05772 ETMSW  TXL NOTTM,0                  SWITCH (TXL=TRA, TXH=NOP).       4F13174
05755 -0 50000 0 06112          CAL ETM                      PICKUP ETM000, AND               4F13175
05756  1 00000 0 05761 XR4X     TXI SETOP,0,**               GO SET OP.                       4F13176
                                LTMSW = ENTRY POINT USED BY LPR,SPC,CMA,EMK.                4F13177
D 05757 -3 00000 0 05772 LTMSW  TXL NOTTM,0                  SWITCH (TXL=TRA, TXH=NOP).       4F13178
05760 -0 50000 0 06113          CAL LTM                      PICKUP LTM000, AND               4F13179
05761  0 60200 0 06142 SETOP    SLW TOP                      SET TOP.                         4F13180
05762 -0 63400 4 05756          SXD XR4X,4                   SAVE THE C(XR4), AND             4F13181
05763  0 07400 4 01731          TSX CIT,4                  * GO MAKE THE FOLLOWING CIT ENTRY= 4F13182
05764  0 00000 0 01367          PZE SL                       WORD1--0(IFN)000                 4F13183
05765  0 00000 0 06142          PZE TOP                      WORD2--ETM000 OR LTM000          4F13184
05766  0 00000 0 01406          PZE L(0)                     WORD3--000000                    4F13185
05767  0 00000 0 01406          PZE L(0)                     WORD4--000000                    4F13186
05770  0 60000 0 01367          STZ SL                       CLEAR SL,                        4F13187
05771 -0 53400 4 05756          LXD XR4X,4                   RESTORE THE C(XR4), AND          4F13188
```

```
     05772  0 02000 4 00001 NOTTM  TRA 1,4                    * EXIT TO CALLER.                    4F13189
                                     END OF PROGRAM ETMSW(LTMSW).                                  4F13190
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13191
                                                                                                   4F13192
                                    IFFIX,1/ USES=TESTFX. CALLERS=CMA,VRA(VRD).                    4F13193
     05773 -0 50000 0 00030 IFFIX  CAL EIFNO                     SET                                4F13194
     05774  0 60000 0 01347        STZ G                         G TO                               4F13195
     05775  0 62200 0 01347        STD G                         (0(IFN)000).                       4F13196
     05776 -0 50000 0 07404        CAL SYM                       MOVE SYMBOL                        4F13197
     05777  0 60200 0 01350        SLW G+1                       INTO G+1.                          4F13198
     06000 -0 50000 0 07310        CAL CHR-6                     PICKUP 1ST CHARACTER OF SYMBOL, AND4F13199
D    06001  1 00000 0 03242        TXI TESTFX+1,0              * GO TEST FOR FIXED OR FLOATING PT.  4F13200
                                     END OF PROGRAM IFFIX.                                         4F13201
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13202
                                                                                                   4F13203
                                    INPUT(OUTPUT),2/ CALLS=GIF,CIT,LIB.                            4F13204
                                    CALLERS=RDC,RIT,RDP,WOT,PDC,WBT,RBT,WRD,RDD.                   4F13205
                                    INPUT = ENTRY POINT USED BY RDC,RIT,RBT,RDD.                   4F13206
     06002  0 50000 0 01414 INPUT  CLA L(6)                      PICKUP 6 TO                        4F13207
TD   06003  1 00000 0 06005        TXI OUTPUT+1                  GO SET INOUT FOR FORVAL ENTRY.     4F13208
                                    OUTPUT = ENTRY POINT USED BY RDP,WOT,PDC,WBT,WRD.              4F13209
     06004  0 50000 0 01413 OUTPUT CLA L(5)                      PICKUP 5 TO                        4F13210
     06005  0 60100 0 05536        STO INOUT                     SET INOUT FOR FORVAR ENTRY.        4F13211
     06006  0 07400 4 02375        TSX GIF,4                   * SET SL = IFN,000.                  4F13212
     06007  0 07400 4 01731        TSX CIT,4                   * GO MAKE THE FOLLOWING CIT ENTRY=   4F13213
     06010  0 00000 0 01367        PZE SL                        WORD1--0(IFN)000                   4F13214
     06011  0 00000 0 01537        PZE CAL                       WORD2--CAL000                      4F13215
     06012  0 00000 0 01510        PZE 15P                       WORD3--*00000                      4F13216
     06013  0 00000 0 01406        PZE L(0)                      WORD4--000000                      4F13217
     06014  0 07400 4 06023        TSX LIB,4                   * MAKE CLOSUB ENTRY, AND COMPILE=    4F13218
     06015  0 00000 0 01406        PZE L(0)                      WORD1--000000                      4F13219
     06016  0 00000 0 06125        PZE XIT                       WORD2--XIT000                      4F13220
     06017  0 00000 0 06132        PZE LEV                       WORD3--(LEV)                       4F13221
     06020  0 00000 0 01406        PZE L(0)                      WORD4--000000                      4F13222
     06021  0 60000 0 01367        STZ SL                        CLEAR SL, AND                      4F13223
     06022  0 02000 2 00001        TRA 1,2                     * EXIT TO CALLER.                    4F13224
                                     END OF PROGRAM INPUT(OUTPUT).                                 4F13225
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13226
                                                                                                   4F13227
                                    LIB,1/ CALLS=TET00,CIT. CALLERS=RDC,EMK,INPUT(OUTPUT).         4F13228
     06023 -0 50000 4 00003 LIB    CAL 3,4                       MOVE NAME OF SUBROUTINE,           4F13229
     06024  0 62100 0 06025        STA LIC                       ADDRESS OF WHICH                   4F13230
     06025 -0 50000 0 00000 LIC    CAL **                        IS IN WORD3 OF CALLING SEQ,        4F13231
     06026  0 60200 0 01347        SLW G                         INTO G, AND                        4F13232
     06027  0 07400 1 03321        TSX TET00,1                 * GO ENTER IN THE                    4F13233
     06030  0 00000 0 00011        PZE 9                         CLOSUB TABLE.                      4F13234
D    06031  1 00000 0 01731        TXI CIT,0                   * MAKE CIT ENTRY, AND EXIT TO CALLER.4F13235
                                     END OF PROGRAM LIB.                                           4F13236
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13237
                                                                                                   4F13238
                                    VRA(VRD),4/ CALLS=IFFIX,DIAG,TET00,CIT,DRTABS,JIF.             4F13239
                                    CALLERS=RIT,WOT,EFT.                                           4F13240
                                    VRA = ENTRY POINT USED BY EFT.                                 4F13241
     06032  0 50000 0 02400 VRA    CLA L(TL)                     RESET TPOA ADDRESS                 4F13242
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06033  0 62100 0 05102          STA TPOA                      TO TL.                                  4F13243
06034 -0 50000 0 00415          CAL TXLOP                     PREPARE TO SET OP-SWITCH TO TRA.        4F13244
06035  1 77777 4 06037          TXI VRD1,4,-1                 SET RETURN TO TSX+2, AND GO SET OP.4F13245
                                    VRD = ENTRY POINT USED BY RIT,WOT.                                4F13246
06036  0 50000 0 00415 VRD      CLA TXLOP                     PREPARE TO SET OP-SWITCH TO NOP.        4F13247
06037  0 63000 0 06052 VRD1     STP VRX                       SET VRX OP-SWITCH.                      4F13248
06040 -0 63400 4 06052          SXD VRX,4                     SAVE THE C(XR4) FOR RETURN.             4F13249
06041  0 07400 1 05773          TSX IFFIX,1                 * SET UP IFN AND SYMBOL FOR FORVAR.       4F13250
06042  0 07400 4 03400          TSX DIAG,4                  * ILLEGAL USE OF FLOATING VARIABLE.       4F13251
06043  0 07400 1 03321          TSX TET00,1                 * IF SYMBOL IS FXD-PT, GO MAKE            4F13252
06044  0 00000 0 00005          PZE 5                         ENTRY IN FORVAR TABLE.                  4F13253
06045  0 07400 4 01731          TSX CIT,4                   * GO MAKE THE FOLLOWING CIT ENTRY=        4F13254
06046  0 00000 0 01367          PZE SL                        WORD1--0(IFN)000                        4F13255
06047  0 00000 0 01537          PZE CAL                       WORD2--CAL000                           4F13256
06050  0 00000 0 07404          PZE SYM                       WORD3--(FXD-PT SYMBOL)                  4F13257
06051  0 00000 0 01406          PZE L(0)                      WORD4--000000                           4F13258
06052  3 00000 0 06055 VRX      TXH VDA,0,**                  SWITCH (TXL=TRA, TXH=NOP).              4F13259
06053 -0 50000 0 06121          CAL STD                       PICKUP STD000, AND                      4F13260
06054  1 00000 0 06076 XRW      TXI RVX,0,**                  GO SET TOP.                             4F13261
06055  0 50000 0 06140 VDA      CLA CON                       IF CON                                  4F13262
06056  0 10000 0 06070          TZE SDA                       IS NOT ZERO,                            4F13263
06057  0 60100 0 01347          STO G                         THEN                                    4F13264
06060  0 07400 4 00417          TSX FXCNIX,4                * ENTER CON IN FIXCON,AND GET TAG.        4F13265
06061  0 76700 0 00022          ALS 18                        ADJUST TAG, AND                         4F13266
06062  0 60100 0 07402          STO RA                        SET RA.                                 4F13267
06063  0 07400 4 01731          TSX CIT,4                   * GO MAKE THE FOLLOWING CIT ENTRY.        4F13268
06064  0 00000 0 01406          PZE L(0)                      WORD1--000000                           4F13269
06065  0 00000 0 01532          PZE ADD                       WORD2--ADD000                           4F13270
06066  0 00000 0 01501          PZE 2P                        WORD3--200000                           4F13271
06067  0 00000 0 07402          PZE RA                        WORD4--(FIXCON TAG)                     4F13272
06070  0 07400 4 01731 SDA      TSX CIT,4                   * GO MAKE THE FOLLOWING CIT ENTRY=        4F13273
06071  0 00000 0 01406          PZE L(0)                      WORD1--000000                           4F13274
06072  0 00000 0 01535          PZE ARS                       WORD2--ARS000                           4F13275
06073  0 00000 0 01406          PZE L(0)                      WORD3--000000                           4F13276
06074  0 00000 0 01466          PZE D18                       WORD4--0(18)000                         4F13277
06075 -0 50000 0 01571          CAL STA                       PICKUP STA000, AND                      4F13278
06076  0 60200 0 06142 RVX      SLW TOP                       SET TOP TO STA OR STD.                  4F13279
06077  0 07400 4 02372          TSX JIF,4                   * GO JUMP IFN, AND SET SL AND TL.         4F13280
06100  0 07400 4 01731          TSX CIT,4                   * GO MAKE THE FOLLOWING CIT ENTRY=        4F13281
06101  0 00000 0 01406          PZE L(0)                      WORD1--000000                           4F13282
06102  0 00000 0 06142          PZE TOP                       WORD2--STA000 OR STD000                 4F13283
06103  0 00000 0 01371          PZE TL                        WORD3--0(IFN)000                        4F13284
06104  0 00000 0 01406          PZE L(0)                      WORD4--000000                           4F13285
06105 -0 75400 0 05555 NLA      PXD LAST,0                    CLEAR THE AC,                           4F13286
06106 -0 53400 4 06052          LXD VRX,4                     RESTORE THE C(XR4), AND                 4F13287
06107  0 02000 4 00001          TRA 1,4                     * EXIT TO CALLER.                         4F13288
                                     END OF PROGRAM VRA(VRD).                                         4F13289
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13290
                                                                                                      4F13291
                                    STATEA/5-CONSTANTS AND VARIABLES USED BY STATE A=                 4F13292
                                                                                                      4F13293
06110  222324000000     BCD     BCD 1BCD000                   CONSTANT USED BY IOT.                   4F13294
06111  226263000000     BST     BCD 1BST000                   CONSTANT USED BY IOT.                   4F13295
06112  256344000000     ETM     BCD 1ETM000                   CONSTANT USED BY IOT.                   4F13296
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06113  436344000000     LTM   BCD 1LTM000                CONSTANT USED BY IOT.          4F13297
06114  456351000000     NTR   BCD 1NTR000                CONSTANT USED BY IOT.          4F13298
06115  512451000000     RDR   BCD 1RDR000                CONSTANT USED BY IOT.          4F13299
06116  512566000000     REW   BCD 1REW000                CONSTANT USED BY IOT.          4F13300
06117  516322000000     RTB   BCD 1RTB000                CONSTANT USED BY IOT.          4F13301
06120  624366000000     SLW   BCD 1SLW000                CONSTANT USED BY IOT.          4F13302
06121  626324000000     STD   BCD 1STD000                CONSTANT USED BY IOT.          4F13303
06122  662451000000     WDR   BCD 1WDR000                CONSTANT USED BY IOT.          4F13304
06123  662526000000     WEF   BCD 1WEF000                CONSTANT USED BY IOT.          4F13305
06124  666322000000     WTB   BCD 1WTB000                CONSTANT USED BY IOT.          4F13306
06125  673163000000     XIT   BCD 1XIT000                CONSTANT USED BY IOT.          4F13307
06126  742224233460     BDC   BCD 1(BDC)                 CONSTANT USED BY IOT.          4F13308
06127  742362303460     CSH   BCD 1(CSH)                 CONSTANT USED BY IOT.          4F13309
06130  742422233460     DBC   BCD 1(DBC)                 CONSTANT USED BY IOT.          4F13310
06131  742631433460     FIL   BCD 1(FIL)                 CONSTANT USED BY IOT.          4F13311
06132  744325653460     LEV   BCD 1(LEV)                 CONSTANT USED BY IOT.          4F13312
06133  745163453460     RTN   BCD 1(RTN)                 CONSTANT USED BY IOT.          4F13313
06134  746223303460     SCH   BCD 1(SCH)                 CONSTANT USED BY IOT.          4F13314
06135  746247303460     SPH   BCD 1(SPH)                 CONSTANT USED BY IOT.          4F13315
06136  746263303460     STH   BCD 1(STH)                 CONSTANT USED BY IOT.          4F13316
06137  746362303460     TSH   BCD 1(TSH)                 CONSTANT USED BY IOT.          4F13317
                                                                                        4F13318
                 06140  CON   BSS 1                      VARIABLE USED BY IOT.          4F13319
06141  0 00000 0 00000  END   PZE **                     VARIABLE USED BY IOT.          4F13320
                 06142  TOP   BSS 1                      VARIABLE USED BY IOT.          4F13322
06143  0 00000 0 00000  TSA   PZE **                     VARIABLE USED BY IOT.          4F13323
06144  0 00000 0 00000  TTA   PZE **                     VARIABLE USED BY IOT.          4F13324
                                                                                        4F13325
                                   DIC/ DICTIONARY OF NON-ARITHMETIC STATEMENTS (USED BY CC500).4F13326
06145 +244677274663     DIC   OCT 244677274663           DO-GOT                         4F13327
06146 -067731267462           OCT -67731267462           O-IF(S                         4F13328
06147 +254562256266           OCT 254562256266           ENSESW                         4F13329
06150 +316323307731           OCT 316323307731           ITCH-I                         4F13330
06151 +267462254562           OCT 267462254562           F(SENS                         4F13331
06152 +254331273063           OCT 254331273063           ELIGHT                         4F13332
06153 -373126243165           OCT -373126243165          -IFDIV                         4F13333
06154 +312425233025           OCT 312425233025           IDECHE                         4F13334
06155 +234277312621           OCT 234277312621           CK-IFA                         4F13335
06156 +232364446443           OCT 232364446443           CCUMUL                         4F13336
06157 +216346514665           OCT 216346514665           ATOROV                         4F13337
06160 +255126434666           OCT 255126434666           ERFLOW                         4F13338
06161 -373126506446           OCT -373126506446          -IFQUO                         4F13339
06162 -233125456346           OCT -233125456346          TIENTO                         4F13340
06163 -252551264346           OCT -252551264346          VERFLO                         4F13341
06164 -267731267721           OCT -267731267721          W-IF-A                         4F13342
06165 -226231274577           OCT -226231274577          SSIGN-                         4F13343
06166 -226346477747           OCT -226346477747          STOP-P                         4F13344
06167 +216462257762           OCT 216462257762           AUSE-S                         4F13345
06170 +254562254331           OCT 254562254331           ENSELI                         4F13346
06171 +273063772431           OCT 273063772431           GHT-DI                         4F13347
06172 -042545623146           OCT -42545623146           MENSIO                         4F13348
06173 -057725506431           OCT -57725506431           N-EQUI                         4F13349
06174 -252143254523           OCT -252143254523          VALENC                         4F13350
06175 +257726512550           OCT 257726512550           E-FREQ                         4F13351
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06176 -242545237077          OCT -242545237077          UENCY-                          4F13352
06177 +234645633145          OCT 234645633145           CONTIN                          4F13353
06200 -242577512521          OCT -242577512521          UE-REA                          4F13354
06201 +246321472577          OCT 246321472577           DTAPE-                          4F13355
06202 -112521243145          OCT -112521243145          READIN                          4F13356
06203 -076463632147          OCT -76463632147           PUTTAP                          4F13357
06204 +257751252124          OCT 257751252124           E-READ                          4F13358
06205 +245164447751          OCT 245164447751           DRUM-R                          4F13359
06206 +252124776651          OCT 252124776651           EAD-WR                          4F13360
06207 +316325632147          OCT 316325632147           ITETAP                          4F13361
06210 +257766513163          OCT 257766513163           E-WRIT                          4F13362
06211 +254664634764          OCT 254664634764           EQUTPU                          4F13363
06212 -236321472577          OCT -236321472577          TTAPE-                          4F13364
06213 -265131632524          OCT -265131632524          WRITED                          4F13365
06214 -116444774751          OCT -116444774751          RUM-PR                          4F13366
06215 +314563774764          OCT 314563774764           INT-PU                          4F13367
06216 -052330775125          OCT -52330775125           NCH-RE                          4F13368
06217 -263145247722          OCT -263145247722          WIND-B                          4F13369
06220 +212342624721          OCT 212342624721           ACKSPA                          4F13370
06221 +232577254524          OCT 232577254524           CE-END                          4F13371
06222 +263143257726          OCT 263143257726           FILE-F                          4F13372
06223 -065144216377          OCT -65144216377           ORMAT-                          4F13373
06224 -226422514664          OCT -226422514664          SUBROU                          4F13374
06225 -233145257723          OCT -233145257723          TINE-C                          4F13375
06226 -064444464577          OCT -064444464577          OMMON-                          4F13376
06227 -112563645145          OCT -112563645145          RETURN                          4F13377
06230 -372321434377          OCT -372321434377          -CALL-                          4F13378
06231 +254524747726          OCT 254524747726           END(-F                          4F13379
06232 -244523633146          OCT -244523633146          UNCTIO                          4F13380
06233 -057777777777          OCT -057777777777          N-----                          4F13381
                  06234      BSS 10                                                     4F133815
                                  END OF DICTIONARY.                                     4F13382
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13383
                                                                                         4F13384
                                 T/ TRANSFER TABLE (USED BY CC000).                      4F13385
D     06246  1 00000 0 03653 T   TXI C0100,0                DO.                           4F13386
D     06247  1 00000 0 03720     TXI C0200,0                GO TO.                        4F13387
D     06250  1 00000 0 04106     TXI C0400,0                IF (SENSE SWITCH.             4F13388
D     06251  1 00000 0 04150     TXI C0500,0                IF (SENSE LIGHT.              4F13389
D     06252  1 00000 0 04154     TXI C0600,0                IF DIVIDE CHECK.              4F13390
D     06253  1 00000 0 04162     TXI C0700,0                IF AC OVERFLOW.               4F13391
D     06254  1 00000 0 04166     TXI C0800,0                IF MQ OVERFLOW.               4F13392
D     06255  1 00000 0 04033     TXI C0300,0                IF.                           4F13393
D     06256  1 00000 0 04216     TXI C1000,0                ASSIGN.                       4F13394
D     06257  1 00000 0 04343     TXI C1300,0                STOP.                         4F13395
D     06260  1 00000 0 04170     TXI C0900,0                PAUSE.                        4F13396
D     06261  1 00000 0 04251     TXI C1100,0                SENSE LIGHT.                  4F13397
D     06262 -3 00000 0 04266     TXL C1200,0                DIMENSION.                    4F13398
D     06263 -3 00000 0 04375     TXL C1500,0                EQUIVALENCE.                  4F13399
D     06264 -3 00000 0 04354     TXL C1400,0                FREQUENCY.                    4F13400
D     06265  1 00000 0 04433     TXI C1600,0                CONTINUE.                     4F13401
D     06266  1 00000 0 05012     TXI RBT,0                  READ TAPE.                    4F13402
D     06267  1 00000 0 04745     TXI RIT,0                  READ INPUT TAPE.              4F13403
D     06270  1 00000 0 05063     TXI RDD,0                  READ DRUM.                    4F13404
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D     06271  1 00000 0 04673        TXI RDC,0                    READ CARD.                        4F13405
D     06272  1 00000 0 04777        TXI WBT,0                    WRITE TAPE.                       4F13406
D     06273  1 00000 0 04764        TXI WOT,0                    WRITE OUTPUT TAPE.                4F13407
D     06274  1 00000 0 05044        TXI WRD,0                    WRITE DRUM.                       4F13408
D     06275  1 00000 0 04753        TXI RDP,0                    PRINT.                            4F13409
D     06276  1 00000 0 04772        TXI PDC,0                    PUNCH.                            4F13410
D     06277  1 00000 0 05107        TXI RWN,0                    REWIND.                           4F13411
D     06300  1 00000 0 05111        TXI BSP,0                    BACKSPACE.                        4F13412
D     06301  1 00000 0 05066        TXI EFT,0                    END FILE.                         4F13413
D     06302 -3 00000 0 05113        TXL FOR,0                    FORMAT.                           4F13414
D     06303 -3 00000 0 04442        TXL C3000,0                  SUBROUTINE.                       4F13415
D     06304 -3 00000 0 04512        TXL C3100,0                  COMMON.                           4F13416
D     06305  1 00000 0 04536        TXI C3200,0                  RETURN.                           4F13417
D     06306  1 00000 0 04607        TXI C3300,0                  CALL.                             4F13418
D     06307 -3 00000 0 04660        TXL C3400,0                  END.                              4F13419
D     06310 -3 00000 0 04440        TXL C3500,0                  FUNCTION.                         4F13420
                       06311        BSS 10                                                         4F134205
                                         END OF TRANSFER TABLE.                                    4F13421
                       06323 ENDADR BSS 0                                                          4F134215
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13422
                                                                                                   4F13423
                       07307 ENDA   ORG 3783                                                       4F13424
                       07307  BIN   BSS 1                        VARIABLE USED BY IOT.             4F13425
                       07316  CHR   BES 6                        VARIABLE USED BY IOT.             4F13426
                       07316        BSS 50                       PARAMETERS FOR TLDOS TABLE -IOT.  4F13427
                       07400  DOLEV BSS 1                        PARAMETERS FOR TLDOS TABLE -IOT.  4F13428
                       07401  OP    BSS 1                        VARIABLE USED BY IOT.             4F13429
                       07402  RA    BSS 1                        VARIABLE USED BY IOT.             4F13430
                       07403  SA    BSS 1                        VARIABLE USED BY IOT.             4F13431
                       07404  SYM   BSS 1                        VARIABLE USED BY IOT.             4F13432
                       07405 TLDOS  BSS 250                      DO TABLE USED BY IOT.             4F13433
                                         END OF WORKING STORAGE USED BY STATEA.                    4F13434
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13435
                                                                                                   4F13436
                                        END OF THE NON-ARITHMETIC PART OF SECTION ONE.             4F13437
                                                                                                   4F13438
                                        * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F13439
                                                                                                   4F13440
                                        ARITHMETIC / STATE B=                                      4F13441
                                        704 FORTRAN MASTER RECORD CARD / STATE B = F0180000.       4F13442
                       00000        ORG 0                                                          4F134421
      00000  0 00506 0 03440        PZE ORGB,,DMWR06                                               4F134422
      00001  0 00000 0 05214        PZE ENDB-1                                                     4F134423
                                                                                                   4F13443
                       03440 ORGB   ORG 1824                                                       4F13444
                                                                                                   4F13445
                                        THIS IS A RECODED VERSION OF STATE B OF SECTION ONE, 704   4F13446
                                        FORTRAN II. THE SCAN HAS BEEN COMPLETELY RECODED AND LEVEL 4F13447
                                        ANALYSIS HAS BEEN FOLDED OVER.                             4F13448
                                                                                                   4F13449
                                        STATE B CONSISTS OF TWO PARTS....SCAN AND LEVEL ANALYSIS.  4F13450
                                        THE SCAN IS LEFT TO RIGHT OVER THE SOURCE STATEMENT WHICH IS 4F13451
                                        IN THE F REGION OF COMMON AND IS IN BCD.                   4F13452
                                        EACH FIXED POINT CONSTANT, FLOATING POINT CONSTANT, AND BCD 4F13453
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                                ( HOLLERITH) ARGUMENT IN CALL NAME STATEMENTS ARE ENTERED IN 4F13454
                                TABLES AND GIVEN AN INTERNAL VARIABLE NAME.                  4F13455
                                LEVEL ANALYSIS IS PREFORMED FOR EACH ELEMENT OF THE STATEMENT4F13456
                                WHERE AN ELEMENT IS DEFINED AS A VARIABLE, FUNCTION NAME OR (4F13457
                                AND THE OPERATOR WHICH PRECEDES IT.                          4F13458
                                                                                             4F13459
03440   0 76000 0 00140         SLF                                                          4F13460
03441   0 50000 0 04741         CLA SIG1ST                                                   4F13461
03442   0 60100 0 00445         STO SIG1IX-3                                                 4F13462
03443   0 60000 0 01122         STZ ARGCTR          CLEAR                                    4F13463
03444   0 60000 0 01124         STZ CHSAVE          X                                        4F13464
03445   0 60000 0 01117         STZ 3LBAR           X                                        4F13465
03446   0 60000 0 01360         STZ NBAR            X                                        4F13466
03447   0 60000 0 05277         STZ CBAR            X                                        4F13467
03450   0 60000 0 05300         STZ ABAR            X                                        4F13468
03451   0 60000 0 05301         STZ FSTYPE          X                                        4F13469
03452  -0 53400 4 01507         LXD 1BAR,4          SET NBAR=-1                              4F13470
03453  -0 63400 4 01360         SXD NBAR,4          X                                        4F13471
03454  -0 50000 0 01500         CAL E(              SET ARERAS - E(                          4F13472
03455   0 60200 0 01120         SLW ARERAS          X                                        4F13473
03456   0 07400 4 01671         TSX C0190X,4        SET FWA - -F AND CHCTR - 0               4F13474
03457  -0 50000 0 00422         CAL TXHOP           SET SWITCHES FOR LEFT SCAN.              4F13475
03460   0 63000 0 03563         STP MS093           X                                        4F13476
03461   0 63000 0 03767         STP MS310           X                                        4F13477
03462   0 63000 0 03750         STP MS321           X                                        4F13478
03463  -0 50000 0 01512 MS010   CAL ADPLUS         SET OP TO ADDITION                       4F13479
03464   0 60200 0 01127 MS030   SLW E+1             X                                        4F13480
03465   0 60000 0 05303         STZ FNBITS          CLEAR FUNCTION NAME INDICATOR            4F13481
03466   0 60000 0 05304         STZ FNCTR           CLEAR FUNCTION ARG COUNTER.              4F13482
03467   0 60000 0 01347         STZ G               CLEAR RECEIVING CELL.                    4F13483
03470   0 50200 0 01406         CLS L(0)            SET E = -0                               4F13484
03471   0 60100 0 01126         STO E               X                                        4F13485
03472   0 53400 2 01414         LXA L(6),2          SET IR2 FOR SIX CHARS.                   4F13486
03473  -0 50000 0 01124 MS040   CAL CHSAVE          CHAR IN CHSAVE, IF ANY, TO AC.           4F13487
03474  -0 10000 0 03476         TNZ MS041           X                                        4F13488
03475   0 07400 4 01707         TSX C0190,4         CHSAVE EMPTY, GET NEXT CHAR.             4F13489
03476   0 34000 0 01417 MS041   CAS L(9)            IS CHAR. NUMERIC.                        4F13490
03477   0 02000 0 03504         TRA MS050           N/, TAKE TRA                             4F13491
D 03500 3 00000 0 04417 MS4007  TXH CM4100,0                                                 4F13492
03501   0 07400 4 04463         TSX ROYCNV,4        X                                        4F13493
03502   0 02000 0 04030         TRA HOLL            RETURN 1, THIS WAS HOLLERITH.            4F13494
03503   0 02000 0 04076         TRA LATXH           THIS WAS FIXED OR FLOATING CONSTANT.     4F13495
03504   0 53400 4 01373 MS050   LXA L(10),4         PREPARE TO TEST FOR PUNCTUATION.         4F13496
03505   0 34000 4 01406 MS051   CAS CTEST,4                                                  4F13497
03506   0 02000 0 03510         TRA MS052           X                                        4F13498
03507   0 02000 0 03543         TRA MS090           CHAR IS SOME PUNCTUATION.                4F13499
03510   2 00001 4 03505 MS052   TIX MS051,4,1       X                                        4F13500
03511   0 76700 2 00044 MS060   ALS 36,2            POSITION CHAR FOR BUILDING SYMBOL.       4F13501
03512  -0 60200 0 01347         ORS G               ADD CHAR TO THOSE IN G.                  4F13502
03513   1 00006 2 03514         TXI MS061,2,6       UPDATE POSITIONING TAG.                  4F13503
03514   0 07400 4 01707 MS061   TSX C0190,4         GET NEXT CHAR.                           4F13504
03515   0 53400 4 01373 MS070   LXA L(10),4         PREPARE TO TEST FOR PUNCTUATION.         4F13505
03516   0 34000 4 01406 MS071   CAS CTEST,4         X                                        4F13506
03517   0 02000 0 03521         TRA MS072           X                                        4F13507
03520   0 02000 0 03545         TRA MS091           CHAR IS SOME PUNCTUATION.
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03521  2 00001 4 03516 MS072  TIX MS071,4,1      X                                          4F13508
03522 -3 00022 2 03511        TXL MS060,2,18     IF THIS IS CHAR 1, 2 /R 3 GO BUILD G.      4F13509
03523  0 34000 0 01422        CAS L(F)           IS THIS AN F ENDING FUNCTION NAME.         4F13510
03524  0 02000 0 03526        TRA MS073          X                                          4F13511
03525  0 02000 0 03530        TRA MS080          MAYBE, GO LOOK AT NEXT CHAR.               4F13512
03526 -3 00044 2 03511 MS073  TXL MS060,2,36     TEST FOR UNDER 7 CHARS.                    4F13513
03527  0 07400 4 03400 MS074  TSX DIAG,4         BUILD G, 7TH CHAR IS ERROR.                4F13514
03530  0 07400 4 01707 MS080  TSX C0190,4        GET NEXT CHAR.                             4F13515
03531  0 34000 0 01375        CAS OPEN           TEST FOR (.                                4F13516
03532  0 02000 0 03534        TRA MS081          X                                          4F13517
03533  0 02000 0 03555        TRA MS092          YES, THIS IS A FUNCTION NAME.              4F13518
03534  0 60100 0 01331 MS081  STO FIRSTC         NO, SAVE CURRENT CHAR.                     4F13519
03535 -0 50000 0 01422        CAL L(F)           ADD F TO CONTENTS OF G.                    4F13520
03536  0 76700 2 00044        ALS 36,2           X                                          4F13521
03537 -0 60200 0 01347        ORS G              X                                          4F13522
03540  3 00044 2 03527        TXH MS074,2,36     TEST FOR 7TH CHAR, YES IS ERROR.           4F13523
03541  0 50000 0 01331        CLA FIRSTC         RESTORE CURRENT CHAR.                      4F13524
03542  1 00006 2 03515        TXI MS070,2,6      UPDATE POSITIONING TAG.                    4F13525
03543  0 60000 0 01124 MS090  STZ CHSAVE         CLEAR                                      4F13526
03544  0 02000 4 03677        TRA TRBLKA,4                                                  4F13527
03545  0 60200 0 01124 MS091  SLW CHSAVE         OP IS IN NEXT ELEMENT, SAVE.               4F13528
03546 -0 50000 0 01430        CAL BLANK          ADD BLANK TO CHARS IN G.                   4F13529
03547  0 76700 2 00044        ALS 36,2           X                                          4F13530
03550 -0 60200 0 01347        ORS G              X                                          4F13531
03551  0 56000 0 01347        LDQ G              MOVE G TO E+2 AND TO G+1.                  4F13532
03552 -0 60000 0 01130        STQ E+2            X                                          4F13533
03553 -0 60000 0 01350        STQ G+1            X                                          4F13534
03554  0 02000 4 03727        TRA TRBLKB,4       NOW BRANCH TO INDIVIDUAL ROUTINE           4F13535
03555 -0 75400 0 00000 MS092  PXD ,0             CLEAR                                      4F13536
03556  0 56000 0 01526        LDQ BLANKS         ADD BLANKS TO SUBROUTINE NAME IN G.        4F13537
03557 -0 76300 2 00052        LGL 42,2           X                                          4F13538
03560 -0 50100 0 01347        ORA G              X                                          4F13539
03561  0 60200 0 01347        SLW G              X                                          4F13540
03562  0 60200 0 01130        SLW E+2            MOVE FUNCTION NAME TO E+2.                 4F13541
U 03563    00000 0 04026 MS093  *** MS335,0       TXH FOR LEFT SIDE, TXL FOR RIGHT SIDE.     4F13542
03564 -0 53400 4 00470        LXD BK,4           THIS IS ARITH FUNCTION STATEMENT.          4F13543
03565  0 60200 4 00471        SLW FORSUB,4       ENTER FUNCTION NAME IN FORSUB TABLE.       4F13544
03566 -0 50000 0 00030        CAL EIFNO          ENTER INTERNAL FORMULA NO IN FORSUB.       4F13545
03567 -0 32000 0 01527        ANA MASK1          X                                          4F13546
03570  0 60100 4 00472        STO FORSUB+1,4     X                                          4F13547
03571  1 77776 4 03572        TXI FS010,4,-2     UPDATE COUNT OF ENTRIES IN FORSUB.         4F13548
03572 -0 63400 4 00470 FS010  SXD BK,4           X                                          4F13549
03573  0 07400 4 01707 FS020  TSX C0190,4        GET FIRST CHAR OF ARGUMENT.                4F13550
03574  0 34000 0 01400        CAS EQUAL          TEST FOR EQUAL.                            4F13551
03575  0 02000 0 03577        TRA FS030          X                                          4F13552
03576  0 02000 0 03755        TRA MS322          GO MOVE FROM E, E+1, E+2 TO LEFT, LEFT+1,+24F13553
03577  0 34000 0 01417 FS030  CAS L(9)           TEST FOR ILLEGAL ARGUMENT.                 4F13554
03600  0 02000 0 03603        TRA FS040          LEGAL, CONTINUE                            4F13555
D 03601  3 00000 0 04427 MS9002 TXH CM4200,0                                                 4F13556
03602  0 07400 4 03400        TSX DIAG,4         BEGINS NUMERIC, ERROR.                     4F13557
03603  0 07400 2 01624 FS040  TSX C0160,2        COLLECT ARGUMENT NAME IN 1G.               4F13558
03604  0 07400 4 03255        TSX TESTB0,4       TEST CHAR FOLLOWING ARG FOR , OR)          4F13559
03605 -0 53400 2 01122        LXD ARGCTR,2       GET COUNT OF ARGUMENTS                     4F13560
03606  0 56000 0 01112        LDQ 1G             ENTER ARGUMENT NAME IN ARGREG TABLE.       4F13561
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03607 -0 60000 2 05215          STQ ARGREG,2          X                                          4F13562
03610  1 77777 2 03611          TXI FS050,2,-1        UPDATE COUNT OF ARGUMENTS.                 4F13563
03611 -0 63400 2 01122 FS050    SXD ARGCTR,2                                                     4F13564
03612  3 77716 2 03573          TXH FS020,2,-50       TEST FOR ARGREG TABLE OVERFLOW.            4F13565
03613  0 07400 4 03400          TSX DIAG,4            YES, ERROR.                                4F13566
03614  0 07400 4 04470 MS200    TSX DECPNT,4          CONVERT BCD NUMBER TO BINARY               4F13567
03615  0 07400 4 03400          TSX DIAG,4            HOLLERITH RETURN, ERROR.                   4F13568
03616  0 02000 0 04076          TRA LATXH             FLOATING POINT CONSTANT RETURN.            4F13569
03617  0 76000 0 00141 MS210    SLN 1                 TURN , LITE ON.                            4F13570
03620 -0 53400 1 01117          LXD 3LBAR,1           PERFORM LEVEL ANALYSIS FOR ,               4F13571
03621 -0 53400 4 05300          LXD ABAR,4                                                       4F13572
03622  0 50200 4 05301          CLS ALPHA-4,4                                                    4F13573
03623  0 60100 1 05520          STO LAMBDA,1                                                     4F13574
03624 -0 50000 0 01522          CAL ADSPOP                                                       4F13575
03625  0 60200 1 05521          SLW LAMBDA+1,1                                                   4F13576
03626  0 50000 0 01360          CLA NBAR                                                         4F13577
03627  0 77100 0 00022          ARS 18                                                           4F13578
03630  0 60100 1 05522          STO LAMBDA+2,1                                                   4F13579
03631  1 77775 1 03632          TXI MS211,1,-3                                                   4F13580
03632 -0 63400 1 01117 MS211    SXD 3LBAR,1                                                      4F13581
03633 -0 53400 1 01360          LXD NBAR,1                                                       4F13582
03634 -0 63400 1 05277          SXD CBAR,1                                                       4F13583
03635  1 77777 1 03636          TXI MS212,1,-1                                                   4F13584
03636 -0 63400 1 01360 MS212    SXD NBAR,1                                                       4F13585
03637  1 00003 4 03640          TXI MS213,4,3                                                    4F13586
03640 -0 63400 4 05300 MS213    SXD ABAR,4                                                       4F13587
03641  0 02000 0 03463          TRA MS010                                                        4F13588
03642 -0 53400 4 05300 MS220    LXD ABAR,4            PERFORM LEVEL ANALYSIS FOR )               4F13589
03643  0 50000 4 05301          CLA ALPHA-4,4                                                    4F13590
03644  0 73400 1 00000          PAX ,1                                                           4F13591
03645 -0 63400 1 05277          SXD CBAR,1                                                       4F13592
03646  1 00004 4 03647          TXI MS221,4,4                                                    4F13593
03647 -0 63400 4 05300 MS221    SXD ABAR,4                                                       4F13594
03650  0 02000 0 04425          TRA MS020                                                        4F13595
03651 -0 53400 4 05300 MS230    LXD ABAR,4            PERFORM LEVEL ANALYSIS FOE ENDMK.          4F13596
03652  1 00003 4 03653          TXI MS231,4,3                                                    4F13597
03653 -3 00000 4 03655 MS231    TXL MS232,4,0         FINISHED, HAS LEVEL BEEN REDUCED TO ZERO,  4F13598
03654  0 07400 4 03400          TSX DIAG,4            NO, ERROR.                                 4F13599
03655 -0 53400 4 01122 MS232    LXD ARGCTR,4          WAS THIS AN ARITH FUNCTION STATEMENT       4F13600
03656 -3 00000 4 02406          TXL STATEC,4,0                                                   4F13601
03657 -0 50000 0 05301          CAL FSTYPE            YES, UPDATE FUNCTION TYPE AND              4F13602
03660  0 40000 0 01407          ADD L(1)              COMPLETE FORSUB ENTRY BY ASSIGNING         4F13603
03661 -0 53400 1 00470          LXD BK,1              TYPE NUMBER.                               4F13604
03662  0 62100 1 00470          STA FORSUB-1,1        X                                          4F13605
03663 -0 60200 0 01120          ORS ARERAS            ALSO SAVE FOR LATER REFERENCE.             4F13606
03664  0 02000 0 02406          TRA STATEC                                                       4F13607
03665  0 02000 0 03651          TRA MS230             ENDMK                                      4F13608
03666  0 02000 0 03712          TRA MS260             (                                          4F13609
03667  0 02000 0 03617          TRA MS210             ,                                          4F13610
03670  0 02000 0 03642          TRA MS220             )                                          4F13611
03671  0 07400 4 03400 MSERR=   TSX DIAG,4            =                                          4F13612
03672  0 02000 0 03707          TRA MS250             -                                          4F13613
03673  0 02000 0 03707          TRA MS250             /                                          4F13614
03674  0 02000 0 03614          TRA MS200             .                                          4F13615
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03675  0 02000 0 03707          TRA MS250          +                                          4F13616
03676  0 76700 0 00036 MS240    ALS 30             *   SAVE *                                 4F13617
                  03677 TRBLKA  BSS 0                                                         4F13618
03677  0 60200 0 01127          SLW E+1            X                                          4F13619
03700  0 07400 4 01707          TSX C0190,4        GET NEXT CHAR.                             4F13620
03701  0 34000 0 01405          CAS STAR           IS IT *                                    4F13621
03702  0 02000 0 03476          TRA MS041          X                                          4F13622
03703  0 02000 0 03705          TRA MS241          YES, THIS WAS **                           4F13623
03704  0 02000 0 03476          TRA MS041          NO, GO COMPARE TO OTHER PUNCTUATION.       4F13624
03705 -0 50000 0 01525 MS241    CAL STRSTR         REPLACE * WITH **                          4F13625
03706  0 02000 0 03710          TRA MS251          X                                          4F13626
03707  0 76700 0 00036 MS250    ALS 30             POSITION CHAR WHICH IS + OR - OR /         4F13627
03710  0 60200 0 01127 MS251    SLW E+1            PUT CURRENT OP IN E+1.                     4F13628
03711  0 02000 0 03473          TRA MS040          NOW GO COLLECT SYMBOL.                     4F13629
03712  0 76700 0 00036 MS260    ALS 30             ( TO SYMBOL WORD                           4F13630
03713  0 60200 0 01130          SLW E+2            X                                          4F13631
03714  0 02000 0 04074          TRA LATXL          GO PERFORM LEVEL ANALYSIS FOR (            4F13632
03715  0 02000 0 03726          TRA MS300          ENDMK                                      4F13633
03716  0 02000 0 03747          TRA MS320          (                                          4F13634
03717  0 02000 0 03726          TRA MS300          ,                                          4F13635
03720  0 02000 0 03726          TRA MS300          )                                          4F13636
03721  0 02000 0 03767          TRA MS310          =                                          4F13637
03722  0 02000 0 03726          TRA MS300          -                                          4F13638
03723  0 02000 0 03726          TRA MS300          /                                          4F13639
03724  0 07400 4 03400          TSX DIAG,4         .                                          4F13640
03725  0 02000 0 03726          TRA MS300          +                                          4F13641
03726 -0 75400 0 00000 MS300    PXD ,0             *   CLEAR                                  4F13642
                  03727 TRBLKB  BSS 0              BASE ADDRESS FOR TAGGED TRANSFER.          4F13643
03727 -0 76300 0 00006          LGL 6              GET FIRST CHAR OF SYMBOL.                  4F13644
03730  0 07400 1 03242          TSX TESTFX+1,1     TEST FOR FIXED OR FLOATING POINT.          4F13645
03731  0 02000 0 04074          TRA LATXL          FLOATING, GO PERFORM LEVEL ANALYSIS.       4F13646
03732 -0 50000 0 00030          CAL EIFNO          FIXED, PREPARE FORVAR ENTRY.               4F13647
03733 -0 32000 0 01527          ANA MASK1          X                                          4F13648
03734  0 60200 0 01347          SLW G              X                                          4F13649
03735  0 07400 1 03321          TSX TET00,1        MAKE FORVAR ENTRY.                         4F13650
03736  0 00000 0 00005              5              X                                          4F13651
03737 -0 75400 0 00000          PXD ,0                                                        4F13652
03740  0 56000 0 01356          LDQ LEFT+2                                                    4F13653
03741 -0 76300 0 00014          LGL 12                                                        4F13654
03742  0 40200 0 01451          SUB CALLER                                                    4F13655
03743 -0 10000 0 04074          TNZ LATXL                                                     4F13656
03744  0 07400 1 03321          TSX TET00,1                                                   4F13657
03745  0 00000 0 00006              6                                                         4F13658
03746  0 02000 0 04074          TRA LATXL          GO PERFORM LEVEL ANALYSIS.                 4F13659
03747  0 60000 0 01124 MS320    STZ CHSAVE         CLEAR CELL FOR OP.                         4F13660
03750    00000 0 04003 MS321    *** MS330,0        TXH ON LEFT, TXL ON RIGHT OF = SIGN.       4F13661
03751  0 07400 4 04450          TSX SS000X,4       GO PROCESS SUBSCRIPT COMBINATION.          4F13662
03752  0 07400 4 01707          TSX C0190,4        GET NEXT CHAR.                             4F13663
03753  0 40200 0 01400          SUB EQUAL          TEST FOR EQUAL SIGN.                       4F13664
03754 -0 10000 0 03671          TNZ MSERR=         NO, ERROR.                                 4F13665
03755  0 53400 4 01411 MS322    LXA L(3),4         MOVE CONTENTS OF E WORDS TO LEFT WORDS.    4F13666
03756  0 56000 4 01131 MS323    LDQ E+3,4          X                                          4F13667
03757 -0 60000 4 01357          STQ LEFT+3,4       X                                          4F13668
03760  2 00001 4 03756          TIX MS323,4,1      X                                          4F13669
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03761 -0 50000 0 00415 MS311   CAL TXLOP                SET SWITCHES FOR RIGHT SIDE SCAN.                4F13670
03762  0 63000 0 03563         STP MS093                X                                                4F13671
03763  0 63000 0 03767         STP MS310                X                                                4F13672
03764  0 63000 0 03750         STP MS321                X                                                4F13673
03765  0 76000 0 00141         SLN 1                    TURN = OR ) LITE ON.                             4F13674
03766  0 02000 0 03463         TRA MS010                GO SCAN NEXT ELEMENT.                            4F13675
U 03767    00000 0 03671 MS310 *** MSERR=,0             TXH FOR LEFT, TXL FOR RIGHT OF EQUAL SIGN.       4F13676
03770  0 60000 0 01124         STZ CHSAVE               CLEAR                                            4F13677
03771 -0 75400 0 00000         PXD ,0                   CLEAR AC.                                        4F136775
03772 -0 76300 0 00006         LGL 6                    GET FIRST CHAR OF SYMBOL.                        4F13678
03773  0 07400 1 03242         TSX TESTFX+1,1           TEST FOR FIXED OR FLOATING POINT                 4F13679
03774  0 02000 0 03755         TRA MS322                FLOATING,                                        4F13680
03775 -0 50000 0 00030         CAL EIFNO                FIXED, PREPARE FORVAL ENTRY.                     4F13681
03776 -0 32000 0 01527         ANA MASK1                X                                                4F13682
03777  0 60200 0 01347         SLW G                    X                                                4F13683
04000  0 07400 1 03321         TSX TET00,1              MAKE FORVAL ENTRY.                               4F13684
04001  0 00000 0 00006             6                    X                                                4F13685
04002  0 02000 0 03755         TRA MS322                                                                 4F13686
04003  0 07400 4 01771 MS330   TSX DIM1SR,4             SEARCH FOR THIS NAME IN THE DIM1, DIM2,          4F13687
04004  0 02000 0 04006         TRA MS331                AND DIM3 TABLES. IF IT IS FOUND IN ONE OF        4F13688
04005  0 02000 0 04013         TRA MS333                THESE TABLES IT IS A SUBSCRIPTED VARIABLE        4F13689
04006  0 07400 4 01775 MS331   TSX DIM2SR,4             OF THAT NUMBER OF DIMENSIONS. IF IT IS NOT       4F13690
04007  0 02000 0 04011         TRA MS332                FOUND IN ANY DIMENSION TABLE THEN IT IS          4F13691
04010  0 02000 0 04013         TRA MS333                ASSUMED TO BE THE NAME OF A FORTRAN II           4F13692
04011  0 07400 4 02005 MS332   TSX DIM3SR,4             SUBROUTINE OR FUNCTION COMPILED SEPARATELY.      4F13693
04012  0 02000 0 04015         TRA MS334                X                                                4F13694
04013  0 07400 4 04450 MS333   TSX SS000X,4             GO PROCESS SUBSCRIPT COMBINATION.                4F13695
04014  0 02000 0 04076         TRA LATXH                GO PERFORM LEVEL ANALYSIS.                       4F13696
04015 -0 50000 0 01471 MS334   CAL FNIND                NOT FOUND, TREAT AS FUNCTION NAME.               4F13697
04016  0 60200 0 05303         SLW FNBITS               X                                                4F13698
04017 -0 75400 0 00000         PXD ,0                   X                                                4F13699
04020  0 56000 0 01526         LDQ BLANKS               COMPLETE NAME WITH BLANKS.                       4F13700
04021 -0 76300 2 00052         LGL 42,2                 X                                                4F13701
04022 -0 60200 0 01347         ORS G                    X                                                4F13702
04023 -0 60200 0 01130         ORS E+2                  X                                                4F13703
04024  0 07400 1 03321         TSX TET00,1              ENTER NAME IN CLOSUB TABLE.                      4F13704
04025  0 00000 0 00011             9                    X                                                4F13705
04026  0 76000 0 00142 MS335   SLN 2                    TURN FUNCTION LITE ON.                           4F13706
04027  0 02000 0 04074         TRA LATXL                GO PERFORM LEVEL ANALYSIS.                       4F13707
04030  0 60000 0 01124 HOLL    STZ CHSAVE                       CLEAR CHSAVE                             4F13708
04031 -0 50000 0 01352         CAL HOLCNT                       GET CURRENT H(+I WORD                    4F13709
04032  0 60200 0 01130         SLW E+2                                                                   4F13710
04033  0 53400 2 01103         LXA N,2                  GET NUMBER OF CHARACTERS IN THIS ARG             4F13711
04034 -0 53400 4 01724         LXD CHCTR,4              GET CURRENT RESIDUE CHAR COUNT                   4F13712
04035  0 56000 0 01365         LDQ RESIDU               GET CURRENT RESIDU WORD                          4F13713
04036  0 53400 1 01414 C3351   LXA L(6),1               SET TO COLLECT SIX CHARS                         4F13714
04037 -0 75400 0 00000         PXD 0,0                  CLEAR AC                                         4F13715
04040 -2 00001 4 04053 C3352   TNX C3354,4,1            TEST FOR NO MORE CHARS IN RESIDU                 4F13716
04041 -0 76300 0 00006 C33525  LGL 6                    GET NEXT CHAR                                    4F13717
04042  0 60200 0 01112         SLW 1G                   STORE WORD                                       4F13718
04043 -0 32000 0 01374         ANA ENDMK                BLANK ALL EXCEPT CURRENT CHAR                    4F13719
04044  0 40200 0 01374         SUB ENDMK                TEST FOR INTERNAL ENDMK                          4F13720
04045 -0 10000 0 04047         TNZ C3353                                                                 4F13721
04046  0 07400 4 03400         TSX DIAG,4                   YES, ERROR, GO TO DIAGNOSTIC.                4F13722
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04047 -0 50000 0 01112 C3353  CAL 1G                    RETREIVE WORD                                4F13723
04050 -2 00001 2 04063        TNX C3358,2,1             TEST FOR ALL CHARS COLLECTED                 4F13724
04051 -2 00001 1 04061        TNX C3356,1,1             TEST FOR SIX CHARS COLLECTED                 4F13725
04052  0 02000 0 04040        TRA C3352                 NOT SIX CHARS YET, CONTINUE COLLECTING4F13726
04053 -0 53400 4 01614 C3354  LXD FWA,4                 LOAD MQ WITH NEXT F REGION WORD              4F13727
04054  0 56000 4 00000        LDQ 0,4                                                                4F13728
04055  1 77777 4 04056        TXI C3355,4,-1            UPDATE FWA                                   4F13729
04056 -0 63400 4 01614 C3355  SXD FWA,4                                                              4F13730
04057  0 53400 4 01414        LXA L(6),4                RESET MQ CHAR COUNT TO SIX                   4F13731
04060  0 02000 0 04041        TRA C33525                CONTINUE COLLECTING                          4F13732
04061  0 07400 1 04437 C3356  TSX C3390,1               GO TO ENTER WORD IN HOLARG TABLE             4F13733
04062  1 00000 0 04036 C3357  TXI C3351,0,**            RETURN TO CONTINUE COLLECTING                4F13734
04063 -0 60000 0 01365 C3358  STQ RESIDU                UPDATE RESIDU                                4F13735
04064 -0 63400 4 01724        SXD CHCTR,4               UPDATE CHCTR                                 4F13736
04065 -2 00001 1 04071        TNX C3360,1,1             TEST FOR SIX CHARS IN AC, DEC IR1            4F13737
04066  0 56000 0 01526        LDQ BLANKS                NOT SIX CHARS, PREPARE TO ADD BLANKS         4F13738
04067 -0 76300 0 00006 C3359  LGL 6                     ADD BLANKS                                   4F13739
04070  2 00001 1 04067        TIX C3359,1,1                                                          4F13740
04071  0 07400 1 04437 C3360  TSX C3390,1               GO TO ENTER WORD IN HOLARG TABLE             4F13741
04072 -0 50000 0 01531        CAL ALL1                  GET WORD OF ONES                             4F13742
04073  0 07400 1 04437        TSX C3390,1               GO TO ENTER WORD IN HOLARG TABLE             4F13743
                                    LEVEL ANALYSIS                                                   4F13744
04074 -0 50000 0 00415 LATXL  CAL TXLOP                                                              4F13745
04075  0 02000 0 04077        TRA LATXL+3                                                            4F13746
04076 -0 50000 0 00422 LATXH  CAL TXHOP                                                              4F13747
04077  0 63000 0 04424        STP CM4105                                                             4F13748
04100  0 53400 1 01406 LA0000 LXA L(0),A                                                             4F13749
04101  0 50000 0 01130        CLA E+2                                                                4F13750
04102 -0 76000 0 00142        SLT 2                     IS THIS A FUNCTION NAME                      4F13751
04103  0 02000 0 04144        TRA LA0000+36             NO                                           4F13752
04104  0 76000 0 00142        SLN 2                     YES - TURN F LITE BACK ON                    4F13753
04105 -0 53400 4 00470        LXD BK,C                  IS FORSUB EMPTY                              4F13754
04106 -3 00000 4 04115        TXL LA0000+13,C,0         YES. GO SET FS BITS TO 0                     4F13755
04107 -0 63400 4 04114        SXD LA0000+12,C                                                        4F13756
04110  0 34000 1 00471        CAS FORSUB,A              SEARCH FN NAME IN FORSUB                     4F13757
04111  1 77776 1 04114        TXI LA0000+12,A,-2                                                     4F13758
04112  0 02000 0 04117        TRA LA0000+15                                                          4F13759
04113  1 77776 1 04114        TXI LA0000+12,A,-2                                                     4F13760
04114  3 00000 1 04110        TXH LA0000+8,A,0                                                       4F13761
04115  0 60000 0 05302        STZ FSBITS                SET FSBITS TO 0                              4F13762
04116  0 02000 0 04131        TRA LA0000+25                                                          4F13763
04117 -0 50000 1 00472        CAL FORSUB+1,A            FN NAME IN FORSUB                            4F13764
04120 -0 32000 0 01452        ANA MASK2                 EXTRACT TYPE NUMBER                          4F13765
04121 -0 53400 4 01122        LXD ARGCTR,C              IS THIS A FUNCTION STATEMENT                 4F13766
04122 -3 00000 4 04126        TXL LA0000+22,C,0         NO                                           4F13767
04123  0 34000 0 05301        CAS FSTYPE                YES - UPDATE FS TYPE                         4F13768
04124  0 62100 0 05301        STA FSTYPE                                                             4F13769
04125  3 00000 0 00000        TXH 0,0                                                                4F13770
04126  0 76700 0 00007        ALS 7                                                                  4F13771
04127 -0 50100 0 01464        ORA FSIND                                                              4F13772
04130  0 60200 0 05302        SLW FSBITS                                                             4F13773
04131 -0 53400 1 01117        LXD 3LBAR,A               LOAD LA COUNTERS                             4F13774
04132 -0 53400 2 01360        LXD NBAR,B                                                             4F13775
04133 -0 53400 4 05300        LXD ABAR,C                                                             4F13776
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04134 -3 00000 1 04160         TXL LA0003,A,0                                  4F13777
04135  3 75520 1 04137         TXH LA0001,A,-1200                              4F13778
04136  0 07400 4 03400         TSX DIAG,4          ERROR..LAMBDA TABLE EXCEEDED.4F13779
04137  3 77323 2 04141 LA0001  TXH LA0002,B,-301                               4F13780
04140  0 07400 4 03400         TSX DIAG,4          ERROR..BETA TABLE EXCEEDED  4F13781
04141 -3 00000 4 04160 LA0002  TXL LA0003,C,0                                  4F13782
04142  3 77565 4 04160         TXH LA0003,C,-139                               4F13783
04143  0 07400 4 03400         TSX DIAG,4          ERROR..ALPHA TABLE EXCEEDED 4F13784
04144 -0 53400 4 01122         LXD ARGCTR,C        VARIABLE OR (               4F13785
04145 -3 00000 4 04115         TXL LA0000+13,C,0   NOT AN FS - GO SET FS BITS TO 0 4F13786
04146 -0 63400 4 04153         SXD LA0000+43,C     FUNCTION STATEMENT          4F13787
04147  0 34000 1 05215         CAS ARGREG,A        SEARCH FREE VARIABLE TABLE  4F13788
04150  1 77777 1 04153         TXI LA0000+43,A,-1                              4F13789
04151  0 02000 0 04155         TRA MS1018                                      4F13790
04152  1 77777 1 04153         TXI LA0000+43,A,-1                              4F13791
04153  3 00000 1 04147         TXH LA0000+39,A,0                               4F13792
04154  0 02000 0 04115         TRA LA0000+13       NOT PRESENT - GO SET FSBITS TO 0 4F13793
04155 -0 75400 1 00000 MS1018  PXD 0,A             PRESENT - STORE TYPE IN FSBITS 4F13794
04156  0 77100 0 00013         ARS 11                                          4F13795
04157  0 02000 0 04127         TRA LA0000+23                                   4F13796
04160  0 50000 0 03601 LA0003  CLA MS9002                                      4F13797
04161  0 62100 0 04366         STA LA4320                                      4F13798
04162 -0 75400 0 00000         PXD 0,0                                         4F13799
04163  0 56000 0 01130         LDQ E+2                                         4F13800
04164 -0 60000 1 05533         STQ LAMBDA+11,A                                 4F13801
04165 -0 60000 1 05530         STQ LAMBDA+8,A                                  4F13802
04166 -0 60000 1 05525         STQ LAMBDA+5,A                                  4F13803
04167 -0 76300 0 00006         LGL 6                                           4F13804
04170  0 60100 0 01331         STO FIRSTC                                      4F13805
04171  0 40200 0 01375         SUB OPEN                                        4F13806
04172  0 10000 0 04201         TZE LA003                                       4F13807
04173  0 50000 0 03500         CLA MS4007                                      4F13808
04174 -0 76000 0 00142         SLT 2                                           4F13809
04175  0 02000 0 04200         TRA LA002                                       4F13810
04176  0 76000 0 00142         SLN 2                                           4F13811
04177  0 50000 0 04227         CLA FINI03                                      4F13812
04200  0 62100 0 04366 LA002   STA LA4320                                      4F13813
04201  0 50000 0 01126 LA003   CLA E                                           4F13814
04202  0 60100 1 05531         STO LAMBDA+9,A                                  4F13815
04203  0 60100 1 05526         STO LAMBDA+6,A                                  4F13816
04204  0 60100 1 05523         STO LAMBDA+3,A                                  4F13817
04205 -0 50000 0 01522         CAL ADSPOP                                      4F13818
04206  0 60200 1 05535         SLW LAMBDA+13,A                                 4F13819
04207  0 60200 1 05532         SLW LAMBDA+10,A                                 4F13820
04210  0 60200 1 05527         SLW LAMBDA+7,A                                  4F13821
04211 -0 75400 0 00000         PXD ,0                                          4F13822
04212  0 56000 0 01127         LDQ E+1                                         4F13823
04213 -0 60000 1 05521         STQ LAMBDA+1,A                                  4F13824
04214 -0 76300 0 00006         LGL 6                                           4F13825
04215  0 34000 0 01405         CAS STAR                                        4F13826
04216  0 02000 0 04262         TRA LA0015          / SIGN                      4F13827
04217  0 02000 0 04252         TRA LA0010          * OR ** SIGN                4F13828
04220 -0 76000 0 00142         SLT 2               + OR - SIGN                 4F13829
04221  0 02000 0 04236         TRA LA0044                                      4F13830
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04222  1 77775 2 04223          TXI MS1033,B,-3      -N TO -(N+3)                                4F13831
04223 -0 75400 2 00000 MS1033   PXD ,B                                                           4F13832
04224  0 77100 0 00022          ARS 18                                                           4F13833
04225  0 60100 1 05536          STO LAMBDA+14,A      STO  (N+3) IN LAMBDA+3 (L+4)+2              4F13834
04226  1 00001 2 04227          TXI FINI03,B,1       -(N+3) TO - (N+2)                           4F13835
04227 -0 75400 2 04432 FINI03   PXD CM4300,B                                                     4F13836
04230  0 77100 0 00022          ARS 18                                                           4F13837
04231 -0 76000 0 00003          SSM                                                              4F13838
04232  0 60100 1 05534          STO LAMBDA+12,A      STO -(N+2) IN LAMBDA+3 (L+4)                4F13839
04233 -0 76000 0 00141 LA0041   SLT 1                                                            4F13840
04234  1 00001 2 04330          TXI L43130,B,1       UNARY... -(N+2) TO -(N+1)                   4F13841
04235  1 00001 2 04272          TXI L13130,B,1       BINARY... -(N+2) TO - (N+1)                 4F13842
04236  0 50000 0 01331 LA0044   CLA FIRSTC                                                       4F13843
04237  0 34000 0 01375          CAS OPEN             EXAMINE SYMBOL                              4F13844
04240  0 02000 0 04242          TRA LA0050                                                       4F13845
04241  1 77775 2 04245          TXI LA0058,B,-3      -N TO -(N+3)                                4F13846
04242 -0 76000 0 00141 LA0050   SLT 1                                                            4F13847
04243  1 77777 2 04334          TXI LA4000,B,-1      UNARY... -NTO -(N+1)                        4F13848
04244  1 77777 2 04276          TXI LA1000,B,-1      BINARY... -N TO -(N+1)                      4F13849
04245 -0 75400 2 00000 LA0058   PXD ,B                                                           4F13850
04246  0 77100 0 00022          ARS 18                                                           4F13851
04247  0 60100 1 05533          STO LAMBDA+11,A      STO S(N+3) IN LAMBDA +3(L+3)+2              4F13852
04250  0 40000 0 01407          ADD L(1)             FORM -(N+2) IN ADD (ACC)                    4F13853
04251  1 00001 2 04233          TXI LA0041,2,1                                                   4F13854
04252  0 16200 0 04262 LA0010   TQP LA0015           GO TO * ROUTINE                             4F13855
04253 -0 76000 0 00142          SLT 2                **                                          4F13856
04254  0 02000 0 04256          TRA LA0072                                                       4F13857
04255  1 77777 2 04311          TXI L23000,B,-1      -N TO -(N+1)                                4F13858
04256  0 50000 0 01331 LA0072   CLA FIRSTC                                                       4F13859
04257  0 40200 0 01375          SUB OPEN                                                         4F13860
04260 -0 10000 0 04324          TNZ LA2000                                                       4F13861
04261  1 77777 2 04304          TXI L22000,B,-1      -N TO -(N+1)                                4F13862
04262 -0 76000 0 00142 LA0015   SLT 2                * OR /                                      4F13863
04263  0 02000 0 04265          TRA LA0021                                                       4F13864
04264  1 77776 2 04374          TXI L33000,B,-2      -N TO -(N+2)                                4F13865
04265  0 50000 0 01331 LA0021   CLA FIRSTC                                                       4F13866
04266  0 34000 0 01375          CAS OPEN                                                         4F13867
04267  1 77777 2 04407          TXI LA3000,B,-1                                                  4F13868
04270  1 77776 2 04367          TXI L32000,B,-2      -N TO -N(+2)                                4F13869
04271  1 77777 2 04407          TXI LA3000,B,-1                                                  4F13870
04272  0 60200 4 05310 L13130   SLW ALPHA+3,C        STO -(N+2) IN ALPHA+A+3                     4F13871
04273  0 50200 0 01406          CLS L(0)                                                         4F13872
04274  0 60100 1 05531          STO LAMBDA+9,A       STO -0 IN LAMBDA +3(L+3)                    4F13873
04275  0 76000 0 00141          SLN 1                                                            4F13874
04276  0 50200 0 05277 LA1000   CLS CBAR                                                         4F13875
04277  0 77100 0 00022          ARS 18                                                           4F13876
04300  0 60200 4 05305          SLW ALPHA,C          STO -C IN ALPHA+A                           4F13877
04301  1 77775 4 04302          TXI LA1040,C,-3      -A TO - (A+3)                               4F13878
04302 -0 63400 4 05300 LA1040   SXD ABAR,C                                                       4F13879
04303  0 02000 0 04335          TRA LA4010                                                       4F13880
04304 -0 75400 2 00000 L22000   PXD ,B                                                           4F13881
04305  0 77100 0 00022          ARS 18                                                           4F13882
04306  0 60100 1 05525          STO LAMBDA+5,A       STO S(N+1) IN LAMBDA+3(L+1)+2               4F13883
04307  0 40000 0 01407          ADD L(1)                                                         4F13884
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04310   1 00001 2 04320         TXI L23130,B,1      -(N+1) TO -N                          4F13885
04311  -0 75400 2 00000 L23000  PXD ,B                                                   4F13886
04312   0 77100 0 00022         ARS 18                                                    4F13887
04313   0 60100 1 05530         STO LAMBDA+8,A      STO S(N+1) IN LAMBDA+3(L+2)+2         4F13888
04314   0 40000 0 01407         ADD L(1)                                                  4F13889
04315  -0 76000 0 00003         SSM                                                       4F13890
04316   1 00001 2 04317         TXI L23090,B,1      -(N+1) TO -N                          4F13891
04317   0 60100 1 05526 L23090  STO LAMBDA+6,A      STO -N IN LAMBDA+3(L+2)               4F13892
04320   0 60200 4 05305 L23130  SLW ALPHA,C         STO -N IN ALPHA +A                    4F13893
04321   0 50200 0 01406         CLS L(0)                                                  4F13894
04322   0 60100 1 05523         STO LAMBDA+3,A      STO -0 IN LAMBDA+3(L+1)               4F13895
04323   0 76000 0 00141         SLN 1                                                     4F13896
04324   0 50200 4 05304 LA2000  CLS ALPHA-1,C                                             4F13897
04325   0 60100 1 05520         STO LAMBDA,A        STO C(ALPHA+A-1) IN LAMBDA+3L         4F13898
04326   0 50000 0 01360         CLA NBAR                                                  4F13899
04327   1 00006 1 04355         TXI LA4180,A,6                                            4F13900
04330   0 60200 4 05305 L43130  SLW ALPHA,C         STO -(N+2) IN ALPHA+A                 4F13901
04331   0 50200 0 01406         CLS L(0)                                                  4F13902
04332   0 60100 1 05531         STO LAMBDA+9,A      STO -0 IN LAMBDA+3(L+3)               4F13903
04333   0 76000 0 00141         SLN 1                                                     4F13904
04334   0 50200 4 05302 LA4000  CLS ALPHA-3,C                                             4F13905
04335   0 60100 1 05520 LA4010  STO LAMBDA,A        STO C(ALPHA+A-3) IN LAMBDA+3L         4F13906
04336   0 50200 0 01360         CLS NBAR                                                  4F13907
04337   0 77100 0 00022         ARS 18                                                    4F13908
04340   0 60200 4 05303         SLW ALPHA-2,C       STO-N IN ALPHA+A-2                    4F13909
04341   0 60200 1 05522         SLW LAMBDA+2,A      STO S(N) IN LAMBDA+3L+2               4F13910
04342   0 60100 1 05523         STO LAMBDA+3,A      STO -N IN LAMBDA+3(L+1)               4F13911
04343  -0 75400 2 00000         PXD ,B                                                    4F13912
04344   0 77100 0 00022         ARS 18                                                    4F13913
04345   0 60100 1 05525         STO LAMBDA+5,A      STO S(N+1) IN LAMBDA+3(L+1)+2         4F13914
04346   0 60100 4 05304         STO ALPHA-1,C       STO-(N+1) IN ALPHA+A-1                4F13915
04347  -0 76000 0 00003         SSM                                                       4F13916
04350   0 60100 1 05526         STO LAMBDA+6,A      STO -(N+1) IN LAMBDA+3(L+2)           4F13917
04351   1 77777 2 04352         TXI LA4150,B,-1     -(N+1) TO -(N+2)                      4F13918
04352  -0 50000 0 01524 LA4150  CAL ADSTAR                                               4F13919
04353   0 60200 1 05524         SLW LAMBDA+4,A      STO * IN LAMBDA+3(L+1)+1              4F13920
04354  -0 75400 2 00000 LA4170  PXD ,B                                                   4F13921
04355   0 77100 0 00022 LA4180  ARS 18                                                    4F13922
04356   0 60100 1 05530         STO LAMBDA+8,A      STOS(N+2) IN LAMBDA+3(L+2)+2          4F13923
04357  -0 60200 1 05531         ORS LAMBDA+9,A      STO -(N+2) IN LAMBDA+3(L+3)           4F13924
04360  -0 50000 0 01525         CAL STRSTR                                                4F13925
04361   0 60200 1 05527         SLW LAMBDA+7,A      STO SPOP IN LAMBDA+3(L+2)+1           4F13926
04362  -0 50000 0 01522         CAL ADSPOP                                                4F13927
04363  -0 50100 0 05302         ORA FSBITS                                                4F13928
04364  -0 50100 0 05303         ORA FNBITS                                                4F13929
04365   0 60200 1 05532         SLW LAMBDA+10,A     STO SPOP IN LAMBDA+3(L+3)+1           4F13930
04366   1 77767 1 00000 LA4320  TXI **,A,-9                                               4F13931
04367  -0 75400 2 00000 L32000  PXD ,B                                                   4F13932
04370   0 77100 0 00022         ARS 18                                                    4F13933
04371   0 60100 1 05530         STO LAMBDA+8,A      STO 5(N+2) IN LAMBDA+3(L+2)+2         4F13934
04372   0 40000 0 01407         ADD L(1)                                                  4F13935
04373   1 00001 2 04403         TXI L33130,B,1      -(N+2) TO -(N+1)                      4F13936
04374  -0 75400 2 00000 L33000  PXD ,B                                                   4F13937
04375   0 77100 0 00022         ARS 18                                                    4F13938
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04376   0 60100 1 05533          STO LAMBDA+11,A       STO S(N+2) IN LAMBDA+3(L+3)+2                  4F13939
04377   0 40000 0 01407          ADD L(1)                                                             4F13940
04400  -0 76000 0 00003          SSM                                                                  4F13941
04401   1 00001 2 04402          TXI L33090,B,1        -(N+2) TO -(N+1)                               4F13942
04402   0 60100 1 05531 L33090   STO LAMBDA+9,A        STO -(N+1) IN LAMBDA+3(L+3)                    4F13943
04403   0 60200 4 05305 L33130   SLW ALPHA,C           STO -(N+1) IN ALPHA+A                          4F13944
04404   0 50200 0 01406          CLS L(0)                                                             4F13945
04405   0 60100 1 05526          STO LAMBDA+6,A                                                       4F13946
04406   0 76000 0 00141          SLN 1                                                                4F13947
04407   0 50200 4 05303 LA3000   CLS ALPHA-2,C                                                        4F13948
04410   0 60100 1 05520          STO LAMBDA,A          STO C(ALPHA+A-2) IN LAMBDA+3L                  4F13949
04411   0 50200 0 01360          CLS NBAR                                                             4F13950
04412   0 77100 0 00022          ARS 18                                                               4F13951
04413   0 60200 4 05304          SLW ALPHA-1,C         STO -N IN ALPHA+A-1                            4F13952
04414   0 60200 1 05522          SLW LAMBDA+2,A        STO S(N) IN LAMBDA+3L+2                        4F13953
04415   0 60100 1 05523          STO LAMBDA+3,A        STO -N IN LAMBDA+3(L+1)                        4F13954
04416   1 00003 1 04354          TXI LA4170,A,3                                                       4F13955
04417   1 77775 1 04420 CM4100   TXI CM4101,A,-3       LA COUNTER MODIFICATION ROUTINES               4F13956
04420  -0 63400 1 01117 CM4101   SXD 3LBAR,A                                                         4F13957
04421  -0 63400 2 05277 CM4102   SXD CBAR,B                                                          4F13958
04422   1 77777 2 04423          TXI CM4104,B,-1                                                      4F13959
04423  -0 63400 2 01360 CM4104   SXD NBAR,B                                                         4F13960
U  04424    00000 0 03463 CM4105   *** MS010,0                                                       4F13961
04425  -0 50000 0 01524 MS020    CAL ADSTAR                                                           4F13962
04426   0 02000 0 03464          TRA MS030                                                            4F13963
04427   1 77775 1 04430 CM4200   TXI CM4201,A,-3                                                      4F13964
04430  -0 63400 1 01117 CM4201   SXD 3LBAR,A                                                         4F13965
04431   1 77777 4 04435          TXI CM4303,C,-1                                                      4F13966
04432   1 77772 1 04433 CM4300   TXI CM4301,A,-6                                                      4F13967
04433  -0 63400 1 01117 CM4301   SXD 3LBAR,A                                                         4F13968
04434   1 77777 4 04435          TXI CM4303,C,-1                                                      4F13969
04435  -0 63400 4 05300 CM4303   SXD ABAR,C                                                         4F13970
04436   1 77777 2 04421          TXI CM4102,B,-1                                                      4F13971
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *  4F13972
                                                                                                      4F13973
                                 CLOSED SUBROUTINE TO MAKE ENTRIES IN HOLARG TABLE                    4F13974
04437  -0 63400 1 04062 C3390    SXD C3357,1               SAVE CALLING IR                            4F13975
04440   0 60200 0 01112          SLW 1G                    MOVE WORD TO BE ENTERED TO 1G              4F13976
04441   0 07400 1 03321          TSX TET00,1               GO TO ENTER WORD IN HOLARG TABLE           4F13977
04442   0 00000 0 00015          13                                                                   4F13978
04443   0 50000 0 01352          CLA HOLCNT                                                           4F13979
04444   0 40000 0 01407          ADD L(1)                  UPDATE HOLCNT                              4F13980
04445   0 60100 0 01352          STO HOLCNT                                                           4F13981
04446  -0 53400 1 04062          LXD C3357,1               RELOAD CALLING IR                          4F13982
04447   0 02000 1 00001          TRA 1,1                   RETURN TO CALLER+1                         4F13983
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *  4F13984
                                                                                                      4F13985
                                 PROGRAM TO SIMPLIFY THE TREATMENT OF RELATIVE ADDRESSES IN           4F13986
                                 SECTION ONE THRU THE USE OF THE RA000 SUBROUTINE BY STATE B.         4F13987
04450  -0 63400 4 04503 SS000X   SXD SSIR4,4               SAVE CALLING TAG.                          4F13988
04451   0 07400 4 02614          TSX SS000,4               GO TO SUBSCRIPT SCAN AND ANALYSIS ROUTINE. 4F13989
04452   0 07400 4 02437          TSX RA000,4               GO TO RELATIVE ADDRESS COMPUTATION ROUTINE.4F13990
04453  -0 50000 0 01351          CAL GTAG                                                             4F13991
04454  -0 32000 0 01527          ANA MASK1                                                            4F13992
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04455   0 60200 0 01141          SLW E+11                                                                           4F13993
04456   0 07400 4 00450          TSX SIG11X,4          GO ENTER THIS RELATIVE ADDRESS IN SIGMA1.                     4F13994
04457   0 76700 0 00017          ALS 15                POSITION SIGMA TAG.                                          4F13995
04460  -0 60200 0 01126          ORS E                 ADD SIGMA TAG TO I-TAU TAGS IN E.                            4F13996
04461  -0 53400 4 04503          LXD SSIR4,4           RELOAD CALLING TAG.                                          4F13997
04462   0 02000 4 00001          TRA 1,4               RETURN TO CALLER +1.                                         4F13998
                                                                                                                    4F13999
                                 * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F14000
                                                                                                                    4F14001
                                 ROYCNV,4/ CALLS=C0190,FXCNIX,FLCNIX,DIAG.                                          4F14002
                                 ROYCNV DOES FIXED AND FLOATING POINT CONVERSION FOR SECTION                        4F14003
                                 ARITHMETIC.                                                                        4F14004
                                 ROYCNV= ENTRY POINT FOR FIXED OR FLOATING POINT INTEGERS.                          4F14005
04463   0 60100 0 01103 ROYCNV   STO N                   SAVE DECIMAL DIGIT IN N.                                   4F14006
04464  -0 63400 4 04467          SXD EXIT,4             SAVE C(XR4) FOR RETURN.                                    4F14007
04465   0 60000 0 01100          STZ DOE                CLEAR DOE (IMPLICIT EXPONENT).                             4F14008
04466   0 50000 0 04505          CLA CM1                PICK UP SWITCH CONTROL,                                    4F14009
04467   1 00000 0 04474 EXIT     TXI IN2,0,**           AND GO SET SWITCH.                                         4F14010
                                 DECPNT= ENTRY POINT FOR FLOATING POINT FRACTIONS.                                  4F14011
04470   0 60000 0 01103 DECPNT   STZ N                   CLEAR N (NO INTEGER).                                      4F14012
04471  -0 63400 4 04467          SXD EXIT,4             SAVE C(XR4) FOR RETURN.                                    4F14013
04472   0 60000 0 01100          STZ DOE                CLEAR DOE (IMPLICIT EXPONENT).                             4F14014
04473  -0 50000 0 04505 NC7      CAL CM1                PICK UP SWITCH CONTROL.                                    4F14015
04474   0 63000 0 04515 IN2      STP CM2                SET SWITCHES CM2, AND                                      4F14016
04475   0 63000 0 04527          STP CM3                CM3.                                                       4F14017
04476   0 14000 0 04477          TOV NC5                TURN OFF OV TRIGGER.                                       4F14018
04477   0 07400 4 01707 NC5      TSX C0190,4          * GO GET NEXT NB CHARACTER IN THE AC.                        4F14019
04500   0 60200 0 01124          SLW CHSAVE             SAVE IT FOR STATE B, AND THEN                              4F14020
04501   0 34000 0 01423          CAS L(H)               COMPARE IT WITH H.                                         4F14021
D  04502   1 00000 0 04504          TXI NC1,0              IF H, GO TO HEXIT.                                         4F14022
D  04503   1 00000 0 04650 SSIR4    TXI HEXIT,0            IF NOT H, CONTINUE                                         4F14023
04504   0 34000 0 01373 NC1      CAS TEN                AND COMPARE WITH TEN.                                      4F14024
D  04505  -3 00000 0 04521 CM1      TXL NC2,0              CHAR EXCEEDS 10, SO IS NON-NUMERIC.                        4F14025
04506  -0 75400 0 00000          PXD ,0                 CLEAR THE AC (MACHINE ERROR).                              4F14026
04507   0 60100 0 01102          STO H                  CHARACTER IS NUMERIC, SO HOLD IT.                          4F14027
04510   0 50000 0 01103          CLA N                  MULTIPLY THE PREVIOUS                                      4F14028
04511   0 76700 0 00002          ALS 2                  PARTIAL RESULT (OR ZERO)                                   4F14029
04512   0 40000 0 01103          ADD N                  BY 10,                                                     4F14030
04513   0 76700 0 00001          ALS 1                  AND ADD IN                                                 4F14031
04514   0 40000 0 01102          ADD H                  THE CURRENT DIGIT.                                         4F14032
D  04515   3 00000 0 04536 CM2      TXH NC3,0              SWITCH (NO TRANSFER IF INTEGER).                           4F14033
04516   0 14000 0 04544          TOV NC4                TEST OVERFLOW, AND                                         4F14034
04517   0 60100 0 01103          STO N                  IF NONE, SAVE NEW PARTIAL RESULT.                          4F14035
D  04520   1 00000 0 04477          TXI NC5,0              THEN GO PICK UP NEXT CHARACTER.                            4F14036
04521   0 34000 0 01403 NC2      CAS POINT              COMPARE NON-NUMERIC WITH A POINT.                          4F14037
D  04522   1 00000 0 04527          TXI CM3,0              IF GREATER THAN 27, GO OUT.                                4F14038
D  04523   1 00000 0 04473          TXI NC7,0              IF POINT, GO BACK AND SET SWITCH.                          4F14039
04524   0 34000 0 04657          CAS L(E)               IF LESS THAN 27, COMPARE WITH E.                           4F14040
D  04525   1 00000 0 04527          TXI CM3,0              IF GREATER THAN 21, GO OUT.                                4F14041
D  04526   1 00000 0 04546          TXI EC1,0              IF E, GO TO EXPONENT ROUTINE.                              4F14042
D  04527   3 00000 0 04605 CM3      TXH FN4,0              SWITCH (NO TRANSFER IF INTEGER).                           4F14043
04530   0 50000 0 01103          CLA N                  PICK UP CONVERTED CONSTANT, AND                            4F14044
04531   0 76700 0 00022 MS9506   ALS 18                 STORE IN THE                                               4F14045
04532   0 60100 0 01347          STO G                  DECREMENT OF G, AND                                        4F14046
```

```
      04533   0 07400 4 00417         TSX FXCNIX,4
      04534  -0 50100 0 01517         ORA FIXVAR
D     04535   1 00000 0 04636         TXI EXITR,0
      04536   0 14000 0 04543 NC3     TOV NC8
      04537   0 60100 0 01103         STO N
      04540   0 50200 0 01407         CLS L(1)
      04541   0 40000 0 01100 NC9     ADD DOE
      04542   0 60100 0 01100         STO DOE
D     04543   1 00000 0 04477 NC8     TXI NC5,0
      04544   0 50000 0 01407 NC4     CLA L(1)
D     04545   1 00000 0 04541         TXI NC9,0
      04546   0 07400 4 01707 EC1     TSX C0190,4
      04547   0 60200 0 01124         SLW CHSAVE
      04550   0 60000 0 01101         STZ EKE
      04551   0 34000 0 01401         CAS 11Z
D     04552   1 00000 0 04602         TXI FN5,0
D     04553   1 00000 0 04561         TXI EC3,0
      04554   0 34000 0 01404         CAS 12Z
D     04555   1 00000 0 04602         TXI FN5,0
D     04556   1 00000 0 04566         TXI EC6,0
      04557   0 34000 0 01420         CAS MINUS
D     04560   1 00000 0 04602         TXI FN5,0
      04561   0 50200 0 01101 EC3     CLS EKE
      04562   0 34000 0 01373         CAS TEN
D     04563   1 00000 0 04602         TXI FN5,0
      04564  -0 75400 0 00000 EC4     PXD ,0
      04565   0 60100 0 01101 EC5     STO EKE
      04566   0 07400 4 01707 EC6     TSX C0190,4
      04567   0 60200 0 01124         SLW CHSAVE
      04570   0 34000 0 01373         CAS TEN
D     04571   1 00000 0 04602         TXI FN5,0
      04572  -0 75400 0 00000         PXD ,0
      04573   0 60100 0 01102         STO H
      04574   0 50000 0 01101         CLA EKE
      04575   0 76700 0 00002         ALS 2
      04576   0 40000 0 01101         ADD EKE
      04577   0 76700 0 00001         ALS 1
      04600   0 36100 0 01102         ACL H
D     04601   1 00000 0 04565         TXI EC5,0
      04602   0 50000 0 01101 FN5     CLA EKE
      04603   0 40000 0 01100         ADD DOE
      04604   0 60100 0 01100         STO DOE
      04605   0 50000 0 01103 FN4     CLA N
      04606   0 10000 0 04633         TZE MS9500
      04607   0 62100 0 04652         STA K1
      04610   0 77100 0 00017         ARS 15
      04611   0 10000 0 04613         TZE FN1
      04612  -0 50100 0 04653         ORA K2
      04613   0 30000 0 04652 FN1     FAD K1
      04614  -0 77300 0 00010         RQL 8
      04615   0 76000 0 00010         RND
      04616  -0 50100 0 04654         ORA K3
      04617   0 53400 1 01100         LXA DOE,1
      04620  -3 00000 1 04633         TXL MS9500,1,0
```

```
* GO MAKE FIXCON ENTRY.                          4F14047
  CREATE INTERNAL FXD-PT VARIABLE,AND           4F14048
  GO TAKE EXITR.                                4F14049
  IF THERE WAS NO OVERFLOW,                     4F14050
  SAVE PARTIAL RESULT, AND                      4F14051
  SUBTRACT 1 FROM DOE                           4F14052
  TO ADJUST EXPONENT                            4F14053
  IN FINAL RESULT.                              4F14054
  THEN GO PICK UP NEXT CHARACTER.               4F14055
  ADD 1 TO DOE ,                                4F14056
  IF THERE WAS INTEGER OVERFLOW.                4F14057
* GO GET NEXT NB CHARACTER IN THE AC.           4F14058
  SAVE IT FOR STATE B, AND                      4F14059
  CLEAR EKE (EXPLICIT EXPONENT).                4F14060
  COMPARE CHARACTER WITH A DASH.                4F14061
  IF GREATER THAN 32, GO OUT.                   4F14062
  IF A DASH, SET EKE MINUS.                     4F14063
  IF LESS THAN 32, COMPARE WITH PLUS.           4F14064
  IF GREATER THAN 16, GO OUT.                   4F14065
  IF PLUS, GO EXAMINE NEXT CHAR.                4F14066
  IF LESS THAN 16,COMPARE WITH MINUS.           4F14067
  IF GREATER THAN 12, GO OUT.                   4F14068
  IF MINUS, SET EKE TO -0.                      4F14069
  COMPARE WITH TEN.                             4F14070
  IF NON-NUMERIC, GO EXAMINE NEXT CH.           4F14071
  CLEAR ACC,                                    4F14072
  SAVE PARTIAL RESULT(OR 0) IN EKE.             4F14073
* GO GET NEXT NB CHARACTER IN THE AC.           4F14074
  SAVE IT FOR STATE B,                          4F14075
  AND COMPARE WITH TEN.                         4F14076
  CHAR EXCEEDS 10, SO IS NON-NUMERIC.           4F14077
  CLEAR THE AC (MACHINE ERROR).                 4F14078
  CHARACTER IS NUMERIC, SO HOLD IT.             4F14079
  MULTIPLY THE PREVIOUS                         4F14080
  PARTIAL RESULT (OR ZERO)                      4F14081
  BY 10,                                        4F14082
  AND ADD IN                                    4F14083
  THE CURRENT DIGIT.                            4F14084
  CONTINUE UNTIL NON-NUMERIC IS MET.            4F14085
  COMBINE EXPLICIT EXPONENT                     4F14086
  WITH IMPLICIT EXPONENT,                       4F14087
  AND SAVE IN DOE.                              4F14088
  IF N CONTAINS ZERO, TAKE                      4F14089
  FLO PT CONSTANT RETURN.                       4F14090
  PUT INTEGER INTO FLO PT WORD,                 4F14091
  ADJUST, AND                                   4F14092
  IF MORE THAN 15 BITS IN LENGTH                4F14093
  AFFIX CORRECT EXPONENT.                       4F14094
  THEN FLOATING ADD THE RESULT                  4F14095
  OF INTEGER CONVERSION, AND                    4F14096
  ROUND --TO OBTAIN                             4F14097
  NORMALIZED RESULT.                            4F14098
  EXAMINE THE C(DOE), AND                       4F14099
  IF ZERO, TAKE FLO PT RETURN.                  4F14100
```

```
         04621 -3 00062 1 04623          TXL  FN2,1,50
D        04622  1 00000 0 04647          TXI  CER,0
         04623  0 56000 0 01100 FN2      LDQ  DOE
         04624  0 16200 0 04641          TQP  FN3
         04625  0 24100 1 04740          FDP  TAB,1
         04626 -0 60000 0 01103          STQ  N
         04627  0 50000 0 01103          CLA  N
         04630  0 36100 0 04655          ACL  K4
         04631 -0 76000 0 00001          PBT
D        04632  1 00000 0 04647          TXI  CER,0
         04633  0 60100 0 01347 MS9500   STO  G
         04634  0 07400 4 00424          TSX  FLCNIX,4
         04635 -0 50100 0 01513          ORA  FLOVAR
         04636  0 60200 0 01130 EXITR    SLW  E+2
         04637 -0 53400 4 04467          LXD  EXIT,4
         04640  0 02000 4 00002          TRA  2,4
         04641  0 60100 0 01103 FN3      STO  N
         04642  0 56000 0 01103          LDQ  N
         04643  0 26000 1 04740          FMP  TAB,1
         04644  0 36100 0 04656          ACL  K5
         04645 -0 76000 0 00001          PBT
D        04646  1 00000 0 04633          TXI  MS9500,0
         04647  0 07400 4 03400  CER     TSX  DIAG,4
         04650 -0 53400 4 04467 HEXIT    LXD  EXIT,4
         04651  0 02000 4 00001          TRA  1,4

         04652 +233000000000     K1     OCT  233000000000
         04653 +252000000000     K2     OCT  252000000000
         04654 +000400000000     K3     OCT  400000000
         04655 +335000000000     K4     OCT  335000000000
         04656 +043000000000     K5     OCT  43000000000
         04657  000000000025     L(E)   BCD  100000E

         04660 +375536246150            OCT  375536246150
         04661 +372430204754            OCT  372430204754
         04662 +366700324573            OCT  366700324573
         04663 +363546566774            OCT  363546566774
         04664 +360436770626            OCT  360436770626
         04665 +354713132675            OCT  354713132675
         04666 +351557257061            OCT  351557257061
         04667 +346445677215            OCT  346445677215
         04670 +342726145174            OCT  342726145174
         04671 +337570120775            OCT  337570120775
         04672 +334454732312            OCT  334454732312
         04673 +330741367020            OCT  330741367020
         04674 +325601137163            OCT  325601137163
         04675 +322464114134            OCT  322464114134
         04676 +316755023372            OCT  316755023372
         04677 +313612334310            OCT  313612334310
         04700 +310473426555            OCT  310473426555
         04701 +304770675742            OCT  304770675742
         04702 +301623713116            OCT  301623713116
         04703 +276503074076            OCT  276503074076
         04704 +273402374713            OCT  273402374713
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         IF GREATER THAN 50, THEN                4F14101
         ERROR. --GO TO DIAGNOSTIC.              4F14102
         DETERMINE WHETHER INTEGER WAS           4F14103
         TO THE RIGHT OR TO THE LEFT OF DP.      4F14104
         IF TO THE RIGHT, DIVIDE BY A            4F14105
         SUITABLE CONSTANT                       4F14106
         TO ADJUST RESULT                        4F14107
         AND TEST FOR OUT OF RANGE.              4F14108
         IF P=1, SKIP TO ARITH RETURN.           4F14109
         ERROR. --GO TO DIAGNOSTIC.              4F14110
         STORE IN G, AND                         4F14111
*        GO MAKE FLOCON ENTRY.                   4F14112
         CREATE INTERNAL FLO-PT VARIABLE,        4F14113
         SAVE VARIABLE IN E+2,                   4F14114
         RESTORE THE C(XR4), AND                 4F14115
*        RETURN TO MAIN ROUTINE.                 4F14116
         IF INTEGER WAS SITUATED                 4F14117
         TO THE LEFT OF THE DECIMAL POINT,       4F14118
         MULTIPLY BY A SUITABLE                  4F14119
         CONSTANT TO ADJUST AND TEST RANGE.      4F14120
         IF P=1, SKIP TO ERROR.                  4F14121
         RETURN TO ARITHMETIC ROUTINE.           4F14122
*        CONVERSION ERROR, GO TO DIAGNOSTIC.     4F14123
         RESTORE THE C(XR4), AND                 4F14124
*        RETURN TO MAIN ROUTINE.                 4F14125
                                                 4F14126
         CONSTANT USED BY ROYCNV.                4F14127
         CONSTANT USED BY ROYCNV.                4F14128
         CONSTANT USED BY ROYCNV.                4F14129
         CONSTANT USED BY ROYCNV.                4F14130
         CONSTANT USED BY ROYCNV.                4F14131
         CONSTANT USED BY ROYCNV.                4F14132
                                                 4F14133
         48-TABLE USED BY ROYCNV.                4F14134
         47-TABLE USED BY ROYCNV.                4F14135
         46-TABLE USED BY ROYCNV.                4F14136
         45-TABLE USED BY ROYCNV.                4F14137
         44-TABLE USED BY ROYCNV.                4F14138
         43-TABLE USED BY ROYCNV.                4F14139
         42-TABLE USED BY ROYCNV.                4F14140
         41-TABLE USED BY ROYCNV.                4F14141
         40-TABLE USED BY ROYCNV.                4F14142
         39-TABLE USED BY ROYCNV.                4F14143
         38-TABLE USED BY ROYCNV.                4F14144
         37-TABLE USED BY ROYCNV.                4F14145
         36-TABLE USED BY ROYCNV.                4F14146
         35-TABLE USED BY ROYCNV.                4F14147
         34-TABLE USED BY ROYCNV.                4F14148
         33-TABLE USED BY ROYCNV.                4F14149
         32-TABLE USED BY ROYCNV.                4F14150
         31-TABLE USED BY ROYCNV.                4F14151
         30-TABLE USED BY ROYCNV.                4F14152
         29-TABLE USED BY ROYCNV.                4F14153
         28-TABLE USED BY ROYCNV.                4F14154
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04705 +267635456171          OCT 267635456171          27-TABLE USED BY ROYCNV.          4F14155
04706 +264512676456          OCT 264512676456          26-TABLE USED BY ROYCNV.          4F14156
04707 +261410545213          OCT 261410545213          25-TABLE USED BY ROYCNV.          4F14157
04710 +255647410337          OCT 255647410337          24-TABLE USED BY ROYCNV.          4F14158
04711 +252522640262          OCT 252522640262          23-TABLE USED BY ROYCNV.          4F14159
04712 +247417031702          OCT 247417031702          22-TABLE USED BY ROYCNV.          4F14160
04713 +243661534466          OCT 243661534466          21-TABLE USED BY ROYCNV.          4F14161
04714 +240532743536          OCT 240532743536          20-TABLE USED BY ROYCNV.          4F14162
04715 +235425434430          OCT 235425434430          19-TABLE USED BY ROYCNV.          4F14163
04716 +231674055530          OCT 231674055530          18-TABLE USED BY ROYCNV.          4F14164
04717 +226543212741          OCT 226543212741          17-TABLE USED BY ROYCNV.          4F14165
04720 +223434157116          OCT 223434157116          16-TABLE USED BY ROYCNV.          4F14166
04721 +217706576512          OCT 217706576512          15-TABLE USED BY ROYCNV.          4F14167
04722 +214553630410          OCT 214553630410          14-TABLE USED BY ROYCNV.          4F14168
04723 +211443023471          OCT 211443023471          13-TABLE USED BY ROYCNV.          4F14169
04724 +205721522451          OCT 205721522451          12-TABLE USED BY ROYCNV.          4F14170
04725 +202564416672          OCT 202564416672          11-TABLE USED BY ROYCNV.          4F14171
04726 +177452013710          OCT 177452013710          10-TABLE USED BY ROYCNV.          4F14172
04727 +173734654500          OCT 173734654500          09-TABLE USED BY ROYCNV.          4F14173
04730 +170575360400          OCT 170575360400          08-TABLE USED BY ROYCNV.          4F14174
04731 +165461132000          OCT 165461132000          07-TABLE USED BY ROYCNV.          4F14175
04732 +161750220000          OCT 161750220000          06-TABLE USED BY ROYCNV.          4F14176
04733 +156606500000          OCT 156606500000          05-TABLE USED BY ROYCNV.          4F14177
04734 +153470400000          OCT 153470400000          04-TABLE USED BY ROYCNV.          4F14178
04735 +147764000000          OCT 147764000000          03-TABLE USED BY ROYCNV.          4F14179
04736 +144620000000          OCT 144620000000          02-TABLE USED BY ROYCNV.          4F14180
04737 +141500000000          OCT 141500000000          01-TABLE USED BY ROYCNV.          4F14181
04740 +136400000000     TAB  OCT 136400000000          00-TABLE USED BY ROYCNV.          4F14182
                              END OF PROGRAM ROYCNV.                                    4F14183
                             * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F14184
                                                                                       4F14185
                                                                                       4F14186
04741  0 00001 0 01230 SIG1ST PZE SIGMA1+2,,1                                          4F141865
                 04742 ENDBDR BSS 0                                                    4F14187
                                                                                       4F14188
                 05215 ENDB   ORG 2701                                                 4F14189
                 05215 ARGREG BSS 50                                                   4F14190
                 05277 CBAR   BSS 1                                                    4F14191
                 05300 ABAR   BSS 1                                                    4F14192
                 05301 FSTYPE BSS 1                                                    4F14193
                 05302 FSBITS BSS 1                                                    4F14194
                 05303 FNBITS BSS 1                                                    4F14195
                 05304 FNCTR  BSS 1                                                    4F14196
                 05305 ALPHA  BSS 139                                                  4F14197
                 05520 LAMBDA BSS 1200                                                 4F14198
                              END OF ARITHMETIC / STATE B.                             4F14199
                             * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F14200
                                                                                       4F14201
                             ARITHMETIC / STATE C=                                     4F14202
                             704 FORTRAN MASTER RECORD CARD / STATE C = F0170000.      4F142021
                 00000       ORG 0                                                     4F142022
00000  0 00504 0 03440       PZE ORGC,,DMWR03                                          4F142023
00001  0 00000 0 05043       PZE ENDC-1                                                4F14203
                                                                                       4F14204
                             STATE C. PERFORMS OPTIMIZATION ON LAMBDA TABLE.
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                    03440 ORGC   ORG 1824
03440   0 56000 0 C1406 R00000 LDQ L(0)          CLEAR MQ                                4F14205
03441  -0 53400 1 01360        LXD NBAR,A        LDXA WITH -N                            4F14206
03442  -0 63400 1 03451        SXD R00700,A                                              4F14207
03443  -0 63400 1 03527        SXD R05200,A                                              4F14208
03444  -0 63400 1 04101        SXD AS0800,A                                              4F14209
03445  -0 63400 1 04126        SXD AS2900,A                                              4F14210
03446   0 53400 7 01406        LXA L(0),7        CLEAR XA,XB,XC,                         4F14211
03447  -0 60000 2 05044 R00500 STQ BETA,B                                               4F14212
03450   1 77777 2 03451        TXI R00700,B,-1                                           4F14213
03451   3 00000 2 03447 R00700 TXH R00500,B,0                                            4F14214
03452   0 50000 0 01117        CLA 3LBAR                                                 4F14215
03453   0 62200 0 03464        STD R01700                                                4F14216
03454   0 62200 0 03541        STD R06200                                                4F14217
03455   0 50000 1 05520 R01000 CLA LAMBDA,A      ADD INTO GAMMA COUNTERS                 4F14218
03456   0 73400 2 00000        PAX 0,B                                                   4F14219
03457   0 50000 2 05044        CLA BETA,B                                                4F14220
03460   0 40000 0 01506        ADD BETAD1        (-3)*2**18+(-3)                         4F14221
03461   0 62200 2 05044        STD BETA,B                                                4F14222
03462   0 62100 2 05044        STA BETA,B                                                4F14223
03463   1 77775 1 03464        TXI R01700,A,-3                                           4F14224
03464   3 00000 1 03455 R01700 TXH R01000,A,0    -3L IN XA AT END                        4F14225
03465   3 77772 1 03516 R01800 TXH R04200,A,-6   EXIT FROM SINGLE ELEMENT REDUCTION      4F14226
03466   0 50000 1 05515        CLA LAMBDA-3,A                                            4F14227
03467   0 73400 2 00000        PAX 0,B                                                   4F14228
03470   0 50000 2 05044        CLA BETA,B                                                4F14229
03471   0 40200 0 01506        SUB BETAD1                                                4F14230
03472   0 10000 0 03474        TZE R02600                                                4F14231
03473   1 00003 1 03465        TXI R01800,A,3                                            4F14232
03474   0 56000 1 05516 R02600 LDQ LAMBDA-2,A    SINGLE ELEMENT                          4F14233
03475  -0 76300 0 00006        LGL 6             EXAMINE OPERATION                       4F14234
03476   0 40200 0 01401        SUB 11Z                                                   4F14235
03477  -0 10000 0 03501        TNZ R03200                                                4F14236
03500   1 00003 1 03465        TXI R01800,A,3                                            4F14237
03501  -0 50000 0 01527 R03200 CAL MASK1         SINGLE ELEMENT, NON-UNARY OP            4F14238
03502   0 32000 1 05515        ANS LAMBDA-3,A    EXTRACT TAGS AND STORE BACK             4F14239
03503   0 50000 1 05512        CLA LAMBDA-6,A                                            4F14240
03504  -0 50100 1 05515        ORA LAMBDA-3,A                                            4F14241
03505   0 60200 1 05512        SLW LAMBDA-6,A                                            4F14242
03506  -0 50000 1 05516        CAL LAMBDA-2,A    EXTRACT FS BITS AND STORE BACK          4F14243
03507  -0 32000 0 01470        ANA MASK5                                                 4F14244
03510  -0 60200 1 05513        ORS LAMBDA-5,A                                            4F14245
03511  -0 50000 1 05517        CAL LAMBDA-1,A    STORE BACK SYMBOL                       4F14246
03512   0 60200 1 05514        SLW LAMBDA-4,A                                            4F14247
03513   0 60000 2 05044        STZ BETA,B        REDUCE GAMMA COUNT TO 0                 4F14248
03514   0 60000 1 05515        STZ LAMBDA-3,A    CLEAR TAG WORD                          4F14249
03515   1 00003 1 03465        TXI R01800,A,3    RESUME SCAN-BACK                        4F14250
03516   0 60000 0 01347 R04200 STZ G                                                     4F14251
03517   0 53400 7 01406        LXA L(0),7        CLEAR XA,XB,XC                          4F14252
03520   0 50000 2 05044 R04500 CLA BETA,B        SET ORIGINS OF SCRIPL TABLE             4F14253
03521   0 10000 0 03526        TZE R05100                                                4F14254
03522   0 56000 0 01347        LDQ G                                                     4F14255
03523  -0 62000 2 05044        SLQ BETA,B                                                4F14256
                                                                                         4F14257
                                                                                         4F14258
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03524   0 40000 0 01347          ADD G                                          4F14259
03525   0 62200 0 01347          STD G                                          4F14260
03526   1 77777 2 03527 R05100   TXI R05200,B,-1                                4F14261
03527   3 00000 2 03520 R05200   TXH R04500,B,0     DEC(K)=DEC(ACC)=-3P AT END  4F14262
03530  -0 50000 1 05520 R05300   CAL LAMBDA,A       STRING BEADS... COMPRESS LAMBDA TABLE  4F14263
03531   0 10000 0 03540          TZE R06100                                     4F14264
03532   0 60200 4 05520          SLW LAMBDA,C                                   4F14265
03533   0 50000 1 05521          CLA LAMBDA+1,A                                 4F14266
03534   0 60100 4 05521          STO LAMBDA+1,C                                 4F14267
03535   0 50000 1 05522          CLA LAMBDA+2,A                                 4F14268
03536   0 60100 4 05522          STO LAMBDA+2,C                                 4F14269
03537   1 77775 4 03540          TXI R06100,C,-3                                4F14270
03540   1 77775 1 03541 R06100   TXI R06200,A,-3                                4F14271
03541   3 00000 1 03530 R06200   TXH R05300,A,0                                 4F14272
03542  -0 63400 4 03563          SXD R07800,C       -3P IN XC AT END            4F14273
03543  -0 63400 4 03707          SXD CS0760,C                                   4F14274
03544   0 53400 1 01406          LXA L(0),A                                     4F14275
03545   0 50000 1 05520 R06400   CLA LAMBDA,A       STORE ORDERED, REDUCED LAMBDA TABLE  4F14276
03546   0 73400 2 00000          PAX 0,B            IN SCRIPL TABLE             4F14277
03547   0 50000 2 05044          CLA BETA,B                                     4F14278
03550  -0 73400 4 00000          PDX 0,C                                        4F14279
03551   0 50000 1 05520          CLA LAMBDA,A                                   4F14280
03552   0 60100 4 06650          STO SCRIPL,C                                   4F14281
03553   0 50000 1 05521          CLA LAMBDA+1,A                                 4F14282
03554   0 60100 4 06651          STO SCRIPL+1,C                                 4F14283
03555   0 50000 1 05522          CLA LAMBDA+2,A                                 4F14284
03556   0 60100 4 06652          STO SCRIPL+2,C                                 4F14285
03557   1 77775 4 03560          TXI R07500,C,-3                                4F14286
03560  -0 75400 4 00000 R07500   PXD 0,C                                        4F14287
03561   0 62200 2 05044          STD BETA,B                                     4F14288
03562   1 77775 1 03563          TXI R07800,A,-3                                4F14289
03563   3 00000 1 03545 R07800   TXH R06400,A,0     -3P IN XA AT END            4F14290
03564   0 56000 0 01406 CS0000   LDQ L(0)          ELIMINATE COMMON SEGMENTS   4F14291
03565  -0 50000 1 06645 CS0010   CAL SCRIPL-3,A                                 4F14292
03566   0 10000 0 03575          TZE CS0080         ERASED SEGMENT - CONTINUE BACK-SCAN  4F14293
03567   0 73400 2 00000 CS0030   PAX 0,B                                        4F14294
03570  -3 00000 2 03675          TXL CS0660,B,0     EXIT FROM CS ROUTINE        4F14295
03571   0 62100 0 03567          STA CS0030                                     4F14296
03572   0 50000 2 05044          CLA BETA,B                                     4F14297
03573   0 73400 4 00000 CS0060   PAX 0,C                                        4F14298
03574  -3 77772 4 03576          TXL CS0090,C,-6    AT LEAST TWO ELEMENTS       4F14299
03575   1 00003 1 03565 CS0080   TXI CS0010,A,3     ONE ELEMENT OR ERASED SEGMENT  4F14300
03576  -0 63400 1 03651 CS0090   SXD CS0470,A       SAVE XA                     4F14301
03577  -0 63400 4 01357          SXD LENGTH,C       SAVE XC, CONTAINING LENGTH OF SEGMENT  4F14302
03600  -3 00000 4 03603 CS0100   TXL CS0130,C,0     SEARCH UP FOR MATCHING SEGMENT  4F14303
03601   1 00003 1 03602          TXI CS0120,A,3                                 4F14304
03602   1 00003 4 03600 CS0120   TXI CS0100,C,3                                 4F14305
03603  -0 50000 1 06645 CS0130   CAL SCRIPL-3,A                                 4F14306
03604  -0 10000 0 03606          TNZ CS0151                                     4F14307
03605   1 00003 1 03603          TXI CS0130,A,3     ERASED SEGMENT              4F14308
03606   0 73400 2 00000 CS0151   PAX 0,B                                        4F14309
03607  -3 00000 2 03670          TXL CS0610,B,0     GO ON TO NEXT SEGMENT       4F14310
03610   0 62100 0 03573          STA CS0060                                     4F14311
03611   0 50000 2 05044          CLA BETA,B                                     4F14312
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03612  0 73400 4 00000         PAX 0,C                                    4F14313
03613 -0 75400 4 00000         PXD 0,C                                    4F14314
03614  0 40200 0 01357         SUB LENGTH                                 4F14315
03615 -0 10000 0 03600         TNZ CS0100      NOT SAME LENGTH SEGMENT-CONTINUE SEARCH  4F14316
03616 -0 53400 2 03651         LXD CS0470,B    SAME LENGTH SEGMENT        4F14317
03617 -0 63400 1 03667         SXD CS0600,A                               4F14318
03620 -3 00000 4 03645 CS0250  TXL CS0430,C,0  MATCHING SEGMENTS          4F14319
03621  0 50000 2 06647         CLA SCRIPL-1,B                             4F14320
03622  0 40200 1 06647         SUB SCRIPL-1,A                             4F14321
03623 -0 10000 0 03600         TNZ CS0100                                 4F14322
03624 -0 50000 2 06645         CAL SCRIPL-3,B  SYMBOLS MATCH              4F14323
03625 -0 32000 0 01527         ANA MASK1                                  4F14324
03626  0 60200 0 01347         SLW G                                      4F14325
03627 -0 50000 1 06645         CAL SCRIPL-3,A                             4F14326
03630 -0 32000 0 01527         ANA MASK1                                  4F14327
03631  0 76000 0 00006         COM                                        4F14328
03632  0 36100 0 01347         ACL G                                      4F14329
03633  0 76000 0 00006         COM                                        4F14330
03634 -0 10000 0 03600         TNZ CS0100                                 4F14331
03635  0 50000 2 06646         CLA SCRIPL-2,B  TAGS MATCH                 4F14332
03636  0 77100 0 00006         ARS 6                                      4F14333
03637  0 76700 0 00006         ALS 6                                      4F14334
03640  0 40200 1 06646         SUB SCRIPL-2,A                             4F14335
03641 -0 10000 0 03600         TNZ CS0100                                 4F14336
03642  1 00003 1 03643         TXI CS0360,A,3  OPS MATCH                  4F14337
03643  1 00003 2 03644 CS0360  TXI CS0370,B,3                             4F14338
03644  1 00003 4 03620 CS0370  TXI CS0250,C,3                             4F14339
03645 -0 50000 1 06650 CS0430  CAL SCRIPL,A    MATCHING SEGMENTS          4F14340
03646 -0 32000 0 01452         ANA MASK2       SEARCH FOR REFERENCES      4F14341
03647  0 34000 1 06647 CS0450  CAS SCRIPL-1,A                             4F14342
03650  1 00003 1 03647         TXI CS0450,A,3                             4F14343
03651  1 00000 0 03653 CS0470  TXI CS0490,0,0                             4F14344
03652  1 00003 1 03647         TXI CS0450,A,3                             4F14345
03653  0 50000 0 03567 CS0490  CLA CS0030      CHANGE REFERENCE           4F14346
03654  0 62100 1 06647         STA SCRIPL-1,A                             4F14347
03655 -0 53400 4 01357         LXD LENGTH,C                               4F14348
03656 -0 53400 1 03667         LXD CS0600,A                               4F14349
03657 -3 00000 4 03663 CS0530  TXL CS0570,C,0  ERASE DUPLICATE SEGMENT    4F14350
03660 -0 60000 1 06645         STQ SCRIPL-3,A                             4F14351
03661  1 00003 1 03662         TXI CS0560,A,3                             4F14352
03662  1 00003 4 03657 CS0560  TXI CS0530,C,3                             4F14353
03663  0 53400 4 03573 CS0570  LXA CS0060,C                               4F14354
03664 -0 60000 4 05044         STQ BETA,C                                 4F14355
03665 -0 50000 0 01401         CAL 11Z         STORE CS BIT               4F14356
03666 -0 60200 2 06651         ORS SCRIPL+1,B                             4F14357
03667  1 00000 0 03603 CS0600  TXI CS0130,0,0                             4F14358
03670 -0 53400 1 03651 CS0610  LXD CS0470,A                               4F14359
03671 -0 53400 4 01357         LXD LENGTH,C                               4F14360
03672 -3 00000 4 03565 CS0630  TXL CS0010,C,0                             4F14361
03673  1 00003 1 03674         TXI CS0650,A,3                             4F14362
03674  1 00003 4 03672 CS0650  TXI CS0630,C,3                             4F14363
03675  0 53400 5 01406 CS0660  LXA L(0),5      STRING BEADS... COMPRESS SCRIPL TABLE  4F14364
03676 -0 50000 1 06650 CS0670  CAL SCRIPL,A                               4F14365
03677  0 10000 0 03706         TZE CS0750                                 4F14366
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03700   0 60200 4 06650          SLW SCRIPL,C                                4F14367
03701   0 50000 1 06651          CLA SCRIPL+1,A                              4F14368
03702   0 60100 4 06651          STO SCRIPL+1,C                              4F14369
03703   0 50000 1 06652          CLA SCRIPL+2,A                              4F14370
03704   0 60100 4 06652          STO SCRIPL+2,C                              4F14371
03705   1 77775 4 03706          TXI CS0750,C,-3                             4F14372
03706   1 77775 1 03707 CS0750   TXI CS0760,A,-3                             4F14373
03707   3 00000 1 03676 CS0760   TXH CS0670,A,0                              4F14374
03710  -0 63400 4 03724          SXD PM0080,C      -3Q IN XC AT END          4F14375
03711  -0 63400 4 04113          SXD AS1800,C                                4F14376
03712  -0 63400 4 04136          SXD AS3600,C                                4F14377
03713   0 76000 0 00140 PM0000   SLF               TURN OFF ALL SENSE LITES  4F14378
03714   0 53400 1 01406          LXA L(0),A        PERMUTE * AND /           4F14379
03715   0 50000 1 06650 PM0010   CLA SCRIPL,A                                 4F14380
03716   0 73400 2 00000          PAX 0,B                                     4F14381
03717   0 50000 2 05044          CLA BETA,B                                  4F14382
03720   0 73400 4 00000          PAX 0,C           LDXC WITH SEGMENT LENGTH  4F14383
03721  -0 63400 4 03723          SXD PM0070,C                                4F14384
03722  -3 77767 4 03726          TXL PM0100,C,-9                             4F14385
03723   1 00000 1 03724 PM0070   TXI PM0080,A,0    LENGTH LESS THAN 3 OR OD NOT = TO *  4F14386
03724  -3 00000 1 04071 PM0080   TXL AS0000,A,0    EXIT FROM PERMUTATION ROUTINE  4F14387
03725   0 02000 0 03715          TRA PM0010                                  4F14388
03726   0 56000 1 06651 PM0100   LDQ SCRIPL+1,A    SEGMENT LENGTH AT LEAST = TO 3  4F14389
03727  -0 75400 0 00000          PXD 0,0                                     4F14390
03730  -0 76300 0 00006          LGL 6                                       4F14391
03731   0 40200 0 01405          SUB STAR                                    4F14392
03732  -0 10000 0 03723          TNZ PM0070                                  4F14393
03733   0 16200 0 03735          TQP PM0170                                  4F14394
03734   0 02000 0 03723          TRA PM0070                                  4F14395
03735  -0 63400 4 03744 PM0170   SXD PM0260,C                                4F14396
03736  -0 63400 4 03762          SXD PM0400,C                                4F14397
03737  -0 63400 4 04013          SXD PM0680,C                                4F14398
03740   0 53400 4 01406          LXA L(0),C        LDXC WITH 0               4F14399
03741   1 77775 1 03742          TXI PM0240,A,-3                             4F14400
03742   0 76000 0 00143 PM0240   SLN 3             TURN * LITE ON            4F14401
03743   1 77775 4 03744 PM0250   TXI PM0260,C,-3                             4F14402
03744  -3 00000 4 04025 PM0260   TXL PM0790,C,0    EXIT                      4F14403
03745  -0 63400 4 03755          SXD PM0340,C                                4F14404
03746  -0 53400 2 03747          LXD PM0290,B                                4F14405
03747   1 00000 3 03750 PM0290   TXI PM0300,3,0    XA TO XA AND XB           4F14406
03750  -0 75400 0 00000 PM0300   PXD 0,0                                     4F14407
03751   0 56000 1 06651          LDQ SCRIPL+1,A                              4F14408
03752  -0 76300 0 00006          LGL 6                                       4F14409
03753   0 34000 0 01402          CAS SLASH                                   4F14410
03754   0 00007 0 00000 FEXUB    HTR 0,0,7                                   4F14411
03755  -3 00000 0 04007 PM0340   TXL PM0640,0,0    / SIGN                    4F14412
03756  -0 76000 0 00143          SLT 3             * SIGN... IS * LITE ON    4F14413
03757   1 77775 1 03742          TXI PM0240,A,-3   NO                        4F14414
03760   1 77775 2 03761          TXI PM0390,B,-3   YES - SEARCH FOR / SIGN    4F14415
03761   1 77775 4 03762 PM0390   TXI PM0400,C,-3                             4F14416
03762  -3 00000 4 04023 PM0400   TXL PM0770,C,0    EXIT                      4F14417
03763  -0 75400 0 00000          PXD 0,0                                     4F14418
03764   0 56000 2 06651          LDQ SCRIPL+1,B                              4F14419
03765  -0 76300 0 00006          LGL 6                                       4F14420
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03766   0 40200 0 01402          SUB  SLASH
03767   0 10000 0 03771          TZE  PM0480
03770   1 77775 2 03761          TXI  PM0390,B,-3
03771   0 50000 1 06650 PM0480   CLA  SCRIPL,A        PERMUTE TAG WORDS
03772   0 56000 2 06650          LDQ  SCRIPL,B
03773  -0 60000 1 06650          STQ  SCRIPL,A
03774   0 60100 2 06650          STO  SCRIPL,B
03775   0 50000 1 06651          CLA  SCRIPL+1,A      PERMUTE OP WORDS
03776   0 56000 2 06651          LDQ  SCRIPL+1,B
03777  -0 60000 1 06651          STQ  SCRIPL+1,A
04000   0 60100 2 06651          STO  SCRIPL+1,B
04001   0 50000 1 06652          CLA  SCRIPL+2,A      PERMUTE SYMBOL WORDS
04002   0 56000 2 06652          LDQ  SCRIPL+2,B
04003  -0 60000 1 06652          STQ  SCRIPL+2,A
04004   0 60100 2 06652          STO  SCRIPL+2,B
04005  -0 53400 4 03755          LXD  PM0340,C
04006   1 77775 1 03743          TXI  PM0250,A,-3     RESUME SEGMENT SCAN
04007  -0 76000 0 00143 PM0640   SLT  3               / SIGN... IS * LITE ON
04010   1 77775 2 04012 PM0650   TXI  PM0670,B,-3     NO
04011   1 77775 1 03743          TXI  PM0250,A,-3
04012   1 77775 4 04013 PM0670   TXI  PM0680,C,-3
04013  -3 00000 4 04023 PM0680   TXL  PM0770,C,0
04014  -0 75400 0 00000          PXD  0,0
04015   0 56000 2 06651          LDQ  SCRIPL+1,B
04016  -0 76300 0 00006          LGL  6
04017   0 40200 0 01402          SUB  SLASH
04020   0 10000 0 04010          TZE  PM0650
04021   0 76000 0 00143          SLN  3               TORN * LITE ON
04022   0 02000 0 03771          TRA  PM0480
04023  -0 53400 1 04024 PM0770   LXD  PM0780,A
04024   1 00000 3 04025 PM0780   TXI  PM0790,3,0      XB TO XA,XB
04025  -0 75400 0 00000 PM0790   PXD  0,0
04026   0 56000 1 06646          LDQ  SCRIPL-2,A
04027  -0 76300 0 00006          LGL  6
04030   0 40200 0 01402          SUB  SLASH
04031   0 10000 0 03724          TZE  PM0080          ... / - EXIT FROM SEGMENT SCAN
04032  -0 75400 0 00000          PXD  0,0
04033   0 56000 1 06643          LDQ  SCRIPL-5,A
04034  -0 76300 0 00006          LGL  6
04035   0 40200 0 01402          SUB  SLASH
04036   0 10000 0 03724          TZE  PM0080          ... / * - EXIT FROM SEGMENT SCAN
04037   0 50000 1 06645          CLA  SCRIPL-3,A      ... **
04040   0 60100 0 01126          STO  E
04041   0 50000 1 06646          CLA  SCRIPL-2,A
04042   0 60100 0 01127          STO  E+1
04043   0 50000 1 06647          CLA  SCRIPL-1,A
04044   0 60100 0 01130          STO  E+2
04045   1 00003 1 04046          TXI  PM0980,A,3
04046   1 00003 4 04047 PM0980   TXI  PM0990,C,3
04047  -3 00000 4 04057 PM0990   TXL  PM1070,C,0      FINIS
04050   0 50000 1 06645          CLA  SCRIPL-3,A
04051   0 60100 1 06650          STO  SCRIPL,A
04052   0 50000 1 06646          CLA  SCRIPL-2,A
04053   0 60100 1 06651          STO  SCRIPL+1,A
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04054   0 50000 1 06647         CLA SCRIPL-1,A                                  4F14475
04055   0 60100 1 06652         STO SCRIPL+2,A                                  4F14476
04056   1 00003 1 04046         TXI PM0980,A,3                                  4F14477
04057   0 50000 0 01126 PM1070  CLA E                                           4F14478
04060   0 60100 1 06650         STO SCRIPL,A                                    4F14479
04061   0 50000 0 01127         CLA E+1                                         4F14480
04062   0 60100 1 06651         STO SCRIPL+1,A                                  4F14481
04063   0 50000 0 01130         CLA E+2                                         4F14482
04064   0 60100 1 06652         STO SCRIPL+2,A                                  4F14483
04065  -0 50000 1 06654         CAL SCRIPL+4,A      PRESERVE CS BIT             4F14484
04066  -0 32000 0 01401         ANA 11Z                                         4F14485
04067  -0 60200 1 06651         ORS SCRIPL+1,A                                  4F14486
04070   0 02000 0 03723         TRA PM0070                                      4F14487
04071   0 53400 7 01406 AS0000  LXA L(0),7          RENUMBER SEGMENT OF SCRIPL  4F14488
04072   0 50000 2 05044 AS0100  CLA BETA,B                                      4F14489
04073   0 10000 0 04100         TZE AS0700                                      4F14490
04074  -0 75400 4 00000         PXD 0,C                                         4F14491
04075   0 77100 0 00022         ARS 18                                          4F14492
04076   0 62100 2 05044         STA BETA,B                                      4F14493
04077   1 77777 4 04100         TXI AS0700,C,-1                                 4F14494
04100   1 77777 2 04101 AS0700  TXI AS0800,B,-1                                 4F14495
04101   3 00000 2 04072 AS0800  TXH AS0100,B,0                                  4F14496
04102   0 50000 1 06650 AS0900  CLA SCRIPL,A                                    4F14497
04103   0 73400 2 00000         PAX 0,B                                         4F14498
04104   0 50000 2 05044         CLA BETA,B                                      4F14499
04105   0 62100 1 06650         STA SCRIPL,A                                    4F14500
04106   0 56000 1 06652         LDQ SCRIPL+2,A                                  4F14501
04107  -0 76300 0 00001         LGL 1                                           4F14502
04110   0 76000 0 00001         LBT                                             4F14503
04111   0 16200 0 04115         TQP AS2000                                      4F14504
04112   1 77775 1 04113         TXI AS1800,A,-3                                 4F14505
04113   3 00000 1 04102 AS1800  TXH AS0900,A,0                                  4F14506
04114   0 02000 0 04122         TRA AS2500                                      4F14507
04115  -0 76300 0 00043 AS2000  LGL 35                                          4F14508
04116   0 73400 2 00000         PAX 0,B                                         4F14509
04117   0 50000 2 05044         CLA BETA,B                                      4F14510
04120   0 62100 1 06652         STA SCRIPL+2,A                                  4F14511
04121   1 77775 1 04113         TXI AS1800,A,-3                                 4F14512
04122   0 53400 3 01406 AS2500  LXA L(0),3          LDXA,XB WITH 0              4F14513
04123   0 56000 0 01406         LDQ L(0)            CLEAR MQ                    4F14514
04124  -0 60000 2 05044 AS2700  STQ BETA,B          RECLEAR BETA TABLE          4F14515
04125   1 77777 2 04126         TXI AS2900,B,-1                                 4F14516
04126   3 00000 2 04124 AS2900  TXH AS2700,B,0                                  4F14517
04127   0 50000 1 06650 AS3000  CLA SCRIPL,A        ADD INTO GAMMA COUNTERS     4F14518
04130   0 73400 2 00000         PAX 0,B                                         4F14519
04131   0 50000 2 05044         CLA BETA,B                                      4F14520
04132   0 40000 0 01462         ADD BETAD2          3*2**18+(-3)                4F14521
04133   0 62200 2 05044         STD BETA,B                                      4F14522
04134   0 62100 2 05044         STA BETA,B                                      4F14523
04135   1 77775 1 04136         TXI AS3600,A,-3                                 4F14524
04136   3 00000 1 04127 AS3600  TXH AS3000,A,0      -3Q IN XA AT END            4F14525
04137  -0 63400 1 01117         SXD 3QBAR,A         -3Q TO 3QBAR = 3LBAR        4F14526
04140  -0 50000 1 06645 CCS000  CAL SCRIPL-3,A      ELIMINATE COMMON SUBEXPRESSIONS 4F14527
04141   0 73400 2 00000         PAX 0,B             LOAD XB WITH S(I)           4F14528
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04142 -3 00000 2 04167          TXL CCS240,B,0
04143 -0 50000 2 05044          CAL BETA,B
04144  0 62200 0 04145          STD CCS060
04145  1 00000 1 04146 CCS060   TXI CCS070,A,0
04146 -0 50000 1 06651 CCS070   CAL SCRIPL+1,A
04147 -0 32000 0 01401          ANA 11Z
04150  0 10000 0 04140          TZE CCS000
04151 -0 75400 2 00000          PXD 0,B
04152  0 77100 0 00022          ARS 18
04153  0 53400 4 01406          LXA L(0),C
04154 -0 53400 2 04155          LXD CCS140,B
04155  1 00000 3 04156 CCS140   TXI CCS150,3,0
04156 -3 00000 2 04163 CCS150   TXL CCS200,B,0
04157  0 34000 2 06647          CAS SCRIPL-1,B
04160  1 00003 2 04156          TXI CCS150,B,3
04161  1 00001 4 04162          TXI CCS190,C,1
04162  1 00003 2 04156 CCS190   TXI CCS150,B,3
04163  3 00001 4 04140 CCS200   TXH CCS000,C,1
04164 -0 50000 0 01530          CAL MASK4
04165  0 32000 1 06651          ANS SCRIPL+1,A
04166  0 02000 0 04140          TRA CCS000
04167 -0 53400 1 04136 CCS240   LXD AS3600,A
04170 -3 00000 1 04423 PL0000   TXL LK0000,A,0
04171  0 50000 1 06645          CLA SCRIPL-3,A
04172  0 73400 2 00000          PAX 0,B
04173 -0 50000 2 05044          CAL BETA,B
04174  0 73400 4 00000          PAX 0,C
04175  0 62200 0 04176          STD PL0060
04176  1 00000 1 04177 PL0060   TXI PL0070,A,0
04177 -0 75400 0 00000 PL0070   PXD 0,0
04200  0 56000 1 06651          LDQ SCRIPL+1,A
04201 -0 76300 0 00006          LGL 6
04202  0 34000 0 01427          CAS SPECOP
04203  0 02000 0 04300          TRA PL0680
04204  0 02000 0 04242          TRA PL0460
04205 -0 75400 0 00000 PL0130   PXD 0,0
04206  0 56000 1 06652          LDQ SCRIPL+2,A
04207 -0 76300 0 00001          LGL 1
04210  0 76000 0 00001          LBT
04211  0 16200 0 04223          TQP PL0300
04212 -0 76300 0 00005          LGL 5
04213  0 34000 0 01423 PL0135   CAS L(H)
04214  0 34000 0 01425          CAS L(0)
04215  0 02000 0 04220          TRA PL0240
04216  0 02000 0 04220          TRA PL0240
04217  0 02000 0 04170          TRA PL0000
04220 -0 50000 0 01416 PL0240   CAL L(8)
04221 -0 60200 1 06651 PL0250   ORS SCRIPL+1,A
04222  1 00000 0 04170 PL0260   TXI PL0000,0,0
04223 -0 53400 2 04224 PL0300   LXD PL0310,B
04224  1 00000 3 04225 PL0310   TXI PL0320,3,0
04225 -0 63400 4 04226 PL0320   SXD PL0330,C
04226  1 00000 2 04227 PL0330   TXI PL0340,B,0
04227 -0 50000 2 06650 PL0340   CAL SCRIPL,B
```

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EXIT AT S(0)                                          4F14529
OBTAIN LENGTH OF S(I)                                 4F14530
AND BACK UP TO                                        4F14531
BEGINNING OF CURRENT SEGMENT                          4F14532
OBTAIN OP1 (S(I))                                     4F14533
EXTRACT CS-BIT                                        4F14534
CONTINUE TO S(I-1)                                    4F14535
                                                      4F14536
                                                      4F14537
TO S(I)                                               4F14538
AND KEEP COUNT OF SAME                                4F14539
XA TO XA,XB                                           4F14540
SEARCH-UP FINISHED. EXAMINE COUNT                     4F14541
                                                      4F14542
CONTINUE SEARCH                                       4F14543
RAISE REF COUNTER AND                                 4F14544
CONTINUE SEARCH                                       4F14545
MULTIPLE REFERENCE                                    4F14546
SINGLE REFERENCE - SO SET                             4F14547
OP1(S(I))30 TO 0, AND                                 4F14548
CONTINUE FOR S(I-1)                                   4F14549
-3Q TO XA                                             4F14550
GO TO LINKAGE                                         4F14551
                                                      4F14552
                                                      4F14553
                                                      4F14554
                                                      4F14555
                                                      4F14556
SET XA TO BEGINNING OF S(I)                           4F14557
                                                      4F14558
OBTAIN                                                4F14559
AND                                                   4F14560
EXAMINE OP1 (S(I))                                    4F14561
                                                      4F14562
                                                      4F14563
OP1 (S(I)) IS +, - OR *                               4F14564
OBTAIN                                                4F14565
AND                                                   4F14566
EXAMINE SYM1 (S(I))                                   4F14567
                                                      4F14568
EX (IN)TERNAL VARIAVLE                                4F14569
IS SYM1 (S(I)) FIX OR FLO PT                          4F14570
                                                      4F14571
FLO PT... SET OP1 (S(I)) 32 = 1                       4F14572
FLO PT... DITTO                                       4F14573
FIX PT... OP1 (S(I)) 32 = 0                           4F14574
SET OP1 (S(I)) 32 = 1                                 4F14575
                                                      4F14576
CONTINUE SCAN                                         4F14577
SYM1 (S(I)) = SOME S(J)                               4F14578
XA TO XA,XB                                           4F14579
                                                      4F14580
                                                      4F14581
                                                      4F14582
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04230   0 73400 4 00000         PAX 0,C                                          4F14583
04231  -0 32000 0 01452         ANA MASK2                                        4F14584
04232   0 40200 1 06652         SUB SCRIPL+2,A                                   4F14585
04233   0 10000 0 04237         TZE PL0420                                       4F14586
04234   0 50000 4 05044         CLA BETA,C                                       4F14587
04235   0 73400 4 00000         PAX 0,C                                          4F14588
04236   0 02000 0 04225         TRA PL0320                                       4F14589
04237  -0 50000 2 06651 PL0420  CAL SCRIPL+1,B      SYM1(S(I)) = S(J)           4F14590
04240  -0 32000 0 01416         ANA L(8)            EXTRACT OP1 (S(J)) 32 AND GO 4F14591
04241   0 02000 0 04221         TRA PL0250          SET OP1 (S(I)) 32 = OP1 (S(J)) 32 4F14592
04242  -0 76300 0 00007 PL0460  LGL 7               OP1 (S(I)) IS SPOP          4F14593
04243   0 16200 0 04252         TQP PL0465                                       4F14594
04244   0 56000 1 06652 PL0461  LDQ SCRIPL+2,A      FS NAME -                   4F14595
04245  -0 75400 0 00000         PXD 0,0             EXAMINE SUM1 (S(I)) S,1-5   4F14596
04246  -0 76300 0 00006         LGL 6                                           4F14597
04247   0 40200 0 01433         SUB L(X)                                        4F14598
04250  -0 10000 0 04220         TNZ PL0240          FLO PT... GO SET OP1 (S(I)) 32 = 1 4F14599
04251   0 02000 0 04170         TRA PL0000          FIX PT ... OP1 (S(I)) 32 = 0 4F14600
04252   0 76000 0 00001 PL0465  LBT                                             4F14601
04253   0 02000 0 04260         TRA PL0470                                      4F14602
04254   0 56000 1 06652         LDQ SCRIPL+2,A                                  4F14603
04255  -0 75400 0 00000         PXD ,0                                          4F14604
04256  -0 76300 0 00006         LGL 6                                           4F14605
04257   0 02000 0 04213         TRA PL0135                                      4F14606
04260   0 50000 1 06652 PL0470  CLA SCRIPL+2,A      NOT AN FS NAME              4F14607
04261   0 53400 2 01406         LXA L(0),B                                      4F14608
04262   0 34000 2 04732 PL0480  CAS OPSUB,B                                     4F14609
04263   1 77777 2 04266         TXI PL0520,B,-1                                 4F14610
04264   0 02000 0 04275         TRA PL0650                                      4F14611
04265   1 77777 2 04266         TXI PL0520,B,-1                                 4F14612
04266   3 77754 2 04262 PL0520  TXH PL0480,B,-20                                4F14613
04267   0 60100 0 01347         STO G                                           4F14614
04270  -0 63400 1 04222         SXD PL0260,A                                    4F14615
04271   0 07400 1 03321         TSX TETOO,A                                     4F14616
04272   0 00000 0 00011         HTR 9                                           4F14617
04273  -0 53400 1 04222         LXD PL0260,A                                    4F14618
04274   0 02000 0 04244         TRA PL0461                                      4F14619
04275  -0 50000 0 01412 PL0650  CAL L(4)            SET OP1 (S(I)) 33 =1        4F14620
04276  -0 60200 1 06651         ORS SCRIPL+1,A                                  4F14621
04277   0 02000 0 04244         TRA PL0461                                      4F14622
04300   0 16200 0 04205 PL0680  TQP PL0130                                      4F14623
04301  -0 75400 0 00000         PXD 0,0             OP1 (S(I) IS **             4F14624
04302   0 56000 1 06652         LDQ SCRIPL+2,A      OBTAIN AND                  4F14625
04303  -0 76300 0 00001         LGL 1               EXAMINE                     4F14626
04304   0 76000 0 00001         LBT                 SYM1 (S(I))                 4F14627
04305   0 16200 0 04363         TQP PL1000                                      4F14628
04306  -0 76300 0 00005         LGL 5               EX (IN)TERNAL VARIABLE      4F14629
04307   0 34000 0 01423         CAS L(H)            IS OT FIX OR FLO PT         4F14630
04310   0 34000 0 01425         CAS L(O)                                        4F14631
04311   0 02000 0 04314         TRA PL0800                                      4F14632
04312   0 02000 0 04314         TRA PL0800                                      4F14633
04313   0 02000 0 04316         TRA PL0830          FIX PT                      4F14634
04314  -0 50000 0 01416 PL0800  CAL L(8)            FLO PT... SET OP1 (S(I)) 32 = 1 4F14635
04315  -0 60200 1 06651 PL0820  ORS SCRIPL+1,A                                  4F14636
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04316 -0 75400 0 00000 PL0830 PXD 0,0                                    4F14637
04317  0 56000 1 06655        LDQ SCRIPL+5,A     OBTAIN                 4F14638
04320 -0 76300 0 00001        LGL 1              AND                    4F14639
04321  0 76000 0 00001        LBT                EXAMINE                4F14640
04322  0 16200 0 04402        TQP PL1200         SYM2 (S(I))            4F14641
04323 -0 76300 0 00005        LGL 5                                     4F14642
04324  0 34000 0 01423        CAS L(H)                                  4F14643
04325  0 34000 0 01425        CAS L(0)                                  4F14644
04326  0 02000 0 04360        TRA PL0940         SYM2 (S(I)) IS FLO PT, SO GO   4F14645
04327  0 02000 0 04360        TRA PL0940         SET OP2 (S(I)) 32 = 1  4F14646
04330 -0 75400 0 00000 PL0850 PXD 0,0            SYM2(S(I)) IS FIX PT   4F14647
04331 -0 76300 0 00006        LGL 6                                     4F14648
04332  0 40200 0 01375        SUB OPEN                                  4F14649
04333 -0 10000 0 04170        TNZ PL0000         SYM2 (S(I)) IS EXTERNAL        4F14650
04334 -0 76300 0 00031        LGL 25             SYM2 (S(I)) IS INTERNAL (AND FIX PT)   4F14651
04335  0 40000 0 04352        ADD PL0880                                4F14652
04336  0 62100 0 04330        STA PL0850                                4F14653
04337  0 76200 0 00302        RDR FXCODR                                4F14654
04340  0 46000 0 04330        LDA PL0850                                4F14655
04341  0 70000 0 01347        CPY G                                     4F14656
04342  0 70000 0 01350        CPY G+1                                   4F14657
04343  0 50000 0 01347        CLA G                                     4F14658
04344  0 34000 0 01350        CAS G+1                                   4F14659
04345  0 02000 0 04347        TRA *+2              GO TO THE DIAGNOSTIC.4F14660
04346  0 02000 0 04350        TRA PL1570                                4F14661
04347  0 07400 4 03400        TSX DIAG,4         * GO TO THE DIAGNOSTIC.4F14662
04350  0 10000 0 04170 PL1570 TZE PL0000         EXP IS 0, SO OP1 (S(I)) 33 = 0 4F14663
04351  0 34000 0 03754        CAS FEXUB                                 4F14664
04352  3 00000 0 00002 PL0880 TXH FIXCON,0,0     EXP NOT LESS THAN 7, SO        4F14665
04353  0 02000 0 04170        TRA PL0000         OP1 (S(I)) 33 = 0      4F14666
04354  0 60100 1 06655        STO SCRIPL+5,A     EXP LESS THAN 7, SO STORE EXP  4F14667
04355 -0 50000 0 01412        CAL L(4)           AS SYM2 (S(I)) AND SET 4F14668
04356 -0 60200 1 06651        ORS SCRIPL+1,A     OP1 (S(I)) 33 = 1      4F14669
04357  0 02000 0 04170        TRA PL0000                                4F14670
04360 -0 50000 0 01416 PL0940 CAL L(8)           SYM2 (S(I)) IS FLO PT  4F14671
04361 -0 60200 1 06654        ORS SCRIPL+4,A     SET OP2 (S(I)) 32 = 1  4F14672
04362  0 02000 0 04170        TRA PL0000                                4F14673
04363 -0 53400 2 04364 PL1000 LXD PL1010,B       SYM1 (S(I)) IS SOME S(J)       4F14674
04364  1 00000 3 04365 PL1010 TXI PL1020,3,0     XA TO XA,XB            4F14675
04365 -0 63400 4 04366 PL1020 SXD PL1030,C                              4F14676
04366  1 00000 2 04367 PL1030 TXI PL1040,B,0                            4F14677
04367 -0 50000 2 06650 PL1040 CAL SCRIPL,B                              4F14678
04370  0 73400 4 00000        PAX 0,C                                   4F14679
04371 -0 32000 0 01452        ANA MASK2                                 4F14680
04372  0 40200 1 06652        SUB SCRIPL+2,A                            4F14681
04373  0 10000 0 04377        TZE PL1130                                4F14682
04374  0 50000 4 05044        CLA BETA,C                                4F14683
04375  0 73400 4 00000        PAX 0,C                                   4F14684
04376  0 02000 0 04365        TRA PL1020                                4F14685
04377 -0 50000 2 06651 PL1130 CAL SCRIPL+1,B                            4F14686
04400 -0 32000 0 01416        ANA L(8)                                  4F14687
04401  0 02000 0 04315        TRA PL0820                                4F14688
04402 -0 53400 2 04403 PL1200 LXD PL1210,B       SYM2 (S(I)) = SOME S(K)        4F14689
04403  1 00000 3 04404 PL1210 TXI PL1220,3,0     XA TO XA,XB            4F14690
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04404 -0 53400 4 04416 PL1220 LXD PL1330,C      LKXC WITH -6                                    4F14691
04405 -0 63400 4 04406 PL1230 SXD PL1240,C                                                      4F14692
04406  1 00000 2 04407 PL1240 TXI PL1250,B,0                                                    4F14693
04407 -0 50000 2 06650 PL1250 CAL SCRIPL,B                                                      4F14694
04410  0 73400 4 00000        PAX 0,C                                                          4F14695
04411 -0 32000 0 01452        ANA MASK2                                                        4F14696
04412  0 40200 1 06655        SUB SCRIPL+5,A                                                   4F14697
04413  0 10000 0 04417        TZE PL1340       SYM2(S(I)) = S(K)                               4F14698
04414  0 50000 4 05044        CLA BETA,C                                                       4F14699
04415  0 73400 4 00000        PAX 0,C                                                          4F14700
04416  1 77772 0 04405 PL1330 TXI PL1230,0,-6                                                  4F14701
04417 -0 50000 2 06651 PL1340 CAL SCRIPL+1,B    SET OP2(S(I)) 32 = OP1 (S(K)) 32                4F14702
04420 -0 32000 0 01416        ANA L(8)                                                         4F14703
04421 -0 60200 1 06654        ORS SCRIPL+4,A                                                   4F14704
04422  0 02000 0 04170        TRA PL0000       RESUME SCAN                                     4F14705
04423 -0 53400 1 04136 LK0000 LXD AS3600,A     -3Q TO XA                                       4F14706
04424 -0 50000 1 06645 LK0030 CAL SCRIPL-3,A                                                    4F14707
04425  0 73400 2 00000        PAX 0,B          S(I) TO XB                                      4F14708
04426 -3 00000 2 04633        TXL LK1610,B,0   EXIT UPON ENCOUNTERING S(0)                     4F14709
04427  0 56000 1 06646        LDQ SCRIPL-2,A   PLACE LAST OP OP S(I) IN MQ                     4F14710
04430  0 50000 2 05044        CLA BETA,B                                                       4F14711
04431  0 62200 0 04432        STD LK0110                                                       4F14712
04432  1 00000 1 04433 LK0110 TXI LK0120,A,0   MOVE XA TO BEGINNING OF S(I)                   4F14713
04433 -0 53400 4 04434 LK0120 LXD LK0130,C                                                      4F14714
04434  1 00000 5 04435 LK0130 TXI LK0140,5,0   XA TO XA,XC                                     4F14715
04435 -0 63400 1 04136 LK0140 SXD AS3600,A                                                      4F14716
04436  0 50000 2 05043        CLA BETA-1,B                                                     4F14717
04437 -0 73400 2 00000        PDX 0,B          LENGTH OF S(I-1) TO XB                          4F14718
04440 -0 63400 2 04441        SXD LK0180,B                                                     4F14719
04441  1 00000 4 04442 LK0180 TXI LK0190,C,0   MOVE XC TO BEGINNING OF S(I-1)                 4F14720
04442  0 16200 0 04566 LK0190 TQP LK1200       S(I) TYPE AC                                    4F14721
04443 -0 77300 0 00001        RQL 1                                                            4F14722
04444  0 16200 0 04566        TQP LK1200       S(I) TYPE AC                                    4F14723
04445 -0 50000 0 01404        CAL 12Z          S(I) RESULTS IN MQ (TYPE MQ)                    4F14724
04446 -0 60200 1 06651        ORS SCRIPL+1,A   SET OP1 (S(I)) 31 = 1                           4F14725
04447 -0 75400 0 00000        PXD 0,0                                                          4F14726
04450  0 56000 4 06651        LDQ SCRIPL+1,C   PLACE OP1 (S(I-1)) IN MQ                        4F14727
04451 -0 76300 0 00006        LGL 6                                                            4F14728
04452  0 34000 0 01427        CAS SPECOP                                                       4F14729
04453  0 02000 0 04456        TRA LK0320                                                       4F14730
04454  0 02000 0 04543        TRA LK0950                                                       4F14731
04455  0 02000 0 04424        TRA LK0030       S(I)TYPTMQ, S(I-1)TYPEAC . OP1(S(I))29=0        4F14732
04456  0 16200 0 04477 LK0320 TQP LK0570                                                       4F14733
04457 -0 76300 0 00033        LGL 27           S(I)TYPE MQ, OP1(S(I-1) = **                    4F14734
04460 -0 50000 1 06650        CAL SCRIPL,A                                                     4F14735
04461 -0 32000 0 01452        ANA MASK2        EXTRACT S(I) IN ACC                             4F14736
04462  0 16200 0 04472        TQP LK0480       OP1 (S(I-1)) 33 = 0                             4F14737
04463  0 40200 4 06652        SUB SCRIPL+2,C   OP1 (S(I-1)) 33 = 1. OPEN ** SUBROUTINE.       4F14738
04464 -0 10000 0 04424        TNZ LK0030       SET OP1 (S(I)) 29 = OP1 (S(I-1)) 35 = 0         4F14739
04465 -0 50000 0 01411        CAL L(3)         S(I) = SYM1 (S(I-1)), SO                        4F14740
04466 -0 60200 4 06651 LK0430 ORS SCRIPL+1,C                                                    4F14741
04467 -0 50000 0 01436 LK0440 CAL BIT29                                                         4F14742
04470 -0 60200 1 06651        ORS SCRIPL+1,A                                                   4F14743
04471  0 02000 0 04424        TRA LK0030       OP1 (S(I-1)) = 0. CLOSED ** SUBROUTINE.         4F14744
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04472  0 40200 4 06655 LK0480 SUB SCRIPL+5,C                                                  4F14745
04473 -0 10000 0 04424        TNZ LK0030          SET OP1(S(I))29=OP1(S(I-1))35=0             4F14746
04474 -0 50000 0 01407        CAL L(1)            S(I) = SYM2 (S(I-1)), SO                    4F14747
04475 -0 60200 4 06654        ORS SCRIPL+4,C      SET OP2 (S(I-1)) 35 = 1                     4F14748
04476  0 02000 0 04467        TRA LK0440                                                      4F14749
04477 -0 75400 0 00000 LK0570 PXD 0,0             S(I) TYPE MQ, OP1 (S(I-1)) = *              4F14750
04500  0 56000 4 06654        LDQ SCRIPL+4,C      PLACE PO2 (S(I-1)) IN MQ                    4F14751
04501 -0 76300 0 00006        LGL 6               IS OP2 (S(I-1)) = *                         4F14752
04502  0 40200 0 01405        SUB STAR                                                        4F14753
04503 -0 10000 0 04424        TNZ LK0030          NO - SET OP1 (S(I)) 29 = OP1 (S(I-1)) 35 =04F14754
04504 -0 50000 0 01410        CAL L(2)            YES                                         4F14755
04505 -0 60200 4 06651        ORS SCRIPL+1,C      SET OP1(S(I-1))34=1                         4F14756
04506 -0 50000 1 06650 LK0630 CAL SCRIPL,A                                                    4F14757
04507 -0 32000 0 01452        ANA MASK2           SEARCH FOR S(I) IN S(I-1)                   4F14758
04510 -3 00000 2 04423 LK0650 TXL LK0000,B,0      NOT FOUND AT ALL                            4F14759
04511  0 34000 1 06647        CAS SCRIPL-1,A                                                  4F14760
04512  1 00003 1 04515        TXI LK0700,A,3                                                  4F14761
04513  0 02000 0 04516        TRA LK0710                                                      4F14762
04514  1 00003 1 04515        TXI LK0700,A,3      NOT FOUND - CONTINUE SEARCH                 4F14763
04515  1 77775 2 04510 LK0700 TXI LK0650,B,-3                                                 4F14764
04516  0 56000 1 06646 LK0710 LDQ SCRIPL-2,A      S(I) IS SYMJ (S(I-1))                       4F14765
04517 -0 77300 0 00001        RQL 1               IS OPJ (S(I-1)) = *                         4F14766
04520  0 16200 0 04522        TQP LK0750                                                      4F14767
04521  1 00003 1 04515        TXI LK0700,A,3      NO... CONTINUE SEARCH                       4F14768
04522  0 50000 4 06650 LK0750 CLA SCRIPL,C        YES...PERMUTE EL1(S(I-1)) WITH ELJ(S(I-1)) 4F14769
04523  0 56000 1 06645        LDQ SCRIPL-3,A      EXCHANGE                                    4F14770
04524  0 60100 1 06645        STO SCRIPL-3,A      TAG                                         4F14771
04525 -0 60000 4 06650        STQ SCRIPL,C        WORDS                                       4F14772
04526 -0 50000 4 06651        CAL SCRIPL+1,C      PLACE OP1 (S(I-1)) IN ACC                   4F14773
04527  0 56000 1 06646        LDQ SCRIPL-2,A      PLACE OPJ (S(I-1)) IN MQ                    4F14774
04530  0 60200 1 06646        SLW SCRIPL-2,A      EXCHANGE                                    4F14775
04531 -0 60000 4 06651        STQ SCRIPL+1,C      OP                                          4F14776
04532 -0 32000 0 01452        ANA MASK2           WORDS AND                                   4F14777
04533 -0 60200 4 06651        ORS SCRIPL+1,C      SET OP1(S(I-1))30-33= OPJ(S(I-1))30-33      4F14778
04534  0 50000 4 06652        CLA SCRIPL+2,C      THEN                                        4F14779
04535  0 56000 1 06647        LDQ SCRIPL-1,A      EXCHANGE                                    4F14780
04536  0 60100 1 06647        STO SCRIPL-1,A      SYMBOL                                      4F14781
04537 -0 60000 4 06652        STQ SCRIPL+2,C      WORDS                                       4F14782
04540 -0 53400 1 04136        LXD AS3600,A        RESTORE XA                                  4F14783
04541 -0 50000 0 01407 LK0900 CAL L(1)            AND                                         4F14784
04542  0 02000 0 04466        TRA LK0430                                                      4F14785
04543 -0 77300 0 00033 LK0950 RQL 27              S(I) TYPE MQ, OP1 (S(I-1)) = SPOP           4F14786
04544 -0 50000 1 06650        CAL SCRIPL,A                                                    4F14787
04545 -0 32000 0 01452        ANA MASK2           EXTRACT S(I) IN ACC                         4F14788
04546  0 16200 0 04555        TQP LK1050          OP1 (S(I-1)) 33 = 0 (CLOSED SUBROUTINE)     4F14789
04547  3 00006 2 04424        TXH LK0030,B,6      OPEN MULTIV... SET OP1 (S(I)) 29 = 0        4F14790
04550  0 40200 4 06655        SUB SCRIPL+5,C      OPEN UNIV... IS S(I) = SUM2 (S(I-1))        4F14791
04551 -0 10000 0 04424        TNZ LK0030          NO... SET OP1 (S(I))29 = OP2 (S(I-1))35 = 04F14792
04552 -0 50000 0 01411        CAL L(3)            AND                                         4F14793
04553 -0 60200 4 06654        ORS SCRIPL+4,C      SET OP2 (S(I-1))34 = OP2 (S(I-1))35 = 1     4F14794
04554  0 02000 0 04467        TRA LK0440                                                      4F14795
04555 -0 77300 0 00017 LK1050 RQL 15                                                          4F14796
04556  0 16200 0 04560        TQP LK1100          TEST OP1(S(I-1))12                          4F14797
04557  0 02000 0 04424        TRA LK0030          FN-NAME                                     4F14798
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04560 -3 00006 2 04424 LK1100 TXL LK0030,B,6        CLOSED UNIV. SBRTN                                  4F14799
04561  0 40200 4 06660         SUB SCRIPL+8,C       CLOSED MULTIV. SBRTN                                4F14800
04562 -0 10000 0 04424         TNZ LK0030           S(I) NOT = SYM3 (S (I-1))                           4F14801
04563 -0 50000 0 01407         CAL L(1)             S(I) = SYM3 (S(I-1)), SO                            4F14802
04564 -0 60200 4 06657         ORS SCRIPL+7,C       SET OP3 (S(I-1))35 = 1                              4F14803
04565  0 02000 0 04467         TRA LK0440                                                               4F14804
04566 -0 75400 0 00000 LK1200  PXD 0,0              S(I) TYPE AC                                        4F14805
04567  0 56000 4 06651         LDQ SCRIPL+1,C       PLACE OP1 (S(I-1)) IN MQ                            4F14806
04570 -0 76300 0 00006         LGL 6                                                                    4F14807
04571  0 34000 0 01427         CAS SPECOP                                                               4F14808
04572  0 02000 0 04604         TRA LK1340                                                               4F14809
04573  0 02000 0 04622         TRA LK1470                                                               4F14810
04574 -0 50000 1 06650         CAL SCRIPL,A         S(I) TYPE AC, OP1 (S(I-1)) = + OR -                 4F14811
04575 -0 32000 0 01452         ANA MASK2            SEARCH FOR S(I) IN S(I-1)                           4F14812
04576 -3 00000 2 04423 LK1280  TXL LK0000,B,0       NOT FOUND AT ALL                                    4F14813
04577  0 34000 1 06647         CAS SCRIPL-1,A                                                           4F14814
04600  1 00003 1 04603         TXI LK1330,A,3                                                           4F14815
04601  0 02000 0 04522         TRA LK0750           S(I) = SOME SYMJ (S(I-1))... GO PERMUTE             4F14816
04602  1 00003 1 04603         TXI LK1330,A,3       NOT FOUND... CONTINUE SEARCH                        4F14817
04603  1 77775 2 04576 LK1330  TXI LK1280,B,-3                                                          4F14818
04604  0 16200 0 04612 LK1340  TQP LK1410                                                               4F14819
04605 -0 50000 1 06650         CAL SCRIPL,A         S(I) TYPE AC, OP1 (S(I-1)) = **                     4F14820
04606 -0 32000 0 01452         ANA MASK2                                                                4F14821
04607  0 40200 4 06652         SUB SCRIPL+2,C       IS S(I) = SYM1 (S(I-1))                             4F14822
04610 -0 10000 0 04424         TNZ LK0030           NO                                                  4F14823
04611  0 02000 0 04541         TRA LK0900           YES                                                 4F14824
04612 -0 75400 0 00000 LK1410  PXD 0,0              S(I) TYPE AC, OP1 (S(I-1)) = *                      4F14825
04613  0 56000 4 06654         LDQ SCRIPL+4,C                                                           4F14826
04614 -0 76300 0 00006         LGL 6                IS OP2 (S(I-1)) = 1                                 4F14827
04615  0 40200 0 01402         SUB SLASH                                                                4F14828
04616  0 10000 0 04506         TZE LK0630           YES                                                 4F14829
04617 -0 50000 0 01410         CAL L(2)             NO                                                  4F14830
04620 -0 60200 4 06651         ORS SCRIPL+1,C       SET OP1 (S(I-1)) 34 = 1                             4F14831
04621  0 02000 0 04423         TRA LK0000                                                               4F14832
04622 -0 77300 0 00033 LK1470  RQL 27               S(I) TYPE AC, OP1 (S(I-1)) = SPOP                   4F14833
04623 -0 50000 1 06650         CAL SCRIPL,A                                                             4F14834
04624 -0 32000 0 01452         ANA MASK2            EXTRACT S(I) IN ACC                                 4F14835
04625  0 16200 0 04630         TQP LK1530                                                               4F14836
04626  3 00006 2 04424         TXH LK0030,B,6       OPEN MULTIV.                                        4F14837
04627  0 02000 0 04472 LK1520  TRA LK0480                                                               4F14838
04630 -0 77300 0 00017 LK1530  RQL 15                                                                   4F14839
04631  0 16200 0 04472         TQP LK0480                                                               4F14840
04632  0 02000 0 04424         TRA LK0030           FN-NAME                                             4F14841
04633 -0 53400 2 05044 LK1610  LXD BETA,B           IS S(0) A SINGLE ELEMENT                            4F14842
04634 -0 75400 0 00000         PXD 0,0                                                                  4F14843
04635  0 56000 1 06646         LDQ SCRIPL-2,A                                                           4F14844
04636  3 00003 2 04655         TXH LK1780,B,3       NO                                                  4F14845
04637 -0 76300 0 00006         LGL 6                YES                                                 4F14846
04640  0 40200 0 01401         SUB 11Z              IS OP (S(0)) = + OR -                               4F14847
04641  0 10000 0 04662         TZE LKK000           OP (S(0)) = -                                       4F14848
04642 -0 50000 0 06652         CAL SCRIPL+2         OP (S(0)) = +                                       4F14849
04643 -0 32000 0 01527         ANA MASK1            DOES SYM (S(0)) = S(1)                              4F14850
04644 -0 10000 0 04662         TNZ LKK000           NO                                                  4F14851
04645 -0 50000 0 06654         CAL SCRIPL+4         YES - PLACE OP1 (S(1)) IN ACC                       4F14852
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04646 -0 32000 0 01404          ANA  12Z                                          4F14853
04647  0 10000 0 04662          TZE  LKK000          OP1 (S(1)) 31 = 0         4F14854
04650 -0 60200 0 06651          ORS  SCRIPL+1        SET OP (S(0)) 31 = 1      4F14855
04651  0 76700 0 00002          ALS  2                                         4F14856
04652 -0 60200 0 06654          ORS  SCRIPL+4        SET OP1 (S(1)) 29 = 1     4F14857
04653  0 77100 0 00006          ARS  6                                         4F14858
04654  0 02000 0 04661          TRA  LK1820                                    4F14859
04655  0 16200 0 04662 LK1780   TQP  LKK000          S(0) TYPT AC              4F14860
04656 -0 77300 0 00001          RQL  1                                         4F14861
04657  0 16200 0 04662          TQP  LKK000          S(0) TYPE AC              4F14862
04660 -0 50000 0 01404          CAL  12Z             S(0) TYPE MQ, SO          4F14863
04661 -0 60200 0 06651 LK1820   ORS  SCRIPL+1                                  4F14864
04662 -0 53400 5 01117 LKK000   LXD  3QBAR,5         -3Q TO XA,XC              4F14865
04663 -0 50000 4 06645          CAL  SCRIPL-3,C                                4F14866
04664  0 73400 2 00000          PAX  0,B                                       4F14867
04665  0 50000 2 05044          CLA  BETA,B                                    4F14868
04666  0 62200 0 04667          STD  LKK050                                    4F14869
04667  1 00000 4 04670 LKK050   TXI  LKK060,C,0      BACK UP XA TO 1ST ELEMENT OF LAST SEGMENT  4F14870
04670 -0 75400 0 00000 LKK060   PXD  0,0                                       4F14871
04671  0 56000 4 06651          LDQ  SCRIPL+1,C      PLACE OP1 OF LAST SEGMENT IN MQ  4F14872
04672 -0 76300 0 00006          LGL  6                                         4F14873
04673  0 40200 0 01405          SUB  STAR                                      4F14874
04674 -0 10000 0 04703          TNZ  PC0000                                    4F14875
04675  0 16200 0 04677          TQP  LKK130                                    4F14876
04676  0 02000 0 04703          TRA  PC0000                                    4F14877
04677  0 56000 4 06654 LKK130   LDQ  SCRIPL+4,C      OP1 OF LAST SEGMENT IS *  4F14878
04700 -0 76300 0 00002          LGL  2                                         4F14879
04701  0 76000 0 00001          LBT                                            4F14880
04702 -0 60200 4 06651          ORS  SCRIPL+1,C      OP2 IS *, SO SET OP1 (S(L)) 34 = 1  4F14881
04703 -0 53400 4 01122 PC0000   LXD  ARGCTR,C       IS THIS AN FS             4F14882
04704  3 00000 4 04706          TXH  PC0030,C,0                                4F14883
04705  1 00001 4 04707          TXI  PC0040,C,1      NO                        4F14884
04706  0 53400 4 01406 PC0030   LXA  L(0),C          YES                       4F14885
04707 -0 50000 1 06645 PC0040   CAL  SCRIPL-3,A                                4F14886
04710  0 73400 2 00000          PAX  0,B                                       4F14887
04711 -3 00000 2 04725          TXL  PC0190,B,0      EXIT AT S(0)              4F14888
04712  0 50000 2 05044          CLA  BETA,B                                    4F14889
04713  0 62200 0 04714          STD  PC0100                                    4F14890
04714  1 00000 1 04715 PC0100   TXI  PC0110,A,0                                4F14891
04715  0 56000 1 06651 PC0110   LDQ  SCRIPL+1,A      PLACE OP1 (S(I)) IN MQ    4F14892
04716 -0 76300 0 00036          LGL  30                                        4F14893
04717  0 76000 0 00001          LBT                                            4F14894
04720  1 00454 0 04722 PC0140   TXI  PC0160,0,300                              4F14895
04721  0 16200 0 04707          TQP  PC0040          OP1 (S(I)) 29= 1 AND OP1 (S(I)) 30 = 0  4F14896
04722 -0 75400 4 00000 PC0160   PXD  0,C             OP1 (S(I)) 29 = 0 OR OP1 (S(I)) 30 = 1  4F14897
04723  0 62200 2 05044          STD  BETA,B          STORE ERAS. REL. ADD. COUNT IN BETA,  4F14898
04724  1 00001 4 04707          TXI  PC0040,C,1      AND UPDATE FOR NEXT SEGMENT  4F14899
04725 -0 53400 2 04720 PC0190   LXD  PC0140,B                                  4F14900
04726  0 50000 2 05520 PC0200   CLA  BETA+300,B                                4F14901
04727  0 60100 2 06650          STO  CPBETA+300,B                              4F14902
04730  2 00001 2 04726          TIX  PC0200,B,1                                4F14903
04731  0 02000 0 02410          TRA  STATED          GO FETCH STATE D          4F14904
                                * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * 4F14905
                                                                               4F14906
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                                    DICTIONARY OF OPEN SUBROUTINES FOLLOWS                          4F14907
04732 -272122626060     OPSUB  OCT 672122626060      XABS                                         4F14908
04733 +212262606060            OCT 212262606060      ABS                                          4F14909
04734 -273145636060            OCT 673145636060      XINT                                         4F14910
04735 +314563606060            OCT 314563606060      INT                                          4F14911
04736 -274446246060            OCT 674446246060      XMOD                                         4F14912
04737 -044624606060            OCT 444624606060      MOD                                          4F14913
04740 -274421670060            OCT 674421670060      XMAX0                                        4F14914
04741 -042167016060            OCT 442167016060      MAX1                                         4F14915
04742 -274421670160            OCT 674421670160      XMAX1                                        4F14916
04743 -042167006060            OCT 442167006060      MAX0                                         4F14917
04744 -274431450060            OCT 674431450060      XMIN0                                        4F14918
04745 -043145016060            OCT 443145016060      MIN1                                         4F14919
04746 -274431450160            OCT 674431450160      XMIN1                                        4F14920
04747 -043145006060            OCT 443145006060      MIN0                                         4F14921
04750 +264346216360            OCT 264346216360      FLOAT                                        4F14922
04751 -272631676060            OCT 672631676060      XFIX                                         4F14923
04752 -223127456060            OCT 623127456060      SIGN                                         4F14924
04753 -276231274560            OCT 676231274560      XSIGN                                        4F14925
04754 -272431446060            OCT 672431446060      XDIM                                         4F14926
04755 +243144606060            OCT 243144606060      DIM                                          4F14927
                 04756         BSS 10                                                             4F14928
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F14929
                 04770 ENDCDR  BSS 0                                                              4F149295
                                                                                                   4F14930
                 05044 ENDC    ORG 2596                                                           4F14931
                 05044 BETA    BSS 300                                                            4F14932
                                     END OF ARITHMETIC / STATE C.                                  4F14933
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F14934
                                                                                                   4F14935
                                    ARITHMETIC / STATE D=                                          4F14936
                                    704 FORTRAN MASTER RECORD CARD / STATE D = F0160000.           4F14937
                 00000         ORG 0                                                              4F149371
00000  0 00471 0 03440         PZE ORGD,,CLDR00                                                   4F149372
00001  0 00000 0 06157         PZE ENDD-1                                                         4F149373
                                                                                                   4F14938
                 03440 ORGD    ORG 1824                                                           4F14939
03440 -0 53400 1 01117 MC0000  LXD 3QBAR,A           MODE CHECKING ROUTINE                        4F14940
03441 -0 63400 1 03512         SXD MC0420,A                                                       4F14941
03442  0 53400 1 01406         LXA L(0),A                                                         4F14942
03443 -0 63400 1 03461 MC0030  SXD XASAVE,A                                                       4F14943
03444 -0 50000 1 06650         CAL SCRIPL,A                                                       4F14944
03445  0 73400 2 00000 MC0050  PAX ,2                S(I) TO XB                                   4F14945
03446  0 50000 2 06174         CLA CPBETA,B                                                       4F14946
03447  0 73400 2 00454 MC0070  PAX TAU2,B                                                         4F14947
03450 -0 63400 2 03511         SXD MC0410,B                                                       4F14948
03451 -0 63400 2 03516         SXD MC0460,B                                                       4F14949
03452  3 77772 2 03511         TXH MC0410,B,-6       SINGLE ELEMENT - GO ONTO S(I+1)              4F14950
03453  0 76000 0 00140         SLF                   TURN OFF ALL SENSE LITES                     4F14951
03454 -0 75400 0 00000         PXD 0,0               CLEAR ACC                                    4F14952
03455  0 56000 1 06651         LDQ SCRIPL+1,A        PLACE OP1 (S(I)) IN MQ                       4F14953
03456 -0 76300 0 00006         LGL 6                                                              4F14954
03457  0 34000 0 01427         CAS SPECOP                                                         4F14955
03460  0 16200 0 03462         TQP MC0180                                                         4F14956
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03461   1 00000 0 03511 XASAVE TXI MC0410,0,0
03462  -0 76300 0 00032 MC0180 LGL 26                 OP1 (S(I)) = +, - OR *
03463   0 16200 0 03465         TQP MC0210              FIX PT
03464   0 76000 0 00141         SLN 1                   FLO PT
03465  -0 75400 0 00000 MC0210 PXD 0,0
03466   0 56000 1 06652         LDQ SCRIPL+2,A          PLACE SYMJ (S(I)) IN MQ - J = 1,...
03467  -0 76300 0 00001         LGL 1
03470   0 76000 0 00001         LBT
03471   0 16200 0 03514         TQP MC0440
03472  -0 76300 0 00005         LGL 5                   SYMJ (S(I)) IS A VARIABLE
03473   0 34000 0 01423         CAS L(H)
03474   0 34000 0 01425         CAS L(O)
03475   1 00000 0 03502 XBSAVE  TXI MC0340,0,0          FLO PT
03476   0 02000 0 03502         TRA MC0340              FLO PT
03477  -0 76000 0 00141 MC0310 SLT 1                   SYMJ (S(I)) IS A FIX PT VARIABLE
03500   1 00003 2 03506         TXI MC0380,B,3          OK
03501   0 07400 4 03400         TSX DIAG,4              ERROR.. FLO PT LITE ON
03502  -0 76000 0 00141 MC0340 SLT 1                   SYMJ(S(I)) IS A FLO PT VARIABLE
03503   0 07400 4 03400         TSX DIAG,4              ERROR.. FLO PT LITE OFF
03504   0 76000 0 00141         SLN 1                   RESTORE FLO PT LITE
03505   1 00003 2 03506         TXI MC0380,B,3
03506  -3 00000 2 03510 MC0380 TXL MC0400,B,0          FINISHED WITH S(I)
03507   1 77775 1 03465         TXI MC0210,A,-3         CONTINUE SCANNING S(I), J TO J+1
03510  -0 53400 1 03461 MC0400 LXD XASAVE,A            GO TO S(I+1)
03511   1 00000 1 03512 MC0410 TXI MC0420,A,0
03512   3 00000 1 03443 MC0420 TXH MC0030,A,0
03513   0 02000 0 03537         TRA CP0000              EXIT TO COMPILER
03514  -0 63400 2 03475 MC0440 SXD XBSAVE,B            SYMJ (S(ITT = SAME S(K)
03515  -0 53400 4 03461         LXD XASAVE,C
03516   1 00000 4 03517 MC0460 TXI MC0470,C,0          MOVE XC TO 1ST ELEMENT OF S(I+1)
03517  -0 50000 4 06650 MC0470 CAL SCRIPL,C
03520  -0 32000 0 01452         ANA MASK2              EXTRACT S(K) IN ACC
03521   0 34000 1 06652         CAS SCRIPL+2,A         AND COMPARE WITH SYMJ (S(I))
03522   0 02000 0 03524         TRA MC0520
03523   0 02000 0 03531         TRA MC0570
03524   0 73400 2 01226 MC0520 PAX SIGMA1,B            S(K) TO XB
03525   0 50000 2 06174         CLA CPBETA,B
03526   0 73400 2 00000 MC0540 PAX TAU1,B
03527  -0 63400 2 03530         SXD MC0560,B
03530   1 00000 4 03517 MC0560 TXI MC0470,C,0
03531  -0 53400 2 03475 MC0570 LXD XBSAVE,B            SYMJ (S(I)) = S(K) FOR SOME K
03532  -0 50000 4 06651         CAL SCRIPL+1,C         PLACE OP1 (S(K)) IN ACC
03533   0 77100 0 00003         ARS 3
03534   0 76000 0 00001         LBT
03535   0 02000 0 03477         TRA MC0310             S(K) IS FIX PT
03536   0 02000 0 03502         TRA MC0340             S(K) IS FLO PT

03537   0 76000 0 00140 CP0000 SLF                     TURN OFF ALL SENSE LITES
03540   0 60000 0 06160         STZ FNSW
03541  -0 53400 4 01122         LXD ARGCTR,C           IS THIS AN FS STATEMENT
03542  -3 00000 4 03550         TXL CP0090,C,0         NO
03543   0 07400 4 01731         TSX CIT00,C            YES - COMPILE FOUR 36 - BIT
03544   0 00000 0 01531         HTR ALL1               STRINGS IN 1 AS A PRELUDE TO
03545   0 00000 0 01531         HTR ALL1               FS STATEMENT COMPILATION
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03546  0 00000 0 01531          HTR ALL1                                                    4F15011
03547  0 00000 0 01531          HTR ALL1                                                    4F15012
03550 -0 50000 0 00030 CP0090   CAL EIFNO                                                   4F15013
03551 -0 32000 0 01527          ANA MASK1                                                   4F15014
03552  0 60200 0 06164          SLW CW                STO INT. FORM. NO. IN DEC. FIELD OF CW.  4F15015
03553 -0 53400 1 01117          LXD 3QBAR,A           -3Q TO XA                             4F15016
03554  0 50000 1 06645 CP0130   CLA SCRIPL-3,A        EXTRACT CURRENT S(I)                  4F15017
03555  0 73400 2 00000 CP0140   PAX ,2                                                      4F15018
03556  0 50000 2 06174          CLA CPBETA,B                                                4F15019
03557  0 62200 0 01363          STD PHI(I)            STO ERAS. REL. ADD. IN PHI (I)        4F15020
03560 -0 32000 0 01452          ANA MASK2                                                   4F15021
03561  0 73400 2 01356 CP0180   PAX TAU3,B                                                  4F15022
03562 -0 63400 2 03607          SXD CP0400,B                                                4F15023
03563  0 76000 0 00006          COM                                                         4F15024
03564  0 40000 0 01407          ADD L(1)                                                    4F15025
03565  0 76700 0 00022          ALS 18                                                      4F15026
03566  0 62200 0 03567          STD CP0240                                                  4F15027
03567  1 00000 1 03570 CP0240   TXI CP0250,A,0        MOVE XA TO 1ST ELEMENT OF CURRENT S(I)  4F15028
03570 -0 63400 1 01117 CP0250   SXD 3QBAR,A                                                 4F15029
03571  0 56000 1 06651          LDQ SCRIPL+1,A        EXAMINE OP1 (S(I)) 29,30,31,32        4F15030
03572 -0 76300 0 00036          LGL 30                                                      4F15031
03573  0 76000 0 00001          LBT                                                         4F15032
03574  0 02000 0 03576          TRA CP0310            OP1 (S(I)) 29 = 0                     4F15033
03575  0 16200 0 03604          TQP CP0370            OP1 (S(I)) 30 = 0                     4F15034
03576  0 76000 0 00141 CP0310   SLN 1                 OP1 (S(I)) 29 = 0 OR OP1 (S(I)) 30 = 1, SO 4F15035
03577 -0 77300 0 00001          RQL 1                 SET STORE LITE                        4F15036
03600  0 16200 0 03602          TQP CP0350            OP1 (S(I)) 31 = 0, SO SET STO LITE    4F15037
03601  0 76000 0 00142          SLN 2                 OP1 (S(I)) 31 = 1, SO SET STQ LITE    4F15038
03602 -0 77300 0 00001 CP0350   RQL 1                                                       4F15039
03603  0 02000 0 03605          TRA CP0380                                                  4F15040
03604 -0 77300 0 00002 CP0370   RQL 2                                                       4F15041
03605  0 16200 0 03611 CP0380   TQP CP0420            TEST OP1 (S(I)) 32                    4F15042
03606 -0 76000 0 00144          SLT 4                 OP1 (S(I)) 32 = 1, SO SET FLPTSW      4F15043
03607  3 00000 0 00000 CP0400   TXH 0,0,0                                                   4F15044
03610  0 02000 0 03612          TRA CP0430                                                  4F15045
03611  0 76000 0 00144 CP0420   SLN 4                 OP1 (S(I)) 32 = 0, SO SET FXPTSW      4F15046
03612 -0 75400 0 00000 CP0430   PXD 0,0                                                     4F15047
03613  0 56000 1 06651          LDQ SCRIPL+1,A        PLACE OP1 (S(I)) IN MQ                4F15048
03614 -0 76300 0 00006          LGL 6                                                       4F15049
03615  0 34000 0 01427          CAS SPECOP                                                  4F15050
03616  1 00000 0 03672          TXI CP0960,0,0                                              4F15051
03617  1 77775 1 04026          TXI CP2040,A,-3                                             4F15052
03620  0 40200 0 01401          SUB 11Z                                                     4F15053
03621  0 10000 0 03650          TZE CP0760                                                  4F15054
03622 -0 76300 0 00035          LGL 29                OP1 (S(I)) = +                        4F15055
03623  0 16200 0 03710          TQP CP1130            OP1 (S(I)) 35 = 0                     4F15056
03624 -0 53400 2 03607 CP0540   LXD CP0400,B          OP1 (S(I)) 35 = 1                     4F15057
03625  1 00003 2 03626          TXI CP0560,B,3                                              4F15058
03626 -3 00000 2 04622 CP0560   TXL ES0000,B,0        GO TO END-OF-SEGMENT SBRTN            4F15059
03627 -0 63400 2 03607          SXD CP0400,B                                                4F15060
03630  1 77775 1 03631          TXI CP0590,A,-3                                             4F15061
03631 -0 75400 0 00000 CP0590   PXD 0,0                                                     4F15062
03632  0 56000 1 06651          LDQ SCRIPL+1,A        PLACE OPJ (S(I)) IN MQ                4F15063
03633 -0 76300 0 00006          LGL 6                                                       4F15064
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03634   0 34000 0 01405          CAS STAR
03635   0 02000 0 03716          TRA CP1200
03636   0 02000 0 03771          TRA CP1720
03637   0 40200 0 01401          SUB 11Z
03640   0 10000 0 03663          TZE CP0880
03641  -0 50000 0 01550          CAL L(FAD)
03642  -0 76000 0 00144          SLT 4
03643   0 02000 0 03646          TRA CP0740
03644   0 76000 0 00144          SLN 4
03645  -0 50000 0 01532          CAL L(ADD)
03646   0 60200 0 06165 CP0740   SLW CW+1
03647   0 02000 0 03766          TRA CP1690
03650  -0 76300 0 00035 CP0760   LGL 29
03651   0 16200 0 03660          TQP CP0850
03652  -0 50000 0 01540          CAL L(CHS)
03653   0 60200 0 06165          SLW CW+1
03654   0 60000 0 06166          STZ CW+2
03655   0 60000 0 06167          STZ CW+3
03656   0 07400 2 05104          TSX COMP,B
03657   0 02000 0 03624          TRA CP0540
03660  -0 50000 0 01543 CP0850   CAL L(CLS)
03661   0 60200 0 06165          SLW CW+1
03662   0 02000 0 03712          TRA CP1150
03663  -0 50000 0 01553 CP0880   CAL L(FSB)
03664  -0 76000 0 00144          SLT 4
03665   0 02000 0 03670          TRA CP0940
03666   0 76000 0 00144          SLN 4
03667  -0 50000 0 01574          CAL L(SUB)
03670   0 60200 0 06165 CP0940   SLW CW+1
03671   0 02000 0 03766          TRA CP1690
03672   0 16200 0 03674 CP0960   TQP CP0980
03673   0 02000 0 04363          TRA CP4140
03674  -0 76300 0 00035 CP0980   LGL 29
03675   0 76000 0 00143          SLN 3
03676   0 76000 0 00001          LBT
03677   0 02000 0 03702          TRA CP1050
03700  -0 76000 0 00143          SLT 3
03701   3 00000 0 00000          TXH 0,0,0
03702   0 16200 0 03704 CP1050   TQP CP1070
03703   0 02000 0 03624          TRA CP0540
03704  -0 50000 0 01556 CP1070   CAL L(LDQ)
03705  -0 76000 0 00143          SLT 3
03706   0 02000 0 03711          TRA CP1140
03707   0 76000 0 00143          SLN 3
03710  -0 50000 0 01541 CP1130   CAL L(CLA)
03711   0 60200 0 06165 CP1140   SLW CW+1
03712   0 07400 4 05112 CP1150   TSX AC0000,C
03713   0 07400 2 05104          TSX COMP,B
03714   0 60000 0 06164          STZ CW
03715   0 02000 0 03624          TRA CP0540
03716  -0 76000 0 00143 CP1200   SLT 3
03717   0 02000 0 03731          TRA CP1330
03720  -0 76000 0 00144          SLT 4
03721   0 02000 0 03764          TRA CP1670
```

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                                                    4F15065
OPJ (S(I)) = /                                      4F15066
OPJ (S(I)) = *                                      4F15067
                                                    4F15068
OPJ (S(I)) = -                                      4F15069
OPJ (S(I)) = +                                      4F15070
                                                    4F15071
                                                    4F15072
FIX PT. RESTORE FXPTSW                              4F15073
                                                    4F15074
                                                    4F15075
                                                    4F15076
OP1 (S(I)) = -                                      4F15077
                                                    4F15078
OP1 (S(I)) 35 = 1, SO                               4F15079
COMPILE CHS FOR 1ST ELEMENT                         4F15080
                                                    4F15081
                                                    4F15082
                                                    4F15083
                                                    4F15084
OP1 (S(I)) 35 = 0, SO                               4F15085
COMPILE CLS SYM1 (S(I)) FOR 1ST ELEMENT             4F15086
                                                    4F15087
OPJ (S(I)) = -                                      4F15088
                                                    4F15089
                                                    4F15090
FIX PT. RESTORE FXPTSW                              4F15091
                                                    4F15092
                                                    4F15093
                                                    4F15094
                                                    4F15095
                                                    4F15096
OP1 (S(I)) = *                                      4F15097
TURN LITE 3 ON                                      4F15098
TEST OP1 (S(I)) 34                                  4F15099
OP1 (S(I)) 34 = 0, SO LEAVE LITE 3 ON               4F15100
OP1 (S(I)) 34 = 1, SO TURN LITE 3 OFF               4F15101
                                                    4F15102
                                                    4F15103
OP1 (S(I)) 35 = 1, SO GO MODIFY J                   4F15104
OP1 (S(I)) 35 = 0                                   4F15105
                                                    4F15106
EL1 (S(II) TO MQ                                    4F15107
EL1 (S(II) TO ACC                                   4F15108
                                                    4F15109
                                                    4F15110
ADDRESS COMPILE SYM1 (S(I))                         4F15111
                                                    4F15112
RESET CW                                            4F15113
GO MODIFY J                                         4F15114
OPJ (S(I)) = /                                      4F15115
                                                    4F15116
PREDECESSOR IN ACC                                  4F15117
FLO PT.                                             4F15118
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03722   0 76000 0 00144          SLN 4                    FIX PT. RESTORE FXPTSW                  4F15119
03723   0 07400 4 01731          TSX CIT00,C              COMPILE LRS 35                          4F15120
03724   0 00000 0 01406          HTR L(0)                                                         4F15121
03725   0 00000 0 01560          HTR L(LRS)                                                       4F15122
03726   0 00000 0 01406          HTR L(0)                                                         4F15123
03727   0 00000 0 01472          HTR DEC35                                                        4F15124
03730   0 02000 0 03734          TRA CP1450                                                       4F15125
03731  -0 76000 0 00144 CP1330   SLT 4                    PREDECESSOR IN MQ                       4F15126
03732   0 02000 0 03753          TRA CP1570               AND SEGMENT IS                          4F15127
03733   0 76000 0 00144          SLN 4                    FIX PT. RESTORE FXPTSW                  4F15128
03734   0 50000 0 01547 CP1450   CLA L(DVP)                                                       4F15129
03735   0 60100 0 06165          STO CW+1                                                         4F15130
03736   0 07400 4 05112          TSX AC0000,C             ADDRESS COMPILE SYMJ (S(I))             4F15131
03737   0 07400 2 05104          TSX COMP,B               COMPILE DVP SYMJ (S(I))                 4F15132
03740   0 07400 4 01731          TSX CIT00,C              COMPILE CLM                             4F15133
03741   0 00000 0 01406          HTR L(0)                                                         4F15134
03742   0 00000 0 01542          HTR L(CLM)                                                       4F15135
03743   0 00000 0 01406          HTR L(0)                                                         4F15136
03744   0 00000 0 01406          HTR L(0)                                                         4F15137
03745   0 07400 4 01731          TSX CIT00,C              COMPILE LLS 18                          4F15138
03746   0 00000 0 01406          HTR L(0)                                                         4F15139
03747   0 00000 0 01557          HTR L(LLS)                                                       4F15140
03750   0 00000 0 01406          HTR L(0)                                                         4F15141
03751   0 00000 0 01466          HTR DEC18                                                        4F15142
03752   0 02000 0 03624          TRA CP0540               GO MODIFY J                             4F15143
03753   0 50000 0 01573 CP1570   CLA L(STQ)              PREDECESSOR IN MQ                       4F15144
03754   0 60100 0 06165          STO CW+1                 AND SEGMENT IS FLO PT                   4F15145
03755   0 50000 0 01505          CLA X(                                                           4F15146
03756   0 60100 0 06166          STO CW+2                                                         4F15147
03757   0 60000 0 06167          STZ CW+3                                                         4F15148
03760   0 07400 2 05104          TSX COMP,B               COMPILE STQ 700000                      4F15149
03761   0 50000 0 01541          CLA L(CLA)                                                       4F15150
03762   0 60100 0 06165          STO CW+1                                                         4F15151
03763   0 07400 2 05104          TSX COMP,B               COMPILE CLA 700000                      4F15152
03764   0 50000 0 01551 CP1670   CLA L(FDP)                                                       4F15153
03765   0 60100 0 06165          STO CW+1                 COMPILE FDP SYMJ (S(I))                 4F15154
03766   0 07400 4 05112 CP1690   TSX AC0000,C             ADDRESS COMPILE SYMJ (S(I))             4F15155
03767   0 07400 2 05104          TSX COMP,B                                                       4F15156
03770   0 02000 0 03624          TRA CP0540               GO MODIFY J                             4F15157
03771  -0 76000 0 00143 CP1720   SLT 3                    OPJ(S(I))=*                             4F15158
03772   0 02000 0 04004          TRA CP1840                                                       4F15159
03773   0 50000 0 01572          CLA L(STO)               PREDECESSOR IN ACC                      4F15160
03774   0 60100 0 06165          STO CW+1                                                         4F15161
03775   0 50000 0 01505          CLA X(                                                           4F15162
03776   0 60100 0 06166          STO CW+2                                                         4F15163
03777   0 60000 0 06167          STZ CW+3                                                         4F15164
04000   0 07400 2 05104          TSX COMP,B               COMPILE STO 700000                      4F15165
04001   0 50000 0 01556          CLA L(LDQ)                                                       4F15166
04002   0 60100 0 06165          STO CW+1                                                         4F15167
04003   0 07400 2 05104          TSX COMP,B               COMPILE LDQ 700000                      4F15168
04004   0 76000 0 00143 CP1840   SLN 3                    TURN LATE 3 ON                          4F15169
04005   0 07400 4 05112          TSX AC0000,C             ADDRESS COMPILE SYMJ(S(I))              4F15170
04006  -0 76000 0 00144          SLT 4                                                            4F15171
04007   0 02000 0 04022          TRA CP2000                                                       4F15172
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04010  0 76000 0 00144          SLN 4                FIX PT. RESTORE FXPTSW                4F15173
04011  0 50000 0 01562          CLA L(MPY)                                                 4F15174
04012  0 60100 0 06165          STO CW+1                                                   4F15175
04013  0 07400 2 05104          TSX COMP,B           COMPILE MPY SYMJ(S(I))                4F15176
04014  0 07400 4 01731          TSX CIT00,C          COMPILE ALS 17                        4F15177
04015  0 00000 0 01406          HTR L(0)                                                   4F15178
04016  0 00000 0 01533          HTR L(ALS)                                                 4F15179
04017  0 00000 0 01406          HTR L(0)                                                   4F15180
04020  0 00000 0 01465          HTR DEC17                                                  4F15181
04021  0 02000 0 03624          TRA CP0540           GO MODIFY J                           4F15182
04022  0 50000 0 01552 CP2000   CLA L(FMP)           FLO PT.                               4F15183
04023  0 60100 0 06165          STO CW+1                                                   4F15184
04024  0 07400 2 05104          TSX COMP,B           COMPILE FMP SYMJ(S(I))                4F15185
04025  0 02000 0 03624          TRA CP0540           GO MODIFY J.                          4F15186
04026 -0 76300 0 00007 CP2040   LGL 7                OP1(S(I))=SPOP                        4F15187
04027  0 76000 0 00001          LBT                  TEST OP1(S(I))12                      4F15188
04030  0 16200 0 04150          TQP CP2650           LIB OR OPEN FUNCTION                  4F15189
04031  0 16200 0 04473          TQP CP5000           FN-FUNCTION                           4F15190
04032 -0 75400 0 00000          PXD 0,0              FS-FUNCTION                           4F15191
04033  0 76300 0 00017          LLS 15               PUT TYPE NO IN ADD(ACC)               4F15192
04034 -0 50100 0 01503          ORA P(               FORM 4...TYPE NO.                     4F15193
04035  0 60200 0 06162          SLW ARGORG           AND STO IN ARGORG                     4F15194
04036 -0 32000 0 01452          ANA MASK2                                                  4F15195
04037 -0 50100 0 01505          ORA X(               FORM 7...TYPE NO.                     4F15196
04040  0 60200 0 06163          SLW XRSAVE           AND STO IN XRSAVE                     4F15197
04041  0 50000 1 06651          CLA SCRIPL+1,A                                             4F15198
04042  0 76000 0 00001          LBT                  EXAMINE OP2(S(I))35                   4F15199
04043  0 02000 0 04052          TRA CP2150           1ST ARG STORED                        4F15200
04044  0 07400 4 01731 CP2100   TSX CIT00,C          1ST ARG IN ACC                        4F15201
04045  0 00000 0 01406          HTR L(0)             COMPILE STO 4...TYPE NO. + 0          4F15202
04046  0 00000 0 01572          HTR L(STO)                                                 4F15203
04047  0 00000 0 06162          HTR ARGORG                                                 4F15204
04050  0 00000 0 01406          HTR L(0)                                                   4F15205
04051  1 77775 1 04057          TXI CP2200,A,-3      GO ON TO OP3(S(I))                    4F15206
04052 -0 50000 0 01541 CP2150   CAL L(CLA)                                                 4F15207
04053  0 60200 0 06165          SLW CW+1                                                   4F15208
04054  0 07400 4 05112          TSX AC0000,C         ADDRESS COMPILE SYM2(S(I))            4F15209
04055  0 07400 2 05104          TSX COMP,B           COMPILE CLA SYM2(S(I))                4F15210
04056  0 02000 0 04044          TRA CP2100                                                 4F15211
04057  0 60000 0 06164 CP2200   STZ CW               RESET CW                              4F15212
04060 -0 53400 2 03607          LXD CP0400,B                                               4F15213
04061  1 00003 2 04062          TXI CP2230,B,3                                             4F15214
04062  3 77772 2 04125 CP2230   TXH CP2500,B,-6      FINISHED WITH S(I)                    4F15215
04063 -0 63400 2 03607          SXD CP0400,B                                               4F15216
04064  0 50000 1 06651          CLA SCRIPL+1,A                                             4F15217
04065  0 76000 0 00001          LBT                  EXAMINE OP3(S(I))35                   4F15218
04066  0 02000 0 04075          TRA CP2300           2ND ARG STORED                        4F15219
04067  0 07400 4 01731 CP2250   TSX CIT00,C          2ND ARG IN MQ                         4F15220
04070  0 00000 0 01406          HTR L(0)             COMPILE STQ 4...TYPE NO. + 1          4F15221
04071  0 00000 0 01573          HTR L(STQ)                                                 4F15222
04072  0 00000 0 06162          HTR ARGORG                                                 4F15223
04073  0 00000 0 01454          HTR 2E18                                                   4F15224
04074  1 77775 1 04102          TXI CP2350,A,-3      GO ON TO SYM4(S(I))                   4F15225
04075 -0 50000 0 01556 CP2300   CAL L(LDQ)                                                 4F15226
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04076   0 60200 0 06165          SLW CW+1                                    4F15227
04077   0 07400 4 05112          TSX AC0000,C      ADDRESS COMPILE SYM3(S(I))4F15228
04100   0 07400 2 05104          TSX COMP,B        COMPILE LDQ SYM3(S(I))    4F15229
04101   0 02000 0 04067          TRA CP2250                                  4F15230
04102   0 50000 0 01521 CP2350   CLA DECMI2        INITIALIZE DEC(P(CNTR) TO 2 4F15231
04103   0 60200 0 06161          SLW P(CNTR                                  4F15232
04104  -0 53400 2 03607 CP2370   LXD CP0400,B                                4F15233
04105   1 00003 2 04106          TXI CP2390,B,3                              4F15234
04106   3 77772 2 04125 CP2390   TXH CP2500,B,-6   FINISHED WITH S(I)        4F15235
04107  -0 63400 2 03607          SXD CP0400,B                                4F15236
04110  -0 50000 0 01541          CAL L(CLA)                                  4F15237
04111   0 60200 0 06165          SLW CW+1                                    4F15238
04112   0 07400 4 05112          TSX AC0000,C      ADDRESS COMPILE SYMJ(S(I)), J=4,••• 4F15239
04113   0 07400 2 05104          TSX COMP,B        COMPILE CLA SYMJ(S(I)), J=4,••• 4F15240
04114   0 07400 4 01731          TSX CIT00,C       COMPILE STO 4•••TYPE NO. + J-2, J=4,••• 4F15241
04115   0 00000 0 01406          HTR L(0)                                    4F15242
04116   0 00000 0 01572          HTR L(STO)                                  4F15243
04117   0 00000 0 06162          HTR ARGORG                                  4F15244
04120   0 00000 0 06161          HTR P(CNTR                                  4F15245
04121   0 50000 0 06161          CLA P(CNTR        UPDATE P(CNTR             4F15246
04122   0 40000 0 01454          ADD 2E18                                    4F15247
04123   0 60100 0 06161          STO P(CNTR                                  4F15248
04124   1 77775 1 04104          TXI CP2370,A,-3                             4F15249
04125  -0 53400 1 01117 CP2500   LXD 3QBAR,A      FINISHED WITH S(I)        4F15250
04126  -0 50000 0 01575          CAL L(SXD)                                  4F15251
04127   0 60200 0 06165          SLW CW+1                                    4F15252
04130  -0 50000 0 06163          CAL XRSAVE                                  4F15253
04131   0 60200 0 06166          SLW CW+2                                    4F15254
04132  -0 50000 0 01412          CAL L(4)                                    4F15255
04133   0 60200 0 06167          SLW CW+3                                    4F15256
04134   0 07400 2 05104          TSX COMP,B        COMPILE SXD 7•••TYPE NO. , 4 4F15257
04135  -0 50000 0 01602          CAL L(TSX)                                  4F15258
04136   0 60200 0 06165          SLW CW+1                                    4F15259
04137  -0 50000 1 06652          CAL SCRIPL+2,A                              4F15260
04140   0 60200 0 06166          SLW CW+2                                    4F15261
04141   0 07400 2 05104          TSX COMP,B        COMPILE TSX SYM1(S(I)),4  4F15262
04142  -0 50000 0 01561          CAL L(LXD)                                  4F15263
04143   0 60200 0 06165          SLW CW+1                                    4F15264
04144  -0 50000 0 06163          CAL XRSAVE                                  4F15265
04145   0 60200 0 06166          SLW CW+2                                    4F15266
04146   0 02000 0 05241          TRA CP6000                                  4F15267
04147   1 00000 0 04622 CP5830   TXI ES0000,0,0                               4F15268
                                                                             4F15269
04150  -0 76300 0 00024 CP2650   LGL 20            TEST OP1(S(I))33          4F15270
04151   0 16200 0 04217          TQP CP3060        0••• LIB. SBRTN           4F15271
04152   0 50200 0 06164          CLS CW            1••• OPEN SBRTN           4F15272
04153   0 60100 0 06164          STO CW            CW TO -CW                 4F15273
04154   0 50000 1 06647          CLA SCRIPL-1,A                              4F15274
04155   0 60100 0 06166          STO CW+2                                    4F15275
04156   0 07400 2 05104          TSX COMP,B        COMPILE FUNCTION NAME     4F15276
04157   0 60000 0 06164          STZ CW            RESET CW                  4F15277
04160  -0 53400 2 03607          LXD CP0400,B                                4F15278
04161  -3 77767 2 04203          TXL CP2930,B,-9                             4F15279
04162  -0 50000 0 01531          CAL ALL1          OPEN UNIVARIATE FUNCTION  4F15280
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04163   0 60200 0 06164          SLW CW                                          4F15281
04164   0 50000 1 06651          CLA SCRIPL+1,A                                  4F15282
04165   0 76000 0 00001          LBT                    EXAMINE OP2(S(I))35      4F15283
04166   0 02000 0 04201          TRA CP2900             0... ARG STORED          4F15284
04167   0 77100 0 00001          ARS 1                  1... ARG NOT STORED      4F15285
04170   0 56000 0 01512          LDQ ADPLUS                                      4F15286
04171   0 76000 0 00001          LBT                                             4F15287
04172   0 02000 0 04174          TRA CP2860                                      4F15288
04173   0 56000 0 01524          LDQ ADSTAR                                      4F15289
04174  -0 60000 0 06166 CP2860   STQ CW+2                                       4F15290
04175   0 60000 0 06167          STZ CW+3                                        4F15291
04176   0 07400 2 05104 CP2880   TSX COMP,B              COMPILE ACC OR MQ INDICATOR 4F15292
04177   0 60000 0 06164          STZ CW                 RESET CW                 4F15293
04200   0 02000 0 04622          TRA ES0000                                      4F15294
04201   0 07400 4 05112 CP2900   TSX AC0000,C           ADDRESS COMPILE SYM2(S(I)) 4F15295
04202   0 02000 0 04176          TRA CP2880             GO COMPILE SYM2(S(I))    4F15296
04203   0 07400 4 05112 CP2930   TSX AC0000,C           OPEN MULTIVARIATE FUNCTION 4F15297
04204  -0 53400 2 03607          LXD CP0400,B                                    4F15298
04205   1 00003 2 04206          TXI CP2960,B,3                                  4F15299
04206   3 77772 2 04212 CP2960   TXH CP3000,B,-6                                 4F15300
04207  -0 63400 2 03607          SXD CP0400,B                                    4F15301
04210   0 07400 2 05104          TSX COMP,B             COMPILE SYMJ(S(I))       4F15302
04211   1 77775 1 04203          TXI CP2930,A,-3                                 4F15303
04212  -0 50000 0 01531 CP3000   CAL ALL1                                        4F15304
04213   0 60200 0 06164          SLW CW                                          4F15305
04214   0 07400 2 05104          TSX COMP,B             COMPILE LAST ARGUMENT NAME 4F15306
04215   0 60000 0 06164          STZ CW                 RESET CW                 4F15307
04216   0 02000 0 04622          TRA ES0000             GO TO END-OF-SEGMENT SBRTN 4F15308
04217  -3 77767 2 04246 CP3060   TXL CP3350,B,-9                                 4F15309
04220   0 50000 1 06651          CLA SCRIPL+1,A         CLOSED UNIVARIATE FUNCTION 4F15310
04221   0 76000 0 00001          LBT                    EXAMINE OP2(S(I))35      4F15311
04222   0 02000 0 04240          TRA CP3280             0... ARG STORED          4F15312
04223   0 50000 0 01575 CP3100   CLA L(SXD)             1... ARG IN ACC          4F15313
04224   0 60100 0 06165          STO CW+1                                        4F15314
04225   0 50000 0 01505          CLA X(                                          4F15315
04226   0 60100 0 06166          STO CW+2                                        4F15316
04227   0 50000 0 01412          CLA L(4)                                        4F15317
04230   0 60100 0 06167          STO CW+3                                        4F15318
04231   0 07400 2 05104          TSX COMP,B             COMPILE SXD7...0,4       4F15319
04232   0 50000 0 01602          CLA L(TSX)                                      4F15320
04233   0 60100 0 06165          STO CW+1                                        4F15321
04234   0 50000 1 06647          CLA SCRIPL-1,A                                  4F15322
04235   0 60100 0 06166          STO CW+2                                        4F15323
04236   0 07400 2 05104          TSX COMP,B             COMPILE TSX SYM1(S(I)),4 4F15324
04237   0 02000 0 04615          TRA CP5780             COMPILE FLOW TRACE INFO AND LXD 7(,4 4F15325
04240   0 50000 0 01541 CP3280   CLA L(CLA)                                      4F15331
04241   0 60100 0 06165          STO CW+1                                        4F15332
04242   0 07400 4 05112          TSX AC0000,C           ADDRESS COMPILE SYM2(S(I)) 4F15333
04243   0 07400 2 05104          TSX COMP,B             COMPILE CLA SYM2(S(I))   4F15334
04244   0 60000 0 06164          STZ CW                 RESET CW                 4F15335
04245   0 02000 0 04223          TRA CP3100             GO COMPILE SXD,TSX,LXD SEQUENCE 4F15336
04246  -3 77764 2 04272 CP3350   TXL CP3560,B,-12                                4F15337
04247   0 50000 1 06651          CLA SCRIPL+1,A         CLOSED BIVARIATE FUNCTION 4F15338
04250   0 76000 0 00001          LBT                    EXAMINE OP2(S(I))35      4F15339
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04251   0 02000 0 04260          TRA CP3450
04252   0 50000 0 01556 CP3390   CLA L(LDQ)
04253   0 60100 0 06165          STO CW+1
04254   1 77775 1 04255          TXI CP3420,A,-3
04255   0 07400 4 05112 CP3420   TSX AC0000,C
04256   0 07400 2 05104          TSX COMP,B
04257   1 00003 1 04223          TXI CP3100,A,3
04260   0 50000 1 06654 CP3450   CLA SCRIPL+4,A
04261   0 76000 0 00001          LBT
04262   0 02000 0 04264          TRA CP3490
04263   0 02000 0 04240          TRA CP3280
04264   0 50000 0 01541 CP3490   CLA L(CLA)
04265   0 60100 0 06165          STO CW+1
04266   0 07400 4 05112          TSX AC0000,C
04267   0 07400 2 05104          TSX COMP,B
04270   0 60000 0 06164          STZ CW
04271   0 02000 0 04252          TRA CP3390
04272   0 50000 1 06651 CP3560   CLA SCRIPL+1,A
04273   0 76000 0 00001          LBT
04274   1 77772 1 04324          TXI CP3820,A,-6
04275   1 77772 1 04276          TXI CP3600,A,-6
04276   0 50000 0 01521 CP3600   CLA DECMI2
04277   0 60100 0 06161          STO P(CNTR
04300   0 50000 0 01556 CP3620   CLA L(LDQ)
04301   0 60100 0 06165          STO CW+1
04302   0 07400 4 05112          TSX AC0000,C
04303   0 07400 2 05104          TSX COMP,B
04304   0 50000 0 01573          CLA L(STQ)
04305   0 60100 0 06165          STO CW+1
04306   0 50000 0 01503          CLA P(
04307   0 60100 0 06166          STO CW+2
04310   0 50000 0 06161          CLA P(CNTR
04311   0 60100 0 06167          STO CW+3
04312   0 40200 0 01454          SUB 2E18
04313   0 60100 0 06161          STO P(CNTR
04314   0 07400 2 05104          TSX COMP,B
04315  -0 53400 2 03607          LXD CP0400,B
04316   1 00003 2 04317          TXI CP3770,B,3
04317  -3 77764 2 04322 CP3770   TXL CP3800,B,-12
04320  -0 53400 1 01117          LXD 3QBAR,A
04321   1 77775 1 04252          TXI CP3390,A,-3
04322  -0 63400 2 03607 CP3800   SXD CP0400,B
04323   1 77775 1 04300          TXI CP3620,A,-3
04324   0 50000 1 06646 CP3820   CLA SCRIPL-2,A
04325   0 76000 0 00001          LBT
04326   1 00006 1 04355          TXI CP4070,A,6
04327   0 50000 0 01521          CLA DECMI2
04330   0 60100 0 06161          STO P(CNTR
04331   0 50000 0 01541 CP3870   CLA L(CLA)
04332   0 60100 0 06165          STO CW+1
04333   0 07400 4 05112          TSX AC0000,C
04334   0 07400 2 05104          TSX COMP,B
04335   0 50000 0 01572          CLA L(STO)
04336   0 60100 0 06165          STO CW+1
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0••• ARG1 STORED                                  4F15340
1••• ARG1 IN ACC                                  4F15341
                                                  4F15342
                                                  4F15343
ADDRESS COMPILE SYM3(S(I))                        4F15344
COMPILE LDQ SYM3(S(I))                            4F15345
GO COMPILE SXD,TSX,LXD SEQUENCE                   4F15346
                                                  4F15347
EXAMINE OP3(S(I))35                               4F15348
0••• ARG2 STORED                                  4F15349
1••• ARG2 IN MQ                                   4F15350
                                                  4F15351
                                                  4F15352
ADDRESS COMPILE SYM2(S(I))                        4F15353
COMPILE CLA SYM2(S(I))                            4F15354
REST CW                                           4F15355
GO COMPILE LDQ,SXD,TSX,LXD SEQUENCE               4F15356
CLOSED MULTIVARIATE FUNCTION                      4F15357
EXAMINE OP2(S(I))35                               4F15358
0••• ARG1 STORED                                  4F15359
1••• ARG1 IN ACC                                  4F15360
                                                  4F15361
INITIALIZE P(CNTR TO -2                           4F15362
                                                  4F15363
                                                  4F15364
ADDRESS COMPILE SYMJ(S(I)) FOR J=4,5,•••          4F15365
COMPILE LDQ SYMJ(S(I))                            4F15366
                                                  4F15367
                                                  4F15368
                                                  4F15369
                                                  4F15370
                                                  4F15371
                                                  4F15372
                                                  4F15373
                                                  4F15374
COMPILE STQ 4•••0-(J-2)                           4F15375
                                                  4F15376
                                                  4F15377
                                                  4F15378
FINISHED WITH ARG VECTOR                          4F15379
                                                  4F15380
                                                  4F15381
GO PICK UP NEXT ARG.                              4F15382
                                                  4F15383
EXAMINE OP3(S(I))35                               4F15384
0••• ARG2 STORED                                  4F15385
1••• ARG2 IN MQ                                   4F15386
                                                  4F15387
                                                  4F15388
                                                  4F15389
ADDRESS COMPILE SYMJ(S(I)) FOR J=4,5,•••          4F15390
COMPILE CLA SYMJ(S(I))                            4F15391
                                                  4F15392
                                                  4F15393
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04337  0 50000 0 01503          CLA P(                                                  4F15394
04340  0 60100 0 06166          STO CW+2                                                4F15395
04341  0 50000 0 06161          CLA P(CNTR                                              4F15396
04342  0 60100 0 06167          STO CW+3                                                4F15397
04343  0 40200 0 01454          SUB 2E18                                                4F15398
04344  0 60100 0 06161          STO P(CNTR                                              4F15399
04345  0 07400 2 05104          TSX COMP,B          COMPILE STO 4...0-(J-2)             4F15400
04346 -0 53400 2 03607          LXD CP0400,B                                            4F15401
04347  1 00003 2 04350          TXI CP4020,B,3                                          4F15402
04350 -3 77764 2 04353 CP4020   TXL CP4050,B,-12                                        4F15403
04351 -0 53400 1 01117          LXD 3QBAR,A         FINISHED WITH ARG VECTOR            4F15404
04352  1 77775 1 04240          TXI CP3280,A,-3                                         4F15405
04353 -0 63400 2 03607 CP4050   SXD CP0400,B                                            4F15406
04354  1 77775 1 04331          TXI CP3870,A,-3     GO PICK UP NEXT ARG                 4F15407
04355  0 50000 0 01541 CP4070   CLA L(CLA)                                              4F15408
04356  0 60100 0 06165          STO CW+1                                                4F15409
04357  0 07400 4 05112          TSX AC0000,C        ADDRESS COMPILE SYM2(S(I))          4F15410
04360  0 07400 2 05104          TSX COMP,B          COMPILE CLASYM2(S(I))               4F15411
04361  0 60000 0 06164          STZ CW              RESET CW                            4F15412
04362  1 77772 1 04276          TXI CP3600,A,-6                                         4F15413
04363 -0 76300 0 00033 CP4140   LGL 27              OP1(S(I))=**                        4F15414
04364  0 16200 0 04415          TQP CP4410          CLOSED SBRTN SINCE OP1(S(I))33=0    4F15415
04365  0 76000 0 00001          LBT                 OPEN SBRTN SINCE OP1(S(I))33=1      4F15416
04366  0 02000 0 04371          TRA CP4200          BASE FIX PT SINCE OP1(S(I))32=0     4F15417
04367  0 50000 0 01525          CLA STRSTR          BASE FLO PT SINCE OP1(S(II))32=1    4F15418
04370  0 02000 0 04372          TRA CP4210                                              4F15419
04371  0 50000 0 01524 CP4200   CLA ADSTAR                                              4F15420
04372  0 60100 0 06165 CP4210   STO CW+1                                                4F15421
04373 -0 76300 0 00002          LGL 2               EXAMINE OP1(S(I))35                 4F15422
04374  0 16200 0 04403          TQP CP4310          0... BASE STORED                    4F15423
04375  0 56000 0 01524          LDQ ADSTAR          1... BASE NOT STORED                4F15424
04376  0 76000 0 00001          LBT                 EXAMINE OP1(S(I))34                 4F15425
04377  0 56000 0 01512          LDQ ADPLUS          0... BASE IN ACC                    4F15426
04400 -0 60000 0 06166          STQ CW+2            1...BASE IN MQ                      4F15427
04401  0 60000 0 06167          STZ CW+3                                                4F15428
04402  0 02000 0 04404          TRA CP4320                                              4F15429
04403  0 07400 4 05112 CP4310   TSX AC0000,C        ADDRESS COMPILE SYM1(S(I))          4F15430
04404  0 50200 0 06164 CP4320   CLS CW                                                  4F15431
04405  0 60100 0 06164          STO CW              CW TO -CW                           4F15432
04406  0 07400 2 05104          TSX COMP,B          COMPILE BASE                        4F15433
04407  0 60000 0 06164          STZ CW              RESET CW                            4F15434
04410  0 50000 1 06655          CLA SCRIPL+5,A                                          4F15435
04411  0 60100 0 06166          STO CW+2                                                4F15436
04412  0 07400 2 05104          TSX COMP,B          COMPILE FIX PT CONSTANT EXPONENT    4F15437
04413  0 60000 0 06165          STZ CW+1            RESET CW+1                          4F15438
04414  0 02000 0 04622          TRA ES0000                                              4F15439
04415 -0 76300 0 00003 CP4410   LGL 3               CLOSED EXP. SBRTN                   4F15440
04416  0 76000 0 00001          LBT                 EXAMINE OP1(S(I))35                 4F15441
04417  0 02000 0 04462          TRA CP4860          0... BASE STORED                    4F15442
04420  0 50000 0 01556 CP4440   CLA L(LDQ)          1... BASE IN ACC.                   4F15443
04421  0 60100 0 06165          STO CW+1                                                4F15444
04422  1 77775 1 04423          TXI CP4470,A,-3                                         4F15445
04423  0 07400 4 05112 CP4470   TSX AC0000,C        ADDRESS COMPILE SYM2(S(I))          4F15446
04424  0 07400 2 05104          TSX COMP,B          COMPILE LDQ SYM2 (S(I))             4F15447
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04425   0 50000 0 01575 CP4490 CLA L(SXD)                                    4F15448
04426   0 60100 0 06165        STO CW+1                                      4F15449
04427   0 50000 0 01505        CLA X(                                        4F15450
04430   0 60100 0 06166        STO CW+2                                      4F15451
04431   0 50000 0 01412        CLA L(4)                                      4F15452
04432   0 60100 0 06167        STO CW+3                                      4F15453
04433   0 07400 2 05104        TSX COMP,B      COMPILE SXD 7,,,0,4           4F15454
04434   0 50000 0 01602        CLA L(TSX)                                    4F15455
04435   0 60100 0 06165        STO CW+1                                      4F15456
04436   0 50000 1 06651        CLA SCRIPL+1,A                                4F15457
04437   0 77100 0 00003        ARS 3                                         4F15458
04440   0 76000 0 00001        LBT             EXAMINE OP2(S(I))32           4F15459
04441   1 00003 1 04447        TXI CP4660,A,3  0,,,                          4F15460
04442   0 50000 0 01516        CLA FLFL        1,,, FLO**FLO                 4F15461
04443   0 56000 1 06646        LDQ SCRIPL-2,A  EXAMINE OP1(S(I))32 TO CHECK  4F15462
04444  -0 77300 0 00040        RQL 32          FOR MIXED EXPONENTIAL EXPRESSION 4F15463
04445   0 16200 0 03501        TQP MC0310+2    ERROR FIX PT BASE, FLOAT EXP.  4F15464
04446   0 02000 0 04454        TRA CP4730                                    4F15465
04447   0 56000 1 06651 CP4660 LDQ SCRIPL+1,A                                4F15466
04450  -0 77300 0 00040        RQL 32          EXAMINE OP1(S(I))32           4F15467
04451   0 50000 0 01514        CLA FXFX                                      4F15468
04452   0 16200 0 04454        TQP CP4730      0,,,FX**FX                    4F15469
04453   0 50000 0 01515        CLA FLFX        1,,, FL**FX                   4F15470
04454   0 60100 0 06166 CP4730 STO CW+2                                      4F15471
04455   0 60100 0 01347        STO G                                         4F15472
04456   0 07400 2 05104        TSX COMP,B      COMPILE TSX FXFX/FLEX/FLFL,4  4F15473
04457   0 07400 1 03321        TSX TET00,A                                   4F15474
04460   0 00000 0 00011        HTR 9                                         4F15475
04461   0 02000 0 04615        TRA CP5780      COMPILE FLOW TRACE INFO AND LXD 7(,4  4F15476
04462   0 50000 0 01541 CP4860 CLA L(CLA)                                    4F15482
04463   0 60100 0 06165        STO CW+1                                      4F15483
04464   0 07400 4 05112        TSX AC0000,C    ADDRESS COMPILE SYM1(S(I))    4F15484
04465   0 07400 2 05104        TSX COMP,B      COMPILE CLA SYM1(S(I))        4F15485
04466   0 60000 0 06164        STZ CW                                        4F15486
04467   0 50000 1 06654        CLA SCRIPL+4,A                                4F15487
04470   0 76000 0 00001        LBT             EXAMINE OP2(S(I))35           4F15488
04471   1 00000 0 04420        TXI CP4440,0,0  0,,,EXP STORED                4F15489
04472   1 77775 1 04425        TXI CP4490,A,-3 1,,, EXP IN MQ                4F15490
                                                                             4F15491
04473   0 50000 0 00030 CP5000 CLA EIFNO       FN FUNCTION                   4F15492
04474   0 40000 0 01454        ADD 2E18        UPDATE EIFNO                  4F15493
04475   0 60100 0 00030        STO EIFNO       AND                           4F15494
04476   0 60100 0 06160        STO FNSW        SET FN SWITCH                 4F15495
04477   0 62200 0 01105        STD 1C          KEEP 1C UPDATED FOR PENDING TIFGO ENTRY.  4F15496
04500   0 53400 4 01407        LXA L(1),C      INITIALIZE STAIX TO 1         4F15497
04501   0 50000 1 06650 CP5050 CLA SCRIPL,A    EXAMINE TAGJ(S(I)), J=2,,,    4F15498
04502  -0 12000 0 04516        TMI CP5180      NONSUBSCRIPTED                4F15499
04503  -0 63400 2 04147        SXD CP5830,B    SUBSCRIPTED-IS THERE A GENERAL TAG  4F15500
04504  -0 63400 4 04577        SXD STACTR,C                                  4F15501
04505   0 07400 4 05112        TSX AC0000,C                                  4F15502
04506  -0 50000 0 06173        CAL TAGPRT                                    4F15503
04507  -0 10000 0 04522        TNZ CP5220      GENERAL TAG PRESENT           4F15504
04510  -0 50000 0 06167        CAL CW+3        NO GENERAL TAG PRESENT,SO PLACE  4F15505
04511   0 77100 0 00013        ARS 11          RELATIVE ADDRESS IN OPJ(S(I))14-28 AND  4F15506
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04512 -0 50100 0 01474        ORA NGTBIT      SET OPJ(S(I))10=1 FROM NGTBIT          4F15507
04513 -0 60200 1 06651        ORS SCRIPL+1,A                                         4F15508
04514 -0 53400 4 04577 CP5160 LXD STACTR,C                                           4F15509
04515 -0 53400 2 04147        LXD CP5830,B                                           4F15510
04516  1 00003 2 04517 CP5180 TXI CP5190,B,3                                         4F15511
04517  3 77772 2 04552 CP5190 TXH CP5460,B,-6      FINISHED WITH PRELUDE,IF ANY      4F15512
04520  1 00001 4 04521        TXI CP5210,C,1       NOT FINISHED-STAIX=STAIX+1        4F15513
04521  1 77775 1 04501 CP5210 TXI CP5050,A,-3      GO ON TO NEXT ARGUMENT            4F15514
04522 -0 50000 0 01566 CP5220 CAL L(PXD)                                             4F15515
04523  0 60200 0 06165        SLW CW+1                                              4F15516
04524  0 07400 2 05104        TSX COMP,B           COMPILE PXD SYMJ(S(I)), TAGJ(S(I))4F15517
04525  0 60000 0 06164        STZ CW               RESET CW                          4F15518
04526  0 07400 4 01731        TSX CIT00,C          COMPILE ARS 18                    4F15519
04527  0 00000 0 01406        HTR L(0)                                               4F15520
04530  0 00000 0 01535        HTR L(ARS)                                             4F15521
04531  0 00000 0 01406        HTR L(0)                                               4F15522
04532  0 00000 0 01466        HTR DEC18                                              4F15523
04533  0 07400 4 01731        TSX CIT00,C          COMPILE ADD *-2                   4F15524
04534  0 00000 0 01406        HTR L(0)                                               4F15525
04535  0 00000 0 01532        HTR L(ADD)                                             4F15526
04536  0 00000 0 01511        HTR PROCTR                                             4F15527
04537  0 00000 0 01521        HTR DECMI2                                             4F15528
04540 -0 50000 0 01571        CAL L(STA)                                             4F15529
04541  0 60200 0 06165        SLW CW+1                                              4F15530
04542 -0 50000 0 00030        CAL EIFNO                                              4F15531
04543 -0 32000 0 01527        ANA MASK1                                              4F15532
04544  0 60200 0 06166        SLW CW+2                                              4F15533
04545 -0 53400 4 04577        LXD STACTR,C                                           4F15534
04546 -0 75400 4 00000        PXD 0,C                                                4F15535
04547  0 60200 0 06167        SLW CW+3                                              4F15536
04550  0 07400 2 05104        TSX COMP,B           COMPILE STA IFN+STAIX             4F15537
04551  1 00000 0 04514        TXI CP5160,0,0       GO ON TO NEXT ARGUMENT,IF ANY     4F15538
04552 -0 53400 1 01117 CP5460 LXD 3QBAR,A                                            4F15539
04553 -0 50000 0 01575        CAL L(SXD)                                             4F15540
04554  0 60200 0 06165        SLW CW+1                                              4F15541
04555 -0 50000 0 01505        CAL X(                                                 4F15542
04556  0 60200 0 06166        SLW CW+2                                              4F15543
04557 -0 50000 0 01412        CAL L(4)                                               4F15544
04560  0 60200 0 06167        SLW CW+3                                              4F15545
04561  0 07400 2 05104        TSX COMP,B           COMPILE SXD 7,4                   4F15546
04562 -0 50000 0 00030        CAL EIFNO                                              4F15547
04563 -0 32000 0 01527        ANA MASK1                                              4F15548
04564  0 60200 0 06164        SLW CW                                                4F15549
04565 -0 50000 0 01602        CAL L(TSX)                                             4F15550
04566  0 60200 0 06165        SLW CW+1                                              4F15551
04567 -0 50000 1 06652        CAL SCRIPL+2,A                                         4F15552
04570  0 60200 0 06166        SLW CW+2                                              4F15553
04571  0 07400 2 05104        TSX COMP,B           COMPILE TSX SYM1(S(I)),4          4F15554
04572  0 60000 0 06164        STZ CW               RESET CW                          4F15555
04573  1 77775 1 04574        TXI CP5680,A,-3      POSITION XA TO SYM2(S(I))         4F15556
04574  0 50000 1 06650 CP5680 CLA SCRIPL,A                                           4F15557
04575  0 12000 0 04600        TPL CP5700                                             4F15558
04576  0 07400 4 05112        TSX AC0000,C         NONSUBSCRIPTED                    4F15559
04577  1 00000 0 04607 STACTR TXI CP5720,0,0                                        4F15560
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04600   0 56000 1 06651 CP5700 LDQ SCRIPL+1,A      SUBSCRIPTED                                  4F15561
04601  -0 76300 0 00013        LGL 11                                                         4F15562
04602   0 76000 0 00001        LBT                                                            4F15563
04603   0 56000 0 01406        LDQ L(0)            GENERAL TAG PRESENT                        4F15564
04604  -0 60000 0 06167        STQ CW+3            NO GENERAL TAG PRESENT                     4F15565
04605  -0 50000 1 06652        CAL SCRIPL+2,A                                                 4F15566
04606   0 60200 0 06166        SLW CW+2                                                       4F15567
04607   0 07400 2 05104 CP5720 TSX COMP,B          COMPILE TSX SYMJ(S(I)) , J=2,...           4F15568
04610  -0 53400 2 03607        LXD CP0400,B                                                   4F15569
04611   1 00003 2 04612        TXI CP5750,B,3                                                 4F15570
04612   3 77772 2 04615 CP5750 TXH CP5780,B,-6     FINISHED SCANNING                          4F15571
04613  -0 63400 2 03607        SXD CP0400,B                                                   4F15572
04614   1 77775 1 04574        TXI CP5680,A,-3                                                4F15573
04615   0 07400 4 03401 CP5780 TSX FLTR00,4        COMPILE FLOW TRACE INFO AND LXD 7(,4       4F15574
04616   0 00000 0 01406        HTR L(0)                                                       4F15575
04617   0 00000 0 01561        HTR L(LXD)                                                     4F15576
04620   0 00000 0 01505        HTR X(                                                         4F15577
04621   0 00000 0 01412        HTR L(4)                                                       4F15578
04622  -0 53400 1 01117 ES0000 LXD 3QBAR,A        -3Q TO XA                                  4F15579
04623  -0 76000 0 00141        SLT 1                                                          4F15580
04624   0 02000 0 03554        TRA CP0130          GO TO NEXT SEGMENT                         4F15581
04625  -0 50000 1 06650        CAL SCRIPL,A                                                   4F15582
04626  -0 32000 0 01452        ANA MASK2                                                      4F15583
04627   0 10000 0 04642        TZE ES0160                                                     4F15584
04630   0 50000 0 01120        CLA ARERAS          S(I) NOT = S(0)                            4F15585
04631   0 60100 0 06166        STO CW+2                                                       4F15586
04632   0 50000 0 01363        CLA PHI(I)                                                     4F15587
04633   0 60100 0 06167        STO CW+3                                                       4F15588
04634   0 50000 0 01573        CLA L(STQ)                                                     4F15589
04635  -0 76000 0 00142        SLT 2                                                          4F15590
04636   0 50000 0 01572        CLA L(STO)                                                     4F15591
04637   0 60100 0 06165        STO CW+1                                                       4F15592
04640   0 07400 2 05104        TSX COMP,B          COMPILE STO/STQ 1... TYPE NO + PHI(I)      4F15593
04641   0 02000 0 03554        TRA CP0130          GO TO NEXT SEGMENT                         4F15594
04642   0 56000 0 01356 ES0160 LDQ LEFT+2          S(I)=S(0)                                  4F15595
04643  -0 76300 0 00014        LGL 12                                                         4F15596
04644   0 34000 0 01450        CAS IFSYM           IS THIS AN IF STATEMENT                    4F15597
04645   0 02000 0 04647        TRA ES0200                                                     4F15598
04646   0 02000 0 05041        TRA ES1500                                                     4F15599
04647   0 34000 0 01451 ES0200 CAS CALLER          IS THIS A CALL STATEMENT                   4F15600
04650   0 02000 0 04652        TRA ES0210                                                     4F15601
04651   0 02000 0 05044        TRA ES1520                                                     4F15602
04652   0 34000 0 01447 ES0210 CAS SAPSYM                                                     4F15603
04653   0 02000 0 04655        TRA ES0220                                                     4F15604
04654   0 02000 0 05100        TRA ES1710                                                     4F15605
04655   0 77100 0 00006 ES0220 ARS 6                                                         4F15606
04656  -0 53400 4 01122        LXD ARGCTR,C        IS THIS A FUNCTION STATEMENT               4F15607
04657   3 00000 4 05016        TXH ES1300,C,0      YES                                        4F15608
04660   0 34000 0 01423        CAS L(H)            NOT A FUNCTION STATEMENT                   4F15609
04661   0 34000 0 01425        CAS L(0)                                                       4F15610
04662   0 02000 0 04750        TRA ES0300                                                     4F15611
04663   0 02000 0 04750        TRA ES0300                                                     4F15612
04664  -0 76000 0 00144        SLT 4                                                          4F15613
04665   0 02000 0 04703        TRA ES0870                                                     4F15614
```

```
04666   0 50000 0 01573 ES0710 CLA L(STQ)          FX(FLO) PT ON LEFT, FX(FLO) PT ON RIGHT     4F15615
04667  -0 76000 0 00142        SLT 2                                                           4F15616
04670   0 50000 0 01572 ES0730 CLA L(STO)                                                      4F15617
04671   0 60100 0 06165        STO CW+1                                                        4F15618
04672   0 50000 0 01354        CLA LEFT                                                        4F15619
04673   0 60100 0 06170        STO TAGWRD                                                      4F15620
04674   0 50000 0 01355        CLA LEFT+1                                                      4F15621
04675   0 60100 0 06171        STO OPWORD                                                      4F15622
04676   0 50000 0 01356        CLA LEFT+2                                                      4F15623
04677   0 60100 0 06172        STO SYMWRD                                                      4F15624
04700   0 07400 4 05120        TSX AC0060,C         ADDRESS COMPILE VARIABLE ON LEFT           4F15625
04701   0 07400 2 05104        TSX COMP,B           COMPILE STO/STQ LEFT+2                     4F15626
04702   0 02000 0 05064        TRA ES1590           EXIT TO FETCH STATE A                      4F15627
04703  -0 76000 0 00142 ES0870 SLT 2                FX PT ON LEFT, FLO PT ON RIGHT             4F15628
04704   0 02000 0 04716        TRA ES0990                                                      4F15629
04705   0 50000 0 01573        CLA L(STQ)           RESULT ON RIGHT APPEARS IN MQ              4F15630
04706   0 60100 0 06165        STO CW+1                                                        4F15631
04707   0 50000 0 01505        CLA X(                                                          4F15632
04710   0 60100 0 06166        STO CW+2                                                        4F15633
04711   0 60000 0 06167        STZ CW+3                                                        4F15634
04712   0 07400 2 05104        TSX COMP,B           COMPILE STQ 700000                         4F15635
04713   0 50000 0 01541        CLA L(CLA)                                                      4F15636
04714   0 60100 0 06165        STO CW+1                                                        4F15637
04715   0 07400 2 05104        TSX COMP,B           COMPILE CLA 700000                         4F15638
04716   0 07400 4 01731 ES0990 TSX CIT00,C          COMPILE FIXING INSTRUCTIONS, WHEN          4F15639
04717   0 00000 0 01406        HTR L(0)             RESULT ON RIGHT IS IN ACC.                 4F15640
04720   0 00000 0 01603        HTR L(UFA)                                                      4F15641
04721   0 00000 0 01504        HTR O(                                                          4F15642
04722   0 00000 0 01406        HTR L(0)                                                        4F15643
04723   0 07400 4 01731        TSX CIT00,C                                                     4F15644
04724   0 00000 0 01406        HTR L(0)                                                        4F15645
04725   0 00000 0 01560        HTR L(LRS)                                                      4F15646
04726   0 00000 0 01406        HTR L(0)                                                        4F15647
04727   0 00000 0 01406        HTR L(0)                                                        4F15648
04730   0 07400 4 01731        TSX CIT00,C                                                     4F15649
04731   0 00000 0 01406        HTR L(0)                                                        4F15650
04732   0 00000 0 01534        HTR L(ANA)                                                      4F15651
04733   0 00000 0 01504        HTR O(                                                          4F15652
04734   0 00000 0 01454        HTR 2E18                                                        4F15653
04735   0 07400 4 01731        TSX CIT00,C                                                     4F15654
04736   0 00000 0 01406        HTR L(0)                                                        4F15655
04737   0 00000 0 01557        HTR L(LLS)                                                      4F15656
04740   0 00000 0 01406        HTR L(0)                                                        4F15657
04741   0 00000 0 01406        HTR L(0)                                                        4F15658
04742   0 07400 4 01731        TSX CIT00,C                                                     4F15659
04743   0 00000 0 01406        HTR L(0)                                                        4F15660
04744   0 00000 0 01533        HTR L(ALS)                                                      4F15661
04745   0 00000 0 01406        HTR L(0)                                                        4F15662
04746   0 00000 0 01466        HTR DEC18                                                       4F15663
04747   0 02000 0 05004        TRA ES0610                                                      4F15664
04750  -0 76000 0 00144 ES0300 SLT 4                                                          4F15665
04751   0 02000 0 04666        TRA ES0710                                                      4F15666
04752  -0 76000 0 00142 ES0320 SLT 2                FLO PT ON LEFT, FX PT ON RIGHT             4F15667
04753   0 02000 0 04765        TRA ES0440                                                      4F15668
```

```
04754   0 50000 0 01573         CLA L(STQ)          RESULT ON RIGHT APPEARS IN MQ                4F15669
04755   0 60100 0 06165         STO CW+1                                                         4F15670
04756   0 50000 0 01505         CLA X(                                                           4F15671
04757   0 60100 0 06166         STO CW+2                                                         4F15672
04760   0 60000 0 06167         STZ CW+3                                                         4F15673
04761   0 07400 2 05104         TSX COMP,B          COMPILE STQ 700000                           4F15674
04762   0 50000 0 01541         CLA L(CLA)                                                       4F15675
04763   0 60100 0 06165         STO CW+1                                                         4F15676
04764   0 07400 2 05104         TSX COMP,B          COMPILE CLA 700000                           4F15677
04765   0 07400 4 01731 ES0440  TSX CIT00,C         COMPILE FLOATING INSTRUCTIONS, WHEN          4F15678
04766   0 00000 0 01406         HTR L(0)            RESULT ON RIGHT IS IN ACC                    4F15679
04767   0 00000 0 01560         HTR L(LRS)                                                       4F15680
04770   0 00000 0 01406         HTR L(0)                                                         4F15681
04771   0 00000 0 01466         HTR DEC18                                                        4F15682
04772   0 07400 4 01731         TSX CIT00,C                                                      4F15683
04773   0 00000 0 01406         HTR L(0)                                                         4F15684
04774   0 00000 0 01564         HTR L(ORA)                                                       4F15685
04775   0 00000 0 01504         HTR O(                                                           4F15686
04776   0 00000 0 01406         HTR L(0)                                                         4F15687
04777   0 07400 4 01731         TSX CIT00,C                                                      4F15688
05000   0 00000 0 01406         HTR L(0)                                                         4F15689
05001   0 00000 0 01550         HTR L(FAD)                                                       4F15690
05002   0 00000 0 01504         HTR O(                                                           4F15691
05003   0 00000 0 01406         HTR L(0)                                                         4F15692
05004  -0 53400 4 01122 ES0610  LXD ARGCTR,C        IS THIS A FUNCTION STATEMENT                 4F15693
05005  -3 00000 4 04670         TXL ES0730,C,0      NO                                           4F15694
05006   0 50000 0 01601 ES0630  CLA L(TRA)          YES                                          4F15695
05007   0 60100 0 06165         STO CW+1                                                         4F15696
05010   0 60000 0 06166         STZ CW+2                                                         4F15697
05011  -0 50000 0 01454         CAL 2E18                                                         4F15698
05012  -0 50100 0 01412         ORA L(4)                                                         4F15699
05013   0 60200 0 06167         SLW CW+3                                                         4F15700
05014   0 07400 2 05104         TSX COMP,B          COMPILE TRA 1,4                              4F15701
05015   0 02000 0 05064         TRA ES1590          EXIT TO FETCH STATE A                        4F15702
05016   0 40200 0 01433 ES1300  SUB L(X)                                                         4F15703
05017   0 10000 0 05023         TZE ES1360                                                       4F15704
05020  -0 76000 0 00144         SLT 4                                                            4F15705
05021   0 02000 0 05025         TRA ES1380                                                       4F15706
05022   0 02000 0 04752         TRA ES0320                                                       4F15707
05023  -0 76000 0 00144 ES1360  SLT 4                                                            4F15708
05024   0 02000 0 04703         TRA ES0870                                                       4F15709
05025  -0 76000 0 00142 ES1380  SLT 2                                                            4F15710
05026   0 02000 0 05006         TRA ES0630                                                       4F15711
05027   0 50000 0 01573         CLA L(STQ)                                                       4F15712
05030   0 60100 0 06165         STO CW+1                                                         4F15713
05031   0 50000 0 01505         CLA X(                                                           4F15714
05032   0 60100 0 06166         STO CW+2                                                         4F15715
05033   0 60000 0 06167         STZ CW+3                                                         4F15716
05034   0 07400 2 05104         TSX COMP,B          COMPILE STQ 700000                           4F15717
05035   0 50000 0 01541         CLA L(CLA)                                                       4F15718
05036   0 60100 0 06165         STO CW+1                                                         4F15719
05037   0 07400 2 05104         TSX COMP,B          COMPILE CLA 700000                           4F15720
05040   0 02000 0 05006         TRA ES0630                                                       4F15721
05041   0 07400 1 03321 ES1500  TSX TET00,1         * GO TO PROGRAM TET TO ENTER 1C,1C+1         4F15722
```

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05042  0 00000 0 00002          PZE 2                    INTO TIFGO TABLE (TABLE 2).        4F15723
05043  0 02000 0 05050          TRA ES1530                                                  4F15724
05044 -0 53400 4 00030 ES1520   LXD EIFNO,4                                                 4F15725
05045 -0 63400 4 01123          SXD CALLNM,4        PREPARE ENTRY FOR TABLE OF CALL FIRST AND 4F15726
05046  0 07400 1 03321          TSX TET00,1         LAST IFN NUMBERS.                       4F15727
05047  0 00000 0 00020              16                                                      4F15728
05050 -0 76000 0 00142 ES1530   SLT 2                                                       4F15729
05051  0 02000 0 05064          TRA ES1590          EXIT TO FETCH STATE A                   4F15730
05052  0 07400 4 01731          TSX CIT00,C         COMPILE LLS 37                          4F15731
05053  0 00000 0 01406              L(0)                                                    4F15732
05054  0 00000 0 01573              L(STQ)                                                  4F15733
05055  0 00000 0 01505              X(                                                      4F15734
05056  0 00000 0 01406              L(0)                                                    4F15735
05057  0 07400 4 01731          TSX CIT00,4                                                 4F15736
05060  0 00000 0 01406              L(0)                                                    4F15737
05061  0 00000 0 01541              L(CLA)                                                  4F15738
05062  0 00000 0 01505              X(                                                      4F15739
05063  0 00000 0 01406              L(0)                                                    4F15740
05064  0 50000 0 06160 ES1590   CLA FNSW                                                    4F15741
05065  0 10000 0 02402          TZE MTR000                                                  4F15742
05066  0 50000 0 01151          CLA F-1                                                     4F15743
05067  0 40200 0 01477          SUB 5BLANS                                                  4F15744
05070  0 10000 0 02402          TZE MTR000                                                  4F15745
05071  0 50200 0 00030          CLS EIFNO                                                   4F15746
05072  0 60100 0 00030          STO EIFNO                                                   4F15747
05073  0 07400 1 03321          TSX TET00,A                                                 4F15748
05074  0 00000 0 00000          HTR 0                                                       4F15749
05075  0 50200 0 00030          CLS EIFNO                                                   4F15750
05076  0 60100 0 00030          STO EIFNO                                                   4F15751
05077  0 02000 0 02402          TRA MTR000                                                  4F15752
05100 -0 53400 2 00637 ES1710   LXD BBOX,B                                                  4F15753
05101  0 50000 0 01362          CLA OPNWRD                                                  4F15754
05102  0 60100 2 00635          STO CIB-3,B                                                 4F15755
05103  0 02000 0 02402          TRA MTR000                                                  4F15756
                                                                                            4F15757
05104  0 07400 4 01731 COMP     TSX CIT00,C                                                 4F15758
05105  0 00000 0 06164          HTR CW                                                      4F15759
05106  0 00000 0 06165          HTR CW+1                                                    4F15760
05107  0 00000 0 06166          HTR CW+2                                                    4F15761
05110  0 00000 0 06167          HTR CW+3                                                    4F15762
05111  0 02000 2 00001          TRA 1,B                                                     4F15763
                                                                                            4F15764
05112  0 50000 1 06650 AC0000   CLA SCRIPL,A                                                4F15765
05113  0 60100 0 06170          STO TAGWRD                                                  4F15766
05114  0 50000 1 06651          CLA SCRIPL+1,A                                              4F15767
05115  0 60100 0 06171          STO OPWORD                                                  4F15768
05116  0 50000 1 06652          CLA SCRIPL+2,A                                              4F15769
05117  0 60100 0 06172          STO SYMWRD                                                  4F15770
05120 -0 50000 0 06170 AC0060   CAL TAGWRD                                                  4F15771
05121 -0 32000 0 01527          ANA MASK1           EXTRACT TAGS IN ACC.                    4F15772
05122 -0 76000 0 00001          PBT                                                         4F15773
05123  0 02000 0 05204          TRA AC0540                                                  4F15774
05124 -0 75400 0 00000          PXD 0,0             NON-SUBSCRIPTED SYMBOL                  4F15775
05125  0 56000 0 06172          LDQ SYMWRD                                                  4F15776
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05126 -0 76300 0 00001          LGL 1                                                   4F15777
05127  0 76000 0 00001          LBT                                                     4F15778
05130  0 16200 0 05175          TQP AC0460          SYMBOL IS SOME S(K)                 4F15779
05131 -0 76300 0 00013          LGL 11              NON-SUBSCRIPTED EX/INTERNAL VARIABLE 4F15780
05132  0 40200 0 01444          SUB L(A()           IS THIS A FLO PT CONSTANT           4F15781
05133  0 10000 0 05170          TZE AC0410          YES                                 4F15782
05134  0 40000 0 01444          ADD L(A()           NO                                  4F15783
05135  0 40200 0 01446          SUB L(I()           IS THIS A FIX PT CONSTANT           4F15784
05136  0 10000 0 05166          TZE AC0390          YES                                 4F15785
05137  0 40000 0 01446          ADD L(I()           NO                                  4F15786
05140  0 40200 0 01445          SUB L(H()           IS THIS A HOLLERITH FIELD           4F15787
05141  0 10000 0 05164          TZE AC0350          YES                                 4F15788
05142  0 56000 0 06171          LDQ OPWORD          NON-SUBSCRIPTED EXTERNAL VARIABLE   4F15789
05143 -0 76300 0 00015          LGL 13              IS THIS A FREE VARIABLE             4F15790
05144  0 16200 0 05161          TQP AC0340          NO                                  4F15791
05145  0 76300 0 00017          LLS 15              YES                                 4F15792
05146  0 76000 0 00006          COM                                                     4F15793
05147  0 40200 0 01407          SUB L(1)                                                4F15794
05150  0 73400 2 00000          PAX 0,B                                                 4F15795
05151 -0 75400 2 00000          PXD 0,B                                                 4F15796
05152  0 60200 0 06167          SLW CW+3            STORE ARGUMENT BUFFER RELATIVE ADDRESS 4F15797
05153 -0 53400 2 00470          LXD BK,B                                                4F15798
05154 -0 50000 2 00470          CAL FORSUB-1,B                                          4F15799
05155 -0 32000 0 01452          ANA MASK2           EXTRACT FUNCTION STATEMENT TYPE     4F15800
05156 -0 50100 0 01503          ORA P(                                                  4F15801
05157  0 60200 0 06166 AC0320   SLW CW+2                                                4F15802
05160  0 02000 4 00001          TRA 1,C             RETURN                              4F15803
05161  0 60000 0 06167 AC0340   STZ CW+3            NON-SUBSCRIPTED, REAL VARIABLE      4F15804
05162 -0 50000 0 06172          CAL SYMWRD                                              4F15805
05163  0 02000 0 05157          TRA AC0320                                              4F15806
05164 -0 50000 0 01522 AC0350   CAL H(                                                  4F15807
05165  0 02000 0 05171          TRA AC0420                                              4F15808
05166  0 50000 0 01501 AC0390   CLA I(              FIX PT INTERNAL VARIABLE            4F15809
05167  0 02000 0 05171          TRA AC0420                                              4F15810
05170  0 50000 0 01502 AC0410   CLA A(              FLO PT INTERNAL VARIABLE            4F15811
05171  0 60100 0 06166 AC0420   STO CW+2                                                4F15812
05172 -0 77300 0 00006          RQL 6                                                   4F15813
05173 -0 60000 0 06167          STQ CW+3                                                4F15814
05174  0 02000 4 00001          TRA 1,C             RETURN                              4F15815
05175 -0 76300 0 00043 AC0460   LGL 35              SYMBOL IS SOME S(K)                 4F15816
05176  0 73400 2 00000 TDRADD   PAX 0,B                                                 4F15817
05177 -0 50000 2 06174          CAL CPBETA,B                                            4F15818
05200 -0 32000 0 01527          ANA MASK1           EXTRACT PHI(K)                      4F15819
05201  0 60200 0 06167          SLW CW+3                                                4F15820
05202 -0 50000 0 01120          CAL ARERAS                                              4F15821
05203  0 02000 0 05157          TRA AC0320                                              4F15822
05204  0 60200 0 06170 AC0540   SLW TAGWRD          SUBSCRIPTED VARIABLE                4F15823
05205  0 56000 0 06170          LDQ TAGWRD                                              4F15824
05206 -0 75400 0 00000          PXD ,0              CLEAR AC.                           4F15825
05207 -0 76300 0 00014          LGL 12              I-TAU TAGS TO AC.                   4F15826
05210  0 60200 0 06167          SLW CW+3            STORE FOR NEXT CIT ENTRY.           4F15827
05211  0 16200 0 05214          TQP *+3                                                 4F15828
05212  0 60000 0 06167          STZ CW+3                                                4F15829
05213 -0 50000 0 01454          CAL 2E18            REPLACE NULL TAG.                   4F15830
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05214  0 60200 0 06173          SLW TAGPRT          SAVE FOR LATER USE.                          4F15831
05215 -0 76300 0 00001          LGL 1                                                            4F15832
05216 -0 75400 0 00000          PXD ,0              CLEAR AC.                                    4F15833
05217 -0 76300 0 00010          LGL 8               FORM TWICE SIGMA TAG.                        4F15834
05220  0 76700 0 00001          ALS 1                                                            4F15835
05221  0 40100 0 00446          ADM SIG1IX-2        FORM BASE OF TABLE + SIGMA TAG.              4F15836
05222  0 62100 0 05223          STA SDRADD                                                       4F15837
05223 -0 75400 0 00000 SDRADD   PXD **,0                                                         4F15838
05224  0 76200 0 00302          RDR 2                                                            4F15839
05225  0 46000 0 05223          LDA SDRADD                                                       4F15840
05226 -0 70000 0 02365          CAD DUMP                                                         4F15841
05227  0 76000 0 00006          COM                                                              4F15842
05230 -0 70000 0 02365          CAD DUMP                                                         4F15843
05231  0 76000 0 00006          COM                                                              4F15844
05232  0 10000 0 05234          TZE *+2             CHECK SUM TEST.                              4F15845
05233  0 07400 4 03400          TSX DIAG,4          ERROR SIGMA1 CKSUM FAILS                     4F15846
05234 -0 50000 0 02365          CAL DUMP                                                         4F15847
05235 -0 60200 0 06167          ORS CW+3            ADD RELATIVE ADDRESS TO I-TAU TAG.           4F15848
05236  0 50000 0 06172          CLA SYMWRD          MOVE VARIABLE NAME FOR NEXT CIT ENTRY.       4F15849
05237  0 60100 0 06166          STO CW+2                                                         4F15850
05240  0 02000 4 00001          TRA 1,4             RETURN TO CALLER                             4F15851
                                                                                                 4F158511
05241  0 07400 4 03401 CP6000   TSX FLTR00,4        COMPILE FLOW TRACE INFORMATION AND THEN      4F158512
05242  0 00000 0 06164              CW              COMPILE LXD 7(TYPE =,4                       4F158513
05243  0 00000 0 06165              CW+1                                                         4F158514
05244  0 00000 0 06166              CW+2                                                         4F158515
05245  0 00000 0 06167              CW+3                                                         4F158516
05246  0 02000 0 04622          TRA ES0000                                                       4F158517
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F15852
                05247 ENDDDR BSS 0                                                               4F158525
                                                                                                 4F15853
                06160 ENDD   ORG 3184                                                            4F15854
                06160 FNSW   BSS 1                                                               4F15855
                06161 P(CNTR BSS 1                                                               4F15856
                06162 ARGORG BSS 1                                                               4F15857
                06163 XRSAVE BSS 1                                                               4F15858
                06164 CW     BSS 4                                                               4F15859
                06170 TAGWRD BSS 1                                                               4F15860
                06171 OPWORD BSS 1                                                               4F15861
                06172 SYMWRD BSS 1                                                               4F15862
                06173 TAGPRT BSS 1                                                               4F15863
                06174 CPBETA BSS 300                                                             4F15864
                06650 SCRIPL BSS 600                                                             4F15865
                                     END OF ARITHMETIC / STATE D.                                4F15866
                                    * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F15867
                                                                                                 4F15868
                                    SYNONYMS USED BY SECTION ONE.                                4F15869
                01100 1E     SYN ERASE                    COMMON WORKING STORAGE.                4F15870
                00004 1TOCS  SYN 4                        ENTRY TO SYSTEM TAPE MONITOR.          4F15871
                01101 2E     SYN ERASE+1                  COMMON WORKING STORAGE.                4F15872
                01501 2P     SYN I(                                                              4F15873
                01531 36ONES SYN ALL1                                                            4F15874
                01102 3E     SYN ERASE+2                  COMMON WORKING STORAGE.                4F15875
                01117 3QBAR  SYN 3LBAR                                                           4F15876
```

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01103 4E      SYN ERASE+3
00001 A       EQU 1
01430 ABLANK  SYN BLANK
01376 ACOMMA  SYN COMMA
01532 ADD     SYN L(ADD)
01400 AEQUAL  SYN EQUAL
01375 ALPAR   SYN OPEN
02404 ARITH   SYN STATEB
01377 ARPAR   SYN CLOS
01535 ARS     SYN L(ARS)
00002 B       EQU 2
00004 C       EQU 4
01537  CAL    SYN L(CAL)
01731 CIT     SYN CIT00
01150 CITMQR  SYN E1C
00223 CITTAP  SYN 147
01101 CITXR1  SYN ERASE+1
01102 CITXR2  SYN ERASE+2
01544  CPY    SYN L(CPY)
01454 D1      SYN 2E18
01101 D12     SYN ERASE+1
01466  D18    SYN DEC18
01102 D3      SYN ERASE+2
01546  DED    SYN L(DED)
00000 DEL(A)  SYN 0
02210 DEL(B)  SYN 1160
02373 DEL(C)  SYN 1275
01322 DEL(D)  SYN 722
00310 DIM1    SYN 0200
00764 DIM2    SYN 0500
01440 DIM3    SYN 0800
01100 DIMCTR  SYN ERASE
01500 DMP     SYN E(
01100 DOE     SYN ERASE
01103 DRCKSM  SYN ERASE+3
01104 DRMADR  SYN ERASE+4
01413 DRMERC  SYN L(5)
01100 DRSYM   SYN ERASE
01100 E1TDR   SYN ERASE
01101 E2C     SYN ERASE+1
01101 E2TDR   SYN ERASE+1
01102 E3C     SYN ERASE+2
01102 E3TDR   SYN ERASE+2
01101 EKE     SYN ERASE+1
01103 ENOND   SYN ERASE+3
01104 FEOD    SYN ERASE+4
00002 FIXCON  SYN 0002
00312 FLOCON  SYN 202
00002 FXCODR  SYN 2
01102 H       SYN ERASE+2
01522 H(      SYN ADSPOP
01554 HPR     SYN L(HPR)
01555  LDA    SYN L(LDA)
01561 LXD     SYN L(LXD)
```

```
COMMON WORKING STORAGE.                    4F15877
                                           4F15878
                                           4F15879
                                           4F15880
                                           4F15881
                                           4F15882
                                           4F15883
                                           4F15884
                                           4F15885
                                           4F15886
                                           4F15887
                                           4F15888
                                           4F15889
                                           4F15890
ERASABLE STORAGE.                          4F15891
COMPILED INSTRUCTION TAPE.                 4F15892
ERASABLE STORAGE.                          4F15893
ERASABLE STORAGE.                          4F15894
                                           4F15895
                                           4F15896
COMMON WORKING STORAGE.                    4F15897
                                           4F15898
COMMON WORKING STORAGE.                    4F15899
                                           4F15900
DRUM ORIGIN FOR STATE A.                   4F15901
DRUM ORIGIN FOR STATE B.                   4F15902
DRUM ORIGIN FOR STATE C.                   4F15903
DRUM ORIGIN FOR STATE D.                   4F15904
DRUM TABLE ORIGIN -DRTABS,DIM.SR.          4F15905
DRUM TABLE ORIGIN -DRTABS,DIM.SR.          4F15906
DRUM TABLE ORIGIN -DRTABS,DIM.SR.          4F15907
COMMON WORKING STORAGE.                    4F15908
                                           4F15909
COMMON WORKING STORAGE.                    4F15910
COMMON WORKING STORAGE.                    4F15911
ERASABLE STORAGE.                          4F15912
NUMBER OF DRUM READING ATTEMPTS.           4F15913
COMMON WORKING STORAGE.                    4F15914
COMMON WORKING STORAGE.                    4F15915
COMMON WORKING STORAGE.                    4F15916
COMMON WORKING STORAGE.                    4F15917
COMMON WORKING STORAGE.                    4F15918
COMMON WORKING STORAGE.                    4F15919
COMMON WORKING STORAGE.                    4F15920
COMMON WORKING STORAGE.                    4F15921
COMMON WORKING STORAGE.                    4F15922
DRUM TABLE ORIGIN -DRTABS.                 4F15923
DRUM TABLE ORIGIN -DRTABS.                 4F15924
                                           4F15925
COMMON WORKING STORAGE.                    4F15926
                                           4F15927
                                           4F15928
                                           4F15929
                                           4F15930
```

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01373 L(10)   SYN TEN                                                    4F15931
01400 L(11)   SYN EQUAL                                                  4F15932
01420 L(12)   SYN MINUS                                                  4F15933
01454 L(1D)   SYN 2E18                                                   4F15934
01374 L(63)   SYN ENDMK                                                  4F15935
03440 MEMORG  SYN 1824          MEMORY ORIGIN FOR ALL STATES.            4F15936
01452 MSK     SYN MASK2                                                  4F15937
02402 MTR000  SYN STATEA                                                 4F15938
02430 MTR300  SYN MTR3                                                   4F15942
01103 N       SYN ERASE+3       COMMON WORKING STORAGE.                  4F15943
01404 PLUS    SYN 12Z                                                    4F15945
01566 PXD     SYN L(PXD)                                                 4F15946
01100 RAXR4   SYN ERASE         COMMON WORKING STORAGE.                  4F15947
01226 SIGMA1  SYN 0662          DRUM TABLE ORIGIN -DRTABS.               4F15948
01101 SR6WRK  SYN ERASE+1       ERASABLE STORAGE.                        4F15949
01416  ST     SYN L(8)                                                   4F15950
01571 STA     SYN L(STA)                                                 4F15951
01104 STCKSM  SYN ERASE+4       COMMON WORKING STORAGE.                  4F15952
00224 TABTAP  SYN 148           TABLE TAPE.                              4F15953
01453 TAG4    SYN 2E17                                                   4F15954
00000 TAU1    SYN 0000          DRUM TABLE ORIGIN -DRTABS.               4F15955
00454 TAU2    SYN 0300          DRUM TABLE ORIGIN -DRTABS.               4F15956
01356 TAU3    SYN 0750          DRUM TABLE ORIGIN -DRTABS.               4F15957
01413 TERC    SYN L(5)          TAPE ERROR COUNTER.                      4F15958
01103 TETMQR  SYN ERASE+3       ERASABLE STORAGE.                        4F15959
01102 TETWRK  SYN ERASE+2       ERASABLE STORAGE.                        4F15960
01100 TETXR2  SYN ERASE         ERASABLE STORAGE.                        4F15961
01101 TETXR4  SYN ERASE+1       ERASABLE STORAGE.                        4F15962
01576  TIX    SYN L(TIX)                                                 4F15963
01504 ZER     SYN O(                                                     4F15964
00000 ..      EQU 0                                                      4F15965
                   END OF SYNONYMS USED BY SECTION ONE.                 4F15966
                  * * * * * * * * * * * * * * * * * * * * * * * * * * * *4F15967
                                                                         4F15968
                   END OF SECTION ONE.                                   4F15969
A     00000       END                                                    4F15970
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1          REM 704 FORTRAN MASTER RECORD CARD / DIAGNOSTIC = F0200000.      4F1D0010
1                                   704 FORTRAN MASTER RECORD CARD / DIAGNOSTIC = F0200000.      4F1D0010
                   00000        ORG 0                                                            4F1D0020
00000  0 13440 0 13440          PZE DIAG,,DIAG                                                   4F1D0030
00001  0 00000 0 17777          PZE 8191                                                         4F1D0040
                                    704 FORTRAN TWO, SECTION ONE DIAGNOSTIC, RECORD F020.        4F1D0050
                                                                                                 4F1D0060
                                    THIS RECORD IS CALLED IN FROM TAPE ONCE FOR EACH ERROR IN    4F1D0070
                                    SECTION ONE AND ONCE AT THE END OF SECTION ONE.              4F1D0080
                                                                                                 4F1D0090
                   13440 DIAG   ORG 1824+4096          MOD 4K OR 8K MACHINE SIZE                 4F1D0100
                   00001  A     EQU 1                                                            4F1D0110
                   00002  B     EQU 2                                                            4F1D0120
                   00004  C     EQU 4                                                            4F1D0130
                   77777  EXITX EQU 32767                                                        4F1D0140
13440  3 00000 4 13543 EDIT     TXH ERENT,C,0          IF IR4 IS ZERO THIS IS THE END OF SEC ONE. 4F1D0150
13441  0 50000 0 00020          CLA 16                 IF NON ZERO IT IS AN ERROR CALL.           4F1D0160
13442 -0 32000 0 14033          ANA L(4)D              IF IT IS THE END OF SEC ONE WERE THERE ANY 4F1D0170
13443  0 10000 0 00004          TZE 4                  ERRORS DURING SECTION ONE ( INDICATED BY   4F1D0180
13444  0 07400 4 14121          TSX PRINT,C                                                      4F1D0190
13445  0 14104 0 14067          HTR STOP,0,XCOM                                                  4F1D0200
13446  0 07400 4 14121          TSX PRINT,C            BIT IN WORD 20 OCTAL). IF THERE WERE NO    4F1D0210
13447  0 14045 0 14044          PZE RESTR,0,RESTR+1    ERRORS GO TO SEC ONE PRIME. IF THERE WERE  4F1D0220
13450  0 53400 4 02367          LXA DCELL1,4           GET INDICATOR OF SOURCE PROGRAM ERRORS.    4F1D0230
13451  3 00000 4 13456          TXH SOURCE,4,0         TEST IF ANY OF ERROR WERE SOURCE.          4F1D0240
13452  0 53400 4 14013          LXA L(8),4             NONE WERE, SO BACKSPACE TAPE 1 TO MACHINE  4F1D0250
13453  0 76400 0 00201          BST 1                  ERROR RECORD.                              4F1D0260
13454  2 00001 4 13453          TIX *-1,4,1                                                      4F1D0270
13455  0 02000 0 00004          TRA 4                  NOW GO TO 1 TO CS FOR MACHINE ERROR RECORD.4F1D0280
13456  0 53400 4 14015 SOURCE   LXA L(12),4            SOME SOURCE PROGRAM ERRORS, RECOMPILATION  4F1D0290
13457  0 76400 0 00201          BST 1                  MEANINGLESS. BACKSPACE TAPE 1 TO SOURCE    4F1D0300
13460  2 00001 4 13457          TIX *-1,4,1            PROGRAM ERROR RECORD.                      4F1D0310
13461  0 02000 0 00004          TRA 4                  NOW GO TO 1 TO CS FOR THIS RECORD.         4F1D0320
                   13462        BSS 10                 EXPANSION AREA.  FOR PESSIMISM...          4F1D0330
                                    NUMBERS OF MACHINE ERROR CALL FROM SECTION ONE.              4F1D0340
13474  000002000304     MACERR BCD 1002034                                                       4F1D0350
13475  000002000602             BCD 1002062                                                       4F1D0360
13476  000002020606             BCD 1002266                                                       4F1D0370
13477  000002040303             BCD 1002433                                                       4F1D0380
13500  000002040304             BCD 1002434                                                       4F1D0390
13501  000002040305             BCD 1002435                                                       4F1D0400
13502  000002040306             BCD 1002436                                                       4F1D0410
13503  000002050203             BCD 1002523                                                       4F1D0420
13504  000002050605             BCD 1002565                                                       4F1D0430
13505  000003020702             BCD 1003272                                                       4F1D0440
13506  000003050601             BCD 1003561                                                       4F1D0450
13507  000005070105             BCD 1005715                                                       4F1D0460
13510  000004030407             BCD 1004347                                                       4F1D0470
13511  000005020303             BCD 1005233                                                       4F1D0480
13512  000000050503             BCD 1000553                                                       4F1D0490
13513  000000050600             BCD 1000560                                                       4F1D0500
13514  000000050603             BCD 1000563                                                       4F1D0510
13515  000000050606             BCD 1000566                                                       4F1D0520
13516  000100050304             BCD 1010534
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13517  000102070500            BCD 1012750
                13520          BSS 18                MORE PESSIMISM...
13542  0 00000 0 00024 COUNT       20                                                    4F1D0540
                                                                                         4F1D0550
                                   THIS IS AN ERROR CALL.                                4F1D0560
13543 -0 75400 4 00000  ERENT PXD 0,C                                                    4F1D0570
13544  0 76000 0 00006        COM                        CONSTRUCT OCTAL STOP            4F1D0580
13545  0 40000 0 14032        ADD L(1)D                                                  4F1D0590
13546 -0 73400 2 00000        PDX 0,B                                                    4F1D0600
13547 -0 75400 2 00000        PXD 0,B                                                    4F1D0610
13550  0 76500 0 00043        LRS 35                                                     4F1D0620
13551 -0 53400 2 14034        LXD L(6)D,B                                                4F1D0630
13552  0 76700 0 00003  ALS   ALS 3                                                      4F1D0640
13553 -0 76300 0 00003        LGL 3                                                      4F1D0650
13554  2 00001 2 13552        TIX ALS,B,1                                                4F1D0660
13555  0 60100 0 14047        STO NUMB                                                   4F1D0670
13556  0 53400 1 14035        LXA L(0),1           SET TO SEARCH TABLE OF NUMBERS OF MACHINE 4F1D0680
13557  0 53400 2 13542        LXA COUNT,2          ERRORS.                               4F1D0690
13560  0 34000 1 13474        CAS MACERR,1         COMPARE  EACH ENTRY IN TABLE TO OCTAL 4F1D0700
13561  1 00001 1 13564        TXI *+3,1,1          NUMBER IN AC.                         4F1D0710
13562  0 02000 0 13566        TRA *+4              EXIT IF FOUND.                        4F1D0720
13563  1 00001 1 13564        TXI *+1,1,1                                                4F1D0730
13564  2 00001 2 13560        TIX *-4,2,1          CONTINUE.                             4F1D0740
13565  0 62100 0 02367        STA DCELL1           SET INDICATOR TO NON-ZERO FOR SOURCE ERROR 4F1D0750
13566  0 53400 3 14035        LXA L(0),3                                                 4F1D0760
13567  0 50000 0 14037        CLA XXX                   CONSTRUCT CALLING SEQUENCE WORD FOR 4F1D0770
13570  0 34000 1 14504  ONE   CAS TABLE,A               PRINTING COMMENT                 4F1D0780
13571  0 02000 0 13573        TRA TWO                                                    4F1D0790
13572  0 02000 0 13601        TRA FOUR                                                   4F1D0800
13573  1 77777 1 13574  TWO   TXI THREE,A,-1                                             4F1D0810
13574  3 00000 1 13570  THREE TXH ONE,A,0                                                4F1D0820
13575  0 50000 0 14047        CLA NUMB                                                   4F1D0830
13576  0 60100 0 14104        STO XCOM                                                   4F1D0840
13577 -0 50000 0 14046        CAL XKEY                                                   4F1D0850
13600  0 02000 0 13632        TRA EIGHT                                                  4F1D0860
13601  3 00000 2 13612  FOUR  TXH FIVE,B,0                                               4F1D0870
13602  0 40200 1 14505        SUB TABLE+1,A                                              4F1D0880
13603  0 10000 0 13627        TZE SEVEN                                                  4F1D0890
13604  0 50000 0 14047        CLA NUMB                                                   4F1D0900
13605  0 40200 1 14505        SUB TABLE+1,A                                              4F1D0910
13606  0 10000 0 13611        TZE NINE                                                   4F1D0920
13607  0 50000 0 14037        CLA XXX                                                    4F1D0930
13610  0 02000 0 13573        TRA TWO                                                    4F1D0940
13611  1 77777 1 13612  NINE  TXI FIVE,A,-1                                              4F1D0950
13612 -0 75400 1 00000  FIVE  PXD 0,A                                                    4F1D0960
13613  0 76000 0 00006        COM                                                        4F1D0970
13614  0 40000 0 14032        ADD L(1)D                                                  4F1D0980
13615 -0 73400 4 00000        PDX 0,C                                                    4F1D0990
13616 -0 75400 4 00000        PXD 0,C                                                    4F1D1000
13617  0 40000 0 14042        ADD TABAD                                                  4F1D1010
13620  3 00000 2 13625        TXH SIX,B,0                                                4F1D1020
13621  0 77100 0 00022        ARS 18                                                     4F1D1030
13622  0 60100 0 14050        STO KEY                                                    4F1D1040
13623  0 50000 0 14037        CLA XXX                                                    4F1D1050
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13624   1 00001 2 13574          TXI THREE,B,1                                  4F1D1060
13625  -0 50100 0 14050  SIX     ORA KEY                                        4F1D1070
13626   0 02000 0 13632          TRA EIGHT                                      4F1D1080
13627   0 50000 0 14047  SEVEN   CLA NUMB                                       4F1D1090
13630   0 60100 0 14104          STO XCOM                                       4F1D1100
13631   0 50000 0 14046          CLA XKEY                                       4F1D1110
13632   0 60100 0 14025  EIGHT   STO COMM                                       4F1D1120
13633   0 50000 0 01151          CLA F-1                                        4F1D1130
13634   0 60100 0 01150          STO F-2                                        4F1D1140
13635   0 50000 0 14045          CLA BLANK                                      4F1D1150
13636   0 60100 0 01151          STO F-1                                        4F1D1160
13637  -0 53400 1 14041          LXD L(X)D,A      CONSTRUCT CALLING SEQUENCE WORD 4F1D1170
13640   0 50000 0 14036          CLA ONES                                       4F1D1180
13641   0 34000 1 01331  STA05   CAS F+111,A                                    4F1D1190
13642   0 02000 0 13644          TRA STA10                                      4F1D1200
13643   0 02000 0 13646          TRA STA20                                      4F1D1210
13644   2 00001 1 13641  STA10   TIX STA05,A,1                                  4F1D1220
13645  -0 53400 1 14035          LXD L(0),A                                     4F1D1230
13646  -0 75400 1 00000  STA20   PXD 0,A                                        4F1D1240
13647   0 60100 0 14051          STO SES                                        4F1D1250
13650   0 50000 0 14041          CLA L(X)D                                      4F1D1260
13651   0 40200 0 14051          SUB SES                                        4F1D1270
13652   0 40000 0 14043          ADD FORG                                       4F1D1280
13653   0 60100 0 14051          STO SES                                        4F1D1290
13654   0 50000 0 14043          CLA FORG                                       4F1D1300
13655   0 77100 0 00022          ARS 18                                         4F1D1310
13656  -0 50100 0 14051          ORA SES                                        4F1D1320
13657   0 60100 0 14023          STO STATE                                      4F1D1330
13660   0 50000 0 00020          CLA 16           WAS THERE A PREVIOUS ERROR CALL 4F1D1340
13661  -0 32000 0 14033          ANA L(4)D                                      4F1D1350
13662  -0 10000 0 13673          TNZ PROG                                       4F1D1360
13663   0 50000 0 14033          CLA L(4)D    NO, MAKE ERROR CALL INDICATION    4F1D1370
13664  -0 60200 0 00020          ORS 16                                         4F1D1380
13665   0 07400 4 14121          TSX PRINT,C      AND PRINT HEADING             4F1D1390
13666   0 14067 0 14052          HTR START,0,STOP                               4F1D1400
13667   0 76600 0 00361          WPR                                            4F1D1410
13670   0 76600 0 00361          WPR                                            4F1D1420
13671   0 76600 0 00361          WPR                                            4F1D1430
13672   0 76600 0 00361          WPR                                            4F1D1440
13673   0 07400 4 13742  PROG    TSX SETNBC,4                                   4F1D1450
13674   0 07400 4 13746          TSX NNBC,4                                     4F1D1460
13675   0 07400 4 13746          TSX NNBC,4                                     4F1D1470
13676   0 40200 0 14014          SUB L(10)                                      4F1D1480
13677  -0 10000 0 14022          TNZ EXIT                                       4F1D1490
13700   0 07400 4 13742          TSX SETNBC,4                                   4F1D1500
13701   0 07400 4 13746          TSX NNBC,4                                     4F1D1510
13702   0 40200 0 14007          SUB L(X)                                       4F1D1520
13703  -0 10000 0 13725          TNZ CALLBK                                     4F1D1530
13704   0 50000 0 14001          CLA L(I)                                       4F1D1540
13705   0 07400 4 13760          TSX REP,4                                      4F1D1550
13706   0 07400 4 13746          TSX NNBC,4                                     4F1D1560
13707   0 50000 0 14002          CLA L(F)                                       4F1D1570
13710   0 07400 4 13760          TSX REP,4                                      4F1D1580
13711   0 07400 4 13746          TSX NNBC,4                                     4F1D1590
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13712  0 40200 0 14003          SUB L(=)                                                  4F1D1600
13713 -0 10000 0 14022          TNZ EXIT                                                  4F1D1610
13714  0 50000 0 14004          CLA L(LP)                                                 4F1D1620
13715  0 07400 4 13760          TSX REP,4                                                 4F1D1630
13716 -3 77622 1 14022 TXE      TXL EXIT,1,-110                                           4F1D1640
13717  0 07400 4 13746          TSX NNBC,4                                                4F1D1650
13720  0 40200 0 14016          SUB ENDM                                                  4F1D1660
13721 -0 10000 0 13716          TNZ TXE                                                   4F1D1670
13722  0 50000 0 14005          CLA L(RP)                                                 4F1D1680
13723  0 07400 4 13760          TSX REP,4                                                 4F1D1690
13724  0 02000 0 14022          TRA EXIT                                                  4F1D1700
13725  0 50000 0 14010 CALLBK   CLA L(C)                  CHANGE Z BACK TO C              4F1D1710
13726  0 07400 4 13760          TSX REP,4                                                 4F1D1720
13727  0 07400 4 13746          TSX NNBC,4                                                4F1D1730
13730  0 50000 0 14011          CLA L(A)                  CHANGE TEN BACK TO A            4F1D1740
13731  0 07400 4 13760          TSX REP,4                                                 4F1D1750
13732  0 07400 4 13746          TSX NNBC,4                                                4F1D1760
13733  0 50000 0 14012          CLA L(L)                  CHANGE EQUAL BACK TO FIRST L    4F1D1770
13734  0 07400 4 13760          TSX REP,4                                                 4F1D1780
13735  2 00001 2 13737          TIX SECL,2,1                                              4F1D1790
13736  1 77777 1 13737          TXI SECL,1,-1             ADJUST COUNTS FOR NEXT CHAR     4F1D1800
13737  0 50000 0 14012 SECL     CLA L(L)                  CHANGE BLANK BACK TO SECOND L   4F1D1810
13740  0 07400 4 13760          TSX REP,4                                                 4F1D1820
13741  0 02000 0 14022          TRA EXIT                                                  4F1D1830
13742 -0 53400 1 13752 SETNBC   LXD TXI,1                                                 4F1D1840
13743  0 53400 2 13747          LXA LGL,2                                                 4F1D1850
13744  0 56000 0 01152          LDQ F                                                     4F1D1860
13745  0 02000 4 00001          TRA 1,4                                                   4F1D1870
13746 -0 75400 0 00000 NNBC     PXD                                                       4F1D1880
13747 -0 76300 0 00006 LGL      LGL 6                                                     4F1D1890
13750  2 00001 2 13754          TIX CAS,2,1                                               4F1D1900
13751  0 56000 1 01152          LDQ F,1                                                   4F1D1910
13752  1 77777 1 13753 TXI      TXI TXI+1,1,-1                                            4F1D1920
13753  0 53400 2 13747          LXA LGL,2                                                 4F1D1930
13754  0 34000 0 14006 CAS      CAS BLANKX                                                4F1D1940
13755  0 02000 4 00001          TRA 1,4                                                   4F1D1950
13756  0 02000 0 13746          TRA NNBC                                                  4F1D1960
13757  0 02000 4 00001          TRA 1,4                                                   4F1D1970
13760 -0 60000 0 14017 REP      STQ ES1                                                   4F1D1980
13761 -0 63400 2 14020          SXD ES2,2                                                 4F1D1990
13762 -0 63400 1 14021          SXD ES3,1                                                 4F1D2000
13763  0 76500 0 00043          LRS 35                                                    4F1D2010
13764 -0 50000 0 14016          CAL ENDM                                                  4F1D2020
13765 -3 00005 2 13767 TXL      TXL TXL+2,2,5                                             4F1D2030
13766  1 00001 1 13771          TXI TXL+4,1,1                                             4F1D2040
13767 -0 76300 0 00006          LGL 6                                                     4F1D2050
13770  2 00001 2 13767 TIX      TIX TIX-1,2,1                                             4F1D2060
13771  0 76000 0 00006          COM                                                       4F1D2070
13772  0 32000 1 01151          ANS F-1,1                                                 4F1D2080
13773 -0 76300 0 00044          LGL 36                                                    4F1D2090
13774 -0 60200 1 01151          ORS F-1,1                                                 4F1D2100
13775 -0 53400 1 14021          LXD ES3,1                                                 4F1D2110
13776 -0 53400 2 14020          LXD ES2,2                                                 4F1D2120
13777  0 56000 0 14017          LDQ ES1                                                   4F1D2130
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14000  0 02000 4 00001          TRA 1,4                                                  4F1D2140
14001  000000000031     L(I)    BCD 100000I                                              4F1D2150
14002  000000000026     L(F)    BCD 100000F                                              4F1D2160
14003  000000000013     L(=)    BCD 100000=                                              4F1D2170
14004  000000000074     L(LP)   BCD 100000(                                              4F1D2180
14005  000000000034     L(RP)   BCD 100000)                                              4F1D2190
14006  000000000060     BLANKX  BCD 100000                                               4F1D2200
14007  000000000067     L(X)    BCD 100000X                                              4F1D2210
14010  000000000023     L(C)    BCD 100000C                                              4F1D2220
14011  000000000021     L(A)    BCD 100000A                                              4F1D2230
14012  000000000043     L(L)    BCD 100000L                                              4F1D2240
14013  0 00000 0 00010  L(8)        8                                                    4F1D2250
14014 +000000000012     L(10)   OCT 12                                                   4F1D2260
14015  0 00000 0 00014  L(12)       12                                                   4F1D2270
14016 +000000000077     ENDM    OCT 77                                                   4F1D2280
A 14017  0 00000 0 00000  ES1     HTR                                                      4F1D2290
A 14020  0 00000 0 00000  ES2     HTR                                                      4F1D2300
A 14021  0 00000 0 00000  ES3     HTR                                                      4F1D2310
14022  0 07400 4 14121   SECND  TSX PRINT,C                PRINT STATEMENT                4F1D2320
A 14023  0 00000 0 00000   STATE  HTR                                                      4F1D2330
14024  0 07400 4 14121          TSX PRINT,C                PRINT COMMENT                  4F1D2340
A 14025  0 00000 0 00000   COMM   HTR                                                      4F1D2350
14026  0 76600 0 00361          WPR                                                      4F1D2360
14027  0 76600 0 00361          WPR                                                      4F1D2370
14030  0 76400 0 00201   BST    BST 1                      TAPE                           4F1D2380
14031  0 02000 0 02402          TRA MON                    AND RETURN TO SEC ONE MONITOR  4F1D2390
14032 +000001000000      L(1)D  OCT 1000000                                              4F1D2400
14033 +000004000000     L(4)D   OCT 4000000                                              4F1D2410
14034 +000006000000      L(6)D  OCT 6000000                                              4F1D2420
A 14035  0 00000 0 00000   L(0)   HTR                                                      4F1D2430
14036 -377777777777      ONES   OCT 777777777777                                         4F1D2440
14037  676767676767      XXX    BCD 1XXXXXX                                              4F1D2450
14040 +000000077777      HALT   OCT 77777                                                4F1D2460
14041 +000161000000      L(X)D  OCT 161000000                                            4F1D2470
14042  0 14504 0 00000   TABAD  HTR 0,0,TABLE                                            4F1D2480
14043  0 01150 0 00000   FORG   HTR 0,0,F-2                                              4F1D2490
14044  016060606060      RESTR  BCD 11                                                   4F1D2500
14045  606060606060      BLANK  BCD 1                                                    4F1D2510
14046  0 14121 0 14104   XKEY   HTR XCOM,0,XXCOM                                         4F1D2520
A 14047  0 00000 0 00000   NUMB   HTR                                                      4F1D2530
A 14050  0 00000 0 00000   KEY    HTR                                                      4F1D2540
A 14051  0 00000 0 00000   SES    HTR                                                      4F1D2550
14052  016060606060      START  BCD 71                                                   4F1D2560
14053  606060606060
14054  606060606060
14055  606060606060
14056  606060606060
14057  606060606060
14060  606060606060
14061  264651635121             BCD 6FORTRAN DIAGNOSTIC PROGRAM RESULTS                  4F1D2570
14062  456024312127
14063  454662633123
14064  604751462751
14065  214460512562
```

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     14066  644363626060
     14067  006060606060      STOP  BCD 70                                                    4F1D2580
     14070  606060606060
     14071  606060606060
     14072  606060606060
     14073  606060606060
     14074  606060606060
     14075  606060606060
     14076  254524604626            BCD 6END OF DIAGNOSTIC PROGRAM RESULTS                    4F1D2590
     14077  602431212745
     14100  466263312360
     14101  475146275121
     14102  446051256264
     14103  436362606060                                                                      4F1D2600
A    14104  0 00000 0 00000   XCOM  HTR
     14105  606060606060            BCD        THIS ERROR IS NOT LISTED IN THE DIAGNOSTIC PROGRAM ERR4F1D2610
     14106  633031626025
     14107  515146516031
     14110  626045466360
     14111  433162632524
     14112  603145606330
     14113  256024312127
     14114  454662633123
     14115  604751462751
     14116  214460255151
     14117  465160433162            BCD 2OR LIST.                                             4F1D2620
     14120  633360606060
                     14121 XXCOM  BSS 0                                                       4F1D2630
                     14121  PRINT BSS 0                                                       4F1D2640
     14121  0 50000 4 00001   RAN   CLA 1,4                                                   4F1D2650
     14122  0 62100 0 14163         STA RNA                                                   4F1D2660
     14123  0 77100 0 00022         ARS 18                                                    4F1D2670
     14124  0 60100 0 14164         STO RNB                                                   4F1D2680
     14125 -0 63400 4 14165         SXD RNC,4                                                 4F1D2690
     14126  0 50000 0 14163   RN40  CLA RNA                                                   4F1D2700
     14127  0 40000 0 14166         ADD RND                                                   4F1D2710
     14130  0 34000 0 14164         CAS RNB                                                   4F1D2720
     14131  0 76100 0 00000         NOP                                                       4F1D2730
     14132  0 02000 0 14153         TRA RN50                                                  4F1D2740
     14133  0 76700 0 00022         ALS 18                                                    4F1D2750
     14134  0 40000 0 14163         ADD RNA                                                   4F1D2760
     14135  0 60100 0 14137         STO RAN10                                                 4F1D2770
     14136  0 07400 4 14170         TSX WOT,C                                                 4F1D2780
A    14137  0 00000 0 00000   RAN10 HTR                                                       4F1D2790
     14140  0 50000 0 14137         CLA RAN10                                                 4F1D2800
     14141  0 77100 0 00022         ARS 18                                                    4F1D2810
     14142  0 40200 0 14167         SUB RNE                                                   4F1D2820
     14143  0 62100 0 14150         STA RN20                                                  4F1D2830
     14144  0 40200 0 14167         SUB RNE                                                   4F1D2840
     14145  0 62100 0 14151         STA RN30                                                  4F1D2850
     14146  0 62100 0 14163         STA RNA                                                   4F1D2860
     14147  0 50000 0 14402         CLA BLNKS                                                 4F1D2870
A    14150  0 60100 0 00000   RN20  STO                                                       4F1D2880
A    14151  0 60100 0 00000   RN30  STO                                                       4F1D2890
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        14152  0 02000 0 14126          TRA RN40                                  4F1D2900
        14153  0 50000 0 14164   RN50   CLA RNB                                   4F1D2910
        14154  0 76700 0 00022          ALS 18                                    4F1D2920
        14155  0 40000 0 14163          ADD RNA                                   4F1D2930
        14156  0 60100 0 14160          STO RN60                                  4F1D2940
        14157  0 07400 4 14170          TSX WOT,C                                 4F1D2950
A       14160  0 00000 0 00000   RN60   HTR                                       4F1D2960
        14161 -0 53400 4 14165          LXD RNC,C                                 4F1D2970
        14162  0 02000 4 00002          TRA 2,C                                   4F1D2980
A       14163  0 00000 0 00000   RNA    HTR                                       4F1D2990
A       14164  0 00000 0 00000   RNB    HTR                                       4F1D3000
A       14165  0 00000 0 00000   RNC    HTR                                       4F1D3010
        14166  0 00000 0 00024   RND    HTR 20                                    4F1D3020
        14167  0 00000 0 00001   RNE    HTR 1                                     4F1D3030
        14170 -0 63400 1 14340   WOT    SXD X1,1                                  4F1D3040
        14171 -0 63400 2 14346          SXD X2,2                                  4F1D3050
        14172  0 50000 4 00001          CLA 1,4          PRINT ROUTINE            4F1D3060
        14173  0 62100 0 14221          STA T5           X                        4F1D3070
        14174  0 62200 0 14403          STD X4           X                        4F1D3080
        14175  0 77100 0 00022          ARS 18           X                        4F1D3090
        14176  0 40000 0 14403          ADD X4           X                        4F1D3100
        14177  0 62100 0 14252          STA PR2          X                        4F1D3110
        14200  0 62100 0 14277          STA CI9          X                        4F1D3120
        14201  0 40200 4 00001          SUB 1,4          B-A+1 IN AC              4F1D3130
        14202  0 10000 4 00002          TZE 2,4                                   4F1D3140
        14203 -0 12000 4 00002          TMI 2,4                                   4F1D3150
        14204 -0 63400 4 14403          SXD X4,4                                  4F1D3160
        14205  0 73400 4 00013   L11    PAX 11,4                                  4F1D3170
        14206 -0 63400 4 14211          SXD PR6,4                                 4F1D3180
        14207 -0 50000 0 14353          CAL WP           INITIALIZE SWITCH        4F1D3190
        14210  0 60100 0 14353          STO WP           X                        4F1D3200
TD      14211  3 00000 0 14212   PR6    TXH T4                                    4F1D3210
        14212  0 76600 0 00361   T4     WPR                                       4F1D3220
TD      14213 -3 00000 0 14217   Z2     TXL S3                                    4F1D3230
ATD     14214 -3 00000 0 00000   OZ2    TXL                                       4F1D3240
        14215  0 76000 0 00364   SP4    SPR 4                                     4F1D3250
TD      14216 -3 00000 0 14250          TXL RPR+2                                 4F1D3260
        14217  0 50200 0 14353   S3     CLS WP           SET SWITCH FOR MASKING   4F1D3270
        14220  0 60100 0 14353          STO WP           CHARACTER FROM TYPE WHEEL 1 4F1D3280
        14221 -0 50000 0 14221   T5     CAL *            OBTAIN FIRST CHARACTER   4F1D3290
        14222  0 77100 0 00036          ARS 30           X                        4F1D3300
        14223  0 10000 0 14215          TZE SP4          DOUBLE SPACE IF ZERO     4F1D3310
        14224  0 34000 0 14404          CAS YZONE        TEST FOR SPACE SUPPRESS  4F1D3320
TD      14225 -3 00000 0 14227          TXL BK           NO                       4F1D3330
TD      14226 -3 00000 0 14247          TXL RPR+1        SUPPRESS SPACE           4F1D3340
        14227  0 34000 0 14405   BK     CAS BNK          TEST FOR BLANK           4F1D3350
TD      14230 -3 00000 0 14232          TXL DIGF         NO                       4F1D3360
TD      14231 -3 00000 0 14250          TXL RPR+2        BLANK                    4F1D3370
        14232  0 76000 0 00372   DIGF   SPR 10           SET CHANNEL SKIP         4F1D3380
        14233 -0 32000 0 14234          ANA MK           MASK OUT ZONE            4F1D3390
        14234  0 73400 1 00017   MK     PAX 15,1         OBTAIN SPR COMBINATION   4F1D3400
        14235  1 00001 1 14236          TXI N2,1,1       X                        4F1D3410
        14236 -2 00010 1 14240   N2     TNX N3,1,8       X                        4F1D3420
        14237  0 76000 0 00370          SPR 8            X                        4F1D3430
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14240 -2 00004 1 14242  N3    TNX N4,1,4       X                                    4F1D3440
14241  0 76000 0 00364        SPR 4            X                                    4F1D3450
14242 -2 00002 1 14244  N4    TNX N5,1,2       X                                    4F1D3460
14243  0 76000 0 00362        SPR 2            X                                    4F1D3470
14244 -2 00001 1 14246  N5    TNX RPR,1,1      X                                    4F1D3480
14245  0 76000 0 00361        SPR 1            X                                    4F1D3490
14246  0 76600 0 00361  RPR   WPR                                                   4F1D3500
14247  0 76000 0 00365        SPR 5            SUPPRESS SPACE                       4F1D3510
14250  0 50000 0 14402        CLA BLNKS        FIND LAST NON-BLANK GROUP            4F1D3520
14251 -0 53400 4 14312        LXD CI4,4        X                                    4F1D3530
14252  0 34000 4 00000  PR2   CAS 0,4          X                                    4F1D3540
14253  1 77777 4 14256        TXI PR1,4,-1     X                                    4F1D3550
14254  1 00001 4 14252        TXI PR2,4,1      X                                    4F1D3560
14255  1 77777 4 14256        TXI PR1,4,-1     X                                    4F1D3570
14256 -0 63400 4 14316  PR1   SXD CI6,4        STORE END TEST                       4F1D3580
14257 -0 63400 4 14330        SXD CI8,4        X                                    4F1D3590
14260 -0 63400 4 14263        SXD PR8,4        X                                    4F1D3600
14261 -0 63400 4 14370        SXD WP4,4        X                                    4F1D3610
14262 -0 53400 4 14211        LXD PR6,4        X                                    4F1D3620
D 14263 -2 00000 4 14267  PR8   TNX PR5,4                                           4F1D3630
14264 -3 00014 4 14266        TXL PR3,4,12                                          4F1D3640
14265  0 76000 0 00370        SPR 8            FIRST CYCLE                          4F1D3650
14266 -0 53400 4 14211  PR3   LXD PR6,4        INITIALIZE GROUP COUNT               4F1D3660
14267  0 53400 2 14271  PR5   LXA PR7,2        INITIALIZE LEFT SETUP                4F1D3670
14270 -0 53400 1 14333        LXD YZ1,1        CLEAR CARD IMAGE                     4F1D3680
T 14271 -0 75400 0 00000  PR7   PXD              X                                    4F1D3690
14272  0 60200 1 14451  PR4   SLW LT,1         X                                    4F1D3700
14273  0 60200 1 14431        SLW RT,1         X                                    4F1D3710
14274  2 00001 1 14272        TIX PR4,1,1      X                                    4F1D3720
14275 -0 50000 0 14407  CIR   CAL COL1         INITIALIZE COLUMN INDICATOR          4F1D3730
14276  0 60200 0 14410  CI2   SLW COL          X                                    4F1D3740
14277  0 56000 4 00000  CI9   LDQ 0,4          OBTAIN GROUP                         4F1D3750
14300 -0 63400 4 14214        SXD OZ2,4        STORE GROUP COUNT                    4F1D3760
14301  0 53400 4 14303        LXA Q6,4         SET CHARACTER COUNT                  4F1D3770
T 14302 -0 75400 0 00000  CI1   PXD                                                 4F1D3780
14303 -0 76300 0 00006  Q6    LGL 6                                                 4F1D3790
14304  0 73400 1 00000        PAX 0,1                                               4F1D3800
14305 -0 50000 0 14410        CAL COL          POSITION COLUMN INDICATOR            4F1D3810
14306  0 77100 4 00006        ARS 6,4          X                                    4F1D3820
14307  2 00020 1 14333        TIX YZ1,1,16     TEST FOR DIGIT                       4F1D3830
14310  3 00017 1 14336        TXH YZ2,1,15     TEST FOR Y-ZONE                      4F1D3840
14311 -0 60200 3 14446  CI5   ORS D,3          STORE DIGIT                          4F1D3850
14312  2 00001 4 14302  CI4   TIX CI1,4,1      COUNT CHARACTERS                     4F1D3860
14313  0 77100 0 00001  CI3   ARS 1            SHIFT AND TEST COLUMN                4F1D3870
14314 -0 53400 4 14214        LXD OZ2,4        RESTORE GROUP COUNT                  4F1D3880
14315  1 77777 4 14316        TXI CI6,4,-1     COUNT GROUPS                         4F1D3890
D 14316 -3 00000 4 14320  CI6   TXL CI7,4        TEST FOR LAST NON-BLANK GROUP        4F1D3900
14317 -0 10000 0 14276        TNZ CI2          TEST FOR END OF ROW                  4F1D3910
14320 -0 50000 2 14433  CI7   CAL 8.3,2        FORM TRUE 8,4                        4F1D3920
14321 -0 60200 2 14436        ORS D-8,2        AND 3 ROWS AND                       4F1D3930
14322 -0 60200 2 14443        ORS D-3,2        MOVE 8.4 AND 8.3                     4F1D3940
14323  0 60200 2 14434        SLW 8.2,2        ROWS                                 4F1D3950
14324 -0 50000 2 14432        CAL 8.4,2        FORM TRUE 8.4                        4F1D3960
14325 -0 60200 2 14436        ORS D-8,2        X                                    4F1D3970
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     14326 -0 60200 2 14442          ORS D-4,2        X                                                4F1D3980
     14327  0 60200 2 14433          SLW 8.3,2        X                                                4F1D3990
D    14330 -3 00000 4 14353  CI8     TXL WP,4         TEST FOR END                                     4F1D4000
     14331  3 00017 2 14353          TXH WP,2,15      TEST FOR RIGHT HALF                              4F1D4010
     14332  1 00020 2 14275          TXI CIR,2,16     INITIALIZE RIGHT HALF                            4F1D4020
     14333  2 00020 1 14341  YZ1     TIX XZ1,1,16     TEST FOR 16/CH/32                                4F1D4030
     14334  3 00017 1 14344          TXH XZ2,1,15     TEST FOR X-ZONE                                  4F1D4040
     14335 -0 60200 3 14446          ORS D,3          STORE DIGIT                                      4F1D4050
     14336 -0 60200 2 14450  YZ2     ORS Y,2          STORE Y-ZONE                                     4F1D4060
     14337  2 00001 4 14302          TIX CI1,4,1      COUNT CHARACTERS                                 4F1D4070
TD   14340 -3 00000 0 14313  X1      TXL CI3          OBTAIN NEXT GROUP                                4F1D4080
     14341  2 00020 1 14347  XZ1     TIX OZ1,1,16     TEST FOR 32/CH/48                                4F1D4090
     14342  3 00017 1 14312          TXH CI4,1,15     TEST FOR BLANK                                   4F1D4100
     14343 -0 60200 3 14446          ORS D,3          STORE DIGIT                                      4F1D4110
     14344 -0 60200 2 14447  XZ2     ORS X,2          STORE X-ZONE                                     4F1D4120
     14345  2 00001 4 14302          TIX CI1,4,1      COUNT CHARACTERS                                 4F1D4130
TD   14346 -3 00000 0 14313  X2      TXL CI3          OBTAIN NEXT GROUP                                4F1D4140
     14347 -0 60200 2 14446  OZ1     ORS Z,2          STORE O-ZONE                                     4F1D4150
     14350 -0 60200 3 14446          ORS D,3          STORE DIGIT                                      4F1D4160
     14351  2 00001 4 14302          TIX CI1,4,1      COUNT CHARACTERS                                 4F1D4170
TD   14352 -3 00000 0 14313          TXL CI3                                                           4F1D4180
TD   14353  3 00000 0 14355  WP      TXH WP9          INVERTED TO TXL IF PROGRAM CARRIAGE CONTROL      4F1D4190
TD   14354 -3 00000 0 14361          TXL WP7          NO PROGRAM                                       4F1D4200
     14355 -0 53400 1 14401  WP9     LXD WP2,1        MASK OUT FIRST COL. OF CARD IMAGE                4F1D4210
     14356 -0 50000 0 14406          CAL MK2          X                                                4F1D4220
     14357  0 32000 1 14451  ANS     ANS LT,1         X                                                4F1D4230
     14360  2 00001 1 14357          TIX ANS,1,1      X                                                4F1D4240
     14361 -0 53400 1 14213  WP7     LXD Z2,1         COPY LOOP                                        4F1D4250
     14362  0 70000 1 14435  CRAN    CPY LT-12,1                                                       4F1D4260
     14363  0 70000 1 14415          CPY RT-12,1      X                                                4F1D4270
     14364  1 77777 1 14365          TXI T2,1,-1                                                       4F1D4280
     14365  3 77764 1 14362  T2      TXH CRAN,1,-12                                                    4F1D4290
     14366 -0 50000 0 14353          CAL WP           RESET SWITCH FOR SECOND CYCLE                    4F1D4300
     14367  0 60100 0 14353          STO WP           X                                                4F1D4310
D    14370  3 00000 4 14377  WP4     TXH WP5,4                                                         4F1D4320
     14371 -0 53400 1 14340          LXD X1,1         NO, RELOAD INDEX REGISTERS AND RETURN            4F1D4330
     14372 -0 53400 2 14346          LXD X2,2         X                                                4F1D4340
     14373 -0 53400 4 14403  WT2     LXD X4,4         X                                                4F1D4350
     14374  0 02000 4 00002  L2      TRA 2,4          X                                                4F1D4360
     14375  0 76600 0 00361  RPR2    WPR                                                               4F1D4370
TD   14376 -3 00000 0 14250          TXL PR2-2                                                         4F1D4380
     14377  0 76600 0 00361  WP5     WPR                                                               4F1D4390
     14400  0 76000 0 00371          SPR 9            SECOND CYCLE                                     4F1D4400
     14401 -3 00014 0 14267  WP2     TXL PR5,0,12     CONVERT REST OF LINE                             4F1D4410
     14402  606060606060     BLNKS   BCD 1                                                             4F1D4420
A    14403  0 00000 0 00000  X4      HTR                                                               4F1D4430
     14404 +000000000020     YZONE   OCT 20                                                            4F1D4440
     14405 +000000000060     BNK     OCT 60                                                            4F1D4450
     14406 +377777777777     MK2     OCT 377777777777                                                  4F1D4460
     14407 -0 00000 0 00000  COL1    MZE                                                               4F1D4470
                     14410   COL     BSS 1                                                             4F1D4480
                     14431   RT      BES 16                                                            4F1D4490
                     14431   8.5     BSS 1                                                             4F1D4500
                     14432   8.4     BSS 1                                                             4F1D4510
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                14433  8.3    BSS 1                                                                  4F1D4520
                14434  8.2    BSS 1                                                                  4F1D4530
                14446  D      BES 9                                                                  4F1D4540
                14446  Z      BSS 1                                                                  4F1D4550
                14447  X      BSS 1                                                                  4F1D4560
                14450  Y      BSS 1                                                                  4F1D4570
                14451  LT     SYN Y+1                                                                4F1D4580
                14433  8.4L   SYN LT-14                                                              4F1D4590
                14413  8.4R   SYN RT-14                                                              4F1D4600
                14451         BSS 27                                                                 4F1D4610
                14022 EXIT    SYN SECND                                                              4F1D4620
                                  ADDRESS REQUIRED FROM SECTION ONE..........                        4F1D4630
                01152 F       SYN 618                        ADDRESS OF 1ST WORD OF F REGION         4F1D4640
                02402 MON     SYN 1282                       ADDRESS OF ENTRY TO MONITOR FOR A       4F1D4650
                02367 DCELL1  SYN 1271                                                               4F1D4660
                                                                                                     4F1D4670
                                                                                                     4F1D4680
                                  TABLE OF DIAGNOSTIC COMMENTS, SECTION ONE OF 704 FORTRAN II.       4F1D4690
                                                                                                     4F1D4700
                                                                                                     4F1D4710
                                   COMMON                                                            4F1D4720
                                                                                                     4F1D4730
                14504  TABLE BSS 0                                                                   4F1D4740
14504  676767676767            BCD  XXXXXX000001      DIM3 TABLE EXCEEDED. THE NUMBER OF 3-DIMEN4F1D4750
14505  000000000001
14506  606060606060
14507  243144036063
14510  212243256025
14511  672325252425
14512  243360633025
14513  604564442225
14514  516046266003
14515  402431442545
14516  623146452143            BCD  SIONAL VARIABLES WHICH APPEAR IN DIMENSION STATEMENTS EXCEED4F1D4760
14517  606521513121
14520  224325626066
14521  303123306021
14522  474725215160
14523  314560243144
14524  254562314645
14525  606263216325
14526  442545636260
14527  256723252524
14530  626011003360            BCD 1S 90.                                                             4F1D4770
                                                                                                     4F1D4780
14531  676767676767            BCD  XXXXXX000002      DIM2 TABLE EXCEEDED. THE NUMBER OF 2-DIMEN4F1D4790
14532  000000000002
14533  606060606060
14534  243144026063
14535  212243256025
14536  672325252425
14537  243360633025
14540  604564442225
14541  516046266002
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14542  402431442545
14543  623146452143          BCD  SIONAL VARIABLES WHICH APPEAR IN DIMENSION STATEMENTS EXCEED4F1D4800
14544  606521513121
14545  224325626066
14546  303123306021
14547  474725215160
14550  314560243144
14551  254562314645
14552  606263216325
14553  442545636260
14554  256723252524
14555  626001000033          BCD 1S 100.                                                    4F1D4810
                                                                                           4F1D4820
14556  676767676767          BCD  XXXXXX000003      DIM1 TABLE EXCEEDED. THE NUMBER OF 1-DIMEN4F1D4830
14557  000000000003
14560  606060606060
14561  243144016063
14562  212243256025
14563  672325252425
14564  243360633025
14565  604564442225
14566  516046266001
14567  402431442545
14570  623146452143          BCD  SIONAL VARIABLES WHICH APPEAR IN DIMENSION STATEMENTS EXCEED4F1D4840
14571  606521513121
14572  224325626066
14573  303123306021
14574  474725215160
14575  314560243144
14576  254562314645
14577  606263216325
14600  442545636260
14601  256723252524
14602  626001000033          BCD 1S 100.                                                    4F1D4850
                                                                                           4F1D4860
14603  676767676767          BCD  XXXXXX000004      SIGMA TABLE EXCEEDED. MORE THAN 30 DIFFERE4F1D4870
14604  000000000004
14605  606060606060
14606  623127442160
14607  632122432560
14610  256723252524
14611  252433604446
14612  512560633021
14613  456003006024
14614  312626255125
14615  456360512543          BCD  NT RELATIVE ADDRESSES RESULTING FROM THE ADDENDS IN SUBSCRIP4F1D4880
14616  216331652560
14617  212424512562
14620  622562605125
14621  626443633145
14622  276026514644
14623  606330256021
14624  242425452462
14625  603145606264
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14626  226223513147
14627  636260462660          BCD  TS OF THIS STATEMENT. (SIGN CONSIDERED, ONE RELATIVE ADDRESS4F1D4890
14630  633031626062
14631  632163254425
14632  456333607462
14633  312745602346
14634  456231242551
14635  252473604645
14636  256051254321
14637  633165256021
14640  242451256262
14641  462660006021          BCD 30F 0 ASSUMMED)                                              4F1D4900
14642  626264444425
14643  243460606060
                                                                                              4F1D4910
14644  676767676767          BCD  XXXXXX000005      TAU3 TABLE EXCEEDED. THE TOTALITY OF DIFFE4F1D4920
14645  000000000005
14646  606060606060
14647  632164036063
14650  212243256025
14651  672325252425
14652  243360633025
14653  606346632143
14654  316370604626
14655  602431262625
14656  512545636003          BCD  RENT 3-DIMENSIONAL SUBSCRIPT COMBINATIONS EXCEEDS 75 FOR THI4F1D4930
14657  402431442545
14660  623146452143
14661  606264226223
14662  513147636023
14663  464422314521
14664  633146456260
14665  256723252524
14666  626007056026
14667  465160633031
14670  626047514627          BCD 2S PROGRAM.                                                  4F1D4940
14671  512144336060
                                                                                              4F1D4950
14672  676767676767          BCD  XXXXXX000006      TAU2 TABLE EXCEEDED. THE TOTALITY OF DIFFE4F1D4960
14673  000000000006
14674  606060606060
14675  632164026063
14676  212243256025
14677  672325252425
14700  243360633025
14701  606346632143
14702  316370604626
14703  602431262625
14704  512545636002          BCD  RENT 2-DIMENSIONAL SUBSCRIPT COMBINATIONS EXCEEDS 90 FOR THI4F1D4970
14705  402431442545
14706  623146452143
14707  606264226223
14710  513147636023
14711  464422314521
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14712  633146456260
14713  256723252524
14714  626011006026
14715  465160633031
14716  626047514627          BCD 2S PROGRAM.                                                    4F1D4980
14717  512144336060
                                                                                               4F1D4990
14720  676767676767          BCD  XXXXXX000007      TAU1 TABLE EXCEEDED. THE TOTALITY OF DIFFE4F1D5000
14721  000000000007
14722  606060606060
14723  632164016063
14724  212243256025
14725  672325252425
14726  243360633025
14727  606346632143
14730  316370604626
14731  602431262625
14732  512545636001          BCD  RENT 1-DIMENSIONAL SUBSCRIPT COMBINATIONS EXCEEDS 100 FOR TH4F1D5010
14733  402431442545
14734  623146452143
14735  606264226223
14736  513147636023
14737  464422314521
14740  633146456260
14741  256723252524
14742  626001000060
14743  264651606330
14744  316260475146          BCD 2IS PROGRAM.                                                   4F1D5020
14745  275121443360
                                                                                               4F1D5030
14746  676767676767          BCD  XXXXXX000010      FLOCON TABLE EXCEEDED. MORE THAT 450 DIFFE4F1D5040
14747  000000000100
14750  606060606060
14751  264346234645
14752  606321224325
14753  602567232525
14754  242524336044
14755  465125606330
14756  216360040500
14757  602431262625
14760  254563602643          BCD RENT FLOATING POINT CONSTANTS IN THIS PROBLEM. (SIGN NOT CONS4F1D5050
14761  462163314527
14762  604746314563
14763  602346456263
14764  214563626031
14765  456063303162
14766  604751462243
14767  254433607462
14770  312745604546
14771  636023464562
14772  312425512524          BCD 2IDERED)                                                       4F1D5060
14773  346060606060
                                                                                               4F1D5070
14774  676767676767          BCD  XXXXXX000011      FIXCON TABLE EXCEEDED. MORE THAN 100 DIFFE4F1D5080
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14775  000000000101
14776  606060606060
14777  263167234645
15000  606321224325
15001  602567232525
15002  242524336044
15003  465125606330
15004  214560010000
15005  602431262625
15006  512545636026          BCD  RENT FIXED POINT CONSTANTS IN THIS PROGRAM. (SIGN NOT CONSID4F1D5090
15007  316725246047
15010  463145636023
15011  464562632145
15012  636260314560
15013  633031626047
15014  514627512144
15015  336074623127
15016  456045466360
15017  234645623124
15020  255125243460          BCD  1ERED)                                                    4F1D5100
                                                                                           4F1D5110
15021  676767676767          BCD  XXXXXX001635      MORE THAN SIX CHARACTERS IN SOME SYMBOL. 4F1D5120
15022  000001060305
15023  606060606060
15024  444651256063
15025  302145606231
15026  676023302151
15027  212363255162
15030  603145606246
15031  442560627044
15032  224643336060
                                                                                           4F1D5130
15033  676767676767          BCD  XXXXXX001643      ILLEGAL PUNCTUATION IN THIS STATEMENT.   4F1D5140
15034  000001060403
15035  606060606060
15036  314343252721
15037  436047644523
15040  636421633146
15041  456031456063
15042  303162606263
15043  216325442545
15044  633360606060
                                                                                           4F1D5150
15045  676767676767          BCD  XXXXXX002034      MACHINE ERROR. CAS CONTRADICTS PREVIOUS TL4F1D5160
15046  000002000304
15047  606060606060
15050  442123303145
15051  256025515146
15052  513360232162
15053  602346456351
15054  212431236362
15055  604751256531
15056  466462606343
15057  503360606060          BCD  1Q.                                                       4F1D5170
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                                                                        4F1D5180
15060  676767676767          BCD  XXXXXX002062      REPEATED CHECK SUM ERROR IN READING DRUM 34F1D5190
15061  000002000602
15062  606060606060
15063  512547252163
15064  252460233025
15065  234260626444
15066  602551514651
15067  603145605125
15070  212431452760
15071  245164446003
15072  336060606060          BCD 1.                                                          4F1D5200
                                                                                           4F1D5210
15073  676767676767          BCD  XXXXXX002266      MACHINE ERROR. INDEX FAILURE.            4F1D5220
15074  000002020606
15075  606060606060
15076  442123303145
15077  256025515146
15100  513360314524
15101  256760262131
15102  436451253360
15103  606060606060
15104  606060606060
                                                                                           4F1D5230
15105  676767676767          BCD  XXXXXX002433      REPEATED FAILURE IN READING STATE C FROM D4F1D5240
15106  000002040303
15107  606060606060
15110  512547252163
15111  252460262131
15112  436451256031
15113  456051252124
15114  314527606263
15115  216325602360
15116  265146446024
15117  516444600433          BCD 2RUM 4.                                                     4F1D5250
15120  606060606060
                                                                                           4F1D5260
15121  676767676767          BCD  XXXXXX002434      REPEATED FAILURE IN READING STATE B FROM D4F1D5270
15122  000002040304
15123  606060606060
15124  512547252163
15125  252460262131
15126  436451256031
15127  456051252124
15130  314527606263
15131  216325602260
15132  265146446024
15133  516444600333          BCD 2RUM 3.                                                     4F1D5280
15134  606060606060
                                                                                           4F1D5290
15135  676767676767          BCD  XXXXXX002435      REPEATED FAILURE IN READING STATE D FROM D4F1D5300
15136  000002040305
15137  606060606060
15140  512547252163
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15141  252460262131
15142  436451256031
15143  456051252124
15144  314527606263
15145  216325602460
15146  265146446024
15147  516444600233        BCD 2RUM 2.                                                    4F1D5310
15150  606060606060
                                                                                          4F1D5320
15151  676767676767        BCD  XXXXXX002436      REPEATED FAILURE IN READING STATE A FROM D4F1D5330
15152  000002040306
15153  606060606060
15154  512547252163
15155  252460262131
15156  436451256031
15157  456051252124
15160  314527606263
15161  216325602160
15162  265146446024
15163  516444600133        BCD 2RUM 1.                                                    4F1D5340
15164  606060606060
                                                                                          4F1D5350
15165  676767676767        BCD  XXXXXX002523      MACHINE ERROR. INDEX FAILURE.           4F1D5360
15166  000002050203
15167  606060606060
15170  442123303145
15171  256025515146
15172  513360314524
15173  256760262131
15174  436451253360
15175  606060606060
15176  606060606060
                                                                                          4F1D5370
15177  676767676767        BCD  XXXXXX002565      REPEATED CHECK SUM ERROR IN READING TABLES4F1D5380
15200  000002050605
15201  606060606060
15202  512547252163
15203  252460233025
15204  234260626444
15205  602551514651
15206  603145605125
15207  212431452760
15210  632122432562
15211  265146446024        BCD 4FROM DRUM 2, 3 OR 4.                                      4F1D5390
15212  516444600273
15213  600360465160
15214  043360606060
                                                                                          4F1D5400
15215  676767676767        BCD  XXXXXX002577      NON-NUMERIC CHARACTER IN NUMERIC FIELD OR 4F1D5410
15216  000002050707
15217  606060606060
15220  454645404564
15221  442551312360
15222  233021512123
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15223  632551603145
15224  604564442551
15225  312360263125
15226  432460465160
15227  474662623122          BCD 8POSSIBLE MISSING PUNCTUATION BETWEEN FIELDS.                4F1D5420
15230  432560443162
15231  623145276047
15232  644523636421
15233  633146456022
15234  256366252545
15235  602631254324
15236  623360606060
                                                                                            4F1D5430
15237  676767676767          BCD  XXXXXX002656      A SUBSCRIPT IS NOT A FIXED POINT VARIABLE.4F1D5440
15240  000002060506
15241  606060606060
15242  216062642262
15243  235131476360
15244  316260454663
15245  602160263167
15246  252460474631
15247  456360652151
15250  312122432533
                                                                                            4F1D5450
15251  676767676767          BCD  XXXXXX002666      A SUBSCRIPT HAS A DOUBLE MULTIPLIER.      4F1D5460
15252  000002060606
15253  606060606060
15254  216062642262
15255  235131476360
15256  302162602160
15257  244664224325
15260  604464436331
15261  474331255133
15262  606060606060
                                                                                            4F1D5470
15263  676767676767          BCD  XXXXXX002673      A SUBSCRIPT MULTIPLIER IS NOT A CONSTANT. 4F1D5480
15264  000002060703
15265  606060606060
15266  216062642262
15267  235131476360
15270  446443633147
15271  433125516031
15272  626045466360
15273  216023464562
15274  632145633360
                                                                                            4F1D5490
15275  676767676767          BCD  XXXXXX002720      MORE THAN SIX CHARACTERS IN A SYMBOL WITHI4F1D5500
15276  000002070200
15277  606060606060
15300  444651256063
15301  302145606231
15302  676023302151
15303  212363255162
15304  603145602160
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15305  627044224643
15306  606631633031
15307  456021606264  BCD 8N A SUBSCRIPT OR POSSIBLE MISSING PUNCTUATION.                4F1D5510
15310  226223513147
15311  636046516047
15312  466262312243
15313  256044316262
15314  314527604764
15315  452363642163
15316  314645336060
                                                                                       4F1D5520
15317  676767676767  BCD  XXXXXX002722      THERE IS AN ILLEGAL CHARACTER IN SOME SUBS4F1D5530
15320  000002070202
15321  606060606060
15322  633025512560
15323  316260214560
15324  314343252721
15325  436023302151
15326  212363255160
15327  314560624644
15330  256062642262
15331  622351314763  BCD 2SCRIPT.                                                      4F1D5540
15332  336060606060
                                                                                       4F1D5550
15333  676767676767  BCD 9XXXXXX002741      A SUBSCRIPT HAS A DOUBLE ADDEND.          4F1D5560
15334  000002070401
15335  606060606060
15336  216062642262
15337  235131476360
15340  302162602160
15341  244664224325
15342  602124242545
15343  243360606060
                                                                                       4F1D5570
15344  676767676767  BCD  XXXXXX002744      A SUBSCRIPT IS NOT A FIXED POINT VARIABLE.4F1D5580
15345  000002070404
15346  606060606060
15347  216062642262
15350  235131476360
15351  316260454663
15352  602160263167
15353  252460474631
15354  456360652151
15355  312122432533
                                                                                       4F1D5590
15356  676767676767  BCD  XXXXXX002764      A SUBSCRIPT IS NOT A FIXED POINT VARIABLE.4F1D5600
15357  000002070604
15360  606060606060
15361  216062642262
15362  235131476360
15363  316260454663
15364  602160263167
15365  252460474631
15366  456360652151
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15367  312122432533
                                                                        4F1D5610
15370  676767676767      BCD  XXXXXX003023      A SUBSCRIPT ADDEND IS NOT A CONSTANT.    4F1D5620
15371  000003000203
15372  606060606060
15373  216062642262
15374  235131476360
15375  212424254524
15376  603162604546
15377  636021602346
15400  456263214563
15401  336060606060
                                                                        4F1D5630
15402  676767676767      BCD  XXXXXX003026      THERE IS A PARENTHESIS MISSING IN SOME SUB4F1D5640
15403  000003000206
15404  606060606060
15405  633025512560
15406  316260216047
15407  215125456330
15410  256231626044
15411  316262314527
15412  603145606246
15413  442560626422
15414  622351314763      BCD 4SCRIPT COMBINATION.                                 4F1D5650
15415  602346442231
15416  452163314645
15417  336060606060
                                                                        4F1D5660
15420  676767676767      BCD  XXXXXX003064      A 3 DIMENSIONAL SUBSCRIPTED VARIABLE DOES 4F1D5670
15421  000003000604
15422  606060606060
15423  216003602431
15424  442545623146
15425  452143606264
15426  226223513147
15427  632524606521
15430  513121224325
15431  602446256260
15432  454663603021      BCD 7NOT HAVE A DIMENSION STATEMENT ENTRY.                4F1D5680
15433  652560216024
15434  314425456231
15435  464560626321
15436  632544254563
15437  602545635170
15440  336060606060
                                                                        4F1D5690
15441  676767676767      BCD  XXXXXX003151      A 2 DIMENSIONAL SUBSCRIPTED VARIABLE DOES 4F1D5700
15442  000003010501
15443  606060606060
15444  216002602431
15445  442545623146
15446  452143606264
15447  226223513147
15450  632524606521
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15451  513121224325
15452  602446256260
15453  454663603021      BCD 7NOT HAVE A DIMENSION STATEMENT ENTRY.                    4F1D5710
15454  652560216024
15455  314425456231
15456  464560626321
15457  632544254563
15460  602545635170
15461  336060606060
                                                                                     4F1D5720
15462  676767676767      BCD  XXXXXX003254      PROGRAM EXPECTS COMMA OR END OF STATEMENT.4F1D5730
15463  000003020504
15464  606060606060
15465  475146275121
15466  446025674725
15467  236362602346
15470  444421604651
15471  602545246046
15472  266062632163
15473  254425456333
                                                                                     4F1D5740
15474  676767676767      BCD  XXXXXX003262      PROGRAM EXPECTS COMMA OR RIGHT PARENTHESIS4F1D5750
15475  000003020602
15476  606060606060
15477  475146275121
15500  446025674725
15501  236362602346
15502  444421604651
15503  605131273063
15504  604721512545
15505  633025623162
15506  336060606060      BCD 1.                                                       4F1D5760
                                                                                     4F1D5770
15507  676767676767      BCD  XXXXXX003270      PROGRAM EXPECTS LEFT PARENTHESIS OR END OF4F1D5780
15510  000003020700
15511  606060606060
15512  475146275121
15513  446025674725
15514  236362604325
15515  266360472151
15516  254563302562
15517  316260465160
15520  254524604626
15521  606263216325      BCD 2 STATEMENT.                                             4F1D5790
15522  442545633360
                                                                                     4F1D5800
15523  676767676767      BCD  XXXXXX003272      MACHINE ERROR. AC GREATER THAN OCTAL 77.  4F1D5810
15524  000003020702
15525  606060606060
15526  442123303145
15527  256025515146
15530  513360212360
15531  275125216325
15532  516063302145
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15533  604623632143
15534  600707336060
                                                                                  4F1D5820
15535  676767676767        BCD 9XXXXXX003274      PROGRAM EXPECTS END OF STATEMENT.   4F1D5830
15536  000003020704
15537  606060606060
15540  475146275121
15541  446025674725
15542  236362602545
15543  246046266062
15544  632163254425
15545  456333606060
                                                                                  4F1D5840
15546  676767676767        BCD 9XXXXXX003300      PROGRAM EXPECTS LEFT PARENTHESIS.   4F1D5850
15547  000003030000
15550  606060606060
15551  475146275121
15552  446025674725
15553  236362604325
15554  266360472151
15555  254563302562
15556  316233606060
                                                                                  4F1D5860
15557  676767676767        BCD 9XXXXXX003304      PROGRAM EXPECTS RIGHT PARENTHESIS.  4F1D5870
15560  000003030004
15561  606060606060
15562  475146275121
15563  446025674725
15564  236362605131
15565  273063604721
15566  512545633025
15567  623162336060
                                                                                  4F1D5880
15570  676767676767        BCD 7XXXXXX003310      PROGRAM EXPECTS COMMA.              4F1D5890
15571  000003030100
15572  606060606060
15573  475146275121
15574  446025674725
15575  236362602346
15576  444421336060
                                                                                  4F1D5900
15577  676767676767        BCD  XXXXXX003314      SYMBOL BEGINS NUMERIC WHICH IS ILLEGAL IN 4F1D5910
15600  000003030104
15601  606060606060
15602  627044224643
15603  602225273145
15604  626045644425
15605  513123606630
15606  312330603162
15607  603143432527
15610  214360314560
15611  633031626023        BCD 3THIS CONTEXT.                                        4F1D5920
15612  464563256763
15613  336060606060
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                                                                                                  4F1D5930
15614  676767676767        BCD  XXXXXX003316      SYMBOL BEGINS NON-NUMERIC WHICH IS ILLEGAL4F1D5940
15615  000003030106
15616  606060606060
15617  627044224643
15620  602225273145
15621  626045464540
15622  456444255131
15623  236066303123
15624  306031626031
15625  434325272143
15626  603145606330        BCD 3 IN THIS CONTEXT.                                            4F1D5950
15627  316260234645
15630  632567633360
                                                                                                  4F1D5960
                                STATE A                                                           4F1D5970
                                                                                                  4F1D5980
15631  676767676767        BCD  XXXXXX003542      THE CHARACTER  $  OCCURS IN THIS STATEMENT4F1D5990
15632  000003050402
15633  606060606060
15634  633025602330
15635  215121236325
15636  516060536060
15637  462323645162
15640  603145606330
15641  316260626321
15642  632544254563
15643  606246442566        BCD 8 SOMEWHERE OTHER THAN IN HOLLERITH TEXT.                     4F1D6000
15644  302551256046
15645  633025516063
15646  302145603145
15647  603046434325
15650  513163306063
15651  256763336060
15652  606060606060
                                                                                                  4F1D6010
15653  676767676767        BCD  XXXXXX003545      THE ILLEGAL CHARACTER    (0 8-2 PUNCH) OCC4F1D6020
15654  000003050405
15655  606060606060
15656  633025603143
15657  432527214360
15660  233021512123
15661  632551607260
15662  607400401040
15663  026047644523
15664  303460462323
15665  645162603145        BCD 4URS IN THIS STATEMENT.                                       4F1D6030
15666  606330316260
15667  626321632544
15670  254563336060
                                                                                                  4F1D6040
15671  676767676767        BCD  XXXXXX003550      THE ILLEGAL CHARACTER -0 (11-8-2 PUNCH) 0 4F1D6050
15672  000003050500
15673  606060606060
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15674  633025603143
15675  432527214360
15676  233021512123
15677  632551604000
15700  607401014010
15701  400260476445
15702  233034604660
15703  232364516260          BCD 4CCURS IN THIS STATEMENT.                                    4F1D6060
15704  314560633031
15705  626062632163
15706  254425456333
                                                                                             4F1D6070
15707  676767676767          BCD  XXXXXX003553      THE ILLEGAL CHARACTER +0 (12-8-2 PUNCH) O 4F1D6080
15710  000003050503
15711  606060606060
15712  633025603143
15713  432527214360
15714  233021512123
15715  632551602000
15716  607401024010
15717  400260476445
15720  233034604660
15721  232364516260          BCD 4CCURS IN THIS STATEMENT.                                    4F1D6090
15722  314560633031
15723  626062632163
15724  254425456333
                                                                                             4F1D6100
15725  676767676767          BCD  XXXXXX003556      THE ILLEGAL CHARACTER - (8-4 PUNCH) OCCUR 4F1D6110
15726  000003050506
15727  606060606060
15730  633025603143
15731  432527214360
15732  233021512123
15733  632551604060
15734  741040046047
15735  644523303460
15736  462323645160
15737  626031456063          BCD 4S IN THIS STATEMENT.                                        4F1D6120
15740  303162606263
15741  216325442545
15742  633360606060
                                                                                             4F1D6130
15743  676767676767          BCD  XXXXXX003561      THE NON BCD CHARACTER 001010 HAS BEEN RE  4F1D6140
15744  000003050601
15745  606060606060
15746  633025604546
15747  456022232460
15750  233021512123
15751  632551600000
15752  010001006030
15753  216260222525
15754  456051256060
15755  212460265146          BCD 8AD FROM TAPE WHILE PROCESSING THIS STATEMENT.               4F1D6150
15756  446063214725
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15757  606630314325
15760  604751462325
15761  626231452760
15762  633031626062
15763  632163254425
15764  456333606060                                                    4F1D6160

15765  676767676767  BCD 8XXXXXX003615    TOO MANY RIGHT PARENTHESIS.   4F1D6170
15766  000003060105
15767  606060606060
15770  634646604421
15771  457060513127
15772  306360472151
15773  254563302562
15774  316233606060                                                    4F1D6180

15775  676767676767  BCD  XXXXXX003624    NON-ARITHMETIC STATEMENT OF A TYPE WHICH I4F1D6190
15776  000003060204
15777  606060606060
16000  454645402151
16001  316330442563
16002  312360626321
16003  632544254563
16004  604626602160
16005  637047256066
16006  303123306031
16007  626045466360  BCD 4S NOT IN DICTIONARY.                          4F1D6200
16010  314560243123
16011  633146452151
16012  703360606060                                                    4F1D6210

16013  676767676767  BCD  XXXXXX004055    TOO FEW RIGHT PARENTHESIS.    4F1D6220
16014  000004000505
16015  606060606060
16016  634646602625
16017  666051312730
16020  636047215125
16021  456330256231
16022  623360606060
16023  606060606060
16024  606060606060                                                    4F1D6230

16025  676767676767  BCD 7XXXXXX004225    PROGRAM EXPECTS TO .          4F1D6240
16026  000004020205
16027  606060606060
16030  475146275121
16031  446025674725
16032  236362606346
16033  603360606060                                                    4F1D6250

16034  676767676767  BCD  XXXXXX004304    A VARIABLE IN THIS LIST APPEARED PREVIOUSL4F1D6260
16035  000004030004
16036  606060606060
16037  216065215131
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16040  212243256031
16041  456063303162
16042  604331626360
16043  214747252151
16044  252460475125
16045  653146646243
16046  706031456021          BCD 5Y IN A DIMENSION STATEMENT.                                4F1D6270
16047  602431442545
16050  623146456062
16051  632163254425
16052  456333606060                                                                         4F1D6280
16053  676767676767          BCD  XXXXXX004323      MORE THAN 3 DIMENSIONS OR MISSING RIGHT PA4F1D6290
16054  000004030203
16055  606060606060
16056  444651256063
16057  302145600360
16060  243144254562
16061  314645626046
16062  516044316262
16063  314527605131
16064  273063604721
16065  512545633025          BCD 2RENTHESIS.                                                 4F1D6300
16066  623162336060                                                                         4F1D6310
16067  676767676767          BCD  XXXXXX004444      A SUBROUTINE OR FUNCTION STATEMENT APPEARS4F1D6320
16070  000004040404
16071  606060606060
16072  216062642251
16073  466463314525
16074  604651602664
16075  452363314645
16076  606263216325
16077  442545636021
16100  474725215162
16101  432163255160          BCD  LATER THAN THE FIRST STATEMENT OF THE PROGRAM. PROBABLY ATTE4F1D6330
16102  633021456063
16103  302560263151
16104  626360626321
16105  632544254563
16106  604626606330
16107  256047514627
16110  512144336047
16111  514622212243
16112  706021636325
16113  444763606060          BCD  MPT   TO BATCH COMPILE WITHOUT SENSE SWITCH 6 DOWN.       4F1D6340
16114  634660222163
16115  233060234644
16116  473143256066
16117  316330466463
16120  606225456225
16121  606266316323
16122  306006602446
16123  664533606060
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16124  606060606060
                                                                        4F1D6350
16125  676767676767   BCD  XXXXXX004544      A RETURN STATEMENT HAS OCCURRED IN A PROGR4F1D6360
16126  000004050404
16127  606060606060
16130  216051256364
16131  514560626321
16132  632544254563
16133  603021626046
16134  232364515125
16135  246031456021
16136  604751462751
16137  214460454663   BCD  AM NOT DEFINED TO BE A SUBROUTINE OR FUNCTION SUBPROGRAM.   4F1D6370
16140  602425263145
16141  252460634660
16142  222560216062
16143  642251466463
16144  314525604651
16145  602664452363
16146  314645606264
16147  224751462751
16150  214433606060
                                                                        4F1D6380
16151  676767676767   BCD  XXXXXX004663      SENSE SWITCH SETTING OTHER THAN 0,1 OR 2  4F1D6390
16152  000004060603
16153  606060606060
16154  622545622560
16155  626631632330
16156  606225636331
16157  452760466330
16160  255160633021
16161  456000730160
16162  465160026060
16163  465160444651   BCD  7OR MORE THAN 5 SETTINGS OR WRONG FORMAT.              4F1D6400
16164  256063302145
16165  600560622563
16166  633145276260
16167  465160665146
16170  452760264651
16171  442163336060
                                                                        4F1D6410
16172  676767676767   BCD  8XXXXXX004705      VARIABLE FORMAT NUMBER.              4F1D6420
16173  000004070005
16174  606060606060
16175  652151312122
16176  432560264651
16177  442163604564
16200  442225513360
16201  606060606060
                                                                        4F1D6430
16202  676767676767   BCD  6XXXXXX004707      NO FORMAT NUMBER.                    4F1D6440
16203  000004070007
16204  606060606060
16205  454660264651
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16206  442163604564
16207  442225513360
                                                                                  4F1D6450
16210  676767676767        BCD  XXXXXX005170      MORE THAN SIX CHARACTERS IN SOME SYMBOL.  4F1D6460
16211  000005010700
16212  606060606060
16213  444651256063
16214  302145606231
16215  676023302151
16216  212363255162
16217  603145606246
16220  442560627044
16221  224643336060
                                                                                  4F1D6470
16222  676767676767        BCD  XXXXXX005200      ILLEGAL CHARACTER IN THIS LIST.           4F1D6480
16223  000005020000
16224  606060606060
16225  314343252721
16226  436023302151
16227  212363255160
16230  314560633031
16231  626043316263
16232  336060606060
16233  606060606060
                                                                                  4F1D6490
16234  676767676767        BCD  XXXXXX005260      MORE THAN THREE LEVELS IN THIS LIST (NESTE4F1D6500
16235  000005020600
16236  606060606060
16237  444651256063
16240  302145606330
16241  512525604325
16242  652543626031
16243  456063303162
16244  604331626360
16245  744525626325
16246  246047215125        BCD 3D PARENTHESIS).                                          4F1D6510
16247  456330256231
16250  623433606060
                                                                                  4F1D6520
16251  676767676767        BCD  XXXXXX005263      ATTEMPT TO SPECIFY SUBSCRIPT RANGE WITHO  4F1D6530
16252  000005020603
16253  606060606060
16254  216363254447
16255  636063466062
16256  472523312670
16257  606264226223
16260  513147636051
16261  214527256066
16262  316330466060
16263  646360646225        BCD 4UT USE OF PARENTHESIS.                                   4F1D6540
16264  604626604721
16265  512545633025
16266  623162336060
                                                                                  4F1D6550
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16267  676767676767          BCD  XXXXXX005305      INCOMPLETE STATEMENT OR INCOMPLETE CLOSURE4F1D6560
16270  000005030005
16271  606060606060
16272  314523464447
16273  432563256062
16274  632163254425
16275  456360465160
16276  314523464447
16277  432563256023
16300  434662645125
16301  462660472151          BCD 30F PARENTHESIS.                                          4F1D6570
16302  254563302562
16303  316233606060
                                                                                          4F1D6580
16304  676767676767          BCD  XXXXXX005306      ILLEGAL CHARACTER IN DO SPECIFICATION IN L4F1D6590
16305  000005030006
16306  606060606060
16307  314343252721
16310  436023302151
16311  212363255160
16312  314560244660
16313  624725233126
16314  312321633146
16315  456031456043
16316  316263336060          BCD 1IST.                                                     4F1D6600
                                                                                          4F1D6610
16317  676767676767          BCD 8XXXXXX005401      TOO MANY RIGHT PARENTHESIS.            4F1D6620
16320  000005040001
16321  606060606060
16322  634646604421
16323  457060513127
16324  306360472151
16325  254563302562
16326  316233606060
                                                                                          4F1D6630
16327  676767676767          BCD 6XXXXXX005416      CONSTANT IN LIST.                      4F1D6640
16330  000005040106
16331  606060606060
16332  234645626321
16333  456360314560
16334  433162633360
                                                                                          4F1D6650
16335  676767676767          BCD 8XXXXXX005552      TOO MANY LEFT PARENTHESIS.             4F1D6660
16336  000005050502
16337  606060606060
16340  634646604421
16341  457060432526
16342  636047215125
16343  456330256231
16344  623360606060
                                                                                          4F1D6670
16345  676767676767          BCD  XXXXXX005607      ILLEGAL CHARACTER IN THIS STATEMENT.   4F1D6680
16346  000005060007
16347  606060606060
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16350  314343252721
16351  436023302151
16352  212363255160
16353  314560633031
16354  626062632163
16355  254425456333
16356  606060606060
                                                                    4F1D6690
16357  676767676767          BCD  XXXXXX005715      A TAPE CHECK HAS OCCURRED THREE TIMES IN A4F1D6700
16360  000005070105
16361  606060606060
16362  216063214725
16363  602330252342
16364  603021626046
16365  232364515125
16366  246063305125
16367  256063314425
16370  626031456021
16371  636325444763          BCD  TTEMPTING TO READ A RECORD OF THE SOURCE PROGRAM FROM TAPE 24F1D6710
16372  314527606346
16373  605125212460
16374  216051252346
16375  512460462660
16376  633025606246
16377  645123256047
16400  514627512144
16401  602651464460
16402  632147256002
16403  336021636325          BCD  . ATTEMPT TO READ ABANDONED. THE STATEMENT INVOLVED IS NOT P4F1D6720
16404  444763606346
16405  605125212460
16406  212221452446
16407  452524336063
16410  302560626321
16411  632544254563
16412  603145654643
16413  652524603162
16414  604546636047
16415  514623256262          BCD  ROCESSED. IF THE RECORD WAS NOT THE LAST RECORD OF A STATEME4F1D6730
16416  252433603126
16417  606330256051
16420  252346512460
16421  662162604546
16422  636063302560
16423  432162636051
16424  252346512460
16425  462660216062
16426  632163254425
16427  456360633025          BCD  NT THE FOLLOWING DIAGNOSTIC COMMENT IS MEANINGLESS AND WAS C4F1D6740
16430  602646434346
16431  663145276024
16432  312127454662
16433  633123602346
16434  444425456360
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16435  316260442521
16436  453145274325
16437  626260214524
16440  606621626023
16441  216462252460
16442  227060214560
16443  216363254447
16444  636063466047
16445  514623256262
16446  602160472151
16447  633121436062
16450  632163254425
16451  456333606060
16452  606060606060

16453  676767676767
16454  000006000402
16455  606060606060
16456  314343252721
16457  436064622560
16460  462660264346
16461  216331452760
16462  474631456360
16463  652151312122
16464  432533606060

       STATE B

16465  676767676767
16466  000003050207
16467  606060606060
16470  634646604421
16471  457060233021
16472  512123632551
16473  626031456062
16474  704422464333

16475  676767676767
16476  000003060002
16477  606060606060
16500  314343252721
16501  436064622560
16502  462660603360
16503  602330215121
16504  236325513360

16505  676767676767
16506  000003060103
16507  606060606060
16510  215127512527
16511  606231712560
16512  256723252524
16513  252433606060
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BCD  AUSED BY AN ATTEMPT TO PROCESS A PARTIAL STATEMENT.          4F1D6750

                                                                 4F1D6760
BCD  XXXXXX006042      ILLEGAL USE OF FLOATING POINT VARIABLE.   4F1D6770

                                                                 4F1D6780
                                                                 4F1D6790
                                                                 4F1D6800
BCD 8XXXXXX003527      TOO MANY CHARACTERS IN SYMBOL.            4F1D6810

                                                                 4F1D6820
BCD 8XXXXXX003602      ILLEGAL USE OF  .  CHARACTER.             4F1D6830

                                                                 4F1D6840
BCD 7XXXXXX003613      ARGREG SIZE EXCEEDED.                     4F1D6850

                                                                 4F1D6860
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16514  676767676767          BCD  XXXXXX003615      ILLEGAL USE OF HOLLERITH SPECIFICATION.   4F1D6870
16515  000003060105
16516  606060606060
16517  314343252721
16520  436064622560
16521  462660304643
16522  432551316330
16523  606247252331
16524  263123216331
16525  464533606060
                                                                                            4F1D6880
16526  676767676767          BCD 8XXXXXX003654      NON-ZERO LEVEL REDUCTION.                 4F1D6890
16527  000003060504
16530  606060606060
16531  454645407125
16532  514660432565
16533  254360512524
16534  642363314645
16535  336060606060
                                                                                            4F1D6900
16536  676767676767          BCD 8XXXXXX003671      ILLEGAL USE OF  =  SIGN.                  4F1D6910
16537  000003060701
16540  606060606060
16541  314343252721
16542  436064622560
16543  462660601360
16544  606231274533
16545  606060606060
                                                                                            4F1D6920
16546  676767676767          BCD 8XXXXXX003724      ILLEGAL USE OF  .  SIGN.                  4F1D6930
16547  000003070204
16550  606060606060
16551  314343252721
16552  436064622560
16553  462660603360
16554  606231274533
16555  606060606060
                                                                                            4F1D6940
16556  676767676767          BCD  XXXXXX004046      THE NUMERIC CONTROL OF A HOLLERITH TEXT IS4F1D6950
16557  000004000406
16560  606060606060
16561  633025604564
16562  442551312360
16563  234645635146
16564  436046266021
16565  603046434325
16566  513163306063
16567  256763603162
16570  432151272551          BCD 9LARGER THAN THE NUMBER OF CHARACTERS FOLLOWING THE H.  4F1D6960
16571  606330214560
16572  633025604564
16573  442225516046
16574  266023302151
16575  212363255162
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16576  602646434346
16577  663145276063
16600  302560303360
                                                                                  4F1D6970
16601  676767676767        BCD 8XXXXXX004136     LAMBDA TABLE SIZE EXCEEDED.      4F1D6980
16602  000004010306
16603  606060606060
16604  432144222421
16605  606321224325
16606  606231712560
16607  256723252524
16610  252433606060
                                                                                  4F1D6990
16611  676767676767        BCD 8XXXXXX004140     BETA TABLE SIZE EXCEEDED.        4F1D7000
16612  000004010400
16613  606060606060
16614  222563216063
16615  212243256062
16616  317125602567
16617  232525242524
16620  336060606060
                                                                                  4F1D7010
16621  676767676767        BCD 8XXXXXX004143     ALPHA TABLE SIZE EXCEEDED.       4F1D7020
16622  000004010403
16623  606060606060
16624  214347302160
16625  632122432560
16626  623171256025
16627  672325252425
16630  243360606060
                                                                                  4F1D7030
16631  676767676767        BCD  XXXXXX004647     FLOATING POINT CONSTANT OUTSIDE RANGE OF M4F1D7040
16632  000004060407
16633  606060606060
16634  264346216331
16635  452760474631
16636  456360234645
16637  626321456360
16640  466463623124
16641  256051214527
16642  256046266044
16643  212330314525        BCD 2ACHINE.                                          4F1D7050
16644  336060606060
                                                                                  4F1D7060
                              STATE C                                             4F1D7070
                                                                                  4F1D7080
16645  676767676767        BCD  XXXXXX004347     CHECK SUM ERROR IN READING FIXED POINT CON4F1D7090
16646  000004030407
16647  606060606060
16650  233025234260
16651  626444602551
16652  514651603145
16653  605125212431
16654  452760263167
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16655  252460474631
16656  456360234645
16657  626321456360          BCD 3STANT FROM DRUM 2.                                  4F1D7100
16660  265146446024
16661  516444600233

                                                                                      4F1D7110
                             STATE D                                                  4F1D7120
                                                                                      4F1D7130
16662  676767676767          BCD 6XXXXXX003501      MIXED EXPRESSION.                 4F1D7140
16663  000003050001
16664  606060606060
16665  443167252460
16666  256747512562
16667  623146453360

                                                                                      4F1D7150
16670  676767676767          BCD 6XXXXXX003503      MIXED EXPRESSION.                 4F1D7160
16671  000003050003
16672  606060606060
16673  443167252460
16674  256747512562
16675  623146453360

                                                                                      4F1D7170
16676  676767676767          BCD  XXXXXX005233      CHECK SUM ERROR IN READING SIGMA TABLE ENT
16677  000005020303
16700  606060606060
16701  233025234260
16702  626444602551
16703  514651603145
16704  605125212431
16705  452760623127
16706  442160632122
16707  432560254563
16710  517060265146          BCD 3RY FROM DRUM 2.
16711  446024516444
16712  600233606060

                             LOCATIONS OF STAE B,C,D CALLS IN 8K SECTION ONE.

16713  676767676767          BCD 8XXXXXX006412      TOO MANY CHARACTERS IN SYMBOL.
16714  000006040102
16715  606060606060
16716  634646604421
16717  457060233021
16720  512123632551
16721  626031456062
16722  704422464333

16723  676767676767          BCD 8XXXXXX006465      ILLEGAL USE OF  .  CHARACTER.
16724  000006040605
16725  606060606060
16726  314343252721
16727  436064622560
16730  462660603360
16731  602330215121
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16732  236325513360

16733  676767676767          BCD 7XXXXXX006476      ARGREG SIZE EXCEEDED.
16734  000006040706
16735  606060606060
16736  215127512527
16737  606231712560
16740  256723252524
16741  252433606060

16742  676767676767          BCD  XXXXXX006500      ILLEGAL USE OF HOLLERITH SPECIFICATION.
16743  000006050000
16744  606060606060
16745  314343252721
16746  436064622560
16747  462660304643
16750  432551316330
16751  606247252331
16752  263123216331
16753  464533606060

16754  676767676767          BCD 8XXXXXX006537      NON-ZERO LEVEL REDUCTION.
16755  000006050307
16756  606060606060
16757  454645407125
16760  514660432565
16761  254360512524
16762  642363314645
16763  336060606060

16764  676767676767          BCD 8XXXXXX006554      ILLEGAL USE OF  =  SIGN.
16765  000006050504
16766  606060606060
16767  314343252721
16770  436064622560
16771  462660601360
16772  606231274533
16773  606060606060

16774  676767676767          BCD 8XXXXXX006607      ILLEGAL USE OF  .  SIGN.
16775  000006060007
16776  606060606060
16777  314343252721
17000  436064622560
17001  462660603360
17002  606231274533
17003  606060606060

17004  676767676767          BCD  XXXXXX006731      THE NUMERIC CONTROL OF A HOLLERITH TEXT IS
17005  000006070301
17006  606060606060
17007  633025604564
17010  442551312360
17011  234645635146
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17012  436046266021
17013  603046434325
17014  513163306063
17015  256763603162

17016  432151272551          BCD 9LARGER THAN THE NUMBER OF CHARACTERS FOLLOWING THE H.
17017  606330214560
17020  633025604564
17021  442225516046
17022  266023302151
17023  212363255162
17024  602646434346
17025  663145276063
17026  302560303360

17027  676767676767          BCD 8XXXXXX007021      LAMBDA TABLE SIZE EXCEEDED.
17030  000007000201
17031  606060606060
17032  432144222421
17033  606321224325
17034  606231712560
17035  256723252524
17036  252433606060

17037  676767676767          BCD 8XXXXXX007023      BETA TABLE SIZE EXCEEDED.
17040  000007000203
17041  606060606060
17042  222563216063
17043  212243256062
17044  317125602567
17045  232525242524
17046  336060606060

17047  676767676767          BCD 8XXXXXX007026      ALPHA TABLE SIZE EXCEEDED.
17050  000007000206
17051  606060606060
17052  214347302160
17053  632122432560
17054  623171256025
17055  672325252425
17056  243360606060

17057  676767676767          BCD  XXXXXX007532      FLOATING POINT CONSTANT OUTSIDE RANGE OF M
17060  000007050302
17061  606060606060
17062  264346216331
17063  452760474631
17064  456360234645
17065  626321456360
17066  466463623124
17067  256051214527
17070  256046266044

17071  212330314525          BCD 2ACHINE.
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17072  336060606060

17073  676767676767          BCD  XXXXXX010534      CHECK SUM ERROR IN READING FIXED POINT CON
17074  000100050304
17075  606060606060
17076  233025234260
17077  626444602551
17100  514651603145
17101  605125212431
17102  452760263167
17103  252460474631
17104  456360234645
17105  626321456360          BCD 3STANT FROM DRUM 2.
17106  265146446024
17107  516444600233

17110  676767676767          BCD 6XXXXXX011216      MIXED EXPRESSION.
17111  000101020106
17112  606060606060
17113  443167252460
17114  256747512562
17115  623146453360

17116  676767676767          BCD 6XXXXXX011220      MIXED EXPRESSION.
17117  000101020200
17120  606060606060
17121  443167252460
17122  256747512562
17123  623146453360

17124  676767676767          BCD  XXXXXX012750      CHECK SUM ERROR IN READING SIGMA TABLE ENT
17125  000102070500
17126  606060606060
17127  233025234260
17130  626444602551
17131  514651603145
17132  605125212431
17133  452760623127
17134  442160632122
17135  432560254563
17136  517060265146          BCD 3RY FROM DRUM 2.
17137  446024516444
17140  600233606060

                                                                                4F1D7200
                                                                                4F1D7210
                          INITALIZATION RECORD F015.                            4F1D7220
                                                                                4F1D7230
17141  676767676767          BCD  XXXXXX000553      FIVE CONSECUTIVE FAILURES IN ATTEMPTING TO4F1D7240
17142  000000050503
17143  606060606060
17144  263165256023
17145  464562252364
17146  633165256026
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17147  213143645125
17150  626031456021
17151  636325444763
17152  314527606346
17153  606651316325          BCD 7 WRITE STATE A OF SECTION ONE ON DRUM 1.                    4F1D7250
17154  606263216325
17155  602160462660
17156  622523633146
17157  456046452560
17160  464560245164
17161  446001336060
                                                                                              4F1D7260
17162  676767676767          BCD  XXXXXX000560      FIVE CONSECUTIVE FAILURES IN ATTEMPTING TO4F1D7270
17163  000000050600
17164  606060606060
17165  263165256023
17166  464562252364
17167  633165256026
17170  213143645125
17171  626031456021
17172  636325444763
17173  314527606346
17174  606651316325          BCD 7 WRITE STATE D OF SECTION ONE ON DRUM 2.                    4F1D7280
17175  606263216325
17176  602460462660
17177  622523633146
17200  456046452560
17201  464560245164
17202  446002336060
                                                                                              4F1D7290
17203  676767676767          BCD  XXXXXX000563      FIVE CONSECUTIVE FAILURES IN ATTEMPTING TO4F1D7300
17204  000000050603
17205  606060606060
17206  263165256023
17207  464562252364
17210  633165256026
17211  213143645125
17212  626031456021
17213  636325444763
17214  314527606346
17215  606651316325          BCD 7 WRITE STATE B OF SECTION ONE ON DRUM 3.                    4F1D7310
17216  606263216325
17217  602260462660
17220  622523633146
17221  456046452560
17222  464560245164
17223  446003336060
                                                                                              4F1D7320
17224  676767676767          BCD  XXXXXX000566      FIVE CONSECUTIVE FAILURES IN ATTEMPTING TO4F1D7330
17225  000000050606
17226  606060606060
17227  263165256023
17230  464562252364
17231  633165256026
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          17232  213143645125
          17233  626031456021
          17234  636325444763
          17235  314527606346
          17236  606651316325          BCD 7 WRITE STATE C OF SECTION ONE ON DRUM 4.                    4F1D7340
          17237  606263216325
          17240  602360462660
          17241  622523633146
          17242  456046452560
          17243  464560245164
          17244  446004336060                                                                           4F1D7350
          17245  676767676767          BCD 2XXXXXXXXXXXX                                               4F1D7360
          17246  676767676767
A                        00000          END                                                             4F1D7370
```

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1       REM 704 FORTRAN MASTER RECORD CARD / 1 PRIME PART A = F0220000.  F1P00010
1                                  704 FORTRAN MASTER RECORD CARD / 1 PRIME PART A = F0220000.  F1P00010
                  00000        ORG 0                                                            F1P00020
00000  0 01146 0 01146         PZE ORG1PA,,ORG1PA                                               F1P00030
00001  0 00000 0 03161         PZE END1PA-1                                                     F1P00040
                                                                                                F1P00050
                                   THIS IS PART A OF 2 PARTS OF SECTION ONE PRIME               F1P00060
                                                                                                F1P00070
                  01146 ORG1PA ORG 614                                                          F1P00080
01146  0 76100 0 00000         NOP                          TO PERMIT STOP FOR TESTING RUNS.   F1P00090
01147  0 77000 0 00204 PARTA   WEF 4                                                            F1P00100
                                          TABLE SAVING PROGRAM                                  F1P00110
                                    WRITE FIXCON WORD COUNT ON DRUM                             F1P00120
01150  0 76600 0 00302         WRS 194                                                          F1P00130
01151  0 50000 0 00414         CLA FXCNIX-3                                                     F1P00140
01152  0 77100 0 00021         ARS 17                                                           F1P00150
01153  0 60100 0 02107         STO WORKCL                                                       F1P00160
01154  0 70000 0 02107         CPY WORKCL                                                       F1P00170
01155  0 70000 0 02107         CPY WORKCL                                                       F1P00180
                                   PROGRAM FOR SAVING COMPAIL TABLE                             F1P00190
01156 -0 53400 2 00637         LXD BBOX,2                                                       F1P00200
01157  3 00000 2 01161         TXH A1PTS,2,0                                                    F1P00210
01160  0 07400 4 00004         TSX DIAG,4                   STOP FOR NO INSTRUCTIONS COMPILED  F1P00220
01161  0 76600 0 00223 A1PTS   WRS 147                                                          F1P00230
01162  0 53400 1 07730         LXA L(0),1                   SAVE                               F1P00240
01163  0 70000 1 00640 AA3PTS  CPY CIB,1                    CIT                                F1P00250
01164  1 77777 1 01165         TXI AA1PTS,1,-1              BUFFER                             F1P00260
01165  1 00001 2 01166 AA1PTS  TXI AA2PTS,2,1                                                   F1P00270
01166  3 00000 2 01163 AA2PTS  TXH AA3PTS,2,0                                                   F1P00280
01167  0 77000 0 00223         WEF 147                                                          F1P00290
01170  0 77200 0 00223         REW 147                                                          F1P00300
01171 -0 76000 0 00012 A5PTS   RTT                          TURN OFF TAPE CHECK                F1P00310
01172  0 76100 0 00000         NOP                          INDICATOR AND LIGHTS               F1P00320
01173  0 53400 1 07734         LXA L(4),1                                                       F1P00330
01174  0 53400 4 07730         LXA L(0),4                                                       F1P00340
01175  0 76200 0 00223 A14PTS  RDS 147                                                          F1P00350
01176  0 70000 4 03163 A6PTS   CPY COMP,4                   COPY A RECORD OF COMPILED          F1P00360
01177  1 77777 4 01176         TXI A6PTS,4,-1               INSTRUCTIONS INTO STORAGE          F1P00370
01200  0 02000 0 01222         TRA A10PTS                   EOF                                F1P00380
01201  0 76600 0 00333         WRS 219                      EOR                                F1P00390
01202 -0 76000 0 00012         RTT                                                              F1P00400
01203  0 02000 0 01217         TRA A11PTS                   TAPE CHECK ON                      F1P00410
01204  0 76600 0 00222         WRS 146                                                          F1P00420
01205  0 50000 0 02245         CLA CMPREC                   COUNT EACH                         F1P00430
01206  0 40000 0 07731         ADD L(1)                     COMPAIL                            F1P00440
01207  0 60100 0 02245         STO CMPREC                   RECORD                             F1P00450
01210  0 53400 1 07732         LXA L(2),1                                                       F1P00460
01211  0 53400 2 07730         LXA L(0),2                   TRANSFER RECORD                    F1P00470
01212  0 70000 2 03163 A9PTS   CPY COMP,2                   FROM STORAGE                       F1P00480
01213  1 77777 2 01214         TXI A7PTS,2,-1               TO TAPE 2                          F1P00490
01214  1 00001 4 01215 A7PTS   TXI A8PTS,4,1                                                    F1P00500
01215  3 00000 4 01212 A8PTS   TXH A9PTS,4,0                                                    F1P00510
01216  0 02000 0 01175         TRA A14PTS                                                       F1P00520
01217  0 76401 0 00223 A11PTS  BST 147,0,1                  PREPARE TO READ RECORD AGAIN       F1P00530
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01220   2 00001 1 01174         TIX A14PTS-1,1,1              TEST FOR 2 TAPE CHECKS.          F1P00540
01221   0 07400 4 00004         TSX DIAG,4              STOP FOR 5TH READ CHECK                F1P00550
01222   0 77000 0 00222 A10PTS  WEF 146                       END OF COMPAIL ON TAPE 2         F1P00560
01223   0 76600 0 00222         WRS 146                                                        F1P00570
01224   0 70000 0 02245         CPY CMPREC                                                     F1P00580
                                  PROGRAM  TO SAVE FORSUB TABLE                               F1P00590
                                                                                              F1P00600
01225  -0 53400 1 00470         LXD BK,1                                                       F1P00610
01226  -3 00000 1 01234         TXL WEF,1,0                   TEST FOR EMPTY TABLE             F1P00620
01227   0 53400 2 07730         LXA L(0),2                                                     F1P00630
01230   0 70000 2 00471         CPY FORSUB,2                                                   F1P00640
01231   1 77777 2 01232         TXI A15PTS,2,-1                                                F1P00650
01232   1 00001 1 01233 A15PTS  TXI A15PTS+1,1,1                                               F1P00660
01233   3 00000 1 01230         TXH A15PTS-2,1,0                                               F1P00670
01234   0 77000 0 00222 WEF     WEF 146                                                        F1P00680
                                PROGRAM FOR SAVING FLOCON TABLE                               F1P00690
01235  -0 53400 4 00421 FL00    LXD FLCNIX-3,4       (N)                                       F1P00700
01236  -0 75400 4 00000         PXD 0,4                                                        F1P00710
01237   0 77100 0 00022         ARS 18                                                         F1P00720
01240   0 60100 0 02244         STO FLSIZE     LOAD FLSIZE WITH N                              F1P00730
01241  -3 00000 4 01276         TXL FL09,4,0       IS TABLE EMPTY                              F1P00740
01242  -0 50000 0 07742         CAL MSK                                                        F1P00750
01243   0 32000 0 00422         ANS FLCNIX-2                                                   F1P00760
01244   0 32000 0 00421         ANS FLCNIX-3                                                   F1P00770
01245   0 50000 0 00421         CLA FLCNIX-3      GET NUMBER OF WORDS IN FLOCON INCLUDING CK SUMS F1P00780
01246   0 40200 0 00422         SUB FLCNIX-2                                                   F1P00790
01247   0 62100 0 01256         STA FL04        SAVE L                                         F1P00800
01250   0 53400 2 07735 FL01    LXA L(5),2            SET TO TRY FIVE TIMES IF CK SUM FAILS    F1P00810
01251   0 53400 4 01256 FL02    LXA FL04,4     (L)                                             F1P00820
01252   0 76200 0 00302         RDR 2                                                          F1P00830
01253   0 46000 0 00422         LDA FLCNIX-2                                                   F1P00840
01254   0 70000 4 05453 FL03    CPY OTA+450,4        COPY FLOCON FROM DRUM                     F1P00850
01255   2 00001 4 01254         TIX FL03,4,1                                                   F1P00860
01256  -0 75400 0 00000 FL04    PXD **,0                                                       F1P00870
01257   0 53400 4 01256         LXA FL04,4       COMPUTE CK SUM OF ENTRIES VERSUS CK SUM OF CK F1P00880
01260   0 53400 1 07737         LXA L(50),1      SUMS. TABLE IS OF FORM A CK SUM FOR FIFTY WORDS F1P00890
01261   0 36100 4 05453 FL05    ACL OTA+450,4    FOLLOWED BY THE FIFTY WORDS                   F1P00900
01262   0 76000 0 00006         COM                                                            F1P00910
01263  -2 00001 4 01307         TNX ERROR,4,1                                                  F1P00920
01264   0 36100 4 05453 FL06    ACL OTA+450,4                                                  F1P00930
01265  -2 00001 4 01271         TNX FL07,4,1       FINAL ENRTY , GET OUT OF CK SUM LOOP        F1P00940
01266   2 00001 1 01264         TIX FL06,1,1                                                   F1P00950
01267   0 76000 0 00006         COM                                                            F1P00960
01270   1 00061 1 01261         TXI FL05,1,49                                                  F1P00970
01271   0 76000 0 00006 FL07    COM                                                            F1P00980
01272   0 10000 0 01275         TZE FL08    TEST CK SUM                                        F1P00990
01273   2 00001 2 01251         TIX FL02,2,1    CK SUM FAILED, TRY AGAIN                       F1P01000
01274   0 07400 4 00004         TSX DIAG,4              CK SUM FAILED FIVE TIMES               F1P01010
01275   0 53400 4 01256 FL08    LXA FL04,4    (L)                                              F1P01020
01276   0 76600 0 00222 FL09    WTB 2                                                          F1P01030
01277   0 70000 0 02244         CPY FLSIZE                                                     F1P01040
01300  -3 00000 4 01310         TXL PROFOR,4,0       IS FLOCON EMPTY                           F1P01050
01301   0 53400 1 07737         LXA L(50),1                                                    F1P01060
01302  -2 00001 4 01307 FL10    TNX ERROR,4,1                                                  F1P01070
01303   0 70000 4 05453 FL11    CPY OTA+450,4
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1-2

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01304 -2 00001 4 01310          TNX PROFOR,4,1    FINISHED, GET OUT OF LOOP                    F1P01080
01305  2 00001 1 01303          TIX FL11,1,1                                                   F1P01090
01306  1 00061 1 01302          TXI FL10,1,49                                                  F1P01100
01307  0 07400 4 00004 ERROR    TSX DIAG,4                    INDEX RAN OUT AT CK [illegible]  F1P01110
                                     ROUTINE TO PROCESS FORMAT TABLE                           F1P01120
01310  0 07400 1 07505 PROFOR   TSX TAP00,1                                                    F1P01130
01311  0 00000 0 00012          HTR 10                                                         F1P01140
01312  0 00000 0 04551              OTA                                                        F1P01150
01313  0 07400 1 07656          TSX WAT00,1                                                    F1P01160
01314  0 00000 0 00012          HTR 10                                                         F1P01170
01315  0 00000 0 04551              OTA                                                        F1P01180
                                    ROUTINE TO CONVERT DIM TABLES TO SIZ TABLE.               F1P01190
01316 -0 53400 4 00452 ADD00    LXD DIM1IX-3,4          ENTRY COUNT                            F1P01200
01317 -3 00000 4 01346          TXL ADD07,4,0         TABLE EMPTY                              F1P01210
01320  0 53400 2 07735 ADD01    LXA L(5),2                                                     F1P01220
01321  0 76200 0 00303 ADD02    RDR 3                                                          F1P01230
01322  0 53400 1 07730          LXA L(0),1                                                     F1P01240
01323  0 46000 0 00453          LDA ORGDM1                                                     F1P01250
01324 -0 75400 0 00000          PXD 0,0                                                        F1P01260
01325  0 70000 1 04551 ADD03    CPY OTA,1             COPY NAME                                F1P01270
01326  0 70000 1 04552          CPY OTA+1,1           COPY N1                                  F1P01280
01327  1 77776 1 01330          TXI ADD04,1,-2                                                 F1P01290
01330 -0 70000 0 02106 ADD04    CAD GARBGE            COPY AND SUM CK SUMS                     F1P01300
01331  2 00001 4 01325          TIX ADD03,4,1                                                  F1P01310
01332  0 76000 0 00006          COM                                                            F1P01320
01333 -0 53400 4 00452          LXD DIM1IX-3,4                                                 F1P01330
01334  0 53400 1 07730          LXA L(0),1                                                     F1P01340
01335  0 36100 1 04551 ADD05    ACL OTA,1             SUM ENTRIES                              F1P01350
01336  0 36100 1 04552          ACL OTA+1,1                                                    F1P01360
01337  1 77776 1 01340          TXI ADD06,1,-2                                                 F1P01370
01340  2 00001 4 01335 ADD06    TIX ADD05,4,1                                                  F1P01380
01341  0 76000 0 00006          COM                                                            F1P01390
01342  0 10000 0 01347          TZE ADD08                                                      F1P01400
01343 -0 53400 4 00452          LXD DIM1IX-3,4        CHECK SUM ERROR, TRY AGAIN               F1P01410
01344  2 00001 2 01321          TIX ADD02,2,1                                                  F1P01420
01345  0 07400 4 00004          TSX DIAG,4            REPEATED CK SUM ERRORS IN R[illegible]NG DRUM F1P01430
01346  0 53400 1 07730 ADD07    LXA L(0),1                                                     F1P01440
01347 -0 63400 1 02110 ADD08    SXD NEWBAS,1                                                   F1P01450
                                    NOW READ DIM2 TABLE                                       F1P01460
01350 -0 53400 4 00457          LXD DIM2IX-3,4                                                 F1P01470
01351 -3 00000 4 01413          TXL ADD18,4,0         TABLE EMPTY                              F1P01480
01352  0 53400 2 07735 ADD09    LXA L(5),2                                                     F1P01490
01353  0 76200 0 00303 ADD10    RDR 3                                                          F1P01500
01354 -0 53400 1 02110          LXD NEWBAS,1                                                   F1P01510
01355  0 46000 0 00460          LDA ORGDM2                                                     F1P01520
01356 -0 75400 0 00000          PXD 0,0                                                        F1P01530
01357  0 70000 1 04551 ADD11    CPY OTA,1             COPY NAME                                F1P01540
01360  0 70000 1 04552          CPY OTA+1,1           COPY N1 N2                               F1P01550
01361  1 77776 1 01362          TXI ADD12,1,-2                                                 F1P01560
01362 -0 70000 0 02106 ADD12    CAD GARBGE            COPY AND SUM CK SUMS                     F1P01570
01363  2 00001 4 01357          TIX ADD11,4,1                                                  F1P01580
01364  0 76000 0 00006          COM                                                            F1P01590
01365 -0 53400 4 00457          LXD DIM2IX-3,4                                                 F1P01600
01366 -0 53400 1 02110          LXD NEWBAS,1                                                   F1P01610
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01367  0 36100 1 04551 ADD13  ACL OTA,1                                                  F1P01620
01370  0 36100 1 04552        ACL OTA+1,1                                                F1P01630
01371  1 77776 1 01372        TXI ADD14,1,-2                                             F1P01640
01372  2 00001 4 01367 ADD14  TIX ADD13,4,1                                              F1P01650
01373  0 76000 0 00006        COM                                                        F1P01660
01374  0 10000 0 01400        TZE ADD15                                                  F1P01670
01375 -0 53400 4 00457        LXD DIM2IX-3,4        CK SUM ERROR TRY AGAIN               F1P01680
01376  2 00001 2 01353        TIX ADD10,2,1                                              F1P01690
01377  0 07400 4 00004        TSX DIAG,4            REPEATED CK SUM ERRORS IN READING DRUM F1P01700
01400 -0 53400 4 00457 ADD15  LXD DIM2IX-3,4                                             F1P01710
01401 -0 53400 1 02110        LXD NEWBAS,1                                               F1P01720
01402  0 60000 0 02107        STZ WORKCL                                                 F1P01730
01403  0 50000 1 04552 ADD16  CLA OTA+1,1                                                F1P01740
01404  0 62100 0 02107        STA WORKCL                                                 F1P01750
01405  0 76500 0 00065        LRS 53                                                     F1P01760
01406  0 20000 0 02107        MPY WORKCL    NI*N2                                        F1P01770
01407 -0 60000 1 04552        STQ OTA+1,1                                                F1P01780
01410  1 77776 1 01411        TXI ADD17,1,-2                                             F1P01790
01411  2 00001 4 01403 ADD17  TIX ADD16,4,1                                              F1P01800
01412 -0 63400 1 02110        SXD NEWBAS,1    UPDATE NEWBAS FOR DIM3 ROUTINE             F1P01810
                                NOW READ DIM3 TABLE.                                     F1P01820
01413 -0 53400 4 00464 ADD18  LXD DIM3IX-3,4                                             F1P01830
01414 -3 00000 4 01462        TXL ADD28,4,0         DIM3 TABLE EMPTY                     F1P01840
01415  0 53400 2 07735 ADD19  LXA L(5),2                                                 F1P01850
01416  0 76200 0 00303 ADD20  RDR 3                                                      F1P01860
01417 -0 53400 1 02110        LXD NEWBAS,1                                               F1P01870
01420  0 46000 0 00465        LDA ORGDM3                                                 F1P01880
01421 -0 75400 0 00000        PXD 0,0                                                    F1P01890
01422  0 70000 1 04551 ADD21  CPY OTA,1                                                  F1P01900
01423  0 70000 1 04552        CPY OTA+1,1                                                F1P01910
01424  0 70000 4 02243        CPY BUFFER,4                                               F1P01920
01425  1 77776 1 01426        TXI ADD22,1,-2                                             F1P01930
01426 -0 70000 0 02106 ADD22  CAD GARBGE                                                 F1P01940
01427  2 00001 4 01422        TIX ADD21,4,1                                              F1P01950
01430  0 76000 0 00006        COM                                                        F1P01960
01431 -0 53400 4 00464        LXD DIM3IX-3,4                                             F1P01970
01432 -0 53400 1 02110        LXD NEWBAS,1                                               F1P01980
01433  0 36100 1 04551 ADD23  ACL OTA,1                                                  F1P01990
01434  0 36100 1 04552        ACL OTA+1,1                                                F1P02000
01435  0 36100 4 02243        ACL BUFFER,4                                               F1P02010
01436  1 77776 1 01437        TXI ADD24,1,-2                                             F1P02020
01437  2 00001 4 01433 ADD24  TIX ADD23,4,1                                              F1P02030
01440  0 76000 0 00006        COM                                                        F1P02040
01441  0 10000 0 01445        TZE ADD25                                                  F1P02050
01442 -0 53400 4 00464        LXD DIM3IX-3,4                                             F1P02060
01443  2 00001 2 01416        TIX ADD20,2,1   CK SUM FAILED TRY AGAIN                    F1P02070
01444  0 07400 4 00004        TSX DIAG,4            REPEATED CK SUM ERRORS IN READING DRUM F1P02080
01445 -0 53400 4 00464 ADD25  LXD DIM3IX-3,4                                             F1P02090
01446 -0 53400 1 02110        LXD NEWBAS,1                                               F1P02100
01447  0 50000 1 04552 ADD26  CLA OTA+1,1                                                F1P02110
01450  0 60000 0 02107        STZ WORKCL                                                 F1P02120
01451  0 62100 0 02107        STA WORKCL                                                 F1P02130
01452  0 76500 0 00065        LRS 53                                                     F1P02140
01453  0 20000 0 02107        MPY WORKCL    N1*N2                                        F1P02150
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01454   0 20000 4 02243         MPY BUFFER,4          N3*(N1*N2)                                F1P02160
01455  -0 60000 1 04552         STQ OTA+1,1                                                     F1P02170
01456   1 77776 1 01457         TXI ADD27,1,-2                                                  F1P02180
01457   2 00001 4 01447 ADD27   TIX ADD26,4,1                                                   F1P02190
01460   0 76100 0 00000         NOP                   NOT USED.                                 F1P02200
01461   0 76100 0 00000         NOP                   NOT USED.                                 F1P02210
                                NOW WRITE SIZ TABLE ON TAPE 2.                                  F1P02220
01462  -0 75400 1 00000 ADD28   PXD 0,1                                                         F1P02230
01463   0 76000 0 00006         COM                                                             F1P02240
01464   0 40000 0 07740         ADD DECR1                                                       F1P02250
01465  -0 73400 4 00000         PDX 0,4                                                         F1P02260
01466  -0 75400 4 00000         PXD 0,4                                                         F1P02270
01467   0 77100 0 00022         ARS 18                                                          F1P02280
01470   0 60100 0 02107         STO WORKCL                                                      F1P02290
01471   0 40000 0 07731         ADD L(1)                                                        F1P02300
01472   0 73400 1 00000         PAX 0,1                                                         F1P02310
01473   0 53400 2 07730         LXA L(0),2                                                      F1P02320
01474  -0 75400 0 00000         PXD 0,0                                                         F1P02330
01475   0 36100 2 04551 ADD33   ACL OTA,2             COMPUTE CK SUM FOR SIZ TABLE              F1P02340
01476   1 77777 2 01477         TXI ADD32,2,-1                                                  F1P02350
01477   2 00001 4 01475 ADD32   TIX ADD33,4,1                                                   F1P02360
01500   0 60200 2 04551         SLW OTA,2                                                       F1P02370
01501   0 50000 0 02101         CLA DMASK                                                       F1P02380
01502   0 32000 0 00030         ANS EIFNO                                                       F1P02390
01503   0 76600 0 00222         WTB 2                                                           F1P02400
01504   0 70000 0 00030         CPY EIFNO                                                       F1P02410
01505   0 70000 0 02107         CPY WORKCL                                                      F1P02420
01506  -3 00001 1 01513         TXL ADD31,1,1                                                   F1P02430
01507   0 53400 2 07730         LXA L(0),2                                                      F1P02440
01510   0 70000 2 04551 ADD29   CPY OTA,2                                                       F1P02450
01511   1 77777 2 01512         TXI ADD30,2,-1                                                  F1P02460
01512   2 00001 1 01510 ADD30   TIX ADD29,1,1                                                   F1P02470
01513   0 77000 0 00202 ADD31   WEF 2                                                           F1P02480
01514   0 76600 0 00222         WTB 2                 WRITE SENSE SWITCH SETTINGS AS RE-        F1P02490
01515   0 53400 1 07735         LXA L(5),1            CORD ONE, FILE FIVE, TAPE TWO             F1P02500
01516   0 70000 1 00036 X0010   CPY END11+5,1                                                   F1P02510
01517   2 00001 1 01516         TIX X0010,1,1                                                   F1P02520
01520   0 07400 1 07505         TSX TAP00,1           ASSEMBLE AND WRITE SUBDEF TABLE           F1P02530
01521   0 00000 0 00013             11                                                          F1P02540
01522   0 00000 0 04551             OTA                                                         F1P02550
01523   0 07400 1 07656         TSX WAT00,1                                                     F1P02560
01524   0 00000 0 00013             11                                                          F1P02570
01525   0 00000 0 04551             OTA                                                         F1P02580
01526   0 07400 1 07505         TSX TAP00,1           ASSEMBLE AND WRITE COMMON TABLE           F1P02590
01527   0 00000 0 00014             12                                                          F1P02600
01530   0 00000 0 04551             OTA                                                         F1P02610
01531   0 07400 1 07656         TSX WAT00,1                                                     F1P02620
01532   0 00000 0 00014             12                                                          F1P02630
01533   0 00000 0 04551             OTA                                                         F1P02640
01534   0 07400 1 07505         TSX TAP00,1           ASSEMBLE AND WRITE TABLE OF HOLLERITH ARGS F1P02650
01535   0 00000 0 00015             13                                                          F1P02660
01536   0 00000 0 04551             OTA                                                         F1P02670
01537   0 07400 1 07656         TSX WAT00,1                                                     F1P02680
01540   0 00000 0 00015             13                                                          F1P02690
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01541  0 00000 0 04551            OTA                                                    F1P02700
01542  0 07400 1 07505         TSX TAP00,1          ASSEMBLE TEIFNO FROM TAPE 4          F1P02710
01543  0 00000 0 00000         HTR 0                                                      F1P02720
01544  0 00000 0 04551         HTR OTA                                                    F1P02730
01545  0 60000 0 02105         STZ PAT15            INSURE DECREMENT IS CLEAR             F1P02740
01546 -0 53400 4 04550         LXD OTA-1,4          LENGTH OF TEIFNO INTO I.R.4           F1P02750
01547 -3 00001 4 01606         TXL WRITE,4,1        IS TEIFNO EMPTY OR IS THERE A SINGLE ENTRY F1P02760
01550 -0 53400 1 02103         LXD PAT13,1          INITIALIZE I.R. TO STEP THROUGH TABLE F1P02770
01551 -0 63400 4 02104         SXD PAT14,4          SAVE WORD COUNT                       F1P02780
01552 -0 53400 4 02104 ISPLUS  LXD PAT14,4          REINTIALIZE FOR FURTHER SEARCHING     F1P02790
01553  0 50000 1 04551  NEXT   CLA OTA,1            PICK UP NEXT ENTRY IN TEIFNO          F1P02800
01554  0 12000 0 01561         TPL MASK             HAS THIS BEEN PROCESSED               F1P02810
01555  0 60200 1 04551         SLW OTA,1                                                  F1P02820
01556  1 77777 1 01557         TXI ISTHRU,1,-1      NO, SET I.R. TO LOOK AT NEXT ENTRY    F1P02830
01557  2 00001 4 01553 ISTHRU  TIX NEXT,4,1         HAVE ALL ENTRIES BEEN EXAMINED        F1P02840
01560  0 02000 0 01606         TRA WRITE            YES, FINISHED                         F1P02850
01561  0 62100 0 02105  MASK   STA PAT15            STORE COMPERAND                       F1P02860
01562  1 77777 1 01563         TXI RECOMP,1,-1      SET I.R.S TO START COMPARISON         F1P02870
01563 -0 75400 1 00000 RECOMP  PXD 0,1                                                    F1P02880
01564 -0 73400 2 00000         PDX 0,2                                                    F1P02890
01565 -2 00001 4 01606         TNX WRITE,4,1        HAVE ALL ENTRIES BEEN EXAMINED        F1P02900
01566 -0 63400 4 02104         SXD PAT14,4          SAVE NUMBER OF ENTRIES YET TO BE TREATED F1P02910
01567  0 50000 2 04551  PAT16  CLA OTA,2            PICK UP ENTRY TO BE COMPARED          F1P02920
01570 -0 12000 0 01575         TMI NODUP            NO SEARCH NECESSARY IF NEGATIVE       F1P02930
01571 -0 32000 0 02102         ANA PAT11            ISOLATE EXTERNAL FORMULA NUMBER       F1P02940
01572  0 34000 0 02105         CAS PAT15            COMPARE TO REMAINING ENTRIES          F1P02950
01573  0 02000 0 01575         TRA NODUP            NO DUPLICATE                          F1P02960
01574  0 02000 0 01600         TRA PAT9             DUPLICATE                             F1P02970
01575  1 77777 2 01576  NODUP  TXI PAT8,2,-1        NO DUPLICATE, SET I.R. TO OBTAIN NEXT ENTRYF1P02980
                                                    FOR COMPARISON                        F1P02990
01576  2 00001 4 01567  PAT8   TIX PAT16,4,1        HAVE ALL ENTRIES BEEN COMPARED        F1P03000
01577  0 02000 0 01552         TRA ISPLUS           YES                                   F1P03010
01600  0 50000 2 04551  PAT9   CLA OTA,2            FLAG DUPLICATE ENTRY NEGATIVE         F1P03020
01601 -0 76000 0 00003         SSM                                                        F1P03030
01602  0 60100 2 04551         STO OTA,2                                                  F1P03040
01603  0 50200 1 04550         CLS OTA-1,1                                                F1P03050
01604  0 60100 1 04550         STO OTA-1,1                                                F1P03060
01605  0 02000 0 01552         TRA ISPLUS                                                 F1P03070
01606  0 07400 1 07656  WRITE  TSX WAT00,1          WRITE TEIFNO ON TAPE                  F1P03080
01607  0 00000 0 00000         HTR 0                                                      F1P03090
01610  0 00000 0 04551            OTA                                                     F1P03100
01611  0 07400 1 07505         TSX TAP00,1                  ASSEMBLE TIFGO                F1P03110
01612  0 00000 0 00002         HTR 2                                                      F1P03120
01613  0 00000 0 03163 L(2TA)  HTR 2TA                                                    F1P03130
                                  START  PROGRAM  FOR MODIFICATION OF TIFGO WITH TEIFNO   F1P03140
01614  0 50000 0 03162 MFGTP   CLA 2TA-1                   GET NUMBER OF WORDS IN 2TA.    F1P03150
01615  0 10000 0 01751         TZE WFG00                   EXIT FOR NO ENTRIES IN TABLE.  F1P03160
01616 -0 73400 2 00000         PDX 0,2                     SET INDEX B TO NUMBER OF WORDS. F1P03170
01617  0 77100 0 00022         ARS 18                      COMPUTE                        F1P03180
01620  0 40000 0 01613         ADD L(2TA)                  2TA                            F1P03190
01621  0 62100 0 01646         STA MFG00                   PLUS                           F1P03200
01622  0 62100 0 01663         STA MFG03                   NUMBER                         F1P03210
01623  0 62100 0 01665         STA MFG05                   OF                             F1P03220
01624  0 62100 0 01701         STA MFG08                   WORDS                          F1P03230
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01625   0 62100 0 01702          STA MFG09
01626   0 62100 0 01716          STA MFG12
01627   0 62100 0 01740          STA MFG18
01630   0 62100 0 01747          STA MFG20
01631   0 50000 0 04550          CLA OTA-1
01632  -0 10000 0 01634          TNZ MFGOK
01633   0 02000 0 07751          TRA TEIFER
01634   0 77100 0 00022 MFGOK    ARS 18
01635   0 40000 0 07750          ADD L(OTA)
01636   0 62100 0 01652          STA MFG01
01637   0 62100 0 01661          STA MFG02
01640   0 62100 0 01670          STA MFG06
01641   0 62100 0 01677          STA MFG07
01642   0 62100 0 01706          STA MFG10
01643   0 62100 0 01715          STA MFG11
01644   0 62100 0 01736          STA MFG17
01645   0 62100 0 01745          STA MFG19
01646   0 50000 2 00000 MFG00    CLA 0,2
01647   0 12000 0 01722          TPL MFG14
01650   0 62100 0 07746          STA E3
01651  -0 53400 4 04550          LXD OTA-1,4
01652   0 50000 4 00000 MFG01    CLA 0,4
01653  -0 32000 0 07742          ANA MSK
01654   0 40200 0 07746          SUB E3
01655   0 10000 0 01661          TZE MFG02
01656   2 00001 4 01652          TIX MFG01,4,1
01657   0 50000 0 02103          CLA PAT13
01660   0 02000 0 01663          TRA MFG03
01661   0 50000 4 00000 MFG02    CLA 0,4
01662   0 77100 0 00022          ARS 18
01663   0 62100 2 00000 MFG03    STA 0,2
01664   1 77777 2 01665 MFG04    TXI MFG05,2,-1
01665   0 50000 2 00000 MFG05    CLA 0,2
01666   0 62100 0 07746          STA E3
01667  -0 53400 4 04550          LXD OTA-1,4
01670   0 50000 4 00000 MFG06    CLA 0,4
01671  -0 32000 0 07742          ANA MSK
01672   0 40200 0 07746          SUB E3
01673   0 10000 0 01677          TZE MFG07
01674   2 00001 4 01670          TIX MFG06,4,1
01675   0 50000 0 02103          CLA PAT13
01676   0 02000 0 01701          TRA MFG08
01677   0 50000 4 00000 MFG07    CLA 0,4
01700   0 77100 0 00022          ARS 18
01701   0 62100 2 00000 MFG08    STA 0,2
01702   0 50000 2 00000 MFG09    CLA 0,2
01703   0 77100 0 00022          ARS 18
01704   0 62100 0 07746          STA E3
01705  -0 53400 4 04550          LXD OTA-1,4
01706   0 50000 4 00000 MFG10    CLA 0,4
01707  -0 32000 0 07742          ANA MSK
01710   0 40200 0 07746          SUB E3
01711   0 10000 0 01715          TZE MFG11
01712   2 00001 4 01706          TIX MFG10,4,1
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                IN                                          F1P03240
                2TA                                         F1P03250
                AND                                         F1P03260
                INITIALIZE  ADDRESSES                       F1P03270
                GET NUM WORDS IN OTA                        F1P03280
                TABLE EXISTS                                F1P03290
STOP FOR NO TABLE IN OTA                                    F1P03300
                NUMBER WORDS PUT IN AC ADDRESS              F1P03310
                ADD OTA ORIGIN                              F1P03320
                INITIALIZE ADDRESSES WITH                   F1P03330
                OTA + NUM WORDS                             F1P03340
                                                            F1P03350
                                                            F1P03360
                                                            F1P03370
                                                            F1P03380
                                                            F1P03390
                                                            F1P03400
                ADDR IS 2TA + NUM WORDS IN 2TA. (1)         F1P03410
                SIGN IS PLUS.                               F1P03420
                SAVE A1.                                    F1P03430
                SET INDEX C TO NUM WORDS IN OTA.(2)         F1P03440
                A1 PRIME AND A1 GO TO AC.                   F1P03450
                ERASE A1 PRIME IN AC.                       F1P03460
                COMPARE TEIFNO ARGUMENT WITH A1.            F1P03470
                A1 EQUALS ARGUMENT.                         F1P03480
                COMP A1 VS NEXT TEIFNO ENTRY. (3A1)         F1P03490
                                                            F1P03500
                                                            F1P03510
                A1 PRIME AND A1 GO TO AC.                   F1P03520
                A1 PRIME GOES TO ADDRESS OF AC              F1P03530
                (1) A1 PRIME REPLACES A1                    F1P03540
                TAKE WORD 2 OF TIFGO ENTRY                  F1P03550
                (1). AC DECR IS A2, ADDR IS A3              F1P03560
                SAVE A3                                     F1P03570
                (2)                                         F1P03580
                A3 PRIME AND A3 GO TO AC                    F1P03590
                ERASE A3 PRIME IN AC                        F1P03600
                COMPARE TEIFNO ARGUMENT WITH A3             F1P03610
                A3 EQUALS ARGUMENT                          F1P03620
                (3A3)                                       F1P03630
                                                            F1P03640
                                                            F1P03650
                A3 PRIME AND A3 GO TO AC                    F1P03660
                A3 PRIME GOES TO ADDR OF AC                 F1P03670
                (1). A3 PRIME REPLACES A3                   F1P03680
                (1). A2 AND A3 PRIME GO TO AC               F1P03690
                A2 GOES TO ADDR OF AC.                      F1P03700
                SAVE A2                                     F1P03710
                (2)                                         F1P03720
                A2 PRIME AND A2 GO TO AC                    F1P03730
                ERASE A2 PRIME IN AC                        F1P03740
                COMPARE TEIFNO ARGUMENT WITH A2             F1P03750
                A2 EQUALS ARGUMENT                          F1P03760
                (3A2)                                       F1P03770
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01713  0 50000 0 02103        CLA PAT13                                                    F1P03780
01714  0 02000 0 01716        TRA MFG12                                                    F1P03790
01715  0 50000 4 00000 MFG11  CLA 0,4          A2 PRIME AND A2 GO TO AC                   F1P03800
01716  0 62200 2 00000 MFG12  STD 0,2          (1) A2 PRIME REPLACES A2                   F1P03810
01717  2 00001 2 01646        TIX MFG00,2,1    TAKE FIRST WORD OF NEXT 2TA ENTRY          F1P03820
01720  2 00001 2 01717 MFG13  TIX MFG13-1,2,1  TAKE SECOND WORD OF 2TA ENTRY             F1P03830
01721  0 02000 0 01751        TRA WFG00        EXIT TO TAPE WRITING PROGRAM               F1P03840
01722  0 73400 4 00000 MFG14  PAX 0,4          INTEGER N GOES TO INDEX C                  F1P03850
01723  0 02000 4 01733        TRA MFG14+9,4                                               F1P03860
01724  0 02000 0 01720        TRA MFG13        N EQUALS 7 NO MODIFICATION                 F1P03870
01725  0 02000 0 01734        TRA MFG15        N EQUALS 6                                 F1P03880
01726  0 02000 0 01664        TRA MFG04        N EQUALS 5                                 F1P03890
01727  0 02000 0 01664        TRA MFG04        N EQUALS 4                                 F1P03900
01730  0 02000 0 01664        TRA MFG04        N EQUALS 3                                 F1P03910
01731  0 02000 0 01720        TRA MFG13        N EQUALS 2 NO MODIFICATION                 F1P03920
01732  0 02000 0 01720        TRA MFG13        N EQUALS 1 NO MODIFICATION                 F1P03930
01733  0 02000 0 01734        TRA MFG15        N EQUALS 0                                 F1P03940
01734  1 77777 2 01735 MFG15  TXI MFG16,2,-1   TAKE WORD 2 OF 2TA ENTRY                   F1P03950
01735 -0 53400 4 04550 MFG16  LXD OTA-1,4      (2)                                        F1P03960
01736  0 50000 4 00000 MFG17  CLA 0,4          K PRIME AND K GO TO AC                     F1P03970
01737 -0 32000 0 07742        ANA MSK          ERASE K PRIME                              F1P03980
01740  0 40200 2 00000 MFG18  SUB 0,2          (1). COMPARE K WITH TEIFNO ARGUMENT        F1P03990
01741  0 10000 0 01745        TZE MFG19        K EQUALS ARGUMENT                          F1P04000
01742  2 00001 4 01736        TIX MFG17,4,1    (3K)                                       F1P04010
01743  0 50000 0 02103        CLA PAT13                                                   F1P04020
01744  0 02000 0 01747        TRA MFG20                                                   F1P04030
01745  0 50000 4 00000 MFG19  CLA 0,4          K PRIME AND K GO TO AC                     F1P04040
01746  0 77100 0 00022        ARS 18           K PRIME GOES TO ADDRESS OF AC              F1P04050
01747  0 62100 2 00000 MFG20  STA 0,2          (1). K PRIME REPLACES K                    F1P04060
01750  2 00001 2 01646        TIX MFG00,2,1    TAKE FIRST WORD OF NEXT 2TA ENTRY          F1P04070
01751  0 07400 1 07656 WFG00  TSX WAT00,1      WRITE 2TA ON TAPE                          F1P04080
01752  0 00000 0 00002           2                                                        F1P04090
01753  0 00000 0 03163        HTR 2TA                                                     F1P04100
01754  0 07400 1 07505        TSX TAP00,1      ASSEMBLE TRAD                              F1P04110
01755  0 00000 0 00003        HTR 3                                                       F1P04120
01756  0 00000 0 03163 L(3TA) HTR 3TA                                                     F1P04130
                                    PROGRAM FOR MODIFICATION OF TRAD WITH TEIFNO        F1P04140
01757  0 50000 0 03162 MTRTP  CLA 3TA-1        GET NUM OF WORDS IN 3TA                    F1P04150
01760  0 10000 0 02011        TZE WTR00        NO ENTRIES IN TABLE                        F1P04160
01761 -0 73400 2 00000        PDX 0,2          NUMBER OF WORDS PUT IN INDEX B             F1P04170
01762  0 77100 0 00022        ARS 18           RESET ADDRESSES                            F1P04180
01763  0 40000 0 01756        ADD L(3TA)                                                  F1P04190
01764  0 62100 0 02000        STA MTR02                                                   F1P04200
01765  0 62100 0 02007        STA MTR04                                                   F1P04210
01766  0 50000 0 04550        CLA OTA-1        GET NUMBER WORDS IN OTA.                   F1P04220
01767 -0 10000 0 01771        TNZ MTROK        TABLE EXISTS                               F1P04230
01770  0 02000 0 07751        TRA TEIFER       STOP FOR NO TABLE IN OTA                   F1P04240
01771  0 77100 0 00022 MTROK  ARS 18           PUT NUMBER WORDS IN AC ADDRESS             F1P04250
01772  0 40000 0 07750        ADD L(OTA)       ADD OTA ORIGIN                             F1P04260
01773  0 62100 0 01775        STA MTR01        INITIALIZE ADDRESS                         F1P04270
01774 -0 53400 4 04550 MTR00  LXD OTA-1,4      SET INDEX C TO NUM WORDS IN OTA            F1P04280
01775  0 50000 4 00000 MTR01  CLA 0,4          A SUB I PRIME AND A SUB I GO TO AC         F1P04290
01776  0 62200 0 07746        STD E3           SAVE A SUB I PRIME                         F1P04300
01777 -0 32000 0 07742        ANA MSK          ERASE A SUB I PRIME                        F1P04310
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02000   0 40200 2 00000 MTR02  SUB 0,2                    ADDR IS 3TA + NUM WORDS IN 3TA (1) F1P04320
02001   0 10000 0 02005        TZE MTR03                  A SUB I EQUALS ARGUMENT            F1P04330
02002   2 00001 4 01775        TIX MTR01,4,1              A SUB I NOT EQUAL TO ARGUMENT      F1P04340
02003   0 50000 0 02103        CLA PAT13                                                     F1P04350
02004   0 02000 0 02007        TRA MTR04                                                     F1P04360
02005   0 50000 0 07746 MTR03  CLA E3                     A SUB I PRIME GOES TO AC DECR.     F1P04370
02006   0 77100 0 00022        ARS 18                     A SUB I PRIME GOES TO AC ADDR.     F1P04380
02007   0 62100 2 00000 MTR04  STA 0,2                    (1). A SUB I PRIME REPLACES A SUB IF1P04390
02010   2 00001 2 01774        TIX MTR00,2,1              TAKE NEXT WORD OF 3TA              F1P04400
02011   0 07400 1 07656 WTR00  TSX WAT00,1                ALL WORDS OF 3TA EXAMINED SO       F1P04410
02012   0 00000 0 00003            3                      WRITE 3TA ON TAPE                  F1P04420
02013   0 00000 0 03163            3TA                                                       F1P04430
02014   0 07400 1 07505 AD000  TSX TAP00,1                ASSEMBLE TDO                       F1P04440
02015   0 00000 0 00001            1                                                         F1P04450
02016   0 00000 0 03163 OATDO      1TA                    ORIGIN OF ASSEMBLED TDO            F1P04460
                          PROGRAM FOR MODIFICATION OF TDO WITH TEIFNO                       F1P04470
02017   0 50000 0 03162 MDOTP  CLA 1TA-1                  GET NUMBER OF WORDS IN ITA         F1P04480
02020   0 10000 0 02074        TZE WD000                  EXIT FOR NO WORDS IN TABLE         F1P04490
02021  -0 73400 2 00000        PDX 0,2                    NUMBER OF WORDS IN ITA PUT IN IRB  F1P04500
02022   0 77100 0 00022        ARS 18                     NUM WORDS PUT IN AC ADDR           F1P04510
02023   0 40000 0 02016        ADD OATDO                  ADD ORIGIN OF ASSEMBLED TDO        F1P04520
02024   0 62100 0 02036        STA MD000                  INITIALIZE ADDRESSES               F1P04530
02025   0 62100 0 02072        STA MD006                                                     F1P04540
02026   0 62100 0 02041        STA MD030                                                     F1P04550
02027   0 50000 0 04550        CLA OTA-1                  GET NUMBER WORDS IN OTA            F1P04560
02030   0 77100 0 00022 MDOOK  ARS 18                     PUT NUMBER WORDS IN AC ADDRESS     F1P04570
02031   0 40000 0 07750        ADD L(OTA)                 ADD OTA ORIGIN AND                 F1P04580
02032   0 62100 0 02050        STA MD002                  INITIALIZE ADDRESSES               F1P04590
02033   0 62100 0 02057        STA MD003                                                     F1P04600
02034   0 62100 0 02062        STA MD004                                                     F1P04610
02035   0 62100 0 02070        STA MD0041                                                    F1P04620
02036   0 50000 2 00000 MD000  CLA 0,2                    ADDR IS ITA + NUMBER WORDS    (1) F1P04630
02037   0 12000 0 02043        TPL MD001                  SIGN OF WORD IS PLUS               F1P04640
02040   0 76000 0 00003        SSP                        CHANGE SIGN OF WORD IN TABLE       F1P04650
02041   0 60100 2 00000 MD030  STO 0,2                                                       F1P04660
02042   0 02000 0 02073        TRA MD007                                                     F1P04670
02043  -0 32000 0 07742 MD001  ANA MSK                    ERASE DECR IN AC                   F1P04680
02044   0 62100 0 07747        STA E1                     SAVE BETA                          F1P04690
02045  -0 53400 4 04550        LXD OTA-1,4                SET INDEX C TO NUM WORDS IN OTA    F1P04700
02046   3 00000 4 02050        TXH MD002,4,0              TEST FOR TEIFNO                    F1P04710
02047   0 02000 0 07751        TRA TEIFER           STOP FOR NO TEIFNO                       F1P04720
02050   0 50000 4 00000 MD002  CLA 0,4                    BETA PRIME AND BETA GO TO AC       F1P04730
02051  -0 32000 0 07742        ANA MSK                    ERASE BETA PRIME                   F1P04740
02052   0 40200 0 07747        SUB E1                     BETA COMPARED WITH TABLE ARGUMENT  F1P04750
02053   0 10000 0 02057        TZE MD003                  BETA EQUALS ARGUMENT               F1P04760
02054   2 00001 4 02050        TIX MD002,4,1              BETA NOT EQUAL TO ARGUMENT         F1P04770
02055   0 50000 0 02103        CLA PAT13                                                     F1P04780
02056   0 02000 0 02072        TRA MD006                                                     F1P04790
02057   0 50000 4 00000 MD003  CLA 0,4                    BETA PRIME AND BETA GO TO AC       F1P04800
02060   0 62200 0 07746        STD E2                     SAVE DECR OF FIRST POSSIBILITY     F1P04810
02061  -2 00001 4 02066        TNX MD008,4,1              SEE IF THERE ARE 2 ENTRIES FOR     F1P04820
02062   0 50000 4 00000 MD004  CLA 0,4                    ONE ARGUMENT                       F1P04830
02063  -0 32000 0 07742        ANA MSK                    ERASE DECR IN AC                   F1P04840
02064   0 40200 0 07747        SUB E1                                                        F1P04850
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02065  0 10000 0 02070          TZE MD0041                    THERE ARE 2 ENTRIES                F1P04860
02066  0 50000 0 07746 MD008    CLA E2                        THERE IS ONLY ONE ENTRY            F1P04870
02067  0 02000 0 02071          TRA MD005                     FOR THIS ARGUMENT                  F1P04880
02070  0 50000 4 00000 MD0041   CLA 0,4                                                          F1P04890
02071  0 77100 0 00022 MD005    ARS 18                                                           F1P04900
02072  0 62100 2 00000 MD006    STA 0,2                       (1). BETA PRIME REPLACES BETA      F1P04910
02073  2 00005 2 02036 MD007    TIX MD000,2,5                 TAKE NEXT ENTRY IN ITA             F1P04920
02074  0 07400 1 07656 WD000    TSX WAT00,1                   WRITE  TDO ON TAPE                 F1P04930
02075  0 00000 0 00001          HTR 1                                                            F1P04940
02076  0 00000 0 03163 TOT1     HTR 1TA                                                          F1P04950
02077  0 76200 0 00221          RTB 1                                                            F1P04960
02100  0 02000 0 00004          TRA 4                         GO TO 1-CS FOR PART B OF ONE PRIME F1P04970
02101  0 77777 0 00000 DMASK        0,0,32767                                                    F1P04980
02102 +000000077777     PAT11   OCT 77777                                                        F1P04990
02103  0 00000 0 00000 PAT13    HTR 0                                                            F1P05000
02104  0 00000 0 00000 PAT14    HTR 0                                                            F1P05010
02105  0 00000 0 00000 PAT15    HTR 0                                                            F1P05020
                 02106 GARBGE   BSS 1                                                            F1P05030
                 02107 WORKCL   BSS 1                                                            F1P05040
                 02110 NEWBAS   BSS 1                                                            F1P05050
                 02243 BUFFER   BES 90                                                           F1P05060
                 02243 E1PTS    BSS 1                                                            F1P05070
                 02244 FLSIZE   BSS 1                                                            F1P05080
                 02245 CMPREC   BSS 1                                                            F1P05090
                 03162 END1PA   ORG 1650                                                         F1P05100
                 03162 1TAM1    BSS 1                         NO OF WORDS IN BLOCK               F1P05110
                 03163 1TA      BSS 750                       BLOCK FOR TABLE ASSEMBLING         F1P05120
                                                                                                 F1P05130
                                                                                                 F1P05140
                                    704 FORTRAN MASTER RECORD CARD / 1 PRIME PART B = F0240000.  F1P05150
                 00000          ORG 0                                                            F1P05160
00000  0 00507 0 00507          PZE ORG1PB,,ORG1PB                                               F1P05170
00001  0 00000 0 01613          PZE END1PB                                                       F1P05180
                                                                                                 F1P05190
                                    THIS IS PART B OF 2 PARTS OF SECTION ONE PRIME               F1P05200
                                                                                                 F1P05210
                 00507 ORG1PB   ORG 327                                                          F1P05220
00507  0 76100 0 00000          NOP                           TO PERMIT A STOP FOR TESTING USE.  F1P05230
00510  0 07400 1 07505          TSX TAP00,1                   ASSEMBLE FORVAL                    F1P05240
00511  0 00000 0 00006 TNT6     HTR 6                                                            F1P05250
00512  0 00000 0 01614 TOT6     HTR 6TA                                                          F1P05260
00513 -0 53400 4 01613          LXD 6TA-1,4           TEST FOR ENTRIES IN FORVAL, IF NONE WRITE  F1P05270
00514 -3 00000 4 00546          TXL CLMD09,4,0        IDENTIFICATION WORD AND ZERO WORD.         F1P05280
                                                                                                 F1P05290
00515  0 07400 1 07505          TSX TAP00,1           ASSEMBLE TABLE OF FIRST, LAST FORMULA      F1P05300
00516  0 00000 0 00020              16                NUMBERS OF CALL STATEMENTS.                F1P05310
00517  0 00000 0 03564 L16TA        16TA                                                         F1P05320
                                                                                                 F1P05330
00520 -0 53400 2 03563          LXD 16TA-1,2          TEST FOR ANY ENTRIES IN CALL NUMBER TABLE, F1P05340
00521 -3 00000 2 00546          TXL CLMD09,2,0        IF NONE WRITE OUT FORVAL TABLE.            F1P05350
                                                                                                 F1P05360
                                    THERE ARE ENTRIES IN BOTH FORVAL AND CALL NUMBER TABLES.     F1P05370
                                    THEREFORE THERE MAY BE SOME NUMBER IN FORVAL WHICH MUST BE   F1P05380
                                    REPLACED WITH THE LAST NUMBER RELATED TO A CALL STATEMENT.   F1P05390
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                                                                                F1P05400
                THE PROGRAM TO SEARCH AND REPLACE IS BASED UPON THE TWO         F1P05410
                TABLES BEING ORDERED BY MAGNITUDE OF INTERNAL FORMULA           F1P05420
                NUMBERS. THIS PERMITS A SINGLE PASS OVER BOTH.                  F1P05430
                                                                                F1P05440
00522  0 60000 0 02107         STZ WORKCL                                       F1P05450
00523  0 53400 1 07730         LXA L(0),1      PREPARE FOR FORWARD SEARCH.      F1P05460
00524 -0 53400 4 01613         LXD 6TA-1,4     NO OF ENTRIES IN FORVAL.         F1P05470
00525 -0 75400 2 00000         PXD ,2                                           F1P05480
00526  0 77100 0 00022         ARS 18                                           F1P05490
00527  0 40000 0 00517         ADD L16TA                                        F1P05500
00530  0 62100 0 00531         STA *+1                                          F1P05510
                                                                                F1P05520
U 00531  0 50000 2       CLMD01 CLA **,2        GET NEXT ENTRY IN CALL TABLE.    F1P05530
00532  0 62200 0 02107         STD WORKCL      DIVIDE ENTRY INTO FIRST IN AC, LAST IN CS. F1P05540
00533 -0 32000 0 07742         ANA MSK                                          F1P05550
00534  0 76700 0 00022         ALS 18                                           F1P05560
00535  0 34000 1 01614 CLMD02  CAS 6TA,1       COMPARE CALL FIRST IN AC TO NEXT FORVAL. F1P05570
00536  1 77777 1 00545         TXI CLMD04,1,-1 CALL GREATER THAN FORVAL         F1P05580
00537  0 02000 0 00542         TRA CLMD03      CALL EQUAL FORVAL.               F1P05590
00540  2 00001 2 00531         TIX CLMD01,2,1  GO FOR NEXT CALL ENTRY IF ANY, OTHERWISE F1P05600
00541  0 02000 0 00546         TRA CLMD09      GO WRITE FORVAL TABLE.           F1P05610
                                                                                F1P05620
00542  0 50000 0 02107 CLMD03  CLA WORKCL      REPLACE FORMULA NUMBER IN FORVAL WHICH IS F1P05630
00543  0 62200 1 01614         STD 6TA,1       FIRST RELATED TO CALL WITH LAST. F1P05640
00544  1 77777 1 00545         TXI *+1,1,-1                                     F1P05650
00545  2 00001 4 00535 CLMD04  TIX CLMD02,4,1  GO ON WITH SEARCH IF THERE ARE MORE FORVALS F1P05660
                               IF NOT GO WRITE FORVAL TABLE.                    F1P05670
                                                                                F1P05680
00546  0 07400 1 07656 CLMD09  TSX WAT00,1                                      F1P05690
00547  0 00000 0 00006         HTR 6           FORVAL                           F1P05700
00550  0 00000 0 01614         HTR 6TA         ON TAPE                          F1P05710
00551  0 50000 0 01613         CLA 6TA-1       GET NUMBER OF WORDS IN FORVAL    F1P05720
00552 -0 10000 0 00554         TNZ WFD00       TABLE EXISTS                     F1P05730
00553  0 02000 0 00610         TRA A4VAR       EXIT TO ASSEMBLE NEXT TABLE      F1P05740
00554  0 76600 0 00302 WFD00   WRS 194         PREPARE TO WRITE FORVAL ON DRUM  F1P05750
00555 -0 73400 1 00000 WFD01   PDX 0,1         SET INDEX A TO NUM OF WORDS      F1P05760
00556  0 53400 2 00555         LXA WFD01,2     SET INDEX B TO ZERO              F1P05770
00557  0 77100 0 00022         ARS 18          PUT NUM OF WORDS IN AC           F1P05780
00560  0 40000 0 00512         ADD TOT6                                         F1P05790
00561  0 62100 0 00571         STA WFD04       INITIALIZE                       F1P05800
00562  0 62100 0 00602         STA WFD07                                        F1P05810
00563  0 40200 0 07731         SUB L(1)        ADDRESSES                        F1P05820
00564  0 62100 0 00570         STA WFD03                                        F1P05830
00565  0 62100 0 00601         STA WFD06                                        F1P05840
00566  1 77777 1 00567         TXI WFD02,1,-1  SUBTRACT ONE FROM INDEX A        F1P05850
00567  0 76000 0 00000 WFD02   CLM             COMPUTE CHECK SUM                F1P05860
00570  0 36100 1 00000 WFD03   ACL 0,1         FOR EACH FORVAL                  F1P05870
00571  0 36100 1 00000 WFD04   ACL 0,1         ENTRY AND SAVE IN                F1P05880
00572  0 60200 2 03564         SLW FRCHS,2     SEPARATE TABLE                   F1P05890
00573  1 77777 2 00574         TXI WFD05,2,-1                                   F1P05900
00574  2 00002 1 00567 WFD05   TIX WFD02,1,2   TEST END OF FORVAL ENTRIES       F1P05910
00575  0 53400 2 00555         LXA WFD01,2     SET INDEX B TO ZERO              F1P05920
00576 -0 53400 1 01613         LXD 6TA-1,1                                      F1P05930
00577  0 46000 0 07744         LDA DRL02
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00600   1 77777 1 00601         TXI WFD06,1,-1                                  F1P05940
00601   0 70000 1 00000 WFD06   CPY 0,1          WRITE FORVAL                   F1P05950
00602   0 70000 1 00000 WFD07   CPY 0,1          ENTRY                          F1P05960
00603  -2 00002 1 00606         TNX WFD08,1,2    TEST END OF FORVAL ENTRIES     F1P05970
00604   0 70000 2 03564         CPY FRCHS,2      WRITE CHECK SUM                F1P05980
00605   1 77777 2 00601         TXI WFD06,2,-1   FOR ABOVE ENTRY                F1P05990
00606   0 70000 2 03564 WFD08   CPY FRCHS,2       WRITE CHECK SUM FOR LAST ENTRY F1P06000
00607   0 70000 0 07743         CPY FRCON        WRITE END OF TABLE SIGNAL      F1P06010
00610   0 07400 1 07505 A4VAR   TSX TAP00,1      ASSEMBLE FORVAR.               F1P06020
00611   0 00000 0 00005 TNT5    HTR 5                                           F1P06030
00612   0 00000 0 01614         HTR 5TA                                         F1P06040
00613   0 07400 1 07656         TSX WAT00,1      WRITE FORVAR ON TAPE           F1P06050
00614   0 00000 0 00005         HTR 5                                           F1P06060
00615   0 00000 0 01614         HTR 5TA                                         F1P06070
00616   0 07400 1 07505         TSX TAP00,1      ASSEMBLE FORTAG                F1P06080
00617   0 00000 0 00004         HTR 4                                           F1P06090
00620   0 00000 0 01614         HTR 4TA                                         F1P06100
00621   0 07400 1 07656         TSX WAT00,1      WRITE FORTAG ON TAPE           F1P06110
00622   0 00000 0 00004         HTR 4                                           F1P06120
00623   0 00000 0 01614         HTR 4TA                                         F1P06130
                          PROGRAM  FOR PROCESSING FREQUENCY TABLE. FRET         F1P06140
00624   0 07400 1 07505         TSX TAP00,1      ASSEMBLE FRET.                 F1P06150
00625   0 00000 0 00007         HTR 7                                           F1P06160
00626   0 00000 0 01614 TOT7    HTR 7TA          ORIGIN OF ASSEMBLED FRET.      F1P06170
00627   0 50000 0 01613 MFRTP   CLA 7TA-1        GET NUM OF WORDS IN TABLE      F1P06180
00630   0 10000 0 01114         TZE WFR00        EXIT FOR EMPTY TABLE           F1P06190
00631  -0 73400 2 00000         PDX 0,2          SET INDEX B TO NUM WORDS IN TABLE F1P06200
00632   0 77100 0 00022         ARS 18           PUT NUMBER IN AC ADDRESS AND   F1P06210
00633   0 40000 0 00626         ADD TOT7         INITIALIZE ADDRESSES           F1P06220
00634   0 62100 0 00645         STA MFR00                                       F1P06230
00635   0 62100 0 00662         STA MFR03                                       F1P06240
00636   0 50000 0 04550         CLA OTA-1        GET NUMBER OF WORDS IN OTA     F1P06250
00637  -0 10000 0 00641         TNZ MFROK        TABLE EXISTS                   F1P06260
00640   0 02000 0 07751         TRA TEIFER     STOP FOR NO TABLE IN OTA         F1P06270
00641   0 77100 0 00022 MFROK   ARS 18           PUT NUMBER WORDS IN AC ADDRESS F1P06280
00642   0 40000 0 07750         ADD L(OTA)       ADD OTA ORIGIN AND             F1P06290
00643   0 62100 0 00651         STA MFR01        INITIALIZE ADDRESSES           F1P06300
00644   0 62100 0 00660         STA MFR02                                       F1P06310
00645   0 50000 2 00000 MFR00   CLA 0,2           ADDR IS 7TA + NUMBER OF WORDS F1P06320
00646   0 12000 0 00663         TPL MFR04        DO NOT MODIFY THIS WORD        F1P06330
00647   0 62100 0 01604         STA E10          SAVE ABSOLUTE PART OF WORD     F1P06340
00650  -0 53400 1 04550         LXD OTA-1,1      SET INDEX TO NUM WORDS IN OTA  F1P06350
00651   0 50000 1 00000 MFR01   CLA 0,1           TEIFNO ARGUMENT IS IN AC.     F1P06360
00652  -0 32000 0 07742         ANA MSK          COMPARE WITH 7TA WORD          F1P06370
00653   0 40200 0 01604         SUB E10                                         F1P06380
00654   0 10000 0 00660         TZE MFR02        MODIFY 7TA WORD                F1P06390
00655   2 00001 1 00651         TIX MFR01,1,1    GO TO NEXT TEIFNO WORD         F1P06400
00656   0 50000 0 07730         CLA L(0)       NO ENTRY FOUND IN TEIFNO.  IGNORE. F1P06410
00657   0 02000 0 00662         TRA MFR03                                       F1P06420
00660   0 50000 1 04551 MFR02   CLA OTA,1        TEIFNO WORD GOES TO AC         F1P06430
00661   0 77100 0 00022         ARS 18           INTERNAL FORMULA NUM IN AC ADDR. F1P06440
00662   0 62100 2 00000 MFR03   STA 0,2          INTERNAL FORMULA NUM GOES TO 7TA F1P06450
00663   2 00001 2 00645 MFR04   TIX MFR00,2,1    EXAMINE NEXT WORD OF 7TA       F1P06460
                          PROGRAM FOR SORTING FRET                              F1P06470
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00664   0 50000 0 01613 SFRTP  CLA 7TA-1
00665   0 77100 0 00022        ARS 18
00666   0 40000 0 00626        ADD TOT7
00667   0 62100 0 00701        STA SFR01
00670   0 62100 0 00707        STA SFR03
00671   0 62100 0 00721        STA SFR06
00672   0 62100 0 00724        STA SFR07
00673   0 62100 0 00733        STA SFR11
00674   0 62100 0 00743        STA SFR13
00675   0 62100 0 00753        STA SFR17
00676   0 76000 0 00000 SFR00  CLM
00677   0 60100 0 07746        STO E12
00700  -0 53400 1 01613        LXD 7TA-1,1
00701   0 50000 1 00000 SFR01  CLA 0,1
00702  -0 12000 0 00704        TMI SFR02
00703   1 77777 1 00701        TXI SFR01,1,-1
00704   0 62100 0 01605 SFR02  STA E11
00705  -0 63400 1 01606        SXD A1BOX,1
00706  -2 00001 1 00762        TNX SFR21,1,1
00707   0 50000 1 00000 SFR03  CLA 0,1
00710  -0 12000 0 00713        TMI SFR05
00711  -3 00001 1 00762        TXL SFR21,1,1
00712   1 77777 1 00707        TXI SFR03,1,-1
00713   0 76000 0 00003 SFR05  SSP
00714   0 40200 0 01605        SUB E11
00715   0 12000 0 00701        TPL SFR01
00716   0 50000 0 07731        CLA L(1)
00717   0 60100 0 07746        STO E12
00720   0 53400 4 07730        LXA L(0),4
00721   0 50000 1 00000 SFR06  CLA 0,1
00722   0 60100 4 04551        STO OTA,4
00723   1 77777 1 00724        TXI SFR07,1,-1
00724   0 50000 1 00000 SFR07  CLA 0,1
00725  -0 12000 0 00732        TMI SFR10
00726   1 77777 4 00727        TXI SFR09,4,-1
00727   0 60100 4 04551 SFR09  STO OTA,4
00730  -3 00001 1 00732        TXL SFR10,1,1
00731   1 77777 1 00724        TXI SFR07,1,-1
00732  -0 53400 1 01606 SFR10  LXD A1BOX,1
00733   0 50000 1 00000 SFR11  CLA 0,1
00734   1 77777 4 00735        TXI SFR12,4,-1
00735   0 60100 4 04551 SFR12  STO OTA,4
00736  -0 63400 4 01607        SXD A2BOX,4
00737   0 50000 0 01606        CLA A1BOX
00740   0 40000 0 01607        ADD A2BOX
00741   0 62200 0 01607        STD A2BOX
00742   1 77777 1 00743        TXI SFR13,1,-1
00743   0 50000 1 00000 SFR13  CLA 0,1
00744  -0 12000 0 00750        TMI SFR15
00745   1 77777 4 00746        TXI SFR14,4,-1
00746   0 60100 4 04551 SFR14  STO OTA,4
00747   1 77777 1 00743        TXI SFR13,1,-1
00750  -0 53400 1 01606 SFR15  LXD A1BOX,1
00751   0 53400 2 07730        LXA L(0),2
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GET NUMBER OF WORDS IN FRET                    F1P06480
NUMBER WORDS IN TABLE GO TO AC ADDR            F1P06490
COMPUTE NUMBER OF WORDS IN TABLE               F1P06500
PLUS ORIGIN OF TABLE AND INITIALIZE            F1P06510
ADDRESSES                                      F1P06520
                                               F1P06530
                                               F1P06540
                                               F1P06550
                                               F1P06560
                                               F1P06570
SET E12 TO ZERO TO INDICATE                    F1P06580
TABLE IS IN ORDER.                             F1P06590
SET INDEX A TO NUM OF WORDS IN 7TA             F1P06600
A WORD OF 7TA GOES TO AC.                      F1P06610
COMPARE THIS WORD. IT IS ALPHA ONE             F1P06620
EXAMINE NEXT WORD OF 7TA                       F1P06630
SAVE ALPHA ONE FOR COMPARISON                  F1P06640
SAVE INDEX FOR RETURN TO ALPHA ONE             F1P06650
EXAMINE NEXT WORD OF 7TA                       F1P06660
PUT NEXT WORD OF 7TA IN AC.                    F1P06670
COMPARE THIS WORD. IT IS ALPHA TWO             F1P06680
EXIT FOR END OF TABLE                          F1P06690
EXAMINE NEXT 7TA WORD                          F1P06700
COMPUTE ALPHA TWO                              F1P06710
MINUS ALPHA ONE                                F1P06720
ALPHA ONE IS SMALLER                           F1P06730
C(E12) NOT ZERO INDICATES TABLE WAS            F1P06740
NOT IN ORDER ON THIS PASS.                     F1P06750
SET INDEX C TO ZERO TO INDEX OTA               F1P06760
ALPHA TWO GOES TO AC                           F1P06770
SAVE ALPHA TWO                                 F1P06780
GET NEXT WORD OF ALPHA TWO ENTRY               F1P06790
PUT THIS WORD IN AC                            F1P06800
ALL WORDS OF ALPHA TWO ENTRY SAVED             F1P06810
GO TO NEXT WORD OF OTA                         F1P06820
SAVE WORDS OF ALPHA TWO ENTRY                  F1P06830
ALPHA TWO ENTRY IS END OF TABLE                F1P06840
EXAMINE NEXT WORD OF 7TA                       F1P06850
SET INDEX A TO GET ADDR OF ALPHA 1             F1P06860
ALPHA ONE GOES TO AC                           F1P06870
GO TO NEXT WORD OF OTA                         F1P06880
SAVE ALPHA ONE                                 F1P06890
COMPUTE INDEX FOR                              F1P06900
RETURNING TO ALPHA ONE                         F1P06910
AFTER TRANSPOSING                              F1P06920
ALPHA ONE AND ALPHA TWO ENTRIES                F1P06930
EXAMINE NEXT WORD OF 7TA                       F1P06940
PUT NEXT WORD IN AC                            F1P06950
FINISHED SAVING ALPHA ONE ENTRY                F1P06960
GO TO NEXT WORD OF OTA                         F1P06970
SAVE WORDS OF ALPHA ONE ENTRY                  F1P06980
EXAMINE NEXT WORD OF 7TA                       F1P06990
SET INDEX A TO GET ADDR OF ALPHA 1             F1P07000
SET INDEX B TO INDEX OTA                       F1P07010
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00752   0 50000 2 04551 SFR16  CLA OTA,2                    ALPHA ONE ENTRY AND ALPHA TWO ENTRYF1P07020
00753   0 60100 1 00000 SFR17  STO 0,1                      ARE INTERCHANGED                   F1P07030
00754   1 77777 2 00755        TXI SFR18,2,-1               GO TO NEXT WORD OF OTA             F1P07040
00755  -2 00001 1 00676 SFR18  TNX SFR00,1,1                END OF TABLE EXIT                  F1P07050
00756  -3 00001 4 00760        TXL SFR20,4,1                TEST IF OTA IS EMPTIED             F1P07060
00757   1 00001 4 00752        TXI SFR16,4,1                COUNT WORDS TAKEN FROM OTA         F1P07070
00760  -0 53400 1 01607 SFR20  LXD A2BOX,1                  GET OLD ALPHA ONE AS NEW ALPHA ONE F1P07080
00761   0 02000 0 00701        TRA SFR01                    START OVER WITH NEW ALPHA ONE      F1P07090
00762   0 50000 0 07746 SFR21  CLA E12                      TEST IF TABLE IS IN ORDER          F1P07100
00763  -0 10000 0 00676        TNZ SFR00                    EXAMINE TABLE AGAIN                F1P07110
                               PROGRAM TO REVERSE FREQUENCIES FOR GO TO VECTOR ENTRIES IN     F1P07120
                               TIFGO                                                          F1P07130
00764   0 76400 0 00222 RFT00  BST 146                      MOVE TAPE                          F1P07140
00765   0 76400 0 00222        BST 146                      THRU TABLES                        F1P07150
00766   0 76400 0 00222        BST 146                      ALREADY WRITTEN                    F1P07160
00767   0 76400 0 00222        BST 146                      TO OBTAIN                          F1P07170
00770   0 76400 0 00222        BST 146                      TIFGO                              F1P07180
00771   0 76400 0 00222        BST 146                                                         F1P07190
00772   0 76200 0 00222        RDS 146                      SELECT TAPE FOR READING            F1P07200
00773   0 50000 0 07734        CLA L(4)           PREPARE   TO COUNT                          F1P07210
00774   0 60100 0 01610        STO IT1                      TWO TAPE TESTS                     F1P07220
00775   0 70000 0 07747        CPY E1RF                     GET TABLE NUMBER                   F1P07230
00776   0 50000 0 07747        CLA E1RF                     AND COMPARE WITH                   F1P07240
00777   0 40200 0 07745        SUB TNT2                     TABLE CALLED FOR                   F1P07250
01000   0 10000 0 01002        TZE RFT01                    TABLE NUMBERS AGREE                F1P07260
01001   0 07400 4 00004        TSX DIAG,4                   STOP FOR TABLE NOT IN RIGHT RECORD F1P07270
01002   0 70000 0 04550 RFT01  CPY OTA-1                    GET NUMBER OF WORDS                F1P07280
01003   0 50000 0 04550        CLA OTA-1                    IN TAPE RECORD                     F1P07290
01004   0 10000 0 01107        TZE WFR01                    EXIT FOR EMPTY TABLE ON TAPE       F1P07300
01005   0 62200 0 01022        STD RFT05                                                       F1P07310
01006  -0 76000 0 00012        RTT                          TURN OFF TAPE                      F1P07320
01007   0 76100 0 00000        NOP                          CHECK INDICATOR AND LIGHTS         F1P07330
01010   0 53400 2 07730 RFT02  LXA L(0),2                   SET INDEX B TO ZERO                F1P07340
01011   0 70000 2 04551 RFT03  CPY OTA,2                                                       F1P07350
01012   1 77777 2 01011        TXI RFT03,2,-1               COPY LOOP                          F1P07360
01013   0 76100 0 00000        NOP                          END OF FILE JUMP                   F1P07370
01014   0 76600 0 00333        WRS 219                      END OF RECORD. DELAY FOR TAPE TEST F1P07380
01015  -0 76000 0 00012        RTT                          TAPE TEST                          F1P07390
01016   0 02000 0 01020        TRA RFT04                    TAPE TEST ON                       F1P07400
01017   0 02000 0 01032        TRA RFT07                    TAPE TEST OFF                      F1P07410
01020   0 76400 0 00224 RFT04  BST 148                      REPEAT RECORD                      F1P07420
01021   0 76200 0 00224        RDS 148                      PREPARE TO READ RECORD             F1P07430
01022   1 00000 2 01023 RFT05  TXI RFT06,2,**               COMPENSATE FOR REREADING RECORD    F1P07440
01023   0 50000 0 01610 RFT06  CLA IT1                      COUNT                              F1P07450
01024   0 40200 0 07731        SUB L(1)                     TWO                                F1P07460
01025   0 60100 0 01610        STO IT1                      TAPE TESTS                         F1P07470
01026   0 70000 0 07747        CPY E1RF                     GET TABLE NUMBER                   F1P07480
01027   0 70000 0 07747        CPY E1RF                     GET NUMBER OF WORDS IN TABLE       F1P07490
01030   0 12000 0 01010        TPL RFT02                    GO TO READ TAPE                    F1P07500
01031   0 07400 4 00004        TSX DIAG,4                   STOP FOR SECOND TAPE TEST          F1P07510
01032   0 50000 0 01613 RFT07  CLA 7TA-1                    COMPUTE TABLE                      F1P07520
01033   0 77100 0 00022        ARS 18                       ORIGIN PLUS                        F1P07530
01034   0 40000 0 00626        ADD TOT7                     NUMBER OF                          F1P07540
01035   0 62100 0 01057        STA RFT09                    WORDS IN                           F1P07550
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01036  0 62100 0 01072        STA RFT13                  FRET AND                          F1P07560
01037  0 62100 0 01103        STA RFT18                  INITIALIZE ADDRESSES              F1P07570
01040  0 50000 0 04550        CLA OTA-1                  GET NUMBER OF WORDS IN TI FGO     F1P07580
01041  0 77100 0 00022        ARS 18                     PUT IN AC AND                     F1P07590
01042  0 40200 0 07731        SUB L(1)                   SUBTRACT ONE                      F1P07600
01043  0 73400 4 00000        PAX 0,4                    SET INDEX C TO THIS NUMBER        F1P07610
01044  0 40000 0 07750        ADD TOTO                   ADD ORIGIN OF TIFGO ADD           F1P07620
01045  0 62100 0 01050        STA RFT08                  INITIALIZE ADDRESS                F1P07630
01046  0 76000 0 00000        CLM                                                          F1P07640
01047  0 60200 0 01611        SLW E1RFT                                                    F1P07650
01050  0 50000 4 00000 RFT08  CLA 0,4                    GET FIRST WORD OF TIFGO ENTRY     F1P07660
01051  0 62200 0 01611        STD E1RFT                  SAVE FORMULA NUMBER               F1P07670
01052 -0 12000 0 01056        TMI RFT09-1                ENTRY IS AN IF(E)                 F1P07680
01053 -0 32000 0 07742        ANA MSK                    ERASE DECREMENT OF AC             F1P07690
01054  0 40200 0 07732        SUB L(2)                   TEST FOR GO TO VECTOR ENTRY       F1P07700
01055 -0 10000 0 01106        TNZ RFT20                  EXIT FOR ENTRY NOT A GO TO VECTOR F1P07710
01056 -0 53400 1 01613        LXD 7TA-1,1                SET INDEX A TO NUM OF WORDS IN FRETF1P07720
01057  0 50000 1 00000 RFT09  CLA 0,1                    GET WORD OF FRET ENTRY            F1P07730
01060  0 12000 0 01065        TPL RFT10                  TEST FOR FIRST WORD OF ENTRY      F1P07740
01061  0 76000 0 00003        SSP                        PUT FORMULA NUMBER                F1P07750
01062  0 76700 0 00022        ALS 18                     IN DECREMENT OF AC                F1P07760
01063  0 40200 0 01611        SUB E1RFT                  COMPARE FORMULA NUMBERS           F1P07770
01064  0 10000 0 01067        TZE RFT11                  FORMULA NUMBERS MATCH             F1P07780
01065  2 00001 1 01057 RFT10  TIX RFT09,1,1              TEST END OF FRET                  F1P07790
01066  0 02000 0 01106        TRA RFT20                  EXIT FOR END OF FRET              F1P07800
01067 -2 00001 1 01106 RFT11  TNX RFT20,1,1              PREPARE FOR SECOND WORD OF ENTRY  F1P07810
01070 -0 63400 1 01612 RFT12  SXD E2RFT,1                AND SAVE INDEX A FOR RETURN       F1P07820
01071  0 53400 2 07730        LXA L(0),2                 SET INDEX B TO ZERO               F1P07830
01072  0 50000 1 00000 RFT13  CLA 0,1                    GET FREQUENCY PART OF ENTRY       F1P07840
01073 -0 12000 0 01077        TMI RFT15                  TEST END OF ENTRY                 F1P07850
01074  0 60100 2 03172        STO FRTS,2                 SAVE FREQUENCY                    F1P07860
01075  1 77777 2 01076        TXI RFT14,2,-1             TAKE NEXT FRTS WORD               F1P07870
01076  2 00001 1 01072 RFT14  TIX RFT13,1,1              TAKE NEXT FRET WORD               F1P07880
01077 -3 00000 2 01106 RFT15  TXL RFT20,2,0              EXIT FOR NO FREQUENCY IN ENTRY    F1P07890
01100 -0 53400 1 01612        LXD E2RFT,1                SET INDEX A TO GET 2ND ENTRY WORD F1P07900
01101  1 00001 2 01102 RFT16  TXI RFT17,2,1              GET FREQUENCIES                   F1P07910
01102  0 50000 2 03172 RFT17  CLA FRTS,2                 IN REVERSE ORDER                  F1P07920
01103  0 60100 1 00000 RFT18  STO 0,1                    AND REPLACE IN FRET ENTRY         F1P07930
01104  1 77777 1 01105        TXI RFT19,1,-1             TAKE NEXT WORD OF FRET ENTRY      F1P07940
01105  3 00000 2 01101 RFT19  TXH RFT16,2,0              TEST END OF ENTRY                 F1P07950
01106  2 00002 4 01050 RFT20  TIX RFT08,4,2              TEST END OF TIFGO                 F1P07960
01107  0 76200 0 00222 WFR01  RDS 146                    POSITION                          F1P07970
01110  0 76200 0 00222        RDS 146                    TAPE                              F1P07980
01111  0 76200 0 00222        RDS 146                    FOR                               F1P07990
01112  0 76200 0 00222        RDS 146                    WRITING                           F1P08000
01113  0 76200 0 00222        RDS 146                    FRET                              F1P08010
01114  0 07400 1 07656 WFR00  TSX WAT00,1                WRITE                             F1P08020
01115  0 00000 0 00007        HTR 7                      FRET                              F1P08030
01116  0 00000 0 01614        HTR 7TA                    ON TAPE                           F1P08040
01117  0 07400 1 07505        TSX TAP00,1                ASSEMBLE EQUIT.                   F1P08050
01120  0 00000 0 00010            8                                                        F1P08060
01121  0 00000 0 04551            EQ                                                       F1P08070
                                PROGRAM FOR CLASSES OF EQUIVALENCE                         F1P08080
                                INITIALIZATION OF ADDRESSES AND STORAGE                    F1P08090
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01122  0 50000 0 04550 CLEQ   CLA EQM1                    COMPUTE EQ ORIGIN PLUS          F1P08100
01123  0 77100 0 00022        ARS 18                      NUMBER OF WORDS IN TABLE        F1P08110
01124  0 40000 0 01574        ADD L(EQ)                                                   F1P08120
01125  0 62100 0 01165        STA B7CLQ                                                   F1P08130
01126  0 62100 0 01171        STA B8CLQ                                                   F1P08140
01127  0 62100 0 01200        STA B9CLQ                                                   F1P08150
01130  0 62100 0 01174        STA B2CLQ                                                   F1P08160
01131  0 62100 0 01213        STA B11CLQ                                                  F1P08170
01132  0 62100 0 01225        STA C2CLQ                                                   F1P08180
01133  0 62100 0 01230        STA C3CLQ                                                   F1P08190
01134  0 62100 0 01271        STA A10CLQ                                                  F1P08200
01135  0 62100 0 01302        STA A11CLQ                                                  F1P08210
01136  0 62100 0 01315        STA A12CLQ                                                  F1P08220
01137  0 62100 0 01326        STA A13CLQ                                                  F1P08230
01140  0 62100 0 01306        STA A17CLQ                                                  F1P08240
01141  0 62100 0 01237        STA C10CLQ                                                  F1P08250
01142  0 76000 0 00000 OADDR  CLM                                                         F1P08260
01143  0 60200 0 01613        SLW MEEQM1                                                  F1P08270
01144  0 60200 0 01575        SLW BOX1                                                    F1P08280
01145  0 60200 0 01577        SLW E1CLEQ                                                  F1P08290
01146  0 60200 0 01600        SLW E2CLEQ                                                  F1P08300
01147  0 60200 0 01601        SLW E3CLEQ                                                  F1P08310
01150  0 60200 0 01602        SLW E4CLEQ                                                  F1P08320
01151  0 60200 0 01603        SLW E5CLEQ                                                  F1P08330
01152  0 53400 2 01142        LXA OADDR,2                                                 F1P08340
01153 -0 53400 4 04550        LXD EQM1,4                                                  F1P08350
01154  0 60200 2 01614 G2CLQ  SLW MEEQ,2                                                  F1P08360
01155  1 77777 2 01156        TXI G1CLQ,2,-1                                              F1P08370
01156  2 00001 4 01154 G1CLQ  TIX G2CLQ,4,1                                               F1P08380
01157  0 50000 0 07740        CLA DECR1                                                   F1P08390
01160  0 60100 0 01576        STO BOX2                                                    F1P08400
                                  INITIALIZATION OF AN EQUIVALENCE CLASS                  F1P08410
01161 -0 53400 1 04550 B0CLQ  LXD EQM1,1                  SET INDEX A TO NUM OF WORDS IN EQ F1P08420
01162 -3 00000 1 01454        TXL OUT,1,0                 EXIT FOR EMPTY EQ TABLE         F1P08430
01163 -0 53400 2 01576        LXD BOX2,2                  PREPARE TO ENTER                F1P08440
01164  1 77777 2 01165        TXI B7CLQ,2,-1              A WORD IN MEEQ                  F1P08450
01165  0 50000 1 00000 B7CLQ  CLA 0,1                     OBTAIN EQ WORD                  F1P08460
01166  0 10000 0 01212        TZE B5CLQ                   EXIT FOR DELETED EQ SET         F1P08470
01167  0 60100 2 01614        STO MEEQ,2                  SAVE EQ SET IN TABLE MEEQ       F1P08480
01170  0 76000 0 00000        CLM                         INDICATE                        F1P08490
01171  0 60200 1 00000 B8CLQ  SLW 0,1                     DELETED                         F1P08500
01172  1 77777 2 01173        TXI B1CLQ,2,-1              EQ SET                          F1P08510
01173 -2 00001 1 00000 B1CLQ  TNX 0,1,1                   EXIT FOR END OF EQ TABLE        F1P08520
01174  0 50000 1 00000 B2CLQ  CLA 0,1                     OBTAIN EQ SUBSCRIPT             F1P08530
01175 -0 12000 0 01206        TMI B4CLQ                   EXIT FOR END OF EQ SET          F1P08540
01176  0 60100 2 01614        STO MEEQ,2                  SAVE REST OF EQ SET             F1P08550
01177  1 77777 1 01200        TXI B9CLQ,1,-1                                              F1P08560
01200  0 50000 1 00000 B9CLQ  CLA 0,1                     OBTAIN EQ SYMBOL                F1P08570
01201  1 77777 2 01202        TXI B10CLQ,2,-1                                             F1P08580
01202  0 60100 2 01614 B10CLQ STO MEEQ,2                                                  F1P08590
01203  1 77777 2 01204        TXI B3CLQ,2,-1              IN TABLE MEEQ                   F1P08600
01204  2 00001 1 01174 B3CLQ  TIX B2CLQ,1,1                                               F1P08610
01205  0 02000 0 00000        TRA **                      EXIT FOR END OF EQ TABLE        F1P08620
01206  0 76000 0 00003 B4CLQ  SSP                         SAVE LAST                       F1P08630
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01207  0 60100 2 01614         STO MEEQ,2                    SUBSCRIPT OF EQ SET                F1P08640
01210 -0 63400 2 01576         SXD BOX2,2                    AND ITS MEEQ INDEX                 F1P08650
01211  0 02000 0 01220         TRA C0CLQ                     GO TO COMPARISON ROUTINE           F1P08660
01212  1 77777 1 01213 B5CLQ   TXI B11CLQ,1,-1                                                  F1P08670
01213  0 50000 1 00000 B11CLQ  CLA 0,1                       LOOP TO                            F1P08680
01214  0 12000 0 01216         TPL B6CLQ                     GO THROUGH                         F1P08690
01215  2 00001 1 01165         TIX B7CLQ,1,1                 DELETED SET                        F1P08700
01216  2 00002 1 01213 B6CLQ   TIX B11CLQ,1,2                                                  F1P08710
01217  0 02000 0 01360         TRA END                       EXIT FOR COMPLETELY DELETED EQ TABLF1P08720
                               COMPARISON OF MEEQ SYMBOLS WITH EQ SYMBOLS                       F1P08730
01220 -0 53400 2 01576 C0CLQ   LXD BOX2,2                    INITIALIZE TEST                    F1P08740
01221 -0 63400 2 01253         SXD C5CLQ,2                   FOR END OF MEEQ TABLE              F1P08750
01222 -0 53400 2 01575         LXD BOX1,2                    SET INDEX B TO GET 1ST SYMB OF MEEQF1P08760
01223 -0 53400 1 04550 C6CLQ   LXD EQ-1,1                    PREPARE TO SCAN EQ TABLE           F1P08770
01224 -0 63400 1 01577 C7CLQ   SXD E1CLEQ,1                  SAVE INDEX OF 1ST WORD OF EQ SET   F1P08780
01225  0 50000 1 00000 C2CLQ   CLA 0,1                       OBTAIN EQ WORD                     F1P08790
01226 -0 10000 0 01235         TNZ C4CLQ                     SET NOT DELETED                    F1P08800
01227  1 77777 1 01230         TXI C3CLQ,1,-1                                                   F1P08810
01230  0 50000 1 00000 C3CLQ   CLA 0,1                       LOOP TO GO THRU                    F1P08820
01231 -0 12000 0 01233         TMI C1CLQ                     DELETED SET                        F1P08830
01232  2 00002 1 01230         TIX C3CLQ,1,2                                                    F1P08840
01233  2 00001 1 01224 C1CLQ   TIX C7CLQ,1,1                 EXAMINE NEXT EQ SET                F1P08850
01234  0 02000 0 01252         TRA C9CLQ                     EXIT FOR END OF EQ TABLE           F1P08860
01235  0 60100 0 01603 C4CLQ   STO E5CLEQ                    SAVE EQ SYMBOL                     F1P08870
01236  1 77777 1 01237         TXI C10CLQ,1,-1                                                  F1P08880
01237  0 50000 1 00000 C10CLQ  CLA 0,1                       GET EQ SUBSCRIPT                   F1P08890
01240  0 12000 0 01246         TPL C8CLQ                     NOT END OF EQ SET                  F1P08900
01241  0 50000 0 01603         CLA E5CLEQ                    GET LAST SYMBOL OF EQ SET          F1P08910
01242  0 40200 2 01614         SUB MEEQ,2                    COMPARE WITH MEEQ SYMBOL           F1P08920
01243  0 10000 0 01263         TZE A0CLQ                     MATCH                              F1P08930
01244  2 00001 1 01224         TIX C7CLQ,1,1                 NO MATCH                           F1P08940
01245  0 02000 0 01252         TRA C9CLQ                                                        F1P08950
01246  0 50000 0 01603 C8CLQ   CLA E5CLEQ                                                      F1P08960
01247  0 40200 2 01614         SUB MEEQ,2                                                       F1P08970
01250  0 10000 0 01263         TZE A0CLQ                                                        F1P08980
01251  2 00001 1 01225         TIX C2CLQ,1,1                                                    F1P08990
01252  1 77776 2 01253 C9CLQ   TXI C5CLQ,2,-2                GET NEXT MEEQ SYMBOL               F1P09000
01253  3 00000 2 01223 C5CLQ   TXH C6CLQ,2,**                TEST END OF TABLE MEEQ             F1P09010
                                END OF TABLE MEEQ, NO MATCH IN TABLE EQ                         F1P09020
01254 -0 53400 2 01576 F2CLQ   LXD BOX2,2                    INDICATE                           F1P09030
01255  0 50000 2 01614         CLA MEEQ,2                    END OF SET                         F1P09040
01256 -0 76000 0 00003         SSM                           IN TABLE                           F1P09050
01257  0 60100 2 01614         STO MEEQ,2                    MEEQ                               F1P09060
01260  1 77777 2 01261         TXI F1CLQ,2,-1                INITIALIZE INDEX OF                F1P09070
01261 -0 63400 2 01575 F1CLQ   SXD BOX1,2                    NEXT SET IN TABLE MEEQ AND         F1P09080
01262  0 02000 0 01161         TRA B0CLQ                     INITIALIZE THE SET                 F1P09090
                               MEEQ SYMBOL MATCHES EQ SYMBOL                                    F1P09100
01263  1 00001 1 01264 A0CLQ   TXI A14CLQ,1,1                                                  F1P09110
01264 -0 63400 1 01314 A14CLQ  SXD A6CLQ,1                   SAVE EQ INDEX OF MATCHED SYMBOL    F1P09120
01265  2 00001 1 01266         TIX A1CLQ,1,1                                                    F1P09130
01266  1 77777 2 01267 A1CLQ   TXI A2CLQ,2,-1                                                  F1P09140
01267  0 50000 2 01614 A2CLQ   CLA MEEQ,2                                                      F1P09150
01270  0 62100 0 01600         STA E2CLEQ                    SAVE SUBSCRIPT OF MEEQ SYMBOL      F1P09160
01271  0 50000 1 00000 A10CLQ  CLA 0,1                                                         F1P09170
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01272  0 62100 0 01601         STA E3CLEQ                    SAVE SUBSCRIPT OF EQ SYMBOL        F1P09180
01273 -0 53400 2 01576         LXD BOX2,2                                                       F1P09190
01274  1 77777 2 01275         TXI A16CLQ,2,-1                                                  F1P09200
01275 -0 63400 2 01356 A16CLQ  SXD E1CLQ,2                                                      F1P09210
01276  1 00001 2 01277         TXI A15CLQ,2,1                                                   F1P09220
01277 -0 12000 0 01313 A15CLQ  TMI A9CLQ                     MATCHED SYMBOL IS END OF EQ SET    F1P09230
01300  1 77777 2 01301 A4CLQ   TXI A3CLQ,2,-1               LOOP TO TRANSFER                   F1P09240
01301 -2 00001 1 00000 A3CLQ   TNX 0,1,1                    TO MEEQ SYMBOLS OF                 F1P09250
01302  0 50000 1 00000 A11CLQ  CLA 0,1                      EQ BELOW MATCHED SYMBOL            F1P09260
01303  0 60100 2 01614         STO MEEQ,2                                                       F1P09270
01304 -2 00001 1 00000         TNX 0,1,1                                                        F1P09280
01305  1 77777 2 01306         TXI A17CLQ,2,-1                                                  F1P09290
01306  0 50000 1 00000 A17CLQ  CLA 0,1                                                         F1P09300
01307 -0 12000 0 01312         TMI A5CLQ                                                        F1P09310
01310  0 60100 2 01614         STO MEEQ,2                                                       F1P09320
01311  0 02000 0 01300         TRA A4CLQ                                                        F1P09330
01312  0 62100 2 01614 A5CLQ   STA MEEQ,2                    SAVE SBSCR OF LAST SYMBOL OF EQ SETF1P09340
01313 -0 53400 1 01577 A9CLQ   LXD E1CLEQ,1                                                    F1P09350
01314 -3 00000 1 01321 A6CLQ   TXL A8CLQ,1,**                EXIT FOR MATCHED SYMBOL REACHED    F1P09360
01315  0 50000 1 00000 A12CLQ  CLA 0,1                      LOOP TO TRANSFER                   F1P09370
01316  1 77777 2 01317         TXI A7CLQ,2,-1               TO MEEQ SYMBOLS OF                 F1P09380
01317  0 60100 2 01614 A7CLQ   STO MEEQ,2                   EQ ABOVE MATCHED                   F1P09390
01320  1 77777 1 01314         TXI A6CLQ,1,-1               SYMBOL                             F1P09400
01321 -0 63400 2 01576 A8CLQ   SXD BOX2,2                                                       F1P09410
01322 -0 63400 2 01343         SXD D2CLQ,2                                                      F1P09420
01323 -0 63400 2 01336         SXD D4CLQ,2                                                      F1P09430
01324 -0 53400 1 01577         LXD E1CLEQ,1                  INDICATE                           F1P09440
01325  0 76000 0 00000         CLM                           DELETED                            F1P09450
01326  0 60200 1 00000 A13CLQ  SLW 0,1                       EQ SET                             F1P09460
                               NORMALIZATION OF MEEQ SUBSCRIPTS                                F1P09470
01327  0 50000 0 01601         CLA E3CLEQ                    GET EQ SUBSCRIPT                   F1P09480
01330  0 40200 0 01600         SUB E2CLEQ                    COMPARE WITH MEEQ SUBSCRIPT        F1P09490
01331  0 10000 0 01220         TZE C0CLQ                     SUBSCRIPTS MATCH                   F1P09500
01332  0 62100 0 01602         STA E4CLEQ                                                       F1P09510
01333  0 12000 0 01350         TPL E0CLQ                                                        F1P09520
                               EQ SUBSCRIPT LESS THAN MEEQ SUBSCRIPT                           F1P09530
01334 -0 53400 2 01356         LXD E1CLQ,2                                                      F1P09540
01335  1 77777 2 01336         TXI D4CLQ,2,-1                                                   F1P09550
01336 -3 00000 2 01344 D4CLQ   TXL D3CLQ,2,**                                                  F1P09560
01337  0 50000 2 01614 D1CLQ   CLA MEEQ,2                   NORMALIZE SUBSCRIPTS               F1P09570
01340  0 40000 0 01602         ADD E4CLEQ                    OF NEW SYMBOLS                     F1P09580
01341  0 62100 2 01614         STA MEEQ,2                    IN MEEQ SET                        F1P09590
01342  1 77776 2 01343         TXI D2CLQ,2,-2                                                   F1P09600
01343  3 00000 2 01337 D2CLQ   TXH D1CLQ,2,**                                                  F1P09610
01344  0 50000 2 01614 D3CLQ   CLA MEEQ,2                   NORMALIZE SUBSCRIPT                F1P09620
01345  0 40000 0 01602         ADD E4CLEQ                    OF LAST NEW SYMBOL                 F1P09630
01346  0 62100 2 01614         STA MEEQ,2                    ENTERED IN MEEQ SET                F1P09640
01347  0 02000 0 01220         TRA C0CLQ                     GO TO COMPARISON ROUTINE           F1P09650
                               EQ SUBSCRIPT GREATER THAN MEEQ SUBSCRIPT                        F1P09660
01350 -0 53400 2 01575 E0CLQ   LXD BOX1,2                                                       F1P09670
01351  1 77777 2 01352         TXI E2CLQ,2,-1                                                   F1P09680
01352  0 50000 2 01614 E2CLQ   CLA MEEQ,2                   NORMALIZE SUBSCRIPTS               F1P09690
01353  0 40000 0 01602         ADD E4CLEQ                    OF OLD SYMBOLS                     F1P09700
01354  0 62100 2 01614         STA MEEQ,2                    IN MEEQ SET                        F1P09710
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01355  1 77776 2 01356          TXI E1CLQ,2,-2                                                  F1P09720
01356  3 00000 2 01352 E1CLQ    TXH E2CLQ,2,**                                                  F1P09730
01357  0 02000 0 01220          TRA COCLQ                    GO TO COMPARISON ROUTINE           F1P09740
01360  0 50000 0 01576 END      CLA BOX2                     COMPUTE                            F1P09750
01361  0 76000 0 00006          COM                          NUMBER                             F1P09760
01362  0 40000 0 07741          ADD DECR2                    OF WORDS                           F1P09770
01363 -0 73400 2 00000          PDX 0,2                      IN TABLE                           F1P09780
01364 -0 75400 2 00000          PXD 0,2                      MEEQ AND                           F1P09790
01365  0 62200 0 01613          STD MEEQM1                   SAVE WITH TABLE                    F1P09800
                                  REDUNDANCY AND INCONSISTENCY TEST OF EQUIVALENCE SENTENCES F1P09810
01366 -0 53400 2 01576          LXD BOX2,2                   INITIALIZATION                     F1P09820
01367 -0 63400 2 01417          SXD M11CLQ,2                 OF                                 F1P09830
01370  0 53400 2 01142          LXA OADDR,2                  INDEXING                           F1P09840
01371 -0 63400 2 01575          SXD BOX1,2                                                      F1P09850
01372 -0 53400 2 01575 M6CLQ    LXD BOX1,2                   OBTAIN                             F1P09860
01373  0 50000 2 01614          CLA MEEQ,2                   FIXED                              F1P09870
01374  0 60100 0 01577          STO SMBL                     SYMBOL                             F1P09880
01375  1 77777 2 01376          TXI M10CLQ,2,-1              AND                                F1P09890
01376  0 50000 2 01614 M10CLQ   CLA MEEQ,2                   ITS                                F1P09900
01377  0 60100 0 01600          STO SBSCR                    SUBSCRIPT                          F1P09910
01400  1 77777 2 01401          TXI M1CLQ,2,-1                                                  F1P09920
01401  0 50000 2 01614 M1CLQ    CLA MEEQ,2                   GET CHANGING SYMBOL AND            F1P09930
01402  0 34000 0 01577          CAS SMBL                     COMPARE WITH FIXED SYMBOL          F1P09940
01403  0 02000 0 01405          TRA M2CLQ                    NO MATCH                           F1P09950
01404  0 02000 0 01423          TRA K1CLQ                    MATCH                              F1P09960
01405  1 77777 2 01406 M2CLQ    TXI M3CLQ,2,-1               HAS END OF CHANGING SYMBOLS        F1P09970
01406  0 50000 2 01614 M3CLQ    CLA MEEQ,2                   BEEN REACHED, NO MATCH CASE        F1P09980
01407 -0 12000 0 01411          TMI M4CLQ                    YES                                F1P09990
01410  1 77777 2 01401          TXI M1CLQ,2,-1               NO                                 F1P10000
01411 -0 63400 2 01416 M4CLQ    SXD M7CLQ,2                                                     F1P10010
01412 -0 53400 2 01575 M9CLQ    LXD BOX1,2                   PREPARE TO GET                     F1P10020
01413  1 77776 2 01414          TXI M5CLQ,2,-2               NEXT FIXED                         F1P10030
01414 -0 63400 2 01575 M5CLQ    SXD BOX1,2                   SYMBOL                             F1P10040
01415  1 77777 2 01416          TXI M7CLQ,2,-1                                                  F1P10050
01416  3 00000 2 01372 M7CLQ    TXH M6CLQ,2,**               TEST END OF MEEQ SET               F1P10060
01417 -3 00000 2 01450 M11CLQ   TXL CLQOUT,2,0                                                  F1P10070
01420  1 77777 2 01421          TXI M8CLQ,2,-1                                                  F1P10080
01421 -0 63400 2 01575 M8CLQ    SXD BOX1,2                                                      F1P10090
01422  0 02000 0 01372          TRA M6CLQ                                                       F1P10100
01423  1 77777 2 01424 K1CLQ    TXI K2CLQ,2,-1               GET SUBSCRIPT                      F1P10110
01424  0 50000 2 01614 K2CLQ    CLA MEEQ,2                   OF CHANGING SYMBOL                 F1P10120
01425 -0 12000 0 01443          TMI K4CLQ                    END OF SET REACHED                 F1P10130
01426  0 34000 0 01600          CAS SBSCR                    COMPARE SUBSCRIPTS OF MATCHED SYMBLF1P10140
01427  0 02000 0 01431          TRA K3CLQ                    NO MATCH, INCONSISTENT CASE        F1P10150
01430  1 77777 2 01401          TXI M1CLQ,2,-1               MATCH, REDUNDANT CASE              F1P10160
01431 -0 53400 4 01442  K3CLQ   LXD NEWTBL,4                                                    F1P10170
01432  3 00000 4 01435          TXH ERSTOR,4,0                                                  F1P10180
01433  0 50000 0 07743          CLA FRCON                                                       F1P10190
01434  0 60100 0 01614          STO MEEQ                                                        F1P10200
01435  0 50000 0 01577 ERSTOR   CLA SMBL                                                        F1P10210
01436  0 60100 4 01615          STO MEEQ+1,4                                                    F1P10220
01437  1 77777 4 01440          TXI SAVIR4,4,-1                                                 F1P10230
01440 -0 63400 4 01442 SAVIR4   SXD NEWTBL,4                                                    F1P10240
01441  0 02000 0 01412          TRA M9CLQ                GET NEXT SYMBOL                        F1P10250
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01442  0 00000 0 00000 NEWTBL HTR 0                                                                F1P10260
01443  0 76000 0 00003 K4CLQ  SSP                                                                  F1P10270
01444  0 34000 0 01600        CAS SBSCR                                                            F1P10280
01445  0 02000 0 01431        TRA K3CLQ                                                            F1P10290
01446  0 02000 0 01412        TRA M9CLQ                                                            F1P10300
01447  0 02000 0 01431        TRA K3CLQ                                                            F1P10310
01450 -0 53400 4 01442 CLQOUT LXD NEWTBL,4                                                         F1P10320
01451 -3 00000 4 01454        TXL OUT,4,0                                                          F1P10330
01452  0 50000 0 07743        CLA FRCON                                                            F1P10340
01453  0 60100 4 01615        STO MEEQ+1,4                                                         F1P10350
01454  0 07400 1 07656 OUT    TSX WAT00,1                    WRITE EQUIT ON TAPE.                  F1P10360
01455  0 00000 0 00010            8                                                                F1P10370
01456  0 00000 0 01614            MEEQ                                                             F1P10380
01457  0 07400 1 07505        TSX TAP00,1                    ASSEMBLE TABLE CLOSUB                 F1P10390
01460  0 00000 0 00011            9                                                                F1P10400
01461  0 00000 0 01614 TOT9       9TA                        ORIGIN OF TABLE 9                     F1P10410
                                  PROGRAM FOR REMOVING DUPLICATE ENTRIES FROM TABLE CLOSUB         F1P10420
01462  0 50000 0 01613 RDCTP  CLA 9TA-1                      GET NUMBER OF WORDS IN 9TA            F1P10430
01463  0 10000 0 01514        TZE REC07                      EXIT FOR EMPTY TABLE                  F1P10440
01464 -0 73400 4 00000        PDX 0,4                        SET INDEX C TO NUM OF WORDS IN 9TA    F1P10450
01465  0 77100 0 00022        ARS 18                         COMPUTE TABLE ORIGIN PLUS             F1P10460
01466  0 40000 0 01461        ADD TOT9                       NUMBER OF WORDS IN TABLE              F1P10470
01467  0 62100 0 01473        STA REC01                      AND INITIALIZE ADDRESS                F1P10480
01470 -0 53400 2 01477        LXD REC03,2                    SET INDEX B TO COMP 1 AND             F1P10490
01471 -0 63400 2 01500        SXD REC04,2                    SAVE COMP 1 IN DECR OF REC04          F1P10500
01472  0 53400 2 07730 REC00  LXA L(0),2                     SET INDEX B TO ZERO                   F1P10510
01473  0 50000 4 00000 REC01  CLA 0,4                        GET 9TA WORD AND                      F1P10520
01474  0 34000 2 01614 REC02  CAS 9TA,2                      COMPARE WITH 9TA WORD                 F1P10530
01475  0 02000 0 01477        TRA REC03                      9TA WORDS NOT EQUAL                   F1P10540
01476  0 02000 0 01505        TRA REC06                      9TA WORDS ARE EQUAL                   F1P10550
01477  1 77777 2 01500 REC03  TXI REC04,2,-1                 TAKE NEXT 9TA WORD                    F1P10560
01500  3 00000 2 01474 REC04  TXH REC02,2,**                 TEST FOR END OF NEW 9TA TABLE         F1P10570
01501 -0 53400 1 01500        LXD REC04,1                    ADD COMP 1 TO DECR OF                 F1P10580
01502  1 77777 1 01503        TXI REC05,1,-1                 REC04 TO ACCOUNT FOR                  F1P10590
01503 -0 63400 1 01500 REC05  SXD REC04,1                    FOLLOWING ENTRY                       F1P10600
01504  0 60100 2 01614        STO 9TA,2                      ENTER UNEQUAL 9TA WORD IN TABLE       F1P10610
01505  2 00001 4 01472 REC06  TIX REC00,4,1                  TEST END OF OLD 9TA TABLE             F1P10620
01506 -0 53400 4 01500        LXD REC04,4                    GET TWOS COMP OF NUMBER               F1P10630
01507 -0 75400 4 00000        PXD 0,4                        OF WORDS ENTERED IN 9TA               F1P10640
01510  0 76000 0 00006        COM                            COMPUTE TRUE FIGURE AND               F1P10650
01511  0 40000 0 07731        ADD L(1)                       STORE IN 9TA-1                        F1P10660
01512 -0 73400 4 00000        PDX 0,4                                                              F1P10670
01513 -0 63400 4 01613        SXD 9TA-1,4                                                          F1P10680
01514  0 07400 1 07656 REC07  TSX WAT00,1                    WRITE MODIFIED                        F1P10690
01515  0 00000 0 00011        HTR 9                          TABLE CLOSUB                          F1P10700
01516  0 00000 0 01614        HTR 9TA                        ON TAPE                               F1P10710
01517  0 77000 0 00222        WEF 146                        END OF TAPE TABLES FILE               F1P10720
01520  0 77200 0 00203        REW 3                                                                F1P10730
01521  0 50000 0 01573        CLA WAT99              CHANGE WAT SUB ROUTINE TO WRITE ON TAPE 3     F1P10740
01522  0 62100 0 07661        STA WAT09                                                            F1P10750
01523  0 62100 0 07701        STA WAT05+2                                                          F1P10760
01524  0 62100 0 07704        STA WAT07-1                                                          F1P10770
01525  0 62100 0 07721        STA WAT08                                                            F1P10780
01526  0 50000 0 07703        CLA WAT05+4            NOP                                           F1P10790
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01527   0 60100 0 07673          STO WAT04-1          OVER COPY IDENTIFICATION                          F1P10800
01530   0 60100 0 07674          STO WAT04            OVER COPY WORD COUNT                              F1P10810
01531   0 60100 0 07665          STO WAT03-1          OVER STA FOR WORD COUNT                           F1P10820
01532   0 50000 0 07752          CLA TP3TRA                                                             F1P10830
01533   0 60100 0 07676          STO WAT04+2                                                            F1P10840
01534   0 07400 1 07505          TSX TAP00,1          ASSEMBLE NONEXC TABLE                             F1P10850
01535   0 00000 0 00016              14                                                                 F1P10860
01536   0 00000 0 01614              XTA                                                                F1P10870
01537   0 07400 1 07656          TSX WAT00,1          WRITE NONEXC TABLE ON TAPE 3                      F1P10880
01540   0 00000 0 00016              14                                                                 F1P10890
01541   0 00000 0 01614              XTA                                                                F1P10900
01542   0 07400 1 07505          TSX TAP00,1          ASSEMBLE TSTOPS TABLE                             F1P10910
01543   0 00000 0 00017              15                                                                 F1P10920
01544   0 00000 0 01614              XTA                                                                F1P10930
01545   0 07400 1 07656          TSX WAT00,1          WRITE TSTOPS TABLE AS SECOND RECORD TAPE 3        F1P10940
01546   0 00000 0 00017              15                                                                 F1P10950
01547   0 00000 0 01614              XTA                                                                F1P10960
01550   0 50000 0 00030          CLA EIFNO                                                              F1P10970
01551   0 40000 0 07740          ADD DECR1            SET EIFNO TO LAST ADD IN PROBLEM PLUS 1           F1P10980
01552   0 60100 0 00030          STO EIFNO                                                              F1P10990
01553  -0 50000 0 07741          CAL DECR2                                                              F1P11000
01554   0 76000 0 00006          COM                                                                    F1P11010
01555   0 32000 0 00020          ANS 16                                                                 F1P11020
01556   0 50000 0 00034          CLA END14                                                              F1P11030
01557   0 34000 0 07731          CAS L(1)                                                               F1P11040
01560   0 02000 0 01564          TRA *+4                                                                F1P11050
01561   0 50000 0 07741          CLA DECR2                                                              F1P11060
01562  -0 60200 0 00020          ORS 16                                                                 F1P11070
01563   0 02000 0 01571          TRA SPACE                                                              F1P11080
01564  -0 75400 0 00000          PXD ,0                                                                 F1P11090
01565   0 76000 0 00164          SWT 4                                                                  F1P11100
01566   0 02000 0 01571          TRA SPACE                                                              F1P11110
01567   0 50000 0 07741          CLA DECR2                                                              F1P11120
01570  -0 60200 0 00020          ORS 16                                                                 F1P11130
01571   0 76200 0 00221 SPACE    RTB 1                                                                  F1P11140
01572   0 02000 0 00004          TRA 4                                                                  F1P11150
01573   0 00000 0 00223 WAT99        147              ADD OF TAPE 3 IN BINARY MODE                      F1P11160
                             WORKING STORAGE FOR PROGRAM CLEQ                                           F1P11170
                             EQU                                                                        F1P11180
01574   0 00000 0 04551 L(EQ)                                                                           F1P11190
01575   0 00000 0 00000 BOX1                                                                            F1P11200
01576   0 00000 0 00000 BOX2                                                                            F1P11210
01577   0 00000 0 00000 E1CLEQ                                                                          F1P11220
01600   0 00000 0 00000 E2CLEQ                                                                          F1P11230
01601   0 00000 0 00000 E3CLEQ                                                                          F1P11240
01602   0 00000 0 00000 E4CLEQ                                                                          F1P11250
01603   0 00000 0 00000 E5CLEQ                                                                          F1P11260
                                 WORKING STORAGE FOR PROGRAM AMW                                        F1P11270
01604   0 00000 0 00000 E10                                                                             F1P11280
01605   0 00000 0 00000 E11                  AMW2105                                                    F1P11290
01606   0 00000 0 00000 A1BOX                AMW 2106                                                   F1P11300
01607   0 00000 0 00000 A2BOX                AMW 2305                                                   F1P11310
01610   0 00000 0 00000 IT1                  AMW 2510                                                   F1P11320
01611   0 00000 0 00000 E1RFT                                                                           F1P11330
01612   0 00000 0 00000 E2RFT
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                 01613 END1PB ORG 907                                                          F1P11340
                 01613 XTAM1  BSS 1                                                            F1P11350
                 01614 XTA    BSS 1500              THIS IS TABLE ASSEMBLY BUFFER OF PART 2    F1P11360
                                                                                               F1P11370
                                                                                               F1P11380
                                   704 FORTRAN MASTER RECORD CARD / 1 PRIME COMMON = F0210000.  F1P11390
                 00000        ORG 0                                                            F1P11400
00000  0 00004 0 04550        PZE ORG1PC,,1TOCS                                                F1P11410
00001  0 00000 0 07760        PZE END1PC                                                       F1P11420
                                                                                               F1P11430
                                   COMMON TO SECTION ONE PRIME                                 F1P11440
                                                                                               F1P11450
                 04550 ORG1PC ORG 2408                                                         F1P11460
                 04550 OTAM1  BSS 1                          LOCATION OF NUM OF WORDS IN TEIFNO F1P11470
                 04551 OTA    BSS 1500                       BLOCK FOR ASSEMBLED TEIFNO        F1P11480
                                   TABLE ASSEMBLY PROGRAM                                      F1P11490
07505  0 77200 0 00204 TAP00  REW 4                                                            F1P11500
07506 -0 60000 0 07754        STQ E2A                                                          F1P11510
07507 -0 63400 2 07755        SXD E3A,2                                                        F1P11520
07510 -0 63400 4 07756        SXD E4A,4                                                        F1P11530
07511  0 50000 1 00001        CLA 1,1               GET TABLE NUMBER                           F1P11540
07512  0 62100 0 07513        STA TAP00+6                                                      F1P11550
07513  0 73400 2 00000        PAX ,2                                                           F1P11560
07514  0 76700 0 00001        ALS 1                                                            F1P11570
07515  0 40000 1 00001        ADD 1,1               FORM 3I                                    F1P11580
07516  0 40000 0 07630        ADD OAD                                                          F1P11590
07517  0 62100 0 07574        STA TAP06                                                        F1P11600
07520  0 62100 0 07541        STA TAP20                                                        F1P11610
07521  0 40000 0 07732        ADD L(2)              FORM INTET + 3I +2                         F1P11620
07522  0 62100 0 07531        STA TAP01                                                        F1P11630
07523  0 62100 0 07570        STA TAP05                                                        F1P11640
07524  0 50000 2 07655        CLA MWN+10,2                                                     F1P11650
07525  0 73400 2 00000        PAX ,2                TABLE MAXIMUM                              F1P11660
07526 -0 63400 2 07601        SXD TAP081,2                                                     F1P11670
07527 -0 63400 2 07617        SXD OVTEST,2                                                     F1P11680
07530  0 53400 2 07730        LXA L(0),2                                                       F1P11690
07531  0 53400 4 00000 TAP01  LXA **,4              NO OF BLOCKS OF THIS TABLE ON TAPE 4       F1P11700
07532  0 50000 1 00002        CLA 2,1                                                          F1P11710
07533  0 62100 0 07561        STA TAP03                                                        F1P11720
07534  0 62100 0 07577        STA TAP08                                                        F1P11730
07535  0 40200 0 07731        SUB L(1)                                                         F1P11740
07536  0 62100 0 07603        STA TAP11                                                        F1P11750
07537  0 62100 0 07612        STA TAP12                                                        F1P11760
07540 -3 00000 4 07570        TXL TAP05,4,0         TEST FOR NO TAPE RECORDS                   F1P11770
07541  0 50000 0 00000 TAP20  CLA **                                                           F1P11780
07542  0 62200 0 07622        STD TAP14+1                                                      F1P11790
07543 -0 76000 0 00012        RTT                   TURN OFF INDICATOR                         F1P11800
07544  3 00000 0 00000        TXH 0,0,0                                                        F1P11810
07545  0 76600 0 00333 TAP02  IOD                                                              F1P11820
07546 -0 76000 0 00012        RTT                   TEST INDICATOR                             F1P11830
07547  1 00001 4 07621        TXI TAP14,4,1         ON                                         F1P11840
07550  0 50000 0 07734        CLA L(4)              OFF                                        F1P11850
07551  0 60100 0 07757        STO E5A                                                          F1P11860
07552  0 76200 0 00224 READ4  RTB 4                                                            F1P11870
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2.2

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07553  0 70000 0 07753          CPY E1A                COPY IDENTIFICATION                          F1P11880
07554  0 02000 0 07556          TRA TAP025                                                          F1P11890
07555  0 07400 4 00004          TSX DIAG,4             EOF MACHINE ERROR                            F1P11900
07556  0 50000 0 07753 TAP025   CLA E1A                                                             F1P11910
07557  0 40200 1 00001          SUB 1,1                TEST FOR RECORD OF TABLE BEING ASSEMBLED     F1P11920
07560 -0 10000 0 07552          TNZ READ4                                                           F1P11930
07561  0 70000 2 00000 TAP03    CPY **,2                                                            F1P11940
07562  1 77777 2 07617          TXI OVTEST,2,-1                                                     F1P11950
07563  0 07400 4 00004          TSX DIAG,4             EOF  MACHINE ERROR                           F1P11960
07564  2 00001 4 07545          TIX TAP02,4,1                                                       F1P11970
07565  0 76600 0 00333 TAP04    IOD                                                                 F1P11980
07566 -0 76000 0 00012          RTT                                                                 F1P11990
07567  0 02000 0 07621          TRA TAP14                                                           F1P12000
07570  0 50000 0 00000 TAP05    CLA **                                                              F1P12010
07571  0 77100 0 00022          ARS 18                                                              F1P12020
07572  0 10000 0 07603          TZE TAP11                                                           F1P12030
07573  0 73400 4 00000          PAX ,4                                                              F1P12040
07574  0 40000 0 00000 TAP06    ADD **                                                              F1P12050
07575  0 62100 0 07576          STA TAP07                                                           F1P12060
07576  0 50000 4 00000 TAP07    CLA **,4                                                            F1P12070
07577  0 60100 2 00000 TAP08    STO **,2                                                            F1P12080
07600  1 77777 2 07601          TXI TAP081,2,-1                                                     F1P12090
07601 -3 00000 2 07620 TAP081   TXL OVFLOW,2,**                                                     F1P12100
07602  2 00001 4 07576 TAP09    TIX TAP07,4,1                                                       F1P12110
07603  0 60000 0 00000 TAP11    STZ **                                                              F1P12120
07604 -0 75400 2 00000          PXD ,2                                                              F1P12130
07605  0 10000 0 07613          TZE TAP13                                                           F1P12140
07606  0 77100 0 00022          ARS 18                                                              F1P12150
07607  0 76000 0 00006          COM                                                                 F1P12160
07610  0 40000 0 07731          ADD L(1)                                                            F1P12170
07611  0 73400 2 00000          PAX ,2                                                              F1P12180
07612 -0 63400 2 00000 TAP12    SXD **,2                                                            F1P12190
07613  0 56000 0 07754 TAP13    LDQ E2A                                                             F1P12200
07614 -0 53400 2 07755          LXD E3A,2                                                           F1P12210
07615 -0 53400 4 07756          LXD E4A,4                                                           F1P12220
07616  0 02000 1 00003          TRA 3,1                RETURN TO CALLER                             F1P12230
07617  3 00000 2 07561 OVTEST   TXH TAP03,2,**                                                      F1P12240
07620  0 07400 4 00004 OVFLOW   TSX DIAG,4             BUFFER AREA EXCEEDED                         F1P12250
07621  0 76400 0 00204 TAP14    BST 4                                                               F1P12260
07622  1 00000 2 07623          TXI TAP14+2,2,**                                                    F1P12270
07623  0 50000 0 07757          CLA E5A                                                             F1P12280
07624  0 40200 0 07731          SUB L(1)                                                            F1P12290
07625  0 60100 0 07757          STO E5A                                                             F1P12300
07626 -0 10000 0 07552          TNZ READ4                                                           F1P12310
07627  0 07400 4 00004          TSX DIAG,4             THREE FAILURES IN READING A RECORD FROM T 4F1P12320
07630  0 00000 0 00322 OAD          INTET                                                           F1P12330
                07631          BSS 3                                                               F1P12340
                                   MAXIMUM NUMBER OF WORDS ALLOWED IN VARIOUS TABLES               F1P12350
07634  0 00000 0 77634             -100                FMTEFN,    TABLE 17                         F1P12360
07635  0 00000 0 77634             -100                CALLFN,    TABLE 16                         F1P12370
07636  0 00000 0 77324             -300                TSTOPS,    TABLE 15                         F1P12380
07637  0 00000 0 76422             -750                NONEXC,    TABLE 14                         F1P12390
07640  0 00000 0 76174             -900                HOLARG,    TABLE 13                         F1P12400
07641  0 00000 0 76650             -600                COMMON,    TABLE 12                         F1P12410
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07642  0 00000 0 76174          -900          SUBDEF,   TABLE 11                    F1P12420
07643  0 00000 0 75152 MWN      -1430         FORMAT,   TABLE 10                    F1P12430
07644  0 00000 0 75044          -1500         CLOSUB,   TABLE  9                    F1P12440
07645  0 00000 0 75044          -1500         EQUIT,    TABLE  8                    F1P12450
07646  0 00000 0 76422          -750          FRET,     TABLE  7                    F1P12460
07647  0 00000 0 76030          -1000         FORVAL,   TABLE  6                    F1P12470
07650  0 00000 0 75044          -1500         FORVAR,   TABLE  5                    F1P12480
07651  0 00000 0 75044          -1500         FORTAG,   TABLE  4                    F1P12490
07652  0 00000 0 77406          -250          TRAD,     TABLE  3                    F1P12500
07653  0 00000 0 76650          -600          TIFGO     TABLE  2                    F1P12510
07654  0 00000 0 76422          -750          TDO,      TABLE  1                    F1P12520
07655  0 00000 0 76422          -750          TEIFNO,   TABLE  0                    F1P12530
                                                                                    F1P12540
                                PROGRAM FOR WRITING AN ASSEMBLED TABLE ON TAPE      F1P12550
07656 -0 63400 2 07726 WAT00  SXD E1W,2                START PROGRAM WAT            F1P12560
07657  0 50000 0 07734        CLA L(4)         PREPARE TO COUNT                     F1P12570
07660  0 60100 0 07727        STO E2W                  TWO TAPE TESTS               F1P12580
07661  0 76600 0 00222 WAT09  WRS 146                  PREPARE TO WRITE ON TAPE 2   F1P12590
07662  0 50000 1 00002        CLA 2,1                  COMPUTE LOCATION OF NUMBER OF WORDSF1P12600
07663  0 40200 0 07731        SUB L(1)                 IN TABLE AND INITIALIZE ADDRESSES F1P12610
07664  0 62100 0 07666        STA WAT03                                             F1P12620
07665  0 62100 0 07674        STA WAT04                                             F1P12630
07666  0 50000 0 00000 WAT03  CLA **                   ADDRESS IS NTA-1             F1P12640
07667  0 77100 0 00022        ARS 18                   NUMBER OF WORDS IN TABLE PUT IN F1P12650
07670  0 73400 2 00000        PAX 0,2                  INDEX B                      F1P12660
07671  0 40000 1 00002        ADD 2,1                  RESET ADDRESS                F1P12670
07672  0 62100 0 07677        STA WAT05                                             F1P12680
07673  0 70000 1 00001        CPY 1,1                  IDENTIFY TABLE ON TAPE       F1P12690
07674  0 70000 0 00000 WAT04  CPY **                   NUM OF WORDS IN TABLE PUT ON TAPE F1P12700
07675  0 40200 1 00002        SUB 2,1                                               F1P12710
07676  0 10000 0 07724        TZE WAT06                NO ENTRIES IN TABLE          F1P12720
07677  0 70000 2 00000 WAT05  CPY 0,2                  ADDR IS NTA + NUM WORDS IN NTA F1P12730
07700  2 00001 2 07677        TIX WAT05,2,1            COPY LOOP                    F1P12740
07701  0 76400 0 00222        BST 146                                               F1P12750
07702 -0 76000 0 00012        RTT                                                   F1P12760
07703  0 76100 0 00000        NOP                                                   F1P12770
07704  0 76200 0 00222        RDS 146                                               F1P12780
07705  0 70000 0 07754 WAT07  CPY E2A                                               F1P12790
07706  0 02000 0 07705        TRA WAT07                                             F1P12800
07707  0 76100 0 00000        NOP                      E O R                        F1P12810
07710  0 76600 0 00333        WRS 219                  E O F                        F1P12820
07711 -0 76000 0 00012        RTT                                                   F1P12830
07712  0 02000 0 07714        TRA WAT10                TAPE CHECK ON                F1P12840
07713  0 02000 0 07724        TRA WAT06                TAPE CHECK OFF               F1P12850
07714  0 50000 0 07727 WAT10  CLA E2W                                               F1P12860
07715  0 40200 0 07731        SUB L(1)                                              F1P12870
07716  0 60100 0 07727        STO E2W                                               F1P12880
07717  0 12000 0 07721        TPL WAT08                                             F1P12890
07720  0 07400 4 00004        TSX DIAG,4               STOP FOR THIRD TAPE CHECK    F1P12900
07721  0 76400 0 00222 WAT08  BST 146                                               F1P12910
07722  0 02000 0 07661        TRA WAT09                                             F1P12920
07723  0 70000 0 07730        CPY L(0)                                              F1P12930
07724 -0 53400 2 07726 WAT06  LXD E1W,2                RESTORE INDEX B              F1P12940
07725  0 02000 1 00003        TRA 3,1                  RETURN TO MAIN PROGRAM       F1P12950
```

```
07726   0 00000 0 00000 E1W
07727   0 00000 0 00000 E2W
07730   0 00000 0 00000 L(0)        0
07731   0 00000 0 00001 L(1)        1
07732   0 00000 0 00002 L(2)        2
07733   0 00000 0 00003 L(3)        3
07734   0 00000 0 00004 L(4)        4
07735   0 00000 0 00005 L(5)        5
07736   0 00000 0 00010 L(8)        8
07737   0 00000 0 00062 L(50)       50
07740   0 00001 0 00000 DECR1       0,0,1
07741   0 00002 0 00000 DECR2       0,0,2
07742 +000000077777     MSK     OCT 77777
07743 +377777777777     FRCON   OCT 377777777777
07744.  0 00000 0 00312 DRL02       202
07745   0 00000 0 00002 TNT2        2
07746   0 00000 0 00000 E3
07747   0 00000 0 00000 E4
07750   0 00000 0 04551 L(OTA)      OTA
07751   0 07400 4 00004 TEIFER  TSX DIAG,4
07752   0 10000 0 07723 TP3TRA  TZE WAT06-1
                07753 E1A       BSS 1
                07754 E2A       BSS 1
                07755 E3A       BSS 1
                07756 E4A       BSS 1
                07757 E5A       BSS 1
                07747 E1        SYN E4
                07746 E2        SYN E3
                07505 TAPOO     SYN TAP00
                07656 WATOO     SYN WAT00
                07750 L(OTA)    SYN L(OTA)
                00004 DIAG      SYN 4
                03163 COMP      SYN 1TA
                03163 2TA       SYN 1TA
                03163 3TA       SYN 1TA
                07750 TOTO      SYN L(OTA)
                04550 EQM1      SYN OTA-1
                04551 EQ        SYN OTA
                01614 4TA       SYN XTA
                01614 5TA       SYN XTA
                01614 6TA       SYN XTA
                01614 7TA       SYN XTA
                01614 9TA       SYN XTA
                01613 MEEQM1    SYN XTA-1
                01614 MEEQ      SYN XTA
                03172 FRTS      SYN XTA+750
                03564 FRCHS     SYN XTA+1000
                07746 E12       SYN E3
                07747 E1RF      SYN E4
                01577 SMBL      SYN E1CLEQ
                01600 SBSCR     SYN E2CLEQ
                03564 16TA      SYN 6TA+1000
                00004 1TOCS     SYN 4
```

AMW0503
35 ONES. AMW 1318
LOCATION OF FIRST WORD ON DRUM

NON ERASABLE 0416 TO 0908

F1P12960
F1P12970
F1P12980
F1P12990
F1P13000
F1P13010
F1P13020
F1P13030
F1P13040
F1P13050
F1P13060
F1P13070
F1P13080
F1P13090
F1P13100
F1P13110
F1P13120
F1P13130
F1P13140
F1P13150
F1P13160
F1P13170
F1P13180
F1P13190
F1P13200
F1P13210
F1P13220
F1P13230
F1P13240
F1P13250
F1P13260
F1P13270
F1P13280
F1P13290
F1P13300
F1P13310
F1P13320
F1P13330
F1P13340
F1P13350
F1P13360
F1P13370
F1P13380
F1P13390
F1P13400
F1P13410
F1P13420
F1P13430
F1P13440
F1P13450
F1P13460
F1P13470
F1P13480
F1P13490

```
                                                                                F1P13500
                    THE FOLLOWING SYN CARDS ARE FOR PARAMETERS IN THE CARRY OVER F1P13510
                    FROM SECTION ONE TO SECTION ONE PRIME.                      F1P13520
00030 EIFNO   SYN 24                                                            F1P13530
00031 ENDI1   SYN 25                                                            F1P13540
00034 ENDI4   SYN 28                                                            F1P13550
00322 INTET   SYN 210                                                           F1P13560
00417 FXCNIX  SYN 271                                                           F1P13570
00424 FLCNIX  SYN 276                                                           F1P13580
00453 ORGDM1  SYN 299                                                           F1P13590
00455 DIM1IX  SYN 301                                                           F1P13600
00460 ORGDM2  SYN 304                                                           F1P13610
00462 DIM2IX  SYN 306                                                           F1P13620
00465 ORGDM3  SYN 309                                                           F1P13630
00467 DIM3IX  SYN 311                                                           F1P13640
00470 BK      SYN 312                                                           F1P13650
00471 FORSUB  SYN 313                                                           F1P13660
00637 BBOX    SYN 415                                                           F1P13670
00640 CIB     SYN 416                                                           F1P13680
07760 END1PC  BSS 0                                                             F1P13690
00000         END                                                               F1P13700
00001 0    ..
```

```
1           ORG 25
1                    00031          ORG 25
                     77777 ERLIST   SYN 32767
                     77633  TABLE   SYN ERLIST-100
                     75435  TRADT   SYN ERLIST-1250
                     75434  BETA    SYN ERLIST-1251
                     75433 TIFGOT   SYN ERLIST-1252
                     75433 ALPHA    SYN ERLIST-1252
                     74303 NONEXT   SYN ERLIST-1852
00031   0 77200 0 00202             REW 2
00032   0 77200 0 00203             REW 3
00033   0 53400 4 01151             LXA IR2,4
00034   0 76200 0 00202 RDFILE      RTD 2              WILL READ ANY KIND OF END FILE MARK
00035   0 70000 0 00000             CPY 0
00036   0 02000 0 00034             TRA RDFILE
00037   2 00001 4 00034             TIX RDFILE,4,1     SPACE OVER 2 FILES AND OVER 1ST RECORD OF
00040   0 76200 0 00222             RTB 2              3RD FILE
00041   0 76100 0 00000             NOP
00042   0 53400 1 01152             LXA IR4,1
00043   0 70000 1 77634  CP         CPY TABLE+1,1
00044   1 00001 1 00043             TXI CP,1,1
00045   0 02000 0 00031             TRA831             START AGAIN, CANNOT GET END FILE
00046   2 00001 1 00124             TIX FORSUB,1,1     DROP COUNT OF 2ND FILE
00047   0 76200 0 00222  OVER       RTB 2              SPACE OVER END FILE AFTER FORSUB
00050   0 76200 0 00222             RTB 2              SPACE OVER FLOCON
00051   0 76200 0 00222             RTB 2              SPACE OVER FORMAT
00052   0 53400 1 01152 RDREC       LXA IR4,1
00053   0 76200 0 00222             RTB 2
00054   0 70000 0 01174             CPY IDENT
00055   0 70000 0 01175             CPY WDCONT
00056   0 70000 1 77633  COPY       CPY TABLE,1        ALTERNATE FOR READING TRAD CPY TRAD,2
00057   1 00001 1 00056  CPTXI      TXI COPY,1,1                                  TIX COPYAA,1,1
00060   1 77777 4 00056 COPYAA      TXI COPY,4,-1
00061  -0 75400 1 00000             PXD 0,1
00062   0 02000 0 01254  RDA        TRA PTCH           NOP GOES HERE AFTER SIZ TABLES ARE READ
00063   0 40200 0 01175 SUBWDS      SUB WDCONT
00064   0 10000 0 00135 RDAAB       TZE SIZ        TZE IDNTFY REPLACES THIS AFTER SIZ TABLES READ
00065  -0 53400 4 01201             LXD BST,4
00066  -3 00016 4 00072             TXL TRY,4,14
00067   0 56000 0 01174             LDQ IDENT
00070   0 07400 4 01033  BADWC      TSX ERROR,4
00071   0 02000 0 00777             TRA DIAGND
00072   1 00001 4 00073  TRY        TXI RDSXD,4,1
00073  -0 63400 4 01201  RDSXD      SXD BST,4
00074   0 76400 0 00202             BST 2
00075   0 02000 0 00052             TRA RDREC
00076   0 60000 0 01201 IDNTFY      STZ BST            FORMAT SIZE AND ALL TAPE TABLES HAVE
00077   0 53400 2 01253             LXA TAPTAB,2       IDENTIFICATION WORD AS FIRST WORD OF
00100   0 50000 0 01174             CLA IDENT          TAPE RECORD, NOT INCLUDED IN WORD
00101   0 34000 2 01253  CAS        CAS TAPTAB,2       COUNT
00102   0 02000 0 00104             TRA NEXT
00103   0 02000 0 00116             TRA HAVE
00104   2 00002 2 00101  NEXT       TIX CAS,2,2
00105  -0 53400 4 01202             LXD BSTA,4         BACK SPACE RECORD AND TRY AGAIN 15 TIMES
```

```
00106 -3 00016 4 00112         TXL TRYA,4,14          IF NECESSARY
00107  0 56000 0 01174         LDQ IDENT
00110  0 07400 4 01033 NOIDEN  TSX ERROR,4
00111  0 02000 0 00777         TRA DIAGND
00112  1 00001 4 00113  TRYA   TXI IDNSXD,4,1
00113 -0 63400 4 01202 IDNSXD  SXD BSTA,4
00114  0 76400 0 00202         BST 2
00115  0 02000 0 00052         TRA RDREC
00116  0 60000 0 01202  HAVE   STZ BSTA
00117  0 50000 2 01254         CLA TAPTAB+1,2
00120  0 62100 0 00121         STA TRA
00121  0 02000 0 00000  TRA    TRA 0
00122  0 76200 0 00222 NOTIFG  RTB 2                 IF NO TIFGO ENTRY, IGNORE TRAD ENTRY
00123  0 02000 0 00052         TRA RDREC
00124  2 00002 1 00126 FORSUB  TIX SAVEA,1,2
00125  0 53400 1 01152         LXA IR4,1
00126 -0 63400 1 00133  SAVEA  SXD TXLA,1
00127  0 53400 1 01152         LXA IR4,1
00130  0 56000 1 77633  LDQA   LDQ TABLE,1
00131  0 07400 4 01066  TSXA   TSX CHECKA,4
00132  1 00002 1 00133         TXI TXLA,1,2
00133 -3 00000 1 00130  TXLA   TXL LDQA,1,0
00134  0 02000 0 00047         TRA OVER
00135 -3 00000 1 00146  SIZ    TXL SETRD,1,0          IF NO ENTRIES, GET NEXT TAPE RECORDS
00136  2 00002 1 00140         TIX SAVEB,1,2          REDUCE WORD COUNT FOR END OF ENTRIES TEST
00137  0 53400 1 01152         LXA IR4,1              IF TOO SMALL, SET TO ZERO
00140 -0 63400 1 00145 SAVEB   SXD TXLB,1
00141  0 53400 1 01152         LXA IR4,1              START AT FIRST ENTRY, THAT IS IR IS ZERO
00142  0 56000 1 77633  LDQB   LDQ TABLE,1
00143  0 07400 4 01066  TSXB   TSX CHECKA,4
00144  1 00002 1 00145         TXI TXLB,1,2           GET NEXT 2 WORD ENTRY
00145 -3 00000 1 00142   TXLB  TXL LDQB,1,0
00146  0 76200 0 00222 SETRD   RTB 2                 SPACE OVER GAP AT END OF 4TH FILE
00147  0 76200 0 00222         RTB 2                  SPACE OVER 5 WORD END RECORD
00150  0 50000 0 01232         CLA AFTRSZ
00151  0 62100 0 00064         STA RDAAB
00152  0 50000 0 01205         CLA NOP
00153  0 60100 0 00062         STO RDA                RESET TEST AT END OF READ LOOP
00154  0 02000 0 00052         TRA RDREC
00155 -3 00000 1 00052 SUBARG  TXL RDREC,1,0          INITIALIZATION OF END ENTRIES TEST
00156  2 00001 1 00160         TIX SAVEC,1,1
00157  0 53400 1 01152         LXA IR4,1
00160 -0 63400 1 00165  SAVEC  SXD TXLC,1
00161  0 53400 1 01152         LXA IR4,1
00162  0 56000 1 77633  LDQC   LDQ TABLE,1
00163  0 07400 4 01066  TSXC   TSX CHECKA,4
00164  1 00001 1 00165         TXI TXLC,1,1           1 WORD ENTRIES
00165 -3 00000 1 00162  TXLC   TXL LDQC,1,0
00166  0 02000 0 00052         TRA RDREC
00167 -3 00000 1 00200 UPPER   TXL UPPRTB,1,0         INITIALIZE END OF ENTRIES TEST
00170  2 00001 1 00172         TIX SAVED,1,1
00171  0 53400 1 01152         LXA IR4,1
00172 -0 63400 1 00177  SAVED  SXD TXLD,1
00173  0 53400 1 01152         LXA IR4,1
```

```
00174   0 56000 1 77633   LDQD   LDQ TABLE,1
00175   0 07400 4 01066   TSXD   TSX CHECKA,4
00176   1 00001 1 00177          TXI TXLD,1,1          1 WORD ENTRIES
00177  -3 00000 1 00174   TXLD   TXL LDQD,1,0
00200   0 76200 0 00222 UPPRTB   RTB 2                 NO SCAN OF HOLARG RECORD
00201   0 02000 0 00052          TRA RDREC
00202  -3 00000 1 00052 TEIFNO   TXL RDREC,1,0         INITIALIZE END OF ENTRIES TEST
00203   2 00001 1 00205          TIX SAVEE,1,1
00204   0 53400 1 01152          LXA IR4,1
00205  -0 63400 1 00214 SAVEE    SXD TXLE,1
00206   0 53400 1 01152          LXA IR4,1
00207   0 50000 1 77633   CLAE   CLA TABLE,1           MINUS ENTRY MEANS BETA IS
00210   0 12000 0 00213          TPL TSTE              DUPLICATED IN SOURCE PROGRAM
00211   0 56000 1 77633          LDQ TABLE,1
00212   0 07400 4 01033   TSXE   TSX ERROR,4
00213   1 00001 1 00214   TSTE   TXI TXLE,1,1
00214  -3 00000 1 00207   TXLE   TXL CLAE,1,0
00215   0 50000 0 01164          CLA ADTIFG
00216   0 62100 0 00056          STA COPY
00217   0 02000 0 00052          TRA RDREC
00220  -3 00000 1 01260 TIFGO    TXL PATIF,1,0         IF NO ENTRIES, IGNORE TRAD IDENTIFICATION
00221   2 00002 1 00223          TIX SAVEF,1,2
00222   0 53400 1 01152          LXA IR4,1
00223  -0 63400 1 00310 SAVEF    SXD TXLF,1
00224   0 50000 0 01165          CLA ADTRAD            SET READ LOOP TO READ TRAD
00225   0 60100 0 00056          STO COPY              UPWARDS IN MEMORY, BUT
00226   0 50000 0 01166          CLA CPTRAD            KEEP TRACK OF WORD COUNT
00227   0 62100 0 00057          STA CPTXI             AS USUAL
00230   0 53400 4 01152          LXA IR4,4
00231   0 02000 0 00052          TRA RDREC
00232   0 50000 0 01163 TRAD     CLA ADTABL            RESTORE COPY LOOP
00233   0 60100 0 00056          STO COPY
00234   0 50000 0 00060          CLA COPYAA
00235   0 62100 0 00057          STA CPTXI
00236   1 77777 4 00237          TXI SXDG,4,-1
00237  -0 63400 4 00572   SXDG   SXD BETANB,4           SAVE NUMBER OF ENTRIES IN BETA TABLE
00240   0 50000 0 00030          CLA 24                ADD ONE TO LAST TEIFNO
00241   0 76100 0 00000          NOP                   GET LAST TEIFNO
00242   0 77100 0 00022          ARS 18
00243   0 60000 0 75434          STZ BETA
00244   0 62100 0 75434          STA BETA
00245   0 76200 0 00223          RTB 3
00246   0 53400 2 01152          LXA IR4,2             READ IN TABLE OF NON EXECUTABLE
00247   0 70000 0 00000   CPNON  CPY 0                 STATEMENTS AND SAVE
00250  -0 53400 4 00000          LXD 0,4                  DECREMENT OF TABLE IN
00251   0 02000 0 00253          TRA PXDH              ADDRESS OF MEMORY
00252   0 02000 0 00257          TRA SAVXNB
00253  -0 75400 4 00000   PXDH   PXD 0,4
00254   0 77100 0 00022          ARS 18
00255   0 60100 2 74303          STO NONEXT,2
00256   1 00001 2 00247          TXI CPNON,2,1
00257   2 00001 2 00261 SAVXNB   TIX SAVEH,2,1         SET END OF ENTRIES TEST
00260   0 53400 2 01152          LXA IR4,2
00261  -0 63400 2 01055 SAVEH    SXD TXLH,2            SET END OF ENTRIES TEST
```

```
00262   0 53400 1 01152         LXA  IR4,1
00263   0 50000 1 75433  CLAF   CLA  TIFGOT,1
00264   0 77100 0 00022         ARS  18
00265   0 62100 0 01170         STA  ALFA
00266   0 50000 1 75433         CLA  TIFGOT,1
00267  -0 12000 0 00312         TMI  TIFMI
00270   0 73400 2 00000         PAX  0,2
00271  -3 00000 2 00345         TXL  TIFZRO,2,0
00272  -3 00001 2 00363         TXL  TIFGO1,2,1
00273  -3 00002 2 00410         TXL  TIFGO2,2,2
00274  -3 00003 2 00435         TXL  TIFGO3,2,3
00275  -3 00004 2 00461         TXL  TIFGO4,2,4
00276  -3 00005 2 00505         TXL  TIFGO5,2,5
00277  -3 00006 2 00531         TXL  TIFGO6,2,6
00300   0 56000 1 75433         LDQ  TIFGOT,1
00301   0 07400 4 01033 WHATIF  TSX  ERROR,4
00302  -0 53400 4 00635 NXTIFG  LXD  ALFANB,4
00303   0 50000 0 01170         CLA  ALFA
00304   0 60100 4 75433         STO  ALPHA,4
00305   1 00001 4 00306         TXI  FSAVE,4,1
00306  -0 63400 4 00635  FSAVE  SXD  ALFANB,4
00307   1 00002 1 00310 RETIF6  TXI  TXLF,1,2
00310  -3 00000 1 00263  TXLF   TXL  CLAF,1,0
00311   0 02000 0 00536         TRA  STOPS
00312  -0 32000 0 01157 TIFMI   ANA  ADDMSK
00313  -0 10000 0 00316         TNZ  SAVEB1
00314   0 07400 4 01022 MINB1   TSX  NOBETA,4
00315   0 02000 0 00321         TRA  NOWB2
00316   0 07400 4 01047 SAVEB1  TSX  ISNONX,4
00317  -0 12000 0 00321         TMI  NOWB2
00320   0 07400 4 01131         TSX  MORBTS,4
00321   0 50000 1 75432 NOWB2   CLA  TIFGOT-1,1
00322   0 77100 0 00022         ARS  18
00323  -0 32000 0 01157         ANA  ADDMSK
00324  -0 10000 0 00327         TNZ  SAVEB2
00325   0 07400 4 01022 MINB2   TSX  NOBETA,4
00326   0 02000 0 00332         TRA  NOWB3
00327   0 07400 4 01047 SAVEB2  TSX  ISNONX,4
00330  -0 12000 0 00332         TMI  NOWB3
00331   0 07400 4 01131         TSX  MORBTS,4
00332   0 50000 1 75432 NOWB3   CLA  TIFGOT-1,1
00333  -0 32000 0 01157         ANA  ADDMSK
00334  -0 10000 0 00337         TNZ  SAVEB3
00335   0 07400 4 01022 MINB3   TSX  NOBETA,4
00336   0 02000 0 00342         TRA  ALFAD1
00337   0 07400 4 01047 SAVEB3  TSX  ISNONX,4
00340  -0 12000 0 00342         TMI  ALFAD1
00341   0 07400 4 01131         TSX  MORBTS,4
00342   0 50000 0 01156 ALFAD1  CLA  DECTRE
00343   0 62200 0 01170         STD  ALFA
00344   0 02000 0 00302         TRA  NXTIFG
00345   0 50000 1 75432 TIFZRO  CLA  TIFGOT-1,1
00346  -0 32000 0 01157         ANA  ADDMSK
00347  -0 10000 0 00352         TNZ  TIFOB
```

SAVE ALPHA IN CASE OF ERROR, AND
ALSO TO PUT IN ALPHA TABLE AT
END OF PROCESSING EACH KIND OF TIFGO
DETERMINE KIND OF ENTRY

NOT IDENTIFYABLE, SAVE IN ERROR
TABLE, BUT PUT ALPHA IN TABLE ANYWAY
STORE ALPHA IN TABLE

TYPE 6 TIFGO ENTRIES DO NOT GO IN
ALPHA TABLE
WHEN TIFGO FINISHED, READ IN STOPS

IF BETA IS ZERO, THERE WAS NO ENTRY
CORRESPONDING TO IT IN COL 1 TO 5 OF
SOURCE PROGRAM, SKIP REST OF PROCESSING
IF BETA IS NOT EXECUTABLE, DO NOT PUT IN
BETA TABLE

```
00350   0 07400 4 01022 TSXTFO TSX NOBETA,4
00351   0 02000 0 00355        TRA NEXTI
00352   0 07400 4 01047 TIFOB  TSX ISNONX,4
00353  -0 12000 0 00355        TMI NEXTI
00354   0 07400 4 01131        TSX MORBTS,4
00355   0 50000 1 75432 NEXTI  CLA TIFGOT-1,1
00356  -0 73400 4 00000        PDX 0,4
00357   3 00000 4 00307        TXH RETIF6,4,0
00360   0 50000 0 01154        CLA DECONE
00361   0 62200 0 01170        STD ALFA
00362   0 02000 0 00302        TRA NXTIFG
00363   0 60000 0 01172 TIFGO1 STZ TRADNB
00364   0 50000 1 75432  CLAJ  CLA TIFGOT-1,1
00365  -0 73400 2 00000        PDX 0,2
00366   0 76700 0 00022        ALS 18
00367   0 62200 0 00404        STD TXHJ
00370   0 50000 2 76027 MORTR  CLA TRADT+250,2
00371  -0 10000 0 00374        TNZ TRADX1
00372   0 07400 4 01022 BTIFG1 TSX NOBETA,4
00373   0 02000 0 00400        TRA ADDJ
00374   0 07400 4 01047 TRADX1 TSX ISNONX,4
00375   0 12000 0 00400        TPL ADDJ
00376   0 50000 0 01154        CLA DECONE
00377   0 62200 2 76027        STD TRADT+250,2
00400   0 50000 0 01172 ADDJ   CLA TRADNB
00401   0 40000 0 01154        ADD DECONE
00402   0 60100 0 01172        STO TRADNB
00403   1 77777 2 00404        TXI TXHJ,2,-1
00404   3 00000 2 00370 TXHJ   TXH MORTR,2,0
00405   0 50000 0 01172        CLA TRADNB
00406   0 62200 0 01170        STD ALFA
00407   0 02000 0 00302        TRA NXTIFG
00410   0 60000 0 01172 TIFGO2 STZ TRADNB
00411   0 50000 1 75432  CLAK  CLA TIFGOT-1,1
00412  -0 73400 2 00000        PDX 0,2
00413   0 76700 0 00022        ALS 18
00414   0 62200 0 00431        STD TXHK
00415   0 50000 2 76027 MORTRD CLA TRADT+250,2
00416  -0 10000 0 00421        TNZ TRADX2
00417   0 07400 4 01022 BTIFG2 TSX NOBETA,4
00420   0 02000 0 00425        TRA ADDK
00421   0 07400 4 01047 TRADX2 TSX ISNONX,4
00422   0 12000 0 00425        TPL ADDK
00423   0 50000 0 01154        CLA DECONE
00424   0 62200 2 76027        STD TRADT+250,2
00425   0 50000 0 01172  ADDK  CLA TRADNB
00426   0 40000 0 01154        ADD DECONE
00427   0 60100 0 01172        STO TRADNB
00430   1 77777 2 00431        TXI TXHK,2,-1
00431   3 00000 2 00415 TXHK   TXH MORTRD,2,0
00432   0 50000 0 01172        CLA TRADNB
00433   0 62200 0 01170        STD ALFA
00434   0 02000 0 00302        TRA NXTIFG.
00435   0 50000 1 75432 TIFGO3 CLA TIFGOT-1,1
```

KEEP TRACK OF NUMBER OF BETAS

DO NOT PUT IN ALPHA TABLE IF
ENTRY BY IRV FOR SAP INSTRUCTIONS

PREPARE TO READ RELATED TRAD ENTRIES

IF TRAD IS NON EXECUTABLE, MAKE ENTRY
FAIL ANY ALPHA PLUS 1 SEARCH LATER ON
BY PUTING NUMBER IN DECFIELD
BUT KEEP TRACK OF NUMBER OF BRANCHES GIVEN

```
00436   0 77100 0 00022         ARS 18
00437  -0 32000 0 01157         ANA ADDMSK
00440  -0 10000 0 00443         TNZ TIF3B1
00441   0 07400 4 01022 B1TIF3  TSX NOBETA,4
00442   0 02000 0 00446         TRA NEXTL
00443   0 07400 4 01047 TIF3B1  TSX ISNONX,4
00444  -0 12000 0 00446         TMI NEXTL
00445   0 07400 4 01131         TSX MORBTS,4
00446   0 50000 1 75432 NEXTL   CLA TIFGOT-1,1
00447  -0 32000 0 01157         ANA ADDMSK
00450  -0 10000 0 00453         TNZ TIF3B2
00451   0 07400 4 01022 B2TIF3  TSX NOBETA,4
00452   0 02000 0 00456         TRA ADDL
00453   0 07400 4 01047 TIF3B2  TSX ISNONX,4
00454  -0 12000 0 00456         TMI ADDL
00455   0 07400 4 01131         TSX MORBTS,4
00456   0 50000 0 01155 ADDL    CLA DECTWO
00457   0 62200 0 01170         STD ALFA
00460   0 02000 0 00302         TRA NXTIFG
00461   0 50000 1 75432 TIFGO4  CLA TIFGOT-1,1
00462   0 77100 0 00022         ARS 18
00463  -0 32000 0 01157         ANA ADDMSK
00464  -0 10000 0 00467         TNZ TIF4B1
00465   0 07400 4 01022 B1TIF4  TSX NOBETA,4
00466   0 02000 0 00472         TRA NEXTM
00467   0 07400 4 01047 TIF4B1  TSX ISNONX,4
00470  -0 12000 0 00472         TMI NEXTM
00471   0 07400 4 01131         TSX MORBTS,4
00472   0 50000 1 75432 NEXTM   CLA TIFGOT-1,1
00473  -0 32000 0 01157         ANA ADDMSK
00474  -0 10000 0 00477         TNZ TIF4B2
00475   0 07400 4 01022 B2TIF4  TSX NOBETA,4
00476   0 02000 0 00502         TRA ADDM
00477   0 07400 4 01047 TIF4B2  TSX ISNONX,4
00500  -0 12000 0 00502         TMI ADDM
00501   0 07400 4 01131         TSX MORBTS,4
00502   0 50000 0 01155  ADDM   CLA DECTWO
00503   0 62200 0 01170         STD ALFA
00504   0 02000 0 00302         TRA NXTIFG
00505   0 50000 1 75432 TIFGO5  CLA TIFGOT-1,1
00506   0 77100 0 00022         ARS 18
00507  -0 32000 0 01157         ANA ADDMSK
00510  -0 10000 0 00513         TNZ TIF5B1
00511   0 07400 4 01022 B1TIF5  TSX NOBETA,4
00512   0 02000 0 00516         TRA NEXTN
00513   0 07400 4 01047 TIF5B1  TSX ISNONX,4
00514  -0 12000 0 00516         TMI NEXTN
00515   0 07400 4 01131         TSX MORBTS,4
00516   0 50000 1 75432 NEXTN   CLA TIFGOT-1,1
00517  -0 32000 0 01157         ANA ADDMSK
00520  -0 10000 0 00523         TNZ TIF5B2
00521   0 07400 4 01022 B2TIF5  TSX NOBETA,4
00522   0 02000 0 00526         TRA ADDN
00523   0 07400 4 01047 TIF5B2  TSX ISNONX,4
```

```
00524 -0 12000 0 00526         TMI ADDN
00525  0 07400 4 01131         TSX MORBTS,4
00526  0 50000 0 01155  ADDN   CLA DECTWO
00527  0 62200 0 01170         STD ALFA
00530  0 02000 0 00302         TRA NXTIFG
00531  0 50000 1 75432 TIFGO6  CLA TIFGOT-1,1
00532 -0 32000 0 01157         ANA ADDMSK
00533 -0 10000 0 00307         TNZ RETIF6
00534  0 07400 4 01022 TIF6B   TSX NOBETA,4
00535  0 02000 0 00307         TRA RETIF6
00536  0 76200 0 00223 STOPS   RTB 3
00537 -0 53400 1 00635         LXD ALFANB,1
00540  0 70000 0 00000 CPSTOP  CPY 0
00541 -0 53400 4 00000         LXD 0,4
00542  0 02000 0 00544         TRA PDXP
00543  0 02000 0 00550         TRA TIXP
00544 -0 75400 4 00000  PDXP   PXD 0,4
00545  0 77100 0 00022         ARS 18
00546  0 60100 1 75433         STO ALPHA,1
00547  1 00001 1 00540         TXI CPSTOP,1,1
00550  2 00001 1 00552  TIXP   TIX NEXTP,1,1
00551  0 53400 1 01152         LXA IR4,1
00552 -0 63400 1 00600  NEXTP  SXD ENDALF,1
00553 -0 63400 1 00635         SXD ALFANB,1
00554 -0 63400 1 00754         SXD FRETST,1
00555  0 50000 0 01167         CLA CHNONX
00556  0 62100 0 01053         STA YESNOX
00557  0 53400 1 01152         LXA IR4,1
00560  0 50000 1 75433  CLAQ   CLA ALPHA,1
00561  0 02000 0 01271 QADD    TRA PAQADD
00562  0 60000 0 01170 ADDQ    STZ ALFA
00563  0 62100 0 01170         STA ALFA
00564  0 53400 2 01152         LXA IR4,2
00565  0 50000 2 75434 NXTBTA  CLA BETA,2
00566  0 34000 0 01170         CAS ALFA
00567  0 02000 0 00571         TRA NEXTQ
00570  0 02000 0 00577         TRA NXTALF
00571  1 77777 2 00572  NEXTQ  TXI BETANB,2,-1
00572  3 00000 2 00565 BETANB  TXH NXTBTA,2,0
00573  0 50000 0 01170         CLA ALFA
00574  0 07400 4 01047         TSX ISNONX,4
00575 -0 12000 0 00602         TMI ALAND1
00576  0 07400 4 01022 NOTRA   TSX NOBETA,4
00577  1 00001 1 00600 NXTALF  TXI ENDALF,1,1
00600 -3 00000 1 00560 ENDALF  TXL CLAQ,1,0
00601  0 02000 0 00052         TRA RDREC
00602  0 50000 0 01170 ALAND1  CLA ALFA
00603  0 02000 0 00561         TRA QADD
00604 -3 00000 1 00723 TDO     TXL SPACES,1,0
00605  2 00005 1 00607         TIX SAVES,1,5
00606  0 53400 1 01152         LXA IR4,1
00607 -0 63400 1 00722 SAVES   SXD TXLS,1
00610  0 53400 1 01152         LXA IR4,1
00611  0 50000 1 77633  CLADO  CLA TABLE,1
```

LOAD NUMBER ALREADY IN ALPHA TABLE
READ TABLE OF STOPS INTO REST OF
ALPHA TABLE, PUT DECREMENT OF
TAPE TABLE INTO ADDRESS OF MEMORY

RESET ISNONX ROUTINE SO IT IS
MERELY INFORMATIVE AND DOES NOT
MAKE ENTRIES IN ERROR TABLE

IF ALPHA PLUS 1 IN NONX, THEN LOOK IN BETA
TABLE FOR ALPHA +2 ETC
NOT EITHER TABLE, PART OF PROG NOT ENTERED

INITIALIZE END OF ENTRIES TEST

```
00612 -0 32000 0 01160         ANA TAGMSK          SAVE TAG FIELD FOR PROCESSING N1,N2,N3
00613  0 76700 0 00022         ALS 18
00614  0 63000 0 01203         STP DOTAG
00615  0 50000 1 77633         CLA TABLE,1         SAVE ALPHA IN CASE OF ERROR
00616  0 77100 0 00022         ARS 18
00617  0 62100 0 01170         STA ALFA
00620  0 50000 1 77633         CLA TABLE,1
00621 -0 32000 0 01157         ANA ADDMSK
00622 -0 10000 0 00625         TNZ BINTIF
00623  0 07400 4 01022 DONOBT  TSX NOBETA,4
00624  0 02000 0 00643         TRA DOALF
00625  0 53400 2 01152 BINTIF  LXA IR4,2           IS BETA IN DO TABLE A CONDITIONAL
00626  0 60100 0 01204         STO DOBETA          TRANSFER, THAT IS, IS IT IN ALPHA TABLE
00627  0 50000 2 75433  SCLA   CLA ALPHA,2
00630 -0 32000 0 01157         ANA ADDMSK          MASK OUT NUMBER OF BRANCHES
00631  0 34000 0 01204         CAS DOBETA
00632  0 02000 0 00634         TRA TIXS
00633  0 02000 0 00727         TRA CONBET          THIS IS AN ERROR
00634  1 00001 2 00635  TIXS   TXI ALFANB,2,1
00635 -3 00000 2 00627 ALFANB  TXL SCLA,2,0
00636  0 50000 0 01204         CLA DOBETA
00637  0 07400 4 01047         TSX ISNONX,4
00640  0 12000 0 00643         TPL DOALF           IF BETA IN TO IS NON EXECUTABLE THIS
00641  0 07400 4 01022 DOBTNX  TSX NOBETA,4
00642  0 07400 4 01141         TSX ADOB,4
00643  0 50000 0 01170 DOALF   CLA ALFA
00644 -0 32000 0 01157         ANA ADDMSK          CLEAR ANY HASH LEFT FROM ERROR RECODING
00645  0 40000 0 01153         ADD ADDONE
00646  0 07400 4 01047         TSX ISNONX,4        IF ALPHA PLUS 1 IS NON EXECUTABLE
00647  0 12000 0 00652         TPL DOSYMB          THIS IS ERROR
00650  0 07400 4 01022 DOALNX  TSX NOBETA,4
00651  0 07400 4 01141         TSX ADOB,4
00652  0 56000 1 77632 DOSYMB  LDQ TABLE-1,1       DOES SYMBOL CONTAIN ANY ILLEGAL
00653  0 07400 4 01066 PUNSYM  TSX CHECKA,4        PUNCTUATION
00654  0 12000 0 00656         TPL IJKSYM
00655  0 07400 4 01141         TSX ADOB,4
00656  0 07400 4 01113 IJKSYM  TSX CHECKB,4        DOES SYMBOL BEGIN WITH IJKLM OR N
00657  0 12000 0 00661         TPL N1
00660  0 07400 4 01141         TSX ADOB,4
00661 -0 50000 0 01203 N1      CAL DOTAG
00662 -0 76000 0 00001         PBT
00663  0 02000 0 00674         TRA N2+1            NO
00664  0 56000 1 77631         LDQ TABLE-2,1       YES
00665  0 07400 4 01066 PUNN1   TSX CHECKA,4
00666  0 12000 0 00670         TPL IJKN1
00667  0 07400 4 01141         TSX ADOB,4
00670  0 07400 4 01113 IJKN1   TSX CHECKB,4
00671  0 12000 0 00673         TPL N2
00672  0 07400 4 01141         TSX ADOB,4
00673 -0 50000 0 01203 N2      CAL DOTAG
00674  0 76700 0 00001         ALS 1
00675 -0 76000 0 00001         PBT
00676  0 02000 0 00706         TRA N3
00677  0 56000 1 77630         LDQ TABLE-3,1
```

```
00700   0 07400 4 01066 PUNN2   TSX CHECKA,4
00701   0 12000 0 00703         TPL IJKN2
00702   0 07400 4 01141         TSX ADOB,4
00703   0 07400 4 01113 IJKN2   TSX CHECKB,4
00704   0 12000 0 00706         TPL N3
00705   0 07400 4 01141         TSX ADOB,4
00706  -0 50000 0 01203 N3      CAL DOTAG
00707   0 76700 0 00002         ALS 2
00710  -0 76000 0 00001         PBT
00711   0 02000 0 00721         TRA NXTDO
00712   0 56000 1 77627         LDQ TABLE-4,1
00713   0 07400 4 01066  PUNN3  TSX CHECKA,4
00714   0 12000 0 00716         TPL IJKN3
00715   0 07400 4 01141         TSX ADOB,4
00716   0 07400 4 01113 IJKN3   TSX CHECKB,4
00717   0 12000 0 00721         TPL NXTDO
00720   0 07400 4 01141         TSX ADOB,4
00721   1 00005 1 00722 NXTDO   TXI TXLS,1,5
00722  -3 00000 1 00611  TXLS   TXL CLADO,1,0
00723   0 76200 0 00222 SPACES  RTB 2
00724   0 76200 0 00222         RTB 2
00725   0 76200 0 00222         RTB 2
00726   0 02000 0 00052         TRA RDREC
00727   0 07400 4 01022 CONBET  TSX NOBETA,4
00730   0 07400 4 01141         TSX ADOB,4
00731   0 02000 0 00643         TRA DOALF
00732  -3 00002 1 00052  FRET   TXL RDREC,1,2
00733   0 53400 2 01152  NEXTT  LXA IR4,2
00734   0 50000 1 77634  CLAT   CLA TABLE+1,1
00735  -0 12000 0 00740         TMI NEWFRT
00736   1 00001 2 00737         TXI TNEXT,2,1
00737   2 00001 1 00734  TNEXT  TIX CLAT,1,1
00740  -0 63400 2 01206 NEWFRT  SXD FRETNB,2
00741  -0 32000 0 01157         ANA ADDMSK
00742   0 60100 0 01170         STO ALFA
00743  -0 10000 0 00745         TNZ BRANCH
00744   0 02000 0 00763         TRA NXTFRT
00745   0 53400 4 01152 BRANCH  LXA IR4,4
00746   0 50000 4 75433  TCLAT  CLA ALPHA,4
00747  -0 32000 0 01157         ANA ADDMSK
00750   0 34000 0 01170         CAS ALFA
00751   0 02000 0 00753         TRA TIXT
00752   0 02000 0 00756         TRA HAVALF
00753   1 00001 4 00754  TIXT   TXI FRETST,4,1
00754  -3 00000 4 00746 FRETST  TXL TCLAT,4,0
00755   0 02000 0 00763         TRA NXTFRT
00756   0 50000 4 75433 HAVALF  CLA ALPHA,4
00757  -0 32000 0 01161         ANA DECMSK
00760   0 40200 0 01206         SUB FRETNB
00761   0 12000 0 00763         TPL NXTFRT
00762   0 07400 4 01022 FRETIF  TSX NOBETA,4
00763   2 00001 1 00733 NXTFRT  TIX NEXTT,1,1
00764   0 02000 0 00052         TRA RDREC
00765   0 50000 0 77633  EQUIV  CLA TABLE
```

SPACE OVER FORVAL
SPACE OVER FORVAR
SPACE OVER FORTAG

AND TEST ALPHA
GO THRO THIS TABLE FROM LAST TO FIRST

WILL NOT FAIL BEFORE THE TMI
SAVE NUMBER OF FREQUENCIES

FREQUENCY OF BETA IS IGNORED BY
FORTRAN IF NO CORRESPONDING BETA IN
COLUMN 1 TO 5 OF SOURCE PROGRAM

SET AT END OF READING IN STOP TABLE

THE ONLY TIME A FREQUENCY STATEMENT CAN
LOUSE UP THE OBJECT PROGRAM IS WHEN
THERE ARE MORE FREQUENCIES GIVEN THAN
BRANCHES.

FIRST WORD IN TABLE WILL BE 35 ONES

```
00766   0 40200 0 01162          SUB MSK35                IF THERE HAVE BEEN INCONSISTANT
00767  -0 10000 0 00777          TNZ DIAGND
00770   0 53400 1 01152          LXA IR4,1
00771   0 50000 1 77632 NXTEQV   CLA TABLE-1,1
00772   0 40200 0 01162          SUB MSK35                LAST INCONSISTANCY IS FOLLOWED BY
00773   0 10000 0 00777          TZE DIAGND               ANOTHER WORD OF ONES
00774   0 56000 1 77632          LDQ TABLE-1,1
00775   0 07400 4 01033 NOTEQV   TSX ERROR,4
00776   1 00001 1 00771          TXI NXTEQV,1,1
00777   0 50000 0 01173 DIAGND   CLA ERNBR
01000   0 10000 0 01263          TZE SPACE2           IF NO ERROR, READ IN SECTION II
01001   0 60100 0 00030          STO 24                SAVE FOR BIG D
01002   0 50000 0 01171          CLA TW13             PUT RECORD NUMBER IN 2 FOR PRINT OUT
01003   0 60100 0 00002          STO 2
01004   0 53400 2 01152          LXA IR4,2
01005   0 76200 0 00201 DIAGRD   RTD 1                SPACE OVER REST OF SYSTEM IN FORTRAN
01006   0 70000 0 00000          CPY 0
01007   0 02000 0 01005          TRA DIAGRD
01010   1 00001 2 01011          TXI TST2FL,2,1
01011  -3 00001 2 01005 TST2FL   TXL DIAGRD,2,1
01012   0 76200 0 00221          RTB 1                 END FILE SKIP, START TO READ BIG D
01013   0 53400 1 01152          LXA IR4,1
01014   0 70000 1 00031  DCPY    CPY 25,1
01015   1 77777 1 01014          TXI DCPY,1,-1
01016   0 76100 0 00000          NOP
01017   0 07400 4 00032 BIGD     TSX 26,4
01020   0 76100 0 00000 REW      NOP                  REPLACED BY SPACE2 AT 1263.  WAS REWIND
01021   0 76100 0 00000          NOP
                                 ENTER WITH AC ZERO. EXIT WITH TSX FROM TABLE
                                 WHICH HAS MISSING BETA, IN DEC OF AC AND
                                 ALPHA IN ADDRESS OF AC.
01022  -0 63400 4 01170 NOBETA   SXD ALFA,4
01023   0 07400 4 01026          TSX SAVALF,4
01024  -0 53400 4 01170          LXD ALFA,4
01025   0 02000 4 00001          TRA 1,4
                                 ENTER WITH HASH IN AC. EXIT WITH CONTENTS OF ALPHA IN AC.
01026  -0 63400 4 01177 SAVALF   SXD ERAS,4
01027  -0 53400 4 01173          LXD ERNBR,4
01030   0 50000 0 01170          CLA ALFA
01031   0 60100 4 77777          STO ERLIST,4
01032   1 00001 4 01044          TXI NEXTA,4,1          SAME RETURN AS ERROR ROUTINE.
                                 ENTER WITH MQ=BCD SYMBOL OR HASH,0, ALPHA
                                 MAKES 2 WORD ENTRY IN ERROR LIST
                                          1...KIND OF ERROR,0, TABLE IN WHICH ERROR FOUND
                                          2...CONTENTS OF MQ
                                 EXIT AC HASH, MQ NOT CHANGED
01033  -0 75400 4 00000 ERROR    PXD 0,4                PUT TSX FROM SECTION SCANNING
01034  -0 53400 4 01173          LXD ERNBR,4            FOR ERROR, IN DEC OF 1ST WORD
01035   0 62200 0 01177          STD ERAS
01036   0 62200 4 77777          STD ERLIST,4
01037   0 50000 0 01152          CLA IR4                PUT TSX FROM OABLE IN WHI+H
01040   0 77100 0 00022          ARS 18                 ERROR WAS FOUND, IN ADDR. OF 1ST WORD
01041   0 62100 4 77777          STA ERLIST,4
01042  -0 60000 4 77776          STQ ERLIST-1,4         PUT MQ IN 2ND WORD
```

```
01043   1 00002 4 01044          TXI NEXTA,4,2
01044  -0 63400 4 01173 NEXTA    SXD ERNBR,4
01045  -0 53400 4 01177          LXD ERAS,4
01046   0 02000 4 00001          TRA 1,4
                                 ENTER WITH AC ALL ZERO, EXCEPT ADDRESS WHICH HAS BETA
                                 FROM TIFGO OR TDO, OR ALPHA+1 FROM SAME. EXIT SAME, EXCEPT
                                 WHERE MATCH IS FOUND, THEN AC HAS HASH
01047  -0 63400 4 01152 ISNONX   SXD IR4,4                ERROR WILL RECORD WHICH TABLE WAS SCANNED
01050   0 02000 0 01274          TRA PATS2
01051   0 34000 2 74303  CASH    CAS NONEXT,2
01052   0 02000 0 01054          TRA NEXTH
01053   0 02000 0 01057 YESNOX   TRA NONEXB               THIS WILL BE CHANGED TO BYPASS ERROR WHEN
01054   1 00001 2 01055  NEXTH   TXI TXLH,2,1             SCANNING BETA TABLE
01055  -3 00000 2 01051  TXLH    TXL CASH,2,0
01056   0 02000 0 01277          TRA PATRE2
01057   0 76700 0 00022 NONEXB   ALS 18                       ERROR, SAVE BETA AND ALPHA IN LIST
01060   0 62200 0 01170          STD ALFA
01061   0 56000 0 01170          LDQ ALFA
01062   0 07400 4 01033 TSXH     TSX ERROR,4
01063  -0 53400 4 01152 INFORM   LXD IR4,4
01064  -0 76000 0 00003          SSM                       SET RETURN TO SHOW ERROR
01065   0 02000 0 01277          TRA PATRE2
                                 ENTER WITH HASH IN AC, MQ HAS BCD SYMBOL. EXIT WITH HASH IN
                                 AC AMD MQ, SYMBOL IS STORED IN NAME. DC IS MINUS ONLY WHEN
                                 ILLEGAL CHARACTER PRESENT
01066  -0 60000 0 01176 CHECKA   STQ NAME
01067  -0 63400 4 01152          SXD IR4,4
01070  -0 63400 2 01151          SXD IR2,2
01071  -0 63400 1 01150          SXD IR1,1
01072  -0 53400 1 01231          LXD SYMBL,1               6 INTO IR1
01073   0 53400 2 01231 NXTNAM   LXA SYMBL,2               10 INTO IR2
01074  -0 75400 0 00000          PXD 0,0                   CLEAR AC AND COMPARE NEXT BCD
01075  -0 76300 0 00006          LGL 6                     CHARACTER WITH TABLE OF ILLEGAL SYMBOLS
01076   0 34000 2 01231  ACAS    CAS SYMBL,2
01077   0 02000 0 01101          TRA ATIX
01100   0 02000 0 01107          TRA WRONG
01101   2 00001 2 01076  ATIX    TIX ACAS,2,1              GET NEXT ILLEGAL SYMBOL FOR COMPARISON
~~01102~~   2 ~~00001~~ 1 ~~01073~~          TIX NXTNAM,1,1            GET NEXT BCD CHARACTER FOR COMPARISON
01103  -0 53400 4 01152 RETNA   LXD IR4,4
01104  -0 53400 2 01151          LXD IR2,2
01105  -0 53400 1 01150          LXD IR1,1
01106   0 02000 4 00001          TRA 1,4
01107   0 56000 0 01176 WRONG    LDQ NAME
01110   0 07400 4 01033 CHATSX   TSX ERROR,4
01111  -0 76000 0 00003          SSM                       SIGNAL THAT ERROR HAS BEEN PICKED UP
01112   0 02000 0 01103          TRA RETNA
                                 ENTER WITH HASH IN AC + MQ. EXIT SAME EXCEPT WHERE NO MATCH-
                                 THEN MINUS
01113   0 56000 0 01176 CHECKB   LDQ NAME
01114  -0 63400 4 01152          SXD IR4,4
01115   0 53400 4 01215          LXA IJK,4
01116  -0 75400 0 00000          PXD 0,0
01117  -0 76300 0 00006          LGL 6
01120   0 34000 4 01215  BCAS    CAS IJK,4
```

```
01121   0 02000 0 01123          TRA BTIX
01122   0 02000 0 01127          TRA RETNB
01123   2 00001 4 01120  BTIX    TIX BCAS,4,1
01124   0 56000 0 01176          LDQ NAME
01125   0 07400 4 01033 CHBTSX   TSX ERROR,4
01126  -0 76000 0 00003          SSM
01127  -0 53400 4 01152  RETNB   LXD IR4,4
01130   0 02000 4 00001          TRA 1,4
                                 ENTER WITH BETA FROM TIFGO ENTRIES WHICH ARE MINUS OR HAVE 0,
                                 3,4,5 OR 6 IN ADDRESS OF 1ST WORD. TIFGO 1 AND 2 ARE ALREADY
                                 IN BETA TABLE. EXIT WITH SAME.
01131  -0 63400 4 01177 MORBTS   SXD ERAS,4
01132  -0 53400 4 00572          LXD BETANB,4
01133   0 60100 4 75434 STOBET   STO BETA,4
01134   1 77777 4 01135          TXI STBET,4,-1
01135  -0 63400 4 00572 STBET    SXD BETANB,4
01136  -0 63400 4 00572          SXD BETANB,4
01137  -0 53400 4 01177          LXD ERAS,4
01140   0 02000 4 00001          TRA 1,4
01141  -0 63400 4 01177 ADOB     SXD ERAS,4
01142  -0 53400 4 01173          LXD ERNBR,4
01143   0 50000 1 77633          CLA TABLE,1
01144   0 60100 4 77777          STO ERLIST,4
01145   0 50000 1 77632          CLA TABLE-1,1
01146   0 60100 4 77776          STO ERLIST-1,4
01147   1 00002 4 01044          TXI NEXTA,4,2
A  01150   0 00000 0 00000  IR1    HTR
01151   0 00000 0 00002  IR2    HTR 2
01152   0 00000 0 00000  IR4    HTR 0
01153   0 00000 0 00001 ADDONE  HTR 1
01154   0 00001 0 00000 DECONE  HTR 0,0,1
01155   0 00002 0 00000 DECTWO  HTR 0,0,2
01156   0 00003 0 00000 DECTRE  HTR 0,0,3
01157 +000000077777     ADDMSK OCT 000000077777
01160 +000000700000     TAGMSK OCT 000000700000
01161 +077777000000     DECMSK OCT 077777000000
01162 +377777777777      MSK35 OCT 377777777777
01163   0 70000 1 77633 ADTABL  CPY TABLE,1
01164   0 00000 0 75433 ADTIFG  HTR TIFGOT
01165   0 70000 4 75435 ADTRAD  CPY TRADT,4
01166   0 00000 0 00060 CPTRAD  HTR COPYAA
01167   0 00000 0 01063 CHNONX  HTR INFORM
01170   0 00000 0 00000   ALFA
01171   0 00000 0 00325 TW13    HTR 213
01172   0 00000 0 00000 TRADNB
01173   0 00000 0 00000   ERNBR
01174   0 00000 0 00000   IDENT
01175   0 00000 0 00000 WDCONT
01176   0 00000 0 00000   NAME
01177   0 00000 0 00000   ERAS
01200   0 00000 0 00000 XERAS
01201   0 00000 0 00000   BST                STORE NUMBER OF TIMES WORD COUNT WRONG
01202   0 00000 0 00000   BSTA               DITTO IDENTIFICATION
01203   0 00000 0 00000   DOTAG
```

```
01204   0 00000 0 00000 DOBETA
01205   0 76100 0 00000   NOP     NOP
01206   0 00000 0 00000 FRETNB
01207   000000000031              BCD 100000I
01210   000000000042              BCD 100000K
01211   000000000041              BCD 100000J
01212   000000000043              BCD 100000L
01213   000000000044              BCD 100000M
01214   000000000045              BCD 100000N
01215   0 00000 0 00006   IJK     HTR 6,0,0
01216   000000000020              BCD 100000+
01217  +000000000014              OCT 000000000014          OTHER MINUS SIGN
01220   000000000040              BCD 100000-
01221   000000000061              BCD 100000/
01222   000000000053              BCD 100000$
01223   000000000074              BCD 100000(
01224   000000000034              BCD 100000)
01225   000000000013              BCD 100000=
01226   000000000073              BCD 100000,
01227   000000000033              BCD 100000.
01230   000000000054              BCD 100000*
01231   0 00006 0 00013 SYMBL     HTR 11,0,6
01232   0 00000 0 00076 AFTRSZ    HTR IDNTFY
01233  +000000000013              OCT 000000000013
01234   0 00000 0 00155           HTR SUBARG
01235  +000000000014              OCT 000000000014
01236   0 00000 0 00167           HTR UPPER
01237  +000000000000              OCT 000000000000
01240   0 00000 0 00202           HTR TEIFNO
01241  +000000000002              OCT 000000000002
01242   0 00000 0 00220           HTR TIFGO
01243  +000000000003              OCT 000000000003
01244   0 00000 0 00232           HTR TRAD
01245  +000000000001              OCT 000000000001
01246   0 00000 0 00604           HTR TDO
01247  +000000000007              OCT 000000000007
01250   0 00000 0 00732           HTR FRET
01251  +000000000010              OCT 000000000010
01252   0 00000 0 00765           HTR EQUIV
01253   0 00000 0 00020 TAPTAB    HTR 16
01254   2 00001 1 01255 PTCH      TIX SZW,1,1               SIZ TABLE HAS CHECK SUM ENTRY NOT
01255  -0 75400 1 00000   SZW     PXD 0,1                   NOT INCLUDED IN WORD COUNT
01256   0 77100 0 00022           ARS 18
01257   0 02000 0 00063           TRA SUBWDS
01260   0 50000 0 01163 PATIF     CLA ADTABL
01261   0 60100 0 00056           STO COPY
01262   0 02000 0 00122           TRA NOTIFG
01263   0 76200 0 00222 SPACE2    RTB 2
01264   0 76200 0 00222           RTB 2
01265   0 76600 0 00333           IOD
01266  -0 76000 0 00012           RTT
01267   0 76100 0 00000           NOP
01270   0 02000 0 00004           TRA 4
01271   0 10000 0 00577 PAQADD    TZE NXTALF
```

```
01272   0 40000 0 01153          ADD ADDONE
01273   0 02000 0 00562          TRA ADDQ
01274  -0 63400 2 01301 PATS2    SXD PATERA,2
01275   0 53400 2 01152          LXA IR4,2
01276   0 02000 0 01051          TRA CASH
01277  -0 53400 2 01301 PATRE2   LXD PATERA,2
01300   0 02000 4 00001          TRA 1,4
01301   0 00000 0 00000 PATERA
A                       00000    END
```

```
1        REM BLOCK ONE OF SECTION TWO.
1                                   BLOCK ONE OF SECTION TWO.
                                       MASTER RECORD CARD = FN027                                F2100000
                                    BLOCK ONE OF SECTION TWO PERFORMS THE                        F2100001
                                    PRELIMINARY DO NEST STRUCTURE ANALYSIS                       F2100002
                                    REQUIRED FOR THE SUCCEEDING BLOCKS. IT AXSIGNS               F2100003
                                    LEVEL NUMBERS AND THE POSSIBILITY OF CARRY.                  F2100004
                                    TRANSFERS OUT OF THE RANGE OF DOS ARE NOTED AND ENTERED      F2100005
                                    INTO TABLE TRALEV. IF THERE IS A VARIABLE                    F2100006
                                    PARAMETER OF A DO ITS HIGHEST LEVEL OF DEFINITION            F2100007
                                    IS ASSIGNED.                                                 F2100008
                                    FINALLY, A SEARCH IS MADE TO DETERMINE                       F2100009
                                    WHETHER A DO INDEX COUNTER IS                                F2100010
                                    NECESSARY TO KEEP CURRENT THE VALUES                         F2100011
                                    OF THE DO INDEX.                                             F2100012
                  00031         ORG 25                                                           F2100015
                  00031 DOTAG   BSS 1                                                            F2100017
                  00032         BSS 1349                                                         F2100020
                  02537 DOTAGZ  BSS 1                                                            F2100030
                  02540 TIFGO   BSS 1                                                            F2100040
                  02541         BSS 599                                                          F2100050
                  03670 TIFZ    BSS 1                                                            F2100060
                  03671 TRAD    BSS 1                                                            F2100070
                  03672         BSS 249                                                          F2100080
                  04263 TRADZ   BSS 1                                                            F2100090
                  04264 TRALEV  BSS 1                                                            F2100100
                  04265         BSS 599                                                          F2100110
                  05414 TLTZ    BSS 1                                                            F2100120
                  02540         ORG 1376                                                         F2100130
                  02540 FORVAL  BSS 1                                                            F2100140
                  02541         BSS 999                                                          F2100150
                  04510 4VALZ   BSS 1                                                            F2100160
                  02540         ORG 1376                                                         F2100170
                  02540 FORVAR  BSS 1                                                            F2100180
                  02541         BSS 1499                                                         F2100190
                  05474 4VARZ   BSS 1                                                            F2100200
                  00734         ORG 476                                                          F2100210
                  00734 FORTAG  BSS 1                                                            F2100220
                  00735         BSS 1499                                                         F2100230
                  03670 FORTZ   BSS 1                                                            F2100240
                                    PROGRAM C ONSTANTS                                           F2100250
                  05474         ORG 2876                                                         F2100260
05474  0 00000 0 00000 L(0)         0,0,0                                                        F2100270
05475  0 00001 0 00000 L(1)         0,0,1                                                        F2100280
05476  0 00002 0 00000 L(2)         0,0,2                                                        F2100290
05477  0 00003 0 00000 L(3)         0,0,3                                                        F2100300
05500  0 00004 0 00000 L(4)         0,0,4                                                        F2100310
05501  0 00005 0 00000 L(5)         0,0,5                                                        F2100320
05502  0 00006 0 00000 L(6)         0,0,6                                                        F2100330
05503  0 00011 0 00000 L(9)         0,0,9                                                        F2100340
05504  0 01130 0 00000 L(600)       0,0,600                                                      F2100350
05505  0 01750 0 00000 L(1000       0,0,1000                                                     F2100360
05506  0 02506 0 00000 L(1350       0,0,1350                                                     F2100370
05507  0 02734 0 00000 L(1500       0,0,1500                                                     F2100380
```

```
05510 -0 00000 0 00000 L(MZ)  MZE                                                F2100390
05511 +200000000000     BITONE OCT 200000000000                                  F2100400
05512 +100000000000     BITTWO OCT 100000000000                                  F2100410
05513 +077777077777     DECADD OCT 77777077777                                   F2100420
05514 +077777000000     DECMSK OCT 77777000000                                   F2100430
05515 +000000700000     TAGMSK OCT 700000                                        F2100440
05516 +000000077777     ADDMSK OCT 77777                                         F2100450
05517 -377777477777     NCMSK  OCT -377777477777                                 F2100460
05520 +000000100000     CR1    OCT 100000                                        F2100470
05521 +000000200000     CR2    OCT 200000                                        F2100480
                              BEGIN BLO CK ONE.                                  F2100490
05522  0 77200 0 00224 TAP00  REW 148                                           F2100500
05523  0 77200 0 00223        REW 147                                           F2100510
05524 -0 76000 0 00012        RTT                                               F2100520
05525  0 76100 0 00000        NOP                                               F2100530
05526  0 76400 0 00222        BST TTAPE          POSITION TAPE TWO              F2100540
05527 -0 53400 1 05503        LXD L(9),1         FOR READING IN TAPE            F2100550
05530  0 76400 0 00222 TAP10  BST TTAPE          TABLES                         F2100560
05531  2 00001 1 05530        TIX TAP10,1,1                                     F2100570
05532  0 76000 0 00140        PSE 96             ALL LIGHTS OFF                 F2100580
05533  0 76000 0 00142        PSE 98             TRALEV LIGHT 98 ON             F2100590
05534 -0 53400 2 05476        LXD L(2),2         READ                           F2100600
05535  0 50000 0 07153        CLA TIFAD          IN                             F2100610
05536  0 07400 4 07060        TSX RTAPE,4        TIEFGO                         F2100620
05537 -0 63400 1 02537        SXD TIFGO-1,1      SAVE NEXT UNUSED INDEX         F2100630
05540 -0 53400 2 05477        LXD L(3),2         READ                           F2100640
05541  0 50000 0 07154        CLA TRADAD         IN                             F2100650
05542  0 07400 4 07060        TSX RTAPE,4        TRAD                           F2100660
05543 -0 63400 1 03670        SXD TRAD-1,1       SAVE NEXT UNUSED INDEX         F2100670
05544 -0 53400 2 05475        LXD L(1),2         READ                           F2100680
05545  0 50000 0 07151        CLA DOAD           IN                             F2100690
05546  0 07400 4 07060        TSX RTAPE,4        TDO WITH DOTAG FORMAT          F2100700
05547 -0 63400 1 00030        SXD DOTAG-1,1      SAVE NEXT UNUSED INDEX         F2100710
05550 -3 02505 1 05553        TXL MR00,1,1349    TEST FOR EMPTY DOTAG           F2100720
05551  0 76000 0 00143        PSE 99             DOTAG EMPTY                    F2100730
05552  0 02000 0 06567        TRA TS4VAL                                        F2100740
                              MR00 COMPUTES LEVEL, X, CARRY BITS.               F2100750
05553 -0 53400 1 00030 MR00   LXD DOTAG-1,1        INITIALIZE TEST              F2100760
05554 -0 63400 1 05630        SXD MR70,1         INSTRUCTION.                   F2100770
05555 -0 53400 1 05506        LXD L(1350,1       INITTALIZE XRA TO MAX DOTAG.   F2100780
05556  0 50000 0 05475 MR05   CLA L(1)           INITIALIZE LEVEL TO ONE        F2100790
05557 -0 73400 2 00000 MR10   PDX 0,2            PUT LEVEL IN XRB               F2100800
05560  0 60100 1 02544        STO DOTAGZ+5,1     STORE LEVEL IN L WORD          F2100810
05561  0 50000 1 02537        CLA DOTAGZ,1       INSPECT TAG OF FIRST WORD)     F2100820
05562 -0 63400 4 05567        SXD MR14,4                                        F2100830
05563  0 73400 4 00000        PAX 0,4                                           F2100840
05564  0 62200 0 05565        STD MR12                                          F2100850
05565  3 00000 4 05570 MR12   TXH MR15,4                                        F2100860
D
05566  0 02000 0 07303        TRA ERBETA         BETA LESS THAN OR EQUAL TO ALPHA F2100871
05567  0 00000 0 00000 MR14   HTR                                               F2100880
A
05570 -0 53400 4 05567 MR15   LXD MR14,4                                        F2100890
05571 -0 32000 0 05515        ANA TAGMSK         IF ZERO( TRA TO MR20)          F2100900
05572  0 10000 0 05576        TZE MR20           IF NOT ZERO( PUT BIT           F2100910
05573  0 50000 0 05512        CLA BITTWO         IN L WORD FOR X NOT            F2100920
```

```
05574 -0 60200 1 02544        ORS  DOTAGZ+5,1
05575  0 02000 0 05625        TRA  MR60
05576  0 50000 1 02542 MR20   CLA  DOTAGZ+3,1
05577  0 40200 1 02541        SUB  DOTAGZ+2,1
05600  0 40000 1 02543        ADD  DOTAGZ+4,1
05601  0 76500 0 00043        LRS  35
05602  0 22000 1 02543        DVH  DOTAGZ+4,1
05603  0 20000 1 02543        MPY  DOTAGZ+4,1
05604  0 76300 0 00043        LLS  35
05605  0 62100 1 02544        STA  DOTAGZ+5,1
05606 -3 00001 2 05625        TXL  MR60,2,1
05607  0 50000 4 02537        CLA  DOTAGZ,4
05610  0 77100 0 00017        ARS  15
05611  0 76000 0 00001        LBT
05612  0 02000 0 05614        TRA  MR30
05613  0 02000 0 05625        TRA  MR60
05614  0 50000 4 02537 MR30   CLA  DOTAGZ,4
05615 -0 32000 0 05513        ANA  DECADD
05616  0 40000 0 05475        ADD  L(1)
05617  0 40200 1 02537        SUB  DOTAGZ,1
05620 -0 10000 0 05623        TNZ  MR40
05621  0 50000 0 05520        CLA  CR1
05622  0 02000 0 05624        TRA  MR50
05623  0 50000 0 05521 MR40   CLA  CR2
05624 -0 60200 1 02544 MR50   ORS  DOTAGZ+5,1
05625 -0 75400 1 00000 MR60   PXD  0,1
05626 -0 73400 4 00000        PDX  0,4
05627  1 77767 1 05630        TXI  MR70,1,-9
05630 -3 00000 1 07316 MR70   TXL  ERTST,1,0
05631  0 50000 1 02537        CLA  DOTAGZ,1
05632 -0 32000 0 05516        ANA  ADDMSK
05633  0 60100 0 05660        STO  MRES
05634  0 50000 4 02537 MR75   CLA  DOTAGZ,4
05635 -0 32000 0 05516        ANA  ADDMSK
05636  0 60100 0 05661        STO  MRES1
05637  0 40200 0 05660        SUB  MRES
05640 -0 12000 0 05645        TMI  MR80
05641  0 50000 4 02544        CLA  DOTAGZ+5,4
05642 -0 32000 0 05514        ANA  DECMSK
05643  0 40000 0 05475        ADD  L(1)
05644  0 02000 0 05557        TRA  MR10
05645  0 50000 1 02537 MR80   CLA  DOTAGZ,1
05646 -0 32000 0 05514        ANA  DECMSK
05647  0 77100 0 00022        ARS  18
05650  0 34000 0 05661        CAS  MRES1
05651  0 02000 0 05654        TRA  MR85
05652  0 02000 0 07263        TRA  ERLIST
05653  0 02000 0 07263        TRA  ERLIST
05654  0 50000 4 02544 MR85   CLA  DOTAGZ+5,4
05655 -0 73400 2 00000        PDX  0,2
05656 -3 00001 2 05556        TXL  MR05,2,1
05657  1 00011 4 05634        TXI  MR75,4,9
A 05660  0 00000 0 00000 MRES   HTR
A 05661  0 00000 0 00000 MRES1  HTR
```

```
      COMPUTABLE AND GO TO                          F2100930
      END.                                          F2100940
      COMPUTE X AND STORE IN                        F2100950
      L WORD                                        F2100960
                                                    F2100970
                                                    F2100980
                                                    F2100990
                                                    F2101000
                                                    F2101010
                                                    F2101020
      IF L IS ONE( SKIP CARRY TEST)                 F2101030
      OBTAIN NEXT BACK SUBNEST                      F2101040
      DO( FIRST WORD. IN SPECT TAG                  F2101050
      FOR VARIABLE N3) IF NOT                       F2101060
      0) VARIABLE( CONTINUE WITH MR30,              F2101070
      1) OTHERWISE GO TO END.                       F2101080
      OBTAIN FIRST WORD OF NEXT                     F2101090
      BACK SUBNEST DO, REMOVE                       F2101100
      TAG, AND ADD ONE TO ALPHA.                    F2101110
      SUB FIRST WORD CURRENT DO                     F2101120
      (TAG IS ZERO). IF RESULT IS                   F2101130
      ZERO, CARRY IS TYPE ONE,                      F2101140
      IF NOT ZERO, CARRY IS TYPE                    F2101150
      TWO. INDICATE TYPE IN                         F2101160
      L WORD OF CURRENT DO.                         F2101170
      MAKE CURRENT DO NEXT BACK                     F2101180
      SUBNEST DO.                                   F2101190
      TAKE NEXT DO IN DOTAG.                        F2101200
NO MORE DOS, EXIT TO TEST IF ERRORS                 F2101211
      OBTAIN FIRST WORD NEW DO.                     F2101220
      OBTAIN BETA                                   F2101230
      AND SAVE                                      F2101240
      OBTAIN BETA OF XRC DO,                        F2101250
      AND SUBTRCT NEW BETA.                         F2101260
                                                    F2101270
      IF NOT NEGATIVE, XRC DO                       F2101280
      CONTAINS NEW DO. OTHERWISE, TRA.              F2101290
      XRC DO CONTAINS NEW DO.                       F2101300
      OBTAIN LEVEL OF XRC DO,                       F2101310
      ADD ONE, STORE IN L.                          F2101320
      GO TO MR10                                    F2101330
                                                    F2101340
                                                    F2101350
                                                    F2101360
                                                    F2101370
      ALPHA(XRA) GREATER THAN BETA(XRC)             F2101380
EQUALITY                                            F2101391
LESS THAN                                           F2101401
                                                    F2101410
      NEWDO. IF XRL DO IS OF                        F2101420
      LEVEL ONE, START NEW NEST                     F2101430
      BY TRA TO MR05. ELSE TRA MR75.                F2101440
      ES                                            F2101450
                                                    F2101460
```

```
                                    FLOW, TRANSFER ANALYSIS.                                    F2101470
05662 -0 53400 4 02537 FLOW   LXD TIFGO-1,4                TEST FOR EMPTY TIFGO                 F2101480
05663  3 01127 4 06307        TXH SV00,4,599                                                    F2101490
05664 -0 53400 1 00030        LXD DOTAG-1,1                INITIALIZE                           F2101500
05665 -0 63400 1 05703        SXD FL030,1                  TEST                                 F2101510
05666 -0 63400 4 05723        SXD FL060,4                  INSTRUCTIONS                         F2101520
05667 -0 63400 1 06240        SXD ADL60,1                                                       F2101530
05670 -0 63400 1 06113        SXD INC40,1                                                       F2101540
05671 -0 63400 1 06166        SXD RNC70,1                                                       F2101550
05672  0 53400 1 06274        LXA TLT50,1                  INITIALIZE TRALEV                    F2101560
05673 -0 63400 1 06274        SXD TLT50,1                  INDEX VALUE                          F2101570
05674 -0 53400 4 05504 FL010  LXD L(600),4                 INITIALIZE                           F2101580
05675 -0 63400 4 06306        SXD TIFX,4                   CURRENT TIFGO INDEX                  F2101590
05676 -0 53400 1 05506        LXD L(1350,1                 INITIALIZE XRA, DOTAG INDEX          F2101600
05677  0 50000 1 02544 FL015  CLA DOTAGZ+5,1               OBTAIN LEVEL OF DO                   F2101610
05700 -0 73400 2 00000        PDX 0,2                      AND                                  F2101620
05701 -3 00001 2 05705        TXL FL040,2,1                TRA IF LEVEL ONE. IF NOT             F2101630
05702  1 77767 1 05703 FL020  TXI FL030,1,-9               LEVEL ONE, FIND NEXT                 F2101640
D 05703  3 00000 1 05677 FL030  TXH FL015,1                  LEVEL ONE, IF ANY.                   F2101650
05704  0 02000 0 05775        TRA FLOEND                                                        F2101660
05705 -0 63400 1 06275 FL040  SXD BNX,1                    SAVE BEGINNING OF NEST INDEX.        F2101670
05706  0 50000 1 02537        CLA DOTAGZ,1                 INITIALIZE                           F2101680
05707  0 73400 2 00000        PAX 0,2                      BEGINNING OF NEST                    F2101690
05710 -0 32000 0 05514        ANA DECMSK                   AND                                  F2101700
05711  0 60100 0 06276        STO BNA                      END OF NEST                          F2101710
05712 -0 75400 2 00000        PXD 0,2                      ADDRESSES                            F2101720
05713  0 60100 0 06277        STO ENA                                                           F2101730
05714 -0 53400 4 06306        LXD TIFX,4                   OBTAIN CURRENT TIFGO INDEX           F2101740
05715  0 50000 4 03670 FL050  CLA TIFZ,4                   AND SEARCH FOR TIFGO                 F2101750
05716 -0 32000 0 05514        ANA DECMSK                   ENTRY IN NEST.                       F2101760
05717  0 34000 0 06276        CAS BNA                      COMPARE WITH BNA                     F2101770
05720  0 02000 0 05727        TRA FL070                    GREATER THAN OR EQUAL TO             F2101780
05721  0 07400 4 00004        TSX DIAG,4  BNA, MAY BE IN NEST.        ERROR. GO TO DIAGNOSTIC. F2101795
05722  1 77776 4 05723 FL055  TXI FL060,4,-2               LESS THAN BNA, GO BACK               F2101800
D 05723  3 00000 4 05715 FL060  TXH FL050,4                  FOR NEXT TIFGO ENTRY,                F2101810
05724  0 02000 0 05775        TRA FLOEND                   IF ANY. IF NONE, EXIT                F2101820
05725 -0 53400 1 06275 FL065  LXD BNX,1                                                         F2101830
05726  0 02000 0 05702        TRA FL020                                                         F2101840
05727 -0 63400 4 06306 FL070  SXD TIFX,4                   SAVE CURRENT TIFGO INDEX             F2101850
05730  0 34000 0 06277        CAS ENA                      COMPARE G AND ENA                    F2101860
05731  0 02000 0 05725        TRA FL065                    G GREATER, GO BACK FOR NEXT NEST.    F2101870
05732  0 76100 0 00000        NOP                          G EQUAL TO                           F2101880
05733  0 60100 0 06300        STO G                        OR LESS THAN G, SAVE G.              F2101890
05734  0 50000 4 03670        CLA TIFZ,4                   TEST FOR THREE ADDRESS IF.           F2101900
05735 -0 12000 0 05743        TMI FL075                    USE ADDRESS TO DETERMINE             F2101910
05736  0 73400 2 00000        PAX 0,2                      WHETHER OR NOT THIS IS AN            F2101920
05737 -3 00005 2 05743        TXL FL075,2,5                ASSIGN FORMULA. IF IT IS,            F2101930
05740 -3 00006 2 05722        TXL FL055,2,6                IGNORE, TAKE NEXT TIFGO ENTRY        F2101940
05741 -3 00007 2 05743        TXL FL075,2,7                TEST FOR ADD. GREATER THAN           F2101950
05742  0 07400 4 00004        TSX DIAG,4  SEVEN.                      ERROR. GO TO DIAGNOSTIC. F2101965
05743  0 50000 0 06300 FL075  CLA G                        OBTAIN G                             F2101970
05744 -0 53400 1 06275        LXD BNX,1                    OBTAIN CURRENT NEST INDEX            F2101980
05745  0 07400 4 06216        TSX ADLOC,4                  OBTAIN XDG AND LDG                   F2101990
05746  0 50000 0 05511        CLA BITONE                   PUT BIT IN DOTAG FOR TRA             F2102000
```

```
05747 -0 60200 1 02545          ORS DOTAGZ+6,1
05750 -0 75400 1 00000          PXD 0,1
05751  0 60100 0 06301          STO XDG
05752 -0 75400 2 00000          PXD 0,2
05753  0 60100 0 06302          STO LDG
05754  0 50200 0 06300          CLS G
05755  0 07400 4 06253          TSX TLT00,4
05756 -0 53400 4 06306          LXD TIFX,4
05757  0 50000 4 03670          CLA TIFZ,4
05760 -0 12000 0 06001          TMI 3ADIF
05761  0 73400 2 00000          PAX 0,2
05762  0 02000 2 05772 FL080    TRA FL080+8,2
05763  0 07400 4 00004          TSX DIAG,4  7, ROYS TRA.
05764  0 07400 4 00004          TSX DIAG,4  6, ASSIGN FORMULA
05765  0 02000 0 06005          TRA 2ADIF
05766  0 02000 0 06005          TRA 2ADIF
05767  0 02000 0 06005          TRA 2ADIF
05770  0 02000 0 06016          TRA GOTOVN
05771  0 02000 0 06016          TRA GOTOVN
05772  0 02000 0 06011          TRA GOTOK
05773 -0 53400 4 06306 FL090    LXD TIFX,4
05774  1 77776 4 05723          TXI FL060,4,-2
05775 -0 53400 1 06274 FLOEND   LXD TLT50,1
05776  3 01127 1 06307          TXH SV00,1,599
05777  0 07400 4 06261          TSX TLT20,4
06000  0 02000 0 06307          TRA SV00
                                CONTROL ROUTINES

06001 -0 32000 0 05516 3ADIF    ANA ADDMSK
06002  0 76700 0 00022          ALS 18
06003  0 07400 4 06033          TSX FA000,4
06004 -0 53400 4 06306          LXD TIFX,4
06005  0 50000 4 03671 2ADIF    CLA TIFZ+1,4
06006 -0 32000 0 05514          ANA DECMSK
06007  0 07400 4 06033          TSX FA000,4
06010 -0 53400 4 06306          LXD TIFX,4
06011  0 50000 4 03671 GOTOK    CLA TIFZ+1,4
06012 -0 32000 0 05516          ANA ADDMSK
06013  0 76700 0 00022          ALS 18
06014  0 07400 4 06033          TSX FA000,4
06015  0 02000 0 05773          TRA FL090
06016  0 50000 4 03671 GOTOVN   CLA TIFZ+1,4
06017  0 73400 4 00000          PAX 0,4
06020 -0 63400 4 06031          SXD GTV20,4
06021 -0 73400 4 00000          PDX 0,4
06022  0 02000 0 06031          TRA GTV20
06023  0 50000 4 04263 GTV10    CLA TRADZ,4
06024  0 76700 0 00022          ALS 18
06025 -0 63400 4 06032          SXD GTV30,4
06026  0 07400 4 06033          TSX FA000,4
06027 -0 53400 4 06032          LXD GTV30,4
06030  1 77777 4 06031          TXI GTV20,4,-1
06031  3 00000 4 06023 GTV20    TXH GTV10,4
06032 -3 00000 0 05773 GTV30    TXL FL090,0
                                ANALYSIS OF ADDRESS
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IN IMMEDIATE RANGE.                          F2102010
SAVE                                         F2102020
XDG                                          F2102030
AND                                          F2102040
LDG                                          F2102050
LIST MINUS G                                 F2102060
IN TRALEV BUFFER.                            F2102070
OBTAIN FIRST WORD OF                         F2102080
TIFGO ENTRY                                  F2102090
TRA IF 3ADIF                                 F2102100
PUT ADDRESS IN XRB                           F2102110
INDEXED TRA.                                 F2102120
          ERROR. GO TO DIAGNOSTIC.           F2102135
          ERROR. GO TO DIAGNOSTIC.           F2102145
5, 2 ADDRESS TYPE                            F2102150
4, 2 ADIF                                    F2102160
3, 2ADIF                                     F2102170
2 VECTOR TYPE TRA                            F2102180
1 GO TO N (ASSIGN)                           F2102190
0 GO TO CONSTANT                             F2102200
GO BACK FOR NEXT                             F2102210
TIFGO ENTRY.                                 F2102220
TEST IF ANY TRALEV ENTRIES                   F2102230
                                             F2102240
IF SO, GO TO WRITE ROUTINE                   F2102250
                                             F2102260
                                             F2102270
THE FOLLOWING ROUTINES                       F2102280
ARRANGE TO PROCESS ALL OF                    F2102290
THE ADDRESSES ASSOCIATED                     F2102300
WITH THE TIFGO ENTRY,                        F2102310
ONE AT A TIME.                               F2102320
WHEN ALL ADDRESSES                           F2102330
ARE PROCESSED,                               F2102340
CONTROL IS RETURED TO                        F2102350
FL090 FOR NEXT                               F2102360
TIFGO ENTRY.                                 F2102370
                                             F2102380
                                             F2102390
                                             F2102400
FOR GOTOV TRANSFERS,                         F2102410
USE WORD TWO                                 F2102420
FOR INDEXING                                 F2102430
VALUES NECESSARY                             F2102440
                                             F2102450
TO GET ADDRESSES                             F2102460
FROM TABLE TRAD.                             F2102470
FOR GOTON (ASSIGN) TYPE                      F2102480
TRANSFERS, ALL ADDRESSES                     F2102490
MUST BE PROCESSED EVEN                       F2102500
THOUGH THEY ARE ON SAME                      F2102510
LEVEL BECAUSE OF                             F2102520
CARRY RESTRICTIONS.                          F2102530
                                             F2102540
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      06033 -0 63400 4 06076 FA000  SXD RS60,4                    SAVE TSX SET                                    F2102550
      06034  0 60100 0 06303        STO A                         SAVE ADDRESS                                    F2102560
      06035 -0 53400 1 06275        LXD BNX,1                     OBTAIN                                          F2102570
      06036  0 07400 4 06216        TSX ADLOC,4                   INDEX OF DO CONTAINING                          F2102580
      06037 -0 75400 1 00000        PXD 0,1                       ADDRESS AND LEVEL OF                            F2102590
      06040  0 60100 0 06304        STO XDA                       THAT DO.                                        F2102600
      06041 -0 75400 2 00000        PXD 0,2                       SAVE IN                                         F2102610
      06042  0 60100 0 06305        STO LDA                       XDA AND LDA.                                    F2102620
      06043 -3 00024 2 06045        TXL FA010,2,20                TEST LEVEL                                      F2102630
      06044  0 07400 4 00004        TSX DIAG,4  LEV. ADD OF TRA EXCEEDS 20. ERROR. GO TO DIAGNOSTIC.              F2102645
      06045  0 77100 0 00022 FA010  ARS 18                                                                       F2102650
      06046  0 62100 0 06051        STA FA020                     TRANSFER                                        F2102660
      06047 -0 50000 0 05510        CAL L(MZ)                     LEVEL IN                                        F2102670
      06050 -0 53400 1 06301        LXD XDG,1                     XDG DO.                                         F2102680
                                                                                                                  F2102690
A     06051  0 77100 0 00000 FA020  ARS                                                                         F2102700
      06052 -0 60200 1 02546        ORS DOTAGZ+7,1                                                              F2102710
      06053  0 50000 0 06305        CLA LDA                       LIST                                            F2102720
      06054  0 77100 0 00022        ARS 18                        ADDRESS AND LEVEL                               F2102730
      06055  0 40000 0 06303        ADD A                         IN                                              F2102740
      06056  0 07400 4 06253        TSX TLT00,4                   TLT. CONTINUE WITH RS00                         F2102750
                                    TRANSFER BIT INSERTION IN DO FORMULA                                        F2102760
      06057 -0 53400 1 06301 RS00   LXD XDG,1                     XRA CONTAINS XDG                                F2102770
      06060 -0 53400 2 06302        LXD LDG,2                     XRB CONTAINS LDG                                F2102780
      06061 -0 75400 2 00000 RS10   PXD 0,2                       IF G AND A IN SAME DO,                          F2102790
      06062  0 40200 0 06305        SUB LDA                       EXIT. THIS ROUTINE INSERTS                      F2102800
      06063  0 10000 0 06077        TZE INC00                     BIT MEANING THERE IS A JUMP                     F2102810
      06064  0 12000 0 06066        TPL RS20                      OUT OF THE RANGE OF THIS DO.                    F2102825
      06065  0 07400 4 00004        TSX DIAG,4  JUMP INTO HIGHER LEVEL.     ERROR. GO TO DIAGNOSTIC.            F2102830
      06066 -0 50000 0 05510 RS20   CAL L(MZ)                                                                    F2102840
      06067 -0 60200 1 02544        ORS DOTAGZ+5,1                                                              F2102850
      06070 -3 00001 2 06077        TXL INC00,2,1                 FIND NEXT BACK SUBNEST                          F2102860
      06071  1 00011 1 06072 RS30   TXI RS40,1,9                  DO FORMULA                                      F2102870
      06072  0 50000 1 02544 RS40   CLA DOTAGZ+5,1                AND RETURN                                      F2102880
      06073  0 62200 0 06074        STD RS50                      TO TEST                                         F2102890
D     06074 -3 00000 2 06071 RS50   TXL RS30,2                    LEVEL                                           F2102900
      06075 -0 73400 2 00000        PDX 0,2                       AT                                              F2102910
D     06076 -3 00000 0 06061 RS60   TXL RS10,0                    RS10                                            F2102920
                                    INDEXING NO CARRY CONDITION                                                 F2102930
      06077  0 50000 0 06305 INC00  CLA LDA                       EXIT IF                                         F2102940
      06100  0 10000 0 06142        TZE RNC00                     LDA IS ZERO.                                    F2102950
      06101  0 50000 0 06300        CLA G                         PLACE G ANDA                                    F2102960
      06102  0 56000 0 06303        LDQ A                         IN                                              F2102970
      06103  0 04000 0 06107        TLQ INC20                     INCX AND INCY SO THAT                           F2102980
      06104  0 60100 0 06140        STO INCX                      INCX IS LESS THAN INCY.                         F2102990
      06105 -0 60000 0 06141        STQ INCY                                                                      F2103000
      06106  0 02000 0 06111        TRA INC30                                                                     F2103010
      06107 -0 60000 0 06140 INC20  STQ INCX                                                                      F2103020
      06110  0 60100 0 06141        STO INCY                                                                      F2103030
      06111 -0 53400 1 06304 INC30  LXD XDA,1                     INITIALIZE XRA                                  F2103040
      06112  1 77767 1 06113 INC35  TXI INC40,1,-9                FIND DO OF LEVEL LDA                            F2103050
D     06113 -3 00000 1 06142 INC40  TXL RNC00,1                   PLUS ONE.                                       F2103060
      06114  0 50000 1 02544        CLA DOTAGZ+5,1                                                              F2103070
      06115 -0 32000 0 05514        ANA DECMSK                                                                    F2103080
      06116  0 40200 0 06305        SUB LDA
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     06117  0 40200 0 05475          SUB L(1)                                                  F2103090
     06120  0 10000 0 06123          TZE INC50                  DO OF LEVEL LDA PLUS ONE FOUND.  F2103100
     06121  0 12000 0 06112          TPL INC35                  LEVEL TO HIGH, GO BACK.          F2103110
     06122  0 02000 0 06142          TRA RNC00                  LEVEL TO LOW, DA EXHAUSTED.      F2103120
     06123  0 50000 1 02537 INC50    CLA DOTAGZ,1               OBTAIN BETA OF                   F2103130
     06124  0 73400 2 00000          PAX 0,2                    THIS DO IN DECREMENT.            F2103140
     06125 -0 75400 2 00000          PXD 0,2                                                     F2103150
     06126  0 34000 0 06141          CAS INCY                   COMPARE WITY INCY.               F2103160
     06127  0 02000 0 06142          TRA RNC00                  GREATER THAN OR EQUAL TO         F2103170
     06130  0 02000 0 06142          TRA RNC00                  GREATEST OF G, A, EXIT.          F2103180
     06131  0 34000 0 06140          CAS INCX                   LESS THAN INCY, COMPARE          F2103190
     06132  0 02000 0 06135          TRA INC60                  WITH INCX. GREATER THAN          F2103200
     06133  0 02000 0 06135          TRA INC60                  OR EQUAL TO INCX, GO TO INC60.   F2103210
     06134  0 02000 0 06112          TRA INC35                  LESS THAN INCX, GET NEXT DO.     F2103220
     06135 -0 50000 0 05517 INC60    CAL NCMSK                  AND OUT CARRY BITS.              F2103230
     06136  0 32000 1 02544          ANS DOTAGZ+5,1                                              F2103240
     06137  0 02000 0 06112          TRA INC35                  GO BACK FOR NEXT DO.             F2103250
A    06140  0 00000 0 00000 INCX     HTR                        ES.                              F2103260
A    06141  0 00000 0 00000 INCY     HTR                        ES.                              F2103270
                                         RESET NO CARRY CONDITION. NO CARRY TRANSFER LEVEL        F2103280
     06142  0 50000 0 06305 RNC00    CLA LDA                    EXIT IF LDA IS ZERO              F2103290
     06143  0 10000 0 06214          TZE RNC95                                                   F2103300
     06144  0 50000 0 06302          CLA LDG                    EXIT IF                          F2103310
     06145  0 40200 0 06305          SUB LDA                    LDA EQUALS                       F2103320
     06146  0 10000 0 06214          TZE RNC95                  LDG                              F2103330
     06147 -0 73400 4 00000          PDX 0,4                    INITIALIZE COUNTER XR6           F2103340
     06150 -0 53400 1 06301          LXD XDG,1                  INITIALIZE XRA                   F2103350
     06151  0 50000 0 06302          CLA LDG                    AND                              F2103360
     06152 -0 73400 2 00000          PDX 0,2                    XRB. C(ACC) LDG.                 F2103370
     06153  1 00001 2 06161          TXI RNC50,2,1              C(XRB) LDG PLUS ONE.             F2103380
     06154  1 00011 1 06155 RNC20    TXI RNC30,1,9              FIND NEXT BACK                   F2103390
     06155  3 02506 1 06214 RNC30    TXH RNC95,1,1350           SUBNESTDO.                       F2103400
     06156  0 50000 1 02544          CLA DOTAGZ+5,1                                              F2103410
     06157  0 62200 0 06160          STD RNC40                                                   F2103420
D    06160 -3 00000 2 06154 RNC40    TXL RNC20,2                                                 F2103430
     06161 -0 63400 1 06206 RNC50    SXD RNC75,1                SAVE XRA                         F2103440
     06162  0 62200 0 06212          STD RNC85                  SAVE LEVEL OF THIS DO            F2103450
     06163 -0 75400 2 00000          PXD 0,2                    SAVE LEVEL OF NEXT INNER         F2103460
     06164  0 60100 0 06213          STO RNC90                  SUBNEST DO.                      F2103470
     06165  1 77767 1 06166 RNC60    TXI RNC70,1,-9             TAKE NEXT DOWN DO IF ANY.        F2103480
D    06166 -3 00000 1 06207 RNC70    TXL RNC80,1                                                 F2103490
     06167  0 50000 1 02537          CLA DOTAGZ,1               IF BETA                          F2103500
     06170 -0 32000 0 05516          ANA ADDMSK                 OF THIS DO                       F2103510
     06171  0 76700 0 00022          ALS 18                     IS LESS                          F2103520
     06172  0 40200 0 06300          SUB G                      THAN G,                          F2103530
     06173  0 12000 0 06207          TPL RNC80                  TEST LEVEL                       F2103540
     06174  0 50000 1 02544          CLA DOTAGZ+5,1             TO SEE IF                        F2103550
     06175 -0 32000 0 05514          ANA DECMSK                 THIS DO IS OF SAME               F2103560
     06176  0 40200 0 06213          SUB RNC90                  LEVEL AS NEXT INNERMOST          F2103570
     06177 -0 10000 0 06165          TNZ RNC60                  SUBNEST DO. IF NOT, GET NEXT DO. F2103580
     06200  0 50000 1 02545          CLA DOTAGZ+6,1             IF SO, MAKE NO CARRY             F2103590
     06201 -0 32000 0 05514          ANA DECMSK                 TRANSFER LEVEL OF THIS           F2103600
     06202  0 40200 0 06305          SUB LDA                    DO EQUAL TO GREATER              F2103610
     06203  0 12000 0 06165          TPL RNC60                  OF PREVIOUS VALUE                F2103620
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      06204   0 50000 0 06305         CLA LDA                    AND CURRENT LDA.                    F2103630
      06205   0 62200 1 02545         STD DOTAGZ+6,1                                                 F2103640
D     06206  -3 00000 0 06165 RNC75   TXL RNC60,0                GO BACK FOR NEXT TEST DO            F2103650
      06207  -0 53400 1 06206 RNC80   LXD RNC75,1                GO BACK FOR NEXT SUBNEST DO,        F2103660
      06210  -0 53400 2 06212         LXD RNC85,2                IF COUNTER PERMITS.                 F2103670
      06211   2 00001 4 06154         TIX RNC20,4,1              OTHERWISE, EXIT.                    F2103680
D     06212  -3 00000 0 06214 RNC85   TXL RNC95,0                                                   F2103690
A     06213   0 00000 0 00000 RNC90   HTR                        ES                                  F2103700
      06214  -0 53400 4 06076 RNC95   LXD RS60,4                 GO BACK TO CONTROL ROUTINE          F2103710
      06215   0 02000 4 00001         TRA 1,4                    FOR NEXT ADDRESS.                   F2103720
                                      INDEX AND LEVEL OF ADDRESS                                     F2103730
      06216  -0 63400 4 06226 ADLOC   SXD ADL20,4                SAVE TSX SET                        F2103740
      06217  -0 53400 4 05474         LXD L(0),4                 INITIALIZE XRC,                     F2103750
      06220  -0 63400 4 06227         SXD ADL30,4                AND DEC OF ADL30, PUT ADDRESS       F2103760
      06221   0 60100 0 06252         STO ADL90                  IN ADL90. XRA CONTAINS BNX          F2103770
      06222   0 50000 1 02537 ADL10   CLA DOTAGZ,1               OBTAIN FIRST WORD.                  F2103780
      06223   0 73400 2 00000         PAX 0,2                    SAVE BETA                           F2103790
      06224  -0 32000 0 05514         ANA DECMSK                 GET ALPHA ALONE.                    F2103800
      06225   0 34000 0 06252         CAS ADL90                  COMPARE WITH ADDRESS. IF            F2103810
D     06226  -3 00000 0 06244 ADL20   TXL ADL70,0                ALPHA NOT LESS THAN ADD, THEN       F2103820
D     06227  -3 00000 0 06244 ADL30   TXL ADL70,0                ADD IN LAST CHOOSEN DO.             F2103830
      06230  -0 75400 2 00000         PXD 0,2                    IF ALPHA LESS THAN ADD,             F2103840
      06231   0 34000 0 06252         CAS ADL90                  COMPARE WITH BETA.                  F2103850
      06232   0 76100 0 00000         NOP                        IF BETA IS NOT LESS THAN            F2103860
      06233   0 02000 0 06236         TRA ADL40                  ADDRESS, THIS DO CONTAINS           F2103870
      06234   3 00000 4 06237         TXH ADL50,4,0              ADDRESS. EXIT IF OUT OF NEST        F2103880
      06235   0 02000 0 06244         TRA ADL70                  TO ADL 70. OTHERWISE, GO TO 50      F2103890
      06236  -0 63400 1 06227 ADL40   SXD ADL30,1                IF DO IN THIS NEST, SXD.            F2103900
      06237   1 77767 1 06240 ADL50   TXI ADL60,1,-9              IN ANY CASE, TAKE NEXT DOWN         F2103910
D     06240  -3 00000 1 06244 ADL60   TXL ADL70,1                DO, IF ANY,                         F2103920
      06241   0 50000 1 02544         CLA DOTAGZ+5,1             PUT LEVEL IN XRC.                   F2103930
      06242  -0 73400 4 00000         PDX 0,4                    AND GO BACK FOR TEST                F2103940
      06243   3 00001 4 06222         TXH ADL10,4,1              UNLESS NGW DO HAS LEVEL ONE.        F2103950
      06244  -0 53400 3 06227 ADL70   LXD ADL30,3                OBTAIN XDA IN XRA, XRB.             F2103960
      06245  -3 00000 1 06250         TXL ADL80,1,0              EXIT IF ZERO.                       F2103970
      06246   0 50000 1 02544         CLA DOTAGZ+5,1             IF NOT ZERO, GET LDA IN             F2103980
      06247  -0 73400 2 00000         PDX 0,2                    XRB, PUT                            F2103990
      06250  -0 53400 4 06226 ADL80   LXD ADL20,4                TSX SET IN XRC                      F2104000
      06251   0 02000 4 00001         TRA 1,4                    AND RETURN.                         F2104010
A     06252   0 00000 0 00000 ADL90   HTR                                                            F2104020
                                      TRALEV LISTING                                                 F2104030
      06253  -0 53400 1 06274 TLT00   LXD TLT50,1                OBTAIN CURRENT TRALEV               F2104040
      06254   0 60100 1 05414         STO TLTZ,1                 INDEX. STORE ENTRY.                 F2104050
      06255   1 77777 1 06256         TXI TLT10,1,-1             IF TABLE NOW FULL, GO TO            F2104060
      06256  -0 63400 1 06274 TLT10   SXD TLT50,1                TAPE WRITING ROUTINE.               F2104070
      06257  -3 00000 1 06261         TXL TLT20,1,0              OTHERWISE, SAVE NEW INDEX           F2104080
      06260   0 02000 4 00001         TRA 1,4                    AND RETURN.                         F2104090
      06261   0 76600 0 00224 TLT20   WRS TLTAPE                 SELECT TAPE TO WRITE AWAY           F2104100
      06262  -0 53400 1 06274         LXD TLT50,1                BUFFER. INITIALIZE XRA              F2104110
      06263  -0 63400 1 06272         SXD TLT40,1                AND TEST INSTR.                     F2104120
      06264  -0 76000 0 00142         MSE 98                     TURN OFF TRALEV TAPE EMPTY          F2104130
      06265   0 76100 0 00000         NOP                        LIGHT                               F2104140
      06266   0 53400 1 06274         LXA TLT50,1                RE-INITIALIZE INDEX QUANTITIES      F2104150
      06267  -0 63400 1 06274         SXD TLT50,1                                                    F2104160
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     06270  0 70000 1 05414 TLT30  CPY TLTZ,1                  COPY BUFFER.                      F2104170
     06271  1 77777 1 06272        TXI TLT40,1,-1                                                F2104180
D    06272  3 00000 1 06270 TLT40  TXH TLT30,1                                                   F2104190
     06273  0 02000 4 00001        TRA 1,4                     RETURN.                           F2104200
     06274  0 00000 0 01130 TLT50  HTR 600                     BUFFER SIZE                       F2104210
                                     ES FORFLOW                                                  F2104220
                     06275 BNX    BSS 1                       BEGINNING OF NEST INDEX           F2104230
                     06276 BNA    BSS 1                       BEGINNING OF NEST ADDRESS         F2104240
                     06277 ENA    BSS 1                       END OF NEST ADDRESS               F2104250
                     06300 G      BSS 1                       GAMMA OF SOME TIFGO ENTRY         F2104260
                     06301 XDG    BSS 1                       INDEX OF DO WITH G IN IMMED.      F2104270
                     06302 LDG    BSS 1                       RANGE. LEVEL OF XDG.              F2104280
                     06303 A      BSS 1                       AN ADDRESS TO WHICH G TRANSFERS.  F2104290
                     06304 XDA    BSS 1                       INDEX OF DO WITH A IN IMMED.      F2104300
                     06305 LDA    BSS 1                       RANGE. LEVEL OF XDA.              F2104310
                     06306 TIFX   BSS 1                       CURRENT TIFGO INDEX.              F2104320
                                     DO SYMBOL DEFINITION OF VARIABLE RANGES AND INCREMENTS.     F2104330
     06307 -0 53400 1 00030 SV00   LXD DOTAG-1,1                                                 F2104340
     06310 -0 63400 1 06333        SXD SV80,1                                                    F2104350
     06311 -0 63400 1 06340        SXD SV95,1                                                    F2104360
     06312 -0 63400 1 06510        SXD TRA40,1                                                   F2104370
     06313 -0 53400 1 05506        LXD L(1350,1                INITIALIZE XRA                    F2104380
     06314 -0 63400 1 06325        SXD SV44,1                  SAVE CURRENT DO INDEX             F2104390
     06315 -0 63400 1 06345 SV10   SXD SV98,1                  SAVE NEST INDEX                   F2104400
     06316  0 50000 1 02537 SV20   CLA DOTAGZ,1                OBTAIN FIRST WORD CURRENT         F2104410
     06317 -0 32000 0 05515        ANA TAGMSK                  DO AND INSPECT TAG.               F2104420
     06320  0 10000 0 06337        TZE SV90                    IF ZERO, GO TO INDEXING.          F2104430
     06321 -0 53400 4 06345        LXD SV98,4                  OTHERWISE, NEST INDEX IN XRC.     F2104440
     06322  0 50000 4 02540 SV30   CLA DOTAGZ+1,4              OBTAIN SYM OF XRC,                F2104450
     06323 -0 53400 2 05477        LXD L(3),2                  INITIALIZE XRB COUNTER            F2104460
     06324  0 34000 1 02543 SV40   CAS DOTAGZ+4,1              AND TEST FOR SYM EQUALS VAR.N.    F2104470
D    06325 -3 00000 0 06327 SV44   TXL SV50,0                  CURRENT DO INDEX STORAGE.         F2104480
D    06326 -3 00000 0 06346 SV48   TXL SF00,0                  INDEX STO. OF N IN CUR. DO.       F2104490
     06327  1 00001 1 06330 SV50   TXI SV60,1,1                TAKE NEXT N, COUNT                F2104500
     06330  2 00001 2 06324 SV60   TIX SV40,2,1                IN XRB AND GO BACK.               F2104510
     06331 -0 53400 1 06325 SV65   LXD SV44,1                  SYM NOT VAR.N., PUT CURRENT       F2104520
     06332  1 77767 4 06333 SV70   TXI SV80,4,-9               DO INDEX IN XRA AND INDEX         F2104530
D    06333 -3 00000 4 06337 SV80   TXL SV90,4                  XRC. IF TABLE ENDS, G070 SU90.    F2104540
     06334  0 50000 4 02544        CLA DOTAGZ+5,4              OTHERWISE TEST FOR NEW NEST.      F2104550
     06335 -0 73400 2 00000        PDX 0,2                     IF NOT NEW NEST, GO BACK TO       F2104560
     06336  3 00001 2 06322        TXH SV30,2,1                TEST SYM. OTHERWISE.              F2104570
     06337  1 77767 1 06340 SV90   TXI SV95,1,-9               TAKE NEXT DOWN DO IF              F2104580
D    06340 -3 00000 1 06567 SV95   TXL TS4VAL,1                POSSIBLE. OTHERWISE, EXIT         F2104590
     06341 -0 63400 1 06325        SXD SV44,1                  SAVE CURRENT DO INDEX.            F2104600
     06342  0 50000 1 02544        CLA DOTAGZ+5,1                                                F2104610
     06343 -0 73400 2 00000        PDX 0,2                     INSPECT LEVEL.                    F2104620
     06344  3 00001 2 06316        TXH SV20,2,1                IF NOT NEW NEST, TRA SV20         F2104630
D    06345 -3 00000 0 06315 SV98   TXL SV10,0                  IF NEW NEST, SV10 (NEST INDEX STO.)F2104640
     06346 -0 63400 1 06326 SF00   SXD SV48,1                  SAVE INDEX OF N IN CURRENT DO.    F2104650
     06347 -0 63400 2 06356        SXD SF10,2                  SAVE N COUNTER.                   F2104660
     06350 -0 63400 4 06361        SXD SF15,4                                                    F2104670
     06351 -0 75400 4 00000        PXD 0,4                     SAVE INDEX OF SYMBOL DO           F2104680
     06352  0 60100 0 06467        STO SFES1                   IN FULL WORD.                     F2104690
     06353 -0 53400 1 06325        LXD SV44,1                  OBTAIN INDEX OF CURRENT DO        F2104700
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     06354 -0 75400 1 00000        PXD 0,1                  IN ACC. AND COMPARE                F2104710
     06355  0 34000 0 06467        CAS SFES1                WITH INDEX OF SYMBOL DO.           F2104720
D    06356 -3 00000 0 06362 SF10   TXL SF20,0               CURRENT INDEX GREATER.             F2104730
     06357  0 02000 0 06424        TRA SF79                 EQUALITY                           F2104740
     06360  0 76000 0 00141        PSE 97                   SYMBOL INDEX GREATER,              F2104750
D    06361 -3 00000 0 06366 SF15   TXL SF30,0               TURN ON LIGHT 97.                  F2104760
     06362 -0 53400 4 06325 SF20   LXD SV44,4               CUR. IND. GREATER, PUT IN XRC      F2104770
     06363 -0 53400 1 06467        LXD SFES1,1              SYM. IND. IN XRA.                  F2104780
     06364 -0 76000 0 00141        MSE 97                   LIGHT 97 OFF.                      F2104790
     06365  0 76100 0 00000        NOP                      AT SF30, XRA CONTAIN LEAST         F2104800
     06366 -0 75400 4 00000 SF30   PXD 0,4                  OF CUR. IND, SYM. IND. XRC         F2104810
     06367  0 60100 0 06467        STO SFES1                CONTAINS GREATER. PUT IN ES.       F2104820
     06370  0 50000 1 02544 SF35   CLA DOTAGZ+5,1           PUT LEVEL OF D(XRA) IN             F2104830
     06371 -0 73400 2 00000        PDX 0,2                  XRB. HALT IF                       F2104840
     06372  3 00001 2 06374        TXH SF40,2,1             LEVEL                              F2104850
     06373  0 07400 4 00004        TSX DIAG,4  IS ONE                ERROR. GO TO DIAGNOSTIC.  F2104865
     06374  1 00011 1 06375 SF40   TXI SF50,1,9             BACK UP IN XRA                     F2104870
     06375 -3 02506 1 06377 SF50   TXL SF60,1,1350          HALT IF TOP OD DOTAG               F2104880
     06376  0 07400 4 00004        TSX DIAG,4  PASSED.               ERROR. GO TO DIAGNOSTIC.  F2104895
     06377  0 50000 1 02544 SF60   CLA DOTAGZ+5,1           THIS ROUTINE, BY RAISING           F2104900
     06400  0 62200 0 06401        STD SF70                 XRA, EXITS TO SF80 OR              F2104910
D    06401 -3 00000 2 06374 SF70   TXL SF40,2               SF90 UPON FINDING A DO             F2104920
     06402 -0 75400 1 00000        PXD 0,1                  IN THE SUBNEST OF XRA              F2104930
     06403  0 34000 0 06467        CAS SFES1                WHICH IS THE DO OF XRC OR          F2104940
     06404  0 02000 0 06407        TRA SF73                 CONTAINS THE DO OF XRC             F2104950
     06405  0 02000 0 06431        TRA SF80                 AND CURRENT DO.                    F2104960
     06406  0 02000 0 06370        TRA SF35                 GO BACK FOR NEXT DO                F2104970
     06407 -0 63400 1 06422 SF73   SXD SF76,1               THIS ROUTINE (THROUGH SF76)        F2104980
     06410 -0 53400 1 06361 SF74   LXD SF15,1                                                  F2104990
     06411  0 07400 4 06470        TSX TRA00,4              USES TRA00                         F2105000
     06412  0 10000 0 06465        TZE SFEND                                                   F2105010
     06413  0 60100 0 06423        STO SF78                 TO DETERMINE THE                   F2105020
     06414 -0 53400 1 06422        LXD SF76,1               GREATEST EXIT LEVEL OF             F2105030
     06415  0 50000 1 02544        CLA DOTAGZ+5,1           DEFINITION FROM A                  F2105040
     06416 -0 32000 0 05514        ANA DECMSK               DO SYM NOT IN THE                  F2105050
     06417  0 34000 0 06423        CAS SF78                 SUBNEST OF A DO WITH               F2105060
     06420  0 50000 0 06423        CLA SF78                 VARIABLE NS, BUT IN A              F2105070
     06421  0 76100 0 00000        NOP                      SUBNEST WHICH HAS A                F2105080
D    06422 -3 00000 0 06437 SF76   TXL SF90,0               NON EMPTY INTERSECTION             F2105090
A    06423  0 00000 0 00000 SF78   HTR                      WITH THAT SUB NEST.                F2105100
     06424  0 50000 1 02544 SF79   CLA DOTAGZ+5,1                                               F2105110
     06425 -0 32000 0 05514        ANA DECMSK                                                  F2105120
     06426  0 40200 0 05475        SUB L(1)                                                    F2105130
     06427 -0 10000 0 06437        TNZ SF90                                                    F2105140
     06430  0 02000 0 06465        TRA SFEND                                                   F2105150
     06431 -0 76000 0 00141 SF80   MSE 97                   EQUALITY, IF SYM DO IS             F2105160
     06432  0 07400 4 00004        TSX DIAG,4  CURRENT DO,           ERROR. GO TO DIAGNOSTIC.  F2105175
     06433  0 50000 0 05511        CLA BITONE                                                  F2105180
     06434 -0 60200 1 02544        ORS DOTAGZ+5,1                                              F2105190
     06435  0 50000 1 02544        CLA DOTAGZ+5,1           OBTAIN LEVEL OF DEFINITION         F2105200
     06436 -0 32000 0 05514        ANA DECMSK               AND STORE                          F2105210
     06437  0 77100 0 00022 SF90   ARS 18                   IN ADDRESS PART                    F2105220
     06440  0 60100 0 06467        STO SFES1                OF SFESI.                          F2105230
     06441 -0 53400 1 06326        LXD SV48,1               INDEX OF VAR.N. IN CUR. DO.        F2105240
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      06442  0 50000 1 02547         CLA DOTAGZ+8,1          -OBTAIN PREVIOUS LEV. DEF.          F2105250
      06443 -0 32000 0 05516         ANA ADDMSK               AND COMPARE                        F2105260
      06444  0 34000 0 06467         CAS SFES1                WITH NEW.                          F2105270
      06445  0 02000 0 06465         TRA SFEND                EXIT UNLESS                        F2105280
      06446  0 02000 0 06465         TRA SFEND                NEW LEV.                           F2105290
      06447  0 50000 0 06467         CLA SFES1                IS LARGGER, IN WHICH CASE          F2105300
      06450  0 62100 1 02547         STA DOTAGZ+8,1           REPLACE OLD WITH NEW               F2105310
      06451 -0 53400 2 06356         LXD SF10,2               OBTAIN N COUNTER IN XRB            F2105320
      06452  0 50000 1 02543 SF92    CLA DOTAGZ+4,1           OBTAIN VAR. N IN ACC.              F2105330
      06453  0 02000 0 06457         TRA SF96                 GO TO INDEXING.                    F2105340
      06454  0 34000 1 02543 SF94    CAS DOTAGZ+4,1           COMPARE, TO FIND DUPLICATE         F2105350
      06455  0 02000 0 06457         TRA SF96                 N S.                               F2105360
      06456  0 02000 0 06462         TRA SF99                 DUPE FOUND.                        F2105370
      06457  1 00001 1 06460 SF96    TXI SF98,1,1             INDEX IN DO FORMULA                F2105380
      06460  2 00001 2 06454 SF98    TIX SF94,2,1             AND IN COUNTER                     F2105390
      06461  0 02000 0 06465         TRA SFEND                                                   F2105400
      06462  0 50000 0 06467 SF99    CLA SFES1                REPLACE                            F2105410
      06463  0 62100 1 02547         STA DOTAGZ+8,1           OLD LEVEL                          F2105420
      06464  0 02000 0 06452         TRA SF92                 OF DEFINITION.                     F2105430
      06465 -0 53400 4 06361 SFEND    LXD SF15,4               GO BACK FOR NEXT                   F2105440
      06466  0 02000 0 06331         TRA SV65                 SYMBOL DO                          F2105450
A     06467  0 00000 0 00000 SFES1    HTR                      ES.                                F2105460
                                  GREATEST TRANSFER LEVEL OUT OF DO FORMULA                      F2105470
      06470  0 50000 1 02544 TRA00    CLA DOTAGZ+5,1           OBTAIL LEVEL OF DO                 F2105480
      06471 -0 73400 2 00000         PDX 0,2                  USE MAX LEV TWENTY                 F2105490
      06472 -3 00024 2 06474 TRA10    TXL TRA20,2,20                                              F2105500
      06473 -0 53400 2 06472         LXD TRA10,2                                                 F2105510
      06474 -0 63400 2 06513 TRA20    SXD TRA50,2              INITIALIZE TEST INSTR.             F2105520
      06475 -0 75400 2 00000         PXD 0,2                  COMPUTE LEVEL MINUS ONE            F2105530
      06476  0 77100 0 00022         ARS 18                   AND INITIALIZE SHIFT INSTR.        F2105540
      06477  0 40200 0 06537         SUB TRAN1                COMPUTE 35 MINUS (L MINUS          F2105550
      06500  0 62100 0 06515         STA TRA70                ONE) AND                           F2105560
      06501  0 40200 0 06540         SUB TRAN2                INITIALIZE                         F2105570
      06502  0 62100 0 06516         STA TRA80                SHIFT INSTR.                       F2105580
      06503 -0 75400 0 00000         PXD 0,0                  INITIALIZE                         F2105590
      06504  0 60100 0 06542         STO TRAN5                ES LOCATION TO ZERO                F2105600
      06505 -0 50000 1 02546 TRA30    CAL DOTAGZ+7,1           OR INTO TRAN5 ALL THE              F2105610
      06506 -0 60200 0 06542         ORS TRAN5                T2 WORDS OF THIS DO                F2105620
      06507  1 77767 1 06510         TXI TRA40,1,-9           AND ALL DOS CONTAINED              F2105630
D     06510 -3 00000 1 06514 TRA40    TXL TRA60,1              BY THIS DO.                        F2105640
      06511  0 50000 1 02544         CLA DOTAGZ+5,1                                              F2105650
      06512 -0 73400 2 00000         PDX 0,2                                                     F2105660
D     06513  3 00000 2 06505 TRA50    TXH TRA30,2                                                 F2105670
      06514  0 56000 0 06541 TRA60    LDQ TRAN4                PUT MASK IN QUOTIENT               F2105680
A     06515  0 76300 0 00000 TRA70    LLS                      REGISTER, SHIFT COMPUTED           F2105690
A     06516  0 76700 0 00000 TRA80    ALS                      AMOUNTS TO CONSTRUCT               F2105700
      06517 -0 32000 0 06542         ANA TRAN5                MASK IN ACC. AND IN                F2105710
      06520  0 10000 0 06536         TZE TRA95                UNION OF T2 WORDS. EXIT IF ZERO.   F2105720
      06521  0 60100 0 06542         STO TRAN5                OBTAIN LOW ORDER BIT               F2105730
      06522  0 40200 0 06537         SUB TRAN1                IN ACC.                            F2105740
      06523  0 60100 0 06543         STO TRAN6                                                   F2105750
      06524 -0 50100 0 06542         ORA TRAN5                                                   F2105760
      06525  0 40200 0 06543         SUB TRAN6                                                   F2105770
      06526 -0 53400 1 05475         LXD L(1),1                                                  F2105780
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06527  0 34000 1 06567 TRA85  CAS TRATAB+19,1          SEARCH TABLE                          F2105790
06530  0 02000 0 06532        TRA TRA86                TO OBTAIN                             F2105800
06531  0 02000 0 06535        TRA TRA90                LEVEL INTEGER                         F2105810
06532  1 00001 1 06533 TRA86  TXI TRA87,1,1                                                  F2105820
06533 -3 00023 1 06527 TRA87  TXL TRA85,1,19                                                 F2105830
06534  0 07400 4 00004        TSX DIAG,4                          ERROR. GO TO DIAGNOSTIC.  F2105845
06535 -0 75400 1 00000 TRA90  PXD 0,1                  PUT LEVEL IN ACC DECREMENT            F2105850
06536  0 02000 4 00001 TRA95  TRA 1,4                  EXIT.                                 F2105860
06537  0 00000 0 00001 TRAN1  HTR 1                                                         F2105870
06540  0 00000 0 00043 TRAN2  HTR 35                                                        F2105880
06541 +377777777777    TRAN4  OCT 377777777777                                           F2105890
A 06542  0 00000 0 00000 TRAN5  HTR                                                       F2105900
A 06543  0 00000 0 00000 TRAN6  HTR                                                       F2105910
06544 +000000200000    TRATAB OCT 200000                                                 F2105920
06545 +000000400000           OCT 400000                                                 F2105930
06546 +000001000000           OCT 1000000                                                F2105940
06547 +000002000000           OCT 2000000                                                F2105950
06550 +000004000000           OCT 4000000                                                F2105960
06551 +000010000000           OCT 10000000                                               F2105970
06552 +000020000000           OCT 20000000                                               F2105980
06553 +000040000000           OCT 40000000                                               F2105990
06554 +000100000000           OCT 100000000                                              F2106000
06555 +000200000000           OCT 200000000                                              F2106010
06556 +000400000000           OCT 400000000                                              F2106020
06557 +001000000000           OCT 1000000000                                             F2106030
06560 +002000000000           OCT 2000000000                                             F2106040
06561 +004000000000           OCT 4000000000                                             F2106050
06562 +010000000000           OCT 10000000000                                            F2106060
06563 +020000000000           OCT 20000000000                                            F2106070
06564 +040000000000           OCT 40000000000                                            F2106080
06565 +100000000000           OCT 100000000000                                           F2106090
06566 +200000000000           OCT 200000000000                                           F2106100
                              FORVAL TABLE SEARCH FOR VARIABLE RANGES AND INCREMENTS     F2106110
06567  0 50000 0 07152 TS4VAL CLA 4VALAD                READ IN                           F2106120
06570 -0 53400 2 05502        LXD L(6),2                FORVAL                            F2106130
06571  0 07400 4 07060        TSX RTAPE,4                                                 F2106140
06572 -3 01747 1 06575        TXL TSV10,1,999                                             F2106150
06573  0 76000 0 00144        PSE 100                   IF FORVAL EMPTY, SET              F2106160
06574  0 02000 0 06753        TRA T190                  SENSE LIGHT AND EXIT              F2106170
06575 -0 63400 1 06652 TSV10  SXD TS40,1                INITIALIZE TEST INSTRS.           F2106180
06576 -0 63400 1 06673        SXD TS75,1                                                  F2106190
06577 -0 76000 0 00143        MSE 99                    TEST FOR EMPTY DOTAG              F2106200
06600  0 02000 0 06603        TRA TSV20                 OFF, NOT EMPTY                    F2106210
06601  0 76000 0 00143        PSE 99                    ON, DOTAG EMPTY                   F2106220
06602  0 02000 0 06753        TRA T190                  EXIT                              F2106230
06603 -0 53400 1 00030 TSV20  LXD DOTAG-1,1             DOTAG TEST INITIALIZING           F2106240
06604 -0 63400 1 06650        SXD TS35,1                                                  F2106250
06605 -0 53400 1 05506        LXD L(1350,1              INITIALIZE XRA                    F2106260
06606 -0 53400 4 05505        LXD L(1000,4              AND                               F2106270
06607 -0 63400 4 06755        SXD XFOR,4                XFOR. CONTINUE WITH TS00          F2106280
06610 -0 76000 0 00141 TS00   MSE 97                    SENSE LIGHT 97 OFF                F2106290
06611  0 76100 0 00000        NOP                                                         F2106300
06612  0 50000 1 02544 TS10   CLA DOTAGZ+5,1           OBTAIN LEVEL OF CURRENT           F2106310
06613 -0 73400 2 00000        PDX 0,2                   DO IN XRB. IF L IS ONE,           F2106320
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06614 -3 00001 2 06621         TXL TS15,2,1                GO TO NEST PROCEDURE. IF                F2106330
06615 -0 76000 0 00141         MSE 97                      L IS NOT ONE AND LIGHT IS               F2106340
06616  0 02000 0 06644         TRA TS30,0                  OFF, GO TO INNER DO PRECEDURE.          F2106350
06617  0 76000 0 00141         PSE 97                      IF LIGHT IS ON, CONTINUE                F2106360
06620  1 77767 1 06650         TXI TS35,1,-9               INDEXING FOR NEXT NEST.                 F2106370
06621 -0 76000 0 00141 TS15    MSE 97                                                              F2106380
06622  0 76100 0 00000         NOP                                                                 F2106390
06623  0 50000 1 02537         CLA DOTAGZ,1                L IS ONE, DO NEST PROCEDURE.            F2106400
06624  0 73400 2 00000         PAX 0,2                     ESTABLISH BEGINNING OF                  F2106410
06625 -0 32000 0 05514         ANA DECMSK                  NEST ADDRESS BNA, AND                   F2106420
06626  0 60100 0 06756         STO TBNA                    END OF NEST ADDRESS ENA.                F2106430
06627 -0 75400 2 00000         PXD 0,2                     SEARCH IN FORTAG UNTIL                  F2106440
06630  0 60100 0 06757         STO TENA                    FOR NRS. FOUND GREATER                  F2106450
06631 -0 53400 4 06755         LXD XFOR,4                  THAN ENA. IF NONE, EXIT                 F2106460
06632  0 50000 0 06756         CLA TBNA                    FROM ENTIRE ROUTINE.                    F2106470
06633  0 34000 4 04510 TS20    CAS 4VALZ,4                 TEST WHETHER FIRST SUCH                 F2106480
06634  1 77776 4 06652         TXI TS40,4,-2               NR. IS IN NEST IF NOT,                  F2106490
06635  0 07400 4 00004         TSX DIAG,4  FIND NEXT NEST. IF SO,     (ERROR. GO TO DIAGNOSTIC.)F2106505
06636 -0 63400 4 06755         SXD XFOR,4                  GO TO INDEXING INSTRS.                  F2106510
06637  0 50000 0 06757         CLA TENA                    FOR NEXT DO.                            F2106520
06640  0 40200 4 04510         SUB 4VALZ,4                                                         F2106530
06641  0 12000 0 06643         TPL TS25                                                            F2106540
06642  0 76000 0 00141         PSE 97              RECORD NO FORVAL FALLS IN THIS NEST.            F2106550
06643  1 77767 1 06650 TS25    TXI TS35,1,-9                                                       F2106560
06644  0 50000 1 02537 TS30    CLA DOTAGZ,1                INNER DO PROCEDURE.                     F2106570
06645 -0 32000 0 05515         ANA TAGMSK                  TEST FOR NON ZERO TAG,                  F2106580
06646 -0 10000 0 06654         TNZ TS50                    IN WHICH CASE TRA FOR                   F2106590
06647  1 77767 1 06650 TS33    TXI TS35,1,-9               TABLE SEARCH. OTHERWISE,                F2106600
D 06650  3 00000 1 06612 TS35  TXH TS10,1                  INDEX FOR NEXT DO, IF POSSIBLE.         F2106610
D 06651 -3 00000 0 06753 TS38  TXL T190,0                  EXIT, STORAGE FOR INDEX CUR. DO.        F2106620
D 06652  3 00000 4 06633 TS40  TXH TS20,4                  INDEX TEST FOR FORVAL                   F2106630
06653  0 02000 0 06753         TRA T190                    EXIT                                    F2106640
06654 -0 63400 1 06651 TS50    SXD TS38,1                  SAVE INDEX OF CURRENT DO                F2106650
06655 -0 63400 2 06722         SXD T110,2                  SAVE LEVEL OF CURRENT DO                F2106660
06656 -0 53400 4 06755         LXD XFOR,4                  OBTAIN FORVAL INDEX IN XRC              F2106670
06657 -0 53400 2 05477 TS55    LXD L(3),2                  PUT THREE IN XRC                        F2106680
06660 -0 53400 1 06651         LXD TS38,1                  CURRENT DO IN XRA                       F2106690
06661  0 50000 0 06757         CLA TENA                    TEST FOR END OF NEST                    F2106700
06662  0 40200 4 04510         SUB 4VALZ,4                                                         F2106710
06663 -0 12000 0 06647         TMI TS33                    NOT IN NEST,TRA FOR NEXT DO.            F2106720
06664  0 50000 4 04511         CLA 4VALZ+1,4               IN NEST OBTAIN FORTAG                   F2106730
06665  0 34000 1 02543 TS60    CAS DOTAGZ+4,1              SYMBOL, COMPARE WITH VAR                F2106740
06666  0 02000 0 06670         TRA TS65                    N SYMBOLS.                              F2106750
06667  0 02000 0 06676         TRA TS80                    EQUALITY                                F2106760
06670  1 00001 1 06671 TS65    TXI TS70,1,1                INDEX IN XRA,                           F2106770
06671  2 00001 2 06665 TS70    TIX TS60,2,1                COUNT IN XRB                            F2106780
06672  1 77776 4 06673         TXI TS75,4,-2               TAKE NEXT FORTAG ENTRY,                 F2106790
D 06673  3 00000 4 06657 TS75  TXH TS55,4                  IF ANY                                  F2106800
06674 -0 53400 1 06651         LXD TS38,1                  RESTORE CURRENT DO INDEX                F2106810
06675  1 77767 1 06650         TXI TS35,1,-9               AND TRA FOR NEXT DO.                    F2106820
06676 -0 63400 2 06743 TS80    SXD T148,2                  SAVE VAR. N. COUNTER.                   F2106830
06677 -0 63400 1 06742         SXD T144,1                  SAVE COUNTER OF SYM IN DO               F2106840
06700 -0 53400 1 06651         LXD TS38,1                  CURRENT DO INDEX IN XRA                 F2106850
06701 -0 53400 2 06722         LXD T110,2                  CURRENT DO LEVEL IN XRB                 F2106860
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      06702  1 00001 2 06703        TXI TS85,2,1                 ADJUST XRB FOR CURRENT DO TEST.    F2106870
      06703  0 50000 1 02544 TS85   CLA DOTAGZ+5,1               OBTAIN NEXT BACK DO IN             F2106880
      06704  0 62200 0 06705        STD TS90                     SUBNEST. ON FIRST TIME             F2106890
D     06705  3 00000 2 06711 TS90   TXH T100,2                   THROUGH, CURRENT DO IS             F2106900
      06706  1 00011 1 06703 TS92   TXI TS85,1,9                 PRODUCED.                          F2106910
      06707  2 00001 2 06706 TS94   TIX TS92,2,1                 ADJUST LEVEL.                      F2106920
      06710  0 07400 4 00004        TSX DIAG,4  IF NOT IN NEST,          ERROR. GO TO DIAGNOSTIC.  F2106935
      06711  0 50000 1 02537 T100   CLA DOTAGZ,1                 NEXT BACK DO FOUND.                F2106940
      06712 -0 32000 0 05514        ANA DECMSK                   TEST TO SEE IF FORTAG              F2106950
      06713  0 40200 4 04510        SUB 4VALZ,4                  FORMULA NR. IS IN THIS             F2106960
      06714  0 12000 0 06707        TPL TS94                     DO. IF NOT, GO TO TS94             F2106970
      06715  0 50000 1 02537        CLA DOTAGZ,1                 TO ADJUST LEVEL FOR                F2106980
      06716 -0 32000 0 05516        ANA ADDMSK                   OBTAINING NEW SUBNEST DO.          F2106990
      06717  0 76700 0 00022        ALS 18                                                          F2107000
      06720  0 40200 4 04510        SUB 4VALZ,4                                                     F2107010
      06721 -0 12000 0 06707        TMI TS94                                                        F2107020
D     06722 -3 00000 2 06724 T110   TXL T120,2                   DEC CONTAINS CURRENT LEVEL.        F2107030
      06723  0 02000 0 06746        TRA T170          APPARENT DEFINITION  OF A VARIABLE N WITHIN  F2107044
                                                      RANGE OF THE DO WITH VARIABLE N. IGNORE AND  F2107046
                                                      GET NEXT FORVAL.                             F2107047
      06724 -0 53400 1 06742 T120   LXD T144,1                   PUT CUR. VAR. DO INDEX IN          F2107050
      06725  0 50000 1 02547        CLA DOTAGZ+8,1               XRA, AND OBTAIN LEV. DEF,          F2107060
      06726  0 73400 2 00000        PAX 0,2                      OF VAR. N.                         F2107070
      06727 -0 63400 2 06731        SXD T130,2                   STORE IN DEC OF T130.              F2107080
      06730 -0 53400 2 06705        LXD TS90,2                   OBTAIN LEVEL OF DO CONTAINING      F2107090
D     06731 -3 00000 2 06746 T130   TXL T170,2                   FURTAG FOR. NR.                    F2107100
      06732 -0 75400 2 00000        PXD 0,2                      CHOOSE LARGER AND PUT IN           F2107110
      06733  0 77100 0 00022        ARS 18                       LEV. DEF. FIELD OF CURRENT DO.     F2107120
      06734  0 62100 1 02547        STA DOTAGZ+8,1               IF CHANGE MADE, SAVE               F2107130
      06735  0 60100 0 06754        STO T195                     LEVEL,                             F2107140
      06736 -0 53400 2 06743        LXD T148,2                   AND TEST TO SEE IF THIS            F2107150
      06737  0 50000 1 02543        CLA DOTAGZ+4,1               SYMBOL                             F2107160
      06740  1 00001 1 06745        TXI T160,1,1                 DUPLICATED                         F2107170
      06741  0 34000 1 02543 T140   CAS DOTAGZ+4,1               IN DO VAR.N S.                     F2107180
D     06742 -3 00000 0 06744 T144   TXL T150,0        IF SO, REPLACE ITS LEVEL(DEC HAS IX FOR VAR N) F2107190
D     06743 -3 00000 0 06747 T148   TXL T180,0        OF DEF  BY THIS ( DEC HAS 3,2,1 IF FORVAL     F2107200
                                                      MATCHES VARIABLE N3,N2,N1)                   F2107201
      06744  1 00001 1 06745 T150   TXI T160,1,1                 NEW LEVEL.                         F2107210
      06745  2 00001 2 06741 T160   TIX T140,2,1                                                    F2107220
      06746  1 77776 4 06673 T170   TXI TS75,4,-2                                                   F2107230
      06747  0 50000 0 06754 T180   CLA T195                                                        F2107240
      06750  0 62100 1 02547        STA DOTAGZ+8,1                                                  F2107250
      06751  0 50000 1 02543        CLA DOTAGZ+4,1                                                  F2107260
      06752  1 00001 1 06745        TXI T160,1,1                                                    F2107270
      06753  0 02000 0 06760 T190   TRA RH00                     EXIT                               F2107280
A     06754  0 00000 0 00000 T195   HTR                          ES                                 F2107290
A     06755  0 00000 0 00000 XFOR   HTR                          FORTAG INDEX                       F2107300
A     06756  0 00000 0 00000 TBNA   HTR                          ES                                 F2107310
A     06757  0 00000 0 00000 TENA   HTR                          ES                                 F2107320
                                        USE OF SYMBOL WITHIN RANGE AS FXD POINT VAR. FORVAR SEARCH. F2107330
      06760 -0 53400 2 05501 RH00   LXD L(5),2                   READ IN                            F2107340
      06761  0 50000 0 07155        CLA 4VARAD                   FORVAR                             F2107350
      06762  0 07400 4 07060        TSX RTAPE,4                                                     F2107360
      06763  3 02733 1 07053        TXH RH95,1,1499              EXIT IF FORVAR EMPTY               F2107370
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06764 -0 76000 0 00143        MSE 99
06765  0 02000 0 06770        TRA RH05
06766  0 76000 0 00143        PSE 99
06767  0 02000 0 07053        TRA RH95
06770 -0 63400 1 07032 RH05   SXD RH60,1
06771 -0 63400 1 07043        SXD RH75,1
06772 -0 53400 1 00030        LXD DOTAG-1,1
06773 -0 63400 1 07052        SXD RH90,1
06774 -0 53400 1 05507        LXD L(1500,1
06775 -0 63400 1 07054        SXD RHNNX,1
06776 -0 76000 0 00141        MSE 97
06777  0 76100 0 00000        NOP
07000 -0 53400 1 05506        LXD L(1350,1
07001  0 50000 1 02537 RH10   CLA DOTAGZ,1
07002  0 73400 2 00000        PAX 0,2
07003 -0 32000 0 05514        ANA DECMSK
07004  0 60100 0 07056        STO RFIRST
07005 -0 75400 2 00000        PXD 0,2
07006  0 60100 0 07057        STO RLAST
07007  0 50000 1 02544        CLA DOTAGZ+5,1
07010 -0 73400 2 00000        PDX 0,2
07011  3 00001 2 07017        TXH RH30,2,1
07012 -0 76000 0 00141        MSE 97
07013  0 02000 0 07015        TRA RH20
07014  0 02000 0 07053        TRA RH95
07015 -0 53400 4 07054 RH20   LXD RHNNX,4
07016 -0 63400 4 07055        SXD RHCNX,4
07017 -0 53400 4 07055 RH30   LXD RHCNX,4
07020  0 50000 0 07056        CLA RFIRST
07021  0 34000 4 05474 RH40   CAS 4VARZ,4
07022  1 77776 4 07032        TXI RH60,4,-2
07023  0 07400 4 00004        TSX DIAG,4
07024 -0 63400 4 07055        SXD RHCNX,4
07025  0 50000 0 07057 RH50   CLA RLAST
07026  0 34000 4 05474        CAS 4VARZ,4
07027  0 76100 0 00000        NOP
07030  0 02000 0 07034        TRA RH70
~~07031  0 02000 0 07047~~        ~~TRA RH80~~
D 07032  3 00000 4 07021 RH60   TXH RH40,4
07033  0 02000 0 07053        TRA RH95
07034  0 50000 1 02540 RH70   CLA DOTAGZ+1,1
07035  0 40200 4 05475        SUB 4VARZ+1,4
07036 -0 10000 0 07042        TNZ RH72
07037  0 50000 0 05511        CLA BITONE
07040 -0 60200 1 02544        ORS DOTAGZ+5,1
07041  3 00001 2 07051        TXH RH85,2,1
07042  1 77776 4 07043 RH72   TXI RH75,4,-2
D 07043  3 00000 4 07025 RH75   TXH RH50,4
07044  3 00001 2 07051        TXH RH85,2,1
07045  0 76000 0 00141        PSE 97
07046  0 02000 0 07051        TRA RH85
07047  3 00001 2 07051 RH80   TXH RH85,2,1
07050 -0 63400 4 07054        SXD RHNNX,4
07051  1 77767 1 07052 RH85   TXI RH90,1,-9
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TEST FOR EMPTY DOTAG.                F2107380
NOT EMPTY.                           F2107390
EMPTY, RESTORE SENSE LIGHT           F2107400
AND EXIT.                            F2107410
FORVAR TEST                          F2107420
INITIALIZING.                        F2107430
DOTAG TEST                           F2107440
INITIALIZING                         F2107450
MAX WORDS IN FORVAL                  F2107460
IN NEXT NEST INDEX.                  F2107470
TURN LIGHT 97 OFF.                   F2107480
                                     F2107490
PUT MAX WDS IN DOTAG IN XRA.         F2107500
OBTAIN FIRST DOTAG WORD.             F2107510
SEPARATE ALPHA AND BETA,             F2107520
STORE IN RFIRST AND RLAST.           F2107530
                                     F2107540
                                     F2107550
                                     F2107560
OBTAIN LEVEL IN XRB.                 F2107570
                                     F2107580
TRA IF LEVEL GREATER THAN ONE.       F2107590
LEVEL IS ONE, TEST WHETHER,          F2107600
ON LAST LEVEL ONE, FORVAR            F2107610
EXHAUSTED. IF SO, EXIT.              F2107620
OTHERWISE, ADJUST FORVAR             F2107630
INDEX TO SKIP LAST NEST AREA.        F2107640
PUT FORVAR INDEX IN XRC.             F2107650
BEGIN SEARCH FOR FIRST               F2107660
FORVAR ENTRY IN RANGE.               F2107670
                                     F2107680
          ERROR. GO TO DIAGNOSTIC.   F2107695
SAVE INDEX AT THIS POINT             F2107700
FOR NEXT DO, AND COMPARE             F2107710
FORVAR ENTRY WITH RLAST              F2107720
                                     F2107730
TRA, IN RANGE.                       F2107740
TRA, NOT IN RANGE.                   F2107750
IF NO ENTRIES GREATER                F2107760
THAN RFIRST, EXIT.                   F2107770
IN RANGE, COMPARE SYMBOLS.           F2107780
IF EQUAL, PUT BIT IN                 F2107790
DOTAG ENTRY.                         F2107800
                                     F2107810
                                     F2107820
                                     F2107830
INDEX FORVAR AND GO BACK,            F2107840
IF POSSIBLE. OTHERWISE,              F2107850
TEST LEVEL. IF LEVEL IS              F2107860
ONE, ARRANGE TO EXIT WHEN            F2107870
NEXT LEVEL ONE ENCOUNTERED.          F2107880
NOT IN RANGE, TEST LEVEL.            F2107890
SET NEXT NEST INDEX IF L IS ONE.     F2107900
INDEX IN DOTAG AND GO                F2107910
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D     07052  3 00000 1 07001 RH90   TXH RH10,1                    BACK, IF POSSIBLE.                F2107920
      07053  0 02000 0 07157 RH95   TRA LB00                      EXIT                              F2107930
A     07054  0 00000 0 00000 RHNNX  HTR                           NEXT NGST INDEX                   F2107940
A     07055  0 00000 0 00000 RHCNX  HTR                           CURRENT NEST INDEX                F2107950
A     07056  0 00000 0 00000 RFIRST HTR                           ALPHA ADDRESS                     F2107960
A     07057  0 00000 0 00000 RLAST  HTR                           BETA ADDRESS                      F2107970
                                      TAPE READING ROUTINE                                          F2107980
      07060  0 62100 0 07101 RTAPE  STA RT40                      INITIALIZE TABLE ADDRESS          F2107990
      07061  0 60100 0 07126        STO RT92                                                        F2108000
      07062 -0 63400 4 07124        SXD RT80,4                    SAVEXRC, TSX SET                  F2108010
      07063 -0 75400 2 00000        PXD 0,2                       SAVE XRB,                         F2108020
      07064  0 77100 0 00022        ARS 18                        TABLE NR. IN ADDRESS.             F2108030
      07065  0 60100 0 07125        STO RT90                                                        F2108040
      07066 -0 53400 4 07136        LXD RTD18,4       INITIALIZE ERROR COUNTER.                     F2108055
      07067 -0 63400 4 07121        SXD RT73,4                                                      F2108060
      07070  0 76200 0 00222 RT10   RDS TTAPE                     SELECT TAPE                       F2108070
      07071 -0 53400 1 07126        LXD RT92,1                    PUT MAX NR WORDS IN XRA           F2108080
      07072 -0 53400 4 05476        LXD L(2),4                    PUT TWO IN XRC                    F2108090
      07073  0 70000 4 07131 RT20   CPY RT95+2,4                  COPY FIRST TWO WORDS.             F2108100
      07074  0 02000 0 07077        TRA RT30                      INTO E.S.                         F2108110
      07075  0 07400 4 00004        TSX DIAG,4  EOF.                        ERROR. GO TO DIAGNOSTIC. F2108125
      07076  0 07400 4 00004        TSX DIAG,4  EOR.                        ERROR. GO TO DIAGNOSTIC. F2108135
      07077  2 00001 4 07073 RT30   TIX RT20,4,1                                                    F2108140
      07100 -3 00001 2 07131        TXL RTD00,2,1                                                   F2108150
      07101  0 70000 1 00000 RT40   CPY 0,1                       COPY TABLE                        F2108160
      07102  1 77777 1 07101        TXI RT40,1,-1                 COUNT NR. OF WORDS.               F2108170
      07103  0 07400 4 00004        TSX DIAG,4  EOF.                        ERROR. GO TO DIAGNOSTIC. F2108185
      07104  0 76600 0 00333 RT45   WRS 219                                                         F2108190
      07105 -0 76000 0 00012        RTT                           ERROR TEST                        F2108200
      07106  0 02000 0 07115        TRA RT70                      ERROR, TRA                        F2108210
      07107  0 50000 0 07125        CLA RT90                      NO ERROR,                         F2108220
      07110  0 40200 0 07127        SUB RT95                      TEST TABLE NR.                    F2108230
      07111  0 10000 0 07113        TZE RT60                      NO ERROR                          F2108240
      07112  0 07400 4 00004        TSX DIAG,4  WRONG TABLE IDENT NR.       ERROR. GO TO DIAGNOSTIC. F2108255
      07113 -0 53400 4 07124 RT60   LXD RT80,4                    TABLE CORRECT,                    F2108260
      07114  0 02000 4 00001        TRA 1,4                       RETURN.                           F2108270
      07115 -0 53400 4 07121 RT70   LXD RT73,4                                                      F2108280
      07116  0 76400 0 00222        BST TTAPE                     ERROR, BACKSPACE TAPE             F2108290
      07117 -2 00001 4 07122        TNX RT75,4,1                                                    F2108300
      07120 -0 63400 4 07121        SXD RT73,4                    COUNT DOWN ERROR COUNTER.         F2108310
D     07121 -3 00000 0 07070 RT73   TXL RT10,0                                                      F2108320
      07122  0 56000 0 07125 RT75   LDQ RT90          IF FIVE FAILURES, PUT                         F2108332
      07123  0 07400 4 00004        TSX DIAG,4  TABLE NR. IN MQ.            ERROR. GO TO DIAGNOSTIC. F2108345
A     07124  0 00000 0 00000 RT80   HTR                           TSX INDEX STORAGE                 F2108350
A     07125  0 00000 0 00000 RT90   HTR                           TABLE NR STORAGE, C.S.            F2108360
A     07126  0 00000 0 00000 RT92   HTR                           ADDRESS WORD STORAGE              F2108370
A     07127  0 00000 0 00000 RT95   HTR                           TABLE NR, WD ONE OF TABLE.        F2108380
A     07130  0 00000 0 00000 RT96   HTR                           NR. OF WDS IN DEC.                F2108390
      07131 -0 75400 0 00000 RTD00  PXD 0,0                       THIS ROUTINE                      F2108400
      07132 -0 53400 4 07136 RTD10  LXD RTD18,4                   READS IN ONE                      F2108410
      07133  0 70000 1 02537 RTD15  CPY DOTAGZ,1                  ENTRY FROM                        F2108420
      07134  1 77777 1 07137        TXI RTD20,1,-1                TDO, AFTER WHICH                  F2108430
      07135  0 07400 4 00004        TSX DIAG,4  FOUR ZERO WORDS             ERROR. GO TO DIAGNOSTIC. F2108445
      07136 -3 00005 0 07104 RTD18  TXL RT45,0,5                  ARE STORED BEFORE                 F2108450
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07137  2 00001 4 07133 RTD20  TIX RTD15,4,1          READING IN                          F2108460
07140  1 00003 4 07141 RTD23  TXI RTD25,4,3          THE NEXT ENTRY.                     F2108470
07141  0 60100 1 02537 RTD25  STO DOTAGZ,1           STORE ZERO                          F2108480
07142  1 77777 1 07143        TXI RTD30,1,-1         INDEX                               F2108490
07143  0 60100 1 02537 RTD30  STO DOTAGZ,1           AND REPEAT.                         F2108500
07144  1 77777 1 07145        TXI RTD35,1,-1         WHEN DOTAG                          F2108510
07145  0 60100 1 02537 RTD35  STO DOTAGZ,1           ENTRY IS                            F2108520
07146  1 77777 1 07147        TXI RTD40,1,-1         COMPLETE,                           F2108530
07147  0 60100 1 02537 RTD40  STO DOTAGZ,1           TRA                                 F2108540
07150  1 77777 1 07132        TXI RTD10,1,-1         TO RTD10                            F2108550
07151  0 02506 0 02537 DOAD   HTR DOTAGZ,0,1350      ADDRESS PART CONTAINS               F2108560
07152  0 01750 0 04510 4VALAD HTR 4VALZ,0,1000       ADDRESS OF LAST WORD IN             F2108570
07153  0 01130 0 03670 TIFAD  HTR TIFZ,0,600         TABLE PLUS ONE.                     F2108580
07154  0 00372 0 04263 TRADAD HTR TRADZ,0,250        DEC CONTAINS MAX NR OF              F2108590
07155  0 02734 0 05474 4VARAD HTR 4VARZ,0,1500       WRDS.                               F2108600
07156  0 02734 0 03670 4TAGAD HTR FORTZ,0,1500                                           F2108610
                              TRANSFER IN EXTENDED RANGE BIT.                          F2108620
07157 -0 76000 0 00143 LB00   MSE 99                TEST FOR EMPTY DOTAG                F2108630
07160  0 02000 0 07163        TRA LB02               OFF, NOT EMPTY                      F2108640
07161  0 76000 0 00143        PSE 99                 ON, EMPTY, RESET LIGHT              F2108650
07162  0 02000 0 07211        TRA EB00               AND EXIT                            F2108660
07163 -0 53400 1 00030 LB02   LXD DOTAG-1,1          OBTAIN NEXT UNUSED INDEX            F2108670
D 07164 -3 00000 0 07207 LB05 TXL LB60,0             TRA TO ADJUST FOR LAST DO.          F2108680
07165  0 50000 1 02545 LB10   CLA DOTAGZ+6,1         OBTAIN T1 WORD.                     F2108690
07166 -0 12000 0 07207        TMI LB60               TEST SIGN, TRA IF NEG.              F2108700
07167 -0 32000 0 05511        ANA BITONE             TEST FOR TRA IN IMMED. RANGE.       F2108710
07170  0 10000 0 07207        TZE LB60               IF NONE,TRA.                        F2108720
07171 -0 63400 1 07164        SXD LB05,1             SAVE XRA                            F2108730
07172  0 50000 1 02544        CLA DOTAGZ+5,1         PUT LEVEL                           F2108740
07173 -0 73400 2 00000        PDX 0,2                IN XRB                              F2108750
07174 -0 50000 0 05510 LB20   CAL LMSK               OR IN                               F2108760
07175 -0 60200 1 02545        ORS DOTAGZ+6,1         MSK                                 F2108770
07176 -3 00001 2 07206        TXL LB50,2,1           EXIT IF LEVEL ONE.                  F2108780
07177  1 00011 1 07200 LB25   TXI LB30,1,9           FIND NEXT BACK                      F2108790
07200  0 50000 1 02544 LB30   CLA DOTAGZ+5,1         SUBNEST DO.                         F2108800
07201  0 62200 0 07202        STD LB40                                                   F2108810
D 07202 -3 00000 2 07177 LB40 TXL LB25,2                                               F2108820
07203 -0 73400 2 00000        PDX 0,2                SAVE NEW LEVEL IN XRB.              F2108830
07204  0 50000 1 02545        CLA DOTAGZ+6,1         TEST SIGN OF WORD T1.               F2108840
07205  0 12000 0 07174        TPL LB20               IF PLUS GO TO PUT IN MSK.           F2108850
07206 -0 53400 1 07164 LB50   LXD LB05,1            IF NOT, FIND NEXT DO                F2108860
07207  1 00011 1 07210 LB60   TXI LB70,1,9           IN MAIN PASS.                       F2108870
07210 -3 02506 1 07165 LB70   TXL LB10,1,1350       EB00 FOLLOWS                        F2108880
                              END OF BLOCK ROUTINE                                     F2108890
07211  0 77200 0 00223 EB00   REW 147               REWIND DOTAG TAPE                   F2108900
07212 -0 76000 0 00143        MSE 99                 TEST FOR EMPTY DOTAG                F2108910
07213  0 02000 0 07216        TRA EB10               OFF, NOT EMPTY                      F2108920
07214  0 76000 0 00143        PSE 99                 ON, EMPTY, RESTORE AND TRA.         F2108930
07215  0 02000 0 07233        TRA EB50                                                   F2108940
07216 -0 53400 1 00030 EB10   LXD DOTAG-1,1          INITIALIZE TEST INSTR.              F2108950
07217 -0 63400 1 07230        SXD EB40,1             AND                                 F2108960
07220 -0 53400 1 05506        LXD L(1350,1           XRA                                 F2108970
07221 -0 53400 4 05503 EB20   LXD L(9),4             WRITE                               F2108980
07222  0 50000 1 02544        CLA DOTAGZ+5,1         DOTAG                               F2108990
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07223 -0 73400 2 00000        PDX 0,2                          ON                                  F2109000
07224  3 00001 2 07226        TXH EB30,2,1                     TAPE                                F2109010
07225  0 76600 0 00223        WRS 147                          ONE                                 F2109020
07226  0 70000 1 02537 EB30   CPY DOTAGZ,1                     NEST                                F2109030
07227  1 77777 1 07230        TXI EB40,1,-1                    PER                                 F2109040
D 07230 -3 00000 1 07233 EB40   TXL EB50,1                       RECORD                              F2109050
07231  2 00001 4 07226        TIX EB30,4,1                                                         F2109060
07232  0 02000 0 07221        TRA EB20                                                             F2109070
07233  0 77000 0 00223 EB50   WEF 147                          WRITE END OF FILE                   F2109080
07234 -0 53400 2 05500 EB60   LXD L(4),2                       READ                                F2109090
07235  0 50000 0 07156        CLA 4TAGAD                       IN                                  F2109100
07236  0 07400 4 07060        TSX RTAPE,4                      FORTAG.                             F2109110
07237 -0 63400 1 00733        SXD FORTAG-1,1                   SET SENSE LIGHT 97                  F2109120
07240 -0 76000 0 00141        MSE 97                           ON IF FORTAG                        F2109130
07241  0 76100 0 00000        NOP                              EMPTY, OFF IF                       F2109140
07242 -3 02733 1 07244        TXL EB70,1,1499                  FORTAG                              F2109150
07243  0 76000 0 00141        PSE 97                           NOT EMPTY.                          F2109160
07244  0 76200 0 00222 EB70   RDS TTAPE                        MOVE TTAPE PAST                     F2109170
07245  0 70000 0 07251        CPY EB80                         END OF FILE MARK.                   F2109180
07246  0 02000 0 07244        TRA EB70                                                             F2109190
07247  0 02000 0 07252        TRA EB90                         EOF                                 F2109200
07250  0 07400 4 00004        TSX DIAG,4  SHOULD NOT BE EOR HERE.     ERROR. GO TO DIAGNOSTIC.    F2109215
A 07251  0 00000 0 00000 EB80   HTR                              ES                                  F2109220
07252 -0 76000 0 00142 EB90   MSE 98             IS TRALEV TALBE EMPTY                             F2109230
07253  0 02000 0 07260        TRA EB95                                                             F2109240
07254  0 76600 0 00224        WRS TLTAPE                       ON, EMPTY.                          F2109250
07255  0 70000 0 05474        CPY L(0)                                                             F2109260
07256  0 70000 0 05474        CPY L(0)                                                             F2109270
07257  0 76000 0 00142        PSE 98                                                               F2109280
07260  0 77000 0 00224 EB95   WEF TLTAPE         TRALEV TAPE                                       F2109290
07261  0 76200 0 00221        RDS 145            SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE.       F2109295
07262  0 02000 0 00004        TRA ONETCS         GO TO ONE TO CS ( MONITOR).                       F2109296
07263 -0 63400 2 07301 ERLIST SXD ERIR2,2            SAVE X R  B                                  F2109311
07264 -0 53400 2 07302        LXD ERNBR,2            GET ERROR NUMBER                             F2109321
07265  0 50000 4 02537        CLA DOTAGZ,4           SAVE ALPHA DO BETA                           F2109331
07266  0 60100 2 77777        STO LIST,2             IN LIST                                      F2109341
07267  0 50000 4 02540        CLA DOTAGZ+1,4         AND SYMBOL                                   F2109351
07270  0 60100 2 77776        STO LIST-1,2                                                         F2109361
07271  0 50000 1 02537        CLA DOTAGZ,1           SAVE OTHER ALPHA DO BETA                     F2109371
07272  0 60100 2 77775        STO LIST-2,2                                                         F2109381
07273  0 50000 1 02540        CLA DOTAGZ+1,1         AND SYMBOL                                   F2109391
07274  0 60100 2 77774        STO LIST-3,2                                                         F2102401
07275  1 00004 2 07276        TXI ERNXT,2,4                                                        F2109411
07276 -0 63400 2 07302 ERNXT  SXD ERNBR,2                                                          F2109421
07277 -0 53400 2 07301        LXD ERIR2,2                                                          F2109431
07300  0 02000 0 05625        TRA MR60                                                             F2109441
07301  0 00000 0 00000 ERIR2                                                                       F2109451
07302  0 00000 0 00000 ERNBR                                                                       F2109461
07303 -0 63400 2 07301 ERBETA SXD ERIR2,2            SAVE ALPHA DO BETA                           F2109471
07304 -0 53400 2 07302        LXD ERNBR,2            WHERE ALPHA                                  F2109481
07305  0 60000 2 77777        STZ LIST,2             IS GREATER THAN                              F2109491
07306  0 50000 1 02537        CLA DOTAGZ,1           ITS BETA                                     F2109501
07307  0 60100 2 77776        STO LIST-1,2                                                         F2109511
07310  0 50000 1 02540        CLA DOTAGZ+1,1                                                       F2109521
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07311   0 60100 2 77775         STO LIST-2,2                                F2109531
07312   1 00003 2 07313         TXI ERNX,2,3                                F2109541
07313  -0 63400 2 07302 ERNX    SXD ERNBR,2                                 F2109551
07314  -0 53400 2 07301         LXD ERIR2,2                                 F2109561
07315   0 02000 0 05570         TRA MR15                                    F2109571
07316  -0 53400 2 07302 ERTST   LXD ERNBR,2                                 F2109581
07317  -3 00000 2 05662         TXL FLOW,2,0                                F2109591
07320   0 07400 4 00004         TSX 4,4                                     F2109601
                  77777 LIST    SYN 32767                                   F2109611
                  00004 ONETCS  EQU 4                                       F2109710
                  00004 DIAG    EQU 4                                       F2109711
                  05510 LMSK    SYN L(MZ)                                   F2109712
                  00222 TTAPE   EQU 146                                     F2109722
                  00224 TLTAPE  EQU 148                                     F2109732
A                 00000         END                 END OF BLOCK 1          F2109742
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1          REM BLOCK TWO OF SECTION TWO.
1                                BLOCK TWO OF SECTION TWO.
                                    MASTER RECORD CARD = FN034                                F2200004
                                 BLOCK 2 OF SECTION 2 PERFORMS SUBSCRIPT ANALYSIS FOR THOSE   F2200006
                                 SUBSCRIPT COMBINATIONS WHICH HAVE SUBSCRIPTS                 F2200010
                                 SOME OR ALL OF WHICH ARE UNDER CONTROL OF THEIR RESPECTIVE   F2200020
                                 DOS. THERE ARE TWO MACHINE STATES, ONE                       F2200030
                                 OF WHICH IS RESERVED EXCLUSIVELY                             F2200040
                                 FOR THOSE SUBSCRIPT COMBINATIONS                             F2200050
                                 SOME SUBSCRIPT ELEMENT/S OF WHICH ARE                        F2200060
                                 NOT UNDER CONTROL OF A DO (RELATIVE                          F2200070
                                 CONSTANT).                                                   F2200080
00031                     ORG 25                                                              F2200090
00031 DOTAG               BSS 1                                                               F2200100
00032                     BSS 449                                                             F2200110
00733 DOTAGZ              BSS 1                                                               F2200120
00734 FORTAG              BSS 1                                                               F2200140
00735                     BSS 1499                                                            F2200150
03670 FORTZ               BSS 1                                                               F2200160
03670                     ORG 1976                                                            F2200170
03670 DOREC               BSS 1                    (INIT ZERO)                                F2200180
03671                     BSS 1                                                               F2200190
03672 ATSW                BSS 1          ADDED TAG SWITCH. EQ 1 IF PROC ADDED TAGS(INITO    F2200200
03673 NEWTAG              BSS 1               (INIT 4000MOD8, FIRSTTAG)                      F2200210
03674 XC                  BSS 1          IX CURRENT DO.                                      F2200220
03675 LC                  BSS 1          LEV CURRENT DO                                      F2200230
03676 ALPHA               BSS 1          ALPHA CURRENT DO                                    F2200240
03677 BETA                BSS 1          BETA CURRENT DO                                     F2200250
03700 TAG                 BSS 1          TAG CURRENT TAG IN ROUTINE TAG                      F2200260
03701 TS                  BSS 1          TAG, EITHER FORTAG OR NEW TAG NAME OF CURRENT       F2200270
03702 TAG1                BSS 1          4TH WD OF TAGTAG                                    F2200280
03703 GROUP               BSS 1          GROUP NR. IN DEC                                    F2200290
03704 C1                  BSS 1          COEFF 1ST SYMB (HERE TO D2 BELOW, INIT 0,SUBCOM    F2200300
03705 S1                  BSS 1          SUBSCR 1ST SYMB                                     F2200310
03706 C2                  BSS 1          COEFF 2ND SYMB                                      F2200320
03707 S2                  BSS 1          SUBSC 2ND                                           F2200330
03710 C3                  BSS 1          COEFF 3RD                                           F2200340
03711 S3                  BSS 1          SUBSC 3RD                                           F2200350
03712 D1                  BSS 1          DIMENSION 1ST                                       F2200360
03713 D2                  BSS 1          DIM 2ND                                             F2200370
03714 X1                  BSS 1          IX DO MATHCHING 1ST SYMB.) (HERE TO CARWRD          F2200380
03715 L1                  BSS 1          LEV DO MATCHING 1ST SYMB    BELOW, INIT 0,IDENT    F2200390
03716 X2                  BSS 1          IX DO MATHCING 2ND SYMB                             F2200400
03717 L2                  BSS 1          LEV DO MATCHING  2ND                                F2200410
03720 X3                  BSS 1          IX DO MATCHING 3RD                                  F2200420
03721 L3                  BSS 1          LEV DO MATCHING 3RD                                 F2200430
03722 XL                  BSS 1          IX LOWEST LEVEL DOSUB                               F2200440
03723 LL                  BSS 1          LEV LOWEST LEVEL DOSUB                              F2200450
03724 NRSUBS              BSS 1          NR. SUBSCRIPTS IN SUBSCR COMBINATION                F2200460
03725 NRRC                BSS 1          NR. RELCONS IN SUBSCR COMBINATION                   F2200470
03726 NRDS                BSS 1          NR DOSUBS IN S.C.                                   F2200480
03727 DORC                BSS 1          BIT POS 15,16,17 EQ 1 IF CORRES X1,X2,X3 DORC       F2200490
03730 RCSUBS              BSS 1          BIT POS 15,16,17 EQ 1 IF CORRES X1,X2,X3 RELCON    F2200500
03731 DOSUBS              BSS 1          BIT POS 15,16,17 EQ 1 IF CORRES X1,X2,X3 DOSUB      F2200510
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                 03732 DELTA  BSS 1                                                    F2200520
                 03733 RCDUP  BSS 1          BIT POS 15,16,17,EQ1 FOR CORRES DUPE RELCONS  F2200530
                 03734 DUPES  BSS 1          BIT POS 15,16,17 EQ 1 FOR CORRES DUPE DOSUBS  F2200540
                 03735 RSYM1  BSS 1                                                    F2200550
                 03736 RSYM2  BSS 1                                                    F2200560
                 03737 CARWRD BSS 1          BIT 11 IF LEFT TYPE 1 CARRY, 12 LEFT TYPE 2,  F2200570
                                             13 CENTER TYPE 1, 14 CENTER TYPE 2.          F2200571
                                             S SET NEG IF COUNTER AND TEST FOUND          F2200572
                 03740 TL1    BSS 1                                                    F2200580
                 03741 TL2    BSS 1                                                    F2200590
                 03742 A      BSS 1                                                    F2200600
                 03743 B      BSS 1                                                    F2200610
                 03744 NEXTA  BSS 1                                                    F2200620
                 03745 LASTB  BSS 1                                                    F2200630
                 03746 REBITS BSS 1                                                    F2200640
                 03747 TRABIT BSS 1                                                    F2200650
                 03750 LOWPOS BSS 1          5,3,1 IF LL SUBSCR IS X1,X2,X3 RESPECT. (ID)  F2200660
03751  0 00000 0 00000 L(0)       0,0,0                                                F2200670
03752  0 00001 0 00000 L(1)       0,0,1                                                F2200680
03753  0 00002 0 00000 L(2)       0,0,2                                                F2200690
03754  0 00003 0 00000 L(3)       0,0,3                                                F2200700
03755  0 00004 0 00000 L(4)       0,0,4                                                F2200710
03756  0 00005 0 00000 L(5)       0,0,5                                                F2200720
03757  0 00006 0 00000 L(6)       0,0,6                                                F2200730
03760  0 00024 0 00000 L(20)      0,0,20                                               F2200740
03761  0 00044 0 00000 L(36)      0,0,36                                               F2200750
03762  0 00074 0 00000 L(60)      0,0,60                                               F2200760
03763  0 00702 0 00000 L(450)     0,0,450                                              F2200770
03764  0 02734 0 00000 L(1500     0,0,1500                                             F2200780
03765  0 00000 0 00001 L(1)A      1                                                    F2200790
03766  0 00000 0 00002 L(2)A      2                                                    F2200800
03767  0 00000 0 00004 L(4)A      4                                                    F2200810
03770 -0 00000 0 00000 L(MZ)  MZE                                                      F2200820
03771 +377777777777    35ONES OCT 377777777777                                         F2200830
03772 +077777000000    DECMSK OCT 77777000000                                          F2200840
03773 +000000077777    ADDMSK OCT 77777                                                F2200850
03774 +000100000000    CR1    OCT 100000000    BIT 11                                  F2200860
03775 +000040000000    CR2    OCT 40000000     BIT 12                                  F2200870
03776 +000000300000    CARMSK OCT 300000       BITS 19,20 (CARRY BITS OF DOTAG, WD 6)  F2200880
03777 +000000004000    FRSTAG OCT 4000                                                 F2200890
04000 +200000000000    BITONE OCT 200000000000                                         F2200900
04001 +100000000000    BITTWO OCT 100000000000                                         F2200910
04002 -200000000000    2BITS  OCT -200000000000 S AND 1 BIT                            F2200920
04003 +000000400000    BIT18  OCT 400000                                               F2200930
04004 +000000200000    BIT19  OCT 200000                                               F2200940
04005 +000000100000    BIT20  OCT 100000                                               F2200950
04006  0 00000 0 00144 ADTXX      100          DEC CONTAINS (FROM HERE TO NAMXX BELOW,  F2200960
04007  0 00000 0 00454 RESXX      300          IX VALUE FOR NEXT (DEC INIT SET TO ADD)  F2200970
04010  0 00000 0 00120 TAGXX      80           TABLE ENTRY.                             F2200980
04011  0 00000 0 00144 NAMXX      100                                                  F2200990
04012  0 77200 0 00223 BEGIN  REW DOTAPE                  REWIND DOTAG TAPE             F2201000
04013 -0 53400 1 03756        LXD L(5),1                  INITIALIZE                    F2201010
04014  0 50000 1 05106 BEG10  CLA LADDIN+5,1              DRUM PROGRAM                  F2201020
04015 -0 32000 0 03773        ANA ADDMSK                  ADDRESSES                     F2201030
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04016  0 60100 1 05101        STO LADDS+5,1                                                F2201040
04017  2 00001 1 04014        TIX BEG10,1,1                                                F2201050
04020  0 50000 0 03751        CLA L(0)                                                     F2201060
04021  0 60100 0 03670        STO DOREC                                                    F2201070
04022 -0 76000 0 00012        RTT                          TURN                            F2201080
04023  0 76100 0 00000        NOP                          LIGHT OFF                       F2201090
04024 -0 53400 6 03751        LXD L(0),6                   TEST FOR EMPTY                  F2201100
04025 -0 76000 0 00144        MSE 100                      FORVAL                          F2201110
04026 -0 53400 4 03752        LXD L(1),4                   OFF, NOT EMPTY                  F2201120
04027 -0 63400 4 04112        SXD END80,4                  ON, EMPTY                       F2201130
04030 -0 76000 0 00143        MSE 99                       TEST FOR                        F2201140
04031 -0 53400 2 03752        LXD L(1),2                   EMPTY DOTAG.                    F2201150
04032 -0 63400 2 04113        SXD END85,2                  SAVE TABLE INFO IN END PROG.    F2201160
04033 -3 00000 2 04043        TXL END,2,0                  IF DOTAG EMPTY, GO TO END.      F2201170
04034 -0 53400 1 00733        LXD FORTAG-1,1               INITIALIZE                      F2201180
04035 -0 63400 1 05426        SXD TINF30,1                 FORTAG                          F2201190
04036 -0 63400 1 04407        SXD TAG20,1                  TEST                            F2201200
04037 -0 63400 1 04516        SXD TAG90,1                  INSTRUCTIONS.                   F2201210
04040  0 50000 0 03777  PAT01 CLA FRSTAG        INITIALIZE NEW TAG NAME BASE.              F2201220
04041  0 60100 0 03673        STO NEWTAG                                                   F2201230
04042  0 02000 0 04116        TRA NEST                                                     F2201240
04043  0 77000 0 00224 END    WEF ATAPE                    WEF ON TAGTAG TAPE              F2201250
04044  0 76600 0 00303        WRS 195                      MAKE END OF DRUMTAG TABLE ENTRY. F2201260
04045  0 46000 0 05100        LDA LADDS+4                                                  F2201270
04046  0 70000 0 03771        CPY 35ONES                                                   F2201280
04047  0 70000 0 03771        CPY 35ONES                                                   F2201290
04050 -0 53400 1 03756        LXD L(5),1                                                   F2201300
04051  0 76600 0 00333 END10  WRS 219                      DELAY.                          F2201310
04052  0 76600 0 00303        WRS ADRUM                    WRITE                           F2201320
04053  0 50000 1 05106        CLA LADDIN+5,1               ALL                             F2201330
04054  0 40200 0 03766        SUB L(2)A                    DRUM                            F2201340
04055  0 62100 0 04114        STA END90                    TABLE                           F2201350
04056  0 50000 1 05106        CLA LADDIN+5,1               WORD                            F2201360
04057 -0 32000 0 03773        ANA ADDMSK                   COUNTS                          F2201370
04060  0 40200 1 05101        SUB LADDS+5,1     IN                                         F2201380
04061  0 76000 0 00003        SSP               FIRST                                      F2201390
04062  0 60100 0 04115        STO END95         TWO                                        F2201400
04063  0 46000 0 04114        LDA END90         WORDS                                      F2201410
04064  0 70000 0 04115        CPY END95         PRECEDING                                  F2201420
04065  0 70000 0 04115        CPY END95         EACH TABLE . (TSXCOM, TRASTO, NAMKEY,      F2201430
04066  2 00001 1 04051        TIX END10,1,1     CHATAG, DRMTAG)                            F2201440
04067  0 76000 0 00140        PSE 96                       RESTORE SENSE LIGHTS            F2201450
04070 -0 53400 1 04112        LXD END80,1                  SL 100 ON, FORVAL EMPTY         F2201460
04071  3 00000 1 04073        TXH END20,1,0                SL 99 ON, DOTAG EMPTY.          F2201470
04072  0 76000 0 00144        PSE 100                                                      F2201480
04073 -0 53400 1 04113 END20  LXD END85,1                                                  F2201490
04074  3 00000 1 04076        TXH END30,1,0                                                F2201500
04075  0 76000 0 00143        PSE 99                                                       F2201510
04076  0 77000 0 00222 END30  WEF TAPE2         WRITE EOF AFTER DONEST RECORDS.            F2201520
04077  0 76600 0 00222        WRS TAPE2                                                    F2201530
04100  0 70000 0 03670        CPY DOREC         MAKE AN EXTRA FILE WITH                    F2201540
04101  0 70000 0 03670        CPY DOREC         DONEST RECORD COUNT.                       F2201550
04102  0 77000 0 00222        WEF TAPE2                                                    F2201560
04103  0 50000 0 05075        CLA LADDS+1       TRASTO CARRYOVER TO BLOCK 3.               F2201570
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                                                                                                                                F2201580
04104   0 60100 0 07775          STO 4093                                                                                       F2201590
04105   0 50000 0 05074          CLA LADDS          TSXCOM CARRYOVER TO BLOCK 3.                                                F2201600
04106   0 60100 0 07776          STO 4094                                                                                       F2201610
04107   0 50000 0 05076          CLA LADDS+2        NAMKEY (OR NAME) CARRYOVER TO BLOCK 3.                                      F2201620
04110   0 60100 0 07777          STO 4095                                                                                       F2201635
04111   0 02000 0 06647          TRA NORMRT                                                                                     F2201640
A 04112   0 00000 0 00000 END80  HTR                ES. (DEC HAS 1 IF FORVAL NOT EMPTY)                                         F2201650
A 04113   0 00000 0 00000 END85  HTR                FOR  (DEC HAS 1 IF DOTAG NOT EMPTY)                                         F2201670
A 04114   0 00000 0 00000 END90  HTR                          END                                                               F2201680
A 04115   0 00000 0 00000 END95  HTR                          PROGRAM.                                                          F2201690
04116  -0 53400 1 03751 NEST    LXD L(0),1                    READ                                                              F2201700
04117   0 76200 0 00223 NEST10  RDS DOTAPE                    ONE                                                               F2201710
04120  -0 53400 2 03763         LXD L(450),2                  NEST OF DO FORMULAS                                               F2201720
04121   0 70000 2 00733 NEST20  CPY DOTAGZ,2                  FROM                                                              F2201730
04122   1 77777 2 04156         TXI NEST60,2,-1               DOTAPE.                                                           F2201740
04123   0 02000 0 04043         TRA END                       IF EOF, GO TO ROUTINE END.                                        F2201750
04124   0 50000 0 03751 NEST30  CLA L(0)                      INITIALIZING INSTRUCTIONS.                                        F2201760
04125   0 60100 0 03672         STO ATSW                                                                                        F2201780
04126  -0 63400 2 03674         SXD XC,2                      PUT C(XRB) IN XC                                                  F2201790
04127  -0 63400 2 00030         SXD DOTAG-1,2      INITIALIZE                                                                   F2201800
04130  -0 63400 2 04260         SXD NEST95,2       DECS                                                                         F2201810
04131  -0 63400 2 05451         SXD TRAW20,2       THAT                                                                         F2201820
04132  -0 63400 2 05464         SXD TRAW50,2       TEST                                                                         F2201830
04133  -0 63400 2 05316         SXD SPC040,2       END OF                                                                       F2201840
04134  -0 63400 2 05353         SXD SPC090,2       DONEST.                                                                      F2201850
04135   0 53400 4 04006         LXA ADTXX,4        INIT                                                                         F2201860
04136  -0 63400 4 04006         SXD ADTXX,4        DECS                                                                         F2201870
04137   0 53400 4 04007         LXA RESXX,4        FROM                                                                         F2201880
04140  -0 63400 4 04007         SXD RESXX,4        ADDRESSES.                                                                   F2201890
04141   0 53400 4 04010         LXA TAGXX,4                                                                                     F2201900
04142  -0 63400 4 04010         SXD TAGXX,4                                                                                     F2201910
04143   0 53400 4 04011         LXA NAMXX,4                                                                                     F2201920
04144  -0 63400 4 04011         SXD NAMXX,4                                                                                     F2201930
04145   0 76600 0 00333         WRS 219                       MAKE                                                              F2201940
04146  -0 76000 0 00012         RTT                           RTT                                                               F2201950
04147   0 02000 0 04151         TRA NEST35                    TEST                                                              F2201960
04150   0 02000 0 04262         TRA DOFOR                     IF NO ERROR, GO TO DOFOR.                                         F2201970
04151   1 00001 1 04152 NEST35  TXI NEST40,1,1                IF ERROR,                                                         F2201985
04152   3 00004 1 04155 NEST40  TXH NEST50,1,4     TRY 4 TIMES MORE FOR                                                         F2201990
04153   0 76400 0 00223         BST DOTAPE                    CORRECT READ.                                                     F2202002
04154   0 02000 0 04117         TRA NEST10         AFTER FIFTH INCORRECT READ,                                               F2202015
04155   0 07400 4 00004 NEST50  TSX DIAG,4                              ERROR. GO TO DIAGNOSTIC.                                F2202020
04156   3 00000 2 04121 NEST60  TXH NEST20,2,0                 INDEX COPY. IF DOTAG                                         F2202030
04157   0 70000 0 04163         CPY NEST70                     STORAGE FULL, AND MORE                                       F2202045
04160   0 07400 4 00004         TSX DIAG,4  NEST ENTRIES REMAIN.        ERROR. GO TO DIAGNOSTIC.                                F2202055
04161   0 07400 4 00004         TSX DIAG,4  INCORRECT EOF.              ERROR. GO TO DIAGNOSTIC.                                F2202060
04162   0 02000 0 04124         TRA NEST30                     NO ENTRIES LEFT, GO TO NEST30.                               F2202070
A 04163   0 00000 0 00000 NEST70  HTR                    E.S.                                                                 F2202080
04164  -0 53400 2 03755 NESTEN  LXD L(4),2                   PUT END OF NEST INDICATION                                       F2202090
04165   0 50000 0 03771         CLA 35ONES                    IN TAGTAG, CONSISTING OF                                         F2202100
04166   0 60100 2 05067 NEST80  STO E1+4,2                    FOUR WORDS OF 35 ONES.                                           F2202120
04167   2 00001 2 04166         TIX NEST80,2,1                                                                                  F2202130
04170   0 07400 4 05510         TSX TAGENT,4                  ENTER IN TAGTAG AND                                              F2202140
04171   0 07400 2 05522         TSX TETAPE,2                  WRITE BUFFER ON TAPE.
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04172  0 50000 0 03752          CLA L(1)                    SET ADDED TAG SWITCH          F2202150
04173  0 60100 0 03672          STO ATSW                    AND GO TO DRMENT TO           F2202160
04174  0 07400 4 05206          TSX DRMENT,4                PROCESS ADDED TAGS            F2202170
04175 -0 53400 1 04011          LXD NAMXX,1                 TRANSFER                      F2202180
04176 -0 63400 1 04212          SXD NEST84,1                TO DRUM TABLE NAME            F2202190
04176 -0 63400 1 04212          SXD NEST84,1                TO DRUM TABLE NAME            F2202190
04177  0 53400 1 04011          LXA NAMXX,1                 ALL ENTRIES                   F2202200
D 04200 -3 00000 0 04212 NEST81 TXL NEST84,0               IN CORE TABLE NAME             F2202210
04201  0 50000 1 07301 NEST82 CLA NAMZ,1                                                  F2202220
04202  0 60100 0 05063          STO E1                                                    F2202230
04203  0 50000 1 07302          CLA NAMZ+1,1                                              F2202240
04204  0 60100 0 05064          STO E2                                                    F2202250
04205  0 50000 0 05071          CLA NAMKEY                                                F2202260
04206 -0 63400 1 04200          SXD NEST81,1                                              F2202270
04207  0 07400 4 05025          TSX LIST,4                                                F2202280
04210 -0 53400 1 04200          LXD NEST81,1                                              F2202290
04211  1 77776 1 04212          TXI NEST84,1,-2                                           F2202300
D 04212  3 00000 1 04201 NEST84 TXH NEST82,1                                              F2202310
04213 -0 53400 1 04006          LXD ADTXX,1                 TRANSFER                      F2202320
04214 -0 63400 1 04234          SXD NEST88,1                TO DRUM TABLE NAME            F2202330
04215  0 53400 1 04006          LXA ADTXX,1                 ALL ENTRIESP                  F2202340
D 04216 -3 00000 0 04234 NEST85 TXL NEST88,0               IN CORE TABLE ADTAG            F2202350
04217  0 50000 1 07136 NEST86 CLA ADTAGZ+1,1               EXCEPT                        F2202360
04220 -0 12000 0 04233          TMI NEST87                  RESET                         F2202370
04221  0 60100 0 05064          STO E2                      ENTRIES                       F2202380
04222  0 50000 1 07135          CLA ADTAGZ,1                                              F2202390
04223  0 60100 0 05063          STO E1                                                    F2202400
04224 -0 73400 2 00000          PDX 0,2                                                   F2202410
04225  0 50000 2 00733          CLA DOTAGZ,2                                              F2202420
04226  0 62200 0 05063          STD E1                                                    F2202430
04227 -0 63400 1 04216          SXD NEST85,1                                              F2202440
04230  0 50000 0 05071          CLA NAMKEY                                                F2202450
04231  0 07400 4 05025          TSX LIST,4                                                F2202460
04232 -0 53400 1 04216          LXD NEST85,1                                              F2202470
04233  1 77776 1 04234 NEST87 TXI NEST88,1,-2                                             F2202480
D 04234  3 00000 1 04217 NEST88 TXH NEST86,1                                              F2202490
04235 -0 53400 1 00030 NST100 LXD DOTAG-1,1                                               F2202500
04236  0 02000 0 04247          TRA NST120                                                F2202510
04237  0 50000 1 00743 NST110 CLA DOTAGZ+8,1     DOES BIT 20 WD 9 OF THIS DOTAG           F2202520
04240 -0 32000 0 04005          ANA BBIT          EQ 1.                                   F2202530
04241  0 10000 0 04247          TZE NST120        AND                                     F2202540
04242  0 50000 1 00732          CLA DOTAGZ-1,1    DOES BIT 18 WD 9 OF PRIOR DOTAG          F2202550
04243 -0 32000 0 04003          ANA ABIT          EQ 1.                                   F2202560
04244 -0 10000 0 04247          TNZ NST120                                                F2202570
04245  0 50000 0 03773          CLA ADDMSK        YES. ERASE DEC WD 9                     F2202580
04246  0 32000 1 00743          ANS DOTAGZ+8,1    OF PRIOR  DOTAG.                        F2202590
04247  1 00011 1 04250 NST120 TXI NST130,1,9                                              F2202610
04250 -3 00671 1 04237 NST130 TXL NST110,1,441                                            F2202620
04251  0 50000 0 03670          CLA DOREC                   WRITE                         F2202630
04252  0 40000 0 03752          ADD L(1)                    DOTAG                         F2202640
04253  0 60100 0 03670          STO DOREC                   ON                            F2202660
04254  0 76600 0 00222          WRS TAPE2                   TAPE TWO.                     F2202670
04255 -0 53400 1 03763          LXD L(450),1                COUNT NR.                     F2202680
04256  0 70000 1 00733 NEST90 CPY DOTAGZ,1                OF NESTS                      F2202690
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04257   1 77777 1 04260         TXI  NEST95,1,-1
D  04260   3 00000 1 04256 NEST95 TXH  NEST90,1
04261   0 02000 0 04116         TRA  NEST
04262  -0 53400 1 03674 DOFOR   LXD  XC,1
04263   1 00011 1 04264         TXI  DOF10,1,9
04264   3 00702 1 04164 DOF10   TXH  NESTEN,1,450
04265   0 07400 4 04363         TSX  DOINFO,4
04266   0 02000 0 04377         TRA  TAG00
04267  -0 53400 1 03674 DOFEND  LXD  XC,1
04270   0 50000 1 00743         CLA  DOTAGZ+8,1
04271  -0 32000 0 04004         ANA  BIT19
04272   0 10000 0 04326         TZE  MAKESC
04273  -0 50000 1 00740         CAL  DOTAGZ+5,1
04274  -0 32000 0 04002         ANA  2BITS
04275  -0 10000 0 04301         TNZ  DOF15
04276   0 50000 0 04005         CLA  BIT20
04277  -0 32000 1 00741         ANA  DOTAGZ+6,1
04300   0 10000 0 04305         TZE  DOF20
04301   0 50000 1 00741 DOF15   CLA  DOTAGZ+6,1
04302  -0 32000 0 04001         ANA  BITTWO
04303  -0 10000 0 04322         TNZ  DOF40
04304   0 02000 0 04326         TRA  MAKESC
04305   0 50000 1 00740 DOF20   CLA  DOTAGZ+5,1
04306  -0 32000 0 04003         ANA  SUBBIT
04307   0 10000 0 04314         TZE  DOF30
04310   0 50000 1 00743         CLA  DOTAGZ+8,1
04311  -0 73400 2 00000         PDX  0,2
04312   3 00000 2 04322         TXH  DOF40,2,0
04313   0 02000 0 04326         TRA  MAKESC
04314   0 50000 1 00743 DOF30   CLA  DOTAGZ+8,1
04315   0 77100 0 00014         ARS  12
04316  -0 73400 2 00000         PDX  0,2
04317  -3 00013 2 04322         TXL  DOF40,2,11
04320   0 50000 0 04005         CLA  BBIT
04321  -0 60200 1 00743         ORS  DOTAGZ+8,1
04322   0 50000 0 04325 DOF40   CLA  DOF50
04323   0 32000 1 00743         ANS  DOTAGZ+8,1
04324   0 02000 0 04262         TRA  DOFOR
04325 +007777777777     DOF50  OCT  7777777777
04326   0 50000 0 03755 MAKESC  CLA  L(4)
04327   0 60100 0 03731         STO  DOSUBS
04330   0 50000 0 03751         CLA  L(0)
04331   0 60100 0 03730         STO  RCSUBS
04332   0 60100 0 03727         STO  DORC
04333   0 60100 0 03704         STO  C1
04334   0 60100 0 03737         STO  CARWRD
04335   0 50000 0 03673         CLA  NEWTAG
04336   0 60100 0 03701         STO  TS
04337   0 40000 0 03765         ADD  L(1)A
04340   0 60100 0 03673         STO  NEWTAG
04341   0 07400 4 06075         TSX  1NS00,4
04342   0 50000 0 03757         CLA  L(6)
04343  -0 50100 0 03767         ORA  L(4)A
04344  -0 50100 0 03737         ORA  CARWRD
```

```
IN DOREC.                                  F2202700
(DEC HAS DOTAG IX)                         F2202710
RETURN FOR NEXT NEST.                      F2202720
OBTAIN                                     F2202730
NEXT BACK DO,                              F2202740
IF ANY.                                    F2202750
USE DOINFO                                 F2202760
AND GO TO TAG00 ROUTINE.                   F2202770
IS A COUNTER                               F2202780
                                           F2202790
                                           F2202800
                                           F2202810
NECESSARY BECAUSE OF                       F2202820
TRANSFERS OR COMPUTATION WITH              F2202830
SYMBOL.                                    F2202840
TEST FOR                                   F2202850
DELTA TWO                                  F2202860
INSERT                                     F2202870
HAS A COUNTER BEEN                         F2202880
FOUND.                                     F2202890
IF NOT,                                    F2202900
MAKE ONE. (RETURN IS TO DOF40)             F2202910
IF NO COUNTER NECESSARY,                   F2202920
HAS SYM OCCURRED WITH                      F2202930
RECON NOT AS TYPE ONE                      F2202940
CARRY. IF SO, HAS A                        F2202950
TEST BEEN FOUND.                           F2202960
IF NOT,                                    F2202970
MAKE A COUNTER (RETURN IS TO DOF40)        F2202980
IF SYM HAS NOT OCCURRED WITH               F2202990
RELCON OR IN SUCH OCCURRENCES              F2203000
WAS ALWAYS A TYPE ONE                      F2203010
CARRY, IS CURRECT TEST                     F2203020
                                           F2203030
                                           F2203040
MADE. TAKE SIGN AND                        F2203050
TEST TABLE INTEGER OUT                     F2203060
OF TEST WORD AND EXIT.                     F2203070
                                           F2203080
INITIALIZE                                 F2203090
DOSUBS AND OTHER LOCATIONS                 F2203100
USED IN 1NS00.                             F2203110
                                           F2203120
                                           F2203130
                                           F2203140
                                           F2203150
GET A NAME                                 F2203160
FOR THIS                                   F2203170
SUBSCRIPT AND                              F2203180
UP DATE NEWTAG.                            F2203190
USE 1NS00 FOR TEST INFO,LIST.              F2203200
SET UP TAG TAG                             F2203210
ENTRY                                      F2203220
                                           F2203230
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04345  0 60200 0 05066          SLW E4                                                  F2203240
04346  0 50000 0 03701          CLA TS                                                  F2203250
04347  0 60100 0 05065          STO E3                                                  F2203270
04350  0 50000 0 03751          CLA L(0)                                                F2203280
04351  0 60100 0 05064          STO E2                                                  F2203290
04352  0 50000 0 03674          CLA XC                                                  F2203300
04353  0 77100 0 00022          ARS 18                                                  F2203310
04354 -0 50100 0 03676          ORA ALPHA                                               F2203320
04355  0 60100 0 05063          STO E1                                                  F2203340
04356  0 07400 4 05510          TSX TAGENT,4                ENTER INTO TAGTAG.          F2203350
04357 -0 53400 1 03674          LXD XC,1                                                F2203360
04360  0 50000 0 04003          CLA ABIT                                                F2203370
04361 -0 60200 1 00743          ORS DOTAGZ+8,1                                          F2203380
04362  0 02000 0 04322          TRA DOF40                   RETURN                      F2203390
04363  0 50000 1 00733 DOINFO   CLA DOTAGZ,1                FOR THE DO FORMULA WHOSE    F2203400
04364  0 73400 2 00000          PAX 0,2                     INDEX IS IN XRA,            F2203410
04365 -0 32000 0 03772          ANA DECMSK                  ESTABLISH                   F2203420
04366  0 60100 0 03676          STO ALPHA                   ALPHA,BETA,XC,XL            F2203430
04367 -0 75400 2 00000          PXD 0,2                                                 F2203440
04370  0 60100 0 03677          STO BETA                                                F2203450
04371 -0 75400 1 00000          PXD 0,1                                                 F2203460
04372  0 60100 0 03674          STO XC                                                  F2203470
04373  0 50000 1 00740          CLA DOTAGZ+5,1                                          F2203480
04374 -0 32000 0 03772          ANA DECMSK                                              F2203490
04375  0 60100 0 03675          STO LC                                                  F2203500
04376  0 02000 4 00001          TRA 1,4                                                 F2203510
04377 -0 53400 1 03764 TAG00    LXD L(1500,1                THIS ROUTINE                F2203520
04400  0 02000 0 04407          TRA TAG20                   SELECTS EVERY TAG           F2203530
04401  0 50000 1 03670 TAG05    CLA FORTZ,1                 IN THE RANGE OF THE         F2203540
04402 -0 32000 0 03772          ANA DECMSK                  CURRENT DO WHICH            F2203550
04403  0 34000 0 03676          CAS ALPHA                   CONTAINS THE SUBSCRIPT      F2203560
04404  0 02000 0 04413          TRA TAG30                   SYMBOL OF THE CURRENT       F2203570
04405  0 07400 4 00004          TSX DIAG,4  DO, AND WHICH HAS NOT      (ERROR. GO TO DIAGNOSTIC.)F2203585
04406  1 77777 1 04407 TAG10    TXI TAG20,1,-1              PREVIOUSLY BEEN             F2203590
D 04407  3 00000 1 04401 TAG20  TXH TAG05,1       PROCESSED, AND    (DEC HAS FORTAG IX)   F2203600
04410  0 02000 0 04267          TRA DOFEND                  COMPLETELY PROCESSES        F2203610
04411 -0 53400 1 04414 TAG25    LXD TAG40,1                 THE TAG. THE RETURN         F2203620
04412  0 02000 0 04406          TRA TAG10                   IS TO DOFEND                F2203630
04413  0 34000 0 03677 TAG30    CAS BETA                    COMPARE WITH BETA.          F2203640
D 04414 -3 00000 0 04267 TAG40  TXL DOFEND,0      RANGE FINISHED.     (DEC HAS CURR FORTAG IX)  F2203650
04415  0 76100 0 00000          NOP                         IF ENTRY IS NEGATIVE,       F2203660
04416  0 50000 1 03670          CLA FORTZ,1                 THEN IT HAS ALREADY         F2203670
04417 -0 12000 0 04406          TMI TAG10                   BEEN PROCESSED.             F2203680
04420 -0 32000 0 03773          ANA ADDMSK                  STORE                       F2203690
04421  0 60100 0 03700          STO TAG                     IN TAG,                     F2203710
04422 -0 63400 1 04414          SXD TAG40,1                 AND SAVE INDEX.             F2203720
04423  0 07400 4 04520          TSX SUBCOM,4                OBTAIN SUB. COM.            F2203730
04424  0 76100 0 00000          NOP                                                     F2203745
04425  0 07400 4 05566          TSX IDENT,4                 USE IDENT.                  F2203750
04426  0 02000 0 04411          TRA TAG25                   SC. NOT WANTED.             F2203760
04427  0 07400 4 06030          TSX NAME,4                  SC. TO BE PROCESSED. USE NAME.  F2203770
04430  0 07400 4 05106          TSX BRANCH,4                                            F2203780
04431  0 07400 4 04614          TSX SCEND,4                                             F2203800
04432  0 07400 4 05510          TSX TAGENT,4                                            F2203810
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04433 -0 53400 2 03756 TAG50  LXD L(5),2
04434  0 50000 2 03721 TAG52  CLA X1+5,2          ENTER BIT 18 WD 9
04435  0 10000 0 04447         TZE TAG58          OF MATCHING DOTAG
04436 -0 73400 1 00000         PDX 0,1            IF 1ST SUBSCR OR
04437  3 00004 2 04445         TXH TAG56,2,4      IF THERE IS NO
04440  0 50000 0 03774         CLA CR1            TYPE 1 CARRY INTO
04441  3 00002 2 04443         TXH TAG54,2,2      THE 2ND AND 3RD
04442  0 77100 0 00002         ARS 2              SUBSCRS RESPECTIVELY.
04443 -0 32000 0 03737 TAG54    ANA CARWRD
04444 -0 10000 0 04447         TNZ TAG58
04445  0 50000 0 04003 TAG56    CLA ABIT           ENTER BIT 18 WD 9.
04446 -0 60200 1 00743         ORS DOTAGZ+8,1
04447  2 00002 2 04434 TAG58    TIX TAG52,2,2
04450 -0 53400 4 03756         LXD L(5),4
04451  0 50000 4 03721 TAG60    CLA X1+5,4         TAG 60 SEQUENCE CONCERNS
04452  0 10000 0 04500         TZE TAG68          TESTS AND ADDED TAGS.
04453 -0 73400 1 00000         PDX 0,1            FOR EACH INDEXED SUBSCRIPT,
04454  0 50000 0 03730         CLA RCSUBS         DETERMINE F IRST WHETHER
04455 -0 50100 0 03727         ORA DORC           OR NOT IT
04456  0 10000 0 04470         TZE TAG66          OCCURS WITH
04457 -3 00001 4 04465         TXL TAG64,4,1      A RELCON.
04460  0 50000 0 03774         CLA CR1            IF SO, PUT IN
04461  3 00003 4 04463         TXH TAG62,4,3      SUBBIT MEANING A TEST
04462  0 77100 0 00002         ARS 2              IS NEEDED UNLESS
04463 -0 32000 0 03737 TAG62    ANA CARWRD         THE 1ST AND 2ND
04464 -0 10000 0 04500         TNZ TAG68          SUBSCR PROMOTE A
04465  0 50000 0 04003 TAG64    CLA SUBBIT         TYPE ONE CARRY  (LEFT
04466 -0 60200 1 00740         ORS DOTAGZ+5,1     OR CENTER RESPECTIVELY)
D 04467 -3 00000 0 04500 TAG65  TXL TAG68,0        IS
04470  0 50000 0 04004 TAG66    CLA BIT19          NEEDED.
04471 -0 60200 1 00743         ORS DOTAGZ+8,1
04472  0 50000 1 00740         CLA DOTAGZ+5,1     IF THE SUBSCRIPT DOES NOT 3CCUR
04473 -0 32000 0 04002         ANA 2BITS          WITH A RELCON, DETERMINE WHETHER OR
04474 -0 10000 0 04500         TNZ TAG68          NOT A COUNTER HAS ALREAD Y BEEN REQUESTED.
04475 -0 63400 4 04467         SXD TAG65,4        IF SO, TAKE NEXT INDEXED SUBSCR.
04476  0 07400 2 04665         TSX TEST,2         IF NOT, USE ROUTINE TEST.
04477 -0 53400 4 04467         LXD TAG65,4        THEN TAKE NEXT INDEXED SUBSCRIPT.
04500  2 00002 4 04451 TAG68    TIX TAG60,4,2
04501 -0 53400 1 04414 TAG70    LXD TAG40,1        SET ALL OCCURRANCES
04502  0 50000 1 03670 TAG72    CLA FORTZ,1        OF THIS TAG, IN FORTAG,
04503 -0 32000 0 03772         ANA DECMSK         IN THE RANGE OF THIS
04504  0 34000 0 03677         CAS BETA           DO, NEGATIVE.
D 04505 -3 00000 0 04411 TAG75  TXL TAG25,0
04506  0 76100 0 00000         NOP
04507  0 50000 1 03670         CLA FORTZ,1
04510 -0 32000 0 03773         ANA ADDMSK
04511  0 40200 0 03700         SUB TAG
04512 -0 10000 0 04515         TNZ TAG80
04513 -0 50000 0 03770         CAL L(MZ)
04514 -0 60200 1 03670         ORS FORTZ,1
04515  1 77777 1 04516 TAG80    TXI TAG90,1,-1
D 04516  3 00000 1 04502 TAG90  TXH TAG72,1        (DEC HAS FORTAG IX)
04517  0 02000 0 04411         TRA TAG25          RETURN FOR NEXT TAG.
                               THIS ROUTINE, GIVEN A TAU TAG, OBTAINS THE
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F2203820 F2203830 F2203840 F2203850 F2203860 F2203870 F2203890 F2203900 F2203910 F2203920 F2203930 F2203940 F2203950 F2203960 F2203970 F2203980 F2203990 F2204000 F2204020 F2204030 F2204040 F2204050 F2204060 F2204070 F2204080 F2204090 F2204100 F2204110 F2204120 F2204130 F2204140 F2204160 F2204170 F2204180 F2204190 F2204200 F2204210 F2204220 F2204230 F2204240 F2204250 F2204260 F2204270 F2204280 F2204290 F2204300 F2204310 F2204320 F2204330 F2204340 F2204350 F2204360 F2204370 F2204380

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                                        CORRESPONDING SUBSCRIPT COMBINATION FROM THE TAU          F2204390
                                        DRUM AND POSITIONS IT IN PROPER FORMAT IN STORAGE.        F2204400
04520 -0 63400 4 04601 SUBCOM SXD SUB085,4          SAVE LINKAGE INDEX.                           F2204410
04521 -0 53400 1 04607        LXD SUBORG,1          INITIALIZE ERROR COUNTER.                     F2204420
04522  0 76200 0 00304 SUB010 RDS TAUDRM            SELECT TAU DRUM.                              F2204430
04523 -0 53400 4 04611        LXD SUBORG+2,4        INITIALIZE                                    F2204440
04524 -0 75400 0 00000        PXD 0,0               SUBSCRIPT COMBINATION                         F2204450
04525  0 60100 4 03714 SUB020 STO C1+8,4            SPACE                                         F2204460
04526  2 00001 4 04525        TIX SUB020,4,1        TO ZERO.                                      F2204470
04527  0 50000 0 03700        CLA TAG               COMPUTE                                       F2204480
04530  0 76500 0 00011        LRS 9                 DRUM                                          F2204490
04531  0 73400 6 00000        PAX 0,6               ADDRESS.                                      F2204500
04532 -0 75400 0 00000        PXD 0,0               TAU ONE ADD. IS ORG+3TAU.                     F2204510
04533  0 76300 0 00011        LLS 9                 TAU TWO ADD. IS ORG+5TAU.                     F2204520
04534  0 60100 0 04612        STO SUBES1            TAU THREE ADD. IS ORG+7TAU.                   F2204530
04535  0 76700 0 00001        ALS 1                 STORE                                         F2204540
04536  0 60100 0 04613        STO SUBES2            ADDRESS                                       F2204550
04537  0 50000 4 04612        CLA SUBORG+3,4        IN SUBES1                                     F2204560
04540  0 40000 0 04612        ADD SUBES1            FOR LDA                                       F2204570
04541  0 40000 0 04613 SUB030 ADD SUBES2            INSTRUCTION.                                  F2204580
04542  2 00001 4 04541        TIX SUB030,4,1                                                      F2204590
04543  0 62100 0 04612        STA SUBES1                                                          F2204600
04544  0 46000 0 04612        LDA SUBES1            COPY SUB. COMB.                               F2204610
04545  0 70000 0 03704        CPY C1                TAU ONE, TWO, THREE                           F2204620
04546 -3 00002 2 04550        TXL SUB040,2,2                                                      F2204630
04547  0 70000 0 03710        CPY C3                TAU 3                                         F2204640
04550  0 70000 0 03705 SUB040 CPY S1                TAU 1,2,3                                     F2204650
04551 -3 00001 2 04556        TXL SUB060,2,1                                                      F2204660
04552  0 70000 0 03707        CPY S2                TAU 2,3                                       F2204670
04553 -3 00002 2 04555        TXL SUB050,2,2                                                      F2204680
04554  0 70000 0 03711        CPY S3                TAU 3                                         F2204690
04555  0 70000 0 03712 SUB050 CPY D1                TAU 2,3                                       F2204700
04556  0 70000 0 04612 SUB060 CPY SUBES1            TAU 1,2,3                                     F2204710
04557 -0 53400 4 04607        LXD SUBORG,4          COMPUTE CHECK SUM                             F2204720
04560 -0 50000 0 03704        CAL C1                AND COMPARE WITH                              F2204730
04561  0 36100 4 03713 SUB070 ACL C1+7,4            ENTRY CHECK SUM.                              F2204740
04562  2 00001 4 04561        TIX SUB070,4,1        THREE ATTEMPTS ARE MADE                       F2204750
04563  0 60200 0 04613        SLW SUBES2            TO READ SC CORRECTLY.                         F2204760
04564  0 50000 0 04613        CLA SUBES2            IF ERROR STILL PRESENT,                       F2204770
04565  0 40200 0 04612        SUB SUBES1            COMPLETE ROUTINE, MAKE ERROR RET.             F2204780
04566  0 10000 0 04571        TZE SUB075            CHECK SUMS AGREE, TRA.                        F2204790
04567  2 00001 1 04522        TIX SUB010,1,1    CHECK SUMS DISAGREE                               F2204805
04570  0 07400 4 00004 PAT03  TSX DIAG,4  IN READING TAU FROM DRUM.   ERROR. GO TO DIAGNOSTIC.    F2204815
04571 -0 53400 4 04610 SUB075 LXD SUBORG+1,4        REARRANGE C1,C2,D1,D2,                        F2204820
04572  0 50000 4 03713 SUB080 CLA C1+7,4            TO COMPLY WITH CORE                           F2204830
04573  0 73400 2 00000        PAX 0,2               STORAGE FORMAT.                               F2204840
04574 -0 32000 0 03772        ANA DECMSK                                                          F2204850
04575  0 60100 4 03713        STO C1+7,4                                                          F2204860
04576 -0 75400 2 00000        PXD 0,2                                                             F2204870
04577 -2 00006 4 04602        TNX SUB090,4,6                                                      F2204880
04600  0 60100 0 03706        STO C2                                                              F2204890
D 04601 -3 00000 0 04572 SUB085 TXL SUB080,0                                                      F2204900
04602  0 60100 0 03713 SUB090 STO D2                                                            F2204910
04603 -0 53400 4 04601        LXD SUB085,4          RESTORE LINKAGE INDEX,                        F2204920
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04604   0 76100 0 00000          NOP                                          F2204935
04605   0 02000 4 00002          TRA 2,4          NORMAL RETURN.              F2204940
04606   0 76100 0 00000 SUB100   NOP                                          F2204955
04607 +000006001356      SUBORG  OCT 6001356     DEC. IS 6, ADD. IS ORG. TAU 3 F2204960
04610 +000007000454              OCT 7000454      DEC. IS 7, ADD. IS ORG. TAU 2 F2204970
04611 +000010000000              OCT 10000000     DEC. IS 8, ADD. IS ORG. TAU 1 F2204980
A 04612   0 00000 0 00000 SUBES1  HTR              E.S.                        F2204990
A 04613   0 00000 0 00000 SUBES2  HTR              E.S.                        F2205000
                                 SCEND COLLECTS TAGTAG ENTRY AND MAKES TABLE ENTRY F2205010
04614   0 50000 0 03703 SCEND    CLA GROUP        ALL OF SCEND IS CONCERNED   F2205020
04615   0 60100 0 03702          STO TAG1         WITH GENERATING THE         F2205030
04616   0 50000 0 03731          CLA DOSUBS       TAGTAG ENTRY FROM ITS       F2205040
04617  -0 50100 0 03734          ORA DUPES                                    F2205050
04620   0 77100 0 00022          ARS 18           VARIOUS COMPONENTS.         F2205060
04621  -0 60200 0 03702          ORS TAG1                                     F2205070
04622   0 50000 0 03730          CLA RCSUBS                                   F2205079
04623  -0 50100 0 03727          ORA DORC                                     F2205080
04624   0 77100 0 00017          ARS 15                                       F2205100
04625  -0 60200 0 03702          ORS TAG1                                     F2205110
04626   0 50000 0 03734          CLA DUPES                                    F2205120
04627   0 77100 0 00011          ARS 9                                        F2205130
04630  -0 60200 0 03702          ORS TAG1                                     F2205140
04631  -0 50000 0 03737          CAL CARWRD                                   F2205150
04632  -0 60200 0 03702          ORS TAG1                                     F2205160
04633  -0 53400 1 03756          LXD L(5),1                                   F2205170
04634   0 50000 0 03752 SCE010   CLA L(1)                                     F2205180
04635   0 34000 1 03711          CAS C1+5,1       GENERATES THE THREE BIT     F2205190
04636   0 02000 0 04645          TRA SCE020       TAG SHOWING WHICH           F2205200
04637   0 02000 0 04645          TRA SCE020       COEFFICIENTS ARE GREATER    F2205210
04640  -0 75400 1 00000          PXD 0,1          THAN ONE.                   F2205220
04641  -3 00001 1 04643          TXL SCE015,1,1                               F2205230
04642   0 40200 0 03752          SUB L(1)                                     F2205240
04643   0 77100 0 00006 SCE015   ARS 6                                        F2205250
04644  -0 60200 0 03702          ORS TAG1                                     F2205260
04645   2 00002 1 04634 SCE020   TIX SCE010,1,2                               F2205270
04646   0 50000 0 03702          CLA TAG1         TAG1 IS NOW COMPLETE.       F2205280
04647   0 60100 0 05066          STO E4           CONSTRUCT THE TAGTAG        F2205290
04650   0 50000 0 03700          CLA TAG          ENTRY                       F2205300
04651   0 76700 0 00022          ALS 18                                       F2205310
04652   0 40000 0 03701          ADD TS                                       F2205320
04653   0 60100 0 05065          STO E3                                       F2205330
04654   0 50000 0 03720          CLA X3                                       F2205340
04655   0 77100 0 00022          ARS 18                                       F2205350
04656   0 40000 0 03716          ADD X2                                       F2205360
04657   0 60100 0 05064          STO E2                                       F2205370
04660   0 50000 0 03714          CLA X1                                       F2205380
04661   0 77100 0 00022          ARS 18                                       F2205390
04662   0 40000 0 03676          ADD ALPHA                                    F2205400
04663   0 60100 0 05063          STO E1                                       F2205410
04664   0 02000 4 00001          TRA 1,4                                      F2205420
04665   0 50000 1 00743 TEST     CLA DOTAGZ+8,1   IF A SUFFICIENTLY GOOD      F2205430
04666  -0 12000 2 00001          TMI 1,2          TEST PREVIOUSLY FOUND, EXIT. F2205440
04667   2 00001 4 04670          TIX TEST10,4,1   XRC CONTAINS 5,3,1,         F2205450
04670  -0 75400 4 00000 TEST10   PXD 0,4          DEPENDING ON POSITION NR    F2205460
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04671  0 76700 0 00003          ALS 3                      1,2,3. CONSTRUCT A                F2205470
04672 -0 50100 0 03703          ORA GROUP                  TABLE SEARCH MASK IN              F2205480
04673 -3 00001 4 04701          TXL TEST20,4,1             WHICH THE FORTH OCTAL             F2205490
04674  0 60100 0 04732          STO TEST85                 DIGIT IS THE CARRY BIT            F2205500
04675  0 50000 0 03737          CLA CARWRD                 INFO. FOR THE POSITION            F2205510
04676  0 76700 4 00005          ALS 5,4                    BEING CONSIDERED, THE             F2205520
04677 -0 32000 0 04733          ANA TEST90                 FIFTH OCTAL DIGIT IS THE          F2205530
04700 -0 50100 0 04732          ORA TEST85                 POSITION BIT, AND THE             F2205540
04701 -0 53400 4 04704 TEST20   LXD TEST35,4               SIXTH OCTAL DIGIT                 F2205550
04702  0 34000 4 04754 TEST30   CAS TESTAB+15,4            IS THE GROUP NUMBER.              F2205560
04703  1 77777 4 04706          TXI TEST40,4,-1            SEARCH TESTAB FOR                 F2205570
04704 -3 00017 0 04707 TEST35   TXL TEST50,0,15            ENTRY AND CONSIDER                F2205580
04705  1 77777 4 04706          TXI TEST40,4,-1            C(XRC) AFTER SEARCH, IF           F2205590
04706  3 00000 4 04702 TEST40   TXH TEST30,4,0             ENTRY NOT FOUND,C(XRC)=0.         F2205600
04707 -0 63400 4 04715 TEST50   SXD TEST60,4               COMPARE THIS INTEGER              F2205610
04710  0 50000 1 00743          CLA DOTAGZ+8,1             WITH PREVIOUS INTEGER,            F2205620
04711 -0 73400 4 00000          PDX 0,4                    IF ANY. IF NEW NR. IS LESS        F2205630
04712 -3 00000 4 04720          TXL TEST75,4,0             THAN OLD, USE NEW TAG             F2205640
04713  0 77100 0 00014          ARS 12                     FOR TEST. OTHERWISE               F2205650
04714 -0 73400 4 00000          PDX 0,4                    USE OLD TAG.                      F2205660
D 04715 -3 00000 4 04731 TEST60 TXL TEST80,4          (DEC HAS TEST TAB NR. FOR THIS S.C.)   F2205670
04716  0 50000 0 04734 TEST70   CLA TEST95                 IF THE NEW TAG IS                 F2205680
04717  0 32000 1 00743          ANS DOTAGZ+8,1             USED, AND C(XRC)                  F2205690
04720 -0 53400 4 04715 TEST75   LXD TEST60,4               AFTER SEARCH WAS ZERO,            F2205700
04721 -0 75400 4 00000          PXD 0,4                    SET DOTAGZ+8 WORD                 F2205710
04722  0 77100 0 00006          ARS 6                      NEGATIVE.                         F2205720
04723 -0 50100 0 03701          ORA TS                                                       F2205730
04724  0 76700 0 00022          ALS 18                                                       F2205740
04725 -0 60200 1 00743          ORS DOTAGZ+8,1                                               F2205750
04726  3 00000 4 04731          TXH TEST80,4,0                                               F2205760
04727 -0 50000 0 03770          CAL L(MZ)                                                    F2205770
04730 -0 60200 1 00743          ORS DOTAGZ+8,1                                               F2205780
04731  0 02000 2 00001 TEST80   TRA 1,2                                                      F2205790
A 04732  0 00000 0 00000 TEST85 HTR                STORAGE FOR COMPOSED TST WORD.            F2205800
04733 +000300000000     TEST90  OCT 300000000      BITS 10, 11                               F2205810
04734 +000000777777     TEST95  OCT 777777                                                   F2205820
04735 +000241000000     TESTAB  OCT 241000000      FIRST SIGNIF DIGIT CONTAINS               F2205830
04736 +000221000000             OCT 221000000      A TWO IF TYPE ONE CARRY ,                 F2205840
04737 +000244000000             OCT 244000000      ONE IF TYPE TWO FROM LEFT OR              F2205850
04740 +000222000000             OCT 222000000      CENTER. (4TH OCT DIG). NEXT               F2205860
04741 +000141000000             OCT 141000000      HAS 4 IF POSIT OF SUBSC IS                F2205870
04742 +000121000000             OCT 121000000      LEFT, 2 IF CENTER, 0 IF RIGHT             F2205880
04743 +000144000000             OCT 144000000      (5TH OCT DIGIT).   FINAL DIG HAS          F2205890
04744 +000122000000             OCT 122000000      GROUP NR. (6TH OCT DIG).                  F2205900
04745 +000045000000             OCT 45000000                                                 F2205910
04746 +000041000000             OCT 41000000                                                 F2205920
04747 +000021000000             OCT 21000000                                                 F2205930
04750 +000044000000             OCT 44000000                                                 F2205940
04751 +000022000000             OCT 22000000                                                 F2205950
04752 +000043000000             OCT 43000000                                                 F2205960
04753 +000023000000             OCT 23000000                                                 F2205970
04754 -0 63400 4 04770 CARRY    SXD CAR05,4                SAVE LINKAGE                      F2205980
04755  0 50000 2 03720          CLA X1+4,2                 PUT LEFT INDEX                    F2205990
04756 -0 73400 1 00000          PDX 0,1                    IN XRA                            F2206000
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04757  0 50000 2 03722          CLA X1+6,2                  PUT RIGHT INDEX                  F2206010
04760 -0 73400 4 00000          PDX 0,4                     IN XRC                           F2206020
04761  0 50000 1 00740          CLA DOTAGZ+5,1              TEST LEFS SUB. DO                F2206030
04762 -0 32000 0 03776          ANA CARMSK                  CARRY BITS.                      F2206040
04763  0 10000 0 05022          TZE CAR30                   EXIT IF NO CARRY.                F2206050
04764  0 50000 1 00741          CLA DOTAGZ+6,1              COMPARE                          F2206060
04765 -0 32000 0 03772          ANA DECMSK                  NO CARRY TRA LEVEL               F2206070
04766  0 34000 0 03723          CAS LL                      AND LOW LEVEL.                   F2206080
04767  0 02000 0 05022          TRA CAR30                   EXIT                             F2206090
D 04770 -3 00000 0 05022 CAR05  TXL CAR30,0                                                  F2206100
04771  0 50000 1 00740          CLA DOTAGZ+5,1              COMPUTE FOR LEFT                 F2206110
04772 -0 32000 0 03773          ANA ADDMSK                  SUBSCRIPT THE QUANTITY           F2206120
04773  0 60100 0 05024          STO CAR40                   C*X (COEF. TIMES ADDED           F2206130
04774  0 56000 0 05024          LDQ CAR40                   VALUE).                          F2206140
04775  0 20000 2 03710          MPY C1+4,2                  COMPUTE FOR RIGHT                F2206150
04776 -0 60000 0 05024          STQ CAR40                   SUBSCRIPT THE QUANTITY           F2206160
04777  0 56000 0 03712          LDQ D1                      C*N3*D(L) (COEF.TIMES            F2206170
05000  3 00002 2 05002          TXH CAR10,2,2               INCREMENT TIMES DIM. OF          F2206180
05001  0 56000 0 03713          LDQ D2                      LEFT SUBSCRIPT.                  F2206190
05002  0 20000 4 00737 CAR10    MPY DOTAGZ+4,4              IF THESE QUANTITIES              F2206200
05003  0 20000 2 03712          MPY C1+6,2                  ARE UNEQUAL,                     F2206210
05004  0 76700 0 00021          ALS 17                      EXIT                             F2206220
05005  0 40200 0 05024          SUB CAR40                                                    F2206230
05006 -0 10000 0 05022          TNZ CAR30                   OBTAIN LEFT                      F2206240
05007  0 50000 1 00740          CLA DOTAGZ+5,1              SUB. DOTAG                       F2206250
05010 -0 32000 0 03776          ANA CARMSK                  CARRY BITS AGAIN.                F2206260
05011  0 77100 0 00017          ARS 15                      TEST FOR                         F2206270
05012  0 76000 0 00001          LBT                         CARRY TYPE ONE                   F2206280
05013  0 02000 0 05016          TRA CAR15                   OR CARRY TYPE                    F2206290
05014  0 50000 0 03774          CLA CR1                     TWO.                             F2206300
05015  0 02000 0 05017          TRA CAR20                   OBTAIN PROPER                    F2206310
05016  0 50000 0 03775 CAR15    CLA CR2                     TAGTAG CARRY BIT,                F2206320
05017  3 00002 2 05021 CAR20    TXH CAR25,2,2               SHIFT IF NECESSARY FOR           F2206330
05020  0 77100 0 00002          ARS 2                       CENTER SUB. AND                  F2206340
05021 -0 60200 0 03737 CAR25    ORS CARWRD                  PLACE IN CARWRD.                 F2206350
05022 -0 53400 4 04770 CAR30    LXD CAR05,4                 EXIT                             F2206360
05023  0 02000 4 00001          TRA 1,4                                                      F2206370
A 05024  0 00000 0 00000 CAR40  HTR                         E.S.                             F2206380
05025 -0 63400 4 05060 LIST     SXD LIST40,4        SAVE LINKAGE                             F2206400
05026 -0 73400 1 00000          PDX 0,1                     PUT INDEX QUANTITY IN XRA        F2206410
05027  0 73400 6 00000          PAX 0,6                     PUT NR. OF WDS IN XRB,XRC.       F2206420
05030  0 40000 0 05061          ADD LIST50                  COMPUTE NR. OF WRDS              F2206430
05031  0 62100 0 05046          STA LIST30                  PLUS ORIGIN EI AND               F2206440
05032  0 62100 0 05041          STA LIST20                  INITIALIZE ADDRESSES.            F2206450
05033  0 50000 1 05106          CLA LADDIN+5,1              TEST                             F2206460
05034  0 77100 0 00022          ARS 18                      FOR                              F2206470
05035  0 40200 1 05101          SUB LADDS+5,1               FULL                             F2206480
05036 -0 10000 0 05040          TNZ LIST10                  TABLE.                           F2206490
05037  0 07400 4 07774          TSX BURNCE,4        DRUM OVERFLOW, GO SAVE IRA BEFORE DIAG.  F2206505
05040 -0 75400 0 00000 LIST10   PXD 0,0                     ZERO IN ACC.                     F2206510
05041  0 36100 2 00000 LIST20   ACL 0,2                     COMPUTE                          F2206520
05042  2 00001 2 05041          TIX LIST20,2,1              ENTRY                            F2206530
05043  0 76600 0 00303          WRS ADRUM           SELECT DRUMF                             F2206535
05044  0 60200 0 05062          SLW LIST60                  CHECK SUM.                       F2206540
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05045  0 46000 1 05101         LDA LADDS+5,1                  COPY                                F2206550
05046  0 70000 4 00000 LIST30  CPY 0,4                        ENTRY                               F2206560
05047  2 00001 4 05046         TIX LIST30,4,1                 AND                                 F2206570
05050  0 70000 0 05062         CPY LIST60                     CHECK SUM.                          F2206580
05051  0 50000 1 05101         CLA LADDS+5,1                  COMPUTE                             F2206590
05052  0 40000 1 05074         ADD TSXCOM+5,1                 NEXT                                F2206600
05053  0 40000 0 03765         ADD L(1)A                      ENTRY                               F2206610
05054 -0 32000 0 03773         ANA ADDMSK                     ADDRESS.                            F2206620
05055  0 60100 1 05101         STO LADDS+5,1                                                      F2206630
05056 -0 53400 4 05060         LXD LIST40,4                   EXIT                                F2206640
05057  0 02000 4 00001         TRA 1,4                                                            F2206650
A 05060  0 00000 0 00000 LIST40 HTR                           E.S.                                F2206660
05061  0 00000 0 05063 LIST50  HTR E1                         L(E1)                               F2206670
A 05062  0 00000 0 00000 LIST60 HTR                           E.S.                                F2206680
                                FOUR WORD ENTRY BLOCK                                             F2206690
A 05063  0 00000 0 00000 E1     HTR                                                               F2206700
A 05064  0 00000 0 00000 E2     HTR                                                               F2206710
A 05065  0 00000 0 00000 E3     HTR                                                               F2206720
A 05066  0 00000 0 00000 E4     HTR                                                               F2206730
                                FIVE KEY WORDS, C(DEC)=INDEX QUANTITIES, C(ADD)=NR. OF WORDS.F2206740
05067  0 00005 0 00002 TSXCOM HTR 2,0,5          ACC KEY WORD WHEN TSX TO LIST.                   F2206750
05070  0 00004 0 00003 TRASTO HTR 3,0,4          (ADD DOES NOT INCL CHECK SUM)                    F2206760
05071  0 00003 0 00002 NAMKEY HTR 2,0,3                                                           F2206770
05072  0 00002 0 00002 CHATAG HTR 2,0,2                                                           F2206780
05073  0 00001 0 00004 DRMTAG HTR 4,0,1          (ADTAG)                                          F2206790
                                FIVE WORDS CONTAINING CURRENT TABLE ADDRESSES IN ADD. PART.       F2206800
A 05074  0 00000 0 00000 LADDS  HTR               TSXCOM   - ADD OF LADDIN - LAST PLUS 1          F2206810
A 05075  0 00000 0 00000        HTR               TRASTO                                          F2206820
A 05076  0 00000 0 00000        HTR               NAMKEY                                          F2206830
A 05077  0 00000 0 00000        HTR               CHATAG                                          F2206840
A 05100  0 00000 0 00000        HTR               DRMTAG                                          F2206850
                                FIVE WORDS, C(ADD)=ORIGIN, C(DEC)=LAST TABLE LOC. PLUS ONE        F2206860
05101  0 01756 0 01302 LADDIN HTR 706,0,1006                 TSXCOM                              F2206870
05102  0 01300 0 00460         HTR 304,0,704                  TRASTO                              F2206880
05103  0 02662 0 01760         HTR 1008,0,1458                NAMKEY                              F2206890
05104  0 00456 0 00002         HTR 2,0,302                    CHATAG                              F2206900
05105  0 03650 0 02664         HTR 1460,0,1960                DRMTAG                              F2206910
05106 -0 63400 4 05122 BRANCH  SXD BRA45,4                    IF THERE ARE RELCONS                F2206920
05107  0 50000 0 03725         CLA NRRC                       (NOT DORC) IN THE SC,               F2206930
05110  0 10000 0 05112         TZE BRA10                      USE                                 F2206940
05111  0 07400 4 05534         TSX RELCON,4                   RELCON.                             F2206950
05112 -0 53400 1 03726 BRA10   LXD NRDS,1                     THIS ROUTINE                        F2206960
05113  3 00001 1 05116         TXH BRA30,1,1                  CONDENSES                           F2206970
05114  0 07400 4 06075 BRA20   TSX 1NS00,4                    DUPLICATE                           F2206980
05115  0 02000 0 05136         TRA BRA90                      SUBSCRIPTS                          F2206990
05116  3 00002 1 05123 BRA30   TXH BRA50,1,2                  AND                                 F2207000
05117  0 50000 0 03734         CLA DUPES                      TRANSFERS                           F2207010
05120 -0 10000 0 05114         TNZ BRA20                      TO                                  F2207020
05121  0 07400 4 06147 BRA40   TSX 2NS00,4                    ROUTINES                            F2207030
D 05122 -3 00000 0 05136 BRA45  TXL BRA90,0                    1NS00, 2NS00, 3NS00                 F2207040
05123 -0 53400 4 03734 BRA50   LXD DUPES,4                    AFTER                               F2207050
05124  3 00006 4 05114         TXH BRA20,4,6                  PROCESSING,                         F2207060
05125 -3 00000 4 05135         TXL BRA80,4,0                  RETURN                              F2207070
05126  3 00005 4 05132         TXH BRA60,4,5                  IS TO                               F2207080
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05127 -3 00003 4 05132        TXL BRA60,4,3
05130  0 50000 0 03754        CLA L(3)
05131  0 02000 0 05133        TRA BRA70
05132  0 50000 0 03756 BRA60  CLA L(5)
05133  0 60100 0 03731 BRA70  STO DOSUBS
05134  0 02000 0 05121        TRA BRA40
05135  0 07400 4 06246 BRA80  TSX 3NS00,4
05136 -0 53400 4 05122 BRA90  LXD BRA45,4
05137  0 02000 4 00001        TRA 1,4
05140 -0 63400 4 05204 RSR    SXD RSR20,4
05141 -0 63400 1 05205        SXD RSR30,1
05142  0 50000 1 00741        CLA DOTAGZ+6,1
05143 -0 32000 0 04003        ANA BIT18
05144 -0 10000 0 05164        TNZ RSR10
05145  0 50000 0 04003        CLA BIT18
05146 -0 60200 1 00741        ORS DOTAGZ+6,1
05147  0 50000 1 00733        CLA DOTAGZ,1
05150 -0 76000 0 00003        SSM
05151  0 60100 0 05063        STO E1
05152  0 50000 1 00740        CLA DOTAGZ+5,1
05153 -0 32000 0 03772        ANA DECMSK
05154  0 77100 0 00022        ARS 18
05155  0 60100 0 05064        STO E2
05156  0 50000 1 00743        CLA DOTAGZ+8,1
05157 -0 32000 0 03772        ANA DECMSK
05160 -0 50100 1 00735        ORA DOTAGZ+2,1
05161  0 60100 0 05065        STO E3
05162  0 50000 0 05070        CLA TRASTO
05163  0 07400 4 05025        TSX LIST,4
05164 -0 53400 1 05205 RSR10  LXD RSR30,1
05165  0 50000 1 00743        CLA DOTAGZ+8,1
05166 -0 32000 0 03772        ANA DECMSK
05167 -0 50100 0 03701        ORA TS
05170 -0 76000 0 00003        SSM
05171  0 60100 0 05065        STO E3
05172  0 50000 0 03741        CLA TL2
05173  0 77100 0 00022        ARS 18
05174 -0 50100 0 03740        ORA TL1
05175  0 60100 0 05064        STO E2
05176  0 50000 1 00733        CLA DOTAGZ,1
05177  0 60100 0 05063        STO E1
05200  0 50000 0 05070        CLA TRASTO
05201  0 07400 4 05025        TSX LIST,4
05202 -0 53400 4 05204        LXD RSR20,4
05203  0 02000 4 00001        TRA 1,4
A 05204  0 00000 0 00000 RSR20  HTR
A 05205  0 00000 0 00000 RSR30  HTR
05206 -0 63400 4 05212 DRMENT SXD DRM05,4
05207 -0 53400 2 04006        LXD ADTXX,2
05210 -0 63400 2 05241        SXD DRM20,2
05211  0 53400 2 04006        LXA ADTXX,2
D 05212 -3 00000 0 05241 DRM05  TXL DRM20,0
05213  0 50000 2 07135 DRM10  CLA ADTAGZ,2
05214 -0 73400 1 00000        PDX 0,1
```

```
DRMENT OR
TAGOO

SAVE LINKAGE
SAVE INDEX
HAS COUNTER ADJUSTMENT
INSTRUCTION BEEN ENTERED.
IF SO, GO TO RSR10
IF NOT, ENTER IN
TRASTO AN ENTRY TO CAUSE
THE COUNTER TO BE

DECREASED BY N1, WHICH
WILL MAKE IT USEFUL AS
AS A RESET SUB. COMB.

ENTER IN TRASTO
AN ENTRY TO CAUSE
THE TAG UNDER
CONSIDERATION

TO BE RESET
BY THE ADJUSTED
COUNTER AT THE
PROPER TIMES.

THIS ROUTINE
PROCESSES THE
ADDED TAG TABLE

OBTAIN FIRST ENTRY WORD.
PUT INDEX IN XRA.
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F2207090
F2207100
F2207110
F2207120
F2207130
F2207140
F2207150
F2207160
F2207170
F2207180
F2207190
F2207200
F2207210
F2207220
F2207230
F2207240
F2207250
F2207260
F2207270
F2207280
F2207290
F2207300
F2207310
F2207320
F2207330
F2207340
F2207350
F2207360
F2207370
F2207380
F2207390
F2207400
F2207410
F2207420
F2207430
F2207440
F2207450
F2207460
F2207470
F2207480
F2207490
F2207500
F2207510
F2207520
F2207530
F2207540
F2207550
F2207560
F2207570
F2207580
F2207590
F2207600
F2207610
F2207620
```

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05215 -0 32000 0 03773          ANA ADDMSK                  STORE TAG                          F2207630
05216  0 60100 0 03700          STO TAG                     IN TAG                             F2207640
05217  0 60100 0 03701          STO TS                      AND TS                             F2207650
05220 -0 75400 1 00000          PXD 0,1                     PUT INDEX                          F2207660
05221  0 60100 0 03674          STO XC                      IN XC                              F2207670
05222 -0 63400 2 05244          SXD DRM30,2                 SAVE INDEX B.                      F2207680
05223  0 50000 2 07136          CLA ADTAGZ+1,2              OBTAIN WORD TWO.                   F2207690
05224 -0 12000 0 05245          TMI DRM40                   TRA IF RESET ENTRY.                F2207700
05225  0 60100 0 03701          STO TS                      SAVE NAME IN TS.                   F2207710
05226  0 07400 4 04363          TSX DOINFO,4                USE DOINFO                         F2207720
05227  0 07400 4 04520          TSX SUBCOM,4                AND                                F2207730
05230  0 76100 0 00000          NOP                 OTHER                                      F2207745
05231  0 07400 4 05566          TSX IDENT,4                 ROUTINES                           F2207750
05232  0 07400 4 00004          TSX DIAG,4  IN ORDER TO                (ERROR. GO TO DIAGNOSTIC.)F2207765
05233  0 07400 4 05106          TSX BRANCH,4                PROCESS                            F2207770
05234  0 07400 4 04614          TSX SCEND,4                 ENTRY.                             F2207780
05235  0 50000 0 05073          CLA DRMTAG                                                       F2207790
05236  0 07400 4 05025          TSX LIST,4                  ENTER RESULT IN DRMTAG.            F2207800
05237 -0 53400 2 05244 DRM15    LXD DRM30,2                                                      F2207810
05240  1 77776 2 05241          TXI DRM20,2,-2                                                   F2207820
D 05241  3 00000 2 05213 DRM20  TXH DRM10,2                                                      F2207830
05242 -0 53400 4 05212          LXD DRM05,4                                                      F2207840
05243  0 02000 4 00001          TRA 1,4                                                          F2207850
A 05244  0 00000 0 00000 DRM30  HTR                                                              F2207860
05245  0 73400 4 00000 DRM40    PAX 0,4                     FOR RESET ENTRY,                   F2207870
05246 -0 32000 0 03772          ANA DECMSK                  INITIALIZE CELLS                   F2207880
05247  0 60100 0 03740          STO TL1                     USED IN RSR ROUTINE.               F2207890
05250 -0 75400 4 00000          PXD 0,4                                                          F2207900
05251  0 60100 0 03741          STO TL2                                                          F2207910
05252  0 07400 4 05140          TSX RSR,4                                                        F2207920
05253  0 02000 0 05237          TRA DRM15                   TRA FOR NEXT ENTRY.                F2207930
                                    SUBROUTINE TAGADD                                            F2207940
05254  3 00000 2 05256 TAGADD   TXH TAGAD1,2,0     C(IRB) EQ 1 IF NORMAL ADTAG                   F2207950
05255 -0 75400 1 00000          PXD 0,1                                                          F2207960
05256 -0 53400 1 04006 TAGAD1   LXD ADTXX,1                                                      F2207970
05257 -3 00000 1 05273          TXL TAGAD6,1,0                                                   F2207980
05260  3 00000 2 05274          TXH TAGAD8,2,0              XRB=1,NORMAL ADDED TAG             F2207990
05261  0 40000 0 03700          ADD TAG                                                          F2208000
05262  0 60100 1 07135          STO ADTAGZ,1                                                     F2208010
05263  0 50000 0 03673          CLA NEWTAG                                                       F2208020
05264  0 56000 0 03673          LDQ NEWTAG                                                       F2208030
05265  0 60100 1 07136          STO ADTAGZ+1,1                                                   F2208040
05266  0 40000 0 03765          ADD L(1)A                                                        F2208050
05267  0 60100 0 03673          STO NEWTAG                                                       F2208060
05270  1 77776 1 05271          TXI TAGAD2,1,-2                                                  F2208070
05271 -0 63400 1 04006 TAGAD2   SXD ADTXX,1                                                      F2208080
05272  0 02000 4 00001 TAGAD3   TRA 1,4                                                          F2208088
05273  0 07400 4 00004 TAGAD6   TSX DIAG,4  TABLE WILL NOT HOLD ENTRY.  ERROR. GO TO DIAGNOSTIC. F2208095
05274  0 60100 1 07135 TAGAD8   STO ADTAGZ,1                                                     F2208110
05275 -0 60000 1 07136          STQ ADTAGZ+1,1                                                   F2208120
05276  1 77776 1 05271          TXI TAGAD2,1,-2                                                  F2208130
                                    SUBROUTINE SPC000                                            F2208140
05277 -0 63400 1 05371 SPC000   SXD SPC115,1                SAVE INDEX OF DO TO BE SEARCHED.   F2208150
05300 -0 63400 2 05344          SXD SPC060,2                SAVE TINFOR,LIST INDICATOR         F2208160
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05301 -0 63400 4 05361         SXD SPC105,4
05302  0 60100 0 05410         STO SPCKEY
05303  0 50000 1 00740         CLA DOTAGZ+5,1
05304  0 62200 0 05321         STD SPC050
05305  0 50000 1 00733         CLA DOTAGZ,1
05306  0 73400 2 00000         PAX 0,2
05307 -0 32000 0 03772         ANA DECMSK
05310  0 60100 0 03744         STO NEXTA
05311  0 60100 0 03742         STO A
05312 -0 75400 2 00000         PXD 0,2
05313  0 60100 0 03745         STO LASTB
05314 -0 53400 1 05371 SPC010  LXD SPC115,1
05315  1 77767 1 05316 SPC020  TXI SPC040,1,-9
D 05316 -3 00000 1 05362 SPC040  TXL SPC110,1
05317  0 50000 1 00740         CLA DOTAGZ+5,1
05320 -0 73400 2 00000         PDX 0,2
D 05321 -3 00000 2 05362 SPC050  TXL SPC110,2
05322  0 50000 1 00734         CLA DOTAGZ+1,1
05323  0 40200 0 03735         SUB RSYM1
05324  0 10000 0 05330         TZE SPC053
05325  0 50000 1 00734         CLA DOTAGZ+1,1
05326  0 40200 0 03736         SUB RSYM2
05327 -0 10000 0 05315         TNZ SPC020
05330  0 50000 1 00733 SPC053  CLA DOTAGZ,1
05331  0 73400 2 00000         PAX 0,2
05332 -0 32000 0 03772         ANA DECMSK
05333  0 60100 0 03743         STO B
05334 -0 75400 2 00000         PXD 0,2
05335  0 60100 0 03744         STO NEXTA
05336 -0 63400 1 05371         SXD SPC115,1
05337 -0 53400 2 05344 SPC055  LXD SPC060,2
05340  0 50000 0 03742 SPC058  CLA A
05341  0 40200 0 03743         SUB B
05342  0 10000 0 05345         TZE SPC065
05343 -3 00001 2 05376         TXL SPCTIN,2,1
D 05344 -3 00000 0 05401 SPC060  TXL SPCSTO,0
05345 -0 53400 2 05344 SPC065  LXD SPC060,2
05346 -3 00000 2 05372         TXL SPC120,2,0
05347 -0 53400 1 05371 SPC070  LXD SPC115,1
05350  0 50000 1 00740         CLA DOTAGZ+5,1
05351  0 62200 0 05356         STD SPC100
05352  1 77767 1 05353 SPC080  TXI SPC090,1,-9
D 05353 -3 00000 1 05362 SPC090  TXL SPC110,1
05354  0 50000 1 00740         CLA DOTAGZ+5,1
05355 -0 73400 2 00000         PDX 0,2
D 05356  3 00000 2 05352 SPC100  TXH SPC080,2
05357  0 50000 0 03744         CLA NEXTA
05360  0 60100 0 03742         STO A
D 05361 -3 00000 0 05321 SPC105  TXL SPC050,0
05362  0 50000 0 03744 SPC110  CLA NEXTA
05363  0 60100 0 03742         STO A
05364  0 50000 0 03745         CLA LASTB
05365  0 60100 0 03743         STO B
05366 -0 53400 2 05344         LXD SPC060,2
```

```
SAVE TSX INDEX.                                  F2208170
SAVE LIST KEY WORD                               F2208180
OBTAIN L WORD                                    F2208190
INITIALIZE TEST INSTR.                           F2208200
OBTAIN ALPHABETA WRD,                            F2208210
SAVE BETA,                                       F2208220
OBTAIN ALPHA ALONE                               F2208230
STO IN NEXTA                                     F2208240
AND STORE IN A.                                  F2208250
PUT BETA IN LASTB AND                            F2208260
BETING SEARCH FOR R2                             F2208270
OBTAIN CURRENT INDEX AND                         F2208280
GO DOWN ONE DO,IF POSSIBLE,ELSE                  F2208290
GO TO SET UP LAST INTERVAL.                      F2208300
TEST WHETHER OR NOT THIS DO                      F2208310
IS IN RANGE OF R1(DXL)                           F2208320
IF NOT,EXIT FOR LAST INTERVAL.                   F2208330
IF IN R1,IS THIS DO TO BE                        F2208340
SKIPPED. IF NOT,GO BACK TO                       F2208350
GET NEXT DO.                                     F2208360
                                                 F2208370
                                                 F2208380
                                                 F2208390
R2 FOUND,ARRANGE TO SKIP THIS                    F2208400
INTERVAL. USE ALPHA OF R2                        F2208410
AS B,PUT BETA OF R2 IN                           F2208420
NEXTA.                                           F2208430
DO FORMULAS WITHIN R2 ARE                        F2208440
ACCOUNTED FOR AFTER SEARCH.                      F2208450
SAVE INDEX OF R2.                                F2208460
PUT TINFOR, LIST IND. IN XRB                     F2208470
FOR                                              F2208480
NON EMPTY                                        F2208490
INTERVALS,                                       F2208500
GO TO ARRANGE TINFOR SEARCH, OR                  F2208510
TRA TO USE LIST.                                 F2208520
RETURN HERE,TEST TINFOR                          F2208530
LIST IND. IF ZERO, EXIT.                         F2208540
TO SET UP NEXT INTERVAL,                         F2208550
OBTAIN INDEX OF LAST R2 AND                      F2208560
STEP DOWN IN DOTAG BY USUAL                      F2208570
PROCEDURE UNTIL SOME DO IS                       F2208580
FOUND NOT IN R2,OR UNTIL                         F2208590
DOTAG EXHAUSTED. IF DO FOUND                     F2208600
NOT IN R2,SET A AND GO TO TEST                   F2208610
IF THIS DO IS IN R1.                             F2208620
IF IT IS,NEWR2 WILL BE FOUND                     F2208630
OR EXIT MADE TO SPC110.                          F2208640
                                                 F2208650
THIS IS SETUP FOR LAST                           F2208660
INTERVAL. FOR A,USE                              F2208670
CONTENTS OF NEXTA. FOR B,                        F2208680
USE BETA OF R1,FOUND IN                          F2208690
LASTB. OBTAIN TINFOR,STOTAG                      F2208700
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```
05367  0 50000 0 03751          CLA L(0)                    IND,AND SET LOCATION OF          F2208710
05370  0 62200 0 05344          STD SPC060                  INDICATOR TO ZERO. GO TO         F2208720
D 05371 -3 00000 0 05340 SPC115 TXL SPC058,0                TINFOR OR TRASTO.                F2208730
05372 -0 53400 4 05361 SPC120 LXD SPC105,4                  EXIT,ALL STORES DONE,OR,         F2208740
05373  0 02000 4 00001          TRA 1,4                     SEARCH MADE,T NOT FOUND.         F2208750
05374 -0 53400 4 05361 SPC130 LXD SPC105,4                  EXIT,T FOUND                     F2208760
05375  0 02000 4 00002          TRA 2,4                     IN SOME INTERVAL                 F2208770
05376  0 07400 4 05417 SPCTIN TSX TINFXX,4                  GO TO SEARCH FORTAG              F2208780
05377  0 02000 0 05374          TRA SPC130                  T FOUND                          F2208790
05400  0 02000 0 05345          TRA SPC065                  T NOT FOUND                      F2208800
05401  0 50000 0 03743 SPCSTO CLA B                        FOR TRASTO,E2 AND E3 ARE         F2208810
05402  0 77100 0 00022          ARS 18                      ALREADY SET UP. COLLECT          F2208820
05403  0 40000 0 03742          ADD A                       A AND B INTO E1 WORD,            F2208830
05404  0 60100 0 05063          STO E1                      PUT TRASTO INDICATOR IN          F2208840
05405  0 50000 0 05410          CLA SPCKEY                  ACC. AND                         F2208850
05406  0 07400 4 05025          TSX LIST,4                  TSX TO LISTING ROUTINE.          F2208860
05407  0 02000 0 05345          TRA SPC065                  ON RETURN,GO TO TEST FINISH.     F2208870
A 05410  0 00000 0 00000 SPCKEY HTR                         STORAGE FOR TABLEKEY             F2208880
                                   SUBROUTINES TINFOR AND TINFXX                             F2208890
05411  0 50000 1 00733 TINFOR CLA DOTAGZ,1                  C(XRA)=INDEX OF DR TO BE         F2208900
05412  0 73400 1 00000          PAX 0,1                     SEARCHED. SEPARATE ALPHA         F2208910
05413 -0 32000 0 03772          ANA DECMSK                  AND BETA                         F2208920
05414  0 60100 0 03742          STO A                       AND STORE IN A                   F2208930
05415 -0 75400 1 00000          PXD 0,1                                                      F2208940
05416  0 60100 0 03743          STO B                       B                                F2208950
05417 -0 53400 1 03764 TINFXX LXD L(1500,1                  PUT MAX FORTAG INDEX IN XRA      F2208960
05420  0 50000 1 03670 TINF10 CLA FORTZ,1                   OBTAIN FORTAG ENTRY              F2208970
05421 -0 32000 0 03772          ANA DECMSK                  RETAIN FORMULA NUMBER ONLY       F2208980
05422  0 34000 0 03742          CAS A                       COMPARE ALPHA AND FORMULA NR.    F2208990
05423  0 02000 0 05430          TRA TINF40                  FOR. NR. GREATER THAN ALPHA. TRA. F2209000
05424  0 76100 0 00000          NOP                         C(A) MAY BE SOME BETA FROM SPC   F2209010
05425  1 77777 1 05426 TINF20 TXI TINF30,1,-1              FOR.NR. LESS THAN ALPHA. GO      F2209020
                                                            BACK FOR NEXT FORTAG ENTRY       F2209030
D 05426  3 00000 1 05420 TINF30 TXH TINF10,1                IF POSSIBLE. OTHERWISE,          F2209040
05427  0 02000 4 00002          TRA 2,4                     RETURN TO CALLING INSTR PLUS TWO. F2209050
05430  0 34000 0 03743 TINF40 CAS B                        COMPARE FOR. NR. WITH BETA       F2209060
05431  0 02000 4 00002          TRA 2,4                     FOR. NR. GREATER THAN BETA,EXIT. F2209070
05432  0 76100 0 00000          NOP                         FOR. NR. EQUAL TO OR             F2209080
05433  0 50000 1 03670          CLA FORTZ,1                 LESS THAN BETA,OBTAIN FORTAG     F2209090
05434  0 12000 0 05425          TPL TINF20                  TAG AND COMPARE WITH SEARCH TAG. F2209100
05435 -0 32000 0 03773          ANA ADDMSK                  I.F. NOT EQUAL,GO BACK FOR NEXT TAGF2209110
05436  0 40200 0 03700          SUB TAG                                                      F2209120
05437 -0 10000 0 05425          TNZ TINF20                  IF EQUAL,RETURN TO CALLING       F2209130
05440  0 02000 4 00001          TRA 1,4                                                      F2209140
                                   INSTR PLUS ONE. XRA CONTAINS INDEX IN FORTAG OF FIRST TAG F2209150
                                   FOUND                                                     F2209160
                                   SUBROUTINE TRAWRD                                         F2209170
05441 -0 63400 4 05470 TRAWRD SXD TRAW65,4                                                   F2209180
05442  0 50000 0 03751          CLA L(0)                                                     F2209190
05443  0 60100 0 03747          STO TRABIT                                                   F2209200
05444  0 50000 1 00740          CLA DOTAGZ+5,1                                               F2209210
05445  0 62200 0 05454          STD TRAW30                                                   F2209220
05446  0 50000 1 00742 TRAW10 CLA DOTAGZ+7,1                OBTAIN T2 WORD                   F2209230
05447 -0 60200 0 03747          ORS TRABIT                  OR INTO TRABIT                   F2209240
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     05450  1 77767 1 05451        TXI  TRAW20,1,-9                TAKE NEXT DO                                        F2209250
D    05451 -3 00000 1 05471 TRAW20 TXL  TRAW70,1      IF NONE, EXIT.  (DEC HAS DOTAG IX)                                F2209260
     05452  0 50000 1 00740        CLA  DOTAGZ+5,1                 OBTAIN L WORD                                       F2209270
     05453 -0 73400 4 00000        PDX  0,4                        PUT L IN XRC.                                       F2209280
D    05454 -3 00000 4 05471 TRAW30 TXL  TRAW70,4                   EXIT IF DO IS NOT IN RANGE R1                       F2209290
     05455 -3 00001 2 05446        TXL  TRAW10,2,1                 IF COMPLETE TEST,GO BACK                            F2209300
     05456  0 50000 1 00734 TRAW35 CLA  DOTAGZ+1,1                 IF INCOMPLETE TEST,IS THIS A                        F2209310
     05457  0 40200 0 03736        SUB  RSYM2                      DO TO BE SKIPPED                                    F2209320
     05460 -0 10000 0 05446        TNZ  TRAW10                     IF NOT, GO BACK                                     F2209330
     05461  0 50000 1 00740        CLA  DOTAGZ+5,1                 THIS DO IS TO BE SKIPPED                            F2209340
     05462  0 62200 0 05467        STD  TRAW60                     PUT LEVEL OF THIS DO IN TEST INSTR.                 F2209350
     05463  1 77767 1 05464 TRAW40 TXI  TRAW50,1,-9                TAKE NEXT DO IF ANY                                 F2209360
D    05464 -3 00000 1 05471 TRAW50 TXL  TRAW70,1      IF NOT, EXIT. OTHERWISE, (DEC HAS DOTAG IX)                       F2209370
     05465  0 50000 1 00740        CLA  DOTAGZ+5,1                 OBTAIN L WORD                                       F2209380
     05466 -0 73400 4 00000        PDX  0,4                        PUT L IN XRC                                        F2209390
D    05467  3 00000 4 05463 TRAW60 TXH  TRAW40,4                   IF DO IS IN RANGE OF R2,GO BACK.                    F2209400
D    05470 -3 00000 0 05454 TRAW65 TXL  TRAW30,0                   OTHERWISE,GO TO TRAW30                              F2209410
     05471 -0 53400 4 05470 TRAW70 LXD  TRAW65,4                                                                       F2209420
     05472  0 50000 0 03761        CLA  L(36)                      OBTAIN 36 IN DECREMENT                              F2209430
     05473  0 40200 0 03741        SUB  TL2                        36-TL2                                              F2209440
     05474  0 77100 0 00022        ARS  18                         IN ADDRESS                                          F2209450
     05475  0 62100 0 05505        STA  TRAW90                     INITIALIZE SHIFT                                    F2209460
     05476  0 50000 0 03741        CLA  TL2                        OBTAIN TL2                                          F2209470
     05477  0 40200 0 03740        SUB  TL1                        TL2-TL1                                             F2209480
     05500  0 77100 0 00022        ARS  18                         IN ADDRESS                                          F2209490
     05501  0 62100 0 05504        STA  TRAW80                     INITIALIZE SHIFT                                    F2209500
     05502  0 50000 0 03751        CLA  L(0)                       ACC CONTAINS ZERO                                   F2209510
     05503  0 56000 0 03771        LDQ  35ONES                     MQ CONTAINS ALL ONES                                F2209520
A    05504  0 76300 0 00000 TRAW80 LLS                             PUT TL2-TL1 ONES IN ACC                             F2209530
A    05505  0 76700 0 00000 TRAW90 ALS                             POSITION ONES IN ACC                                F2209540
     05506 -0 32000 0 03747        ANA  TRABIT                     AND IN TRANSFER BITS                                F2209550
     05507  0 02000 4 00001        TRA  1,4                        GO BACK TO CALLING INSTR PLUS ONE.                  F2209560
                                   SUBROUTINES TAGENT AND TETAPE                                                     F2209570
     05510 -0 53400 1 04010 TAGENT LXD  TAGXX,1                    THIS ROUTINE ENTERS                                 F2209580
     05511  3 00000 1 05513        TXH  TE10,1,0                   ONE ENTRY IN TAGZ,                                  F2209590
     05512  0 07400 2 05522        TSX  TETAPE,2                   IF POSSIBLE. IF NOT,                                F2209600
     05513 -0 53400 2 03755 TE10   LXD  L(4),2                     TRA TO TETAPE.                                      F2209610
     05514  0 50000 2 05067 TE20   CLA  E1+4,2                                                                        F2209620
     05515  0 60100 1 06771        STO  TAGZ,1                                                                        F2209630
     05516  1 77777 1 05517        TXI  TE30,1,-1                                                                     F2209640
     05517  2 00001 2 05514 TE30   TIX  TE20,2,1                                                                     F2209650
     05520 -0 63400 1 04010        SXD  TAGXX,1                                                                       F2209660
     05521  0 02000 4 00001        TRA  1,4                                                                           F2209670
     05522  0 76600 0 00224 TETAPE WRS  ATAPE                       THIS ROUTINE                                        F2209680
     05523 -0 53400 1 04010        LXD  TAGXX,1                    ENTERS ALL THE VALID                                F2209690
     05524 -0 63400 1 05530        SXD  TE50,1                     ENTRIES IN TAGZ ON                                  F2209700
     05525  0 53400 1 04010        LXA  TAGXX,1                    THE TAPE                                            F2209710
     05526  0 70000 1 06771 TE40   CPY  TAGZ,1                     THE LAST ENTRY ON TAPE                              F2209720
     05527  1 77777 1 05530        TXI  TE50,1,-1                  AFTER EACH NEST IS                                  F2209730
D    05530  3 00000 1 05526 TE50   TXH  TE40,1                     AN ENTRY OF 4 WDS OF 35 ONES                        F2209740
     05531  0 53400 1 04010        LXA  TAGXX,1                                                                       F2209750
     05532 -0 63400 1 04010        SXD  TAGXX,1                                                                       F2209760
     05533  0 02000 2 00001        TRA  1,2                                                                           F2209770
                                   ROUTINE RELCON PINGPONGS INSTRUCTIONS                                             F2209780
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05534 -0 53400 2 03753 RELCON LXD L(2),2                    INITIALIZE SWITCH                    F2209790
05535 -0 53400 4 03756 REL10  LXD L(5),4          INITIALIZE ERROR COUNTER.                      F2209805
05536 -0 53400 1 05565 REL20  LXD RELWDS,1                  PUT NR OF DRM WDS IN XRA             F2209810
05537  0 76200 0 00301        RDS PPDRM                     LOCATE DRUM ADDRESS                  F2209820
05540  0 46000 2 05566        LDA RELDRA+2,2                LOCATE PROPER DRM ADDRESS            F2209830
05541  0 70000 1 06566 REL30  CPY CORESZ,1                  READ STATE B, OR A, INTO             F2209840
05542  2 00001 1 05541        TIX REL30,1,1                 STORAGE                              F2209850
05543 -0 53400 1 05565        LXD RELWDS,1                  LOAD XRA WITH NR OF DRM WDS          F2209860
05544 -0 75400 0 00000        PXD 0,0                      COMPUTE                               F2209870
05545  0 36100 1 06566 REL40  ACL CORESZ,1                  CHECK                                F2209880
05546  2 00001 1 05545        TIX REL40,1,1                 SUM                                  F2209890
05547  0 60200 0 05561        SLW REL80                     AND                                  F2209900
05550  0 50000 0 05561        CLA REL80                     COMPARE.                             F2209910
05551  0 40200 2 05564        SUB RELCS+2,2                 IF NOT ZERO,                         F2209920
05552 -0 10000 0 05557        TNZ REL70                     GO TO ERROR ROUTINE.                 F2209930
05553 -3 00001 2 05112 REL50  TXL BRA10,2,1                 IF STATE A, RETURN TO BRANCH.        F2209940
D 05554 -3 00000 0 05566 REL60  TXL CORES,0                AND TRA TO REL ROUTINE               F2209950
05555 -0 53400 2 03752 RELEND LXD L(1),2                                                         F2209960
05556  0 02000 0 05535        TRA REL10                     GO TO READ IN STATE A.               F2209970
05557  2 00001 4 05536 REL70  TIX REL20,4,1                 COUNT IN ERROR COUNTER AND RETURN    F2209980
05560  0 07400 4 00004        TSX DIAG,4  DRUM READ                    ERROR. GO TO DIAGNOSTIC.  F2209995
A 05561  0 00000 0 00000 REL80  HTR                        E.S.                                 F2210000
05562 +103075525444     RELCS  OCT 103075525444  CHECK SUM, STATE B, RELCON                     F2210014
05563 -246744643200            OCT -246744643200 CHECK SUM STATE A, NORMAL                     F2210024
05564 +000000001000     RELDRA OCT 1000                     DRUM ADDRESS, STATE B.               F2210030
05565 +001000000000            OCT 1000000000               NR. WDS, DRUM ADDRESS STATE A.       F2210040
                 05566         ORG 2934                                                         F2210050
                                   MASTER RECORD CARD = FN032                                    F2210055
05566 -0 63400 4 05622 IDENT   SXD ID075,4                  SAVE INDEX                           F2210060
05567 -0 53400 1 03760         LXD L(20),1                  INITIALIZE IDENT STORAGE.            F2210070
05570  0 50000 0 03751         CLA L(0)                     TO ZERO                              F2210080
05571  0 60100 0 06027         STO IDES                                                          F2210090
05572  0 60100 1 03740 ID010   STO X1+20,1                                                       F2210100
05573  2 00001 1 05572         TIX ID010,1,1                                                    F2210110
05574  0 50000 0 03771         CLA 35ONES                   INITIALIZE                           F2210120
05575  0 60100 0 03723         STO LL                       LOW LEVEL                            F2210130
05576 -0 53400 2 03751         LXD L(0),2                   COUNT THE SUBSCRIPT                  F2210140
05577 -0 53400 4 03756         LXD L(5),4                   SYMBOLS.                             F2210150
05600  0 50000 4 03712 ID020   CLA S1+5,4                   STORE COUNT IN                       F2210160
05601  0 10000 0 05603         TZE ID030                    NRSUBS, AND ALSO IN                  F2210170
05602  1 00001 2 05603         TXI ID030,2,1                NRRC, WHICH IS THE                   F2210180
05603  2 00002 4 05600 ID030   TIX ID020,4,2                COUNT OF REL. CON.                   F2210190
05604 -0 75400 2 00000         PXD 0,2                      SUBSCRIPTS. DO SUBS ARE              F2210200
05605  0 60100 0 03725         STO NRRC                     SUBTRACTED OUT LATER.                F2210210
05606  0 60100 0 03724         STO NRSUBS                                                        F2210220
05607 -0 53400 1 03674         LXD XC,1                     COMPARE EACH SYMBOL                  F2210230
05610 -0 53400 2 03675         LXD LC,2                     IN THE SUB. COMB. WITH               F2210240
05611  0 76000 0 00141         PSE TL                       THE SYMBOL OF EACH                   F2210250
05612  0 50000 1 00734 ID050   CLA DOTAGZ+1,1               DO IN THE SUB NEST.                  F2210260
05613 -0 53400 4 03756         LXD L(5),4                   WHEN EQUALITY IS                     F2210270
05614  0 34000 4 03712 ID060   CAS S1+5,4                   FOUND, GO TO ID120.                  F2210280
05615  0 02000 0 05617         TRA ID070                    IF THE CURRENT DO                    F2210290
05616  0 02000 0 05632         TRA ID120                    SYMBOL IS NOT FOUND,                 F2210300
05617  2 00002 4 05614 ID070   TIX ID060,4,2                MAKE EXIT FROM ID410                 F2210310
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     05620 -0 76000 0 00141         MSE TL
     05621  0 02000 0 05623         TRA ID080
D    05622 -3 00000 0 06025 ID075   TXL ID410,0
     05623 -3 00001 2 05646 ID080   TXL ID150,2,1
     05624  1 00011 1 05625 ID090   TXI ID100,1,9
     05625  0 50000 1 00740 ID100   CLA DOTAGZ+5,1
     05626  0 62200 0 05627         STD ID110
D    05627 -3 00000 2 05624 ID110   TXL ID090,2
     05630 -0 73400 2 00000         PDX 0,2
     05631  0 02000 0 05612         TRA ID050
     05632 -0 76000 0 00141 ID120   MSE TL
     05633  0 76100 0 00000         NOP
     05634 -0 75400 1 00000         PXD 0,1
     05635  0 60100 4 03721         STO X1+5,4
     05636 -0 75400 2 00000         PXD 0,2
     05637  0 60100 4 03722         STO L1+5,4
     05640  0 50000 0 03725         CLA NRRC
     05641  0 40200 0 03752         SUB L(1)
     05642  0 60100 0 03725         STO NRRC
     05643  0 10000 0 05646         TZE ID150
     05644  0 50000 1 00734         CLA DOTAGZ+1,1
     05645  0 02000 0 05617         TRA ID070
     05646  0 76600 0 00333 ID150   IOD
     05647  0 50000 0 03714         CLA X1
     05650  0 56000 0 03716         LDQ X2
     05651  0 04000 0 05653         TLQ PT041
     05652  0 50000 0 03716         CLA X2
     05653  0 56000 0 03720  PT041  LDQ X3
     05654  0 04000 0 05656         TLQ PT042
     05655  0 50000 0 03720         CLA X3
     05656  0 60100 0 05662  PT042  STO PT043
     05657 -0 53400 4 03757         LXD L(6),4
     05660 -0 53400 3 03754         LXD L(3),3
     05661  0 02000 0 05663         TRA ID160
A    05662  0 00000 0 00000  PT043  HTR
     05663  0 50000 1 03710 ID160   CLA S1+3,1
     05664  0 10000 0 05671         TZE ID170
     05665  0 40200 2 03712         SUB S1+5,2
     05666 -0 10000 0 05671         TNZ ID170
     05667 -0 75400 4 00000         PXD 0,4
     05670 -0 60200 0 03734         ORS DUPES
     05671  2 00001 4 05672 ID170   TIX ID180,4,1
     05672  2 00002 2 05663 ID180   TIX ID160,2,2
     05673  2 00001 4 05674         TIX ID190,4,1
     05674  2 00002 1 05663 ID190   TIX ID160,1,2
     05675 -0 53400 2 03725         LXD NRRC,2
     05676 -3 00000 2 05723         TXL ID300,2,0
     05677 -3 00001 2 05704         TXL ID195,2,1
     05700  0 50000 0 03734         CLA DUPES
     05701  0 60100 0 03733         STO RCDUP
     05702  0 50000 0 03751         CLA L(0)
     05703  0 60100 0 03734         STO DUPES
     05704 -0 53400 4 03756 ID195   LXD L(5),4
     05705  0 50000 4 03722 ID200   CLA L1+5,4
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                                                F2210320
                                                F2210330
                                                F2210340
THESE INSTRUCTIONS                              F2210350
FIND THE NEXT BACK                              F2210360
SUB NEST DO FORMULA,                            F2210370
AND RETURN CONTROL                              F2210380
TO ID050.                                       F2210390
                                                F2210400
                                                F2210410
TURN OFF TEST LIGHT                             F2210420
AND                                             F2210430
ESTABLISH                                       F2210440
INDEX                                           F2210450
AND                                             F2210460
LEVEL FOR THIS SUBSCRIPT.                       F2210470
SUBTRACT ONE FROM                               F2210480
NRRC. THIS WORD                                 F2210490
CONTAINS INITIALLY                              F2210500
THE NUMBER OF                                   F2210510
SUBSCRIPTS IN THE                               F2210520
COMBINATION.                                    F2210530
  THIS - EDRECNO FN 265001 P463                 F2210540
  ROUTINE        FN265002                       F2210550
  LOOKS FOR THE                                 F2210560
  OUTERMOST                                     F2210570
  DOTAG                                         F2210580
  OF A                                          F2210590
  SUBSCRIPT                                     F2210600
  COMBINATION.                                  F2210610
                                                F2210620
                                                F2210630
                                                F2210640
  RETURN                                        F2210650
                                                F2210660
WHICH CAN BE ASSIGNED                           F2210670
HAVE BEEN ASSIGNED.                             F2210680
THIS                                            F2210690
ROUTINE                                         F2210700
MAKES UP THE                                    F2210710
DUPLICATE                                       F2210720
SUBSCRIPT                                       F2210730
WORD.                                           F2210740
                                                F2210750
                                                F2210760
IF THERE IS MORE                                F2210770
THAN ONE RELCON,                                F2210780
AND IF THERE ARE                                F2210790
DUPLICATES, THEN THE                            F2210800
RELCONS ARE DUPLICATES.                         F2210810
OTHERWISE, THE DOSUBS                           F2210820
ARE DUPLICATES.                                 F2210830
IF THERE ARE RELCONS,                           F2210840
THERE ARE NOT MORE                              F2210850
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05706 -0 10000 0 05720          TNZ ID210                  THAN TWO.                          F2210860
05707  0 50000 4 03712          CLA S1+5,4                 PUT THEIR SYMBOLS                  F2210870
05710  0 10000 0 05720          TZE ID210                  IN PSYM1 AND RSYM2,                F2210880
05711 -0 75400 4 00000          PXD 0,4                    AND PUT BITS IN THE                F2210890
05712 -3 00001 4 05714          TXL ID205,4,1              PROPER POSITIONS OF                F2210900
05713  0 40200 0 03752          SUB L(1)                   RCSUBS.                            F2210910
05714 -0 60200 0 03730 ID205    ORS RCSUBS                                                    F2210920
05715  0 50000 4 03712          CLA S1+5,4                                                    F2210930
05716 -2 00001 2 05722          TNX ID220,2,1                                                 F2210940
05717  0 60100 0 03736          STO RSYM2                                                     F2210950
05720  2 00002 4 05705 ID210    TIX ID200,4,2                                                 F2210960
05721  0 02000 0 05723          TRA ID300                                                     F2210970
05722  0 60100 0 03735 ID220    STO RSYM1                                                     F2210980
05723 -0 53400 4 03756 ID300    LXD L(5),4                 FOR ALL DO SUBS,                   F2210990
05724  0 50000 4 03721 ID310    CLA X1+5,4                 SELECT THE                         F2211000
05725  0 10000 0 05740          TZE ID340                  MAXIMUM OF ALL                     F2211010
05726 -0 73400 1 00000          PDX 0,1                    VARAIBLE N LEVEL                   F2211020
05727 -0 53400 2 03754          LXD L(3),2                 OF DEFINITION                      F2211030
05730  0 50000 1 00741 ID320    CLA DOTAGZ+6,1             QUANTITIES.                        F2211040
05731 -0 32000 0 03773          ANA ADDMSK                                                    F2211050
05732  0 76700 0 00022          ALS 18                                                        F2211060
05733  0 34000 0 06027          CAS IDES                                                      F2211070
05734  0 60100 0 06027          STO IDES                                                      F2211080
05735  0 76100 0 00000          NOP                                                           F2211090
05736  2 00001 1 05737          TIX ID330,1,1                                                 F2211100
05737  2 00001 2 05730 ID330    TIX ID320,2,1                                                 F2211110
05740  2 00002 4 05724 ID340    TIX ID310,4,2                                                 F2211120
05741 -0 53400 4 03756          LXD L(5),4                 COMPARE THIS MAXIMUM               F2211130
05742 -0 53400 2 03751          LXD L(0),2                                                    F2211140
05743  0 50000 4 03722 ID350    CLA L1+5,4                 WITH EACH SUBSCRIPT                F2211150
05744  0 10000 0 06000          TZE ID380                  LEVEL, THOSE SUBSCRIPT             F2211160
05745  0 34000 0 06027          CAS IDES                   LEVELS LESS THAN OR                F2211170
05746  0 02000 0 05764          TRA ID370                  EQUAL TO THE MAXIMUM               F2211180
05747  0 76100 0 00000          NOP                        LEVEL OF DEFINITION                F2211190
05750 -0 75400 4 00000          PXD 0,4                    QUANTITY WILL BE TREATED           F2211200
05751 -3 00001 4 05753          TXL ID360,4,1              AS REL. CONS.                      F2211210
05752  0 40200 0 03752          SUB L(1)                   INDICATE THIS CONDITION            F2211220
05753 -0 60200 0 03727 ID360    ORS DORC                   IN THE DORC WORD.                  F2211230
05754  0 50000 4 03721          CLA X1+5,4                                                    F2211240
05755 -0 73400 1 00000          PDX 0,1                                                       F2211250
05756  0 50000 0 04000          CLA BITONE        MAKE INDICATION FOR STORED COUNTER          F2211260
05757 -0 60200 1 00740          ORS DOTAGZ+5,1    FOR THIS DORC.                              F2211270
05760 -0 75400 0 00000          PXD 0,0           CLEAR X(N) AND L(N)                         F2211280
05761  0 60100 4 03722          STO L1+5,4        SINCE THEY ARE NO LONGER DOSUBS.            F2211290
05762  0 60100 4 03721          STO X1+5,4                                                    F2211300
05763  0 02000 0 06000          TRA ID380                                                     F2211310
05764  0 34000 0 03723 ID370    CAS LL            FOR TRUE DO SUBS.                           F2211320
05765  0 02000 0 05773          TRA ID372                  ESTABLISH LOW LEVEL                F2211330
05766  0 02000 0 05773          TRA ID372                  AND LOW INDEX. LOW                 F2211340
05767  0 60100 0 03723          STO LL                     LEVEL WORD WAS                     F2211350
05770  0 50000 4 03721          CLA X1+5,4                 INITIALIZED TO                     F2211360
05771  0 60100 0 03722          STO XL                     35ONES.                            F2211370
05772 -0 63400 4 03750          SXD LOWPOS,4                                                  F2211380
05773 -0 75400 4 00000 ID372    PXD 0,4                    PUT BITS IN                        F2211390
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05774 -3 00001 4 05776        TXL ID375,4,1                PROPER POSITIONS                  F2211400
05775  0 40200 0 03752        SUB L(1)                     OF DOSUBS                         F2211410
05776 -0 60200 0 03731 ID375  ORS DOSUBS                   WORD                              F2211420
05777  1 00001 2 06000        TXI ID380,2,1                                                  F2211430
06000  2 00002 4 05743 ID380  TIX ID350,4,2                                                  F2211440
06001 -0 75400 2 00000        PXD 0,2                                                        F2211450
06002  0 60100 0 03726        STO NRDS                     CHECK TO SEE THAT                 F2211460
06003 -0 10000 0 06005        TNZ ID385          AT LEAST ONE SUBSCR IS A DOSUB              F2211472
06004  0 07400 4 00004        TSX DIAG,4  NO DOSUB WAS PRECLUDED.     ERROR. GO TO DIAGNOSTIC. F2211485
06005 -0 53400 2 03725 ID385  LXD NRRC,2                   THESE INSTRUCTIONS                F2211490
06006 -3 00000 2 06023        TXL ID400,2,0                COMPUTE DELTA.                    F2211500
06007 -0 53400 4 03752        LXD L(1),4                   IF ONE DISTINCT DOSUB,            F2211510
06010  0 50000 0 03733        CLA RCDUP                    ONE DISTINCT RELCON,              F2211520
06011 -0 10000 0 06021        TNZ ID395                    DELTA IS ONE.                     F2211530
06012  0 50000 0 03734        CLA DUPES                    IF TWO DISTINCT DOSUBS,           F2211540
06013 -0 10000 0 06021        TNZ ID395                    ONE RELCON, DELTA IS TWO.         F2211550
06014 -3 00001 2 06016        TXL ID390,2,1                IF ONE DOSUB, TWO                 F2211560
06015  1 00002 4 06021        TXI ID395,4,2                DISTINCT RELCONS,                 F2211570
06016 -0 53400 2 03726 ID390  LXD NRDS,2                   DELTA IS THREE.                   F2211580
06017 -3 00001 2 06021        TXL ID395,2,1                FOR ALL OTHER CASES,              F2211590
06020  1 00001 4 06021        TXI ID395,4,1                DELTA IS ZERO.                    F2211600
06021 -0 75400 4 00000 ID395  PXD 0,4                                                        F2211610
06022  0 60100 0 03732        STO DELTA                                                      F2211620
06023 -0 53400 4 05622 ID400  LXD ID075,4                  EXIT,                             F2211630
06024  0 02000 4 00002        TRA 2,4                      SUBCOM USED.                      F2211640
06025 -0 53400 4 05622 ID410  LXD ID075,4                  EXIT,                             F2211650
06026  0 02000 4 00001        TRA 1,4                      SUBCOMB NOT USED.                 F2211660
A 06027  0 00000 0 00000 IDES   HTR                                                          F2211670
06030 -0 63400 4 06036 NAME   SXD NAM10,4                  SAVE LINKAGE                      F2211680
06031  0 50000 0 03700        CLA TAG                      PUT TAU IN TS,                    F2211690
06032  0 60100 0 03701  PAT05 STO TS                                                P463     F2211700
06033 -0 53400 1 05662        LXD PT043,1                                                    F2211710
06034  0 07400 4 05411 RET01  TSX TINFOR,4                SEARCH RANGE OF XL                 F2211720
06035  0 02000 0 06037        TRA NAM20                    (FOUND) FOR NEGATICE TAG.         F2211730
TD 06036 -3 00000 0 06073 NAM10  TXL NAM50                    NOT FOUND                         F2211740
06037  0 50000 0 03673 NAM20  CLA NEWTAG                   OBTAIN                            F2211750
06040  0 60100 0 03701        STO TS                       NEW                               F2211760
06041  0 40000 0 03765        ADD L(1)A                    NAME                              F2211770
06042  0 60100 0 03673        STO NEWTAG                                                     F2211780
06043 -0 53400 1 03674        LXD XC,1                     ARRANGE                           F2211790
06044  0 50000 1 00733        CLA DOTAGZ,1                 ENTRY BLOCK                       F2211800
06045  0 60100 0 05063        STO E1                       FOR CHATAG                        F2211810
06046  0 50000 0 03700        CLA TAG                      ENTRY.                            F2211820
06047  0 76700 0 00022        ALS 18                                                         F2211830
06050  0 40000 0 03701        ADD TS                                                         F2211840
06051  0 60100 0 05064        STO E2                                                         F2211850
06052  0 50000 0 05072        CLA CHATAG                                                     F2211860
06053 -0 53400 4 03725        LXD NRRC,4                   USE LIST OR SPC000,               F2211870
06054  3 00000 4 06057        TXH NAM30,4,0                DEPENDING UPON                    F2211880
06055  0 07400 4 05025        TSX LIST,4                   WHETHER OR NOT                    F2211890
06056  0 02000 0 06061        TRA NAM40          WORD NRRC IS ZERO. I.E., ARE THERE RELCONS.  F2211900
06057 -0 53400 2 03753 NAM30  LXD L(2),2         NO TINFOR SEARCH REQUIRED.                   F2211910
06060  0 07400 4 05277        TSX SPC000,4                                                   F2211920
06061 -0 53400 1 04011 NAM40  LXD NAMXX,1                  ENTER                             F2211930
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06062  3 00000 1 06064         TXH NAM44,1,0                 ALPHA,                                F2211940
06063  0 07400 4 00004         TSX DIAG,4  TAG,    (NAME TABLE FULL.   ERROR. GO TO DIAGNOSTIC.)F2211955
06064  0 50000 0 03676 NAM44   CLA ALPHA                     AND                                   F2211960
06065 -0 50100 0 03700         ORA TAG                       NAME                                  F2211970
06066  0 60100 1 07301         STO NAMZ,1                    IN                                    F2211980
06067  0 50000 0 03701         CLA TS                        NAME                                  F2211990
06070  0 60100 1 07302         STO NAMZ+1,1                  TABLE                                 F2212000
06071  1 77776 1 06072         TXI NAM48,1,-2                                                      F2212010
06072 -0 63400 1 04011 NAM48   SXD NAMXX,1                                                         F2212020
06073 -0 53400 4 06036 NAM50   LXD NAM10,4                   EXIT                                  F2212030
06074  0 02000 4 00001         TRA 1,4                                                             F2212040
                                  1NS00 PROCESSES SC CONTAINING ONE DISTINCT INDEXED SUBSCRIPT.F2212050
06075 -0 63400 4 06146 1NS00   SXD 1NS20,4                   SAVE LINKAGE                          F2212060
06076 -0 53400 1 03674         LXD XC,1                                                            F2212070
06077  0 50000 0 04001         CLA BITTWO                    IF A COUNTER HAS                      F2212080
06100 -0 32000 1 00741         ANA DOTAGZ+6,1                BEEN FOUND,                           F2212090
06101 -0 10000 0 06142         TNZ 1NS10                     GO TO 1NS10                           F2212100
06102 -0 53400 4 03731         LXD DOSUBS,4                  SKIP TO 1NS10                         F2212110
06103 -3 00003 4 06142         TXL 1NS10,4,3                 IF NOT FIRST POSITION.                F2212120
06104  3 00004 4 06142         TXH 1NS10,4,4                                                       F2212130
06105  0 50000 0 03730         CLA RCSUBS                    IF ANY RELCONS,                       F2212140
06106 -0 50100 0 03727         ORA DORC                      GO TO 1NS10                           F2212150
06107 -0 10000 0 06142         TNZ 1NS10                                                           F2212160
06110 -0 53400 4 03704         LXD C1,4                      IF C1 IS NOT ONE,                     F2212170
06111  3 00001 4 06142         TXH 1NS10,4,1                 GO TO 1NS10                           F2212180
06112  0 50000 0 03773         CLA ADDMSK                    THIS SUB. COMB. WILL SERVE            F2212190
06113  0 32000 1 00743         ANS DOTAGZ+8,1                AS COUNTER AND TEST. ENTER IN         F2212200
06114  0 50000 0 03701         CLA TS                        DOTAGZ+8.                             F2212210
06115  0 76700 0 00022         ALS 18                        INDICATE                              F2212220
06116 -0 50100 0 03770         ORA L(MZ)                     BEST TEST                             F2212230
06117 -0 60200 1 00743         ORS DOTAGZ+8,1                FOUND.                                F2212240
06120  0 50000 0 04001         CLA BITTWO                    INDICATE COUNTER FOUND.               F2212250
06121 -0 60200 1 00741         ORS DOTAGZ+6,1                                                      F2212260
06122 -0 50000 0 03770         CAL L(MZ)                     SET CARWRD NEGATIVE.                  F2212270
06123 -0 60200 0 03737         ORS CARWRD                    TEST BITONE OF L WORD.                F2212280
06124  0 50000 0 04000         CLA BITONE                    IF ONE, SKIP TRASTO                   F2212290
06125 -0 32000 1 00740         ANA DOTAGZ+5,1                TEST.                                 F2212300
06126 -0 10000 0 06142         TNZ 1NS10                                                           F2212310
06127  0 50000 1 00740 1NS05   CLA DOTAGZ+5,1                TEST TO SEE IF TRANSFER               F2212320
06130  0 12000 0 06142         TPL 1NS10                     STORE NECESSARY.                      F2212330
06131  0 50000 1 00733         CLA DOTAGZ,1                  MAKE TRASTO ENTRY                     F2212340
06132  0 60100 0 05063         STO E1                        TO STORE COUNTER                      F2212350
06133  0 50000 1 00734         CLA DOTAGZ+1,1                IN LOCATION OF SYMBOL.                F2212360
06134  0 60100 0 05064         STO E2                                                              F2212370
06135  0 50000 0 03675         CLA LC                                                              F2212380
06136 -0 50100 0 03701         ORA TS                                                              F2212390
06137  0 60100 0 05065         STO E3                                                              F2212400
06140  0 50000 0 05070         CLA TRASTO                                                          F2212410
06141  0 07400 4 05025         TSX LIST,4                                                          F2212420
06142  0 50000 0 03757 1NS10   CLA L(6)                      ENTER                                 F2212430
06143  0 60100 0 03703         STO GROUP                     GROUP NR.                             F2212440
06144 -0 53400 4 06146         LXD 1NS20,4                   AND EXIT.                             F2212450
06145  0 02000 4 00001         TRA 1,4                                                             F2212460
A 06146  0 00000 0 00000 1NS20 HTR                                                                 F2212470
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                                2NS00 ROUTINE PROCESSES SC WITH TWO DISTINCT INDEXED      F2212480
                                SUBSCRIPTS.                                               F2212490
06147 -0 63400 4 06157 2NS00    SXD 2NS25,4          SAVE LINKAAGE                        F2212500
06150 -0 53400 1 03731 2NS10    LXD DOSUBS,1         2NS10 TO 2NS80 DETERMINE THE         F2212510
06151 -0 53400 2 03753          LXD L(2),2           GROUP NR AND CARRY BITS              F2212520
06152  0 50000 0 03715          CLA L1               FOR THE SL.                          F2212530
06153  3 00003 1 06155          TXH 2NS20,1,3                                             F2212540
06154  0 50000 0 03717          CLA L2                                                    F2212550
06155 -3 00005 1 06160 2NS20    TXL 2NS30,1,5                                             F2212560
06156  0 40200 0 03717          SUB L2                                                    F2212570
D 06157 -3 00000 0 06161 2NS25  TXL 2NS40,0                                               F2212580
06160  0 40200 0 03721 2NS30    SUB L3                                                    F2212590
06161 -0 12000 0 06174 2NS40    TMI 2NS70                                                 F2212600
06162  0 40200 0 03752          SUB L(1)                                                  F2212610
06163 -0 10000 0 06172          TNZ 2NS60                                                 F2212620
06164 -3 00003 1 06167          TXL 2NS50,1,3                                             F2212630
06165 -3 00005 1 06172          TXL 2NS60,1,5                                             F2212640
06166  1 00002 2 06167          TXI 2NS50,2,2                                             F2212650
06167 -0 53400 4 03734 2NS50    LXD DUPES,4          THIS DUPE TEST IS AN ADJUSTMENT      F2212660
06170  3 00000 4 06172          TXH 2NS60,4,0        FOR DUPLICATES IN A REDUCED          F2212670
06171  0 07400 4 04754          TSX CARRY,4          3NS CASE.                            F2212680
06172  0 50000 0 03752 2NS60    CLA L(1)                                                  F2212690
D 06173 -3 00000 0 06175 2NS65  TXL 2NS80,0                                               F2212700
06174  0 50000 0 03757 2NS70    CLA L(6)                                                  F2212710
06175  0 60100 0 03703 2NS80    STO GROUP                                                 F2212720
06176 -0 73400 4 00000          PDX 0,4                                                   F2212730
06177 -0 53400 2 03731          LXD DOSUBS,2         THIS ROUTINE,TO 2NS90,               F2212740
06200  0 50000 0 03715          CLA L1               PREPARES A TRAWRD CALLING            F2212750
06201  3 00003 2 06203          TXH 2NS82,2,3        SEQUENCE TO DETERMINE                F2212760
06202  0 50000 0 03717          CLA L2               WHETHER OR NOT RESETTING             F2212770
06203 -3 00005 2 06206 2NS82    TXL 2NS84,2,5        IS NECESSARY                         F2212780
06204  0 56000 0 03717          LDQ L2                                                    F2212790
06205  0 02000 0 06207          TRA 2NS86                                                 F2212800
06206  0 56000 0 03721 2NS84    LDQ L3                                                    F2212810
06207 -3 00001 4 06220 2NS86    TXL 2NS88,4,1        TEST GROUP                           F2212820
06210  0 60100 0 03740          STO TL1                                                   F2212830
06211 -0 60000 0 03741          STQ TL2                                                   F2212840
06212 -0 53400 1 03720          LXD X3,1                                                  F2212850
06213  0 50000 0 03752          CLA L(1)                                                  F2212860
06214 -3 00005 2 06227          TXL 2NS90,2,5                                             F2212870
06215 -0 53400 1 03716          LXD X2,1                                                  F2212880
06216  0 50000 0 03753          CLA L(2)                                                  F2212890
06217  0 02000 0 06227          TRA 2NS90                                                 F2212900
06220  0 60100 0 03741 2NS88    STO TL2                                                   F2212910
06221 -0 60000 0 03740          STQ TL1                                                   F2212920
06222 -0 53400 1 03714          LXD X1,1                                                  F2212930
06223  0 50000 0 03755          CLA L(4)                                                  F2212940
06224  3 00003 2 06227          TXH 2NS90,2,3                                             F2212950
06225 -0 53400 1 03716          LXD X2,1                                                  F2212960
06226  0 50000 0 03753          CLA L(2)                                                  F2212970
06227  0 60100 0 03746 2NS90    STO REBITS           2NS90 SEQ. SINGLE REBITS             F2212980
06230 -0 32000 0 03734          ANA DUPES            ARE PART OF THE TAG OF THE           F2212990
06231  0 10000 0 06235          TZE 2NS91            RESETTING SC,IT MUST BE              F2213000
06232  0 50000 0 03746          CLA REBITS           ADJUSTED FOR DUPE RESETS.            F2213010
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06233 -0 50100 0 03734        ORA DUPES                                                F2213020
06234  0 60100 0 03746        STO REBITS                                               F2213030
06235 -0 63400 1 06173 2NS91  SXD 2NS65,1                                              F2213040
06236 -0 53400 2 03752        LXD L(1),2                                               F2213050
06237  0 07400 4 05441        TSX TRAWRD,4          TEST FOR TANSFER BITS.             F2213060
06240  0 10000 0 06244        TZE 2NSEND            RESETTING NOT NECESSARY IF         F2213070
06241 -0 53400 2 03746        LXD REBITS,2          TRAWRD RESULT ZERO.  IF            F2213080
06242 -0 53400 1 06173        LXD 2NS65,1           RESETTING NECESSARY, EXECUTE       F2213090
06243  0 07400 4 06370        TSX RESET,4           RESET ROUTINE AND                  F2213100
06244 -0 53400 4 06157 2NSEND LXD 2NS25,4           EXIT                               F2213110
06245  0 02000 4 00001        TRA 1,4                                                  F2213120
                              3NS00 ROUTINE PROCESSES SC WITH THREE DISTINCT INDEXED   F2213130
                              SUBSCRIPTS.                                              F2213140
06246 -0 63400 4 06255 3NS00  SXD 3GRP15,4          SAVE LINKAGE                       F2213150
                              THIS ROUTINE DETERMINES GROUP NUMBER FOR 3NS NO DUPE SC  F2213160
06247 -0 53400 2 03751        LXD L(0),2            PUT ZERO IN XRB                    F2213170
06250  0 50000 0 03721        CLA L3                OBTAIN L3                          F2213180
06251  0 34000 0 03717        CAS L2                COMPARE WITH L2                    F2213190
06252  1 00004 2 06254        TXI 3GRP10,2,4        L3 GREATER THAN L2                 F2213200
06253  0 07400 4 00004        TSX DIAG,4  NO DUPES.                ERROR. GO TO DIAGNOSTIC. F2213215
06254  0 34000 0 03715 3GRP10 CAS L1                L3 LESS THAN L2,COMPARE L3,L1      F2213220
D 06255 -3 00000 0 06260 3GRP15 TXL 3GRP20,0        L3 GREATER THAN L1                 F2213230
06256  0 07400 4 00004        TSX DIAG,4  NO DUPES.                ERROR. GO TO DIAGNOSTIC. F2213245
06257  1 00001 2 06260        TXI 3GRP20,2,1        L3 LESS THAN L1                    F2213250
06260  0 50000 0 03717 3GRP20 CLA L2                OBTAIN L2                          F2213260
06261  0 40200 0 03715        SUB L1                SUBTRACT L1                        F2213270
06262 -0 12000 0 06264        TMI 3GRP30            TRA IF L2 LESS THAN L1             F2213280
06263  1 00002 2 06264        TXI 3GRP30,2,2        L2 GREATER THAN L1                 F2213290
06264 -0 75400 2 00000 3GRP30 PXD 0,2               PUT GROUP NUMBER IN ACC DEC.       F2213300
06265  0 60100 0 03703        STO GROUP             OR INTO TAG 1                      F2213310
06266  0 50000 0 03715        CLA L1                OBTAIN L1                          F2213320
06267  0 40200 0 03752        SUB L(1)              L1 LESS 1                          F2213330
06270  0 40200 0 03717        SUB L2                L1 LESS 1 LESS L2                  F2213340
06271 -0 10000 0 06274        TNZ 3GRP40            NOT ZERO,NO CARRY,TRA              F2213350
06272 -0 53400 2 03755        LXD L(4),2            SET XRB                            F2213360
06273  0 07400 4 04754        TSX CARRY,4           AND TSX TO CARRY                   F2213370
06274  0 50000 0 03717 3GRP40 CLA L2                RE-ENTRY,OBTAIN L2                 F2213380
06275  0 40200 0 03752        SUB L(1)              L2 LESS 1                          F2213390
06276  0 40200 0 03721        SUB L3                L2 LESS 1 LESS L3                  F2213400
06277 -0 10000 0 06302        TNZ 3GRP50            NOT ZERO,NO CARRY,TRA              F2213410
06300 -0 53400 2 03753        LXD L(2),2            SET XRB                            F2213420
06301  0 07400 4 04754        TSX CARRY,4           AND TSX TO CARRY                   F2213430
06302 -0 53400 6 03751 3GRP50 LXD L(0),6            THE FOLLOWING ROUTINE,             F2213440
06303 -0 53400 1 03703        LXD GROUP,1           THROUGH 3GRP72, COMPUTES           F2213450
06304  0 02000 1 06313 3GRP55 TRA 3GRP55+7,1        QUANTITIES FOR XRB, XRC.           F2213460
06305  1 00002 2 06314        TXI 3GRP65,2,2        GROUP IS SIX                       F2213470
06306  1 00004 4 06314        TXI 3GRP65,4,4        FIVE                               F2213480
06307  1 00004 2 06314        TXI 3GRP65,2,4        FOUR                               F2213490
06310  1 00002 6 06313        TXI 3GRP60,6,2        THREE                              F2213500
06311  1 00002 4 06314        TXI 3GRP65,4,2        TWO                                F2213510
06312  1 00004 4 06313        TXI 3GRP60,4,4        ONE                                F2213520
06313  1 00002 2 06314 3GRP60 TXI 3GRP65,2,2                                          F2213530
06314  0 50000 4 03720 3GRP65 CLA X1+4,4                                              F2213540
06315  0 60100 0 06362        STO INX                                                  F2213550
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06316   0 50000 4 03721          CLA X1+5,4
06317   0 60100 0 06363          STO INL
06320   0 50000 2 03720          CLA X1+4,2
06321   0 60100 0 06364          STO MIDX
06322   0 50000 2 03721          CLA X1+5,2
06323   0 60100 0 06365          STO MIDL
06324   3 00000 4 06326          TXH 3GRP70,4,0
06325   1 00001 4 06326          TXI 3GRP70,4,1
06326  -0 63400 4 06357 3GRP70   SXD INP,4
06327   3 00000 2 06331          TXH 3GRP72,2,0
06330   1 00001 2 06331          TXI 3GRP72,2,1
06331  -0 63400 2 06361 3GRP72   SXD MIDP,2
06332  -0 53400 4 03755          LXD L(4),4
06333   0 50000 4 06366 3GRP75   CLA INX+4,4
06334  -0 73400 1 00000          PDX 0,1
06335   0 50000 4 06367          CLA INL+4,4
06336   0 60100 0 03741          STO TL2
06337   0 50000 0 03723          CLA LL
06340   0 60100 0 03740          STO TL1
06341  -0 53400 2 03752          LXD L(1),2
06342  -0 63400 4 06360          SXD 3GRP80,4
06343   0 07400 4 05441          TSX TRAWRD,4
06344  -0 53400 4 06360          LXD 3GRP80,4
06345   0 10000 0 06355          TZE 3GRP77
06346   0 50000 4 06363          CLA INP+4,4
06347  -0 73400 2 00000          PDX 0,2
06350   0 50000 4 06366          CLA INX+4,4
06351  -0 73400 1 00000          PDX 0,1
06352  -0 63400 4 06360          SXD 3GRP80,4
06353   0 07400 4 06370          TSX RESET,4
06354  -0 53400 4 06360          LXD 3GRP80,4
06355   2 00002 4 06333 3GRP77   TIX 3GRP75,4,2
06356   0 02000 0 06366          TRA 3NSEND
A 06357   0 00000 0 00000 INP    HTR
A 06360   0 00000 0 00000 3GRP80 HTR
A 06361   0 00000 0 00000 MIDP   HTR
A 06362   0 00000 0 00000 INX    HTR
A 06363   0 00000 0 00000 INL    HTR
A 06364   0 00000 0 00000 MIDX   HTR
A 06365   0 00000 0 00000 MIDL   HTR
06366  -0 53400 4 06255 3NSEND  LXD 3GRP15,4
06367   0 02000 4 00001          TRA 1,4
06370  -0 63400 4 06421 RESET    SXD RES45,4
06371  -0 75400 2 00000          PXD 0,2
06372   0 60100 0 06613          STO RES300
06373  -0 75400 1 00000          PXD 0,1
06374   0 60100 0 06614          STO RES310
06375   0 50000 0 03710          CLA C3
06376   0 77100 0 00022          ARS 18
06377   0 02000 2 06406 RES05    TRA RES05+7,2
06400   0 02000 0 06422          TRA RES50
06401   0 02000 0 06414          TRA RES30
06402   0 02000 0 06416          TRA RES40
06403   0 02000 0 06412          TRA RES20
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                                                                    F2213560
                                                                    F2213570
                                                                    F2213580
                                                                    F2213590
                                                                    F2213600
                                                                    F2213610
                THE QUANTITIES IN XRB.                              F2213620
                XRC, ARE ZERO, TWO, OR                              F2213630
                FOUR, ADJUSTED TO ONE,                              F2213640
                TWO, FOUR, TO INDICATE THE                          F2213650
                POSITION OF THE SUBCCRIPT                           F2213660
                BEING RESET, STORE IN INP, MIDP.                    F2213670
                THIS LOOP IS EXECUTED TWICE.                        F2213680
                OBTAIN INNER INDEX OF PAIR                          F2213690
                IN XRA                                              F2213700
                OBTAIN INNER LEVEL OF PAIR                          F2213710
                TL2                                                 F2213718
                OBTAIN LOWER LEVEL IN                               F2213720
                TL1                                                 F2213740
                PUT ONE IN XRB,                                     F2213750
                SAVE XRC,                                           F2213760
                AND USE TRAWRD.                                     F2213770
                RESTORE XRC,                                        F2213780
                GO TO INDEXING IF ZERO.                             F2213790
                TRAWRD RESULT NOT ZERO.                             F2213800
                PREPARE TO                                          F2213810
                USE RESET                                           F2213820
                                                                    F2213830
                SAVE XRC,                                           F2213840
                GO TO RESET,                                        F2213850
                RESTROE XRC,                                        F2213860
                INDEX AND GO BACK,                                  F2213870
                OR EXIT                                             F2213880
                POSITION OF INNER SUB.                              F2213890
                                                                    F2213900
                POSITION OF MIDDLE SUB.                             F2213910
INDEX INNER LEVEL SUBSCRIPT                                         F2213920
LEVEL INNER LEVEL SUBSCRIPT                                         F2213930
INDEX MIDDLE LEVEL SUBSCRIPT                                        F2213940
LEVEL MIDDLE LEVEL SUBSCRIPT                                        F2213950
                                                                    F2213960
                                                                    F2213970
                SAVE LINKAGE                                        F2213980
                SAVE                                                F2213990
                PREFIX (REBITS)                                     F2214000
                SAVE INDEX                                          F2214010
                OF RESET                                            F2214020
                OBTAIN C3 IN                                        F2214030
                ADDRESS PART.                                       F2214040
                INDEXED T RANSFER, C(XRB)=C(REBITS)                 F2214050
                C(XRB)=110                                          F2214060
                C(XRB)=101                                          F2214070
                C(XRB)=100                                          F2214080
                C(XRB)=011                                          F2214090
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06404   0 02000 0 06422         TRA RES50
06405   0 60100 0 05064 RES10   STO E2
06406   0 50000 0 03713         CLA D2
06407   0 77100 0 00022         ARS 18
06410   0 40000 0 03712         ADD D1
06411   0 02000 0 06430         TRA RES60
06412   0 40000 0 03706 RES20   ADD C2
06413   0 02000 0 06405         TRA RES10
06414   0 40000 0 03704 RES30   ADD C1
06415   0 02000 0 06405         TRA RES10
06416   0 50000 0 03704 RES40   CLA C1
06417   0 60100 0 05064         STO E2
06420   0 50000 0 03751         CLA L(0)
D 06421 -3 00000 0 06430 RES45  TXL RES60,0
06422   0 50000 0 03706 RES50   CLA C2
06423   0 77100 0 00022         ARS 18
06424  -3 00002 2 06426         TXL RES55,2,2
06425   0 40000 0 03704         ADD C1
06426   0 60100 0 05064 RES55   STO E2
06427   0 50000 0 03712         CLA D1
06430   0 60100 0 05065 RES60   STO E3
06431   3 00004 2 06433         TXH RES65,2,4
06432   3 00003 2 06620         TXH RES400,2,3
06433  -0 53400 1 04007 RES65   LXD RESXX,1
06434  -0 63400 1 06445         SXD RES75,1
06435   0 53400 1 04007         LXA RESXX,1
06436   0 02000 0 06445         TRA RES75
06437   0 50000 1 07755 RES70   CLA RETABZ,1
06440  -0 32000 0 03772         ANA DECMSK
06441   0 34000 0 06614         CAS RES310
06442   1 77775 1 06445         TXI RES75,1,-3
06443   0 02000 0 06447         TRA RES80
06444   1 77775 1 06445 RES73   TXI RES75,1,-3
D 06445 3 00000 1 06437 RES75   TXH RES70,1
06446   0 02000 0 06466         TRA RES85
06447   0 50000 1 07755 RES80   CLA RETABZ,1
06450  -0 32000 0 06615         ANA RES320
06451   0 76700 0 00006         ALS 6
06452   0 40200 0 06613         SUB RES300
06453  -0 10000 0 06444         TNZ RES73
06454   0 50000 1 07756         CLA RETABZ+1,1
06455   0 40200 0 05064         SUB E2
06456  -0 10000 0 06444         TNZ RES73
06457   0 50000 1 07757         CLA RETABZ+2,1
06460   0 40200 0 05065         SUB E3
06461  -0 10000 0 06444         TNZ RES73
06462   0 50000 1 07755         CLA RETABZ,1
06463  -0 32000 0 03773         ANA ADDMSK
06464   0 60100 0 06616         STO RES330
06465   0 02000 0 06573         TRA RES200
06466   0 50000 0 06613 RES85   CLA RES300
06467   0 77100 0 00006         ARS 6
06470  -0 50100 0 03700         ORA TAG
06471   0 60100 0 06616         STO RES330
```

```
C(XRB)= 010                                  F2214100
C(XRB)=001                                   F2214110
THESE INSTRUCTIONS, THROUGH                  F2214120
RES60, COMPUTE THE                           F2214130
CHARACTERISTIC WORDS OF THE                  F2214140
SUBSCRIPT COMBINATION.                       F2214150
                                             F2214160
                                             F2214170
                                             F2214180
                                             F2214190
                                             F2214200
                                             F2214210
                                             F2214220
                                             F2214230
                                             F2214240
                                             F2214250
                                             F2214260
                                             F2214270
                                             F2214280
                                             F2214290
                                             F2214300
IF PREFIX IS 1,0,0,                          F2214310
T RA TO RES400                               F2214320
SEARCH                                       F2214330
RETAB                                        F2214340
FOR                                          F2214350
SAME                                         F2214360
INDEX.                                       F2214370
                                             F2214380
                                             F2214390
                                             F2214400
INDEX FOUND, GO TO RES80                     F2214410
                                             F2214420
                                             F2214430
NOT FOUND, GO TO RES85                       F2214440
COMPARE PREFIX OF                            F2214450
RETAB ENTRY                                  F2214460
WITH CURRENT                                 F2214470
PREFIX. IF NOT EQUAL,                        F2214480
CONTINUE RETAB SEARCH.                       F2214490
IF EQUAL, COMPARE                            F2214500
C HARACTERISTIC WORDS.                       F2214510
IF                                           F2214520
NOT                                          F2214530
                                             F2214540
EQUAL, CONTINUE SEARCH.                      F2214550
IF EQUAL,                                    F2214560
USE RESET TAG ALREADY                        F2214570
ENTERED. SAVE NAME.                          F2214580
TRA TO RES200                                F2214590
NO USABLE ENTRY FOUND.                       F2214600
MAKE                                         F2214610
NEW                                          F2214620
                                             F2214630
```

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06472 -0 50100 0 06614          ORA RES310                    ENTRY                                  F2214640
06473 -0 53400 1 04007          LXD RESXX,1                   IN                                     F2214650
06474  3 00000 1 06476          TXH RES87,1,0                 RETAB.                                 F2214660
06475  0 07400 4 00004          TSX DIAG,4  RETAB TABLE FULL.          ERROR. GO TO DIAGNOSTIC.      F2214675
06476  0 60100 1 07755 RES87    STO RETABZ,1                                                         F2214680
06477  0 50000 0 05064          CLA E2                                                               F2214690
06500  0 60100 1 07756          STO RETABZ+1,1                                                       F2214700
06501  0 50000 0 05065          CLA E3                                                               F2214710
06502  0 60100 1 07757          STO RETABZ+2,1                                                       F2214720
06503  1 77775 1 06504          TXI RES88,1,-3                ADJUST IN DEX.                         F2214730
06504 -0 63400 1 04007 RES88    SXD RESXX,1                                                          F2214740
06505  0 50000 0 06614          CLA RES310                    MAKE E2 WORD                           F2214750
06506  3 00005 2 06522          TXH RES96,2,5                 FOR DRUMTAG OR                         F2214760
06507  3 00004 2 06521          TXH RES94,2,4                 TAGTAG ENTRY                           F2214770
06510  3 00003 2 06520          TXH RES92,2,3                                                        F2214780
06511  3 00002 2 06515          TXH RES90,2,2                                                        F2214790
06512  3 00001 2 06522          TXH RES96,2,1                                                        F2214800
06513  0 77100 0 00022          ARS 18                                                               F2214810
06514  0 02000 0 06522          TRA RES96                                                            F2214820
06515  0 77100 0 00022 RES90    ARS 18                                                               F2214830
06516  0 40000 0 06614          ADD RES310                                                           F2214840
06517  0 02000 0 06522          TRA RES96                                                            F2214850
06520  0 50000 0 03751 RES92    CLA L(0)                                                             F2214860
06521  0 77100 0 00022 RES94    ARS 18                                                               F2214870
06522  0 60100 0 05064 RES96    STO E2                                                               F2214880
06523  0 50000 0 06614          CLA RES310                    MAKE                                   F2214890
06524  0 77100 0 00022          ARS 18                        E1 WORD                                F2214900
06525  3 00003 2 06527          TXH RES98,2,3                                                        F2214910
06526  0 50000 0 03751          CLA L(0)                                                             F2214920
06527  0 60100 0 05063 RES98    STO E1                                                               F2214930
06530 -0 53400 1 06614          LXD RES310,1                                                         F2214940
06531  0 50000 1 00733          CLA DOTAGZ,1                                                         F2214950
06532 -0 32000 0 03772          ANA DECMSK                                                           F2214960
06533 -0 60200 0 05063          ORS E1                                                               F2214970
06534  0 50000 0 06616          CLA RES330                    MAKE                                   F2214980
06535  0 60100 0 05065          STO E3                        E3 WORD                                F2214990
06536  0 50000 0 03757          CLA L(6)                      MAKE                                   F2215000
06537  0 60100 0 05066          STO E4                        E4                                     F2215010
06540  0 50000 0 06613          CLA RES300                    WORD                                   F2215020
06541  0 77100 0 00022          ARS 18                                                               F2215030
06542 -0 60200 0 05066          ORS E4                                                               F2215040
06543 -3 00002 2 06550          TXL RES110,2,2                                                       F2215050
06544 -3 00003 2 06546          TXL RES100,2,3                                                       F2215060
06545 -3 00004 2 06550          TXL RES110,2,4                                                       F2215070
06546  0 76700 0 00011 RES100   ALS 9                                                                F2215080
06547 -0 60200 0 05066          ORS E4                                                               F2215090
06550  0 50000 0 03751 RES110   CLA L(0)                      THESE INSTRUCTIONS,                    F2215100
06551  0 60100 0 06617          STO RES340                    TO RES170, DETERMINE                   F2215110
06552 -0 53400 4 03756          LXD L(5),4                    WHICH COEFFICIENTS                     F2215120
06553  0 50000 4 03711 RES120   CLA C1+5,4                    ARE GREATER THAN                       F2215130
06554  0 40200 0 03752          SUB L(1)                      ONE AND PLACE                          F2215140
06555  0 10000 0 06562          TZE RES140                    THIS INFO IN                           F2215150
06556  2 00001 4 06557          TIX RES130,4,1                E4(TAG1).                              F2215160
06557 -0 75400 4 00000 RES130   PXD 0,4                                                              F2215170
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06560 -0 60200 0 06617         ORS RES340                                                F2215180
06561  1 00001 4 06562         TXI RES140,4,1                                            F2215190
06562  2 00002 4 06553 RES140  TIX RES120,4,2                                            F2215200
06563  0 50000 0 06617         CLA RES340                                                F2215210
06564 -0 32000 0 06613         ANA RES300                                                F2215220
06565  0 77100 0 00006         ARS 6                                                     F2215230
06566 -0 60200 0 05066         ORS E4                                                    F2215240
06567  0 50000 0 05073         CLA DRMTAG                DRUM TAG ENTRY                  F2215250
06570  0 07400 4 05025         TSX LIST,4                OR                              F2215260
06571  0 02000 0 06573         TRA RES200                TAGTAG                          F2215270
06572  0 07400 4 05510 RES180  TSX TAGENT,4              ENTRY.                          F2215280
06573 -0 53400 1 06614 RES200  LXD RES310,1              MAKE                            F2215290
06574  0 50000 1 00733         CLA DOTAGZ,1              PROPER                          F2215300
06575  0 60100 0 05063         STO E1                    TRASTO                          F2215310
06576  0 50000 0 03741         CLA TL2                   ENTRY                           F2215320
06577  0 77100 0 00022         ARS 18                                                    F2215330
06600  0 40000 0 03740         ADD TL1                                                   F2215340
06601  0 60100 0 05064         STO E2                                                    F2215350
06602  0 50000 0 06616         CLA RES330                                                F2215360
06603  0 76700 0 00022         ALS 18                                                    F2215370
06604  0 40000 0 03701         ADD TS                                                    F2215380
06605 -0 76000 0 00003         SSM                                                       F2215390
06606  0 60100 0 05065         STO E3                                                    F2215400
06607  0 50000 0 05070         CLA TRASTO                                                F2215410
06610  0 07400 4 05025         TSX LIST,4                                                F2215420
06611 -0 53400 4 06421 RES210  LXD RES45,4               EXIT.                           F2215430
06612  0 02000 4 00001         TRA 1,4                                                   F2215440
A 06613  0 00000 0 00000 RES300 HTR                      PREFIX STORAGE                  F2215450
A 06614  0 00000 0 00000 RES310 HTR                      INDEX STORAGE                   F2215460
06615 +000000070000     RES320 OCT 70000                 PREFIX MASK                     F2215470
A 06616  0 00000 0 00000 RES330 HTR                      RESET NAME STORAGE              F2215480
A 06617  0 00000 0 00000 RES340 HTR                      E.S.                            F2215490
06620  0 50000 0 05064 RES400  CLA E2                    TEST FOR COEFFICIENT            F2215500
06621  0 40200 0 03752         SUB L(1)                  EQUAL TO ONE.                   F2215510
06622 -0 10000 0 06433         TNZ RES65                 IF NOT, PROCESS NORMALLY        F2215520
06623  0 50000 1 00733         CLA DOTAGZ,1              THROUGH RESET.                  F2215530
06624  0 77100 0 00021         ARS 17                    TEST FOR CONSTANT N1.           F2215540
06625  0 76000 0 00001         LBT                       IF VARIABLE, NORMAL PROCESSING. F2215550
06626  0 02000 0 06630         TRA RES410                0                               F2215560
06627  0 02000 0 06433         TRA RES65                 1                               F2215570
06630  0 50000 1 00741 RES410  CLA DOTAGZ+6,1            HAS COUNTER BEEN FOUND.         F2215580
06631 -0 32000 0 04001         ANA BITTWO                                                F2215590
06632 -0 10000 0 06645         TNZ RES420                IF SO, GO TO RES420             F2215600
06633  0 50000 0 03741         CLA TL2                   IF NOT, MAKE ENTRY              F2215610
06634  0 77100 0 00022         ARS 18                    IN ADDED TAG TABLE              F2215620
06635 -0 50100 0 03740         ORA TL1                   FOR PROCESSING INTO             F2215630
06636 -0 76000 0 00003         SSM                       DRUM TAG AFTER NEST             F2215640
06637  0 76500 0 00043         LRS 35                    ANALYSIS.                       F2215650
06640 -0 75400 1 00000         PXD 0,1                                                   F2215660
06641 -0 50100 0 03701         ORA TS                                                    F2215670
06642 -0 53400 2 03752         LXD L(1),2                                                F2215680
06643  0 07400 4 05254         TSX TAGADD,4                                              F2215690
06644  0 02000 0 06611         TRA RES210                TRA TO EXIT                     F2215700
06645  0 07400 4 05140 RES420  TSX RSR,4                 COUNTER FOUND, USE RSR.         F2215710
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06646  0 02000 0 06611          TRA RES210                    TRA TO EXIT                                F2215720
                                   THE 2 WD SUBRT NORMRT SPACES TAPE 1 PAST DIAGNOSTIC RECORD.          F2215725
06647  0 76200 0 00221 NORMRT   RDS 145          SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE.            F2215726
06650  0 02000 0 00004          TRA ONETCS       GO TO ONE TO CS ( MONITOR)                             F2215727
                 06651          BSS 80                                                                  F2215730
                 06771 TAGZ     BSS 1                                                                   F2215740
                 06772          BSS 99                                                                  F2215750
                 07135 ADTAGZ   BSS 1                                                                   F2215760
                 07136          BSS 99                                                                  F2215770
                 07301 NAMZ     BSS 1                                                                   F2215780
                 07302          BSS 299                                                                 F2215790
                 07755 RETABZ   BSS 1                                                                   F2215800
                                      MASTER RECORD CARD = FN030                                        F2215805
                                   THIS ROUTINE PROCESSES SINGLE RELATIVE CONSTANTS                     F2215810
                                   AND, FOR SC WITH TWO RC SUBS, DOES ALL PROCESSING                    F2215820
                                   EXCEPT WHERE THERE IS A POSSIBLE MULTIPLE DEFINITION,                F2215830
                                   AT WHICH POINT IT CALLS ON 2R0000.                                   F2215840
                 05566          ORG IDENT             STATE B                                           F2215850
05566 -0 53400 1 00030 CORES    LXD DOTAG-1,1                                                           F2215860
05567 -0 63400 1 05602          SXD DSDR20,1                                                            F2215870
05570 -0 63400 1 05745          SXD DSD118,1                                                            F2215880
05571 -0 63400 1 05762          SXD DSD145,1                                                            F2215890
05572 -0 63400 1 06026          SXD 2R0020,1                                                            F2215900
05573 -0 76000 0 00144 DSDR00   MSE 100                                                                 F2215910
05574  0 76100 0 00000          NOP                                                                     F2215920
05575 -0 53400 1 03674          LXD XC,1                      PUT INDEX OF DC IN XRA                    F2215930
05576 -0 53400 4 03732          LXD DELTA,4                   PUT DELTA IN XRC                          F2215940
05577  0 50000 0 03675          CLA LC                        INITIALIZE END OF                         F2215950
05600  0 62200 0 05605          STD DSDR30                    DC TEST INSTR                             F2215960
05601  1 77767 1 05602 DSDR10   TXI DSDR20,1,-9               TAKE NEXT DOWN DO,IF POSSIBLE             F2215970
D 05602 -3 00000 1 05734 DSDR20 TXL DSD100,1                  EXIT IF DOTAG EXHAUSTED.                  F2215980
05603  0 50000 1 00740          CLA DOTAGZ+5,1                OBTAIN LEVEL OF THIS DO IN                F2215990
05604 -0 73400 2 00000          PDX 0,2                       XRB,COMPARE WITH LEVEL OF                 F2216000
D 05605 -3 00000 2 05734 DSDR30 TXL DSD100,2                  D6 AND EXIT IF NOT IN DC.                 F2216010
05606  0 50000 1 00734          CLA DOTAGZ+1,1                OBTAIN SYMBOL OF THIS DO                  F2216020
05607  0 40200 0 03735          SUB RSYM1                     COMPARE WITH (FIRST) R SYM.               F2216030
05610  0 10000 0 05621          TZE DSDR50                    IF THIS DO IS DR1,TRA.                    F2216040
05611 -3 00002 4 05601          TXL DSDR10,4,2                IF NOT DR1,GO BACK,UNLESS DELTA3          F2216050
05612  0 50000 1 00734          CLA DOTAGZ+1,1                OBTAIN SYMBOL AGAIN                       F2216060
05613  0 40200 0 03736          SUB RSYM2                     AND COMPARE WITH RSYM2                    F2216070
05614 -0 10000 0 05601          TNZ DSDR10                    IF NOT RSYM1 OR RSYM2,GO BACK             F2216080
05615  0 50000 0 03736          CLA RSYM2                     IF DO SYM IS RSYM2,                       F2216090
05616  0 56000 0 03735          LDQ RSYM1                     SWITCH RSYM1 AND RSYM2                    F2216100
05617  0 60100 0 03735          STO RSYM1                     TO MAKE BUCKET LABLES                     F2216110
05620 -0 60000 0 03736          STQ RSYM2                     AGREE WITH ORDER OF DO FORMULAS           F2216120
05621 -0 63400 1 06365 DSDR50   SXD XR1,1                     SAVE                                      F2216130
05622 -0 75400 2 00000          PXD 0,2                       INDEX OF R1                               F2216140
05623  0 60100 0 06366          STO LR1                       AND LEVEL OF R1                           F2216150
05624  0 60100 0 03741          STO TL2                       INITIALIZE TRAWRD TL2                     F2216160
05625  0 50000 0 03723          CLA LL                        INITIALIZE TRAWRD TL1                     F2216170
05626  0 60100 0 03740          STO TL1                       PREPARE                                   F2216180
05627 -0 53400 2 03752          LXD L(1),2                    TRAWRD C(XRB)                             F2216190
05630 -3 00002 4 05632          TXL DSDR55,4,2                                                          F2216200
05631 -0 53400 2 03753          LXD L(2),2                                                              F2216210
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05632   0 07400 4 05441 DSDR55 TSX TRAWRD,4          GO TO TRAWRD AND                F2216220
05633   0 60100 0 06371         STO D2D1             SAVE IF NOT ZERO                F2216230
05634  -0 53400 4 03732         LXD DELTA,4          RETURN HERE                     F2216240
05635   3 00002 4 05703         TXH DSDR85,4,2       TRANSFER IF DELTA IS THREE      F2216250
05636   0 10000 0 05602         TZE DSDR20           RETURN IF RESULT ZERO           F2216260
05637  -0 63400 1 05733         SXD DSDR95,1                                         F2216270
05640  -3 00001 4 05655         TXL DSDR65,4,1       TR IF DELTA=1                   F2216280
05641   0 50000 0 03761         CLA L(36)            FOR DELTA=2,SEPARATE            F2216290
05642   0 40200 0 03675         SUB LC               TRAWRD RESULTS.                 F2216300
05643   0 77100 0 00022         ARS 18                                               F2216310
05644   0 62100 0 05647         STA DSDR60                                           F2216320
05645   0 56000 0 03751         LDQ L(0)                                             F2216330
05646   0 50000 0 06371         CLA D2D1                                             F2216340
A  05647   0 76500 0 00000 DSDR60 LRS                                              F2216350
05650   0 10000 0 05652         TZE DSDR62           IF TRANSFERS EXIST DC TO DL,    F2216360
05651   0 76000 0 00144         PSE 100              SET SENSE SWITCH                F2216370
05652  -0 60000 0 06371 DSDR62 STQ D2D1                                            F2216380
05653   0 50000 0 06371         CLA D2D1                                             F2216390
05654   0 10000 0 05700         TZE DSDR80           IF NO TRANSFERS DR TO DC,EXIT   F2216400
05655   0 50000 0 03672 DSDR65 CLA ATSW              TEST ADDED TAG SWITCH           F2216410
05656  -0 10000 0 05700         TNZ DSDR80           IF ADDED DELTA TWO, SKIP INSERT F2216420
05657  -0 53400 1 06365         LXD XR1,1            IS TAG IN DR1                   F2216430
05660   0 07400 4 05411         TSX TINFOR,4         GO TO TINFOR AND RETURN         F2216440
05661   0 02000 0 05667         TRA DSDR70           FOUND                           F2216450
05662  -0 53400 2 03751         LXD L(0),2           NOT FOUND                       F2216460
05663  -0 53400 1 06365         LXD XR1,1                                            F2216470
05664   0 07400 4 05254         TSX TAGADD,4         INSERT TAG IN R1,RETURN         F2216480
05665  -0 60000 0 06374         STQ TR1              HERE AND STORE NAME IN TR1      F2216490
05666   0 02000 0 05675         TRA DSDR75                                           F2216500
05667  -0 53400 1 06365 DSDR70 LXD XR1,1            FIND NAME OF TAG IN R1          F2216510
05670   0 50000 1 00733         CLA DOTAGZ,1                                         F2216520
05671  -0 32000 0 03772         ANA DECMSK                                           F2216530
05672   0 40000 0 03700         ADD TAG                                              F2216540
05673   0 07400 4 06376         TSX GETNAM,4                                         F2216550
05674   0 60100 0 06374         STO TR1                                              F2216560
05675  -0 53400 1 06365 DSDR75 LXD XR1,1            LIST STORES                     F2216570
05676  -0 53400 2 03751         LXD L(0),2                                           F2216580
05677   0 07400 4 06431         TSX STORES,4                                         F2216590
05700  -0 53400 1 05733 DSDR80 LXD DSDR95,1                                        F2216600
05701  -0 53400 4 03732         LXD DELTA,4                                          F2216610
05702   0 02000 0 05602         TRA DSDR20                                           F2216620
05703   0 10000 0 06022 DSDR85 TZE 2R0000            GO TO R2 SEARCH IF NO TRA R1 TO D6 F2216630
05704  -0 53400 1 06365         LXD XR1,1            IF TRA R1 TO DC,                F2216640
05705  -0 53400 2 03752         LXD L(1),2           USE SPC000 TO LOOK FOR          F2216650
05706   0 07400 4 05277         TSX SPC000,4         TAG IN R1                       F2216660
05707   0 02000 0 05717         TRA DSDR87           NOT FOUND,GO TO DSDR87          F2216670
05710  -0 53400 1 06365         LXD XR1,1            FOUND,USE SUBROUTINE            F2216680
05711   0 50000 1 00733         CLA DOTAGZ,1         GETNAM TO DETERMINE LABLE       F2216690
05712  -0 32000 0 03772         ANA DECMSK           OF TAG IN R1                    F2216700
05713   0 40000 0 03700         ADD TAG                                              F2216710
05714   0 07400 4 06376         TSX GETNAM,4                                         F2216720
05715   0 60100 0 06374         STO TR1              PUT NAME IN TR1                 F2216730
05716   0 02000 0 05726         TRA DSDR89                                           F2216740
05717  -0 53400 1 06365 DSDR87 LXD XR1,1            USE TAGADD TO INSERT            F2216750
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05720 -0 53400 2 03751          LXD L(0),2
05721  0 07400 4 05254          TSX TAGADD,4
05722 -0 60000 0 06374          STQ TR1
05723 -0 53400 1 03722          LXD XL,1
05724  0 50000 0 04005          CLA BIT20
05725 -0 60200 1 00741          ORS DOTAGZ+6,1
05726 -0 53400 1 06365 DSDR89   LXD XR1,1
05727 -0 53400 2 03752          LXD L(1),2
05730  0 07400 4 06431          TSX STORES,4
05731  0 02000 0 06022 DSDR90   TRA 2R0000
05732 -0 53400 4 03732 DSDR92   LXD DELTA,4
D 05733 -3 00000 0 05602 DSDR95 TXL DSDR20,0
05734 -3 00001 4 06021 DSD100   TXL DSD200,4,1
05735  3 00002 4 06021          TXH DSD200,4,2
05736 -0 76000 0 00144          MSE 100
05737  0 02000 0 05741          TRA DSD110
05740  0 02000 0 05776          TRA DSD170
05741 -0 53400 1 03722 DSD110   LXD XL,1
05742  0 50000 1 00740          CLA DOTAGZ+5,1
05743  0 62200 0 05750          STD DSD120
05744  1 77767 1 05745 DSD115   TXI DSD118,1,-9
D 05745 -3 00000 1 06021 DSD118 TXL DSD200,1
05746  0 50000 1 00740          CLA DOTAGZ+5,1
05747 -0 73400 2 00000          PDX 0,2
D 05750 -3 00000 2 06021 DSD120 TXL DSD200,2
05751 -0 75400 1 00000          PXD 0,1
05752  0 40200 0 03674          SUB XC
05753  0 10000 0 05760          TZE DSD130
05754  0 50000 1 00734          CLA DOTAGZ+1,1
05755  0 40200 0 03735          SUB RSYM1
05756  0 10000 0 05767          TZE DSD160
05757  0 02000 0 05744          TRA DSD115
05760 -0 63400 2 05765 DSD130   SXD DSD150,2
05761  1 77767 1 05762 DSD140   TXI DSD145,1,-9
D 05762 -3 00000 1 06021 DSD145 TXL DSD200,1
05763  0 50000 1 00740          CLA DOTAGZ+5,1
05764 -0 73400 2 00000          PDX 0,2
D 05765 -3 00000 2 05750 DSD150 TXL DSD120,2
05766  0 02000 0 05761          TRA DSD140
05767 -0 75400 2 00000 DSD160   PXD 0,2
05770  0 60100 0 03741          STO TL2
05771  0 50000 0 03723          CLA LL
05772  0 60100 0 03740          STO TL1
05773 -0 53400 2 03752          LXD L(1),2
05774  0 07400 4 05441          TSX TRAWRD,4
05775  0 10000 0 05745          TZE DSD118
05776 -0 53400 2 03722 DSD170   LXD XL,2
05777  0 50000 0 04000          CLA BITONE
06000 -0 60200 2 00740          ORS DOTAGZ+5,2
06001 -0 53400 2 03750          LXD LOWPOS,2
06002  0 50000 0 03751          CLA L(0)
06003  0 60100 2 03721          STO X1+5,2
06004  0 60100 2 03722          STO X1+6,2
06005  2 00001 2 06006          TIX DSD175,2,1
```

```
TAG IN R1                                   F2216760
                                            F2216770
PUT NAME IN TR1                             F2216780
                                            F2216790
                                            F2216800
                                            F2216810
LIST STORES                                 F2216820
                                            F2216830
                                            F2216840
GO TO R2 ROUTINE AND                        F2216850
RETURN HERE                                 F2216860
NEXT R1. DEC CONTAINS XNEXTR1               F2216870
TRA IF DELTA IS 1                           F2216880
TRA IF DELTA IS 3                           F2216890
DELTA IS 2,TEST D3D1 SWITCH                 F2216900
LIGHT OFF                                   F2216910
LIGHT ON                                    F2216920
OBTAIN INDEX OF DL IN XRA                   F2216930
OBTAIN LEVEL OF DL                          F2216940
AND STORE IN TEST INSTR.                    F2216950
TAKE NEXT DOWN DO IF POSSIBLE               F2216960
OTHERWISE,EXIT.                             F2216970
OBTAIN LEVEL OF THIS DO                     F2216980
AND TEST WHETHER THIS DO IS                 F2216990
IN DL. IF NOT,EXIT.                         F2217000
IF IN DL,                                   F2217010
IF THIS DO D6.                              F2217020
IF SO,TRA.                                  F2217030
IF NOT,IS THIS DO A DR.                     F2217040
                                            F2217050
IF SO,TRA,                                  F2217060
IF NOT,GO BACK TO GET NEXT DO               F2217070
IF DO IS DC,                                F2217080
                                            F2217090
                                            F2217100
IS NEW IN DL.                               F2217110
IF SO,GO BACK TO STEP DOWN                  F2217120
AGAIN IN DC. IF NOT IN                      F2217130
DC, GO TO TEST IF IN DL                     F2217140
INITIALIZE                                  F2217150
TL2 TO LEVEL OF DR                          F2217160
PUT LEVEL OF DL                             F2217170
IN TL1                                      F2217180
PUT 1 IN XRB                                F2217190
AND GO TO TRAWRD.                           F2217200
IF RESUTL ZERO,GO BACK                      F2217210
                                            F2217220
                                            F2217230
                                            F2217240
                                            F2217250
                                            F2217260
                                            F2217270
                                            F2217280
                                            F2217290
```

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     06006 -0 75400 2 00000 DSD175 PXD 0,2                                                          F2217300
     06007 -0 60200 0 03727        ORS DORC                                                         F2217310
     06010  0 76000 0 00006        COM                                                              F2217320
     06011  0 32000 0 03731        ANS DOSUBS                                                       F2217330
     06012  0 50000 0 03674        CLA XC                                                           F2217340
     06013  0 60100 0 03722        STO XL                                                           F2217350
     06014  0 50000 0 03675        CLA LC                                                           F2217360
     06015  0 60100 0 03723        STO LL                                                           F2217370
     06016  0 50000 0 03752        CLA L(1)                                                         F2217380
     06017  0 60100 0 03726        STO NRDS                                                         F2217390
     06020  0 60100 0 03732        STO DELTA                                                        F2217400
     06021  0 02000 0 06123 DSD200 TRA DS4VAL                                                       F2217410
                                     RELCON DELTA THREE SECOND LEVEL DEFINITION.                    F2217420
     06022 -0 53400 1 06365 2R0000 LXD XR1,1                    PUT INDEX OF R1 IN XRA              F2217430
     06023  0 50000 0 06366        CLA LR1                      OBTAIN LEVEL OF R1                  F2217440
     06024  0 62200 0 06031        STD 2R0030                   INITIALIZE TEST INSTR.              F2217450
     06025  1 77767 1 06026 2R0010 TXI 2R0020,1,-9              TAKE NEXT DOWN DO IF POSSIBLE       F2217460
D    06026 -3 00000 1 05732 2R0020 TXL DSDR92,1                 EXIT IF PARTLY FULL DOTAG EXHAUSTEDF2217470
     06027  0 50000 1 00740        CLA DOTAGZ+5,1               OBTAIN LEVEL OF DO                  F2217480
     06030 -0 73400 2 00000        PDX 0,2                      PUT IN XRB AND COMPARE WITH         F2217490
D    06031 -3 00000 2 05732 2R0030 TXL DSDR92,2                 LR1,EXIT IF NEW DO NOT IN XR1.      F2217500
     06032  0 50000 1 00734        CLA DOTAGZ+1,1               OBTAIN SYMBOL OF NEW DO,            F2217510
     06033  0 40200 0 03736        SUB RSYM2                    COMPARE WITH RSYM2.                 F2217520
     06034 -0 10000 0 06025        TNZ 2R0010                   IF NOT RSYM2,GO BACK.               F2217530
     06035 -0 63400 1 06367        SXD XR2,1                    SAVE INDEX                          F2217540
     06036 -0 75400 2 00000        PXD 0,2                      AND LEVEL                           F2217550
     06037  0 60100 0 06370        STO LR2                      OF R2.                              F2217560
     06040  0 60100 0 03741        STO TL2                      PREPARE FOR TSX TO TRAWRD.          F2217570
     06041  0 50000 0 03675        CLA LC                       TO TEST FOR TRANSFERS               F2217580
     06042  0 60100 0 03740        STO TL1                      FROM R2 TO DS.                      F2217590
     06043 -0 53400 2 03752        LXD L(1),2                                                       F2217600
     06044  0 07400 4 05441        TSX TRAWRD,4                 IF NO TRANSFERS,GO BACK             F2217610
     06045  0 10000 0 06026        TZE 2R0020                   FOR NEXT DO.                        F2217620
     06046 -0 63400 1 06072        SXD 2R0065,1                                                     F2217630
     06047  0 60100 0 06373        STO D3D2                     TEMPORARY STORAGE                   F2217640
     06050  0 50000 0 03761        CLA L(36)                    PUT 36 IN ACC                       F2217650
     06051  0 40200 0 06366        SUB LR1                      SUB LEVEL OF R1,                    F2217660
     06052  0 77100 0 00022        ARS 18                       SHIFT RESULT AND                    F2217670
     06053  0 62100 0 06056        STA 2R0050                                                       F2217680
     06054  0 56000 0 03751        LDQ L(0)                     PUT ZERO IN MQ,                     F2217690
     06055  0 50000 0 06373        CLA D3D2                     OBTAIN TRAWRD RESULT,               F2217700
A    06056  0 76500 0 00000 2R0050 LRS                          PERFORM SEPARATION                  F2217710
     06057  0 60100 0 06372        STO D3D1                     AND SAVE                            F2217720
     06060 -0 60000 0 06373        STQ D3D2                     RESULTS.                            F2217730
     06061  0 50000 0 06372        CLA D3D1                     IF D3D1 IS ZERO,THEN D3D2           F2217740
     06062 -0 10000 0 06065        TNZ 2R0060                   IS NOT ZERO                         F2217750
     06063  0 50000 0 06371        CLA D2D1                     IF D2D1 IS ZERO,                    F2217760
     06064  0 10000 0 06121        TZE 2R0200                   TR TO GET NEX DO                    F2217770
     06065 -0 53400 1 06367 2R0060 LXD XR2,1                    SEARCH FOR TAG                      F2217780
     06066  0 07400 4 05411        TSX TINFOR,4                 IN R2                               F2217790
     06067  0 02000 0 06100        TRA 2R0080                   FOUND,TR TO OBTAIN NAME             F2217800
     06070 -0 53400 1 06367        LXD XR2,1                    NOT FOUND, LOOK FOR DELTA TWO       F2217810
     06071  0 07400 4 06413        TSX ADDSER,4                 INSERT IN ADDED TAG TABLE.          F2217820
D    06072 -3 00000 0 06105 2R0065 TXL 2R0090,0                 FOUND,NAME IN ACC.                  F2217830
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06073 -0 53400 1 06367         LXD XR2,1
06074 -0 53400 2 03751         LXD L(0),2
06075  0 07400 4 05254         TSX TAGADD,4
06076 -0 60000 0 06375         STQ TR2
06077  0 02000 0 06106         TRA 2R0100
06100 -0 53400 1 06367 2R0080  LXD XR2,1
06101  0 50000 1 00733         CLA DOTAGZ,1
06102 -0 32000 0 03772         ANA DECMSK
06103  0 40000 0 03700         ADD TAG
06104  0 07400 4 06376         TSX GETNAM,4
06105  0 60100 0 06375 2R0090  STO TR2
06106  0 50000 0 06372 2R0100  CLA D3D1
06107  0 10000 0 06113         TZE 2R0150
06110 -0 53400 1 06367         LXD XR2,1
06111 -0 53400 2 03753         LXD L(2),2
06112  0 07400 4 06431         TSX STORES,4
06113  0 50000 0 06373 2R0150  CLA D3D2
06114  0 10000 0 06121         TZE 2R0200
06115  0 50000 0 06371         CLA D2D1
06116  0 10000 0 06121         TZE 2R0200
06117 -0 53400 1 06367         LXD XR2,1
06120  0 07400 4 06447         TSX STORXX,4
06121 -0 53400 1 06072 2R0200  LXD 2R0065,1
06122  0 02000 0 06026         TRA 2R0020
                               DRUM SEARCH OF FORVAL
06123 -0 53400 1 04112 DS4VAL  LXD END80,1
06124 -3 00000 1 06207         TXL DS4V20,1,0
06125  0 50000 0 03700         CLA TAG
06126  0 76700 0 00022         ALS 18
06127  0 40000 0 03701         ADD TS
06130  0 60100 0 05064         STO E2
06131 -0 76000 0 00144         MSE 100
06132  0 76100 0 00000         NOP
06133  0 50000 0 03676         CLA ALPHA
06134  0 60100 0 03742         STO A
06135  0 50000 0 03677         CLA BETA
06136  0 40000 0 03765         ADD L(1)A
06137  0 60100 0 03743         STO B
06140  0 50000 0 06363         CLA 4VALAD
06141  0 60100 0 06362         STO FORAD
06142 -0 53400 1 03751         LXD L(0),1
06143  0 07400 4 06210         TSX FSXX,4
06144 -0 53400 4 03732         LXD DELTA,4
06145  3 00002 4 06207         TXH DS4V20,4,2
06146 -3 00001 4 06207         TXL DS4V20,4,1
06147  0 76000 0 00144         PSE 100
06150  0 50000 0 03743         CLA B
06151  0 60100 0 03744         STO NEXTA
06152  0 50000 0 03742         CLA A
06153  0 60100 0 03743         STO B
06154 -0 53400 2 03722         LXD XL,2
06155  0 50000 2 00733         CLA DOTAGZ,2
06156  0 73400 2 00000         PAX 0,2
06157 -0 32000 0 03772         ANA DECMSK
```

```
NOT FOUND                                F2217840
ADD TAG                                  F2217850
IN TABLE OF ADDED TAGS                   F2217860
PUT NAME IN TR2                          F2217870
                                         F2217880
SEARCH                                   F2217890
FOR                                      F2217900
NAME                                     F2217910
                                         F2217920
                                         F2217930
PUT NAME IN TR2                          F2217940
LIST STORES,IF ANY TR,                   F2217950
FOR TRANSFERS                            F2217960
D3D1                                     F2217970
                                         F2217980
                                         F2217990
TEST TR                                  F2218000
D3D2                                     F2218010
TEST TR                                  F2218020
D2D1                                     F2218030
LIST STORES                              F2218040
                                         F2218050
RETURN FOR                               F2218060
NEXT R2                                  F2218070
                                         F2218080
OBTAIN FORVAL EMPTY INDICATOR.           F2218090
EXIT IF FORVAL EMPTY                     F2218100
PRESET WORD E2 FOR LIST                  F2218110
ROUTINE,TAU TAG AND NAME                 F2218120
                                         F2218130
                                         F2218140
LIGHT 100 OFF                            F2218150
                                         F2218160
THESE INSTRUCTIONS SET UP                F2218170
FOR DRUM SEARCH.                         F2218180
                                         F2218190
                                         F2218200
                                         F2218210
OBTAIN LOCATION FO FIRST                 F2218220
FORVAL DRUM ENTRY,STORE IN               F2218230
LDA ADDRESS. PUT ZERO                    F2218240
IN XRA AND GO TO                         F2218250
SEARCH ROUTINE. UPON RETURN,             F2218260
ECIT UNLESS DELTA IS 2,                  F2218270
IN WHICH CASE,CONTINUE                   F2218280
TURN INDICATOR LIGHT ON                  F2218290
THE FOLLOWING INSTR.                     F2218300
SET UP TWO ADDITIONAL                    F2218310
RANGES FOR SEARCHING,                    F2218320
THOSE FORMULAS OUTSIDE                   F2218330
OF DC BUT WITHIN DL.                     F2218340
IN THESE SPECIAL RANGES                  F2218350
AS SOON AS ONE ENTRY IS                  F2218360
FOUND IN EITHER RANGE,                   F2218370
```

```
06160  0 60100 0 03742          STO A                      TO BE DONE.                    F2218380
06161 -0 75400 2 00000          PXD 0,2                                                   F2218390
06162  0 40000 0 03765          ADD L(1)A                                                 F2218400
06163  0 60100 0 03745          STO LASTB                                                 F2218410
06164  0 50000 0 03742          CLA A                                                     F2218420
06165  0 40000 0 03752          ADD L(1)                                                  F2218430
06166  0 40200 0 03743          SUB B                                                     F2218440
06167  0 10000 0 06174          TZE DS4V10                 IF THIS RANGE IS EMPTY,        F2218450
06170  0 50000 0 06363          CLA 4VALAD                 SKIP SEARCH.                   F2218460
06171  0 60100 0 06362          STO FORAD                                                 F2218470
06172 -0 53400 1 03751          LXD L(0),1                                                F2218480
06173  0 07400 4 06210          TSX FSXX,4                 GO TO SEARCH ROUTINE           F2218490
06174  0 50000 0 03744 DS4V10   CLA NEXTA                  A AND B FOR SECOND             F2218500
06175  0 60100 0 03742          STO A                      SPECIAL RANGE.                 F2218510
06176  0 50000 0 03745          CLA LASTB                                                 F2218520
06177  0 60100 0 03743          STO B                                                     F2218530
06200  0 40200 0 03742          SUB A                                                     F2218540
06201  0 10000 0 06207          TZE DS4V20                                                F2218550
06202  0 76000 0 00144          PSE 100                                                   F2218560
06203  0 50000 0 06363          CLA 4VALAD                                                F2218570
06204  0 60100 0 06362          STO FORAD                                                 F2218580
06205 -0 53400 1 03751          LXD L(0),1                                                F2218590
06206  0 07400 4 06210          TSX FSXX,4                                                F2218600
06207  0 02000 0 05555 DS4V20   TRA RELEND                 EXIT                           F2218610
06210 -0 63400 4 06231 FSXX     SXD FS28,4                 SAVE TSX INDEX                 F2218620
06211  0 50000 0 03756 FS00     CLA L(5)          INITIALIZE                              F2218632
06212  0 62200 0 06361          STD 4VLHL8                 ERROR COUNTER                  F2218640
06213  0 76200 0 00302 FS05     RDS 194                                                   F2218650
06214 -0 53400 2 06300          LXD BS71,2                                                F2218660
06215  0 46000 0 06362          LDA FORAD                  FIND FIRST OR NEXT ADDRESS     F2218670
06216  0 50000 0 03742          CLA A                      IN FORVAL,PUT A IN ACC.        F2218680
06217  0 70000 0 06472 FS10     CPY BLOCK                  COPY FORMULA NR.               F2218690
06220  0 04000 0 06232          TLQ FS30                   A GREATER THAN FOR.NR.,TRA.    F2218700
06221  0 70000 0 06473          CPY BLOCK+1                A LESS,COPY BALANCE OF         F2218710
06222  0 50000 0 03743          CLA B                      ENTRY,PUT B IN ACC,            F2218720
06223  0 70000 0 06474          CPY BLOCK+2                ADJUST XRA FOR THIS            F2218730
06224  1 00003 1 06225          TXI FS20,1,3               ENTRY.                         F2218740
06225  0 70000 2 06566 FS20     CPY BLOCK+60,2             COPY NEXT FOR. NR.             F2218750
06226  0 04000 0 06235          TLQ FS40                   B GREAT THAN FOR. NR.,TRA.     F2218760
06227  0 40200 0 06472 FS25     SUB BLOCK                  TEST FIRST ENTRY.              F2218770
06230  0 12000 0 06242          TPL FS50                   B GREATER THAN F,TRA           F2218780
D 06231 -3 00000 0 06353 FS28   TXL BS99,0                 B LESS THAN F,EXIT             F2218790
06232  0 70000 0 06473 FS30     CPY BLOCK+1                COPY BALANCE OF ENTRY,GO       F2218800
06233  0 70000 0 06474          CPY BLOCK+2                BACK IF POSSIBLE TO CONTINUE   F2218810
06234  1 00003 1 06217          TXI FS10,1,3               SEARCH FOR BEGINNING OF RANGE, F2218820
06235  0 70000 2 06567 FS40     CPY BLOCK+61,2             THIS ENTRY IS IN RANGE,        F2218830
06236  0 70000 2 06570          CPY BLOCK+62,2             CONTINUE READING IN ENTRIES    F2218840
06237  2 00003 2 06225          TIX FS20,2,3               UNTIL BLOCK FULL OR RANGE      F2218850
06240 -0 53400 2 03751          LXD L(0),2                 EXCEEDED.                      F2218860
06241  0 02000 0 06227          TRA FS25                                                  F2218870
06242 -0 63400 2 06255 FS50     SXD CS20,2                                                F2218880
06243 -0 63400 2 06265          SXD BS40,2                                                F2218890
06244 -0 63400 1 06262          SXD BS25,1                                                F2218900
06245 -0 53400 2 03762 CS00     LXD L(60),2                THIS ROUTINE COMPUTES          F2218910
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      06246 -0 50000 2 06566 CS10   CAL  BLOCK+60,2
      06247  0 36100 2 06567        ACL  BLOCK+61,2
      06250  0 60200 0 06364        SLW  4VALES
      06251  0 50000 0 06364        CLA  4VALES
      06252  0 40200 2 06570        SUB  BLOCK+62,2
      06253 -0 10000 0 06355        TNZ  4VLHLT
      06254  1 77775 2 06255        TXI  CS20,2,-3
D     06255  3 00000 2 06246 CS20   TXH  CS10,2
      06256  0 50000 0 03735 BS00   CLA  RSYM1
      06257 -0 53400 4 03732        LXD  DELTA,4
      06260 -0 53400 2 03762 BS10   LXD  L(60),2
      06261  0 34000 2 06567 BS20   CAS  BLOCK+61,2
D     06262 -3 00000 0 06264 BS25   TXL  BS30,0
      06263  0 02000 0 06272        TRA  BS60
      06264  1 77775 2 06265 BS30   TXI  BS40,2,-3
D     06265  3 00000 2 06261 BS40   TXH  BS20,2
      06266 -3 00002 4 06275 BS50   TXL  BS70,4,2
      06267 -0 53400 4 03751        LXD  L(0),4
      06270  0 50000 0 03736        CLA  RSYM2
      06271  0 02000 0 06260        TRA  BS10
      06272 -0 76000 0 00144 BS60   MSE  100
      06273  0 02000 0 06307        TRA  BS80
      06274  0 02000 0 06327        TRA  BS90
      06275 -0 53400 2 06265 BS70   LXD  BS40,2
      06276  3 00000 2 06353        TXH  BS99,2,0
      06277 -0 53400 1 06262        LXD  BS25,1
      06300  1 00071 1 06301 BS71   TXI  BS72,1,57
      06301  3 02733 1 06353 BS72   TXH  BS99,1,1499
      06302 -0 75400 1 00000        PXD  0,1
      06303  0 77100 0 00022        ARS  18
      06304  0 40000 0 06363        ADD  4VALAD
      06305  0 60100 0 06362        STO  FORAD
D     06306 -3 00000 0 06211 BS78   TXL  FS00,0
      06307  0 60100 0 06364 BS80   STO  4VALES
      06310 -0 53400 1 03722        LXD  XL,1
      06311  0 50000 0 04000        CLA  BITONE
      06312 -0 60200 1 00740        ORS  DOTAGZ+5,1
      06313 -0 53400 1 03674        LXD  XC,1
      06314 -0 60200 1 00740        ORS  DOTAGZ+5,1
      06315  0 50000 2 06566        CLA  BLOCK+60,2
      06316  0 60100 0 05063        STO  E1
      06317  0 50000 0 05067        CLA  TSXCOM
      06320 -0 63400 2 06326        SXD  BS85,2
      06321 -0 63400 4 06306        SXD  BS78,4
      06322  0 07400 4 05025        TSX  LIST,4
      06323 -0 53400 2 06326        LXD  BS85,2
      06324 -0 53400 4 06306        LXD  BS78,4
      06325  0 50000 0 06364        CLA  4VALES
TD    06326 -3 00000 0 06264 BS85   TXL  BS30
      06327 -0 53400 2 03722 BS90   LXD  XL,2
      06330  0 50000 0 04000        CLA  BITONE
      06331 -0 60200 2 00740        ORS  DOTAGZ+5,2
      06332 -0 53400 2 03750        LXD  LOWPOS,2
      06333  0 50000 0 03751        CLA  L(0)
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THE CHECK SUMS OF THE                                    F2218920
ENTRIES AND COMPARES                                     F2218930
                                                         F2218940
THEM WITH THE GIVEN CHECK                                F2218950
SUMS.                                                    F2218960
TRA TO EXIT IF BAD ENTRY.                                F2218970
                                                         F2218980
CONTINUE WITH BS00                                       F2218990
THIS ROUTINE SEARCHES                                    F2219000
THE STORAGE BLOCK FOR                                    F2219010
RSYM1,AND RSYM2 IF DELTA                                 F2219020
IS THREE.                                                F2219030
                                                         F2219040
EQUALITY FOUND,TRA.                                      F2219050
RE-ENTRY                                                 F2219060
                                                         F2219070
                                                         F2219080
                                                         F2219090
                                                         F2219100
                                                         F2219110
TEST TO SEE IF                                           F2219120
NORMAL SEARCH,OR IF                                      F2219130
SPECIAL CASE OF DELTA TWO.                               F2219140
BLOCK SEARCH DONE. IF BLOCK                              F2219150
WAS NOT FULL,EXIT.                                       F2219160
OTHERWISE,PREPARE TO CONTINUE                            F2219170
SEARCH,IF MORE ENTRIES IN FORVAL.                        F2219180
                                                         F2219190
AND COMPUTE                                              F2219200
NEW FORVAL                                               F2219210
ADDRESS                                                  F2219220
                                                         F2219230
GO BACK TO CONTINUE SEARCH                               F2219240
RSYM FOUND,ARRANGE TO                                    F2219250
SAVE INDEXED SUBSCRIPTS.                                 F2219260
                                                         F2219270
                                                         F2219280
                                                         F2219290
RSYM FOUND,E2 PREVIOUSLY                                 F2219300
PREPARED,NOW PREPARE                                     F2219310
E1,SAVE ACC,XRB,XRC,                                     F2219320
AND LIST.                                                F2219330
AFTER LISTING,                                           F2219340
RESTORE ACC,XRB,XRC                                      F2219350
AND RETURN TO CONTINUE                                   F2219360
SEARCH.                                                  F2219370
                                                         F2219380
                                                         F2219390
                                                         F2219400
SPECIAL CASE,DELTA TWO,                                  F2219410
PUT IN BIT TO SAVE SL                                    F2219420
                                                         F2219430
OBTAIN INDEX QUANTITY 1, 3, 5.                           F2219440
FOR XL,                                                  F2219450
```

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06334   0 60100 2 03721         STO X1+5,2                    SET PROPER X AND L TO ZERO,          F2219460
06335   0 60100 2 03722         STO X1+6,2                                                         F2219470
06336   2 00001 2 06337         TIX BS91,2,1                  ADJUST 1,3,5 TO 1,2,4,               F2219480
06337  -0 75400 2 00000 BS91    PXD 0,2                       PUT IN ACC                           F2219490
06340  -0 60200 0 03727 BS92    ORS DORC                      AND PUT BIT IN DORC                  F2219500
06341   0 76000 0 00006         COM                           REMOVE BIT                           F2219510
06342   0 32000 0 03731         ANS DOSUBS                    FROM DOSUBS                          F2219520
06343   0 50000 0 03674         CLA XC                                                             F2219530
06344   0 60100 0 03722         STO XL                                                             F2219540
06345   0 50000 0 03675         CLA LC                                                             F2219550
06346   0 60100 0 03723         STO LL                                                             F2219560
06347   0 50000 0 03752         CLA L(1)                                                           F2219570
06350   0 60100 0 03726         STO NRDS                                                           F2219580
06351   0 60100 0 03732         STO DELTA                                                          F2219590
06352   0 02000 0 06207         TRA DS4V20                    EXIT                                 F2219600
06353  -0 53400 4 06231 BS99    LXD FS28,4                    EXIT FROM FSXX ENTRY                 F2219610
06354   0 02000 4 00001         TRA 1,4                                                            F2219620
06355  -0 53400 2 06361 4VLHLT  LXD 4VLHL8,2                  IF THERE IS AN ERROR IN THE          F2219630
06356   2 00001 2 06360         TIX 4VLHL4,2,1                CHECK SUM ROUTINE,THE BLOCK          F2219640
06357   0 07400 4 00004 4VLHL2  TSX DIAG,4  WILL BE REREAD 5 TIMES.    (ERROR. GO TO DIAGNOSTIC.)F2219655
06360  -0 63400 2 06361 4VLHL4  SXD 4VLHL8,2                  BEFORE THE MACHINE STOPS.            F2219660
                                                                                                   F2219670
D  06361  -3 00000 0 06213 4VLHL8  TXL FS05,0
A  06362   0 00000 0 00000 FORAD   HTR                        DRUM ADDRESS FOR LDA INSTR.          F2219680
                                                                                                   F2219690
06363   0 00000 0 00312 4VALAD  HTR 202                                                           F2219700
A  06364   0 00000 0 00000 4VALES HTR                         E.S.                                 F2219710
06365   0 00000 0 00000 XR1                                                                        F2219720
06366   0 00000 0 00000 LR1                                                                        F2219730
06367   0 00000 0 00000 XR2                                                                        F2219740
06370   0 00000 0 00000 LR2                                                                        F2219750
06371   0 00000 0 00000 D2D1                                                                       F2219760
06372   0 00000 0 00000 D3D1                                                                       F2219770
06373   0 00000 0 00000 D3D2                                                                       F2219780
06374   0 00000 0 00000 TR1                                                                        F2219790
06375   0 00000 0 00000 TR2                                                                        F2219800
                                SUBROUTINE GETNAM                                                  F2219810
06376  -0 53400 1 04011 GETNAM  LXD NAMXX,1                   THIS ROUTINE SEARCHES                F2219820
06377  -0 63400 1 06406         SXD GETN20,1                  TABLE NAMZ FOR THE NAME              F2219830
06400   0 53400 1 04011         LXA NAMXX,1                   OF TAU TAG IN A PARTICULAR           F2219840
06401   0 02000 0 06406         TRA GETN20                                                         F2219850
06402   0 34000 1 07301 GETN05  CAS NAMZ,1                    DO FORMULA.                          F2219860
06403   0 02000 0 06405         TRA GETN10                                                         F2219870
06404   0 02000 0 06411         TRA GETN30                                                         F2219880
06405   1 77776 1 06406 GETN10  TXI GETN20,1,-2                                                    F2219890
D  06406  3 00000 1 06402 GETN20  TXH GETN05,1                                                     F2219900
06407  -0 32000 0 03773         ANA ADDMSK                                                         F2219910
06410   0 02000 4 00001         TRA 1,4                                                            F2219920
06411   0 50000 1 07302 GETN30  CLA NAMZ+1,1                                                       F2219930
06412   0 02000 4 00001         TRA 1,4                                                            F2219940
                                SUBROUTINE ADDSER                                                  F2219950
06413  -0 75400 1 00000 ADDSER  PXD 0,1                                                           F2219960
06414   0 40000 0 03700         ADD TAG                       PREPARE XRA AND DEC 0                F2219970
06415  -0 53400 1 04006         LXD ADTXX,1                   ADS030 FOR TABLE SEARCH.             F2219980
06416  -0 63400 1 06425         SXD ADS030,1                                                       F2219990
06417   0 53400 1 04006         LXA ADTXX,1
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06420   0 02000 0 06425         TRA ADS030                TRA FOR EMPTY TABLE TEST          F2220000
06421   0 34000 1 07135 ADS010  CAS ADTAGZ,1                                                F2220010
06422   0 02000 0 06424         TRA ADS020                                                  F2220020
06423   0 02000 0 06427         TRA ADS040                FIRST WORD FOUND                  F2220030
06424   1 77776 1 06425 ADS020  TXI ADS030,1,-2                                             F2220040
D 06425 3 00000 1 06421 ADS030  TXH ADS010,1                                               F2220050
06426   0 02000 4 00002         TRA 2,4                   NOT FOUND                         F2220060
06427   0 50000 1 07136 ADS040  CLA ADTAGZ+1,1                                             F2220070
06430   0 02000 4 00001 ADS050  TRA 1,4                                                    F2220080
                                SUBROUTINES STORES AND STORXX                              F2220090
06431  -0 63400 4 06464 STORES  SXD ST040,4               THIS ROUTINE PREPARES             F2220100
06432   0 50000 0 06366         CLA LR1                   AN ENTRY FOR TABLE TRASTO         F2220110
06433   0 77100 0 00022         ARS 18                    AND USES LIST TO ENTER            F2220120
06434   0 40000 0 03675         ADD LC                    THE ENTRY ON THE PROPER           F2220130
06435   0 60100 0 05064         STO E2                    DRUM TABLE. IF SPC000             F2220140
06436   0 50000 0 06374         CLA TR1                   IS USED BY THE ROUTINE,           F2220150
06437  -3 00001 2 06441         TXL ST020,2,1             MANY ENTRIES MAY BE MADE          F2220160
06440   0 50000 0 06375         CLA TR2                   IN TRA STO.                       F2220170
06441   0 76700 0 00022 ST020   ALS 18                    IF DELTA EQUALS ONE OR TWO,       F2220180
06442   0 40000 0 03701         ADD TS                    THIS ROUTINE IS ENTERED           F2220190
06443   0 60100 0 05065         STO E3                    THROUGH STORES WITH C(XRB)        F2220200
06444  -3 00000 2 06460         TXL ST035,2,0             ZERO. IF DELTA IS THREE           F2220210
06445  -3 00001 2 06465         TXL ST050,2,1             AND WE ARE WORKING ON             F2220220
06446   0 02000 0 06460         TRA ST035                 TRANSFERS DR2 TO DS,THEN          F2220230
06447  -0 63400 4 06464 STORXX  SXD ST040,4               STORES ENTRY IS USED WITH         F2220240
06450   0 50000 0 06370         CLA LR2                   C(XRB)=2                          F2220250
06451   0 77100 0 00022         ARS 18                    IF DELTA=3,TRA DR1 TO DS,         F2220260
06452   0 40000 0 06366         ADD LR1                   STORES ENTRY IS USED WITH         F2220270
06453   0 60100 0 05064         STO E2                    C(XRB)=1                          F2220280
06454   0 50000 0 06375         CLA TR2                   IF DELTA=3,TRA DR2 TO DR1,        F2220290
06455   0 76700 0 00022         ALS 18                    ENTRY  STORXX IS USED.            F2220300
06456   0 40000 0 06374         ADD TR1                   C(XRB) NOT USED.                  F2220310
06457   0 60100 0 05065         STO E3                    LIST ROUTINE IS USED IN           F2220320
                                                                 EVERY CASE,MAKING ONE     F2220330
                                                                 TRASTO ENTRY,EXCEPT FOR   F2220340
                                                          CASE DELTA=3,TRA DR1 TO DS,      F2220350
                                                          C(XRB)=1,WHEN SPC000 IS USED.    F2220360
06460   0 50000 1 00733 ST035   CLA DOTAGZ,1              LIST ROUTINE USED                 F2220370
06461   0 60100 0 05063         STO E1                                                      F2220380
06462   0 50000 0 05070         CLA TRASTO                                                  F2220390
06463   0 07400 4 05025         TSX LIST,4                                                  F2220400
D 06464 -3 00000 0 06470 ST040  TXL ST100,0                                                F2220410
06465  -0 53400 2 03753 ST050   LXD L(2),2               SPC000 USED.                      F2220420
06466   0 50000 0 05070         CLA TRASTO                                                  F2220430
06467   0 07400 4 05277         TSX SPC000,4                                                F2220440
06470  -0 53400 4 06464 ST100   LXD ST040,4               EXIT                              F2220450
06471   0 02000 4 00001         TRA 1,4                                                     F2220460
                  06472 BLOCK   BSS 60                                                     F2220470
                  07730         ORG 4056                                                   F2220480
                                    MASTER RECORD CARD = FN029                             F2220485
07730  -0 53400 2 07770 PPONG   LXD PG80,2               ROUTINE PPONG SETS UP DRUM ONE FOR F2220490
07731   0 02000 0 07733         TRA PG10                  PING-PONGING.                     F2220500
07732  -0 53400 2 07767         LXD PG70,2                                                  F2220510
07733  -0 53400 4 07771 PG10    LXD PG90,4                                                  F2220520
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07734  0 76600 0 00301 PG15   WRS 193                                                          F2220530
07735 -0 53400 1 07772        LXD PG95,1                                                       F2220540
07736  0 46000 2 07767        LDA PG60+2,2                                                     F2220550
07737  0 70000 1 06566 PG20   CPY CORESZ,1                                                     F2220560
07740  2 00001 1 07737        TIX PG20,1,1                                                     F2220570
07741  0 76600 0 00333        WRS 219                                                          F2220580
07742  0 76200 0 00301        RDS 193                                                          F2220590
07743 -0 53400 1 07772        LXD PG95,1                                                       F2220600
07744  0 46000 2 07767        LDA PG60+2,2                                                     F2220610
07745  0 70000 1 05566 PG30   CPY CORES,1                                                      F2220620
07746  2 00001 1 07745        TIX PG30,1,1                                                     F2220630
07747 -0 53400 1 07772        LXD PG95,1                                                       F2220640
07750 -0 75400 0 00000        PXD 0,0                          PG40-1                          F2220650
07751  0 36100 1 05566 PG40   ACL CORES,1                                                      F2220660
07752  2 00001 1 07751        TIX PG40,1,1                                                     F2220670
07753  0 60200 0 07773        SLW PG99                                                         F2220680
07754  0 50000 0 07773        CLA PG99                                                         F2220690
07755  0 40200 2 07765        SUB PG50+2,2                                                     F2220700
07756  0 10000 0 07761        TZE NORMRP                                                       F2220715
07757  2 00001 4 07734        TIX PG15,4,1                                                     F2220720
07760  0 07400 4 00004        TSX DIAG,4  DRUM READ                  ERROR. GO TO DIAGNOSTIC.  F2220735
07761  0 76200 0 00221 NORMRP RDS 145            SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE.   F2220736
07762  0 02000 0 00004        TRA ONETCS         GO TO ONE TO CS (MONITOR)=                    F2220737
07763 +103075525444    PG50   OCT 103075525444   CHECK SUM, STATE B, RELCON                   F2220744
07764 -246744643200           OCT -246744643200  CHECK SUM STATE A, NORMAL                    F2220754
07765 +000000001000    PG60   OCT 1000                                                         F2220760
07766 +000000000000           OCT                                                              F2220770
07767 +000001000000    PG70   OCT 1000000                                                      F2220780
07770 +000002000000    PG80   OCT 2000000                                                      F2220790
07771 +000005000000    PG90   OCT 5000000                                                      F2220805
07772 +001000000000    PG95   OCT 1000000000                                                   F2220810
A 07773  0 00000 0 00000 PG99   HTR                                                            F2220820
07774 -0 63400 1 77777 BURNCE SXD TOP,1              DRUM OVERFLOW                             F2220825
07775  0 02000 0 00004        TRA DIAG               ERROR PROCEDURE.                          F2220826
                 77777    TOP EQU 32767                                                        F2220827
                 00222 TAPE2  EQU 146                                                          F2220830
                 00223 DOTAPE EQU 147                                                          F2220840
                 00224 ATAPE  EQU 148                                                          F2220850
                 00301 PPDRM  EQU 193                                                          F2220860
                 00303 ADRUM  EQU 195                                                          F2220870
                 00304 TAUDRM EQU 196                                                          F2220880
                 00141 TL     EQU 97                                                           F2220890
                 05565 RELWDS SYN RELDRA+1                                                     F2220900
                 04003 ABIT   SYN BIT18                                                        F2220910
                 04005 BBIT   SYN BIT20                                                        F2220920
                 04003 SUBBIT SYN BIT18                                                        F2220930
                 06566 CORESZ SYN CORES+512                                                    F2220940
                 00004 ONETCS EQU 4                                                            F2220945
                 00004 DIAG   EQU 4                                                            F2220946
A                00000        END                                                              F2220950
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1          REM BLOCK THREE OF SECTION TWO.
1                                BLOCK THREE OF SECTION TWO.
                                   MASTER RECORD CARD = FN036                                F2300004
                                 BLOCK 3 DOES SUBSCRIPT ANALYSIS FOR                         F2300006
                                 THOSE SUBSCRIPT COMBINATIONS NO SUBSCRIPT                   F2300010
                                 ELEMENT OF WHICH IS UNDER CONTROL OF                        F2300020
                                 A DO (PURE RELATIVE CONSTANTS). TWO                         F2300030
                                 TYPES OF TSXCOM TABLE ENTRIES ARE MADE IN ROUTINE FOUND     F2300040
                                 WHICH WILL INDICATE TO SUCCEEDING BLOCKS THE NECESSITY TO   F2300050
                                 COMPILE EITHER DIRECT LXDS OF INDEX REG VALUES OR TSXS TO   F2300060
                                 SUBROUTINES TO COMPUTE THOSE INDEX REG VALUES. FOUR TYPES OF F2300070
                                 TRASTO TABLE ENTRIES ARE MADE WHICH WILL INDICATE THAT      F2300080
                                 CERTAIN INDEXING INSTRUCTIONS SHOULD BE COMPILED ACCOMPANYINGF2300090
                                 THE TRANSFERS OUT OF THE RANGE OF DOS WHICH DEFINE VALUES   F2300100
                                 OF THE SUBSCRIPTS IN QUESTION. FINALLY, TSXCOM ENTRIES AND  F2300110
                                 TABLE IRV ENTRIES ARE SORTED AND WRITTEN ON DRUM. ROUTINES  F2300120
                                 ENCOUNTERED IN BLOCK 2 WILL BE RECOGNIZED IN THIS BLOCK 3 - F2300130
                                 SUBCOM, TRAWORD, SPC, TINFOR, LIST.                         F2300140
                                                                                             F2300150
        00031          ORG 25                                                               F2300160
        00031 NAME     BSS 1            TABLE STORAGE                                       F2300170
        00032          BSS 449                                                              F2300180
        00733 NAMZ     BSS 1                                                                F2300190
        00734 FORTAG   BSS 1                                                                F2300200
        00735          BSS 1499                                                             F2300210
        03670 FORTZ    BSS 1                                                                F2300220
        03671 FORVAL   BSS 1                                                                F2300230
        03672          BSS 1499                                                             F2300240
        06625 4VALZ    BSS 1                                                                F2300250
        00031          ORG 25                                                               F2300260
        00031 TCOM     BSS 1                                                                F2300270
        00032          BSS 749                                                              F2300280
        01407 TCOMZ    BSS 1                                                                F2300290
        03671          ORG 1977                                                             F2300300
        03671 DOTAG    BSS 1                                                                F2300310
        03672          BSS 1349                                                             F2300320
        06377 DOTAGZ   BSS 1                                                                F2300330
        06400          BSS 149                                                              F2300340
        06625 IRVZ     BSS 1                                                                F2300350
        06626 TAG      BSS 1            ADDRESS HAS FORTAG IX CURRENT                       F2300360
        06627 TS       BSS 1            NEW NAME                                            F2300370
        06630 TAGIND   BSS 1            ONE IF SOLITARY SUB COEFF ONE, OTHERWISE ZERO       F2300380
        06631 DELTA    BSS 1            COUNT OF NO OF SYMBOLS IN SUB COMB                  F2300390
        06632 RSYM1    BSS 1            WORKING SYMBOL ONE                                  F2300400
        06633 RSYM2    BSS 1            WORKING SYMBOL TWO                                  F2300410
        06634 RSYM3    BSS 1            WORKING SYMBOL THREE                                F2300420
        06635 C1       BSS 1            COEFF FIRST SYMBOL                                  F2300430
        06636 S1       BSS 1            FIRST SYMBOL                                        F2300440
        06637 C2       BSS 1            COEFF 2ND SYMBOL                                    F2300450
        06640 S2       BSS 1            2ND SYMBOL                                          F2300460
        06641 C3       BSS 1            COEFF 3RD SYMBOL                                    F2300470
        06642 S3       BSS 1            3RD SYMBOL                                          F2300480
        06643 D1       BSS 1            DIM 1ST SYM, IF TWO-DIMENSIONAL                     F2300490
        06644 D2       BSS 1            DIM 2ND SYM, IF THREE-DIMENSIONAL                   F2300500
        06645 TL2      BSS 1            LEVEL DOTAG MATCHING SUBXCRIPT SYMBOL               F2300500
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                    06646 XR1     BSS 1              IX DOTAG MATCHING FIRST SUB SYMBOL (RSYM1)      F2300510
                    06647 LR1     BSS 1              LEV DOTAG MATCHING 1ST SUB SYMB (RSYM1)         F2300520
                    06650 NEXTR1  BSS 1              IX LAST DOTAG OF NEST SEARCHED IN TRAWRD 1ST LVF2300530
                    06651 XR2     BSS 1              IX DOTAG MATCHING 2ND SUB SYMB (RSYM2)          F2300540
                    06652 LR2     BSS 1              LEV DOTAG MATCHING 2ND SUB SYMB (RSYM2)         F2300550
                    06653 NEXTR2  BSS 1              IX LAST DO OF NEST SRCHD IN TRAWORD ON 2ND LEV  F2300560
                    06654 XR3     BSS 1              IX DOTAG MATCHING THIRD SUB SYMB (RSYM3)        F2300570
                    06655 NEXTR3  BSS 1              IX LAST DO OF NEST SRCHD IN TRWRD ON 3RD LEVEL  F2300580
                    06656 SKIP    BSS 1              SKIP, ZERO OR 1                                 F2300590
                    06657 TRABIT  BSS 1              TRAWORD TEMP STORAGE                            F2300600
                    06660 NEXTA   BSS 1              INTERMEDIATE UPPER LIMIT OF RANGE               F2300610
                    06661 LASTB   BSS 1              INTERMEDIATE LOWER LIMIT OF RANGE               F2300620
                    06662 A       BSS 1              UPPER LIMIT OF RANGE                            F2300630
                    06663 B       BSS 1              LOWER LIMIT OF RANGE                            F2300640
                    06664 IRVXX   BSS 1              CURRENT TABLE IRV I.R. VALUE                    F2300650
06665   0 00000 0 00000 L(0)        0,0,0                                                             F2300660
06666   0 00001 0 00000 L(1)        0,0,1                                                             F2300670
06667   0 00002 0 00000 L(2)        0,0,2                                                             F2300680
06670   0 00003 0 00000 L(3)        0,0,3                                                             F2300690
06671   0 00006 0 00000 L(6)        0,0,6                                                             F2300700
06672   0 00044 0 00000 L(36)       0,0,36                                                            F2300710
06673   0 02506 0 00000 L(1350      0,0,1350                                                          F2300720
06674   0 02734 0 00000 L(1500      0,0,1500                                                          F2300730
06675 +000000000001     L(1)A   OCT 1                                                               F2300740
06676 -0 00000 0 00000 L(MZ)    MZE                                                                 F2300750
06677 +200000000000     BITONE  OCT 200000000000                                                    F2300760
06700 +000000400000     BIT18   OCT 400000                                                          F2300770
06701 +177777777777     34ONES  OCT 177777777777                                                    F2300780
06702 +377777777777     35ONES  OCT 377777777777                                                    F2300790
06703 +000000077777     ADDMSK  OCT 77777                                                           F2300800
06704 +077777000000     DECMSK  OCT 77777000000                                                     F2300810
06705 -200000000000     PREMSK  OCT -200000000000                                                   F2300820
06706   0 00000 0 00312 DRMADD      202             DRUM ORIGIN OF FORVAL TABLE                     F2300830
06707   0 00000 0 01760 NAMORG      1008            DRUM ORIGIN OF NAME TABLE                       F2300840
06710   0 00000 0 00031 NAMAD       NAME            CORE ORIGIN OF NAME TABLE                       F2300850
06711   0 00702 0 00000 NAMAX       0,0,450         MAXIMUM WORDS IN NAME TABLE                     F2300860
06712   0 00000 0 02430 IRVORG      1304            DRUM ORIGIN OF WD COUNT TABLE IRV               F2300870
06713   0 00000 0 06377 IRVAD       IRV             CORE ORIGIN OF IRV TABLE                        F2300880
06714   0 00226 0 00000 IRVMAX      0,0,150         MAXIMUM WORDS IN IRV TABLE                      F2300890
06715   0 00000 0 01300 TCOMOR      704             DRUM ORIGIN OF WD COUNT, TABLE TCOM             F2300900
06716   0 00000 0 01302 TSXORG      706             DRUM ORIGIN OF TSXCOM TABLE                     F2300910
06717   0 00000 0 00031 TCOMAD      TCOM            CORE ORIGIN OF TCOM TABLE                       F2300920
06720   0 01356 0 00000 TCOMAX      0,0,750                                                         F2300930
06721   0 50000 0 07776 BLOCK3  CLA 4094            TSXCOM CARRYOVER FROM BLOCK TWO                 F2300940
06722   0 60100 0 07667         STO LADDS           EQUAL  TO LAST TABLE ENTRY PLUS ONE.            F2300950
06723   0 50000 0 07775         CLA 4093            TRASTO CARRYOVER FROM BLOCK TWO                 F2300960
06724   0 60100 0 07670         STO LADDS+1         EQUAL TO LAST TABLE ENTRY PLUS ONE.             F2300970
06725   0 50000 0 06714         CLA IRVMAX          INITIALIZE IRVXX.                               F2300980
06726   0 60100 0 06664         STO IRVXX           EQUAL TO ETC.                                   F2300990
06727 -0 53400 1 00733          LXD FORTAG-1,1      IF FORTAG EMPTY,                                F2301000
06730   3 02733 1 07616         TXH NORMRT,1,1499   NORM RET MONITOR. GO TO SPACE TAPE 1.           F2301015
06731 -0 53400 2 06671 NAMRD    LXD L(6),2          INITIALIZE EERROR COUNTER.                      F2301022
06732   0 50000 0 07777 NAM10   CLA 4095           OBTAIN NAME ADDRESS CARRYOVER FROM BLOCK 2      F2301030
06733   0 40200 0 06707         SUB NAMORG          FROM BLOCK TWO.                                 F2301040
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06734  0 73400 1 00000          PAX 0,1                                                          F2301050
06735 -3 00000 1 06766          TXL NAM95,1,0      IF NO TABLE NAME, GO TO READ IN FORVAL.       F2301060
06736  0 76200 0 00303          RDS ADRUM          READ IN TABLE NAME.                           F2301070
06737  0 40000 0 06710          ADD NAMAD          ADD CORE ORG TABLE NAME TO COMP TERMINUS AND  F2301080
06740  0 62100 0 06746          STA NAM60          STORE IN COPY ADDRESS.                        F2301090
06741 -0 75400 1 00000          PXD 0,1                                                          F2301100
06742 -0 76000 0 00003          SSM                                                              F2301110
06743  0 40000 0 06711          ADD NAMAX          DIFF BETWEEN MAX NO ENTRIES AND ACTUAL NO.    F2301120
06744  0 60100 0 00030          STO NAME-1                                                       F2301130
06745  0 46000 0 06707          LDA NAMORG         DRUM ORG                                      F2301140
06746  0 70000 1 00000 NAM60    CPY 0,1                                                          F2301150
06747  2 00001 1 06746          TIX NAM60,1,1                                                    F2301160
06750 -0 53400 1 00030          LXD NAME-1,1                                                     F2301170
06751 -0 63400 1 06762          SXD NAM80,1                                                      F2301180
06752 -0 53400 1 06711          LXD NAMAX,1                                                      F2301190
06753 -0 50000 1 00733 NAM70    CAL NAMZ,1         COMPUTE CHECK SUM                             F2301200
06754  0 36100 1 00734          ACL NAMZ+1,1       FOR                                           F2301210
06755  0 60200 0 06771          SLW NAMES1         EACH                                          F2301220
06756  0 50000 0 06771          CLA NAMES1         TABLE ENTRY,                                  F2301230
06757  0 40200 1 00735          SUB NAMZ+2,1       AND COMPARE                                   F2301240
06760 -0 10000 0 06764          TNZ NAM90          SAME.                                         F2301250
06761  1 77775 1 06762          TXI NAM80,1,-3                                                   F2301260
D 06762  3 00000 1 06753 NAM80  TXH NAM70,1                                                      F2301270
06763  0 02000 0 06772          TRA BEGIN          TABLE NAME ALL IN.                            F2301280
06764  2 00001 2 06732 NAM90    TIX NAM10,2,1                                                    F2301290
06765  0 07400 4 00004          TSX DIAG,4  DRUM READ NAME TABLE.       ERROR. GO TO DIAGNOSTIC. F2301305
06766  0 50000 0 06711 NAM95    CLA NAMAX          TABLE NAME EMPTY.                             F2301310
06767  0 60100 0 00030          STO NAME-1                                                       F2301320
06770  0 02000 0 06772          TRA BEGIN                                                        F2301330
A 06771  0 00000 0 00000 NAMES1 HTR                TEMP STORAGE                                  F2301340
06772 -0 76000 0 00144 BEGIN    MSE LIGHT          TEST FOR EMPTY FORVAL                         F2301350
06773  0 02000 0 06776          TRA CPYLP                                                        F2301360
06774  0 76000 0 00144          PSE LIGHT          IF EMPTY,                                     F2301370
06775  0 02000 0 07616          TRA NORMRT          NORM RET MONITOR. GO TO SPACE TAPE 1         F2301385
06776 -0 53400 2 06671 CPYLP    LXD L(6),2         READ IN FORVAL                                F2301392
06777  0 76200 0 00302 RDSDRM   RDS BDRUM                                                        F2301400
07000  0 50000 0 06701          CLA 34ONES         PUT DRUM MARK IN ACC.                         F2301410
07001  0 46000 0 06706          LDA DRMADD                                                       F2301420
07002 -0 53400 1 06674          LXD L(1500,1                                                     F2301430
07003  0 70000 1 06625 CPYONE   CPY 4VALZ,1        PULL IN FIRST WORD OF FORVAL.                 F2301440
07004  0 04000 0 07006          TLQ CPYTWO         TEST FOR DRUM MARK.                           F2301450
07005  0 02000 0 07012          TRA CHKSUM                                                       F2301460
07006  0 70000 1 06626 CPYTWO   CPY 4VALZ+1,1      PULL IN 2ND WORD OF FORVAL,                   F2301470
07007  0 70000 1 06627          CPY 4VALZ+2,1      AND CHECK SUM.                                F2301480
07010  2 00003 1 07003          TIX CPYONE,1,3                                                   F2301490
07011 -0 53400 1 06665          LXD L(0),1                                                       F2301500
07012 -0 63400 1 03670 CHKSUM   SXD FORVAL-1,1     COMPUTE AND                                   F2301510
07013 -0 63400 1 07024          SXD NEXT,1         COMPARE                                       F2301520
07014 -0 53400 1 06674          LXD L(1500,1       CHECK                                         F2301530
07015 -0 50000 1 06625 CSLOOP   CAL 4VALZ,1        SUMS.                                         F2301540
07016  0 36100 1 06626          ACL 4VALZ+1,1                                                    F2301550
07017  0 60200 0 07030          SLW COMCS                                                        F2301560
07020  0 50000 0 07030          CLA COMCS                                                        F2301570
07021  0 40200 1 06627          SUB 4VALZ+2,1                                                    F2301580
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07022 -0 10000 0 07026          TNZ ERROR                                                    F2301590
07023  1 77775 1 07024          TXI NEXT,1,-3                                                F2301600
D 07024  3 00000 1 07015 NEXT   TXH CSLOOP,1                                                 F2301610
07025  0 02000 0 07031          TRA 2WDDO          FORVAL ALL IN.                            F2301620
07026  2 00001 2 06777 ERROR    TIX RDSDRM,2,1                                               F2301630
07027  0 07400 4 00004          TSX DIAG,4  DRUM REAAD FORVAL TABLE.    ERROR. GO TO DIAGNOSTIC. F2301645
A 07030  0 00000 0 00000 COMCS  HTR                                                          F2301650
07031 -0 53400 4 06671 2WDDO    LXD L(6),4         ERROR COUNTER.                            F2301662
07032  0 77200 0 00223 2WD05    REW TAPE3          PREPARE TO READ IN DOTAG.                 F2301670
07033 -0 53400 1 07071          LXD L(300),1                                                 F2301680
07034 -0 76000 0 00143          MSE 99             TEST FOR EMPTY DOTAG.                     F2301690
07035  0 02000 0 07040          TRA 2WD10                                                    F2301700
07036  0 76000 0 00143          PSE 99                                                       F2301710
07037  0 02000 0 07062          TRA 2WD70                                                    F2301720
07040 -0 76000 0 00012 2WD10    RTT                                                          F2301730
07041  0 76100 0 00000          NOP                                                          F2301740
07042  0 76200 0 00223 2WD20    RDS TAPE3          PULL                                      F2301750
07043 -0 53400 2 07072 2WD30    LXD L(7),2         IN                                        F2301760
07044  0 70000 1 07570          CPY DOZ,1          DOTAG                                     F2301770
07045  0 02000 0 07050          TRA 2WD40          BUT                                       F2301780
07046  0 02000 0 07062          TRA 2WD70          ONLY                                      F2301790
07047  0 02000 0 07042          TRA 2WD20          THE                                       F2301800
07050  0 70000 1 07571 2WD40    CPY DOZ+1,1        FIRST                                     F2301810
07051  0 02000 0 07054          TRA 2WD50          TWO                                       F2301820
07052  0 07400 4 00004          TSX DIAG,4  WORDS                       ERROR. GO TO DIAGNOSTIC. F2301835
07053  0 07400 4 00004          TSX DIAG,4  OF                          ERROR. GO TO DIAGNOSTIC. F2301845
07054  0 70000 0 07073 2WD50    CPY ESXX           EACH                                      F2301850
07055  0 02000 0 07060          TRA 2WD60          TABLE                                     F2301860
07056  0 07400 4 00004          TSX DIAG,4  ENTRY.                      ERROR. GO TO DIAGNOSTIC. F2301875
07057  0 07400 4 00004          TSX DIAG,4                              ERROR. GO TO DIAGNOSTIC. F2301885
07060  2 00001 2 07054 2WD60    TIX 2WD50,2,1                                                F2301890
07061  1 77776 1 07043          TXI 2WD30,1,-2                                               F2301900
07062 -0 63400 1 07570 2WD70    SXD DOZ,1                                                    F2301910
07063  0 76600 0 00333          WRS 219                                                      F2301920
07064 -0 76000 0 00012          RTT                                                          F2301930
07065  0 02000 0 07067          TRA 2WD80          READ ERROR.                               F2301940
07066  0 02000 0 07616          TRA NORMRT          NORM RET MONITOR. GO TO SPACE TAPE 1     F2301955
07067  2 00001 4 07032 2WD80    TIX 2WD05,4,1                                                F2301960
07070  0 07400 4 00004          TSX DIAG,4  TAPE 3 READING DOTAG,       ERROR. GO TO DIAGNOSTIC. F2301975
07071  0 00454 0 00000 L(300)       0,0,300                                                  F2301980
07072  0 00007 0 00000 L(7)         0,0,7                                                    F2301990
A 07073  0 00000 0 00000 ESXX   HTR                TEMP STORAGE.                             F2302000
                                     MASTER RECORD CARD = FN037                              F2302005
                 07614          ORG 3980                                                     F2302010
07614 -0 63400 1 77777 BURNCE   SXD TOP,1              DRUM OVERFLOW                         F2302011
07615  0 02000 0 00004          TRA DIAG               ERROR PROCEDURE                       F2302012
                                    THE 2 WD SUBRT NORMRT SPACES TAPE 1 PAST THE DIAGNOSTIC REC. F2302016
07616  0 76200 0 00221 NORMRT   RDS 145            SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE.  F2302017
07617  0 02000 0 00004          TRA ONETCS         GO TO ONE TO CS (MONITOR)                 F2302018
07620 -0 63400 4 07653 LIST     SXD LIST40,4           SAVE LINKAGE                          F2302030
07621 -0 73400 1 00000          PDX 0,1            PUT INDEX QUANTITY IN XRA                 F2302040
07622  0 73400 6 00000          PAX 0,6            PUT NR. OF WDS IN XRB,XRC.                F2302050
07623  0 40000 0 07654          ADD LIST50         COMPUTE NR. OF WRDS                       F2302060
07624  0 62100 0 07641          STA LIST30         PLUS ORIGIN E1 AND                        F2302070
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     07625  0 62100 0 07634         STA LIST20        INITIALIZE ADDRESSES.                          F2302080
     07626  0 50000 1 07701         CLA LADDIN+5,1    TEST                                           F2302090
     07627  0 77100 0 00022         ARS 18            FOR                                            F2302100
     07630  0 40200 1 07674         SUB LADDS+5,1     FULL                                           F2302110
     07631 -0 10000 0 07633         TNZ LIST10        TABLE.                                         F2302120
     07632  0 07400 4 07614         TSX BURNCE,4          DRUM OVERFLOW, GO SAVE IRA BEFORE DIAG.    F2302135
     07633 -0 75400 0 00000 LIST10  PXD 0,0           ZERO IN ACC.                                   F2302140
     07634  0 36100 2 00000 LIST20  ACL 0,2           COMPUTE                                        F2302150
     07635  2 00001 2 07634         TIX LIST20,2,1    ENTRY                                          F2302160
     07636  0 76600 0 00303         WRS ADRUM             SELECT DRUM.                               F2302165
     07637  0 60200 0 07655         SLW LIST60        CHECK SUM.                                     F2302170
     07640  0 46000 1 07674         LDA LADDS+5,1     COPY                                           F2302180
     07641  0 70000 4 00000 LIST30  CPY 0,4           ENTRY                                          F2302190
     07642  2 00001 4 07641         TIX LIST30,4,1    AND                                            F2302200
     07643  0 70000 0 07655         CPY LIST60        CHECK SUM.                                     F2302210
     07644  0 50000 1 07674         CLA LADDS+5,1     COMPUTE                                        F2302220
     07645  0 40000 1 07667         ADD TSXCOM+5,1    NEXT                                           F2302230
     07646  0 40000 0 06675         ADD L(1)A         ENTRY                                          F2302240
     07647 -0 32000 0 06703         ANA ADDMSK        ADDRESS.                                       F2302250
     07650  0 60100 1 07674         STO LADDS+5,1                                                    F2302260
     07651 -0 53400 4 07653         LXD LIST40,4      EXIT                                           F2302270
     07652  0 02000 4 00001         TRA 1,4                                                          F2302280
A    07653  0 00000 0 00000 LIST40  HTR               E.S.                                           F2302290
     07654  0 00000 0 07656 LIST50  HTR E1            L(E1)                                          F2302300
A    07655  0 00000 0 00000 LIST60  HTR               E.S.                                           F2302310
                                        FOUR WORD ENTRY BLOCK                                        F2302320
A    07656  0 00000 0 00000 E1      HTR                                                              F2302330
A    07657  0 00000 0 00000 E2      HTR                                                              F2302340
A    07660  0 00000 0 00000 E3      HTR                                                              F2302350
A    07661  0 00000 0 00000 E4      HTR                                                              F2302360
                                        FIVE KEY WORDS, C(DEC)=INDEX QUANTITIES, C(ADD)=NR. OF WORDS.F2302370
     07662  0 00005 0 00002 TSXCOM  HTR 2,0,5                                                        F2302380
     07663  0 00004 0 00003 TRASTO  HTR 3,0,4                                                        F2302390
     07664  0 00003 0 00002 NAMKEY  HTR 2,0,3                                                        F2302400
     07665  0 00002 0 00002 CHATAG  HTR 2,0,2                                                        F2302410
     07666  0 00001 0 00004 DRMTAG  HTR 4,0,1                                                        F2302420
                                        FIVE WORDS CONTAINING CURRENT TABLE ADDRESSES IN ADD. PART.  F2302430
A    07667  0 00000 0 00000 LADDS   HTR               TSXCOM                                         F2302440
A    07670  0 00000 0 00000         HTR               TRASTO                                         F2302450
A    07671  0 00000 0 00000         HTR               NAMKEY                                         F2302460
A    07672  0 00000 0 00000         HTR               CHATAG                                         F2302470
A    07673  0 00000 0 00000         HTR               DRMTAG                                         F2302480
                                        FIVE WORDS, C(ADD)=ORIGIN,C(DEC)=LAST TABLE LOC. PLUS ONE    F2302490
     07674  0 02660 0 01302 LADDIN  HTR 706,0,1456    TSXCOM                                         F2302500
     07675  0 01300 0 00460         HTR 304,0,704     TRASTO                                         F2302510
     07676  0 02662 0 01760         HTR 1008,0,1458   NAMKEY                                         F2302520
     07677  0 00456 0 00002         HTR 2,0,302       CHATAG                                         F2302530
     07700  0 03650 0 02664         HTR 1460,0,1960   DRMTAG                                         F2302540
                                        THIS ROUTINE, GIVEN A TAU TAG, OBTAINS THE                   F2302550
                                        CORRESPONDING SUBSCRIPT COMBINATION FROM THE TAU             F2302560
                                        DRUM AND POSITIONS IT IN PROPER FORMAT IN STORAGE.           F2302570
     07701 -0 63400 4 07762 SUBCOM  SXD SUB085,4      SAVE LINKAGE INDX.                             F2302580
     07702 -0 53400 1 07770         LXD SUBORG,1      INITIALIZE ERROR COUTNER.                      F2302590
     07703  0 76200 0 00304 SUB010  RDS TAUDRM        SELECT TAU DRUM.                               F2302600
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07704 -0 53400 4 07772          LXD SUBORG+2,4     INITIALIZE                                  F2302610
07705 -0 75400 0 00000          PXD 0,0            SUBSCRIPT COMBINATION                       F2302620
07706  0 60100 4 06645 SUB020   STO C1+8,4         SPACE                                       F2302630
07707  2 00001 4 07706          TIX SUB020,4,1     TO ZERO.                                    F2302640
07710  0 50000 0 06626          CLA TAG            COMPUTE                                     F2302650
07711  0 76500 0 00011          LRS 9              DRUM                                        F2302660
07712  0 73400 6 00000          PAX 0,6            ADDRESS.                                    F2302670
07713 -0 75400 0 00000          PXD 0,0            TAU ONE ADD. IS ORG+3TAU.                   F2302680
07714  0 76300 0 00011          LLS 9              TAU TWO ADD. IS ORG+5TAU.                   F2302690
07715  0 60100 0 07773          STO SUBES1         TAU THREE ADD. IS ORG+7TAU.                 F2302700
07716  0 76700 0 00001          ALS 1              STORE                                       F2302710
07717  0 60100 0 07774          STO SUBES2         ADDRESS                                     F2302720
07720  0 50000 4 07773          CLA SUBORG+3,4     IN SUBES1                                   F2302730
07721  0 40000 0 07773          ADD SUBES1         FOR LDA                                     F2302740
07722  0 40000 0 07774 SUB030   ADD SUBES2         INSTRUCTION.                                F2302750
07723  2 00001 4 07722          TIX SUB030,4,1                                                 F2302760
07724  0 62100 0 07773          STA SUBES1                                                     F2302770
07725  0 46000 0 07773          LDA SUBES1         COPY SUB. COMB.                             F2302780
07726  0 70000 0 06635          CPY C1             TAU ONE, TWO, THREE                         F2302790
07727 -3 00002 2 07731          TXL SUB040,2,2                                                 F2302800
07730  0 70000 0 06641          CPY C3             TAU 3                                       F2302810
07731  0 70000 0 06636 SUB040   CPY S1             TAU 1,2,3                                   F2302820
07732 -3 00001 2 07737          TXL SUB060,2,1                                                 F2302830
07733  0 70000 0 06640          CPY S2             TAU2,3                                      F2302840
07734 -3 00002 2 07736          TXL SUB050,2,2                                                 F2302850
07735  0 70000 0 06642          CPY S3             TAU 3                                       F2302860
07736  0 70000 0 06643 SUB050   CPY D1             TAU 2,3                                     F2302870
07737  0 70000 0 07773 SUB060   CPY SUBES1         TAU 1,2,3                                   F2302880
07740 -0 53400 4 07770          LXD SUBORG,4       COMPUT CHECK SUM                            F2302890
07741 -0 50000 0 06635          CAL C1             AND COMPARE WITH                            F2302900
07742  0 36100 4 06644 SUB070   ACL C1+7,4         ENTRY CHECK CUM.                            F2302910
07743  2 00001 4 07742          TIX SUB070,4,1     THREE ATTMPTS ARE MADE                      F2302920
07744  0 60200 0 07774          SLW SUBES2         TO READ SC CORRECTLY.                       F2302930
07745  0 50000 0 07774          CLA SUBES2         IF ERROR STILL PRESENT,                     F2302940
07746  0 40200 0 07773          SUB SUBES1         COMPLETE ROUTINE, MAKE ERROR RET.           F2302950
07747  0 10000 0 07752          TZE SUB075         CHECK SUMS AGREE, TRA.                      F2302960
07750  2 00001 1 07703          TIX SUB010,1,1     CHECK SUMS DISAGREE,                        F2302972
07751  0 07400 4 00004          TSX DIAG,4  IN READING TAU FROM DRUM,   ERROR. GO TO DIAGNOSTIC. F2302985
07752 -0 53400 4 07771 SUB075   LXD SUBORG+1,4     REARRANGE C1, C2, D1, D2,                   F2302990
07753  0 50000 4 06644 SUB080   CLA C1+7,4         TO COMPLY WITH CORE                         F2303000
07754  0 73400 2 00000          PAX 0,2            STORAGE FORMAT.                             F2303010
07755 -0 32000 0 06704          ANA DECMSK                                                     F2303020
07756  0 60100 4 06644          STO C1+7,4                                                     F2303030
07757 -0 75400 2 00000          PXD 0,2                                                        F2303040
07760 -2 00006 4 07763          TNX SUB090,4,6                                                 F2303050
07761  0 60100 0 06637          STO C2                                                         F2303060
07762 -3 00000 0 07753 SUB085   TXL SUB080,0                                                   F2303070
07763  0 60100 0 06644 SUB090   STO D2                                                         F2303080
07764 -0 53400 4 07762          LXD SUB085,4       RESTORE LINKAGE INDEX,                      F2303090
07765  0 76100 0 00000          NOP                                                            F2303102
07766  0 02000 4 00001          TRA 1,4                                                        F2303110
07767  0 76100 0 00000 SUB100   NOP                                                            F2303122
07770 +000006001356     SUBORG  OCT 000006001356                                               F2303130
07771 +000007000454             OCT 7000454        DEC. IS 7, ADD. IS ORG. TAU 2               F2303140
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     07772 +000010000000            OCT 10000000      DEC. IS 8, ADD. IS ORG. TAU 1                F2303150
A    07773  0 00000 0 00000 SUBES1  HTR               E.S.                                         F2303160
A    07774  0 00000 0 00000 SUBES2  HTR               E.S.                                         F2303170
                     06721          ORG 3537                                                       F2303180
                                          MASTER RECORD CARD = FN039                                F2303185
     06721 -0 53400 1 00733 BL3A    LXD FORTAG-1,1    IF FORTAG                                    F2303190
     06722  3 02733 1 07616         TXH NORMRT,1,1499 IS EMPTY, NORM RET MONITOR. GO SPACE TP 1.   F2303205
     06723 -0 76000 0 00144         MSE LIGHT         IF FORVAL IS EMPTY,                          F2303210
     06724  0 02000 0 06726         TRA INIT                                                       F2303220
     06725  0 02000 0 07616         TRA NORMRT         NORM RET MONITOR. GO TO SPACE TAPE 1        F2303235
     06726 -0 53400 1 03670 INIT    LXD FORVAL-1,1    INITIALIZE                                   F2303240
     06727 -0 63400 1 07034         SXD TAB60,1       .                                            F2303250
     06730 -0 53400 1 00733         LXD FORTAG-1,1    .                                            F2303260
     06731 -0 63400 1 07015         SXD VAL80,1       .                                            F2303270
     06732 -0 63400 1 07020         SXD VAL95,1       .                                            F2303280
     06733 -0 53400 1 07570         LXD DOZ,1         .                                            F2303290
     06734 -0 63400 1 07101         SXD IND20,1       .                                            F2303300
     06735 -0 53400 1 06674 VALTAG  LXD L(1500,1      THIS PROGRAM                                 F2303310
     06736  0 50000 1 03670 VAL10   CLA FORTZ,1       MAKES A                                      F2303320
     06737 -0 12000 0 07017         TMI VAL90         PASS OVER                                    F2303330
     06740 -0 32000 0 06677         ANA BITONE        FORTAG, AND                                  F2303340
     06741 -0 10000 0 07017         TNZ VAL90         FOR EACH NON-NEGATIVE (NOT TRREATED IN BL 2) F2303350
     06742  0 50000 1 03670         CLA FORTZ,1       TAG WITH BITONE EQUAL                        F2303360
     06743 -0 32000 0 06703         ANA ADDMSK        TO ZERO, (NOT YET TREATED HERE)              F2303370
     06744  0 60100 0 06626         STO TAG           OBTAINS THE CORRESPONDING SUBSCRIPT          F2303380
     06745 -0 63400 1 07000         SXD SAVEA,1       COMBINATION FROM THE                         F2303390
     06746  0 07400 4 07701         TSX SUBCOM,4      TAU TABLE DRUM.                              F2303400
     06747 -0 53400 4 06670         LXD L(3),4                                                     F2303410
     06750 -0 75400 0 00000         PXD 0,0                                                        F2303420
     06751  0 60100 4 06635 VAL20   STO RSYM1+3,4     INITIALIZE WITH ZEROES.                      F2303430
     06752  2 00001 4 06751         TIX VAL20,4,1                                                  F2303440
     06753 -0 53400 1 06671         LXD L(6),1        THIS ROUTINE STORES                          F2303450
     06754 -0 53400 2 06670         LXD L(3),2        THE SYMBOLS AS FOLLOWS                       F2303460
     06755  0 50000 1 06644 VAL30   CLA S1+6,1        LEFTMOST IN RSYM1,                           F2303470
     06756  0 10000 0 06761         TZE VAL40         NEXT SYMBOL IN RSYM2,                        F2303480
     06757  0 60100 2 06635         STO RSYM1+3,2     RIGHTMOST IN RSYM3.                          F2303490
     06760  1 77777 2 06761         TXI VAL40,2,-1    IF THERE ARE NOT THREE                       F2303500
     06761  2 00002 1 06755 VAL40   TIX VAL30,1,2     SYMBOLS IN THE SC, THEN                      F2303510
     06762 -0 75400 2 00000         PXD 0,2           THE RSYM LOCATIONS ARE                       F2303520
     06763 -0 76000 0 00003         SSM               SET TO ZERO.                                 F2303530
     06764  0 40000 0 06670         ADD L(3)          DELTA IS THE SYMBOL COUNT.                   F2303540
     06765  0 10000 0 07001         TZE VAL60         SUBSCRIPT IS CONSTANT, NO SYMBOLS.           F2303550
     06766  0 60100 0 06631         STO DELTA                                                      F2303560
     06767 -0 53400 4 06665         LXD L(0),4        LOCATION TAGIND IS SET                       F2303570
     06770  0 40200 0 06666         SUB L(1)          TO ZERO, UNLESS THE SC                       F2303580
     06771 -0 10000 0 06777         TNZ VAL50         HAS THE FOLLOWING                            F2303590
     06772  0 50000 0 06636         CLA S1            CHARACTERISTICS                              F2303600
     06773  0 10000 0 06777         TZE VAL50         ONE SYMBOL                                   F2303610
     06774 -0 53400 1 06635         LXD C1,1          IN LEFTMOST POSITION                         F2303620
     06775  3 00001 1 06777         TXH VAL50,1,1     WITH COEFFICIENT EQUAL                       F2303630
     06776 -0 53400 4 06666         LXD L(1),4        TO ONE                                       F2303640
     06777 -0 63400 4 06630 VAL50   SXD TAGIND,4                                                   F2303650
D    07000 -3 00000 0 07022 SAVEA   TXL TABSER,0      GO TO PROCESSING ROUTINE. (DEC HAS FORTAG IX) F2303660
     07001 -0 53400 1 07000 VAL60   LXD SAVEA,1       RETURN FROM PROCESSING                       F2303670
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07002   0 50000 1 03670         CLA FORTZ,1       ROUTINE. FOR THIS TAG,                          F2303680
07003  -0 12000 0 07014         TMI VAL70         AND ALL TAGS EQUAL TO                           F2303690
07004  -0 32000 0 06677         ANA BITONE        THIS TAG, SET FORTAG                            F2303700
07005  -0 10000 0 07014         TNZ VAL70         ENTRY BIT ONE EQUAL                             F2303710
07006   0 50000 1 03670         CLA FORTZ,1       TO ONE.                                         F2303720
07007  -0 32000 0 06703         ANA ADDMSK                                                        F2303730
07010   0 40200 0 06626         SUB TAG                                                           F2303740
07011  -0 10000 0 07014         TNZ VAL70                                                         F2303750
07012   0 50000 0 06677         CLA BITONE                                                        F2303760
07013  -0 60200 1 03670         ORS FORTZ,1                                                       F2303770
07014   1 77777 1 07015 VAL70   TXI VAL80,1,-1                                                    F2303780
D 07015   3 00000 1 07002 VAL80   TXH VAL60+1,1    IF FORTAG DONE,        (DEC HAS FORTAGIX)      F2303790
07016  -0 53400 1 07000         LXD SAVEA,1       GO BACK                                         F2303800
07017   1 77777 1 07020 VAL90   TXI VAL95,1,-1    FOR NEXT TAG                                    F2303810
D 07020   3 00000 1 06736 VAL95   TXH VAL10,1     IF ANY        (DEC HAS FORTAGIX)                F2303820
07021   0 02000 0 07616         TRA NORMRT         NORM RET MONITOR. GO TO SPACE TAPE 1           F2303835
07022  -0 53400 1 06674 TABSER  LXD L(1500,1      SEARCH                                          F2303840
07023  -0 63400 2 07032         SXD TAB40,2              (6 - 2X NO SUB SYMBOLS      - VAL40)    F2303850
07024  -0 53400 2 06670 TAB10   LXD L(3),2        FORVAL                                          F2303860
07025   0 50000 1 06626         CLA 4VALZ+1,1     FOR AN                                          F2303870
07026   0 34000 2 06635 TAB20   CAS RSYM1+3,2      OCCURRANCE                                      F2303880
07027   0 02000 0 07031         TRA TAB30         OF ANY SYMBOL                                   F2303890
07030   0 02000 0 07036         TRA FOUND         IN THIS SC.                                     F2303900
07031   1 77777 2 07032 TAB30   TXI TAB40,2,-1                                                    F2303910
D 07032   3 00000 2 07026 TAB40   TXH TAB20,2            ( DEC LOADED FROM TABSER + 1)           F2303920
07033   1 77775 1 07034 TAB50   TXI TAB60,1,-3                                                    F2303930
D 07034   3 00000 1 07024 TAB60   TXH TAB10,1              (DEC HAS FORVALIX)                    F2303940
07035   0 02000 0 07001         TRA VAL60                                                         F2303950
07036  -0 63400 1 07053 FOUND   SXD FND10,1       IF SYMBOL FOUND,                                F2303960
07037  -0 53400 4 06630         LXD TAGIND,4      MAKE NORMAL OR SPECIAL                          F2303970
07040   0 50000 1 06625         CLA 4VALZ,1       ENTRY IN TSXCOM, DEPENDING                      F2303980
07041   3 00000 4 07054         TXH FND20,4,0     ON TAGIND. (UNLESS SEE SUBRT INDO)              F2303990
07042   0 60100 0 07112         STO FORNR                                                         F2304000
07043   0 07400 4 07064         TSX INDO,4                                                        F2304010
07044   0 02000 0 07062         TRA FND40         INDO RETURN IF FRVL ALPH IN RANGE MTCHNG DOTAG  F2304020
07045  -0 53400 1 07053         LXD FND10,1       RETURN FROM INDO WHEN NOT SO.                   F2304030
07046   0 50000 1 06625         CLA 4VALZ,1                                                       F2304040
07047   0 60100 0 07656         STO E1            SPECIAL ENTRY IF TAGIND                         F2304050
07050   0 50000 0 06626         CLA TAG           NOT ZERO                                        F2304060
07051   0 76700 0 00022         ALS 18                                                            F2304070
07052  -0 50100 0 06626         ORA TAG                                                           F2304080
D 07053  -3 00000 0 07057 FND10   TXL FND30,0              (DEC HAS FORTAG IX)                   F2304090
07054  -0 50100 0 06626 FND20   ORA TAG           SET UP E BLOCK WHEN TAGIND EQUAL  1             F2304100
07055   0 60100 0 07656         STO E1                                                            F2304110
07056   0 50000 0 06632         CLA RSYM1         TAG SYMBOL                                      F2304120
07057   0 60100 0 07657 FND30   STO E2                                                            F2304130
07060   0 50000 0 07662         CLA TSXCOM        TSXCOM KEY                                      F2304140
07061   0 07400 4 07620         TSX LIST,4                                                        F2304150
07062  -0 53400 1 07053 FND40   LXD FND10,1                                                      F2304160
07063   0 02000 0 07033         TRA TAB50         CONTINUE SEARCH                                 F2304170
                                SUBRT INDO.... THIS ROUTINE DETERMINES  WHETHER THE FORVAL      F2304180
                                WHICH HAS BEEN FOUND TO MATCH A SUBSCRIPT FALLS WITHIN RANGE    F2304190
                                OF A DO WHICH IN TURN MATCHES THE FORAVAL. IF SO A RETURN IS    F2304200
                                MADE AND TSXCOM ENTRY FOR THIS FORVAL ALPHA IS OMMITTED.        F2304210
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07064 -0 53400 1 07113 INDO   LXD IND60,1                                                    F2304220
07065  0 02000 0 07101        TRA IND20                                                      F2304230
07066  0 50000 1 07570 IND10  CLA DOZ,1         OBTAIN FIRST WORD DOTAG.                     F2304240
07067  0 73400 2 00000        PAX 0,2           DOTAGS BETA.                                 F2304250
07070 -0 32000 0 06704        ANA DECMSK        DOTAGS ALPHA                                 F2304260
07071  0 34000 0 07112        CAS FORNR         AGAINST FORVAL ALPHA.                        F2304270
07072  0 02000 4 00002        TRA 2,4           OUTSIDE RANGE . RETURN.                      F2304280
07073  0 07400 4 00004        TSX DIAG,4  FORVAL ALPHA EQ DO ALPHA.   ERROR. GO TO DIAGNOSTIC. F2304295
07074 -0 75400 2 00000        PXD 0,2                                                        F2304300
07075  0 34000 0 07112        CAS FORNR         DOTAGS BETA AGAINST FORVAL ALPHA.            F2304310
07076  0 02000 0 07103        TRA IND30         FORVAL WITHIN RANGE                          F2304320
07077  0 02000 0 07103        TRA IND30         OF DOTAG.                                    F2304330
07100  1 77776 1 07101        TXI IND20,1,-2                                                 F2304340
D 07101  3 00000 1 07066 IND20  TXH IND10,1                                                  F2304350
07102  0 02000 4 00002        TRA 2,4           DOTAG EXHAUSTED, RETURN.                     F2304360
07103 -0 53400 2 06670 IND30  LXD L(3),2                                                     F2304370
07104  0 50000 1 07571        CLA DOZ+1,1       FN  EDIT CORR CD NR.                         F2304384
07105  0 34000 2 06635 IND40  CAS RSYM1+3,2     DOES DOTAG SYMBOL EQUAL                      F2304390
07106  0 02000 0 07110        TRA IND50         FORVAL SYMBOL (WHICH HAS BEEN FOUND          F2304400
07107  0 02000 4 00001        TRA 1,4           TO EQUAL SUBSCRIPT). IF SO, RETURN.          F2304410
07110  2 00001 2 07105 IND50  TIX IND40,2,1                                                  F2304420
07111  1 77776 1 07101        TXI IND20,1,-2                                                 F2304430
A 07112  0 00000 0 00000 FORNR  HTR               STORAGE FOR FIRST WD FORVAL (ALPHA)          F2304440
07113  0 00454 0 00000 IND60      0,0,300                                                    F2304450
                 07114 DO     BSS 1                                                          F2304460
                 07115        BSS 299                                                        F2304470
                 07570 DOZ    BSS 1                                                          F2304480
                 06721        ORG 3537                                                       F2304490
                                  MASTER RECORD CARD = FN041                                 F2304495
06721 -0 53400 1 00733 BL3B   LXD FORTAG-1,1    FORTAG EMPTY                                 F2304500
06722  3 02733 1 07616        TXH NORMRT,1,1499 NORM RET MONITOR. GO TO SPACE TAPE 1.        F2304515
06723 -0 76000 0 00143        MSE 99            TEST FOR EMPTY DOTAG                         F2304520
06724  0 02000 0 06727        TRA RDOTAG        OFF                                          F2304530
06725  0 76000 0 00143        PSE 99            ON, EMPTY                                    F2304540
06726  0 02000 0 07616        TRA NORMRT         NORM RET MONITOR. GO TO SPACE TAPE 1        F2304555
06727 -0 53400 6 06671 RDOTAG LXD L(6),6        INITIALIZE ERROR COUNTERS.                   F2304562
06730  0 76400 0 00222 RDPOS  BST TAPE2         POSITION TAPE 2 FOR DOTAG                    F2304570
06731  0 76400 0 00222        BST TAPE2                                                      F2304580
06732  0 76200 0 00222        RDS TAPE2                                                      F2304590
06733  0 70000 0 06770        CPY RDES1                                                      F2304600
06734  0 70000 0 06771        CPY RDES2                                                      F2304610
A 06735  0 70000 0 00000        CPY                                                          F2304620
06736  0 07400 4 00004        TSX DIAG,4                          ERROR. GO TO DIAGNOSTIC. F2304635
06737  0 07400 4 00004        TSX DIAG,4                          ERROR. GO TO DIAGNOSTIC. F2304645
06740  0 50000 0 06770 RDREC  CLA RDES1                                                      F2304650
06741  0 40200 0 06771        SUB RDES2                                                      F2304660
06742  0 10000 0 06745        TZE RDBACK                                                     F2304670
06743  2 00001 4 06731        TIX RDPOS+1,4,1   ERROR - REREAD                               F2304680
06744  0 07400 4 00004        TSX DIAG,4                          ERROR. GO TO DIAGNOSTIC. F2304695
06745 -0 53400 1 06770 RDBACK LXD RDES1,1       NO RECORDS                                   F2304700
06746  1 00002 1 06747        TXI RDBST,1,2                                                  F2304710
06747  0 76400 0 00222 RDBST  BST TAPE2         BACKSPACE DESIGNATED NO RECORDS              F2304720
06750  2 00001 1 06747        TIX RDBST,1,1                                                  F2304730
06751 -0 53400 1 06673        LXD L(1350,1      MAX SIZE DOTAG                               F2304740
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06752  0 76200 0 00222 RDRDS  RDS TAPE2                                                          F2304750
06753  0 70000 1 06377 RDCPY  CPY DOTAGZ,1      READ IN DOTAG                                    F2304760
06754  1 77777 1 06753        TXI RDCPY,1,-1                                                     F2304770
06755  0 02000 0 06757        TRA RDEOF                                                          F2304780
06756  0 02000 0 06752        TRA RDRDS                                                          F2304790
06757 -0 63400 1 03670 RDEOF  SXD DOTAG-1,1     DOTAG INDEX(1350-NO DOTAG ENTRIES)               F2304800
06760  0 76200 0 00222        RDS TAPE2         SPACE TAPE.                                      F2304810
06761  0 76200 0 00222        RDS TAPE2                                                          F2304820
06762  0 76600 0 00333        WRS 219                                                            F2304830
06763 -0 76000 0 00012        RTT                                                                F2304840
06764  0 02000 0 06766        TRA RDER          ON                                               F2304850
06765  0 02000 0 06772        TRA DOPASS                                                         F2304860
06766  2 00001 2 06730 RDER   TIX RDPOS,2,1     TRY TWICE MORE.                                  F2304870
06767  0 07400 4 00004        TSX DIAG,4  TAPE 2, READING DOTAG.      ERROR. GO TO DIAGNOSTIC. F2304885
A 06770  0 00000 0 00000 RDES1  HTR               RECORD COUNT                                     F2304890
A 06771  0 00000 0 00000 RDES2  HTR               RECORD COUNT                                     F2304900
06772 -0 53400 1 03670 DOPASS LXD DOTAG-1,1     DOTAG INDEX.                                     F2304910
06773 -0 63400 1 07110        SXD SYM40,1       INITIALIZE.                                      F2304920
06774 -0 63400 1 07160        SXD SYM130,1      .                                                F2304930
06775 -0 63400 1 07222        SXD SYM220,1      .                                                F2304940
06776 -0 63400 1 07523        SXD TRAW20,1      .                                                F2304950
06777 -0 63400 1 07541        SXD TRAW50,1      .                                                F2304960
07000 -0 63400 1 07420        SXD SPC040,1      .                                                F2304970
07001 -0 63400 1 07455        SXD SPC090,1      .                                                F2304980
07002 -0 53400 1 00030        LXD NAME-1,1      .                                                F2304990
07003 -0 63400 1 07261        SXD GETN20,1      .                                                F2305000
                                THIS ROUTINEMAKES A PASS OVER FORTAG AND FOR EACH NON-           F2305010
                                NEGATIVE TAG, OBTAINS THE CORRESPONDING SUBSCRIPT COMBINATIONF2305020
                                FROM THE TAU DRUM. THE SYMBOLS ARE PUT INTO THE LOCATIONS        F2305030
                                RSYM1, RSYM2, RSYM3, AND LOCATION TAGIND IS INITIALIZED.         F2305040
                                CONTROL THEN GOES TO ROUTINE SYMONE. UPON RETURN, THIS ENTRY F2305050
                                IN FORTAG AND ALL OTHER NON- NEGATIVE ENTRIES  CONTAINING        F2305060
                                THIS TAG ARE SET NEGATIVE.                                       F2305070
07004 -0 53400 1 00733 TAGPAS LXD FORTAG-1,1                                                     F2305080
07005 -0 63400 1 07601        SXD TINF30,1                                                       F2305090
07006 -0 63400 1 07073        SXD TAGP80,1                                                       F2305100
07007 -0 63400 1 07076        SXD TAGP98,1                                                       F2305110
07010 -0 53400 1 06674        LXD L(1500,1                                                       F2305120
07011  0 50000 1 03670 TAGP10 CLA FORTZ,1                                                        F2305130
07012 -0 12000 0 07075        TMI TAGP94        IF NEG, GET NEXT FORTAG                          F2305140
07013 -0 32000 0 06703        ANA ADDMSK        TAG                                              F2305150
07014  0 60100 0 06626        STO TAG                                                            F2305160
07015 -0 63400 1 07077        SXD TAGX,1        SAVE CURRENT FORTAG IX                           F2305170
07016  0 07400 4 07701        TSX SUBCOM,4      OBTAIN AND DISPERSE THE TAU TABLES.              F2305180
07017 -0 53400 4 06670        LXD L(3),4                                                         F2305190
07020 -0 75400 0 00000        PXD 0,0                                                            F2305200
07021  0 60100 4 06635 TAGP20 STO RSYM1+3,4     INITIALIZE RSYM LOCATIONS WITH ZERO.             F2305210
07022  2 00001 4 07021        TIX TAGP20,4,1                                                     F2305220
07023 -0 53400 1 06671        LXD L(6),1                                                         F2305230
07024 -0 53400 2 06670        LXD L(3),2                                                         F2305240
07025 -0 53400 4 06665        LXD L(0),4                                                         F2305250
07026  0 50000 1 06644 TAGP30 CLA S1+6,1        GET SYMBOL                                       F2305260
07027  0 10000 0 07041        TZE TAGP40        IF ZERO, GET NEXT SYMBOL                         F2305270
07030  3 00002 2 07037        TXH TAGP34,2,2    AT RSYM2 AND RSYM3 PASS,                         F2305280
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07031   0 34000 0 06632         CAS RSYM1          CHECK FOR DUPLICATE SYMBOLS.                          F2305290
07032   0 02000 0 07034         TRA TAGP32                                                               F2305300
07033   1 00001 4 07041         TXI TAGP40,4,1     SYMBOL DUPLICATES RSYM1.                              F2305310
07034   0 34000 0 06633 TAGP32  CAS RSYM2                                                               F2305320
07035   0 02000 0 07037         TRA TAGP34                                                               F2305330
07036   1 00001 4 07041         TXI TAGP40,4,1     SYMBOL DUPLICATES RSYM2.                              F2305340
07037   0 60100 2 06635 TAGP34  STO RSYM1+3,2                                                           F2305350
07040   1 77777 2 07041         TXI TAGP40,2,-1    BUMP DELTA COUNTER.                                   F2305360
07041   2 00002 1 07026 TAGP40  TIX TAGP30,1,2                                                          F2305370
07042  -0 75400 2 00000         PXD 0,2            COMPUTE                                               F2305380
07043  -0 76000 0 00003         SSM                DELTA AS NO                                           F2305390
07044   0 40000 0 06670         ADD L(3)           OF DISTINCT SYMBOLS.                                  F2305400
07045   0 10000 0 07062         TZE TAGP50         CONSTANT SUBSCRIPT.                                   F2305410
07046   0 60100 0 06631         STO DELTA                                                                F2305420
07047  -0 53400 2 06665         LXD L(0),2                                                               F2305430
07050   3 00000 4 07060         TXH TAGP45,4,0     IF DUPES, SET TAGIND TO ZERO                          F2305440
07051   0 40200 0 06666         SUB L(1)                                                                 F2305450
07052  -0 10000 0 07060         TNZ TAGP45         IF DELTA OTHER THAN ONE, SET TAGIND TO ZERO           F2305460
07053   0 50000 0 06636         CLA S1                                                                   F2305470
07054   0 10000 0 07060         TZE TAGP45         IF SUBSCRIPT CONSTANT, SET TAGIND TO ZERO             F2305480
07055  -0 53400 1 06635         LXD C1,1           IF COEFF OTHER THAN 1 SET TAGIND TO ZERO              F2305490
07056   3 00001 1 07060         TXH TAGP45,1,1                                                           F2305500
07057  -0 53400 2 06666         LXD L(1),2         OTHERWISE SET TAGIND TO ONE.                          F2305510
07060  -0 63400 2 06630 TAGP45  SXD TAGIND,2                                                           F2305520
07061   0 02000 0 07100         TRA SYMONE         GO TO ANALYZE DONEST.                                 F2305530
07062  -0 53400 1 07077 TAGP50  LXD TAGX,1         IF ANY                                                F2305540
07063   0 50000 1 03670 TAGP60  CLA FORTZ,1        OF THE AS YET UNTREATED                               F2305550
07064  -0 12000 0 07072         TMI TAGP70         FORTAGS                                               F2305560
07065  -0 32000 0 06703         ANA ADDMSK         ARE                                                   F2305570
07066   0 40200 0 06626         SUB TAG            THE SAME AS THAT TAG                                  F2305580
07067  -0 10000 0 07072         TNZ TAGP70         JUST TREATED,                                         F2305590
07070  -0 50000 0 06676         CAL L(MZ)          SET THEM                                              F2305600
07071  -0 60200 1 03670         ORS FORTZ,1        MINUS.                                                F2305610
07072   1 77777 1 07073 TAGP70  TXI TAGP80,1,-1                                                          F2305620
D 07073   3 00000 1 07063 TAGP80  TXH TAGP60,1                ( DEC HAS FORTAG IX)                      F2305630
07074  -0 53400 1 07077 TAGP90  LXD TAGX,1                                                              F2305640
07075   1 77777 1 07076 TAGP94  TXI TAGP98,1,-1    IF ALL OF FORTAG                                      F2305650
D 07076   3 00000 1 07011 TAGP98  TXH TAGP10,1      HAS BEEN COMPLETED,   (DEC HAS FORTAG IX)           F2305660
D 07077  -3 00000 0 07616 TAGX    TXL NORMRT,0      NORMAL RET MONITOR. (DEC HAS  CURR FORTAG IX)       F2305675
                          ROUTINE SYMONE FINDS DOFORMULAS DEFINING SOME SYMBOL IN THIS                  F2305680
                          SC. IT USES TRAWRD TO DETERMINE WHETHER OR NOT ROUTINE                        F2305690
                          PROCESS SHOULD BE USED.                                                       F2305700
                          IF MORE THAN ONE SYMBOL, IT THEN USES ROUTINE SYM2.                           F2305710
07100  -0 53400 1 06673 SYMONE  LXD L(1350,1                                                            F2305720
07101  -0 53400 2 06670 SYM10   LXD L(3),2                                                              F2305730
07102   0 50000 1 06400         CLA DOTAGZ+1,1     GET NEXT DOTAG SYMBOL.                                F2305740
07103   0 34000 2 06635 SYM20   CAS RSYM1+3,2      IS IT SAME AS SUBSCRIPT SYMBOL.                       F2305750
07104   0 02000 0 07106         TRA SYM30                                                                F2305760
07105   0 02000 0 07112         TRA SYM50          YES                                                   F2305770
07106   2 00001 2 07103 SYM30   TIX SYM20,2,1                                                            F2305780
07107   1 77767 1 07110         TXI SYM40,1,-9                                                           F2305790
D 07110   3 00000 1 07101 SYM40   TXH SYM10,1       END OF DOTAG, RETURN.                                 F2305800
07111   0 02000 0 07062         TRA TAGP50                                                               F2305810
07112   0 50000 0 06632 SYM50   CLA RSYM1           INTERCHANGE THE                                       F2305820
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07113   0 56000 2 06635         LDQ RSYM1+3,2     MATCHING SUBSCRIPT                                        F2305830
07114   0 60100 2 06635         STO RSYM1+3,2     SYMBOL WITH                                               F2305840
07115  -0 60000 0 06632         STQ RSYM1         RSYM1.                                                    F2305850
07116   0 50000 1 06404         CLA DOTAGZ+5,1                                                              F2305860
07117  -0 32000 0 06704         ANA DECMSK        STORE LEVEL                                               F2305870
07120   0 60100 0 06647         STO LR1           OF                                                        F2305880
07121   0 60100 0 06645         STO TL2           DOTAG                                                     F2305890
07122  -0 63400 1 06646         SXD XR1,1         THIS DOTAG IS R1.                                         F2305900
07123  -0 53400 4 06631         LXD DELTA,4       IF DELTA IS                                               F2305910
07124  -0 53400 2 06666         LXD L(1),2        ONE, THEN                                                 F2305920
07125  -3 00001 4 07127         TXL SYM60,4,1     NO TRAWORD SKIP.                                          F2305930
07126  -0 53400 2 06667         LXD L(2),2        OTHERWISE, TRAWORD SKIP.                                  F2305940
07127   0 07400 4 07513 SYM60   TSX TRAWRD,4                                                                F2305950
07130  -0 63400 1 06650         SXD NEXTR1,1      SAVE INDEX LAST DOTAG HANDLED.                            F2305960
07131   0 10000 0 07135         TZE SYM70         ARE THERE TRANSFERS OUT(TRABITS).                         F2305970
07132  -0 53400 1 06646         LXD XR1,1         YES. LOAD I.R. FOR MATCHING DOTAG.                        F2305980
07133  -0 53400 2 06666         LXD L(1),2        A ONE TELLS PROCESS THAT                                  F2305990
07134   0 07400 4 07236         TSX PROCES,4      CALLER WAS SYMONE. (B).                                   F2306000
07135  -0 53400 4 06631 SYM70   LXD DELTA,4       NO TRANSFERS OUT (TRABITS)                                F2306010
07136  -3 00001 4 07142         TXL SYM80,4,1     IF DELTA IS GREATER THAN ONE, THEN                        F2306020
07137  -0 53400 1 06646         LXD XR1,1         LOAD INDEX REG FOR MATCHING DOTAG,                        F2306030
07140  -0 53400 2 06647         LXD LR1,2         AND LEVEL AND                                             F2306040
07141   0 02000 0 07144         TRA SYM2          GO TO SECOND LEVEL SEARCH.                                F2306050
07142  -0 53400 1 06650 SYM80   LXD NEXTR1,1      DELTA IS ONE,                                             F2306060
07143   0 02000 0 07110         TRA SYM40         CONTINUE FIRST LEVEL SEARCH.                              F2306070
                                ROUTINE SYMTWO MAKES A SECOND LEVEL SEARCH AMONG THOSE DOS                  F2306080
                                NESTED WITHIN THE DO MATCHING RSYM1. USES PROCESS ROUTINE                   F2306090
                                IF NECESSARY, AND ROUTINE SYM3 IF NECESSARY.                                F2306100
07144  -0 63400 2 07150 SYM2    SXD SYM100,2      INITIALIZE LEVEL TEST                                     F2306110
07145   0 02000 0 07157         TRA SYM120                                                                  F2306120
07146   0 50000 1 06404 SYM90   CLA DOTAGZ+5,1     GET LEVEL OF                                              F2306130
07147  -0 73400 2 00000         PDX 0,2           NEW DOTAG AND                                             F2306140
D 07150 -3 00000 2 07110 SYM100 TXL SYM40,2       TEST AGAINST LEVEL OF R1 AND                              F2306150
07151   0 50000 1 06400         CLA DOTAGZ+1,1    IF WITHIN RANGE OF R1,                                    F2306160
07152   0 34000 0 06633         CAS RSYM2         TEST MATCH DOTAG SYMBOL AGAINST RSYM2.                    F2306170
07153   0 02000 0 07155         TRA SYM110                                                                  F2306180
07154   0 02000 0 07166         TRA SYM150        MATCHES . GO TO TREAT R2.                                 F2306190
07155   0 40200 0 06634 SYM110  SUB RSYM3         DOESNT MATCH RSYM2, TRY RSYM3.                            F2306200
07156   0 10000 0 07162         TZE SYM140                                                                  F2306210
07157   1 77767 1 07160 SYM120  TXI SYM130,1,-9   GET NEXT DOTAG                                            F2306220
D 07160 3 00000 1 07146 SYM130  TXH SYM90,1               (DEC CONTAINS DOTAG IX)                           F2306230
07161   0 02000 0 07110         TRA SYM40         IF END OF DOTAG, EXIT.                                    F2306240
07162   0 50000 0 06633 SYM140  CLA RSYM2         DOTAG SYMBOL MATCHES RSYM3 -                              F2306250
07163   0 56000 0 06634         LDQ RSYM3         INTERCHANGE                                               F2306260
07164   0 60100 0 06634         STO RSYM3         RSYM2 AND                                                 F2306270
07165  -0 60000 0 06633         STQ RSYM2         RSYM3.                                                    F2306280
07166  -0 63400 1 06651 SYM150  SXD XR2,1         THIS DOTAG IS R2                                          F2306290
07167  -0 63400 2 06652         SXD LR2,2         SAVE ITS LEVEL .                                          F2306300
07170  -0 53400 2 06666         LXD L(1),2        IF DELTA IS                                               F2306310
07171  -0 53400 4 06631         LXD DELTA,4       TWO OR ONE, THEN                                          F2306320
07172  -3 00002 4 07174         TXL SYM160,4,2    NO TRAWORD SKIP.                                          F2306330
07173  -0 53400 2 06667         LXD L(2),2        OTHERWISE TRAWORD SKIP.                                   F2306340
07174   0 07400 4 07513 SYM160  TSX TRAWRD,4                                                                F2306350
07175  -0 63400 1 06653         SXD NEXTR2,1      SAVE INDEX LAST DOTAG HANDLED.                            F2306360
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07176  0 10000 0 07202        TZE SYM170        ARE THERE TRANSFERS OUT (TRABITS).                F2306370
07177 -0 53400 1 06651        LXD XR2,1         YES. LOAD IX REG FOR MATCHING DOTAG.              F2306380
07200 -0 53400 2 06667        LXD L(2),2        A TWO TELLS PROCESS THAT                          F2306390
07201  0 07400 4 07236        TSX PROCES,4      CALLER WAS SYM2. (2).                             F2306400
07202 -0 53400 4 06631 SYM170 LXD DELTA,4       NO TRANSFERS OUT (TRABITS).                       F2306410
07203 -3 00002 4 07207        TXL SYM180,4,2    IF DELTA IS 3 , THEN                              F2306420
07204 -0 53400 1 06651        LXD XR2,1         LOAD INDEX REG FOR MATCHING DOTAG.                F2306430
07205 -0 53400 2 06652        LXD LR2,2         AND LEVEL AND                                     F2306440
07206  0 02000 0 07211        TRA SYM3          GO TO THRID LEVEL SEARCH.                         F2306450
07207 -0 53400 1 06653 SYM180 LXD NEXTR2,1      DELTA IS LESS THAN THREE,                         F2306460
07210  0 02000 0 07160        TRA SYM130        CONTINUE SECOND LEVEL SEARCH.                     F2306470
                              ROUTINE  SYM3 MAKES A THIRD LEVEL SEARCH OF DOTAG AMONG THOSE     F2306480
                              DOS NESTED WITHIN THE DO MATCHING RSYM2, USES PROCESS IF          F2306490
                              NECESSARY, AND THEN RETURNS TO SYM2.                              F2306500
07211 -0 63400 2 07215 SYM3   SXD SYM200,2       INITIALIZE WITH LEVEL OF R2.                      F2306510
07212  0 02000 0 07221        TRA SYM210                                                          F2306520
07213  0 50000 1 06404 SYM190 CLA DOTAGZ+5,1     OBTAIN LEVEL                                      F2306530
07214 -0 73400 2 00000        PDX 0,2           OF CURRENT DOTAG AND IF IT IS                     F2306540
D 07215 -3 00000 2 07160 SYM200 TXL SYM130,2    OUTSIDE RANGE OF R2, EXIT. (DEC HAS LEVEL R2)     F2306550
07216  0 50000 1 06400        CLA DOTAGZ+1,1    OTHERWISE CHECK FOR IDENTIRY                      F2306560
07217  0 40200 0 06634        SUB RSYM3         WITH THIRD FORTAG SYMBOL.                         F2306570
07220  0 10000 0 07224        TZE SYM230        IF  IDENTITY, GO TO ANALYZE . OTHERWISE,          F2306580
07221  1 77767 1 07222 SYM210 TXI SYM220,1,-9   GET NEXT DOTAG.                                   F2306590
D 07222  3 00000 1 07213 SYM220 TXH SYM190,1    IF END OF DOTAG,  (DEC HAS DOTAG IX)              F2306600
07223  0 02000 0 07160        TRA SYM130        EXIT FROM THIRD LEVEL SEARCH                      F2306610
07224 -0 63400 1 06654 SYM230 SXD XR3,1         SAVE IX OF MATCHING DO                            F2306620
07225 -0 53400 2 06666        LXD L(1),2        NO TRAWORD SKIP.                                  F2306630
07226  0 07400 4 07513        TSX TRAWRD,4      GO TO HUNT TRANSFERS-OUT.                         F2306640
07227  0 10000 0 07222        TZE SYM220        IF NO TRNSFRS OUT (TRABITS) RETURN TO SRCH        F2306650
07230 -0 63400 1 06655        SXD NEXTR3,1      TRNSFRS OUT. SAVE IX LAST DO HANDLED IN TRAWORD   F2306660
07231 -0 53400 1 06654        LXD XR3,1                                                           F2306670
07232 -0 53400 2 06670        LXD L(3),2        THREE TELLS PROCESS THAT CALLER WAS SYM3.          F2306680
07233  0 07400 4 07236        TSX PROCES,4                                                        F2306690
07234 -0 53400 1 06655        LXD NEXTR3,1      GET IX NEXT DOTAG AND                             F2306700
07235  0 02000 0 07222        TRA SYM220        CONTINUE THIRD LEVEL SEARCH.                      F2306710
                              ROUTINE PROCESS DETERMINES WHETHER OR NOT THERE EXISTS  A         F2306720
                              TAG IDENTICAL TO THE CURRENT RELCON TAG AND WHETHER  ITS          F2306730
                              TAG NAME HAS BEEN CHANGED. THE SEARCH FOR THIS IDENTICAL TAG      F2306740
                              IS MADE THRU APPROPRIATE RANGES OF THAT DO WHOSE SYMBOL HAS       F2306750
                              BEEN FOUND TO MATCH ONE OF THE RELCON SYMBOLS. TRASTO ENTRIES     F2306760
                              ARE ENTERED DEPENDING UPON WHICH OF THOSE CONDITIONS HOLDS.       F2306770
07236 -0 63400 1 07262 PROCES SXD DOX,1         SAVE DOTAG IX                                     F2306780
07237 -0 63400 4 07265        SXD SYMLNK,4      AND CALLER                                        F2306790
07240 -0 63400 2 07243        SXD PR10,2        AND INITIALIZE WITH B.                            F2306800
07241 -0 53400 2 06631        LXD DELTA,2                                                         F2306810
07242 -0 53400 4 06665        LXD L(0),4                                                          F2306820
D 07243  3 00000 2 07245 PR10 TXH PR20,2        DOES DELTA EXCEED B.  (DEC HAS B)                 F2306830
07244 -0 53400 4 06666        LXD L(1),4        IF NOT, THEN NO SKIP. OTHERWISE,                  F2306840
07245 -0 63400 4 06656 PR20   SXD SKIP,4        SKIP IF C(SKIP)=0.                                F2306850
07246 -0 53400 4 06630        LXD TAGIND,4      TRA IF SPECIAL CASE, I.E., MOST SIMPLE.           F2306860
07247  3 00000 4 07317        TXH PRSPEC,4,0    (TAGIND NOT ZERO)                                 F2306870
07250  0 50000 1 06377        CLA DOTAGZ,1      SEARCH TABLE NAME                                 F2306880
07251 -0 32000 0 06704        ANA DECMSK        GET RSYM1 DOTAG ALPHA IN DEC                      F2306890
07252  0 40000 0 06626        ADD TAG           AND FORTAG IN ADDRESS.                            F2306900
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07253 -0 53400 1 06711 GETNAM LXD NAMAX,1       LOAD MAX NO NAME TABLE WORDS                          F2306910
07254  0 02000 0 07261         TRA GETN20                                                            F2306920
07255  0 34000 1 00733 GETN05  CAS NAMZ,1       DOES THE DOTAG ALPHA AND FORTAG INDEX OF THE          F2306930
07256  0 02000 0 07260         TRA GETN10       FIRST WORD OF NAME TABLE MATCH THOSE ABOVE.           F2306940
07257  0 02000 0 07263         TRA GETN30       YES.                                                  F2306950
07260  1 77775 1 07261 GETN10  TXI GETN20,1,-3  NO, GET NEXT NAME TABLE.                              F2306960
D 07261  3 00000 1 07255 GETN20  TXH GETN05,1    IS NAME TABLE EXHAUSTED  (DEC HAS NAME IX)          F2306970
D 07262 -3 00000 0 07266 DOX     TXL PR25,0      YES, NOT NOT FOUND. ( DEC HAS IX MATCHING DOTAG     F2306980
07263  0 50000 1 00734 GETN30  CLA NAMZ+1,1     FOUND. OBTAIN NEW TAG NAME                            F2306990
07264  0 60100 0 06627         STO TS           AND SAVE IT.                                          F2307000
D 07265 -3 00000 0 07313 SYMLNK  TXL PR80,0                                                          F2307010
07266 -0 53400 4 06656 PR25     LXD SKIP,4       NOT FOUND IN NAME TABLE,                              F2307020
07267 -0 53400 1 07262          LXD DOX,1        SEARCH FORTAG                                         F2307030
07270  3 00000 4 07275          TXH PR30,4,0     IN PROPER RANGE.                                      F2307040
07271 -0 53400 2 06666          LXD L(1),2       INDICATE TINFOR SEARCH REQUIRED                       F2307050
07272  0 07400 4 07401          TSX SPC000,4                                                           F2307060
07273  0 02000 0 07277          TRA PR40         NOT FOUND                                             F2307070
07274  0 02000 0 07315          TRA PR90         T FOUND                                               F2307080
07275  0 07400 4 07564 PR30     TSX TINFOR,4                                                           F2307090
07276  0 02000 0 07315          TRA PR90         FOUND, GO TO EXIT.                                    F2307100
07277 -0 53400 2 06665 PR40     LXD L(0),2       T NOT FOUND, MAKE TYPE 6                              F2307110
07300  0 07400 4 07336          TSX TRAENT,4     TRASTO ENTRY                                          F2307120
                                MAKE ENTRY IN    TABLE IRV                                             F2307130
07301 -0 53400 1 06664 PR60     LXD IRVXX,1      GET IX FOR ENTRY IN TABLE IRV.                        F2307140
07302  3 00000 1 07304          TXH PR70,1,0                                                           F2307150
07303  0 07400 4 00004          TSX DIAG,4  TABLE IRV FULL.          ERROR. GO TO DIAGNOSTIC.         F2307165
07304  0 50000 0 06626 PR70     CLA TAG          PLACE TAG IN                                          F2307170
07305  0 76700 0 00022          ALS 18           DECREMENT AND                                         F2307180
07306  0 40000 0 06626          ADD TAG          ADDRESS AND                                           F2307190
07307  0 60100 1 06625          STO IRVZ,1       STORE ENTRY IN TABLE IRV                              F2307200
07310  1 77777 1 07311          TXI PR75,1,-1    BUMP IRV TABLE INDEX AND                              F2307210
07311 -0 63400 1 06664 PR75     SXD IRVXX,1      SAVE IT FOR NEXT ENTRY.                               F2307220
07312  0 02000 0 07315          TRA PR90                                                               F2307230
07313 -0 53400 2 06666 PR80     LXD L(1),2       MAKE TYPE ONE TRASTO ENTRY                            F2307240
07314  0 07400 4 07336          TSX TRAENT,4                                                           F2307250
07315 -0 53400 4 07265 PR90     LXD SYMLNK,4     RESTORE INDEX REG                                     F2307260
07316  0 02000 4 00001          TRA 1,4          AND RETURN TO CALLER                                  F2307270
                                ROUTINE PERSPEC IS FOR THE SPECIAL CASE OF A SINGLE SUBSCRIPT         F2307280
                                RELCON WITH NO COEFFICIENT (TAGIND EQUALS ONE)                        F2307290
07317  0 50000 1 06407 PRSPEC   CLA DOTAGZ+8,1   IF  DOTAGS                                          F2307300
07320  0 77100 0 00022          ARS 18           TEST NAME                                             F2307310
07321  0 40200 0 06626          SUB TAG          IS SAME AS                                            F2307320
07322 -0 10000 0 07331          TNZ PR100        CURRENT FORTAG                                        F2307330
07323  0 50000 0 06700          CLA BIT18        AND IF                                                F2307340
07324 -0 32000 1 06405          ANA DOTAGZ+6,1   THERE IS A                                           F2307350
07325  0 10000 0 07315          TZE PR90                                                               F2307360
07326 -0 53400 2 06670          LXD L(3),2       MAKE A TYPE 5 TRASTO ENTRY                            F2307370
07327  0 07400 4 07336          TSX TRAENT,4                                                           F2307380
07330  0 02000 0 07315          TRA PR90                                                               F2307390
07331  0 07400 4 07564 PR100    TSX TINFOR,4     LOOK FOR ALREADY PROCESSED IDENT FORTAG.              F2307400
07332  0 02000 0 07315          TRA PR90         FOUND.                                                F2307410
07333 -0 53400 2 06667          LXD L(2),2       NOT FOUND, MAKE A TYPE 1 TRASTO                       F2307420
07334  0 07400 4 07336          TSX TRAENT,4     ENTRY                                                 F2307430
07335  0 02000 0 07315          TRA PR90                                                               F2307440
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                                        MAKE A TRASTO ENTRY. TRASTO TYPE ONE ENTRY IS MADE WHEN      F2307450
                                        B IS ONE OR TWO, TYPE FIVE ENTRY WHEN B IS THREE, AND TYPE   F2307460
                                        SIX TRASTO ENTRY WHEN B IS ZERO.                             F2307470
07336 -0 63400 4 07375 TRAENT SXD TE70,4                                                             F2307480
07337 -0 53400 1 07262        LXD DOX,1                                                              F2307490
07340  0 50000 1 06377        CLA DOTAGZ,1       GET DOTAGS ALPHA AND BETA                           F2307500
07341 -3 00002 2 07343        TXL TE10,2,2       WHERE B IS 3 (TYPE5)                                F2307510
07342 -0 76000 0 00003        SSM                SET E1 NEG.                                         F2307520
07343  0 60100 0 07656 TE10   STO E1             AND STORE IN E1.                                    F2307530
07344  0 50000 0 06645        CLA TL2            GET LEVEL OF DOTAG                                  F2307540
07345  0 77100 0 00022        ARS 18             INTO ADDRESS AND                                    F2307550
07346  3 00000 2 07350        TXH TE20,2,0       WHERE B ZERO (TYPE 6),                              F2307560
07347 -0 76000 0 00003        SSM                SET NEG AND                                         F2307570
07350  0 60100 0 07657 TE20   STO E2             PUT IT INTO E2.                                     F2307580
07351 -3 00001 2 07361        TXL TE40,2,1       WHERE B 2OR3 (TYPE 1 OR 5),                         F2307590
07352  0 50000 1 06407        CLA DOTAGZ+8,1     PREPARE DOTAGS                                      F2307600
07353 -0 32000 0 06704        ANA DECMSK         TEST NAME .                                         F2307610
07354  3 00002 2 07357        TXH TE30,2,2       IF B 2 (TYPE 1)                                     F2307620
07355 -0 50100 0 06626        ORA TAG            PREPARE FORTAG INDEX AND                            F2307630
07356  0 02000 0 07367        TRA TE60           GO TO STORE IN E3.                                  F2307640
07357 -0 50100 1 06401 TE30   ORA DOTAGZ+2,1     WHERE B IS 3, (TYPE 5) PREPARE DOTAGS               F2307650
07360  0 02000 0 07366        TRA TE50           PARAMETER N1.                                       F2307660
07361  0 50000 0 06626 TE40   CLA TAG            WHERE B ZERO OR 1 (TYPE 1), GET FORTAG              F2307670
07362 -3 00000 2 07366        TXL TE50,2,0       AND WHEN ONE,                                       F2307680
07363  0 76700 0 00022        ALS 18             PUT IN DEC WITH                                     F2307690
07364  0 40000 0 06627        ADD TS             NEW TAG NAME IN ADDRESS.                            F2307700
07365  0 02000 0 07367        TRA TE60                                                               F2307710
07366 -0 76000 0 00003 TE50   SSM                SET MINUS FOR B ZERO OR 3 (TYPE 6OR5)               F2307720
07367  0 60100 0 07660 TE60   STO E3             AND STORE IN E3, FINALLY.                           F2307730
07370 -0 50000 0 07663        CAL TRASTO         GET TRASTO KEY WORD.                                F2307740
07371 -0 53400 2 06667        LXD L(2),2         INDICATE TINFOR SEARCH NOT REQUIRED                 F2307750
07372 -0 53400 4 06656        LXD SKIP,4                                                             F2307760
07373  3 00000 4 07376        TXH TE80,4,0       IF  SKIP IS 1 (DELTA GREATER THEN B),               F2307770
07374  0 07400 4 07401        TSX SPC000,4       GO TO SPC.                                          F2307780
D 07375 -3 00000 0 07377 TE70  TXL TE90,0                (DEC SAVES TSXLINK)                       F2307790
07376  0 07400 4 07620 TE80   TSX LIST,4         GO TO LIST KF SKIP IS ZERO.                         F2307800
07377 -0 53400 4 07375 TE90   LXD TE70,4         RETURN FROM LIST.                                   F2307810
07400  0 02000 4 00001        TRA 1,4            RETURN TO CALLER.                                   F2307820
                              SUBROUTINE SPC000                                                      F2307830
07401 -0 63400 1 07473 SPC000 SXD SPC115,1       SAVE INDEX OF DO TO BE SEARCHED.                    F2307840
07402 -0 63400 2 07446        SXD SPC060,2       SAVE TINFOR, LIST INDICATOR                         F2307850
07403 -0 63400 4 07463        SXD SPC105,4       SAVE TSX INDEX.                                     F2307860
07404  0 60100 0 07512        STO SPCKEY         SAVE LIST KEY WORD                                  F2307870
07405  0 50000 1 06404        CLA DOTAGZ+5,1     OBTAIN L WORD                                       F2307880
07406  0 62200 0 07423        STD SPC050         INITIALIZE TEST INSTR.                              F2307890
07407  0 50000 1 06377        CLA DOTAGZ,1       OBTAIN ALPHABETA WRD,                               F2307900
07410  0 73400 2 00000        PAX 0,2            SAVE BETA,                                          F2307910
07411 -0 32000 0 06704        ANA DECMSK         OBTAIN ALPHA ALONE                                  F2307920
07412  0 60100 0 06660        STO NEXTA          STO IN NEXTA                                        F2307930
07413  0 60100 0 06662        STO A              AND STORE IN A.                                     F2307940
07414 -0 75400 2 00000        PXD 0,2            PUT BETA IN LASTB AND                               F2307950
07415  0 60100 0 06661        STO LASTB          BEGIN SEARCH FOR R2                                 F2307960
07416 -0 53400 1 07473 SPC010 LXD SPC115,1       OBTAIN CURRENT INDEX AND                            F2307970
07417  1 77767 1 07420 SPC020 TXI SPC040,1,-9    GO DOWN ONE DO, IF POSSIBLE, ELSE                   F2307980
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D     07420 -3 00000 1 07464 SPC040 TXL SPC110,1      GO TO SET UP LAST INTERVAL. (DEC HAS DOTAG IX) F2307990
      07421  0 50000 1 06404        CLA DOTAGZ+5,1    TEST WHETHER OR NOT THIS DO                    F2308000
      07422 -0 73400 2 00000        PDX 0,2           IS IN RANGE OF R1(DXL)                         F2308010
D     07423 -3 00000 2 07464 SPC050 TXL SPC110,2      IF NOT, EXIT FOR LAST INTRVL. (DEC LEV DO)     F2308020
      07424  0 50000 1 06400        CLA DOTAGZ+1,1    IF IN R1, IS THIS DO TO BE                     F2308030
      07425  0 40200 0 06634        SUB RSYM3         SKIPPED. IF NOT, GO BACK TO                    F2308040
      07426  0 10000 0 07432        TZE SPC053        GET NEXT DO.                                   F2308050
      07427  0 50000 1 06400        CLA DOTAGZ+1,1                                                   F2308060
      07430  0 40200 0 06633        SUB RSYM2                                                        F2308070
      07431 -0 10000 0 07417        TNZ SPC020                                                       F2308080
      07432  0 50000 1 06377 SPC053 CLA DOTAGZ,1      R2 FOUND, ARRANGE TO SKIP THIS                 F2308090
      07433  0 73400 2 00000        PAX 0,2           INTERVAL. USE ALPHA OF R2                      F2308100
      07434 -0 32000 0 06704        ANA DECMSK        AS B, PUT BETA OF R2 IN                        F2308110
      07435  0 60100 0 06663        STO B             NEXTA.                                         F2308120
      07436 -0 75400 2 00000        PXD 0,2           DO FORMULAS WITHIN R2 ARE                      F2308130
      07437  0 60100 0 06660        STO NEXTA         ACCOUNTED FOR AFTER SEARCH.                    F2308140
      07440 -0 63400 1 07473        SXD SPC115,1      SAVE INDEX OF R2.                              F2308150
      07441 -0 53400 2 07446 SPC055 LXD SPC060,2      PUT TINFOR, LIST IND. IN XRB                   F2308160
      07442  0 50000 0 06662 SPC058 CLA A            FOR                                            F2308170
      07443  0 40200 0 06663        SUB B             NON EMPTY                                      F2308180
      07444  0 10000 0 07447        TZE SPC065        INTERVALS,                                     F2308190
      07445 -3 00001 2 07500        TXL SPCTIN,2,1    GO TO ARRANGE TINFOR SEARCH, OR                F2308200
D     07446 -3 00000 0 07503 SPC060 TXL SPCSTO,0      TRA TO USE LIST. (DEC HAS TINFOR SEARCH INDIC) F2308210
      07447 -0 53400 2 07446 SPC065 LXD SPC060,2      RETURN HERE, TEST TINFOR                       F2308220
      07450 -3 00000 2 07474        TXL SPC120,2,0    LIST IND. IF ZERO, EXIT.                       F2308230
      07451 -0 53400 1 07473 SPC070 LXD SPC115,1      TO SET UP NEXT INTERVAL,                       F2308240
      07452  0 50000 1 06404        CLA DOTAGZ+5,1    OBTAIN INDEX OF LAST R2 AND                    F2308250
      07453  0 62200 0 07460        STD SPC100        STEP DOWN IN DOTAG BY USUAL                    F2308260
      07454  1 77767 1 07455 SPC080 TXI SPC090,1,-9   PROCEDURE UNTIL SOME DO IS                    F2308270
D     07455 -3 00000 1 07464 SPC090 TXL SPC110,1      FOUND NOT IN R2, OR UNTIL (DEC HAS DOTAG TX)   F2308280
      07456  0 50000 1 06404        CLA DOTAGZ+5,1    DOTAG EXHAUSTED. IF DO FOUND                   F2308290
      07457 -0 73400 2 00000        PDX 0,2           NOT IN R2, SET A AND GO TO TEST                F2308300
D     07460  3 00000 2 07454 SPC100 TXH SPC080,2      IF THIS DO IS IN R1. (DEC HAS LEV LAST R2 DO)  F2308310
      07461  0 50000 0 06660        CLA NEXTA         IF IT IS, NEWR2 WILL BE FOUND                  F2308320
      07462  0 60100 0 06662        STO A             OR EXIT MADE TO SPC110.                        F2308330
D     07463 -3 00000 0 07423 SPC105 TXL SPC050,0                                                     F2308340
      07464  0 50000 0 06660 SPC110 CLA NEXTA         THIS IS SETUP FOR LAST                         F2308350
      07465  0 60100 0 06662        STO A             INTERVAL. FOR A, USE                           F2308360
      07466  0 50000 0 06661        CLA LASTB         CONTENTS OF NEXTA. FOR B,                      F2308370
      07467  0 60100 0 06663        STO B             USE BETA OF R1, FOUND IN                       F2308380
      07470 -0 53400 2 07446        LXD SPC060,2      LASTB. OBTAIN TINFOR, STOTAG                   F2308390
      07471  0 50000 0 06665        CLA L(0)          IND, AND SET LOCATION OF                       F2308400
      07472  0 62200 0 07446        STD SPC060        INDICATOR TO ZERO. GO TO                       F2308410
D     07473 -3 00000 0 07442 SPC115 TXL SPC058,0      TINFOR OR TRASTO. (DEC HAS DOTAG IX)           F2308420
      07474 -0 53400 4 07463 SPC120 LXD SPC105,4      EXIT, ALL STORES DONE, OR,                     F2308430
      07475  0 02000 4 00001        TRA 1,4           SEARCH MADE, T NOT FOUND.                      F2308440
      07476 -0 53400 4 07463 SPC130 LXD SPC105,4      EXIT,T FOUND                                   F2308450
      07477  0 02000 4 00002        TRA 2,4           IN SOME INTERVAL                               F2308460
      07500  0 07400 4 07572 SPCTIN TSX TINFXX,4      GO TO SEARCH FORTAG                            F2308470
      07501  0 02000 0 07476        TRA SPC130        T FOUND                                        F2308480
      07502  0 02000 0 07447        TRA SPC065        T NOT FOUND                                    F2308490
      07503  0 50000 0 06663 SPCSTO CLA B            FOR TRASTO, E2 AND E3 ARE                      F2308500
      07504  0 77100 0 00022        ARS 18            ALREADY SET UP. COLLECT                        F2308510
      07505  0 40000 0 06662        ADD A             A AND B INTO E1 WORD,                          F2308520
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     07506  0 60100 0 07656         STO E1            PUT TRASTO INDICATOR IN                          F2308530
     07507  0 50000 0 07512         CLA SPCKEY        ACC. AND                                         F2308540
     07510  0 07400 4 07620         TSX LIST,4        TSX TO LISTING ROUTINE.                          F2308550
     07511  0 02000 0 07447         TRA SPC065        ON RETURN, GO TO TEST FINISH.                    F2308560
A    07512  0 00000 0 00000 SPCKEY HTR                STORAGE FOR TABLEKEY                             F2308570
                                      SUBROUTINE TRAWRD                                                F2308580
     07513 -0 63400 4 07545 TRAWRD SXD TRAW65,4                                                         F2308590
     07514  0 50000 0 06665         CLA L(0)                                                           F2308600
     07515  0 60100 0 06657         STO TRABIT        INITIALIZE.                                      F2308610
     07516  0 50000 1 06404         CLA DOTAGZ+5,1    LEVEL OF DOTAG                                   F2308620
     07517  0 62200 0 07526         STD TRAW30                                                         F2308630
     07520 -0 50000 1 06406 TRAW10 CAL DOTAGZ+7,1    OBTAIN T2 WORD.                                  F2308640
     07521 -0 60200 0 06657         ORS TRABIT        OR INTO TRABIT                                   F2308650
     07522  1 77767 1 07523         TXI TRAW20,1,-9   TAKE NEXT DO                                     F2308660
D    07523 -3 00000 1 07546 TRAW20 TXL TRAW70,1      IF NONE, EXIT (DEC HAS DOTAG IX)                 F2308670
     07524  0 50000 1 06404         CLA DOTAGZ+5,1    ODTAIN L WORD                                    F2308680
     07525 -0 73400 4 00000         PDX 0,4           PUT L IN XRC.                                    F2308690
D    07526 -3 00000 4 07546 TRAW30 TXL TRAW70,4      EXIT IF DO IS NOT INRANGE R1 (DEC HAS LEV DO)    F2308700
     07527 -3 00001 2 07520         TXL TRAW10,2,1    IF COMPLETE TEST, GO BACK (NO TRAWORD SKIP)      F2308710
     07530  0 50000 1 06400 TRAW35 CLA DOTAGZ+1,1    IF INCOMPLETE TEST, IS THIS A                    F2308720
     07531  0 40200 0 06633         SUB RSYM2         DO TO BE SKIPPED                                 F2308730
     07532  0 10000 0 07536         TZE TRAW38        IF SO, GO TO TRAW38                              F2308740
     07533  0 50000 1 06400         CLA DOTAGZ+1,1    TEST RSYM3                                       F2308750
     07534  0 40200 0 06634         SUB RSYM3         IF NO SKIP                                       F2308760
     07535 -0 10000 0 07520         TNZ TRAW10        GO BACK.                                         F2308770
     07536  0 50000 1 06404 TRAW38 CLA DOTAGZ+5,1    THIS DO IS TO BE SKIPPED.                        F2308780
     07537  0 62200 0 07544         STD TRAW60        PUT LEVEL OF THIS DO IN TEST INSTR.              F2308790
     07540  1 77767 1 07541 TRAW40 TXI TRAW50,1,-9   TAKE NEXT DO IF ANY                              F2308800
D    07541 -3 00000 1 07546 TRAW50 TXL TRAW70,1      IF NOT, EXIT. OTHERWISE, (DEC HAS DO IX)         F2308810
     07542  0 50000 1 06404         CLA DOTAGZ+5,1    ODTAIN L WORD                                    F2308820
     07543 -0 73400 4 00000         PDX 0,4           PUT L IN XRC                                     F2308830
D    07544  3 00000 4 07540 TRAW60 TXH TRAW40,4      IF DO IS IN RANGE OF R2, GO BACK.                F2308840
D    07545 -3 00000 0 07526 TRAW65 TXL TRAW30,0      OTHERWISE, GO TO TRAW30                          F2308850
     07546 -0 53400 4 07545 TRAW70 LXD TRAW65,4                                                         F2308860
     07547  0 50000 0 06672         CLA L(36)         OBTAIN 36 IN DECREMENT                           F2308870
     07550  0 40200 0 06645         SUB TL2           36-TL2 (LEVEL OF DOTAG)                          F2308880
     07551  0 77100 0 00022         ARS 18            IN ADDRESS                                       F2308890
     07552  0 62100 0 07561         STA TRAW90        INITIALIZE SHIFT                                 F2308900
     07553  0 50000 0 06645         CLA TL2           OBTAIN TL2                                       F2308910
     07554  0 77100 0 00022         ARS 18            IN ADDRESS                                       F2308920
     07555  0 62100 0 07560         STA TRAW80        INITIALIZE SHIFT                                 F2308930
     07556  0 50000 0 06665         CLA L(0)          ACC CONTAINS ZERO                                F2308940
     07557  0 56000 0 06702         LDQ 35ONES        MQ CONTAINS ALL ONES                             F2308950
A    07560  0 76300 0 00000 TRAW80 LLS               PUT TL2 ONES IN ACC (LEV. DOTAG)                 F2308960
A    07561  0 76700 0 00000 TRAW90 ALS               POSITION ONES IN ACC                             F2308970
     07562 -0 32000 0 06657         ANA TRABIT        AND IN TRANSFER BITS                             F2308980
     07563  0 02000 4 00001         TRA 1,4           GO BACK TO CALLING INSTR PLUS ONE.               F2308990
                                      SUBROUTINES TINFOR AND TINFXX                                    F2309000
     07564  0 50000 1 06377 TINFOR CLA DOTAGZ,1      C(XRA)=INDEX OF DO TO BE                         F2309010
     07565  0 73400 1 00000         PAX 0,1           SEARCHED. SEPARATE ALPHA                         F2309020
     07566 -0 32000 0 06704         ANA DECMSK        AND BETA                                         F2309030
     07567  0 60100 0 06662         STO A             AND STORE IN A                                   F2309040
     07570 -0 75400 1 00000         PXD 0,1                                                            F2309050
     07571  0 60100 0 06663         STO B             B                                                F2309060
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07572 -0 53400 1 06674 TINFXX LXD L(1500,1      PUT MAX FORTAG INDEX IN XRA                          F2309070
07573  0 50000 1 03670 TINF10 CLA FORTZ,1       OBTAIN FORTAG ENTRY                                  F2309080
07574 -0 32000 0 06704         ANA DECMSK       RETAIN FORMULA NUMBER ONLY                           F2309090
07575  0 34000 0 06662         CAS A            COMPARE ALPHA AND FORMULA NR.                        F2309100
07576  0 02000 0 07603         TRA TINF40       FOR. NR. GREATER THAN ALPHA. TRA.                    F2309110
07577  0 76100 0 00000         NOP              C(A) MAY BE SOME BETA FROM SPC, HENCE, NO HALT.      F2309120
07600  1 77777 1 07601 TINF20  TXI TINF30,1,-1  FOR. NR. LESS THAN ALPHA. GO                         F2309130
                                                BACK FOR NEXT FORTAG ENTRY                           F2309140
D 07601  3 00000 1 07573 TINF30 TXH TINF10,1     IF POSSIBLE. OTHERWISE, (DEC HAS FORTAG IX)          F2309150
07602  0 02000 4 00002         TRA 2,4          RETURN TO CALLING INSTR PLUS TWO.                    F2309160
07603  0 34000 0 06663 TINF40  CAS B            COMPARE FOR. NR. WITH BETA                           F2309170
07604  0 02000 4 00002         TRA 2,4          FOR. NR. GREATER THAN BETA, EXIT.                    F2309180
07605  0 76100 0 00000         NOP              FOR. NR. EQUAL TO OR                                 F2309190
07606  0 50000 1 03670         CLA FORTZ,1      LESS THAN BETA, OBTAIN FORTAG                        F2309200
07607  0 12000 0 07600         TPL TINF20       TAG AND COMPARE WITH SEARCH TAG.                     F2309210
07610 -0 32000 0 06703         ANA ADDMSK       I.F. NOT EQUAL, GO BACK FOR NEXT TAG                 F2309220
07611  0 40200 0 06626         SUB TAG                                                               F2309230
07612 -0 10000 0 07600         TNZ TINF20       IF EQUAL, RETURN TO CALLING                          F2309240
07613  0 02000 4 00001         TRA 1,4          INSTR PLUS ONE. XRA CONTAINS IX IN FORTAG OF         F2309250
                                                FIRST TAG FOUND                                      F2309260
                 06721         ORG 3537                                                              F2309270
                                  MASTER RECORD CARD = FN043                                         F2309275
06721 -0 53400 1 00733 BL3C    LXD FORTAG-1,1    IF FORTAG IS EMPTY,                                  F2309280
06722  3 02733 1 07164         TXH WRTIRV,1,1499 GO TO WRITE IRV                                     F2309290
                                  READ IN TSXCOM                                                     F2309300
06723 -0 53400 4 06671 RDTSX   LXD L(6),4        INITIALIZE ERROR COUNTER                             F2309312
06724  0 50000 0 07667 RTSX10  CLA LADDS        COMPUTE NUMBER                                       F2309320
06725  0 40200 0 06716         SUB TSXORG       OF TSXCOM ENTRIES                                    F2309330
06726  0 73400 1 00000         PAX 0,1          AND                                                  F2309340
06727 -0 63400 1 00030         SXD TCOM-1,1     SAVE.                                                F2309350
06730  0 10000 0 06763         TZE RTSX60       IF EMPTY, GO TO EXIT.                                F2309360
06731  0 40000 0 06717         ADD TCOMAD       OTHERWISE, COMPUTE TERMINAL CORE ADDRESS             F2309370
06732  0 62100 0 06735         STA RTSX20       AND INITIALIZE CPY ADDRESS THEREWITH.                F2309380
06733  0 76200 0 00303         RDS 195          DRUM 3                                               F2309390
06734  0 46000 0 06716         LDA TSXORG       ORIG OF TSXCOM TABLES ON DRUM                        F2309400
06735  0 70000 1 00000 RTSX20  CPY 0,1          READ TSXCOM (ADD HAS TERM CORE ADD TSXCOM)           F2309410
06736  2 00001 1 06735         TIX RTSX20,1,1   TABLES .                                             F2309420
06737 -0 53400 1 00030         LXD TCOM-1,1     COMPUTE                                              F2309430
06740 -0 75400 1 00000         PXD 0,1          NUMBER  OF                                           F2309440
06741 -0 76000 0 00003         SSM              UNFILLED TSXCOM TABLE                                F2309450
06742  0 40000 0 06720         ADD TCOMAX       SPACES,                                              F2309460
06743  0 60100 0 00030         STO TCOM-1       SAVE,                                                F2309470
06744  0 62200 0 06756         STD RTSX30       AND INITIALIZE.                                      F2309480
06745 -0 53400 1 06720         LXD TCOMAX,1     COMPUTE                                              F2309490
06746 -0 50000 1 01407 RTSX25  CAL TCOMZ,1      CHECK                                                F2309500
06747  0 36100 1 01410         ACL TCOMZ+1,1    SUM FOR EACH TABLE ENTRY                             F2309510
06750  0 60200 0 06760         SLW RTSX40       AND COMPARE                                          F2309520
06751  0 50000 0 06760         CLA RTSX40       AGAINST                                              F2309530
06752  0 40200 1 01411         SUB TCOMZ+2,1    GIVEN SUM.                                           F2309540
06753  0 76100 0 00000         NOP                                                                   F2309550
06754 -0 10000 0 06761         TNZ RTSX50       ERROR.                                               F2309560
06755  1 77775 1 06756         TXI RTSX30,1,-3                                                       F2309570
D 06756  3 00000 1 06746 RTSX30 TXH RTSX25,1     IF COMPLETE,  (DEC HAS UNUSED TSXCOM BUFFER)         F2309580
06757  0 02000 0 06766         TRA SORT         GO TO SORT.                                          F2309590
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A     06760   0 00000 0 00000 RTSX40 HTR                                                          F2309600
      06761   2 00001 4 06724 RTSX50 TIX RTSX10,4,1     GO BACK TO REREAD                          F2309610
      06762   0 07400 4 00004        TSX DIAG,4  READING TSXCOM FROM DRUM3.  ERROR. GO TO DIAGNOSTIC. F2309625
      06763   0 50000 0 06720 RTSX60 CLA TCOMAX         IF TSXCOM EMPTY PUT MAX NO                 F2309630
      06764   0 60100 0 00030        STO TCOM-1         TSXCOM ENTRIES IN KEY WORD AND             F2309640
      06765   0 02000 0 07053        TRA IRVSRT         EXIT.                                      F2309650
                                     SORT TSXCOM                                                   F2309660
      06766  -0 76000 0 00144 SORT   MSE LIGHT          TURN OFF LIGHT                             F2309670
      06767   0 76100 0 00000        NOP                                                           F2309680
      06770  -0 53400 1 00030        LXD TCOM-1,1       INITIALIZE                                 F2309690
      06771   1 00003 1 06772        TXI SORT10,1,3                                                F2309700
      06772   3 01353 1 07034 SORT10 TXH MAKIRV,1,747   IS THERE ONLY ONE ENTRY IN TSXCOM.         F2309710
      06773  -0 63400 1 07025        SXD SORT80,1       INITIALIZE                                 F2309720
      06774  -0 53400 1 06720 SORT20 LXD TCOMAX,1                                                  F2309730
      06775   0 50000 1 01407 SORT30 CLA TCOMZ,1        OBTAIN FIRST WORD, FIRST ENTRY TSXCOM (ALPHA) F2309740
      06776   0 34000 1 01412        CAS TCOMZ+3,1      COMPARE IT AGAINST SECOND ENTRY            F2309750
      06777   0 02000 0 07007        TRA SORT50         OUT OF ORDER , REARRANGE TOTAL TSXCOM ENTRY. F2309760
      07000   0 02000 0 07002        TRA SORT40         IN ORDER BY FIRST WORDS. GO CHECK 2ND WORDS. F2309770
      07001   0 02000 0 07024        TRA SORT70         ENTRIES IN ORDER, IGNORE.                  F2309780
      07002   0 50000 1 01410 SORT40 CLA TCOMZ+1,1      ALRIGHT- FIRST WORDS IN ORDER BUT          F2309790
      07003   0 34000 1 01413        CAS TCOMZ+4,1      HOW DO THEIR 2ND WORDS COMPARE.            F2309800
      07004   0 02000 0 07013        TRA SORT60         IF OUT OF ORDER, GO TO REARRANGE.          F2309810
      07005   0 02000 0 07024        TRA SORT70         IF EQUAL OR                                F2309820
      07006   0 02000 0 07024        TRA SORT70         IF IN ORDER, IGNORE.                       F2309830
      07007   0 50000 1 01407 SORT50 CLA TCOMZ,1        FIRST ENTRY GREATER, OUT OF ORDER 1ST WORDS. F2309840
      07010   0 56000 1 01412        LDQ TCOMZ+3,1      INTERCHANGE THE FIRST WORDS                F2309850
      07011   0 60100 1 01412        STO TCOMZ+3,1      OF  THE                                    F2309860
      07012  -0 60000 1 01407        STQ TCOMZ,1        TWO ENTRIES.                               F2309870
      07013   0 50000 1 01410 SORT60 CLA TCOMZ+1,1      INTERCHANGE                                F2309880
      07014   0 56000 1 01413        LDQ TCOMZ+4,1      THE                                        F2309890
      07015   0 60100 1 01413        STO TCOMZ+4,1      SECOND                                     F2309900
      07016  -0 60000 1 01410        STQ TCOMZ+1,1      AND                                        F2309910
      07017   0 50000 1 01411        CLA TCOMZ+2,1      THIRD                                      F2309920
      07020   0 56000 1 01414        LDQ TCOMZ+5,1      WORDS                                      F2309930
      07021   0 60100 1 01414        STO TCOMZ+5,1      OF THE                                     F2309940
      07022  -0 60000 1 01411        STQ TCOMZ+2,1      TWO ENTRIES.                               F2309950
      07023   0 76000 0 00144        PSE LIGHT          INDICATE OUT OF ORDER ENTRY HAS BEEN FOUND. F2309960
      07024   1 77775 1 07025 SORT70 TXI SORT80,1,-3    BUMP FOR NEXT COMPARISON.                  F2309970
D     07025   3 00000 1 06775 SORT80 TXH SORT30,1       IS PASS COMPLETE. (DEC HAS UNUSED TSXCOM BUFF+3F2309980
      07026  -0 76000 0 00144        MSE LIGHT          YES. WAS OUT OF ORDER ENTRY APPREHENDED .  F2309990
      07027   0 02000 0 07034        TRA REMOVE         NO. GO TO MAKIRV.                          F2310000
      07030  -0 53400 1 07025        LXD SORT80,1       YES. NUMBER OF COMPARISONS                 F2310010
      07031   1 00003 1 07032        TXI SORT90,1,3     MADE IS DECREASED BY ONE                   F2310020
      07032  -0 63400 1 07025 SORT90 SXD SORT80,1       ON EACH PASS.                              F2310030
      07033   0 02000 0 06774        TRA SORT20                                                    F2310040
                                     BUILD UP TABLE IRV FROM TSXCOM                                F2310050
      07034  -0 53400 2 06664 MAKIRV LXD IRVXX,2            (IX VALUE FOR NEXT IRV ENTRY)         F2310060
      07035  -0 53400 1 00030        LXD TCOM-1,1                                                  F2310070
      07036  -0 63400 1 07051        SXD MAK50,1                                                   F2310080
      07037  -0 53400 1 06720        LXD TCOMAX,1                                                  F2310090
      07040  -0 50000 1 01410 MAK10  CAL TCOMZ+1,1      GET SECOND WORD OF TSXCOM.                 F2310100
      07041  -0 32000 0 06705        ANA PREMSK         PULL OUT PREFIX.                           F2310110
      07042  -0 10000 0 07050        TNZ MAK40          IS ANYTHING THERE.                         F2310120
      07043   0 50000 1 01410        CLA TCOMZ+1,1                                                 F2310130
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07044  3 00000 2 07046          TXH MAK20,2,0                                                  F2310140
07045  0 07400 4 00004          TSX DIAG,4  TABLE IRV BUFFER FULL.      ERROR. GO TO DIAGNOSTIC. F2310155
07046  0 60100 2 06625 MAK20    STO IRVZ,2        STORE IRV.                                   F2310160
07047  1 77777 2 07050          TXI MAK40,2,-1                                                 F2310170
07050  1 77775 1 07051 MAK40    TXI MAK50,1,-3                                                 F2310180
D 07051  3 00000 1 07040 MAK50    TXH MAK10,1       IS TSXCOM TABLE EXHAUST (DEC HAS UNUSED TSXCOM)F2310190
07052 -0 63400 2 06664 MAK60    SXD IRVXX,2       YES. SAVE INDICATION OF SIZE OF IRV.         F2310200
                                  SORT TABLE IRV.                                              F2310210
07053 -0 53400 1 06664 IRVSRT   LXD IRVXX,1                                                    F2310220
07054  1 00001 1 07055          TXI IRVS10,1,1                                                 F2310230
07055  3 00225 1 07120 IRVS10   TXH WRTTSX,1,149  IS THERE BUT ONE ENTRY IN IRV.               F2310240
07056 -0 63400 1 07067          SXD IRVS50,1                                                   F2310250
07057 -0 76000 0 00144          MSE LIGHT         TURN OFF LITE.                               F2310260
07060  0 76100 0 00000          NOP                                                            F2310270
07061 -0 53400 1 06714 IRVS20   LXD IRVMAX,1      INITIALIZE                                   F2310280
07062  0 50000 1 06625 IRVS30   CLA IRVZ,1        GET FIRST IRV ENTRY AND                      F2310290
07063  0 34000 1 06626          CAS IRVZ+1,1      COMPARE AGAINST ITS NEIGHBOR.                F2310300
07064  0 02000 0 07073          TRA IRVS60        OUT OF ORDER. GO TO REARRANGE.               F2310310
07065  0 76100 0 00000          NOP                                                            F2310320
07066  1 77777 1 07067 IRVS40   TXI IRVS50,1,-1   BUMP FOR NEXT COMPARISON                     F2310330
D 07067  3 00000 1 07062 IRVS50   TXH IRVS30,1      IS PASS COMPLETE  (DEC HAS IRV INDEX)        F2310340
07070 -0 76000 0 00144          MSE LIGHT         YES . WAS OUT OF ORDER NABBED.               F2310350
07071  0 02000 0 07100          TRA DELETE        NO. SORT COMPLETE.                           F2310360
07072  0 02000 0 07061          TRA IRVS20        YES. MAKE ANOTHER PASS.                      F2310370
07073  0 56000 1 06626 IRVS60   LDQ IRVZ+1,1      REARRANGE                                    F2310380
07074  0 60100 1 06626          STO IRVZ+1,1      THE OUT OF ORDER                             F2310390
07075 -0 60000 1 06625          STQ IRVZ,1        IRV ENTRIES AND                              F2310400
07076  0 76000 0 00144          PSE LIGHT         INDICATE SAME.                               F2310410
07077  0 02000 0 07066          TRA IRVS40                                                     F2310420
                                  DELETE DUPE ENTRIES FROM TABLE IRV                           F2310430
07100 -0 53400 1 06664 DELETE   LXD IRVXX,1                                                    F2310440
07101 -0 63400 1 07112          SXD DEL30,1       INITIALIZE                                   F2310450
07102 -0 53400 3 06714          LXD IRVMAX,3      INITIALIZE CANDIDATE IR AND STANDARD IR      F2310460
07103  2 00001 2 07104          TIX DEL10,2,1     BUMP CANDIDATE IR.                           F2310470
07104  0 50000 2 06625 DEL10    CLA IRVZ,2        GET CANDIDATE.                               F2310480
07105  0 34000 1 06625          CAS IRVZ,1        COMPARE AGAINST STANDARD.                    F2310490
07106  0 02000 0 07116          TRA DEL40         CANDIDATE DOES NOT MATCH STANDARD.           F2310500
07107  0 02000 0 07111          TRA DEL20         CAND MATCHES STAND. IGNORE ITS REINSTATEMENT. F2310510
07110  0 07400 4 00004          TSX DIAG,4  IRV UNORDERED DESPITE SORT. ERROR. GO TO DIAGNOSTIC. F2310525
07111  1 77777 2 07112 DEL20    TXI DEL30,2,-1    BUMP FOR NEXT CANDIDATE.                     F2310530
D 07112  3 00000 2 07104 DEL30    TXH DEL10,2       IS IT END OF PASS.  (DEC HAS IRV INDEX)      F2310540
07113  1 77777 1 07114          TXI DEL35,1,-1    YES. BUMP STANDARD IR.                       F2310550
07114 -0 63400 1 06664 DEL35    SXD IRVXX,1       SAVE NEW EDITED-IRV TABLE-SIZE INDICATION.   F2310560
07115  0 02000 0 07120          TRA WRTTSX                                                     F2310570
07116  0 60100 1 06626 DEL40    STO IRVZ+1,1      NOT DUPE, PUT CANDIDATE BACK.                F2310580
07117  1 77777 1 07111          TXI DEL20,1,-1    AND INSTALL IT AS STANDARD.                  F2310590
                                  WRITE EDITED TSXCOM TABLE ON DRUM                            F2310600
07120  0 76600 0 00303 WRTTSX   WRS ADRUM                                                      F2310610
07121 -0 53400 1 00030          LXD TCOM-1,1      INITIALIZE                                   F2310620
07122 -0 63400 1 07133          SXD WTSX30,1                                                   F2310630
07123 -0 53400 1 06720          LXD TCOMAX,1                                                   F2310640
07124 -0 75400 0 00000          PXD 0,0                                                        F2310650
07125 -0 53400 2 06665          LXD L(0),2                                                     F2310660
07126  0 02000 0 07133          TRA WTSX30                                                     F2310670
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07127  0 36100 1 01407 WTSX10 ACL  TCOMZ,1        COMPUTE                                                  F2310680
07130  0 36100 1 01410         ACL  TCOMZ+1,1      CHECK SUM OF ALL ENTRIES                                 F2310690
07131  1 77775 1 07132         TXI  WTSX20,1,-3                                                             F2310700
07132  1 00002 2 07133 WTSX20  TXI  WTSX30,2,2                                                              F2310710
D 07133  3 00000 1 07127 WTSX30  TXH  WTSX10,1      IS THAT ALL OF TSXCOM. (DEC HAS TSXCOM LIMIT)            F2310720
07134  0 60200 0 07163         SLW  WTSX60         STORE CHECK SUM.                                         F2310730
07135 -0 53400 1 00030         LXD  TCOM-1,1       COMPUTE                                                  F2310740
07136 -0 75400 1 00000         PXD  0,1            NUMBER                                                   F2310750
07137 -0 76000 0 00003         SSM                 OF                                                       F2310760
07140  0 40000 0 06720         ADD  TCOMAX         TSXCOM                                                   F2310770
07141 -0 73400 1 00000         PDX  0,1            ENTRIES.                                                 F2310780
07142  0 77100 0 00022         ARS  18             COMPUTE CORE                                             F2310790
07143  0 40000 0 06717         ADD  TCOMAD         TERMINUS                                                 F2310800
07144  0 62100 0 07155         STA  WTSX40         AND INITIALIZE CPY ADDRESS FOR FIRST WORD,               F2310810
07145  0 40000 0 06675         ADD  L(1)A          FOR SECOND                                               F2310820
07146  0 62100 0 07156         STA  WTSX50         WORD.                                                    F2310830
07147 -0 75400 2 00000         PXD  0,2                                                                     F2310840
07150  0 60100 0 00030         STO  TCOM-1         NOW CONTAINS NO OF TSXCOM ENTRIES MINUS C.S.             F2310850
07151  0 46000 0 06715         LDA  TCOMOR                                                                  F2310860
07152  0 70000 0 00030         CPY  TCOM-1         CPY WORD COUNT                                           F2310870
07153  0 70000 0 00030         CPY  TCOM-1         ONTO DRUM                                                F2310880
07154 -3 00000 2 07164         TXL  WRTIRV,2,0     IF EMPTY, EXIT.                                          F2310890
07155  0 70000 1 00000 WTSX40  CPY  0,1            WRITE TSXCOM ENTRIES                                     F2310900
07156  0 70000 1 00000 WTSX50  CPY  0,1            ONTO DRUM                                                F2310910
07157  2 00003 1 07155         TIX  WTSX40,1,3                                                              F2310920
07160  0 70000 0 07163         CPY  WTSX60         CHECKSUM                                                 F2310930
07161  0 70000 0 07163         CPY  WTSX60                                                                  F2310940
07162  0 02000 0 07164         TRA  WRTIRV                                                                  F2310950
A 07163  0 00000 0 00000 WTSX60  HTR                 C.S. STORAGE                                             F2310960
                                WRITE EDITED TABLE IRV ON DRUM                                            F2310970
07164  0 76600 0 00303 WRTIRV  WRS  ADRUM                                                                   F2310980
07165 -0 53400 1 06664         LXD  IRVXX,1                                                                 F2310990
07166 -0 63400 1 07173         SXD  WIRV20,1       INITIALIZE TEST INSTR.                                   F2311000
07167 -0 75400 0 00000         PXD  0,0                                                                     F2311010
07170 -0 53400 1 06714         LXD  IRVMAX,1                                                                F2311020
07171  0 36100 1 06625 WIRV10  ACL  IRVZ,1         COMPUTE CHECK SUM.                                       F2311030
07172  1 77777 1 07173         TXI  WIRV20,1,-1                                                             F2311040
D 07173  3 00000 1 07171 WIRV20  TXH  WIRV10,1      IS IRV DONE FOR. (DEC HAS IRV IX)                        F2311050
07174  0 60200 0 07217         SLW  WIRV40         YES. SAVE C.S.                                           F2311060
07175 -0 53400 1 06664         LXD  IRVXX,1        COMPUTE                                                  F2311070
07176 -0 75400 1 00000         PXD  0,1            NUMBER                                                   F2311080
07177 -0 76000 0 00003         SSM                 OF                                                       F2311090
07200  0 40000 0 06714         ADD  IRVMAX         IRV ENTRIES                                              F2311100
07201  0 60100 0 06664         STO  IRVXX          AND SAVE.                                                F2311110
07202 -0 73400 1 00000         PDX  0,1            COMPUTE                                                  F2311120
07203  0 77100 0 00022         ARS  18             CORE TERMINUS                                            F2311130
07204  0 40000 0 06713         ADD  IRVAD          OF IRV.                                                  F2311140
07205  0 62100 0 07212         STA  WIRV30         INITIALIZE CPY.                                          F2311150
07206  0 46000 0 06712         LDA  IRVORG                                                                  F2311160
07207  0 70000 0 06664         CPY  IRVXX          WRITE WORD                                               F2311170
07210  0 70000 0 06664         CPY  IRVXX          COUNT.                                                   F2311180
07211 -3 00000 1 07220         TXL  END,1,0        EXIT IF IRV EMPTY.                                       F2311190
07212  0 70000 1 00000 WIRV30  CPY  0,1            WRITE IRV.                                               F2311200
07213  2 00001 1 07212         TIX  WIRV30,1,1                                                              F2311210
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     07214  0 70000 0 07217         CPY WIRV40        WRITE                                          F2311220
     07215  0 70000 0 07217         CPY WIRV40        CHECK SUM.                                     F2311230
     07216  0 02000 0 07220         TRA END                                                          F2311240
A    07217  0 00000 0 00000 WIRV40  HTR               C.S. STORAGE                                   F2311250
     07220  0 76600 0 00303 END     WRS 195           WRITE NR OF WDS IN TRASTO ON DRUM.             F2311260
     07221  0 50000 0 07670         CLA LADDS+1       ORIGIN PLUS NR OF WDS IN TRASTO                F2311270
     07222  0 40200 0 07232         SUB L(304A        LESS ORIGIN OF TRASTO                          F2311280
     07223  0 60100 0 07230         STO ENDES                                                        F2311290
     07224  0 46000 0 07231         LDA L(302A                                                       F2311300
     07225  0 70000 0 07230         CPY ENDES                                                        F2311310
     07226  0 70000 0 07230         CPY ENDES                                                        F2311320
     07227  0 02000 0 07616         TRA NORMRT         NORM RET MONITOR. GO TO SPACE TAPE 1          F2311335
A    07230  0 00000 0 00000 ENDES   HTR                                                              F2311340
     07231  0 00000 0 00456 L(302A  HTR 302                                                          F2311350
     07232  0 00000 0 00460 L(304A  HTR 304                                                          F2311360
                      77777    TOP  EQU 32767                                                        F2311365
                      00304 TAUDRM  EQU 196                                                          F2311370
                      00303 ADRUM   EQU 195                                                          F2311380
                      00302 BDRUM   EQU 194                                                          F2311390
                      00222 TAPE2   EQU 146                                                          F2311400
                      00223 TAPE3   EQU 147                                                          F2311410
                      00144 LIGHT   EQU 100           IF FORVAL EMPTY, LIGHT ON.                     F2311420
                      07034 REMOVE  SYN MAKIRV                                                       F2311430
                      06377 IRV     SYN DOTAGZ                                                       F2311440
                      00004 ONETCS  EQU 4                                                            F2311445
                      00004 DIAG    EQU 4                                                            F2311446
A                     00000         END                                                              F2311450
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1          REM BLOCK FOUR OF SECTION TWO.
1                                        BLOCK FOUR OF SECTION TWO.
                                            MASTER RECORD CARD = FN045                                  F2400000
                                         BLOCK 4                                                        F2400005
                                         THIS PART COMPILES THE SUBROUTINES WHICH COMPUTE               F2400010
                                         INDEX LOAD VALUES FOR PURE RELCONS.                            F2400020
                                         THE LOAD VALUE FOR SUBSCRIPTS (C1I,C2J,C3K) IS                 F2400030
                                         (C1I-1)+(C2D1J-D1)+(C3D1D2K-D1D2)+1                            F2400040
                                         TABLE IRV, PRODUCED BY BLOCK 3, GIVES A LIST OF THE            F2400050
                                         SUBROUTINES REQUIRED.                                          F2400060
                      00030          ORG 24                                                             F2400070
                      00030   CIB    BSS 100                                                            F2400080
                      00174   WRKSC  BSS 8                                                              F2400090
                      00204   BOB    BSS 152                                                            F2400100
                      00434   OR000  BSS 28                                                             F2400110
                      00450          ORG 296                                                            F2400120
M     00450 +010000000001     OR012  OCT 010000000001                                                   F2400130
M     00451 +060000000003     OR013  OCT 060000000003                                                   F2400140
                      00456          ORG 302                                                            F2400150
M     00456 +010000000002     OR018  OCT 010000000002                                                   F2400160
                      00466          ORG 310                                                            F2400170
M     00466 +010000000003     OR026  OCT 010000000003                                                   F2400180
      00467  0 00000 0 00000         HTR 0                                                              F2400190
      00470  0 50000 0 01430 START1  CLA L(1)              SAVE STATUS OF SENSE-LIGHT3                  F2400200
      00471 -0 76000 0 00143         MSE 99                SO THAT IT CAN BE USED                       F2400210
      00472  0 02000 0 00474         TRA START             IN THIS BLOCK.                               F2400220
      00473  0 60100 0 01415         STO SENSE1                                                         F2400230
      00474  0 07400 4 00752  START  TSX RDRM,4            READ TABLE IRV (BOB ALSO)                    F2400240
      00475  0 02000 0 00542         TRA FINISH+9          RETURN HERE IF NO ENTRIES.                   F2400250
      00476 -0 53400 1 01007         LXD 1CNT,1            LOAD IRA WITH NO. OF IRV ENTRIES             F2400260
      00477  0 07400 4 00710         TSX INITFX,4          FORM END TEST FOR FIXCON SEARCH              F2400270
      00500 -0 53400 2 01427         LXD L(0),2            BEGIN WITH FIRST TABLE BOB ENTRY.            F2400280
      00501  0 50000 2 00204 REPETE  CLA BOB,2             SELECT TABLE IRV ENTRY.                      F2400290
      00502  0 62100 0 01375         STA NAME1             PUT SUBCOM NAME IN NAME 1.                   F2400300
      00503  0 77100 0 00022         ARS 18                PUT TAU REFERENCE                            F2400310
      00504  0 62100 0 01376         STA TAG1              IN TAG1.                                     F2400320
      00505 -0 63400 2 01414  ENTRY  SXD BX,2                                                           F2400330
      00506 -0 63400 1 01413         SXD AX,1                                                           F2400340
      00507  0 07400 4 01143         TSX SUBCOM,4          READ TAU ENTRY FROM DRUM.                    F2400350
      00510  0 07400 4 00562         TSX COMPIL,4          COMPILE SUBROUTINE FRO COMPUTING             F2400360
      00511 -0 53400 2 01414         LXD BX,2              LOAD VALUE.                                  F2400370
      00512 -0 53400 1 01413         LXD AX,1                                                           F2400380
      00513  1 77777 2 00514         TXI TEST,2,-1         STEP DOWN COUNT THROUGH TABLE IRV.           F2400390
      00514 -2 00001 1 00531  TEST   TNX FINISH,1,1        END OF TABLE IRV.                            F2400400
      00515  0 50000 2 00204         CLA BOB,2             REDUNDANT.                                   F2400410
      00516  0 07400 4 00735         TSX LINKTR,4          COMPILE SUBROUTINE RETURN.                   F2400420
      00517  0 02000 0 00501         TRA REPETE                                                         F2400430
      00520  0 62100 0 01377         STA TAG2              THE INSTRUCTIONS FROM HERE                   F2400440
      00521  0 40200 0 01376         SUB TAG1              THROUGH                                      F2400450
      00522  0 10000 0 00527         TZE EQUAL             TRA ENTRY                                    F2400460
      00523  0 07400 4 00735         TSX LINKTR,4          ARE                                          F2400470
      00524  0 50000 0 01377         CLA TAG2              REDUNDANT.                                   F2400480
      00525  0 60100 0 01376         STO TAG1                                                           F2400490
      00526  0 02000 0 00505         TRA ENTRY                                                          F2400500
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00527   0 07400 4 00674  EQUAL  TSX  STOTP,4                                  F2400510
00530   0 02000 0 00513         TRA  TEST-1                                   F2400520
00531   0 07400 4 00735 FINISH  TSX  LINKTR,4   FORM LAST SUBROUTINE RETURN.   F2400530
00532   0 50000 0 01071         CLA  FC08+1     FIXCON WORD COUNT             F2400540
00533   0 76600 0 00302         WRS  194                                      F2400550
00534  -0 32000 0 01424         ANA  DECMSK     ADJUST FIXCON WDRDCT          F2400560
00535   0 40000 0 01421         ADD  L1DEC                                    F2400570
00536   0 77100 0 00021         ARS  17         WRITE FIXCON WORDCT AND       F2400580
00537   0 60100 0 01401         STO  AD1        ITS CHECKSUM ON DRUM, IN      F2400590
00540   0 70000 0 01401         CPY  AD1        ITS ORIGINAL POSITION, AT THE F2400600
00541   0 70000 0 01401         CPY  AD1        BEGINNING.                    F2400610
00542   0 07400 4 01021         TSX  CITSP,4    WRITE CIT BUFFER ON TAPE      F2400620
00543   0 77000 0 00222         WEF  146        WRITE E.O.F. ONCIT TAPE       F2400630
00544   0 76600 0 00222         WRS  146                                      F2400640
00545   0 70000 0 01400         CPY  RECCNT     WRITE CIT RECORDCOUNT AND     F2400650
00546   0 70000 0 01400         CPY  RECCNT     CHECKSUM ON CIT TAPE          F2400660
00547   0 77000 0 00222         WEF  146        WRITE E.O.F. ON CIT TAPE.     F2400670
00550   0 53400 1 01400         LXA  RECCNT,1   BACKSPACE CIT TAPE            F2400680
00551   1 00003 1 00552         TXI  BST,1,3    UNTIL 1ST CIT RECORD          F2400690
00552   0 76400 0 00222  BST    BST  146        THAT THIS BLOCK COMPILED.     F2400700
00553   2 00001 1 00552         TIX  BST,1,1                                  F2400710
00554   0 76000 0 00140         PSE  96         TURN OFF ALL SENSE LIGHTS.    F2400720
00555   0 50000 0 01415         CLA  SENSE1     RESET LIGHT 3 TO THE STATUS   F2400730
00556   0 10000 0 00560         TZE  END        IT HELD BEFORE THE            F2400740
00557   0 76000 0 00143         PSE  99         COMMENCEMENT OF THIS BLOCK.   F2400750
00560   0 76200 0 00221  END    RDS  145        SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE
00561   0 02000 0 00004         TRA  4                                        F2400770
00562  -0 63400 1 01402 COMPIL  SXD  1XBOX,1                                 F2400780
00563  -0 63400 2 01403         SXD  2XBOX,2                                  F2400790
00564  -0 63400 4 01012         SXD  LINK1,4    SAVE LINKAGE                  F2400800
00565   0 76000 0 00140         PSE  96         TURN ALL SENSE LIGHTS OFF     F2400810
00566   0 07400 4 01240         TSX  COSE,4     OBTAIN NAME OF IOEFF. IN FIXCON. F2400820
00567   0 50000 0 01426         CLA  L(CLA)                                   F2400830
00570   0 60100 0 01051         STO  CIL01      THIS ROUTINE COMPILES         F2400840
00571   0 50000 0 00451         CLA  OR000+13   THE INSTRUCTION               F2400850
00572  -0 32000 0 01422         ANA  6ONES                                    F2400860
00573   0 60100 0 01052         STO  CIL02      CLA 6)+3,                     F2400870
00574   0 50000 0 01432         CLA  L(3)       WITH ZERO TAG,                F2400880
00575   0 76700 0 00022         ALS  18                                       F2400890
00576   0 60100 0 01053         STO  CIL03      TOGETHER WITH A SYMBOLIC      F2400900
00577   0 50000 0 01375         CLA  NAME1      LOCATION OF                   F2400910
00600  -0 50100 0 01420         ORA  BCD10                                    F2400920
00601   0 60100 0 01050 STOLOC  STO  CIL00      10)+NAME1                     F2400930
00602   0 07400 4 01015         TSX  CIT,4      ENTER INSTR. IN CIT           F2400940
00603   0 50000 0 01425         CLA  L(STO)                                   F2400950
00604   0 60100 0 01051         STO  CIL01      THIS ROUTINE COMPILES THE     F2400960
00605   0 50000 0 00466         CLA  OR000+26   INSTRUCTION.                  F2400970
00606   0 73400 1 00000         PAX  0,1                                      F2400980
00607  -0 32000 0 01422         ANA  6ONES      STO 1)+3                      F2400990
00610  -0 63400 1 01053         SXD  CIL03,1    THESE COMPILED INSTR. PLACE   F2401000
00611   0 60100 0 01052         STO  CIL02      1 IN ERASABLE STORAGE         F2401010
T  00612  -0 75400 0 00000         PXD  0                                     F2401020
00613   0 60100 0 01050         STO  CIL00                                    F2401030
00614   0 07400 4 01015         TSX  CIT,4      ENTER INSTR. IN CIT
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00615   0 50000 0 00175          CLA WRKSC+1      TEST 1ST SUBSCRIPT SYMBOL                F2401040
00616   0 10000 0 00630          TZE S2           NO SYMBOL PRESENT                        F2401050
00617   0 60100 0 00435          STO OR000+1      SAVE S1 FOR LXC ROUTINE                  F2401060
00620   0 53400 1 01433          LXA L(4),1       INDEX FOR NO. OF COMPILED INSTR.         F2401070
00621  -0 76000 0 00141          MSE 97           DOES 1ST COEFF EXCEED 1                  F2401080
00622   0 02000 0 00624          TRA COMP20       NO                                       F2401090
00623   1 00002 1 00626          TXI COMP30,1,2   YES. 6 INSTR. TO BE COMPILED             F2401100
00624   0 50000 0 01436 COMP20   CLA KLX02        NO. COMPILE INSTR TO COMPUTE             F2401110
00625   0 02000 0 00627          TRA COMP30+1     S1-1+(1 ALREADY IN ERASABLE)             F2401120
00626   0 50000 0 01437 COMP30   CLA KLX021       YES. COMPILE C1A1-1                      F2401130
00627   0 07400 4 01257          TSX LXC,4        +(1 AREADY IN ERASABLE)                  F2401140
00630   0 50000 0 00177  S2      CLA WRKSC+3                                               F2401150
00631   0 10000 0 00645          TZE S3           TRA IF NO 2ND SUBSC. SYMBOL              F2401160
00632   0 60100 0 00440          STO OR000+4      SAVE S2 FOR LXC ROUTINE.                 F2401170
00633   0 50000 0 00202          CLA WRKSC+6      OBTAIN SYMBOLIC ADDRESS                  F2401180
00634   0 07400 4 01054          TSX FIXCON,4     OF D1 IN FIXCON TABLE                    F2401190
00635   0 60100 0 00443          STO OR000+7      AND STORE FOR LXC ROUTINE.               F2401200
00636   0 53400 1 01435          LXA L(6),1       6 INSTR. TO BE COMPILED                  F2401210
00637  -0 76000 0 00142          MSE 98           IS COEFF. C2 GREATER THAN 1.             F2401220
00640   0 02000 0 00643          TRA COMP40       NO. COMPILE D1*S2-D1+                    F2401230
00641   0 50000 0 01440          CLA KLX03        YES. 8 INSTR. COMPILED TO                F2401240
00642   1 00002 1 00644          TXI COMP40+1,1,2 COMPUTE D1*S2*C3-D1+                     F2401250
00643   0 50000 0 01441 COMP40   CLA KLX031                                               F2401260
00644   0 07400 4 01257          TSX LXC,4        + THAT ALREADY COMPUTED.                 F2401270
00645   0 50000 0 00201  S3      CLA WRKSC+5      TEST FOR 3RD SUBSCRIPT                   F2401280
00646   0 10000 0 00664          TZE COMP55       SYMBOL.                                  F2401290
00647   0 60100 0 00461          STO OR000+21     STORE FOR LXC ROUTINE.                   F2401300
00650   0 56000 0 00202          LDQ WRKSC+6      COMPUTE D1*D2,                           F2401310
00651   0 20000 0 00203          MPY WRKSC+7      AND OBTAIN                               F2401320
00652   0 76700 0 00021          ALS 17           NAME FOR THIS CONSTANT FROM              F2401330
00653   0 07400 4 01054          TSX FIXCON,4     FIXCON, AND STORE FOR                    F2401340
00654   0 60100 0 00464          STO OR000+24     LXC ROUTINE.                             F2401350
00655   0 53400 1 01435          LXA L(6),1       6 INSTR. TO BE COMPILED                  F2401360
00656  -0 76000 0 00143          MSE 99           IS 3RD COEFF GREATER THAN 1.             F2401370
00657   0 02000 0 00662          TRA COMP50       NO. COMPILE D1D2*S3-D1D2+                F2401380
00660   0 50000 0 01442          CLA KLX05         YES, COMPILE D1D2*C3S3-D1D2+            F2401390
00661   1 00002 1 00663          TXI COMP50+1,1,2                                          F2401400
00662   0 50000 0 01443 COMP50   CLA KLX051                                               F2401410
00663   0 07400 4 01257          TSX LXC,4        + THAT ALREADY COMPUTED.                 F2401420
00664  -0 53400 4 01045 COMP55   LXD BBOX,4                                              F2401430
00665   1 00004 4 00666          TXI COMP55+2,4,4 STEP UP CIT BUFFER COUNT                 F2401440
00666  -0 63400 4 01045          SXD BBOX,4                                              F2401450
00667   0 07400 4 00674          TSX STOTP,4      COMPILE INSTRUCTION TO STORE             F2401460
00670  -0 53400 1 01402          LXD 1XBOX,1      LOADING VALUE FOR SUBSCRIPT COMB.        F2401470
00671  -0 53400 2 01402          LXD 1XBOX,2                                             F2401480
00672  -0 53400 4 01012          LXD LINK1,4                                             F2401490
00673   0 02000 4 00001          TRA 1,4          RETURN                                   F2401500
00674  -0 63400 4 01404  STOTP   SXD LINK2,4      ROUTINE COMPILES THE INSTR.              F2401510
00675   0 50000 0 01427          CLA L(0)         TO STORE THE RESULTS OF                  F2401520
00676   0 60100 0 01050          STO CIL00        THE SUBROUTINE COMPILATION IN            F2401530
00677   0 60100 0 01053          STO CIL03        THE TAG NAME.                            F2401540
00700   0 50000 0 01425          CLA L(STO)       THIS INSTRUCTION IS                      F2401550
00701   0 60100 0 01051          STO CIL01                                                 F2401560
00702   0 50000 0 01375          CLA NAME1        STO 12)+ NAME1                           F2401570
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00703 -0 50100 0 01417         ORA BCD14                                          F2401580
00704  0 60100 0 01052         STO CIL02                                          F2401590
00705  0 07400 4 01015         TSX CIT,4              ENTER IN CIT TABLE          F2401600
00706 -0 53400 4 01404         LXD LINK2,4                                        F2401610
00707  0 02000 4 00001         TRA 1,4                RETURN                      F2401620
                               ROUTINE FORMS END TEST FOR FIXCON SEARCH ROUTINE   F2401630
00710  0 53400 2 01434 INITFX  LXA L(5),2             LOAD READING ERROR COUNTER. F2401640
00711  0 76200 0 00302  C1     RDS 194                                            F2401650
00712  0 70000 0 01007         CPY 1CNT               READ FIXCON WD.CT           F2401660
00713  0 70000 0 01010         CPY 2CNT               AND ITS CHECKSUM            F2401670
00714  0 50000 0 01007         CLA 1CNT                                           F2401680
00715  0 40200 0 01010         SUB 2CNT               TEST FOR READING ERROR.     F2401690
00716 -0 10000 0 00733         TNZ C6                 ERROR.                      F2401700
00717  0 50000 0 01007         CLA 1CNT               IS FIXCON EMPTY.            F2401710
00720  0 10000 0 00725         TZE C4                 YES                         F2401720
00721  0 40200 0 01431         SUB L(2)                                           F2401730
00722  0 76700 0 00021         ALS 17                 STORE END TEST IN           F2401740
00723  0 62200 0 01071  C2     STD FC08+1             FIXCON SEARCH ROUTINE       F2401750
00724  0 02000 4 00001         TRA 1,4                RETURN TO MAIN ROUTINE.     F2401760
00725  0 76200 0 00302  C4     RDS 194                FIXCON IS EMPTY.            F2401770
00726  0 70000 0 01427         CPY L(0)               SET FIRST FOUR LOCATIONS    F2401780
00727  0 70000 0 01427         CPY L(0)               TO                          F2401790
00730  0 70000 0 01427         CPY L(0)               ZERO.                       F2401800
00731  0 70000 0 01427         CPY L(0)                                           F2401810
00732  0 02000 0 00723         TRA C2                 STORE ZERO AS END TEST      F2401820
00733  2 00001 2 00711  C6     TIX C1,2,1             ERROR. TRY TO READ 3 TIMES. F2401830
00734  0 07400 4 00004         TSX DIAG,4             DRUM 2 READING ERROR FIVE TIMES. F2401840
00735  0 50000 0 01427 LINKTR  CLA L(0)                                          F2401850
00736  0 60100 0 01050         STO CIL00              THIS ROUTINE COMPILES       F2401860
00737  0 60100 0 01052         STO CIL02              INSTRUCTION FOR RETURN      F2401870
00740  0 50000 0 00750         CLA L(TRA)             TO THE FORTRAN MASTER       F2401880
00741  0 60100 0 01051         STO CIL01              ROUTINE.                    F2401890
00742  0 50000 0 00751         CLA RELTG              TRA1,4                      F2401900
00743  0 60100 0 01053         STO CIL03                                          F2401910
00744 -0 63400 4 01012         SXD LINK1,4                                        F2401920
00745  0 07400 4 01015         TSX CIT,4              FENTER IN CIT TABLE.        F2401930
00746 -0 53400 4 01012         LXD LINK1,4                                        F2401940
00747  0 02000 4 00001         TRA 1,4                RETURN                      F2401950
00750  635121000000     L(TRA) BCD 1TRA000                                        F2401960
00751 +000001000004      RELTG OCT 000001000004                                   F2401970
                               ROUTINE READS AND CHECKS TABLE IRV (ALSO CALLED BOB) F2401980
00752  0 53400 1 01434 RDRM    LXA L(5),1             LOAD ERROR COUNTER.         F2401990
00753 -0 63400 4 01012         SXD LINK1,4            SAVE ENTRY PT.              F2402000
00754  0 76200 0 00303  RDS    RDS 195                                            F2402010
00755  0 53400 2 01013         LXA L(152),2                                       F2402020
00756  0 46000 0 01014         LDA L1304              DRUM ADDRESS OF TABLE IS 1304 F2402030
00757  0 70000 0 01007         CPY 1CNT               READ WD. CT. OF TABLE.      F2402040
00760  0 70000 0 01010         CPY 2CNT               READ WD. CT. CHECKSUM.      F2402050
00761  0 70000 2 00434  CPY    CPY BOB+152,2          READ 150 TABLE ENTRIES.     F2402060
00762  2 00001 2 00761         TIX CPY,2,1                                        F2402070
00763  0 50000 0 01007         CLA 1CNT               DOES WD. CT AGREE           F2402080
00764  0 40200 0 01010         SUB 2CNT               WITH ITS CHECKSUM.          F2402090
00765 -0 10000 0 01005         TNZ EROR               NO. ERROR.                  F2402100
00766 -0 53400 2 01007         LXD 1CNT,2             YES.                        F2402110
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      00767  3 00000 2 00772         TXH PROCED,2,0        IS TABLE EMPTY.                                F2402120
      00770 -0 53400 4 01012         LXD LINK1,4           YES. RETURN TO                                 F2402130
      00771  0 02000 4 00001         TRA 1,4               MAIN ROUTINE.                                  F2402140
T     00772 -0 75400 0 00000 PROCED  PXD 0                 TABLE IRV IS NOT EMPTY.                        F2402150
      00773 -0 73400 4 00000         PDX 0,4               INITIALISE IRC TO ZERO.                        F2402160
      00774  0 36100 4 00204 ACCSUM  ACL BOB,4             FORM LOGICAL CHECKSUM OF                       F2402170
      00775  1 77777 4 00776         TXI TIX,4,-1          ENTRIES                                        F2402180
      00776  2 00001 2 00774  TIX    TIX ACCSUM,2,1                                                       F2402190
      00777  0 60200 0 01011         SLW LOGWD                                                            F2402200
      01000  0 50000 0 01011         CLA LOGWD             COMPUTED CHECKSUM.                             F2402210
      01001  0 40200 4 00204         SUB BOB,4             DRUM CHECKSUM FOLLOWS LAST ENTRY.              F2402220
      01002 -0 10000 0 01005         TNZ EROR              NOT EQUAL                                      F2402230
      01003 -0 53400 4 01012         LXD LINK1,4           DRUM READ CORRECTLY.                           F2402240
      01004  0 02000 4 00002         TRA 2,4               RETURN                                         F2402250
      01005  2 00001 1 00754  EROR   TIX RDS,1,1           TRY TO READ THREE MORE TIMES.                  F2402260
      01006  0 07400 4 00004         TSX DIAG,4            DRUM 3 READING ERROR FIVE TIMES.               F2402270
A     01007  0 00000 0 00000  1CNT   HTR                                                                  F2402280
A     01010  0 00000 0 00000  2CNT   HTR                                                                  F2402290
A     01011  0 00000 0 00000  LOGWD  HTR                                                                  F2402300
A     01012  0 00000 0 00000  LINK1  HTR                                                                  F2402310
      01013  0 00000 0 00230 L(152)  HTR 152               LENGTH OF TABLE IRV, WD. CT., CHECKSUMS        F2402320
      01014  0 00000 0 02430 L1304   HTR 1304              ORG OF WD. CT OF TABLE IRV                     F2402330
                                         ROUTINE WRITES CIT BUFFER ON TAPE ,IF FULL. THEN ENTERS          F2402340
                                         NEW CIT INTO BUFFER.                                             F2402350
      01015 -0 63400 1 01046  CIT    SXD E2C,1                                                            F2402360
      01016 -0 63400 2 01047         SXD E3C,2                                                            F2402370
      01017 -0 53400 2 01045         LXD BBOX,2            COMPLEMENT OF CURRENT BUFFER CT.               F2402380
      01020  3 77634 2 01034         TXH CIT04,2,-100      BUFFER NEITHER FULL NOR ZERO                   F2402390
      01021 -0 53400 2 01045  CITSP  LXD BBOX,2                                                           F2402400
      01022 -3 00000 2 01034         TXL CIT04,2,0         TRA IF BUFFER CT ZERO                          F2402410
      01023  0 50000 0 01400         CLA RECCNT            BUFFER IS ALREADY FULL.                        F2402420
      01024  0 40000 0 01430         ADD L(1)              UPDATE CIT RECORD COUNT.                       F2402430
      01025  0 60100 0 01400         STO RECCNT                                                           F2402440
      01026  0 76600 0 00222         WRS 146                                                              F2402450
      01027  0 53400 1 01427         LXA L(0),1            WRITE CIT BUFFER ON TAPE.                      F2402460
      01030  0 70000 1 00030  CIT01  CPY CIB,1                                                            F2402470
      01031  1 77777 1 01032         TXI CIT02,1,-1                                                       F2402480
      01032  1 00001 2 01033  CIT02  TXI CIT03,2,1         STEP BUFFER COUNT BACK TO ZERO                 F2402490
      01033  3 00001 2 01030  CIT03  TXH CIT01,2,1         TEST FOR BUFFER END                            F2402500
      01034  0 53400 1 01433  CIT04  LXA L(4),1                                                           F2402510
      01035  0 50000 1 01054  CIT05  CLA CIL00+4,1         STORE 4WD CIT IN BUFFER.                       F2402520
      01036  0 60100 2 00030         STO CIB,2                                                            F2402530
      01037  1 77777 2 01040         TXI CIT07,2,-1        UPDATE CIT BUFFER COUNT                        F2402540
      01040  2 00001 1 01035  CIT07  TIX CIT05,1,1                                                        F2402550
      01041 -0 63400 2 01045         SXD BBOX,2            SAVE CIT BUFFER COUNT                          F2402560
      01042 -0 53400 1 01046         LXD E2C,1                                                            F2402570
      01043 -0 53400 2 01047         LXD E3C,2             RELOAD INDEX REGS.                             F2402580
      01044  0 02000 4 00001         TRA 1,4               RETURN                                         F2402590
      01045  0 00000 0 00000  BBOX   HTR 0                 CIT BUFFER CT. INITIALLY ZERO                  F2402600
A     01046  0 00000 0 00000  E2C    HTR                                                                  F2402610
A     01047  0 00000 0 00000  E3C    HTR                                                                  F2402620
                      01050  CIL00  BSS 1                 SYMBOLIC LOCN OF CIT                           F2402630
                      01051  CIL01  BSS 1                 OP.DAND DEC. OF CIT.                           F2402640
                      01052  CIL02  BSS 1                 SYMBOLIC ADDRESS OF CIT                        F2402650
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                    01053  CIL03 BSS 1                  REL. ADDRESS AND TAG.                          F2402660
                                     REQUIRED FIXCON IS IN ACC. WHEN THIS ROUTINE IS                  F2402670
                                     BEGUN. THE FIXCON TABLE IS SEARCHED AND IF FIXCON IS             F2402680
                                     NOT ALREADY THERE, IT IS ENTERED IN THE TABLE.                   F2402690
                                     (SEARCH IS MADE IN TWO PASSES, ONE FOR EVEN ENTRIES, ONE         F2402700
                                     FOR ODD, FOR TIMING PURPOSES.)EXIT WITH NAME OF ENTRY IN ACC.F2402710
    01054 -0 63400 1 01107 FIXCON SXD FC29,1                                                          F2402720
    01055 -0 63400 2 01077        SXD FC18,2                                                          F2402730
    01056 -0 63400 4 01111        SXD FC34,4                                                          F2402740
    01057  0 60100 0 01406        STO ERDRM1          SAVE FIXCON.                                    F2402750
    01060  0 53400 4 01434        LXA L(5),4          INITIALIZE DRUM ERROR COUNTER.                  F2402760
    01061  0 50000 0 01142  FC02  CLA ORIGIN          INITIALISE AD1 TO SELECT 1ST ENTRY              F2402770
    01062  0 60100 0 01401        STO AD1             AND ODD NUMBERED ENTRIES.                       F2402780
    01063  0 53400 1 01427        LXA L(0),1          INITIALISE COUNT THROUGH TABLE                  F2402790
    01064  0 53400 2 01431        LXA L(2),2          INITIALISES FOR TWO FIXCON PASSES               F2402800
    01065  0 50000 0 01406  FC04  CLA ERDRM1          REQD. FIXCON                                    F2402810
    01066  0 76200 0 00302        RDS 194             READ NEXT FIXCON ENTRY                          F2402820
    01067  0 46000 0 01401        LDA AD1                                                             F2402830
    01070  0 70000 0 01407  FC08  CPY CPYWD1                                                          F2402840
D   01071  3 00000 1 01102        TXH FC24+1,1        DECR IS WD.CT OF FIXCON TABLE (INITFX)          F2402850
    01072  0 70000 0 01410        CPY CPYWD2          READ CHECKSUM OF ENTRY                          F2402860
    01073  0 04000 0 01110        TLQ FC30            TRA IF ENTRY DOES NOT MATCH FIXCON.             F2402870
    01074  0 70000 0 01405        CPY ERDRM           FALSE COPY.                                     F2402880
    01075  0 34000 0 01410        CAS CPYWD2          COMPARE WITH CHECKSUM.                          F2402890
    01076  0 07400 4 00004        TSX DIAG,4          OBVIATED BY TLQ.                                F2402900
D   01077 -3 00000 0 01135  FC18  TXL FC60,0          SAVED IRB IN DECR. MATCH FOUND.                 F2402910
    01100  0 70000 0 01405  FC20  CPY ERDRM           FALSE COPY. NO MATCH                            F2402920
    01101  1 00002 1 01070  FC24  TXI FC08,1,2        INCREASE COUNT OF WORDS TESTED.                 F2402930
    01102 -2 00001 2 01112        TNX FC40,2,1        BOTH PASSES ARE COMPLETED.                      F2402940
    01103  0 50000 0 01401        CLA AD1             ADJUST DRUM ADDRESS                             F2402950
    01104  0 40000 0 01431        ADD L(2)            TO TEST EVEN NUMBERED ENTRIES.                  F2402960
    01105  0 60100 0 01401        STO AD1                                                             F2402970
    01106  0 53400 1 01430  FC28  LXA L(1),1          INITIALISE COUNT THROUGH TABLE                  F2402980
D   01107 -3 00000 0 01065  FC29  TXL FC04,0          TRA TO MAKE 2ND PASS. SAVED IRA IN DEC.         F2402990
    01110  0 70000 0 01405  FC30  CPY ERDRM           FALSE COPY.                                     F2403000
D   01111 -3 00000 0 01100  FC34  TXL FC20,0          DECR, CONTAINS ROUTINE LINKAGE.                 F2403010
    01112  0 60100 0 01407  FC40  STO CPYWD1          SEARCH COMPLETED. NO MATCH.                     F2403020
    01113 -0 53400 1 01071        LXD FC08+1,1                                                        F2403030
    01114  1 00001 1 01115        TXI FC42,1,1        INCREASE FIXCON WD. COUNT AND                   F2403040
    01115 -0 63400 1 01071  FC42  SXD FC08+1,1        STORE AS NEW TEST.                              F2403050
    01116 -0 75400 1 00000        PXD 0,1             FORM NEW ADDRESS                                F2403060
    01117  0 77100 0 00021        ARS 17              FOR                                             F2403070
    01120  0 40000 0 01142        ADD ORIGIN          DRUM WRITING.                                   F2403080
    01121  0 60100 0 01401        STO AD1                                                             F2403090
    01122  0 76600 0 00302        WRS 194                                                             F2403100
    01123  0 46000 0 01401        LDA AD1             WRITE NEW FIXCON AND                            F2403110
    01124  0 70000 0 01407        CPY CPYWD1          ITS CHECKSUM ON DRUM.                           F2403120
    01125  0 70000 0 01407        CPY CPYWD1                                                          F2403130
    01126 -0 75400 1 00000  FC50  PXD 0,1             FORM NAME OF CONSTANT                           F2403140
    01127  0 77100 0 00022        ARS 18              IN ACC. NAME CONSISTS OF                        F2403150
    01130 -0 50100 0 01416        ORA BCD2            2 IN DEC.=2) FOR FIXCON TABLE,                  F2403160
    01131 -0 53400 1 01107        LXD FC29,1          AND ENTRY NO WITHIN TABLE,                      F2403170
    01132 -0 53400 2 01077        LXD FC18,2          IN ADDRESS.                                     F2403180
    01133 -0 53400 4 01111        LXD FC34,4          RESTORE INDEX.                                  F2403190
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01134  0 02000 4 00001          TRA 1,4                 RETURN.                                F2403200
01135  0 50000 0 01407  FC60    CLA CPYWD1              MATCH FOUND. TEST DRUM READ.           F2403210
01136  0 40200 0 01410          SUB CPYWD2                                                     F2403220
01137  0 10000 0 01126          TZE FC50                DRUM READ CORRECTLY.                   F2403230
01140  2 00001 4 01061          TIX FC02,4,1            ERROR. TRY 3 TIMES.                    F2403240
01141  0 07400 4 00004 STOPFC   TSX DIAG,4              DRUM 2 READING ERROR FIVE TIMES.       F2403250
01142  0 00000 0 00002 ORIGIN   HTR 2                   DRUM ORIGIN OF FIXCON TABLE.           F2403260
                                    THIS ROUTINE, GIVEN A TAU TAG, OBTAINS THE CORR.           F2403270
                                    SUBSCR. COMBINATION FROM THE APPROPRIATE TAU TABLE         F2403280
                                    AND STORES IN POSITION C1,S1,C2,S2,S3,S3,D1,D2.            F2403290
01143 -0 63400 4 01224 SUBCOM   SXD SUB085,4            SAVE S.R. LINKAGE                      F2403300
01144  0 53400 1 01434          LXA L(5),1              INITIALIZE DRUM ERROR COUNTER.         F2403310
01145  0 60100 0 01237          STO SUBTAG              STORE TAU TAG NAME.                    F2403320
01146  0 76200 0 00304 SUB010   RDS 196                 SELECT TAU DRUM                        F2403330
01147 -0 53400 4 01234          LXD SUBORG+2,4          INITIALIZE SUBSCRIPT COMBINATION       F2403340
T 01150 -0 75400 0 00000        PXD 0                   WORKING SPACE                          F2403350
01151  0 60100 4 00204 SUB020   STO WRKSC+8,4           TO ZERO.                               F2403360
01152  2 00001 4 01151          TIX SUB020,4,1                                                 F2403370
01153  0 50000 0 01237          CLA SUBTAG              THESE INSTRUCTIONS PLACE               F2403380
01154  0 76500 0 00011          LRS 9                   TAU TABLE REQUIRED                     F2403390
01155  0 73400 6 00000          PAX 0,6                 (1,2 OR 3) IN IRB AND IRC.             F2403400
T 01156 -0 75400 0 00000        PXD 0                                                          F2403410
01157  0 76300 0 00011          LLS 9                   STORE ENTRY NUMBER                     F2403420
01160  0 60100 0 01235          STO SUBES1              WITHIN APPROPRIATE TAU TABLE.          F2403430
01161  0 76700 0 00001          ALS 1                                                          F2403440
01162  0 60100 0 01236          STO SUBES2              STORE TWICE TAU ENTRY NO.              F2403450
01163  0 50000 4 01235          CLA SUBORG+3,4          SELECT APPROPRIATE TAU ORIGIN.         F2403460
01164  0 40000 0 01235          ADD SUBES1              FORM DRUM ADDRESS, WHICH EQUALS        F2403470
01165  0 40000 0 01236 SUB030   ADD SUBES2              TAU ORIGIN + ENTRY N/.*                F2403480
01166  2 00001 4 01165          TIX SUB030,4,1          NUMBER OF WORDS PER ENTRY              F2403490
01167  0 62100 0 01235          STA SUBES1              (3 FOR TAU1,5 FOR TAU2,7 FORTAU3)      F2403500
01170  0 46000 0 01235          LDA SUBES1              SELECT TAU ENTRY.                      F2403510
01171  0 70000 0 00174          CPY WRKSC               DECR. C1, ADDR. C2                     F2403520
01172 -3 00002 2 01174          TXL SUB040,2,2                                                 F2403530
01173  0 70000 0 00200          CPY WRKSC+4             FOR TAU 3, ADDR. C3.                   F2403540
01174  0 70000 0 00175 SUB040   CPY WRKSC+1             S1                                     F2403550
01175 -3 00001 2 01202          TXL SUB060,2,1                                                 F2403560
01176  0 70000 0 00177          CPY WRKSC+3             FOR TAU2 AND3, S2.                     F2403570
01177 -3 00002 2 01201          TXL SUB050,2,2                                                 F2403580
01200  0 70000 0 00201          CPY WRKSC+5             FOR TAU3, SO, ALSO                     F2403590
01201  0 70000 0 00202 SUB050   CPY WRKSC+6                ADDRESS D2,DECR.D1                  F2403600
01202  0 70000 0 01235 SUB060   CPY SUBES1              CHECKSUM.                              F2403610
01203 -0 53400 4 01232          LXD SUBORG,4                                                   F2403620
01204 -0 50000 0 00174          CAL WRKSC               COMPUTE                                F2403630
01205  0 36100 4 00203 SUB070   ACL WRKSC+7,4           CHECKSUM.                              F2403640
01206  2 00001 4 01205          TIX SUB070,4,1                                                 F2403650
01207  0 60200 0 01236          SLW SUBES2                                                     F2403660
01210  0 50000 0 01236          CLA SUBES2              TEST FOR                               F2403670
01211  0 40200 0 01235          SUB SUBES1              READING ERROR.                         F2403680
01212  0 10000 0 01214          TZE SUB075              TRA. IF CORRECT                        F2403690
01213  2 00001 1 01146          TIX SUB010,1,1          IF ERROR, TRY FOUR MORE TIMES.         F2403700
01214 -0 53400 4 01233 SUB075   LXD SUBORG+1,4                                                 F2403720
01215  0 50000 4 00203 SUB080   CLA WRKSC+7,4           REARRANGE WORDS WRKSC                  F2403730
01216  0 73400 2 00000          PAX 0,2                 AND WRKSC+6, IN TURN, WHICH            F2403740
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                01217 -0 32000 0 01424          ANA DECMSK          CONTAIN C1 AND C2,D1AND D2.                 F2403750
                01220  0 60100 4 00203          STO WRKSC+7,4       NONBCD CHARACTERS                           F2403760
                01221 -0 75400 2 00000          PXD 0,2             ARE STORED IN DECREMENT                     F2403770
                01222 -2 00006 4 01225          TNX SUB090,4,6      AND ORDER OF ITEMS IS NOW                   F2403780
                01223  0 60100 0 00176          STO WRKSC+2         C1,S1,C2,S2,C3,S3,D1,D2.                    F2403790
                                                                                                                F2403800
D               01224 -3 00000 0 01215 SUB085   TXL SUB080,0                                                   F2403810
                01225  0 60100 0 00203 SUB090   STO WRKSC+7                                                    F2403820
                01226 -0 53400 4 01224          LXD SUB085,4        RESTORE LINKAGE INDEX                       F2403830
                01227 -3 00001 1 01231          TXL SUB100+1,1,1    TRA IF READING ERROR.                       F2403840
                01230  0 02000 4 00001 SUB100   TRA 1,4           RETURN                                      F2403850
                01231  0 07400 4 00004          TSX DIAG,4          DRUM 4 READING ERROR 5 TIMES.               F2403860
                01232 +000006001356     SUBORG  OCT 000006001356    DECR. IS 6, ADDR. IS ORG TAU3               F2403870
                01233 +000007000454             OCT 000007000454    DECR. IS 7, ADDR IS ORG TAU2                F2403880
                01234 +000010000000             OCT 000010000000    DECR IS 8, ADDR IS ORG TAU1                 F2403890
A               01235  0 00000 0 00000 SUBES1   HTR                 ERASABLE ST. FOR DRUM ADDR.                 F2403900
A               01236  0 00000 0 00000 SUBES2   HTR                 ERASABLE ST. FO DRUM CHECK.                 F2403910
A               01237  0 00000 0 00000 SUBTAG   HTR                                                           F2403920
                                        COSE ROUTINE FORMS NAME OF EACH NONTRIVIAL COEFF. IN FIXCON          F2403930
                                        TABLE, AND SETS SENSE LIGHTS ACCORDINGLY.                            F2403940
                01240  0 53400 1 01435  COSE    LXA L(6),1          INDEX TO SELECT SUBSCRIPTS IN TURN.         F2403950
                01241  0 53400 2 01432          LXA L(3),2          INITIALISE SENSE LT. SELECTION.             F2403960
                01242 -0 63400 4 01411          SXD LINKC,4                                                     F2403970
                01243  0 50000 1 00202  COSE5   CLA WRKSC+6,1       SELECT A S.C. COEFF.                        F2403980
                01244  0 10000 0 01253          TZE COSE08          TRA IF NO SUBSC. IN THIS DIMENSION.         F2403990
                01245  0 40200 0 01421          SUB L1DEC                                                       F2404000
                01246  0 10000 0 01253          TZE COSE08          TRA IF COEFF. IS ONE.                       F2404010
                01247  0 76000 2 00144          PSE 100,2           SET CORRESPONDING SENSE LIGHT.              F2404020
                01250  0 50000 1 00202          CLA WRKSC+6,1       ENTER COEFF IN FIXCON IF                    F2404030
                01251  0 07400 4 01054          TSX FIXCON,4        NOT ALREADY THERE.                          F2404040
                01252  0 60100 2 00450          STO QR000+12,2      STORE NAME OF FIXCON ENTRY.                 F2404050
                01253  2 00002 1 01254 COSE08   TIX COSE10,1,2                                                  F2404060
                01254  2 00001 2 01243 COSE10   TIX COSE5,2,1       REPEAT FOR ALL SUBSCRIPTS.                  F2404070
                01255 -0 53400 4 01411          LXD LINKC,4                                                     F2404080
                01256  0 02000 4 00001          TRA 1,4             RETURN                                      F2404090
                                        ROUTINE COMPILES SETS OF INSTRUCTIONS, GIVEN STARTING LOCN.          F2404100
                                        OF APPROPRIATE SKELETON IN ACC., AND NO. OF INSTR. IN IRA            F2404110
                01257 -0 63400 4 01313  LXC     SXD LXC19,4                                                     F2404120
                01260  0 60100 0 01412          STO ERLXC           SAVE LOCATION OF INSTR. SKELETON.           F2404130
                01261 -0 75400 1 00000          PXD 0,1             NO. OF INST TO BE COMPILED.                 F2404140
                01262  0 77100 0 00022          ARS 18                                                          F2404150
                01263  0 40000 0 01412          ADD ERLXC           FORM ADDRESS WHICH GIVES                    F2404160
                01264  0 62100 0 01267          STA LXC10           APPROPRIATE SKELETAL WORDS.                 F2404170
                01265  0 50000 0 01427  LXC08   CLA L(0)            SET CIT SYMBOLIC LOCN. TO ZERO              F2404180
                01266  0 60100 0 01050          STO CIL00                                                       F2404190
                01267  0 56000 1 00000  LXC10   LDQ 0,1             SELECT NEXT SKELETAL WORD.                  F2404200
                01270  0 76300 0 00000          LLS 0               FOR COMPILATION. SET SIGN IN AC.            F2404210
                01271 -0 76300 0 00022          LGL 18              BCD. OPERATION IS IN DECREMENT.             F2404220
                01272 -0 60000 0 01051          STQ CIL01           STORE OPERATION                             F2404230
                01273 -0 12000 0 01314          TMI LXC20           CIT IS SHIFT TYPE INSTRUCTION.              F2404240
                01274  0 62100 0 01275          STA LXC15           CIT IS SYMBOLIC ADDRESS TYPE.               F2404250
A               01275  0 50000 0 00000  LXC15   CLA                 ADDR. IS LOCATION OF SYMBOLIC ADDRESS       F2404260
                01276  0 60100 0 01052          STO CIL02           OF CIT.                                     F2404270
                01277  0 50000 0 01427          CLA L(0)                                                        F2404280
                01300  0 60100 0 01053          STO CIL03           SET CIT TAG TO ZERO.
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01301 -0 50000 0 01052        CAL  CIL02              TEST FOR A COT                          F2404290
01302 -0 32000 0 01422        ANA  6ONES              SYMBOLIC ADDRESS OF THE TYPE            F2404300
01303  0 10000 0 01321        TZE  LXC30              1)+3 OR6)+2 ERASABLE                    F2404310
01304 -0 32000 0 01423        ANA  BIT01              STORAGE                                 F2404320
01305 -0 10000 0 01321        TNZ  LXC30              NO                                      F2404330
01306 -0 50000 0 01052        CAL  CIL02              YES. SEPARATE ADDRESS LEAVING THE       F2404340
01307  0 76700 0 00022        ALS  18                 CLASS OF SYMBOLS IN SYMBOLIC            F2404350
01310  0 62200 0 01053        STD  CIL03              ADDRESS POSN. ALONE, AND                F2404360
01311 -0 50000 0 01422        CAL  6ONES              PLACING ADDEND IN REL. ADDRESS          F2404370
01312  0 32000 0 01052        ANS  CIL02              POSITION.                               F2404380
D 01313 -3 00000 0 01321 LXC19 TXL  LXC30,0           UNCOND. TRANSFER LINKAGE INDECR.        F2404390
01314  0 76700 0 00022 LXC20  ALS  18                 CIT IS SHIFT TYPE INSTRUCTION           F2404400
01315 -0 32000 0 01424        ANA  DECMSK             I.E. ABSOLUTE ADDRESS ONLY.             F2404410
01316  0 60100 0 01053        STO  CIL03              STORE ADDRESS IN CIT REL. ADDRESS.      F2404420
01317  0 50000 0 01427        CLA  L(0)               STORE ZERO AS                           F2404430
01320  0 60100 0 01052        STO  CIL02              SYMBOLIC ADDRESS.                       F2404440
01321  0 07400 4 01015 LXC30  TSX  CIT,4              MAKE CIT ENTRY.                         F2404450
01322  2 00001 1 01265        TIX  LXC08,1,1          RETURN FOR NEXT SKELETON INST.          F2404460
01323 -0 53400 4 01313        LXD  LXC19,4            SKELETON COMPLETED.                     F2404470
01324  0 02000 4 00001        TRA  1,4                RETURN.                                 F2404480
01325  0 00451 2 34321 LX100  HTR  14545,2,OR000+13   CLA. THESE WORDS                        F2404490
01326  0 00466 6 26346        HTR  11494,6,OR000+26   STO. CONSTITUTE THE                    F2404500
01327  0 00435 2 34321 LX102  HTR  14545,2,OR000+1    CLA. CODING                             F2404510
01330  0 00451 6 26422        HTR  11538,6,OR000+13   SUB. SKELETONS,                         F2404520
01331  0 00466 2 12424        HTR  5396,2,OR000+26    ADD. AND ARE                            F2404530
01332  0 00466 6 26346        HTR  11494,6,OR000+26   STO. CALLED UPON                       F2404540
01333  0 00435 4 32450 LX105  HTR  13608,4,OR000+1    LDQ. BY THE LXC                         F2404550
01334  0 00445 4 44770        HTR  18936,4,OR000+9    MPY. ACCORDING                          F2404560
01335 -2 00021 2 14362        TNX  6386,2,17          ALS. TO THE                             F2404570
01336  0 00451 6 26422        HTR  11538,6,OR000+13   SUB. DIFFERENT                          F2404580
01337  0 00466 2 12424        HTR  5396,2,OR000+26    ADD. COMPUTATIONS                       F2404590
01340  0 00466 6 26346        HTR  11494,6,OR000+26   STO. REQUIRED.                          F2404600
01341  0 00440 4 32450 LX110  HTR  13608,4,OR000+4    LDQ.                                    F2404610
01342  0 00443 4 44770        HTR  18936,4,OR000+7    MPY. THE TAG AND                        F2404620
01343 -2 00021 2 14362        TNX  6386,2,17          ALS. ADDRESS ARE                        F2404630
01344  0 00443 6 26422        HTR  11538,6,OR000+7    SUB. THE BCD                            F2404640
01345  0 00466 2 12424        HTR  5396,2,OR000+26    ADD. EQUIVALENTS OF                     F2404650
01346  0 00466 6 26346        HTR  11494,6,OR000+26   STO. THE CIT                           F2404660
01347  0 00440 4 32450 LX116  HTR  13608,4,OR000+4    LDQ. INSTRUCTIONS.                      F2404670
01350  0 00446 4 44770        HTR  18936,4,OR000+10   MPY. THE SYMBOLIC                      F2404680
01351 -2 00022 4 35162        TNX  14962,4,18         LRS. DECREMENTS ARE                     F2404690
01352  0 00443 4 44770        HTR  18936,4,OR000+7    MPY. THE LOCATIONS                      F2404700
01353 -2 00021 2 14362        TNX  6386,2,17          ALS. OF THE                             F2404710
01354  0 00443 6 26422        HTR  11538,6,OR000+7    SUB. ADDRESSES IN                       F2404720
01355  0 00466 2 12424        HTR  5396,2,OR000+26    ADD. THE CIT                            F2404730
01356  0 00466 6 26346        HTR  11494,6,OR000+26   STO.                                   F2404740
01357  0 00461 4 32450 LX124  HTR  13608,4,OR000+21   LDQ. THE NEGATIVE                       F2404750
01360  0 00464 4 44770        HTR  18936,4,OR000+24   MPY. PREFIX INDICATES                  F2404760
01361 -2 00021 2 14362        TNX  6386,2,17          ALS. A PURELY                           F2404770
01362  0 00464 6 26422        HTR  11538,6,OR000+24   SUB. ABSOLUTE ADDRESS                   F2404780
01363  0 00466 2 12424        HTR  5396,2,OR000+26    ADD.                                    F2404790
01364  0 00466 6 26346        HTR  11494,6,OR000+26   STO.                                   F2404800
01365  0 00461 4 32450 LX130  HTR  13608,4,OR000+21   LDQ.                                    F2404810
01366  0 00447 4 44770        HTR  18936,4,OR000+11   MPY.                                    F2404820
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     01367 -2 00022 4 35162          TNX 14962,4,18          LRS.                                F2404830
     01370  0 00464 4 44770          HTR 18936,4,OR000+24    MPY.                                F2404840
     01371 -2 00021 2 14362          TNX 6386,2,17           ALS.                                F2404850
     01372  0 00464 6 26422          HTR 11538,6,OR000+24    SUB.                                F2404860
     01373  0 00466 2 12424          HTR 5396,2,OR000+26     ADD.                                F2404870
     01374  0 00466 6 26346          HTR 11494,6,OR000+26    STO.                                F2404880
A    01375  0 00000 0 00000   NAME1  HTR                                                         F2404890
A    01376  0 00000 0 00000   TAG1   HTR                                                         F2404900
A    01377  0 00000 0 00000   TAG2   HTR                                                         F2404910
A    01400  0 00000 0 00000  RECCNT  HTR                                                         F2404920
A    01401  0 00000 0 00000   AD1    HTR                                                         F2404930
A    01402  0 00000 0 00000   1XBOX  HTR                                                         F2404940
A    01403  0 00000 0 00000   2XBOX  HTR                                                         F2404950
A    01404  0 00000 0 00000   LINK2  HTR                                                         F2404960
A    01405  0 00000 0 00000   ERDRM  HTR                                                         F2404970
A    01406  0 00000 0 00000  ERDRM1  HTR                                                         F2404980
A    01407  0 00000 0 00000  CPYWD1  HTR                                                         F2404990
A    01410  0 00000 0 00000  CPYWD2  HTR                                                         F2405000
A    01411  0 00000 0 00000   LINKC  HTR                                                         F2405010
A    01412  0 00000 0 00000   ERLXC  HTR                                                         F2405020
A    01413  0 00000 0 00000   AX     HTR                                                         F2405030
A    01414  0 00000 0 00000   BX     HTR                                                         F2405040
A    01415  0 00000 0 00000  SENSE1  HTR                                                         F2405050
     01416 +020000000000      BCD2   OCT 020000000000                                            F2405060
     01417 +140000000000      BCD14  OCT 140000000000                                            F2405070
     01420 +120000000000      BCD10  OCT 120000000000                                            F2405080
     01421 +000001000000      L1DEC  OCT 000001000000                                            F2405090
     01422 -370000000000      6ONES  OCT 770000000000                                            F2405100
     01423 -200000000000      BIT01  OCT 600000000000                                            F2405110
     01424 +077777000000     DECMSK  OCT 077777000000                                            F2405120
     01425  626346000000     L(STO)  BCD 1STO000                                                 F2405130
     01426  234321000000     L(CLA)  BCD 1CLA000                                                 F2405140
     01427  0 00000 0 00000   L(0)   HTR 0                                                       F2405150
     01430  0 00000 0 00001   L(1)   HTR 1                                                       F2405160
     01431  0 00000 0 00002   L(2)   HTR 2                                                       F2405170
     01432  0 00000 0 00003   L(3)   HTR 3                                                       F2405180
     01433  0 00000 0 00004   L(4)   HTR 4                                                       F2405190
     01434  0 00000 0 00005   L(5)   HTR 5                                                       F2405195
     01435  0 00000 0 00006   L(6)   HTR 6                                                       F2405200
     01436  0 00000 0 01327   KLX02  HTR LX102               SKELETON KEYS                       F2405210
     01437  0 00000 0 01333  KLX021  HTR LX105               FOR LXC ROUTINE.                    F2405220
     01440  0 00000 0 01347   KLX03  HTR LX116                                                   F2405230
     01441  0 00000 0 01341  KLX031  HTR LX110                                                   F2405240
     01442  0 00000 0 01365   KLX05  HTR LX130                                                   F2405250
     01443  0 00000 0 01357  KLX051  HTR LX124                                                   F2405260
M                     00450   OR012  SYN OR000+12                                                F2405270
M                     00451   OR013  SYN OR000+13                                                F2405280
M                     00456   OR018  SYN OR000+18                                                F2405290
M                     00466   OR026  SYN OR000+26                                                F2405300
                      00004    DIAG  EQU 4                                                       F2405305
A                     00000          END                                                         F2405310
A                           0OR012  00450,00450
A                           0OR013  00451,00451
A                           0OR018  00456,00456
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LCW

A

00R026 00466,00466

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1          REM BLOCK FIVE OF SECTION TWO.
1                                        BLOCK FIVE OF SECTION TWO.
                                         FORTRAN 2*****BLOCK 5 OF SECTION 2***************************F2500000
                                         BLOCK 5 OF SECTION 2 USES INFORMATION GENERATED BY BLOCKS    F2500030
                                         1,2, AND 3 TO COMPILE ALL DO LOOP INDEXING INSTRUCTIONS.     F2500040
                                         DECREMENTS ARE COMPUTED, AND WHEN NECESSARY OPEN SUBROUTINES F2500050
                                         ARE COMPILED TO COMPUTE THESE DECREMENTS AT OBJECT PROGRAM   F2500060
                                         TIME.  AT THE END OF BLOCK 5 THESE INSTRUCTIONS ARE ON TAPE  F2500070
                                         3 IN SEMI-INVERTED ORDER.  BLOCK 6 INVERTS THE DOFILE INTO ITF2500080
                                         PROPER ORDER ONTO TAPE 4                                     F2500090
                                                                                                      F2500100
                                                                                                      F2500110
                                                                                                      F2500120
                                            MASTER RECORD CARD = FN047                                F2500125
                                         BEGIN INITIALIZATION                                         F2500130
                                         THE INITIALIZATION RECORD IS THE FIRST RECORD OB BLOCK 5 READF2500140
                                         IN BY MONITOR.  IT POSITIONS THE INPUT TAPES 2 AND 4 AND     F2500150
                                         REWINDS THE OUTPUT TAPE 3.IT READS THE NEXT RECORD (THE ALPHAF2500160
                                         STATE) INTO CORES THEN WRITES IT ON DRUM 2.  THEN IT READS   F2500170
                                         IN THE NEXT RECORD(COMMON + THE BETA STATE), AND WRITES THE BF2500180
                                         BETA STATE ON DRUM 1.  IT READS THE ADTAG TABLE FROM DRUM 2 IF2500190
                                         FIXCON IS CHECKED8 AND INITIALIZED IF NECESSARY. IF THERE AREF2500200
                                         ANY DOS CONTROL IS PASSED TO MAN.  IF THERE ARE NO DOS THE NEF2500210
                                         NEXT RECORD, WHICH IS BLOCK 6, IS READ IN.                   F2500220
                     00030          ORG 24                                                            F2500230
00030  0 53400 1 00131 AINIT   LXA L5,1              INITIALIZE ERROR COUNTER.                      F2500240
00031  0 76400 0 00222         BST 146               POSITION TAPE 2                                F2500250
00032  0 76400 0 00222         BST 146               TO READ DOTAG                                  F2500260
00033  0 76200 0 00222  A1     RDS 146                                                              F2500270
00034  0 70000 0 00124         CPY CPYWD3            DO TAG REC COUNT                               F2500280
00035  0 70000 0 00124         CPY CPYWD3            DO TAG REC COUNT                               F2500290
00036  0 76600 0 00333         WRS 219                                                              F2500300
00037 -0 76000 0 00012         RTT                                                                  F2500310
00040  0 02000 0 00056         TRA A3I               ERROR                                          F2500320
00041 -0 53400 1 00124         LXD CPYWD3,1                                                         F2500330
00042 -3 00000 1 00044         TXL A2,1,0                                                           F2500340
00043  1 00002 1 00044         TXI A2,1,2                                                           F2500350
00044  0 76400 0 00222  A2     BST 146               BACKSPACE TO BEGINNING                         F2500360
00045  2 00001 1 00044         TIX A2,1,1            OF DOTAG RECORDS                               F2500370
00046  0 77200 0 00223         REW 147               REWIND OUTPUT TAPE                             F2500380
00047  0 77200 0 00224         REW 148               REWIND TAGTAG TAPE                             F2500390
00050  0 76200 0 00224  A3     RDS 148                                                              F2500400
00051  0 70000 0 00124         CPY CPYWD3            TAGTAG RECORD COUNT                            F2500410
00052  0 02000 0 00050         TRA A3                                                               F2500420
00053  0 76200 0 00221         RDS 145               SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE F2500430
00054  0 02000 0 00004         TRA 4                 E.D.F. READ IN NEXT BLOCK OF INST.             F2500440
                                         THE ALPHA STATE IS NOW IN CORES.  CONTROL PASSES TO C.       F2500450
00055  0 02000 0 00050         TRA A3                E.O.R.                                         F2500460
00056 -2 00001 1 00061 A3I     TNX A4,1,1            READING                                        F2500470
00057  0 76400 0 00222         BST 146               ERROR                                          F2500480
00060  0 02000 0 00033         TRA A1                ROUTINE                                        F2500490
00061  0 07400 4 00004  A4     TSX DIAG,4            TAPE 2 HAS GOTTEN AN ERROR CHECK 5 TIMES.      F2500500
00062  0 53400 2 00146  C      LXA L0,2                                                             F2500510
00063  0 07400 4 00132         TSX BINIT,4           WRITE BLOCK A ON DRUM                          F2500520
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     00064  0 76200 0 00221        RDS 145              SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE F2500530
     00065  0 02000 0 00004        TRA 4                READ NEXT RECORD                           F2500540
                                       COMMON AND BETA STATE ARE NOW IN CORES.  CONTROL IS PASSED TOF2500550
                                       THE FOLLOWING INSTRUCTION.                                   F2500560
     00066  0 53400 2 00126        LXA L1,2                                                          F2500570
     00067  0 07400 4 00132        TSX BINIT,4          PLACE BLOCK B ON DRUM                      F2500580
     00070  0 07400 4 00150        TSX ADTGDM,4         READ ADTAG ENTRIES                         F2500590
     00071  0 53400 1 00131        LXA L5,1             INITIALIZE ERROR COUNTER.                  F2500600
     00072  0 76200 0 00302  C1    RDS 194              SELECT FIXCON DRUM.                        F2500610
     00073  0 70000 0 00124        CPY CPYWD3           WORD COUNT OF FIXCON                       F2500620
     00074  0 70000 0 00125        CPY CPYWD4                                                        F2500630
     00075  0 50000 0 00124        CLA CPYWD3                                                        F2500640
     00076  0 40200 0 00125        SUB CPYWD4                                                        F2500650
     00077 -0 10000 0 00122        TNZ C6               ERROR IN DRUM READING                      F2500660
     00100  0 50000 0 00124        CLA CPYWD3                                                        F2500670
     00101  0 10000 0 00114        TZE C4               NO ENTRIES IN FIXCON                       F2500680
     00102  0 40200 0 00127        SUB L2                                                            F2500690
     00103  0 76700 0 00021        ALS 17                                                            F2500700
     00104  0 62200 0 04616 C2     STD FC08+1           STORE WORD COUNT IN                        F2500710
     00105  0 50000 0 05126        CLA L(1)             DECREMENT OF FC08-1                        F2500720
     00106  0 60100 0 05205        STO SWICH2           SET SWITCH 2 TO 1                          F2500730
     00107 -0 76000 0 00143        MSE 99                                                            F2500740
     00110  0 02000 0 03654        TRA MAN              IF NO DOTAGS,                              F2500750
     00111  0 76000 0 00143        PSE 99               TRA MONITOR                                F2500760
     00112  0 76200 0 00221        RDS 145              SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE F2500770
     00113  0 02000 0 00004        TRA 4                OTHERWISE TRA MAN.                         F2500780
     00114  0 76600 0 00302  C4    WRS 194                                                           F2500790
     00115  0 70000 0 00146        CPY L0               NO ENTRIES, WRITE                          F2500800
     00116  0 70000 0 00146        CPY L0               ZEROS IN FIRST FOUR                        F2500810
     00117  0 70000 0 00146        CPY L0               LOCATIONS OF DRUM 3                        F2500820
     00120  0 70000 0 00146        CPY L0                                                            F2500830
     00121  0 02000 0 00104        TRA C2                                                            F2500840
     00122  2 00001 1 00072  C6    TIX C1,1,1           DRUM 2 READING ERROR ROUTINE.              F2500850
     00123  0 07400 4 00004        TSX DIAG,4           DRUM 2 READING ERROR 5 TIMES.              F2500860
A    00124  0 00000 0 00000 CPYWD3 HTR                                                               F2500870
A    00125  0 00000 0 00000 CPYWD4 HTR                                                               F2500880
     00126  0 00000 0 00001  L1    HTR 1                                                             F2500890
     00127  0 00000 0 00002  L2    HTR 2                                                             F2500900
     00130  0 00000 0 00003  L3    HTR 3                                                             F2500910
     00131  0 00000 0 00005  L5    HTR 5                                                             F2500920
                                       ************************************************************ F2500930
                                       BINIT WRITES A SELECTED STATE, ALPHA OR BETA, ON DRUM2 OR 1  F2500940
                                       RESPECTIVELY,                                                F2500950
     00132  0 50000 0 00146  BINIT CLA L0                                                            F2500960
     00133  0 53400 1 00147        LXA L1000,1          FORM CHECK SUM FOR                         F2500970
M    00134  0 36100 1 07226 B1     ACL RTXAC+1000,1     PROGRAM ON DRUM.                           F2500980
     00135  2 00001 1 00134        TIX B1,1,1                                                        F2500990
     00136  0 60200 0 00124        SLW CPYWD3                                                        F2501000
     00137  0 53400 1 00147        LXA L1000,1                                                       F2501010
     00140  0 76600 2 00302        WRS 194,2            WRITE 1000 WORDS OF                        F2501020
     00141  0 46000 0 00147        LDA L1000            PROGRAM ONTO DRUM                          F2501030
     00142  0 70000 0 00124        CPY CPYWD3                                                        F2501040
M    00143  0 70000 1 07226 B2     CPY RTXAC+1000,1                                                  F2501050
     00144  2 00001 1 00143        TIX B2,1,1                                                        F2501060
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00145  0 02000 4 00001          TRA 1,4                                                    F2501070
A 00146  0 00000 0 00000  L0     HTR                                                        F2501080
00147  0 00000 0 01750  L1000   HTR 1000                                                   F2501090
                                 ************************************************************ F2506930
                                 ADTGDM READS THE ADTAG TABLE FROM DRUM 3 INTO CORES.       F2506940
00150  0 50000 0 05133 ADTGDM   CLA L(0)              INITIALIZE ERROR INDICATOR           F2506950
00151  0 60100 0 05223          STO ERORBX                                                 F2506960
00152  0 53400 2 05124 ADTG05   LXA LZEKMX,2          CHECK SUM AREA                       F2506970
00153  0 53400 1 05125          LXA LADMX,1           ADTAG AREA                           F2501100
00154  0 76200 0 00303          RDS 195                                                    F2501110
00155  0 46000 0 00217          LDA DRADSI            READ ADTEG TABLE                     F2501120
00156  0 70000 1 03466 ADTG10   CPY ADTGMX,1          ADDRESS IS ORIGIN - MAX WORDS        F2501130
00157  0 50000 0 05123          CLA ALLONE            FENCE FOR TABLE END                  F2501140
00160  0 70000 1 03467          CPY ADTGMX+1,1                                             F2501150
00161  0 40200 1 03466          SUB ADTGMX,1                                               F2501160
00162  0 70000 1 03470          CPY ADTGMX+2,1                                             F2501170
00163  0 10000 0 00170          TZE ADTG30            END OF TABLE.                        F2501180
00164  0 70000 1 03471          CPY ADTGMX+3,1                                             F2501190
00165  1 77774 1 00166          TXI ADTG20,1,-4                                            F2501200
00166  0 70000 2 01242 ADTG20   CPY ZEKSUM,2          CHECK SUM FOR DRMTAG.                F2501210
00167  1 77777 2 00156          TXI ADTG10,2,-1                                            F2501220
00170 -0 63400 1 00207 ADTG30   SXD ADTG38,1          MAX CURRENT TABLE SIZE.              F2501230
00171 -0 63400 1 04521          SXD ADTGS1,1                                               F2501240
00172  3 00617 1 00210          TXH ADTG38+1,1,399    RETURN IF TABLE DEPLETED.            F2501250
00173  0 53400 1 05125          LXA LADMX,1           START TO CHECK                       F2501260
00174  0 53400 2 05124          LXA LZEKMX,2          ALL CHECK SUMS.                      F2501270
00175 -0 50000 1 03466 ADTG32   CAL ADTGMX,1                                               F2501280
00176  0 36100 1 03467          ACL ADTGMX+1,1                                             F2501290
00177  0 36100 1 03470          ACL ADTGMX+2,1                                             F2501300
00200  0 36100 1 03471          ACL ADTGMX+3,1                                             F2501310
00201  0 60200 0 00124          SLW CPYWD3                                                 F2501320
00202  0 50000 0 00124          CLA CPYWD3                                                 F2501330
00203  0 40200 2 01242          SUB ZEKSUM,2                                               F2501340
00204 -0 10000 0 00211          TNZ EROR                                                   F2501350
00205  1 77774 1 00206          TXI ADTG34,1,-4                                            F2501360
00206  1 77777 2 00207 ADTG34   TXI ADTG38,2,-1                                            F2501370
D 00207  3 00000 1 00175 ADTG38 TXH ADTG32,1          TEST FOR END OF TABLE.               F2501380
00210  0 02000 4 00001          TRA 1,4               END OF TABLE, READ CORRECTLY.        F2501390
00211  0 50000 0 05223  EROR    CLA ERORBX            IF ERROR IN A CHECK THE              F2501400
00212  0 40000 0 05126          ADD L(1)              ENTIRE TABLE IS RE-READ.             F2501410
00213  0 60100 0 05223          STO ERORBX            THIS IS DONE FOUR TIMES AFTER        F2501420
00214  0 40200 0 00131          SUB L5                THE FIRST READING OF THE TABLE.      F2501430
00215 -0 10000 0 00152          TNZ ADTG05                                                 F2501440
00216  0 07400 4 00004  STOP    TSX DIAG,4            DRUM 3 READING ERROR 5 TIMES.        F2501450
00217 +000000002664     DRADSI  OCT 2664              DRMTG ORIGIN.                        F2501460
                                 ************************************************************ F2501470
                                 ************************************************************ F2501480
                                                                                            F2501490
                                                                                            F2501500
                                    MASTER RECORD CARD = FN051                              F2501505
                                 BEGIN COMMON AND BETA STATES                               F2501510
                                 ************************************************************F2501520
                                                 BEGIN BLOCK 5 COMMON                       F2501530
                 00030          ORG 24                                                      F2501540
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                    00030 CIB     BSS 100                                                          F2501550
                    00174 DOTAG   BSS 450                                                          F2501560
                    01076 TGTG    BSS 672                                                          F2501570
                    02336 OMXTGA  BSS 200                                                          F2501580
                    02646 ADTG    BSS 404                                                          F2501590
                    03472 OADTGA  BSS 100                                                          F2501600
                    03636 WRKSC   BSS 8                                                            F2501610
      03646  0 00000 0 00000 TAG1                                                                  F2501620
      03647  0 00000 0 00000 TAG2                                                                  F2501630
M     03650  0 00000 0 00000 TAG21                                                                 F2501640
M     03651  0 00000 0 00000 TAG22                                                                 F2501650
                    03652 TAG3    BSS 1                                                            F2501660
                    03653 TAG4    BSS 1                                                            F2501670
                                      MAN CONSTITUTES THE MAIN LINEAR FLOW THROUGH BLOCK 5.  A     F2501680
                                      SUBROUTINE PICKS A DO BETA OR ALPHA, AND THEN CONTROL IS PASSF2501690
                                      ED TO THE PROPER STATE, (BETA OR ALPHA), TO COMPILE ALL THE  F2501700
                                      INDEXING INSTRUCTIONS FOR THAT PART OF THAT DO.  CONTROL IS  F2501710
                                      RETURNED TO MAN.  THIS PROCESS IS REPEATED UNTIL ALL ALPHAS  F2501720
                                      AND BETAS IN A NEST HAVE BEEN TREATED.  THE WHOLE PROCEDURE IF2501730
                                      IS REPEATED FOR EACH NEST AND THEN CONTROL IS PASSED TO BLOCKF2501740
                                      SIX.                                                         F2501750
                                      ************************************************************ F2501760
      03654  0 07400 4 04012  MAN   TSX TDOTG,4          READ ONE NEST OF DOTAG                    F2501770
      03655  0 02000 0 03740        TRA MAN70            END OF PROBLEM                            F2501780
      03656 -0 63400 2 04142        SXD DOGS60,2         INIT. DECREMENT OF TEST.                  F2501790
      03657 -0 63400 2 03664        SXD MAN05,2                                                    F2501800
      03660  0 53400 2 05057        LXA LMXDTG,2                                                   F2501810
      03661 -0 50000 0 05103        CAL T1MSK            MASK FOR T1 WORD OF DOTAG                 F2501820
      03662  0 32000 2 01104  MAN03 ANS DOTAGZ+6,2       T1 WORD MUST HAVE                         F2501830
      03663  1 77767 2 03664        TXI MAN05,2,-9       SOME BITS REMOVED FOR                     F2501840
D     03664  3 00000 2 03662  MAN05 TXH MAN03,2          SXD LOCATION                              F2501850
      03665  0 07400 4 04027        TSX TTG,4            READ NEST OF TAGTAGS                      F2501860
      03666 -0 63400 2 04165        SXD FIND10,2         SAVE COUNT OF TAGTAGS IN NEST             F2501870
      03667  0 50000 0 05133        CLA L(0)             ZERO.                                     F2501880
      03670  0 53400 2 05122        LXA LMXTGA,2         INITIALIZE APPENDED TGTG                  F2501890
      03671  0 60100 2 02646  MAN06 STO MXTGA,2          TO.                                       F2501900
      03672  2 00001 2 03671        TIX MAN06,2,1        ZERO.                                     F2501910
      03673  0 53400 2 05124        LXA LZEKMX,2         INITIALIZE APPENDED ADTAG                 F2501920
      03674  0 60100 2 03636  STO   STO ADTGA,2          TO                                        F2501930
      03675  2 00001 2 03674        TIX STO,2,1          ZERO                                      F2501940
      03676  0 50000 0 05133  MAN10 CLA L(0)             INITIALIZE                                F2501950
      03677  0 60100 0 05173        STO BBOX             INDICATORS                                F2501960
      03700  0 60100 0 05230        STO DOIND                                                      F2501970
      03701  0 60100 0 05231        STO DOIND1                                                     F2501980
      03702  0 60100 0 05233        STO SWICH1                                                     F2501990
      03703  0 50000 0 05123        CLA ALLONE           INITIALIZE                                F2502000
      03704  0 60100 0 05244        STO VCTR             INSTRUCTION COUNTER                       F2502010
      03705  0 50000 0 05126  MAN20 CLA L(1)                                                       F2502020
      03706  0 60100 0 05222        STO LOCIND                                                     F2502030
      03707  0 07400 4 04055        TSX DOGS,4           SELECT BOR A                              F2502040
      03710  0 02000 0 03731        TRA MAN50            NEST COMPLETELY ANALYZED                  F2502050
      03711  0 50000 0 05233        CLA SWICH1           IS APPROPRIATE                            F2502060
      03712  0 34000 0 05205        CAS SWICH2           CODING IN CORES                           F2502070
      03713  0 02000 0 03715        TRA MAN35            NO                                        F2502080
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03714  0 02000 0 03720          TRA MAN40          YES                                          F2502090
03715  0 07400 4 03763  MAN35   TSX ABDRM,4        NO. READ STATE FROM DRUM                     F2502100
03716  0 50000 0 05233          CLA SWICH1                                                      F2502110
03717  0 60100 0 05205          STO SWICH2                                                      F2502120
03720 -0 53400 2 05230  MAN40   LXD DOIND,2                                                     F2502130
03721  0 50000 2 01076          CLA DOTAGZ,2                                                    F2502140
03722  0 62200 0 05224          STD A              SAVE A                                       F2502150
03723  0 73400 1 00000          PAX 0,1                                                         F2502160
03724 -0 63400 1 05225          SXD B,1            CURRENT DO                                   F2502170
03725 -0 73400 1 00000 MAN45    PDX 0,1                                                         F2502180
03726 -0 75400 1 00000          PXD 0,1            ACCUMULATOR, LEAVING BETA                    F2502190
M 03727  0 07400 4 05256          TSX RTXAC,4                                                     F2502200
03730  0 02000 0 03705          TRA MAN20          BACK TO DOGS                                 F2502210
03731  0 07400 4 04352  MAN50   TSX CITSP,4        WRITE CIT BUFFER ON TAPE                     F2502220
03732  0 76600 0 00223          WRS 147                                                         F2502230
03733  0 70000 0 05133          CPY L(0)           END OF RECORD INDIC                          F2502240
03734  0 70000 0 05133          CPY L(0)                                                        F2502250
03735  0 70000 0 05133          CPY L(0)                                                        F2502260
03736  0 70000 0 05133          CPY L(0)                                                        F2502270
03737  0 02000 0 03654          TRA MAN                                                         F2502280
03740  0 77000 0 00223  MAN70   WEF 147            END OF FILE FOR DO FILE                      F2502290
03741  0 76600 0 00301          WRS 193                                                         F2502300
03742  0 46000 0 05065          LDA AD202                                                       F2502310
03743  0 70000 0 05063          CPY DRADS2                                                      F2502320
03744  0 70000 0 05063          CPY DRADS2                                                      F2502330
03745  0 76600 0 00301          WRS 193                                                         F2502340
03746  0 70000 0 05064          CPY DRADS3                                                      F2502350
03747  0 70000 0 05064          CPY DRADS3                                                      F2502360
03750  0 76600 0 00302          WRS 194                                                         F2502370
03751  0 50000 0 04616          CLA FC08+1                                                      F2502380
03752 -0 32000 0 05142          ANA DECMSK                                                      F2502390
03753  0 40000 0 05061          ADD L1DEC                                                       F2502400
03754  0 77100 0 00021          ARS 17                                                          F2502410
03755  0 60100 0 05214          STO AD1                                                         F2502420
03756  0 70000 0 05214          CPY AD1                                                         F2502430
03757  0 70000 0 05214          CPY AD1                                                         F2502440
03760  0 76000 0 00140          PSE 96                                                          F2502450
03761  0 76200 0 00221          RDS 145            SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE F2502460
03762  0 02000 0 00004          TRA 4              EXIT BLOCK 5.                                F2502470
                                ************************************************************ F2502480
                                ABDRM IS CALLED BY MAN TO WRITE THE PROPEER DRUM STATE8 ALPHAF2502490
                                OR BETA, INTO CORES WHEN NECESSARY.                             F2502500
03763 -0 63400 4 05223  ABDRM   SXD ERORBX,4       STORE LINKAGE                                F2502510
03764  0 53400 4 05233          LXA SWICH1,4                                                    F2502520
03765  0 53400 2 05132          LXA L(5),2         INITIALIZE DRUM READING ERROR COUNTER.       F2502530
03766  0 76200 4 00302  PGPG4   RDS 194,4                                                       F2502540
03767  0 53400 1 05073          LXA BLKSZE,1       = OF INST PLUS CHECK SUM                     F2502550
03770  0 46000 4 05073          LDA ABDRMA+1,4                                                  F2502560
03771  0 70000 0 05203          CPY CHEKSM                                                      F2502570
M 03772  0 70000 1 07226 PGPG8   CPY RTXAC+1000,1                                                F2502580
03773  2 00001 1 03772          TIX PGPG8,1,1                                                   F2502590
03774  0 50000 0 05133          CLA L(0)                                                        F2502600
03775  0 53400 1 05073          LXA BLKSZE,1                                                    F2502610
M 03776  0 36100 1 07226 PGPG10  ACL RTXAC+1000,1                                                F2502620
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03777  2 00001 1 03776          TIX PGPG10,1,1                                          F2502630
04000  0 60200 0 05202          SLW ERAB                                                F2502640
04001  0 50000 0 05203          CLA CHEKSM                                              F2502650
04002  0 40200 0 05202          SUB ERAB                                                F2502660
04003  0 10000 0 04010          TZE PGPG14                                              F2502670
04004  2 00001 2 03766          TIX PGPG4,2,1          READING ERROR. TRY AGAIN 4 TIMES.F2502680
04005 -3 00000 4 04007          TXL PGPG12,4,0         WHICH DRUM.                      F2502690
04006  0 07400 4 00004          TSX DIAG,4             DRUM 1 READ INCORRECTLY 5 TIMES. F2502700
04007  0 07400 4 00004 PGPG12   TSX DIAG,4             DRUM 2 READ INCORRECTLY 5 TIMES. F2502710
04010 -0 53400 4 05223 PGPG14   LXD ERORBX,4                                           F2502720
04011  0 02000 4 00001          TRA 1,4                                                 F2502730
                                ********************************************************F2502740
                                TDOTG IS CALLED BY MAN TO READ IN A NEST OF DOTAG ENTRIES.F2502750
                                                                                       F2502760
04012  0 53400 1 05132  TDOTG   LXA L(5),1                                            F2502770
04013  0 53400 2 05057 TDOTG1   LXA LMXDTG,2           LOC. OF DOTAGZ                  F2502780
04014  0 76200 0 00222          RDS 146                                                 F2502790
04015  0 70000 2 01076 TDOTG4   CPY DOTAGZ,2                                          F2502800
04016  1 77777 2 04015          TXI TDOTG4,2,-1                                         F2502810
04017  0 02000 4 00001          TRA 1,4                EF END OF PROBLEM                F2502820
04020  0 76600 0 00333          WRS 219                                                 F2502830
04021 -0 76000 0 00012          RTT                                                     F2502840
04022  0 02000 0 04024          TRA TDOTG5             ERROR                            F2502850
04023  0 02000 4 00002          TRA 2,4                RECORD CORRECTLY READ            F2502860
04024  0 76400 0 00222 TDOTG5   BST 146                BACKSPACE AND REPEAT             F2502870
04025  2 00001 1 04013          TIX TDOTG1,1,1         IF NOT YET READ 3 TIMES          F2502880
04026  0 07400 4 00004          TSX DIAG,4             TAPE 4 READ INCORRECTLY 5 TIMES. F2502890
                                ********************************************************F2502900
                                TTG IS CALLED BY MAN TO READ IN A NEST OF TAGTAG ENTRIES F2502910
04027  0 53400 2 05121  TTG     LXA LMXTG,2            LOCATION OF MAX TAP TABLE SIZE   F2502920
04030  0 53400 1 05132  TTG01   LXA L(5),1            INITIALIZE TAPE ERROR COUNTER.   F2502930
04031  0 76200 0 00224  TTG02   RDS 148                                               F2502940
04032 -0 63400 2 04043          SXD TTG10,2            FOR ERROR BACKUP IN READING      F2502950
04033  0 70000 2 02336  TTG05   CPY MXTGTG,2                                          F2502960
04034  0 02000 0 04037          TRA TTG06                                               F2502970
04035  0 07400 4 00004          TSX DIAG,4             FALXE END OF FILE ON TAPE 4.     F2502980
04036  0 02000 0 04041          TRA TTG07              END OF RECORD, CORRECT EXIT.     F2502990
04037  2 00001 2 04033 TTG06    TIX TTG05,2,1                                           F2503000
~~04040  0 07400 4 00004~~          ~~TSX DIAG,4~~             BUFFER EXCEEDED.         F2503010
04041  0 76600 0 00333  TTG07   WRS 219                                               F2503020
04042 -0 76000 0 00012          RTT                                                     F2503030
TD 04043 -3 00000 0 04051  TTG10 TXL TTG16              ERROR IN READING                 F2503040
04044  1 00004 2 04045          TXI TTG11,2,4          FIRST WORD LAST ENTRY            F2503050
04045  0 50000 2 02336  TTG11   CLA MXTGTG,2           FOR NEST END TEST                F2503060
04046  0 40200 0 05123          SUB ALLONE             END OF NEST INDICATOR            F2503070
04047  0 10000 4 00001  TTG13   TZE 1,4                END OF NEST                      F2503080
04050  2 00004 2 04030          TIX TTG01,2,4                                           F2503090
04051 -0 53400 2 04043  TTG16   LXD TTG10,2            TAPE ERROR ROUTINE .  LOAD       F2503100
04052  0 76400 0 00224          BST 148                TAG TABLE INDEX AND RETRY        F2503110
04053  2 00001 1 04031          TIX TTG02,1,1          UP TO 5 TIMES.                   F2503120
04054  0 07400 4 00004          TSX DIAG,4             TAPE 4 READ INCORRECTLY 5 TIMES. F2503130
                                ********************************************************F2503140
                                DOGS IS CALLED BY MAN TO SELECT AN ALPHA OR BETA TO BE PRO F2503150
                                CESSED BY THE APPROPRIATE STATE (ALPHA OR BETA).       F2503160
04055  0 50000 0 05133  DOGS    CLA L(0)               INITIALIZING TO ZERO
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04056   0 60100 0 05224         STO A          ALL CALLS REQUIRED FOR          F2503170
04057   0 60100 0 05225         STO B          COMPARISON FOR EACH DO          F2503180
04060   0 60100 0 05226         STO SWICH                                      F2503190
04061   0 60100 0 05227         STO TEBBOX                                     F2503200
04062  -0 53400 1 05231         LXD DOIND1,1   IF LEVEL OF LAST                F2503210
D 04063 -3 00000 1 04072         TXL DOGS20,1                                  F2503220
04064   0 50000 0 05233         CLA SWICH1                                     F2503230
04065  -0 10000 0 04072         TNZ DOGS20                                     F2503240
04066   0 50000 1 01103         CLA DOTAGZ+5,1 ANALYZED DOTAG ENTRY            F2503250
04067  -0 73400 1 00000         PDX 0,1        IS ONE THEN THE NEST            F2503260
04070   3 00001 1 04072         TXH DOGS20,1,1 HAS BEEN COMPLETELY             F2503270
04071   0 02000 4 00001         TRA 1,4        ANALYZED. IF NOT                F2503280
04072   0 53400 1 05057 DOGS20  LXA LMXDTG,1   START SCAN AT FIRST ENTRY        F2503290
04073   0 50000 0 05226 DOGS22  CLA SWICH                                      F2503300
04074  -0 10000 0 04104         TNZ DOGS25     B PORTION UNDER CONSIDERATION   F2503310
04075   0 50000 1 01076         CLA DOTAGZ,1   A PORTION UNDER CONSIDERATION   F2503320
04076  -0 32000 0 05136         ANA BIT1                                       F2503330
04077  -0 10000 0 04134         TNZ DOGS50     CONTINUE, ALREADY ANALYZED      F2503340
04100   0 50000 1 01076         CLA DOTAGZ,1   SETS UP A PORTION OF            F2503350
04101  -0 73400 2 00000         PDX 0,2        DO FOR COMPARISON               F2503360
04102  -0 63400 2 05225         SXD B,2        PUT A OF DO IN INDICATOR B      F2503370
04103   0 02000 0 04114         TRA DOGS30     PROCEED T/ COMPARISON           F2503380
04104   0 50000 1 01076 DOGS25  CLA DOTAGZ,1   B PORTION UNDER CONSIDERATION   F2503390
04105  -0 32000 0 05137         ANA BIT2       MASK TO INDICATE LOOKED AT      F2503400
04106  -0 10000 0 04134         TNZ DOGS50     ALREADY ANALYZED, CONTINUE      F2503410
04107   0 50000 1 01076         CLA DOTAGZ,1   SET UP A IN                     F2503420
04110  -0 73400 2 00000         PDX 0,2        B WORD FOR COMPARISON           F2503430
04111  -0 63400 2 05224         SXD A,2                                        F2503440
04112   0 73400 2 00000         PAX 0,2                                        F2503450
04113  -0 63400 2 05225         SXD B,2                                        F2503460
04114   0 50000 0 05225 DOGS30  CLA B                                          F2503470
04115   0 34000 0 05227         CAS TEBBOX                                     F2503480
04116   0 02000 0 04125         TRA DOGS45     T-B1 STORE B IN TEBBOX          F2503490
04117   0 02000 0 04121         TRA DOGS40     T=B1 COMPARE AS                 F2503500
04120   0 02000 0 04134         TRA DOGS50     T-B1 CONTINUE                   F2503510
04121   0 50000 0 05232 DOGS40  CLA TEABOX     CONPARE AS                      F2503520
04122   0 34000 0 05224         CAS A                                          F2503530
04123   0 02000 0 04134         TRA DOGS50     T-A CONTINUE                    F2503540
04124   0 07400 4 00004         TSX DIAG,4     T=A, ERROR.                     F2503550
04125   0 50000 0 05224 DOGS45  CLA A          T-A STORE B IN TRBBOX           F2503560
04126   0 60100 0 05232         STO TEABOX                                     F2503570
04127   0 50000 0 05225         CLA B                                          F2503580
04130   0 60100 0 05227         STO TEBBOX                                     F2503590
04131  -0 63400 1 05231         SXD DOIND1,1   RECORD THE DO POSITION           F2503600
04132   0 50000 0 05226         CLA SWICH      RECORD SWITCH                   F2503610
04133   0 60100 0 05233         STO SWICH1                                     F2503620
04134   0 50000 0 05226 DOGS50  CLA SWICH      REVERSE SWITCH FOR              F2503630
04135   0 40200 0 05126         SUB L(1)       EITHER B OF SAME DO OR          F2503640
04136   0 76000 0 00003         SSP            A OF NEXT DO                    F2503650
04137   0 60100 0 05226         STO SWICH                                      F2503660
04140  -0 10000 0 04142         TNZ DOGS60     TESTS A,B STATUS IF A           F2503670
04141   1 77767 1 04142         TXI DOGS60,1,-9 LOWERS INDEX FOR NEXT DO       F2503680
D 04142 3 00000 1 04073 DOGS60  TXH DOGS22,1                                   F2503690
04143  -0 53400 1 05231         LXD DOIND1,1   END OF SCAN                      F2503700
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04144 -0 63400 1 05230        SXD DOIND,1          DO INDICATOR SET                          F2503710
04145  0 53400 2 05233        LXA SWICH1,2                                                   F2503720
04146  0 50000 0 05136        CLA BIT1             ORDER TO PLACE BIT IN                     F2503730
04147 -3 00000 2 04151        TXL DOGS70,2,0       A OR B USED                               F2503740
04150  0 77100 0 00001        ARS 1                INDICATOR POSITION                        F2503750
04151 -0 60200 1 01076 DOGS70 ORS DOTAGZ,1                                                   F2503760
04152  0 02000 4 00002        TRA 2,4              EXIT AFTER FINDING DO                     F2503770
                              ************************************************************F2503780
                              SCAN SCANS TAGTAG FOR THE FIRST ENTRY THAT IS MODIFIED BY A DF2503790
                              DO WHOSE ALLPHA IS LESS THAT THE CURRENT DOTAG BETA.       F2503800
                              THIS TAG IS CALLED RTXTGX.                                 F2503810
04153  0 53400 1 05121 SCAN   LXA LMXTG,1          COMPARE B WITH DOFOR                      F2503820
04154  0 50000 0 05225 SCAN05 CLA B               DOTAG A OF EACH TAGTAG                    F2503830
04155  0 34000 1 02336        CAS MXTGTG,1         ENTRY IN NEST                             F2503840
04156  1 00004 1 04161        TXI SCAN10,1,4       SEARCH COMPLETED.                         F2503850
04157  0 07400 4 00004        TSX DIAG,4           EQUALITY IMPOSSIBLE.                      F2503860
04160  1 77774 1 04154        TXI SCAN05,1,-4      G LESS THAN A.                            F2503870
04161  0 02000 4 00001 SCAN10 TRA 1,4                                                       F2503880
                              ************************************************************F2503890
                              FIND, BEGINNING WITH RTXTGX, SEARCHES FOR A TAGTAG ENTRY MODIF2503900
                              FIED BY THE CURRENT DO.                                    F2503910
                                                                                         F2503920
04162 -0 63400 4 04176 FIND   SXD FIND22,4                                               F2503930
04163 -0 53400 1 05237        LXD XTG,1                                                  F2503940
04164  1 77774 1 04165 FIND04 TXI FIND10,1,-4      BUMP TO NEXT TGTG ENTRY.                  F2503950
D     04165  3 00000 1 04170 FIND10 TXH FIND20,1    DECREMENT CONTAINS TGTG COUNT.            F2503960
04166 -0 53400 4 04176        LXD FIND22,4                                               F2503970
04167  0 02000 4 00001        TRA 1,4              END OF TGTG TABLE AND DO.                 F2503980
04170  0 50000 0 05224 FIND20 CLA A               COMPARE DOTAGA WITH                       F2503990
04171  0 34000 1 02336        CAS MXTGTG,1         TGTG DOFOR DOTAG A.                       F2504000
04172  0 02000 0 04166        TRA FIND10+1         END OF DO.                                F2504010
04173  0 76100 0 00000        NOP                                                        F2504020
04174  0 07400 4 04213        TSX TGFM,4                                                 F2504030
04175  0 07400 4 04204        TSX ISC,4                                                  F2504040
D     04176 -3 00000 0 04164 FIND22 TXL FIND04,0    POSIND=3 IF LEFTMOST SYMBOL.              F2504050
04177 -0 75400 2 00000        PXD 0,2              2IF CENTER.                               F2504060
04200  0 77100 0 00022        ARS 18               1 IF RIGHTMOST.                           F2504070
04201  0 60100 0 05240        STO POSIND                                                 F2504080
~~04202 -0 53400 4 04176~~     ~~LXD FIND22,4~~                                           F2504090
04203  0 02000 4 00002        TRA 2,4              SUCCESSFUL SEARCH.                        F2504100
                              ************************************************************F2504110
                              ISC IS CALLED BY FIND TO TEST FOR MODIFICATION.            F2504120
04204  0 53400 2 05126 ISC    LXA L(1),2           COMPARE SUBSCRIPT                         F2504130
04205  0 50000 0 05230        CLA DOIND            WITH THE INDEX                            F2504140
04206  0 40200 2 03652        SUB TAG2+3,2         OF THE CURRENT DO.                        F2504150
04207  0 10000 4 00002        TZE 2,4              CURRENT DO MODIFIES THIS TAG.             F2504160
04210  1 00001 2 04211        TXI ISC+5,2,1        TRY NEXT LEFT                             F2504170
04211 -3 00003 2 04205        TXL ISC+1,2,3        SUBSCRIPT.                                F2504180
04212  0 02000 4 00001        TRA 1,4              NO MODIFICATION, ERROR RETURN.            F2504190
                              ************************************************************F2504200
                              TGFM TAKES A TAG ENTRY AND STORES ITS INFORMATION INTO     F2504210
                              WORKING TGTG.                                              F2504220
04213  0 50000 1 02336  TGFM  CLA MXTGTG,1                                               F2504230
04214  0 62200 0 03646        STD TAG1             IN WORKING TGTG.                          F2504240
04215  0 73400 2 00000        PAX 0,2              A, X1, X2, X3, TG, TG1.
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04216 -0 63400 2 03647          SXD TAG2,2                                                  F2504250
04217  0 50000 1 02337          CLA MXTGTG+1,1                                              F2504260
04220  0 62200 0 03650          STD TAG2+1                                                  F2504270
04221  0 73400 2 00000          PAX 0,2                                                     F2504280
04222 -0 63400 2 03651          SXD TAG2+2,2                                                F2504290
04223  0 50000 1 02340          CLA MXTGTG+2,1                                              F2504300
04224  0 60100 0 03652          STO TAG3                                                    F2504310
04225  0 50000 1 02341          CLA MXTGTG+3,1                                              F2504320
04226  0 60100 0 03653          STO TAG4                                                    F2504330
04227  0 02000 4 00001          TRA 1,4                                                     F2504340
                                ***********************************************************F2504350
                                ENTR SIMJLATES A TAU ENTRY AND SPREADS IS INTO WORKING TAG--(F2504360
04230 -0 53400 2 05230 ENTR     LXD DOIND,2          SYMBOL OF DO IS                        F2504370
04231  0 50000 2 01077          CLA DOTAGZ+1,2       PLACED IN WRKSC                        F2504380
04232  0 60100 0 03637          STO WRKSC+1          AND COEF. IS SET                       F2504390
04233  0 50000 0 05061          CLA L1DEC            =1. THIS SIMULATES                     F2504400
04234  0 60100 0 03636          STO WRKSC            A TAU TABLE ENTRY.                     F2504410
04235  0 02000 4 00001          TRA 1,4                                                     F2504420
                                ***********************************************************F2504430
                                SUBCOM SPREADS A TAU ENTRY INTO WORKING TAG                F2504440
04236 -0 63400 4 04320 SUBCOM   SXD SUB085,4         SAVE LINKAGE.                          F2504450
04237  0 53400 1 05132          LXA L(5),1                                                  F2504460
04240  0 60100 0 04331          STO SUBTAG                                                  F2504470
04241  0 76200 0 00304 SUB010   RDS 196              SELECT TAU DRUM.                       F2504480
04242 -0 53400 4 04326          LXD SUBORG+2,4       INITIALIZE                             F2504490
04243 -0 75400 0 00000          PXD 0,0              SUBSCRIPT COMBINATION.                 F2504500
04244  0 60100 4 03646 SUB020   STO WRKSC+8,4        TO ZERO.                               F2504510
04245  2 00001 4 04244          TIX SUB020,4,1                                              F2504520
04246  0 50000 0 04331          CLA SUBTAG                                                  F2504530
04247  0 76500 0 00011          LRS 9                                                       F2504540
04250  0 73400 6 00000          PAX 0,6              TAU 1,2, OR 3.                         F2504550
04251 -0 75400 0 00000          PXD 0,0              TAU 1 ADD. IS ORG+3TAU.                F2504560
04252  0 76300 0 00011          LLS 9                TAU2 ADD. IS ORG+5TAU.                 F2504570
04253  0 60100 0 04327          STO SUBES1           TAU THREE ADD. IS ORG+7TAU.            F2504580
04254  0 76700 0 00001          ALS 1                STORE                                  F2504590
04255  0 60100 0 04330          STO SUBES2           ADRRESS                                F2504600
04256  0 50000 4 04327          CLA SUBORG+3,4                                              F2504610
04257  0 40000 0 04327          ADD SUBES1           FOR LDA                                F2504620
04260  0 40000 0 04330 SUB030   ADD SUBES2           INSTRUCTION.                           F2504630
04261  2 00001 4 04260          TIX SUB030,4,1                                              F2504640
04262  0 62100 0 04327          STA SUBES1           ACTUAL DRUM ADDRESS.                   F2504650
04263  0 46000 0 04327          LDA SUBES1           COPY SUB. COMBINATION                  F2504660
04264  0 70000 0 03636          CPY WRKSC            WD1 IS C1 AND C2.                      F2504670
04265 -3 00002 2 04267          TXL SUB040,2,2       1 AND 2 DIM SKIP WD5.                  F2504680
04266  0 70000 0 03642          CPY WRKSC+4          WD5 IS C3.                             F2504690
04267  0 70000 0 03637 SUB040   CPY WRKSC+1          WD2 IS S1.                             F2504700
04270 -3 00001 2 04275          TXL SUB060,2,1       1 DIM., SKIP WDS 4,6,7.                F2504710
04271  0 70000 0 03641          CPY WRKSC+3          WD4 IS S2.                             F2504720
04272 -3 00002 2 04274          TXL SUB050,2,2       1 AND 2 DIM SKIP WD 6.                 F2504730
04273  0 70000 0 03643          CPY WRKSC+5          WD6 IS S3.                             F2504740
04274  0 70000 0 03644 SUB050   CPY WRKSC+6          WD7 IS DIMENSION.                      F2504750
04275  0 70000 0 04327 SUB060   CPY SUBES1           CHECK SUM INTO SUBES1.                 F2504760
04276 -0 53400 4 04324          LXD SUBORG,4         COMPUTE CHECK SUM.                     F2504770
04277 -0 50000 0 03636          CAL WRKSC                                                   F2504780
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04300  0 36100 4 03645 SUB070 ACL WRKSC+7,4                                                  F2504790
04301  2 00001 4 04300        TIX SUB070,4,1        3 ATTEMPTS ARE MADE                      F2504800
04302  0 60200 0 04330        SLW SUBES2            TO READ SC CORRECTLY.                    F2504810
04303  0 50000 0 04330        CLA SUBES2            IF ERROR STILL PRESENT,                  F2504820
04304  0 40200 0 04327        SUB SUBES1            COMPLETE ROUTINE, RETURN.                F2504830
04305  0 10000 0 04310        TZE SUB075            CHECK SUMS AGREE, TRA.                   F2504840
04306  2 00001 1 04241        TIX SUB010,1,1        ERROR, TRY UP TO 5 TIMES.                F2504850
04307  0 07400 4 00004        TSX DIAG,4            DRUM 4 READING ERROR 5 TIMES.            F2504860
04310 -0 53400 4 04325 SUB075 LXD SUBORG+1,4        REARRANGE C1,C2,D1, AND D2.              F2504870
04311  0 50000 4 03645 SUB080 CLA WRKSC+7,4                                                  F2504880
04312  0 73400 2 00000        PAX 0,2               C2 INTO XB.                              F2504890
04313 -0 32000 0 05142        ANA DECMSK                                                     F2504900
04314  0 60100 4 03645        STO WRKSC+7,4         WD1 DECREMENT IS C1)                     F2504910
04315 -0 75400 2 00000        PXD 0,2               WD7 DECREMENT IS D1.                     F2504920
04316 -2 00006 4 04321        TNX SUB090,4,6                                                 F2504930
04317  0 60100 0 03640        STO WRKSC+2                                                    F2504940
D 04320 -3 00000 0 04311 SUB085 TXL SUB080,0                                                  F2504950
04321  0 60100 0 03645 SUB090 STO WRKSC+7           WD8 DECREMENT IS D2.                     F2504960
04322 -0 53400 4 04320        LXD SUB085,4          RESTORE LINKAGE INDEX.                   F2504970
04323  0 02000 4 00001 SUB100 TRA 1,4                                                        F2504980
04324 +000006001356    SUBORG OCT 000006001356      DECREMENT IS 6, ADD. IS ORG. TAU3.       F2504990
04325 +000007000454           OCT 000007000454      DECREMENT IS 7, ADD. IS ORG. TAU2        F2505000
04326 +000010000000           OCT 000010000000      DECREMENT IS 8, ADD. IS ORG. TAU1        F2505010
A 04327  0 00000 0 00000 SUBES1 HTR                                                           F2505020
A 04330  0 00000 0 00000 SUBES2 HTR                                                           F2505030
04331  0 00000 0 00000 SUBTAG                                                                 F2505040
                                ***************************************************************F2505050
                                LOCO ASSIGNS A RELATIVE LOCATION (INSTRUCTION NUMBER), AND UPF2505060
                                DATES A COUNTER FOR THE NEXT ASSIGNMENT.                    F2505070
04332  0 50000 0 05222 LOCO   CLA LOCIND                                                     F2505080
04333  0 10000 2 00001        TZE 1,2               LOCATION ALREADY ASSIGNED.               F2505090
04334  0 50000 0 05133        CLA L(0)              IF LOCIND GREATER                        F2505100
04335  0 60100 0 05222        STO LOCIND                                                     F2505110
04336  0 50000 0 05176        CLA CIL00             TO ZERO.                                 F2505120
04337 -0 10000 2 00001        TNZ 1,2               IF CIL00 HAS NOT BEEN                    F2505130
04340  0 50000 0 05244        CLA VCTR                                                       F2505140
04341  0 60100 0 05176        STO CIL00             UPDATE VCTR.                             F2505150
04342  0 40000 0 05110        ADD L(8)                                                       F2505160
04343  0 60100 0 05244        STO VCTR                                                       F2505170
04344  0 02000 2 00001        TRA 1,2               START COMPARING BUFFER                   F2505180
                                ***************************************************************F2505190
                                CIT ENTERS A COMPILED INSTRUCTION INTO THE COMPILED INSTRUCTIF2505200
                                ION BUFFER.  IF THE BUFFER IS FULL, CITSP (WHICH IS PART OF CF2505210
                                CIT) WRITES IT ONTO TAPE 3.                                 F2505220
04345 -0 63400 1 05174 CIT    SXD E2C,1             SIZE TO CURRENT WORD COUNT.              F2505230
04346 -0 63400 2 05175        SXD E3C,2                                                      F2505240
04347  0 07400 2 04332        TSX LOCO,2                                                     F2505250
04350 -0 53400 2 05173        LXD BBOX,2            COMP OF CURRENT WORD COUNT.              F2505260
04351  3 77634 2 04362        TXH CIT04,2,-100      IF BUFFER INITIALLY                      F2505270
04352 -0 53400 2 05173 CITSP  LXD BBOX,2                                                     F2505280
04353 -3 00000 2 04362        TXL CIT04,2,0         WRITE                                    F2505290
04354  0 76600 0 00223        WRS 147               BUFFER                                   F2505300
04355  0 53400 1 05133        LXA L(0),1            ON TAPE 3.                               F2505310
04356  0 70000 1 00030 CIT01  CPY CIB,1             COPY LOOP.                               F2505320
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04357   1 77777 1 04360         TXI CIT02,1,-1                                  F2505330
04360   1 00001 2 04361 CIT02   TXI CIT03,2,1       DROP WORD COUNT.            F2505340
04361   3 00001 2 04356 CIT03   TXH CIT01,2,1       TEST FOR BUFFER DNE.        F2505350
04362   0 53400 1 05130 CIT04   LXA L(4),1          PROCEED TO NEW              F2505360
04363   0 50000 1 05202 CIT05   CLA CIL00+4,1       INST INTO BUFFER.           F2505370
04364   0 60100 2 00030         STO CIB,2                                       F2505380
04365   1 77777 2 04366         TXI CIT07,2,-1      KEEP WORD COUNT UPDATED.    F2505390
04366   2 00001 1 04363 CIT07   TIX CIT05,1,1                                   F2505400
04367  -0 63400 2 05173         SXD BBOX,2          SAVE CURRENT WD CT.         F2505410
04370  -0 53400 1 05174         LXD E2C,1                                       F2505420
04371  -0 53400 2 05175         LXD E3C,2                                       F2505430
04372   0 02000 4 00001         TRA 1,4                                         F2505440
                                ****************************************************F2505450
                                SCLMN1 ISOLATES THE INNERMOST DOTAG CONTROLLING A GIVEN TAG. F2505460
04373  -0 53400 1 03647 SCLMN1  LXD TAG2,1          S1 INDEX QUANTITY.          F2505470
04374  -0 53400 2 03650         LXD TAG2+1,2        S2 INDEX QUANTITY.          F2505480
04375  -0 63400 2 04376         SXD SCLMN2,2        THIS ROUTINE                F2505490
D 04376   3 00000 1 04400 SCLMN2 TXH SCLMN3,1       COMPARES SIZES              F2505500
04377  -0 53400 1 04376         LXD SCLMN2,1        OF THE INDEX                F2505510
04400  -0 53400 2 03651 SCLMN3  LXD TAG2+2,2        QUANTITIES OF               F2505520
04401  -0 63400 2 04402         SXD SCLMN4,2        EACH SUBSCRIPT IN A TAG.    F2505530
D 04402   3 00000 1 04404 SCLMN4 TXH SCLMN5,1       LARGEST 2.X. QUANTITY       F2505540
04403  -0 53400 1 04402         LXD SCLMN4,1        IS FOUND AND LEFT IN        F2505550
04404  -0 75400 1 00000 SCLMN5  PXD 0,1             ACC FOR COMPARISON WITH DOIND. F2505560
04405   0 02000 4 00001         TRA 1,4                                         F2505570
                                ****************************************************F2505580
                                TELC MONITORS THE COMPUTING OF THE LOAD PORTION OF THE TEST  F2505590
                                DECREMENT.                                      F2505600
04406   0 53400 1 05131 TELC    LXA L(3),1                                      F2505610
04407   0 50000 0 05133         CLA L(0)                                        F2505620
04410   0 60100 0 05245         STO ERTX01                                      F2505630
04411  -0 63400 4 05236         SXD LINKC,4                                     F2505640
04412   0 50000 1 03652 TELC05  CLA TAG2+3,1        SEQUENCE.  PUT S IN XB TO PREPARE  F2505650
04413  -0 73400 2 00000         PDX 0,2             FOR CN1IJ ROUTINE.          F2505660
04414  -3 00000 2 04416         TXL TELC10-2,2,0    NO S, GO TO NEXT S.         F2505670
04415   0 07400 4 04423         TSX CN1IJ,4         COMPUTE (CN1-1)IJ ETC.      F2505680
04416   0 40000 0 05245         ADD ERTX01                                      F2505690
04417   0 60100 0 05245         STO ERTX01          (C1N1)+(C2N1-1)D1+(C3N1-1)D1D2. F2505700
04420   2 00001 1 04412 TELC10  TIX TELC05,1,1      GO TO NEXT S FOR CN1IJ ROUTINE. F2505710
04421  -0 53400 4 05236         LXD LINKC,4                                     F2505720
04422   0 02000 4 00001         TRA 1,4                                         F2505730
                                ****************************************************F2505740
                                CN1IJ COMPUTES THE LOAD VALUE FOR A GIVEN SUBSCRIPT IN A     F2505750
                                SUBSCRIPT COMBINATION. (C1N1-1), OR (C2N1-1)D1               F2505760
                                (C3N1-1)D1D2.                                   F2505770
04423   0 56000 2 01100 CN1IJ   LDQ DOTAGZ+2,2      N2 INTO MQ.                 F2505780
04424   0 76300 0 00022         LLS 18                                          F2505790
04425  -3 00002 1 04431         TXL CN1IJ2,1,2      S2 OR S3, TRANSFER.         F2505800
04426   0 20000 0 03636         MPY WRKSC           S1,                         F2505810
04427   0 40200 0 05127         SUB L(2)                                        F2505820
04430   0 02000 0 04445         TRA CN1IJ8                                      F2505830
04431  -3 00001 1 04437 CN1IJ2  TXL CN1IJ4,1,1      DIVIDE BY 2 AND RETURN.     F2505840
04432   0 20000 0 03640         MPY WRKSC+2         S2                          F2505850
04433   0 40200 0 05127         SUB L(2)            COMPUTE                     F2505860
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04434  0 76500 0 00022         LRS 18              (2C2N1-2)D1D2 THEN                          F2505870
04435  0 20000 0 03644         MPY WRKSC+6         GO TO CN1IJ8 TO DIVIDE                      F2505880
04436  0 02000 0 04445         TRA CN1IJ8          BY 2 AND RETURN.                            F2505890
04437  0 20000 0 03642 CN1IJ4  MPY WRKSC+4         S3,                                         F2505900
04440  0 40200 0 05127         SUB L(2)            COMPUTE                                     F2505910
04441  0 76500 0 00022         LRS 18              (2C3N1-2)D1D2 THEN                          F2505920
04442  0 20000 0 03644         MPY WRKSC+6         GO TO CN1IJ8 TO DIVIDE                      F2505930
04443  0 76500 0 00022         LRS 18              DIVIDE BY 2 AND                             F2505940
04444  0 20000 0 03645         MPY WRKSC+7         RETURN.                                     F2505950
04445  0 77100 0 00001 CN1IJ8  ARS 1               DIVIDE BY 2.  RESULT IS (C1N1-1)            F2505960
04446  0 02000 4 00001         TRA 1,4             OR (C2N1-1)D1 OR (C3N1-1)D1D2.              F2505970
                               ************************************************************F2505980
                               CXIJ COMPUTES GN3X.  WHEN THE ROUTINE CXIJ+2 IS CALLED,     F2505990
                               GQ IS COMPUTED, Q BEING WHATEVER PARAMETER IS LEFT IN THE ACCF2506000
                               BY THE CALLER.                                              F2506010
04447  0 50000 2 01103 CXIJ    CLA DOTAGZ+5,2                                              F2506020
04450 -0 32000 0 05141         ANA ADMSK           ISOLATE X QUANTITY.                     F2506030
04451  0 60100 0 05247         STO ERTX03                                                  F2506040
04452  3 00001 1 04455         TXH CXIJ+6,1,1      S2 OR S1.                               F2506050
04453  0 56000 0 03642         LDQ WRKSC+4         S3, LOAD C3.                            F2506060
04454  0 02000 0 04461         TRA CXIJ2                                                   F2506070
04455 -3 00002 1 04460         TXL CXIJ1,1,2       S2.                                     F2506080
04456  0 56000 0 03636         LDQ WRKSC           S1, LOAD C1.                            F2506090
04457  0 02000 0 04461         TRA CXIJ2                                                   F2506100
04460  0 56000 0 03640 CXIJ1   LDQ WRKSC+2         S2, LOAD C2.                            F2506110
04461  0 20000 0 05247 CXIJ2   MPY ERTX03                                                  F2506120
04462  3 00002 1 04470         TXH CXIJ4,1,2       IF S1, FINISHED.                        F2506130
04463  0 76500 0 00022         LRS 18                                                      F2506140
04464  0 20000 0 03644         MPY WRKSC+6         CX TIMES D1.                            F2506150
04465  3 00001 1 04470         TXH CXIJ4,1,1       IF S2, FINISHED.                        F2506160
04466  0 76500 0 00022         LRS 18                                                      F2506170
04467  0 20000 0 03645         MPY WRKSC+7         CXD1 TIMES D2.                          F2506180
04470  0 76300 0 00021 CXIJ4   LLS 17                                                     F2506190
04471  0 02000 4 00001         TRA 1,4             IN ACC. AND RETURN.                     F2506200
                               ************************************************************F2506210
                               CSXD COMPILES AN SXD INSTRUCTION WHERE THE ADDRESS IS NOT YETF2506220
                               KNOWN, BUT IS KNOWN TO BE THE TEST FOR A GIVEN DO.  THE     F2506230
                               ADDRESS WORD IS FILLED IN WITH THAT DOTAG ALPHA-BETA AND THE F2506240
                               LOCATION OF THE SXD IS STORED IN THAT DOTAG SO THAT A TABLE (F2506250
                               (SXDTX) MAY BE MADE FOR REFERENCE BY SECTION 3 TO FILL IN THEF2506260
                               PROPER ADDRESS DURING MERGE.                                F2506270
04472 -0 63400 4 05245 CSXD    SXD ERTX01,4        ROUTINE FOR                             F2506280
04473  0 07400 4 06224         .TSX CILV,4         COMPILING AN                            F2506290
04474  0 50000 0 05133         CLA L(0)            SXD INSTRUCTION                         F2506300
04475  0 60100 0 05201         STO CIL03           WHERE THE                               F2506310
04476  0 60100 0 05200         STO CIL02                                                   F2506320
04477 -0 53400 4 05250         LXD BLKNUM,4                                                F2506330
04500 -3 00002 4 04503         TXL CSXD4,4,2       BLOCKS B,C.                             F2506340
M 04501 -0 53400 4 03650       LXD TAG21,4         BLOCKS D,E, LOAD S2 INDEX.              F2506350
04502  0 02000 0 04504         TRA CSXD4+1                                                 F2506360
04503 -0 53400 4 03647 CSXD4   LXD TAG2,4          BLOCKS B,C, LOAD S1 INDEX.              F2506370
04504  0 50000 4 01076         CLA DOTAGZ,4        FOR BLOCKS B,C, FILL IN                 F2506380
04505 -0 32000 0 05071         ANA NOPRET          SYMBOLIC ADDRESS OF SXD                 F2506390
04506  0 60100 0 05200         STO CIL02           FROM WD1 OF S1 DOTAG.                   F2506400
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04507  0 50000 0 03652          CLA TAG3              NOT KNOWN.                                F2506410
04510  0 62100 0 05201          STA CIL03                                                         F2506420
04511  0 50000 0 05045          CLA L(SXD)                                                        F2506430
04512  0 60100 0 05177          STO CIL01                                                         F2506440
04513  0 07400 4 04345          TSX CIT,4                                                         F2506450
04514 -0 53400 4 05245          LXD ERTX01,4                                                      F2506460
04515  0 02000 4 00001          TRA 1,4                                                           F2506470
                                ***********************************************************F2506480
                                ADTGSE FINDS A VALID DRMTG (ADTAG) ENTRY FOR CONSIDERATION   F2506490
                                AND SPREADS IT INTO WORKING TAG (WRKSC).                      F2506500
04516 -0 53400 1 05237 ADTGSE LXD XTG,1                                                         F2506510
04517  1 77774 1 04520 ADTGS   TXI ADTGS+1,1,-4                                                  F2506520
04520 -0 63400 1 05237          SXD XTG,1                                                         F2506530
D 04521  3 00000 1 04523 ADTGS1 TXH ADTGS5,1                                                      F2506540
04522  0 02000 4 00001          TRA 1,4               END OF TABLE.                             F2506550
04523  0 50000 1 03466 ADTGS5 CLA ADTGMX,1           COMPARE ADTG DDA WITH                     F2506560
04524 -0 32000 0 05142          ANA DECMSK            DOTAG A AND B UNTIL                       F2506570
04525  0 34000 0 05224          CAS A                 WE FIND AN ADTAG                          F2506580
04526  0 02000 0 04531          TRA ADTGS4            MODIFIED BY A DO THAT                     F2506590
04527  0 02000 0 04531          TRA ADTGS4            IS WITHIN THE RANGE                       F2506600
04530  0 02000 0 04517          TRA ADTGS             OF THE CURRENT DO                         F2506610
04531  0 34000 0 05225 ADTGS4 CAS B                                                             F2506620
04532  0 02000 0 04517          TRA ADTGS             NOT IN RANGE, SELECT NEXT.                F2506630
04533  0 07400 4 00004          TSX DIAG,4            EQUALITY IMPOSSIBLE.                      F2506640
04534  0 50000 1 03466          CLA ADTGMX,1          IN RANGE, FILL                            F2506650
04535 -0 73400 2 00000          PDX 0,2               OUT WORKING TAG.                          F2506660
04536 -0 63400 2 03646          SXD TAG1,2            DDA IN TAG1 DECREMENT.                    F2506670
04537  0 73400 2 00000          PAX 0,2                                                           F2506680
04540 -0 63400 2 03647          SXD TAG2,2            S1 INDEX IN TAG2.                         F2506690
04541  0 50000 1 03467          CLA ADTGMX+1,1                                                    F2506700
04542 -0 73400 2 00000          PDX 0,2                                                           F2506710
04543 -0 63400 2 03650          SXD TAG2+1,2          S2 INDEX IN TAG2+1.                       F2506720
04544  0 73400 2 00000          PAX 0,2                                                           F2506730
04545 -0 63400 2 03651          SXD TAG2+2,2          S3 INDEX IN TAG2+2.                       F2506740
04546  0 50000 1 03470          CLA ADTGMX+2,1                                                    F2506750
04547  0 60100 0 03652          STO TAG3              TAG NAME IN TAG3.                         F2506760
04550  0 50000 1 03471          CLA ADTGMX+3,1                                                    F2506770
04551  0 60100 0 03653          STO TAG4              ADTG WD4 IN TAG4.                         F2506780
04552  0 53400 2 05126 ADTGS8 LXA L(1),2             INIT FOR POSING.                          F2506790
04553  0 50000 2 03652          CLA TAG2+3,2                                                      F2506800
04554  0 40200 0 05230          SUB DOIND             TEST FOR MODIFICATION.                    F2506810
04555  0 10000 4 00002          TZE 2,4               PROPER ENTRY FOUND.                       F2506820
04556  3 00002 2 04517          TXH ADTGS,2,2         NOT MOD BY DO, TAKE NEXT SUBSCRIPT.       F2506830
04557  1 00001 2 04553          TXI ADTGS8+1,2,1      ADTG NOT MOD BY DO, TAKE NEXT ADTG.       F2506840
                                ***********************************************************F2506850
                                N1STET ISOLATES VARIABLE N1 BITS FOR A TAG AND ORS THEM TO  LF2506860
                                LAST 3 BITS OF THE WORD N1SBX.                                F2506870
04560  0 50000 0 03653 N1STET CLA TAG4                                                          F2506880
04561  0 77100 0 00003          ARS 3                 ONE BIT                                   F2506890
04562 -0 32000 0 05076          ANA L(7)              IS STORED IN N1SBX.                       F2506900
04563  0 76700 0 00003          ALS 3                                                             F2506910
04564  0 60100 0 05254          STO N1SBX                                                         F2506920
04565  0 53400 1 05131          LXA L(3),1                                                        F2506980
04566  0 50000 1 03652 N1S02   CLA TAG2+3,1          A CONATAINS POSIND.                       F2506990
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     04567 -0 73400 2 00000        PDX 0,2                                                    F2507000
D    04570 -3 00000 2 04576        TXL N1S05,2          NO TAG FOR THIS POS.                  F2507010
     04571  0 50000 2 01076        CLA DOTAGZ,2         ISOLATE                               F2507020
     04572  0 77100 0 00017        ARS 15               VARIABLE                              F2507030
     04573 -0 32000 0 05130        ANA L(4)             N1                                    F2507040
     04574  0 77100 1 00003        ARS 3,1              BIT.                                  F2507050
     04575 -0 60200 0 05254        ORS N1SBX            OR N1BIT TO N1SBX.                    F2507060
     04576  2 00001 1 04566 N1S05  TIX N1S02,1,1        REPEAT FOR NEXT RIGHT S.              F2507070
     04577  0 50000 0 05254        CLA N1SBX                                                  F2507080
     04600  0 02000 4 00001        TRA 1,4                                                    F2507090
                                   ***********************************************************F2507100
                                   FIXCON SCANS THE FIXCON DRUM TABLE FOR A DESIRED SYMBOL FOR AF2507110
                                   FIXED POINT CONSTANT.  IF THE DESIRED FIXCON IS NOT THERE A SF2507120
                                   SYMBOL IS CREATED FOR IT AND AN ENTRY IS MADE.             F2507130
     04601 -0 63400 1 04634 FIXCON SXD FC29,1           SAVE                                  F2507140
     04602 -0 63400 2 04624        SXD FC18,2           INDEX                                 F2507150
     04603 -0 63400 4 04636        SXD FC34,4           REGISTERS.                            F2507160
M    04604  0 60100 0 05243        STO ERDRM1                                                 F2507170
     04605  0 53400 4 05132        LXA L(5),4                                                 F2507180
     04606  0 50000 0 04667 FC02   CLA ORIGIN           FIXCON TABLE ORIGIN.                  F2507190
     04607  0 60100 0 05214        STO AD1                                                    F2507200
     04610  0 53400 1 05133        LXA L(0),1           INITIALIZE WORD COUNT TEST INDICATOR. F2507210
     04611  0 53400 2 05127        LXA L(2),2           INITIALIZE INDICATOR FOR TWO PASSES.  F2507220
M    04612  0 50000 0 05243 FC04   CLA ERDRM1           COMPARISON WORD IN ACCUMULATOR.       F2507230
     04613  0 76200 0 00302        RDS 194              FIXCON TABLE                          F2507240
     04614  0 46000 0 05214        LDA AD1              ON DRUM 3.                            F2507250
     04615  0 70000 0 05241 FC08   CPY CPYWD1           ENTRY FROM TABLE.                     F2507260
D    04616  3 00000 1 04627        TXH FC24+1,1         DECREMENT CONTAINS WORD COUNT.        F2507270
     04617  0 70000 0 05242        CPY CPYWD2           CHECK SUM.                            F2507280
     04620  0 04000 0 04635        TLQ FC30             ENTRY LESS THAN COMPARISON WORD.      F2507290
     04621  0 70000 0 05246        CPY ERDRM            SKIP EVEN ENTRIES FOR 2ND PASS.       F2507300
     04622  0 34000 0 05242        CAS CPYWD2           COMPARE ENTRY WITH COMPARISON WORD.   F2507310
     04623  0 07400 4 00004        TSX DIAG,4           TLQOBVIATES THIS PATH.                F2507320
D    04624 -3 00000 0 04662 FC18   TXL FC60,0           EQUALITY SEARCH ENDED.                F2507330
     04625  0 70000 0 05246 FC20   CPY ERDRM            SKIP EVEN ENTRIES FOR 2ND PASS.       F2507340
     04626  1 00002 1 04615 FC24   TXI FC08,1,2         BUMP WORD COUNT TEST INDICATOR        F2507350
     04627 -2 00001 2 04637        TNX FC40,2,1         TEST FOR PASS CONDITION.              F2507360
     04630  0 50000 0 05214        CLA AD1              INITIALIZE ORIGIN DRUM                F2507370
     04631  0 40000 0 05127        ADD L(2)             ADDRESS FOR 2ND PASS                  F2507380
     04632  0 60100 0 05214        STO AD1              (EVEN ENTRIES)                        F2507390
     04633  0 53400 1 05126 FC28   LXA L(1),1           SET ENTRY NUMBER FOR SECOND PASS.     F2507400
D    04634 -3 00000 0 04612 FC29   TXL FC04,0           RETURN TO FC04 FOR SECOND PASS.       F2507410
     04635  0 70000 0 05246 FC30   CPY ERDRM                                                  F2507420
D    04636 -3 00000 0 04625 FC34   TXL FC20,0                                                 F2507430
     04637  0 60100 0 05241 FC40   STO CPYWD1           SEARCH ENDED, ENTRY NOT FOUND.        F2507440
     04640 -0 53400 1 04616        LXD FC08+1,1                                               F2507450
     04641  1 00001 1 04642        TXI FC42,1,1         WORD COUNT.                           F2507460
     04642 -0 63400 1 04616 FC42   SXD FC08+1,1         NEW TEST VALUE (WORD COUNT).          F2507470
     04643 -0 75400 1 00000        PXD 0,1              WORD COUNT                            F2507480
     04644  0 77100 0 00021        ARS 17               PLUS                                  F2507490
     04645  0 40000 0 04667        ADD ORIGIN           ORIGIN EQUALS                         F2507500
     04646  0 60100 0 05214        STO AD1              NEW ADDRESS FOR DRUM WRITING.         F2507510
     04647  0 76600 0 00302        WRS 194              SELECT                                F2507520
     04650  0 46000 0 05214        LDA AD1              DRUM AND                              F2507530
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04651   0 70000 0 05241         CPY CPYWD1          WRITE NEW CONSTANT                          F2507540
04652   0 70000 0 05241         CPY CPYWD1          AND CHECK SUM ON DRUM.                      F2507550
04653  -0 75400 1 00000 FC50   PXD 0,1             PLACE NAME OF CONSTANT                      F2507560
04654   0 77100 0 00022         ARS 18              IN ACCUMULATOR, RESTORE X REGISTERS,        F2507570
04655  -0 50100 0 05101         ORA BCD2            AND RETURN                                  F2507580
04656  -0 53400 1 04634         LXD FC29,1          TO                                          F2507590
04657  -0 53400 2 04624         LXD FC18,2          MAIN                                        F2507600
04660  -0 53400 4 04636         LXD FC34,4                                                      F2507610
04661   0 02000 4 00001         TRA 1,4             ROUTINE.                                    F2507620
04662   0 50000 0 05241 FC60    CLA CPYWD1          TEST DRUM READING.                          F2507630
04663   0 40200 0 05242         SUB CPYWD2                                                      F2507640
04664   0 10000 0 04653         TZE FC50            DRUM READ CORRECTLY.                        F2507650
04665   2 00001 4 04606         TIX FC02,4,1        RETURN FOR 1ST PASS.                        F2507660
04666   0 07400 4 00004 STOPFC   TSX DIAG,4          DRUM 4 READING ERROR 5 TIMES.               F2507670
04667   0 00000 0 00002 ORIGIN   HTR 2                                                          F2507680
                        ********************************************************************F2507690
                        OP2 IS CALLED BY THE ALPHA STATE TO TEST FOR OPTIMIZATION IN        F2507700
                        THE COMILATION OF LOAD VALUE COMPUTATION.  IT OPTIMIZES WHEN        F2507710
                        (CN1-1)=0 OR IS COMPUTABLE AT EXECUTIVE TIME.                       F2507720
04670   0 50000 4 77776 OP2      CLA 32766,4                                                   F2507730
04671   0 62100 0 04740         STA RETURN          LINKAGE.                                    F2507740
04672   0 50000 1 03652         CLA TAG2+3,1        IF S IS NOT                                 F2507750
04673  -0 73400 2 00000         PDX 0,2             DEFINED BY A DO,                            F2507760
04674   3 00000 2 04676         TXH OP2P,2,0                                                    F2507770
04675   0 02000 4 00001         TRA 1,4                                                         F2507780
04676   0 50000 2 01100 OP2P     CLA DOTAGZ+2,2      IF NOT DEFINED BY                           F2507790
04677  -0 32000 0 05104         ANA 6ONES                                                       F2507800
04700  -0 10000 4 00001         TNZ 1,4             RETURN TO MAIN ROUTINE.                     F2507810
04701   0 50000 2 01100         CLA DOTAGZ+2,2      IF CONSTANT, COMPUTE                        F2507820
04702   0 07400 4 04423         TSX CN1IJ,4                                                     F2507830
04703   0 10000 0 04740         TZE RETURN          RETURN AND CONSIDER S2.                     F2507840
04704   0 76700 0 00022         ALS 18              OTHERWISE COMPUTE                           F2507850
04705  -3 00002 1 04707         TXL OP2P1,1,2                                                   F2507860
04706   0 40000 0 05061         ADD L1DEC           TO (CN1-1).                                 F2507870
04707   0 07400 4 04601 OP2P1    TSX FIXCON,4                                                    F2507880
04710  -3 00002 1 04713         TXL OP2P2,1,2                                                   F2507890
04711   0 60100 0 07567         STO OR000+1                                                     F2507900
04712   2 00001 1 05517         TIX AC050,1,1                                                   F2507910
04713   0 73400 1 00000 OP2P2    PAX 0,1                                                       F2507920
04714  -0 32000 0 05104         ANA 6ONES           ASSIGN FIXCON SYMBOL.                       F2507930
04715   0 60100 0 05200         STO CIL02           CHECK SUBSCRIPT. IF                         F2507940
04716  -0 75400 1 00000         PXD 0,1             S1, TRA RETURN (3RD).  OTHERWISE            F2507950
04717   0 60100 0 05201         STO CIL03           COMPILE ADD L(SYMBOL).                      F2507960
04720   0 50000 0 05054         CLA L(ADD)          STO 1)+3.                                   F2507970
04721   0 60100 0 05177         STO CIL01                                                       F2507980
04722   0 50000 0 05133         CLA L(0)                                                        F2507990
04723   0 60100 0 05176         STO CIL00                                                       F2508000
04724  -0 53400 1 05173         LXD BBOX,1                                                      F2508010
04725   1 00004 1 04726         TXI OP24,1,4                                                    F2508020
04726  -0 63400 1 05173 OP24    SXD BBOX,1                                                    F2508030
04727   0 07400 4 04345         TSX CIT,4                                                       F2508040
04730   0 50000 0 05044         CLA L(STO)                                                      F2508050
04731   0 60100 0 05177         STO CIL01                                                       F2508060
04732   0 50000 0 05075         CLA L3DEC                                                       F2508070
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04733  0 60100 0 05201          STO CIL03                                                    F2508080
04734  0 50000 0 07620          CLA OR000+26                                                 F2508090
04735 -0 32000 0 05104          ANA 6ONES                                                    F2508100
04736  0 60100 0 05200          STO CIL02                                                    F2508110
04737  0 07400 4 04345          TSX CIT,4                                                    F2508120
04740  0 02000 0 00000 RETURN   TRA 0                ADDRESS MODIFIED.                       F2508130
                                ***********************************************************F2508140
                                OP3 TESTS  FOR VARIABLE NS AND IF CONSTANT COMPILES A       F2508150
                                CLA L(N2-N1), OR IF VARIABLE CLA L(N2)....SUBL(N1).         F2508160
04741 -0 63400 4 05040 OP3      SXD EROP3,4                                                  F2508170
04742  0 50000 2 01076          CLA DOTAGZ,2         ARE ALL                                 F2508180
04743  0 77100 0 00017          ARS 15               N PARAMETERS                            F2508190
04744 -0 32000 0 05076          ANA L(7)             CONSTANT.                               F2508200
04745 -0 10000 0 04766          TNZ OP31             NO, OP31.                               F2508210
04746  0 50000 2 01101          CLA DOTAGZ+3,2       YES,                                    F2508220
04747  0 40200 2 01100          SUB DOTAGZ+2,2       FORM                                    F2508230
04750  0 76700 0 00022          ALS 18               N2-N1.                                  F2508240
04751  0 07400 4 04601          TSX FIXCON,4         OBTAIN FIXCON SYMBOL                    F2508250
04752  0 73400 4 00000          PAX 0,4              COMPILE                                 F2508260
04753 -0 32000 0 05104          ANA 6ONES            CLA                                     F2508270
04754  0 60100 0 05200          STO CIL02            L(N2-N1)                                F2508280
04755 -0 75400 4 00000          PXD 0,4              AND                                     F2508290
04756  0 60100 0 05201          STO CIL03            RETURN                                  F2508300
04757  0 50000 0 05053          CLA L(CLA)           TO                                      F2508310
04760  0 60100 0 05177          STO CIL01            THE                                     F2508320
04761  0 50000 0 05133          CLA L(0)             CALLER.                                 F2508330
04762  0 60100 0 05176          STO CIL00            ZERO LOCATION.                          F2508340
04763  0 07400 4 04345          TSX CIT,4                                                    F2508350
04764 -0 53400 4 05040          LXD EROP3,4                                                  F2508360
04765  0 02000 4 00001          TRA 1,4                                                      F2508370
04766  0 77100 0 00001 OP31     ARS 1                                                        F2508380
04767  0 76000 0 00001          LBT                                                          F2508390
04770  0 02000 0 04776          TRA OP32                                                     F2508400
04771  0 50000 2 01101          CLA DOTAGZ+3,2       N2 VARIABLE,                            F2508410
04772  0 60100 0 05200          STO CIL02            COMPILE                                 F2508420
04773  0 50000 0 05133          CLA L(0)             CLA L(N2).                              F2508430
04774  0 60100 0 05201          STO CIL03                                                    F2508440
04775  0 02000 0 05006          TRA OP33                                                     F2508450
04776  0 50000 2 01101 OP32     CLA DOTAGZ+3,2                                               F2508460
04777  0 76700 0 00022          ALS 18                                                       F2508470
05000  0 07400 4 04601          TSX FIXCON,4                                                 F2508480
05001  0 73400 4 00000          PAX 0,4                                                      F2508490
05002 -0 32000 0 05104          ANA 6ONES                                                    F2508500
05003  0 60100 0 05200          STO CIL02                                                    F2508510
05004 -0 75400 4 00000          PXD 0,4                                                      F2508520
05005  0 60100 0 05201          STO CIL03                                                    F2508530
05006  0 50000 0 05133 OP33     CLA L(0)                                                     F2508540
05007  0 60100 0 05176          STO CIL00                                                    F2508550
05010  0 50000 0 05053          CLA L(CLA)                                                   F2508560
05011  0 60100 0 05177          STO CIL01                                                    F2508570
05012  0 07400 4 04345          TSX CIT,4                                                    F2508580
05013  0 50000 2 01076          CLA DOTAGZ,2                                                 F2508590
05014  0 77100 0 00021          ARS 17                                                       F2508600
05015  0 76000 0 00001          LBT                                                          F2508610
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05016   0 02000 0 05024          TRA OP34                                    F2508620
05017   0 50000 2 01100          CLA DOTAGZ+2,2        N1IS VARIABLE,        F2508630
05020   0 60100 0 05200          STO CIL02             PREPARE TO            F2508640
05021   0 50000 0 05133          CLA L(0)              COMPILE               F2508650
05022   0 60100 0 05201          STO CIL03             SUBL(N1).             F2508660
05023   0 02000 0 05033          TRA OP35                                    F2508670
05024   0 50000 2 01100 OP34     CLA DOTAGZ+2,2        N1 CONSTANT,          F2508680
05025   0 76700 0 00022          ALS 18                OBTAIN                F2508690
05026   0 07400 4 04601          TSX FIXCON,4          FIXCON SYMBOL         F2508700
05027   0 73400 4 00000          PAX 0,4               FOR N1                F2508710
05030  -0 32000 0 05104          ANA 6ONES             AND PREPARE           F2508720
05031   0 60100 0 05200          STO CIL02             TO COMPILE            F2508730
05032  -0 63400 4 05201          SXD CIL03,4           SUB L(N1).            F2508740
05033   0 50000 0 05055 OP35     CLA L(SUB)            COMPILE               F2508750
05034   0 60100 0 05177          STO CIL01             SUB                   F2508760
05035   0 07400 4 04345          TSX CIT,4             L(N1)                 F2508770
05036  -0 53400 4 05040          LXD EROP3,4                                 F2508780
05037   0 02000 4 00001          TRA 1,4                                     F2508790
05040   0 00000 0 00000 EROP3                                                F2508800
05041  +000000000100     EROP    OCT 100                                     F2508810
                                  ************************************************************F2508820
05042   636731000000     L(TXI)  BCD 1TXI000                                 F2508830
05043   476724000000     L(PXD)  BCD 1PXD000                                 F2508840
05044   626346000000     L(STO)  BCD 1STO000                                 F2508850
05045   626724000000     L(SXD)  BCD 1SXD000                                 F2508860
05046   633167000000     L(TIX)  BCD 1TIX000                                 F2508870
05047   636743000000     L(TXL)  BCD 1TXL000                                 F2508880
05050   242524000000     L(DED)  BCD 1DED000                                 F2508890
05051   436724000000     L(LXD)  BCD 1LXD000                                 F2508900
05052   626324000000     L(STD)  BCD 1STD000                                 F2508910
05053   234321000000     L(CLA)  BCD 1CLA000                                 F2508920
05054   212424000000     L(ADD)  BCD 1ADD000                                 F2508930
05055   626422000000     L(SUB)  BCD 1SUB000                                 F2508940
05056   226262000000     L(BSS)  BCD 1BSS000                                 F2508950
05057   0 00000 0 00702 LMXDTG       450                                     F2508960
05060  +000000000400     MAXLOC  OCT 400                                     F2508970
05061  +000001000000     L1DEC   OCT 1000000                                 F2508980
05062  +000000002664     DRADS1  OCT 2664                                    F2508990
05063   0 00000 0 00314 DRADS2       204                                     F2509000
05064   0 00000 0 00002 DRADS3       2                                       F2509010
05065   0 00000 0 00312 AD202        202                                     F2509020
05066   0 00000 0 00021 L(17)        17                                      F2509030
05067   0 00000 0 07566 L(ORO)       ORO00                                   F2509040
05070   0 00000 0 00000 ESTORE  HTR  0                                       F2509050
05071  +077777077777     NOPRET  OCT 077777077777                            F2509050
05072  +000000001750     ABDRMA  DEC 1000                                    F2509070
05073  +000000001750     BLKSZE  DEC 1000                                    F2509080
05074  +000000077776     MINUS1  OCT 77776                                   F2509090
05075  +000003000000     L3DEC   OCT 000003000000                            F2509100
05076   0 00000 0 00007 L(7)         7                                       F2509110
05077  +170000000000     BCD15   OCT 170000000000                            F2509120
05100  +060000000002     BCD0    OCT 060000000002                            F2509130
05101  +020000000000     BCD2    OCT 020000000000                            F2509140
05102  -200000000000     BIT01   OCT 600000000000                            F2509150
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05103 -300000077777     T1MSK   OCT 700000077777                F2509160
05104 -370000000000     6ONES   OCT 770000000000                F2509170
05105 +007777000000     TETMSK  OCT 007777000000                F2509180
05106   0 00000 0 00006 L(6)            6                       F2509190
05107   0 00000 0 00030 L(24)           24                      F2509200
05110   0 00000 0 00010 L(8)            8                       F2509210
05111 +000000000010     L(K1)   OCT 10                          F2509220
05112 +000004000000     L4DEC   OCT 000004000000                F2509230
05113   0 00000 0 03636 INST20          ADTGA                   F2509240
05114   0 00000 0 02646 INST22          MXTGA                   F2509250
05115   0 00000 0 05673 INST24          RTX160                  F2509260
05116   0 00000 0 05716 INST26          RTX184                  F2509270
05117   0 00000 0 06204 INST30          RTX264                  F2509280
05120   0 00000 0 06065 INST32          RTX226                  F2509290
05121   0 00000 0 01240 LMXTG           672                     F2509300
05122   0 00000 0 00310 LMXTGA          200                     F2509310
05123 +377777777777     ALLONE  OCT 377777777777                F2509320
05124   0 00000 0 00144 LZEKMX          100                     F2509330
05125   0 00000 0 00620 LADMX           400                     F2509340
05126   0 00000 0 00001 L(1)            1                       F2509350
05127   0 00000 0 00002 L(2)            2                       F2509360
05130   0 00000 0 00004 L(4)            4                       F2509370
05131   0 00000 0 00003 L(3)            3                       F2509380
05132   0 00000 0 00005 L(5)            5                       F2509390
05133   0 00000 0 00000 L(0)            0                       F2509400
05134   0 00000 0 00012 L(10)           10                      F2509410
05135   0 00000 0 00020 L(16)           16                      F2509420
05136   2 00000 0 00000 BIT1    PTW 0                           F2509430
05137   1 00000 0 00000 BIT2    PON 0                           F2509440
05140 +002000000000     BIT8    OCT 002000000000                F2509450
05141 +000000077777     ADMSK   OCT 77777                       F2509460
05142 +077777000000     DECMSK  OCT 077777000000                F2509470
05143   0 00000 0 00000 SMSK                                    F2509480
05144 +000000000760     SMSK1   OCT 760                         F2509490
05145 +000000000774     SMSK2   OCT 774                         F2509500
05146 +000000000763     SMSK3   OCT 763                         F2509510
05147 +000000000773     SMSK4   OCT 773                         F2509520
05150 +000000000020     BITMSK  OCT 20                          F2509530
05151 +000000000010             OCT 10                          F2509540
05152 +000000074030     OPMSK   OCT 74030                       F2509550
05153 +000000003777     11BITS  OCT 3777                        F2509560
05154 +000000100000     BIT20   OCT 100000                      F2509570
05155 -377777777777     36ONES  OCT 777777777777                F2509580
05156   0 53400 1 05130 INST2   LXA L(4),1                       F2509590
05157   0 53400 1 05127 INST3   LXA L(2),1                       F2509600
05160   0 02000 0 06115 INST4   TRA AC224                       F2509610
05161   0 02000 0 06116 INST5   TRA AC228                       F2509620
05162   0 00000 0 06250 INST8           AC244                   F2509630
05163   0 00000 0 03636 INST10          ADTGA                   F2509640
05164   0 00000 0 05315 INST11          AC010                   F2509650
05165   0 00000 0 02646 INST12          MXTGA                   F2509660
05166   0 02000 0 05725 INST13  TRA AC155                       F2509670
05167   0 07400 4 07131 INST14  TSX CIL03I,4                    F2509680
05170 +000000000077     6ONESR  OCT 77                          F2509690
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        05171 +007777000000     6TO17   OCT 007777000000                                F2509700
        05172 +000000007777     24TO35  OCT 7777                                        F2509710
A       05173   0 00000 0 00000 BBOX    HTR                                             F2509720
A       05174   0 00000 0 00000 E2C     HTR                                             F2509730
A       05175   0 00000 0 00000 E3C     HTR                                             F2509740
                        05176 CIL00   BSS 1                                             F2509750
                        05177 CIL01   BSS 1                                             F2509760
                        05200 CIL02   BSS 1                                             F2509770
                        05201 CIL03   BSS 1                                             F2509780
                        05202 ERTGA   BSS 1                                             F2509790
                        05203 CHEKSM  BSS 1                                             F2509800
                        05204 TETTG   BSS 1                                             F2509810
                        05205 SWICH2  BSS 1                                             F2509820
                        05206 ERLXC   BSS 1                                             F2509830
                        05207 AX      BSS 1                                             F2509840
                        05210 RELCO   BSS 1                                             F2509850
                        05211 WRKTGA  BSS 1                                             F2509860
                        05212 N3X     BSS 1                                             F2509870
                        05213 XX      BSS 1                                             F2509880
                        05214 AD1     BSS 1                                             F2509890
                        05215 AD2     BSS 1                                             F2509900
                        05216 ADTGX   BSS 1                                             F2509910
                        05217 WRKRXT  BSS 1                                             F2509920
                        05220 TETTGX  BSS 1                                             F2509930
                        05221 RTXTGX  BSS 1                                             F2509940
                        05222 LOCIND  BSS 1                                             F2509950
                        05223 ERORBX  BSS 1                                             F2509960
                        05224 A       BSS 1                                             F2509970
                        05225 B       BSS 1                                             F2509980
                        05226 SWICH   BSS 1                                             F2509990
                        05227 TEBBOX  BSS 1                                             F2510000
                        05230 DOIND   BSS 1                                             F2510010
                        05231 DOIND1  BSS 1                                             F2510020
                        05232 TEABOX  BSS 1                                             F2510030
                        05233 SWICH1  BSS 1                                             F2510040
                        05234 N3IND   BSS 1                                             F2510050
                        05235 N1N2N3  BSS 1                                             F2510060
                        05236 LINKC   BSS 1                                             F2510070
                        05237 XTG     BSS 1                                             F2510080
                        05240 POSIND  BSS 1                                             F2510090
                        05241 ER40    BSS 1                                             F2510100
                        05242 ER41    BSS 1                                             F2510110
                        05243 ARG     BSS 1                                             F2510120
                        05244 VCTR    BSS 1                                             F2510130
                        05245 ERTX01  BSS 1                                             F2510140
                        05246 ERTX02  BSS 1                                             F2510150
                        05247 ERTX03  BSS 1                                             F2510160
                        05250 BLKNUM  BSS 1                                             F2510170
                        05251 SXDTXZ  BSS 1                                             F2510180
                        05252 OREDO   BSS 1                                             F2510190
                        05253 DEFDO   BSS 1                                             F2510200
                        05254 N1SBX   BSS 1                                             F2510210
                        05255 TETLOC  BSS 1                                             F2510220
                              ************************************************************F2510230
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                                        BEGIN BETA STAGE                                                F2510240
                                        THE BETA STATE IS CALLED BY MAN TO COMPUTE AND COMPILE          F2510250
                                        INCREMENTING, TESTING, AND RESETTING INSTRUCTIONS FOR A GIVE    F2510260
                                        DO.                                                             F2510270
     05256 -0 63400 4 05325 RTX     SXD RTX024,4                                                        F2510280
     05257 -0 53400 1 05244         LXD VCTR,1            VARIABLE CTR.  LAST BETA.                     F2510290
     05260 -0 53400 2 05230         LXD DOIND,2           NEW DO                                        F2510300
     05261  0 50000 2 01076         CLA DOTAGZ,2          ALPHA BETA WORD OF DO.                        F2510310
     05262  0 73400 2 00000         PAX 0,2               PLACE B IN X.                                 F2510320
     05263 -0 63400 2 05264         SXD RTX04,2                                                         F2510330
D    05264 -3 00000 1 05276 RTX04   TXL RTX05,1           IS THIS THE FIRST BETA.                       F2510340
     05265 -0 75400 2 00000         PXD 0,2                                                             F2510350
     05266  0 40000 0 05111         ADD L(K1)             FIRST B. SET                                  F2510360
     05267  0 60100 0 05244         STO VCTR              VCTR AND                                      F2510370
     05270  0 50000 0 05123         CLA ALLONE            INITIALIZE                                    F2510380
     05271  0 60100 0 05176         STO CIL00             CIL BUFFER                                    F2510390
     05272  0 60100 0 05177         STO CIL01             TO ALL ONES.                                  F2510400
     05273  0 60100 0 05200         STO CIL02                                                           F2510410
     05274  0 60100 0 05201         STO CIL03                                                           F2510420
     05275  0 07400 4 04352         TSX CITSP,4           USE SPECIAL CIT ENTRY.                        F2510430
     05276  0 50000 0 05133 RTX05   CLA L(0)              INITIALIZE THE TEST TAG                       F2510440
     05277  0 60100 0 05220         STO TETTGX            INDEX FOR THIS DO TO ZERO.                    F2510450
     05300  0 60100 0 05237         STO XTG                                                             F2510460
     05301  0 60100 0 05221         STO RTXTGX                                                          F2510470
     05302  0 60100 0 05216         STO ADTGX                                                           F2510480
     05303  0 07400 4 06235         TSX N3BIT,4           ISOLATE N3 BIT OF DOTAG                       F2510490
     05304  0 07400 4 04153         TSX SCAN,4                                                          F2510500
     05305 -0 63400 1 05221 RTXIN1  SXD RTXTGX,1          STORE FIRST TTG FOR TX CYCLE.                 F2510510
     05306 -0 63400 1 05237         SXD XTG,1             ENTRY THAT LIES BETWEEN A AND B               F2510520
     05307  0 07400 4 04162 RTX06   TSX FIND,4                                                          F2510530
     05310  0 02000 0 05707         TRA RTX180            END OF DO, START DMTG CYCLE.                  F2510540
     05311 -0 63400 1 05237         SXD XTG,1             SC MODIFIED BY DO, STORE.                     F2510550
     05312  0 07400 4 06243         TSX TETG,4            PLACE TEST BITS IN TAG WORD.                  F2510560
     05313  0 07400 4 06277         TSX PRES,4                                                          F2510570
                                        AT THE END OF THIS ROUTINE THE BLOCK INDICATION IS IN XB.       F2510580
     05314  3 00004 2 05673         TXH RTX160,2,4        BLOCK F, NO INSTRUCTIONS, GET NEW TAG.        F2510590
     05315  3 00000 2 05435         TXH RTX70,2,0         BLOCK DIFFERENT FROM A OR F.                  F2510600
     05316  0 50000 0 05234         CLA N3IND             BLOCK EQUALSA.                                F2510610
     05317 -0 10000 0 05403         TNZ RTX68             DECREMENT OF RXA IS VARIABLE                  F2510620
     05320 -0 53400 1 03652 RTX020  LXD TAG3,1            DECREMENT IS CONSTANT.                        F2510630
     05321  3 00000 1 05334         TXH RTX50,1,0         TEST FOR INSERTED COUNTER.                    F2510640
     05322  0 50000 0 03652         CLA TAG3              OR RESET TAG.                                 F2510650
     05323  0 76500 0 00013         LRS 11                                                              F2510660
     05324  0 76000 0 00001         LBT                                                                 F2510670
D    05325 -3 00000 0 05327 RTX024  TXL RTX30,0           RESET                                         F2510680
     05326  0 02000 0 05332         TRA RTX34             COUNTER.                                      F2510690
     05327  0 50000 0 03652 RTX30   CLA TAG3              IF RESET TAG, PUT TAG                         F2510700
     05330 -0 32000 0 05153         ANA 11BITS            NAME IN ACCUMULATOR AND                       F2510710
     05331  0 02000 0 05336         TRA RTX51             GO TO SUBCOM.                                 F2510720
     05332  0 07400 4 04230 RTX34   TSX ENTR,4            IF COUNTER, MAKE                              F2510730
     05333  0 02000 0 05337         TRA RTX52             ARTIFICIAL ENTRY IN WRKSC.                    F2510740
     05334 -0 75400 1 00000 RTX50   PXD 0,1               CURRENT TAG.                                  F2510750
     05335  0 77100 0 00022         ARS 18                GET TAG NAME                                  F2510760
     05336  0 07400 4 04236 RTX51   TSX SUBCOM,4          LAY OUT TAU ENTRY.                            F2510770
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05337  0 50000 0 05042 RTX52  CLA L(TXI)          COMPILE                                          F2510780
05340  0 60100 0 05177         STO CIL01          TXI                                              F2510790
05341  0 53400 1 05240         LXA POSIND,1       PREPARE FOR                                      F2510800
05342 -0 53400 2 05230         LXD DOIND,2        EXIT ROUTINE.                                    F2510810
05343  0 07400 4 06447         TSX CN3IJ,4        ROUTINE COMPUTES DECREMENT N3G                   F2510820
05344  0 60100 0 05245         STO ERTX01         AND STORES IN ERTX01.                            F2510830
05345  0 53400 1 05240         LXA POSIND,1                                                        F2510840
05346  0 50000 0 03653         CLA TAG4           TEST FOR DUPLICATE                               F2510850
05347  0 76500 0 00014         LRS 12             SUBSCRIPTS AND COMPUTE                           F2510860
05350  0 76300 1 00004         LLS 4,1            DECREMENT FOR THEM.                              F2510870
05351  0 76000 0 00001         LBT                TEST ON S1,S2, OR S3 FOR DUPES.                  F2510880
05352  0 02000 0 05376         TRA RTX66          NO DUPLICATES FOR THIS SUBSCRIPT.                F2510890
05353  0 77100 0 00001         ARS 1                                                               F2510900
05354  0 76000 0 00001         LBT                TEST FOR S1 OR S2 DUPES.                         F2510910
05355  1 00002 1 05367         TXI RTX62+3,1,2    DUPES ARE 1,3 ON TRANSFER.                       F2510920
05356  1 00001 1 05357         TXI RTX61,1,1                                                       F2510930
05357  0 60100 0 05246 RTX61   STO ERTX02         STORE STATUS OF ACCUMULATOR.  DUPES ARE          F2510940
05360  0 07400 4 06447         TSX CN3IJ,4        1,2 OR 2,3 OR 1,2,3.                             F2510950
05361  0 53400 1 05240         LXA POSIND,1       COMPUTE DECREMENT ADJUSTMENT                     F2510960
05362  0 40000 0 05245         ADD ERTX01         FOR NEXT LEFT SUBSCRIPT.                         F2510970
05363  0 60100 0 05245         STO ERTX01         REPLACE ADJUSTED DECREMENT IN ERTX01.            F2510980
05364  1 00002 1 05365 RTX62   TXI RTX62+1,1,2                                                     F2510990
05365  3 00003 1 05376         TXH RTX66,1,3      NOT 3RD SUBSCRIPT CASE.                          F2511000
05366  0 50000 0 05246         CLA ERTX02         LOW ORDER BIT IS SUBSCRIPT LEFT OF DOSUB.        F2511010
05367  0 77100 0 00001         ARS 1                                                               F2511020
05370  0 76000 0 00001         LBT                TEST FOR S1 DUPE.                                F2511030
05371  0 02000 0 05376         TRA RTX66                                                           F2511040
05372 -0 53400 2 05230         LXD DOIND,2                                                         F2511050
05373  0 07400 4 06447         TSX CN3IJ,4        COMPUTE DECREMENT ADJUSTMENT FOR S1              F2511060
05374  0 40000 0 05245         ADD ERTX01         IN 1,2,3 AND 1,3 CASES.                          F2511070
05375  0 60100 0 05245         STO ERTX01         FINAL DECREMENT ADJUSTMENT.                      F2511080
05376  0 50000 0 05245 RTX66   CLA ERTX01                                                          F2511090
05377  0 62100 0 05177         STA CIL01          AFTER DECREMENT IS COMPUTED, FILL                F2511100
05400  0 07400 4 06465         TSX CIL023,4       OUT 4 WORDS OF                                   F2511110
05401  0 07400 4 04345         TSX CIT,4          COMPILED INSTRUCTION.P                           F2511120
05402  0 02000 0 05413         TRA RTX69          AND CONTINUE.                                    F2511130
05403  0 07400 4 06224 RTX68   TSX CILV,4         DECREMENT IS VARIABLE.  ASSIGN LOCATION.         F2511140
05404  0 50000 0 05176         CLA CIL00          PREPARE VCTR LOCATION                            F2511150
05405 -0 32000 0 05141         ANA ADMSK          FOR TGA ROUTINE.                                 F2511160
05406  0 07400 4 06476         TSX TGA,4          PLACE LOCATION IN APPENDED TAGTAG WORD           F2511170
05407  0 07400 4 06625         TSX CIL23,4        AND THEN FILL OUT                                F2511180
05410  0 50000 0 05042         CLA L(TXI)         REMAINING WORDS OF                               F2511190
05411  0 60100 0 05177         STO CIL01          COMPILED INSTRUCTION                             F2511200
05412  0 07400 4 04345         TSX CIT,4          COMPILER ROUTINE.                                F2511210
05413  0 50000 0 03653 RTX69   CLA TAG4           TEST FOR SYMBOL                                  F2511220
05414  0 12000 0 05673         TPL RTX160         INDICATION                                       F2511230
05415 -0 53400 2 05230         LXD DOIND,2        FORVAR                                           F2511240
05416  0 50000 2 01103         CLA DOTAGZ+5,2     OCCURRANCE.                                      F2511250
05417 -0 32000 0 05136         ANA BIT1                                                            F2511260
05420  0 10000 0 05673         TZE RTX160         NO FORVAR, CONTINUE.                             F2511270
05421  0 50000 0 05133         CLA L(0)           FORVAR EXISTS.                                   F2511280
05422  0 60100 0 05176         STO CIL00                                                           F2511290
05423  0 50000 0 03652         CLA TAG3           COMPILE                                          F2511300
05424 -0 32000 0 05141         ANA ADMSK          STORE                                            F2511310
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05425  0 60100 0 05201          STO CIL03          INSTRUCTION                          F2511320
05426  0 50000 0 05045          CLA L(SXD)         FOR                                  F2511330
05427  0 60100 0 05177          STO CIL01          FORVAR OCCURRANCE.                   F2511340
05430 -0 53400 2 05230          LXD DOIND,2                                             F2511350
05431  0 50000 2 01077          CLA DOTAGZ+1,2     PUT FORVAR SUBSCRIPT                 F2511360
05432  0 60100 0 05200          STO CIL02          IN RELATIVE ADDRESS                  F2511370
05433  0 07400 4 04345          TSX CIT,4          WORD FOR SXD INSTRUCTION.            F2511380
05434  0 02000 0 05673          TRA RTX160                                              F2511390
05435  3 00001 2 05466 RTX70    TXH RTX90,2,1      BLOCK IS B,C,D OR E.                 F2511400
05436 -0 63400 2 05250          SXD BLKNUM,2                                            F2511410
05437 -0 53400 2 03647          LXD TAG2,2         BLOCK B FIRST DETERMINE              F2511420
05440  0 07400 4 06620          TSX NBITS,4        IF DECREMENT IS VARIABLE             F2511430
05441  0 40000 0 05234          ADD N3IND                                               F2511440
05442 -0 10000 0 05464          TNZ RTX80          DECREMENT IS VARIABLE.               F2511450
05443  0 50000 0 03652          CLA TAG3           DECREMENT IS CONSTANT.               F2511460
05444  0 77100 0 00022          ARS 18                                                  F2511470
05445  0 07400 4 04236          TSX SUBCOM,4       LAY OUT TAU INTO WRKSC.              F2511480
05446 -0 53400 2 05230          LXD DOIND,2        PREPARE FOR                          F2511490
05447  0 53400 1 05240          LXA POSIND,1       EXIT ROUTINE.                        F2511500
05450  0 07400 4 06447          TSX CN3IJ,4        COMPUTE N3G AND                      F2511510
05451  0 60100 0 05245          STO ERTX01         STORE IN ERTX01.                     F2511520
05452 -0 53400 2 03647          LXD TAG2,2                                              F2511530
05453  0 53400 1 05240          LXA POSIND,1       MOVE POSIND TO LEFT SUB              F2511540
05454  1 00001 1 05455          TXI RTX72,1,1      AND COMPUTE XN3G                     F2511550
05455  0 07400 4 04447 RTX72    TSX CXIJ,4         FOR LEFT SUB WHICH IS TEST.          F2511560
05456  0 40200 0 05126          SUB L(1)                                                F2511570
05457  0 60100 0 05246          STO ERTX02                                              F2511580
05460  0 40000 0 05245          ADD ERTX01         ADDN3G FOR THIS SUBSCRIPT            F2511590
05461  0 60100 0 05245          STO ERTX01         RESULT IS TXI DECREMENT.             F2511600
05462  0 07400 4 06513          TSX EDCB,4         COMPILE TXI SXD TIX.                 F2511610
05463  0 02000 0 05673          TRA RTX160         CHECK BEST TEST.                     F2511620
05464  0 07400 4 06546 RTX80    TSX BCDE,4         BLOCK B IS VARIABLE.                 F2511630
05465  0 02000 0 05673          TRA RTX160                                              F2511640
05466  3 00002 2 05525 RTX90    TXH RTX110,2,2     BLOCK IS C,D, OR E.                  F2511650
05467 -0 63400 2 05250          SXD BLKNUM,2       BLOCK IS C, PUT IN XB.               F2511660
05470 -0 53400 2 03647          LXD TAG2,2         ISOLATE                              F2511670
05471  0 07400 4 06620          TSX NBITS,4        NBITS INTO N1N2N3.                   F2511680
05472  0 40000 0 05234          ADD N3IND                                               F2511690
05473 -0 10000 0 05523          TNZ RTX100         DECREMENT IS VARIABLE, TSX BCDE.     F2511700
05474  0 50000 0 03652          CLA TAG3           DECREMENT IS CONSTANT.               F2511710
05475  0 77100 0 00022          ARS 18             LAY OUT TAU                          F2511720
05476  0 07400 4 04236          TSX SUBCOM,4       ENTRY INTO WRKSC.                    F2511730
05477 -0 53400 2 03647          LXD TAG2,2         COMPUTE                              F2511740
05500  0 53400 1 05131          LXA L(3),1         XN3G-1                               F2511750
05501  0 07400 4 04447 RTX91    TSX CXIJ,4         FOR                                  F2511760
05502  0 40200 0 05126          SUB L(1)           LEFT                                 F2511770
05503  0 60100 0 05246          STO ERTX02         SUBSCRIPT.                           F2511780
05504  0 53400 1 05240          LXA POSIND,1       THEN COMPUTE N3G                     F2511790
05505  0 07400 4 06447          TSX CN3IJ,4        FOR RIGHT                            F2511800
05506  0 40000 0 05246          ADD ERTX02         SUBSCRIPT.                           F2511810
05507  0 60100 0 05245          STO ERTX01         RESULT IS ERTX01.                    F2511820
05510  0 50000 0 03653          CLA TAG4                                                F2511830
05511  0 77100 0 00011          ARS 9              TEST FOR DUPES.                      F2511840
05512  0 76000 0 00001          LBT                                                     F2511850
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05513   0 02000 0 05521          TRA RTX95
05514   0 53400 1 05240          LXA POSIND,1
05515   1 00001 1 05516          TXI RTX93,1,1
05516   0 07400 4 06447 RTX93    TSX CN3IJ,4
05517   0 40000 0 05245          ADD ERTX01
05520   0 60100 0 05245          STO ERTX01
05521   0 07400 4 06513 RTX95    TSX EDCB,4
05522   0 02000 0 05673          TRA RTX160
05523   0 07400 4 06546 RTX100   TSX BCDE,4
05524   0 02000 0 05673          TRA RTX160
05525   3 00003 2 05601 RTX110   TXH RTX140,2,3
05526  -0 63400 2 05250          SXD BLKNUM,2
05527  -0 53400 2 03650          LXD TAG2+1,2
05530   0 07400 4 06620          TSX NBITS,4
05531   0 40000 0 05234          ADD N3IND
05532  -0 10000 0 05577          TNZ RTX130
05533   0 50000 0 03652          CLA TAG3
05534   0 77100 0 00022          ARS 18
05535  -0 32000 0 05153          ANA 11BITS
05536   0 07400 4 04236          TSX SUBCOM,4
05537  -0 53400 2 03650          LXD TAG2+1,2
05540   0 53400 1 05127          LXA L(2),1
05541   0 07400 4 04447          TSX CXIJ,4
05542   0 60100 0 05246          STO ERTX02
05543   0 53400 1 05240          LXA POSIND,1
05544  -0 53400 2 05230          LXD DOIND,2
05545   0 07400 4 06447          TSX CN3IJ,4
05546   0 60100 0 05245          STO ERTX01
05547   0 50000 0 03653          CLA TAG4
05550   0 77100 0 00011          ARS 9
05551  -0 32000 0 05076          ANA L(7)
05552   0 10000 0 05570          TZE RTX126
05553   0 76000 0 00001          LBT
05554   0 02000 0 05563          TRA RTX118
05555   0 53400 1 05240          LXA POSIND,1
05556   1 00002 1 05557          TXI RTX114,1,2
05557   0 07400 4 06447 RTX114   TSX CN3IJ,4
05560   0 40000 0 05245          ADD ERTX01
05561   0 60100 0 05245          STO ERTX01
05562   0 02000 0 05570          TRA RTX126
05563  -0 53400 2 03650 RTX118   LXD TAG2+1,2
05564   0 53400 1 05131          LXA L(3),1
05565   0 07400 4 04447 RTX122   TSX CXIJ,4
05566   0 40000 0 05246          ADD ERTX02
05567   0 60100 0 05246          STO ERTX02
05570   0 50000 0 05246 RTX126   CLA ERTX02
05571   0 40200 0 05126          SUB L(1)
05572   0 60100 0 05246          STO ERTX02
05573   0 40000 0 05245          ADD ERTX01
05574   0 60100 0 05245          STO ERTX01
05575   0 07400 4 06513          TSX EDCB,4
05576   0 02000 0 05673          TRA RTX160
05577   0 07400 4 06546 RTX130   TSX BCDE,4
05600   0 02000 0 05673          TRA RTX160
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NO DOSUB DUPE.                                          F2511860
DOSUB IS DUPE.                                          F2511870
COMPUTE ADJUSTMENT                                      F2511880
FOR DECREMENT AND                                       F2511890
STORE IN ERTX01.                                        F2511900
XN3G(L) + N3G(R) + N3G(C) - 1)                          F2511910
COMPILE TXI SXD TIX.                                    F2511920
                                                        F2511930
BLOCK DECREMENT IS VARIABLE.                            F2511940
                                                        F2511950
D OR E.                                                 F2511960
STORE BLOCK NUMBER D.                                   F2511970
BLOCK D CONSIDERED.                                     F2511980
ISOLATE NBITS                                           F2511990
CHECK FOR VARIABLE DECREMENT.                           F2512000
DECREMENT IS VARIABLE.                                  F2512010
DECREMENT IS CONSTANT.                                  F2512020
SET UP TAG                                              F2512030
NAME AND                                                F2512040
LAY OUT TAU ENTRY.P                                     F2512050
CONSIDER CENTER SUBSCRIPT                               F2512060
FOR EXIT ROUTINE.                                       F2512070
COMPUTE XN3G FOR                                        F2512080
CENTER SUBSCRIPT.                                       F2512090
PREPARE DOSUB SUBSCRIPT                                 F2512100
FOR CN3IJROUTINE.                                       F2512110
COMPUTE N3G FOR                                         F2512120
DOSUB SUBSCRIPT.                                        F2512130
TEST                                                    F2512140
FOR                                                     F2512150
DUPES.                                                  F2512160
NORMAL BLOCK D, NO DUPES.                               F2512170
                                                        F2512180
XX0 BLOCK D, OR 0XX.                                    F2512190
X0X BLOCK D.                                            F2512200
SWITCH RIGHT OR LEFT POSIND.                            F2512210
COMPUTE N3G                                             F2512220
DECREMENT ADJUSTMENT                                    F2512230
FOR X0X                                                 F2512240
DUPES.                                                  F2512250
COMPUTE XN3G                                            F2512260
DECREMENT                                               F2512270
ADJUSTMENT                                              F2512280
FOR CENTER                                              F2512290
SUBSCRIPT.                                              F2512300
SUB1 AND                                                F2512310
ADD ERTX01                                              F2512320
AND ERTX02                                              F2512330
YIELDING TXI                                            F2512340
DECREMENT.                                              F2512350
COMPILE TXI SXD TIX.                                    F2512360
END CHECK FOR TEST TAG.                                 F2512370
BLOCK D IS VARIABLE.                                    F2512380
                                                        F2512390
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05601 -0 63400 2 05250 RTX140 SXD BLKNUM,2      BLOCK E                                F2512400
05602 -0 53400 2 03647         LXD TAG2,2       PUT N BITS FOR S1                      F2512410
05603  0 07400 4 06620         TSX NBITS,4      PLACE N BITS PLUS                      F2512420
05604  0 40000 0 05234         ADD N3IND        N3IND FOR S1                           F2512430
05605  0 60100 0 05245         STO ERTX01       AND S2 INTO ERTX01                     F2512440
05606 -0 53400 2 03650         LXD TAG2+1,2     FOR VARIABLE DECREMENT                 F2512450
05607  0 07400 4 06620         TSX NBITS,4      TEST.  IF SUM IS NOT ZERO,             F2512460
05610  0 40000 0 05245         ADD ERTX01       THEN THE DECREMENT IS VARIABLE.        F2512470
05611 -0 10000 0 05644         TNZ RTX154       DECREMENT IS VARIABLE.                 F2512480
05612  0 50000 0 03652         CLA TAG3         CONSTANT CASE, LAY                     F2512490
05613  0 77100 0 00022         ARS 18           OUT TAU ENTRY INTO                     F2512500
05614  0 07400 4 04236         TSX SUBCOM,4     WRKSC.                                 F2512510
05615 -0 53400 2 03650         LXD TAG2+1,2     SET UP CENTER SUBSCRIPT                F2512520
05616  0 53400 1 05127         LXA L(2),1       FOR EXIT ROUTINE.                      F2512530
05617  0 07400 4 04447         TSX CXIJ,4       COMPUTE XN3G FOR CENTER.               F2512540
05620  0 40200 0 05126         SUB L(1)         STORE SN3G-1                           F2512550
05621  0 60100 0 05246         STO ERTX02       IN ERTX02.                             F2512560
05622  0 53400 1 05240         LXA POSIND,1     COMPUTE N3G                            F2512570
05623 -0 53400 2 05230         LXD DOIND,2      FOR RIGHT                              F2512580
05624  0 07400 4 06447         TSX CN3IJ,4      SUBSCRIPT (DOSUB).                     F2512590
05625  0 40000 0 05246         ADD ERTX02       PUT FIRST TXI DECREMENT                F2512600
05626  0 60100 0 05245         STO ERTX01       IN ERTX01.                             F2512610
05627  0 07400 4 06513         TSX EDCB,4       COMPILES FIRST                         F2512620
05630 -0 53400 2 03647         LXD TAG2,2       THREE OF BLOCK E.                      F2512630
05631  0 53400 1 05240         LXA POSIND,1     COMPUTE XN3G FOR                       F2512640
05632  1 00002 1 05633         TXI RTX150,1,2   LEFT SUBSCRIPT.                        F2512650
05633  0 07400 4 04447 RTX150 TSX CXIJ,4       IN ORDER TO CMPILE 2ND                 F2512660
05634  0 40200 0 05126         SUB L(1)         TXI SXD TIX IN                         F2512670
05635  0 60100 0 05245         STO ERTX01       BLOCK E, THE BLOCK                     F2512680
05636  0 60100 0 05246         STO ERTX02       NUMBER IS SET TO                       F2512690
05637 -0 53400 4 05250         LXD BLKNUM,4     APPEAR LIKE BLOCK C SO                 F2512700
05640  2 00002 4 05641         TIX RTX152,4,2   THATTHE SXD LOCATION IS STORED         F2512710
05641 -0 63400 4 05250 RTX152 SXD BLKNUM,4      PROPERLY INTO DOTAG.                   F2512720
05642  0 07400 4 06513         TSX EDCB,4       COMPILE 2ND TXI SXD TIX.               F2512730
05643  0 02000 0 05673         TRA RTX160                                              F2512740
05644  0 07400 4 06546 RTX154 TSX BCDE,4       E IS VARIABLE.  THIS TAKES             F2512750
05645  0 07400 4 06224         TSX CILV,4       CARE OF FIRST 3 INSTRUCTIONS.P         F2512760
~~05646  0 07400 4 06625         TSX CIL23,4~~    THE REMAINING THREE ARE                F2512770
05647  0 50000 0 05042         CLA L(TXI)                                              F2512780
05650  0 60100 0 05177         STO CIL01        NOW COMPILED.                          F2512790
05651  0 07400 4 04345         TSX CIT,4                                               F2512800
05652 -0 53400 4 05250         LXD BLKNUM,4     CHANGE BLKNUM                          F2512810
05653  2 00002 4 05653 RTX157 TIX RTX157,4,2   FROM E                                 F2512820
05654 -0 63400 4 05250         SXD BLKNUM,4     TO C AND                               F2512830
05655  0 07400 4 04472         TSX CSXD,4       TSX CSXD.                              F2512840
05656 -0 53400 4 05250         LXD BLKNUM,4                                            F2512850
05657  1 00002 4 05660         TXI RTX157+5,4,2                                        F2512860
05660 -0 63400 4 05250         SXD BLKNUM,4                                            F2512870
05661 -0 53400 2 03647         LXD TAG2,2       PLACE LOCATION OF SXD                  F2512880
05662  0 50000 0 05176         CLA CIL00        INSTRUCTION IN PROPER DOTAG ENTRY      F2512890
05663 -0 32000 0 05141         ANA ADMSK        AND POSITION. (LEFT SUB DO).           F2512900
05664  0 76700 0 00014         ALS 12                                                  F2512910
05665 -0 60200 2 01104         ORS DOTAGZ+6,2                                          F2512920
05666  0 07400 4 06224         TSX CILV,4       GENERATE AND                           F2512930
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05667  0 07400 4 06625          TSX CIL23,4                                                  F2512940
05670  0 50000 0 05046          CLA L(TIX)          COMPILE REMAINING INSTRC.                F2512950
05671  0 60100 0 05177          STO CIL01                                                    F2512960
05672  0 07400 4 04345          TSX CIT,4           PUT INTO BUFFER.                         F2512970
05673 -0 53400 2 05230 RTX160   LXD DOIND,2         FINDING S.C. WHICH                       F2512980
05674  0 50000 2 01106          CLA DOTAGZ+8,2      HAS AN S THAT IS THE TEST.               F2512990
05675 -0 32000 0 05105          ANA TETMSK                                                   F2513000
05676  0 60100 0 05245          STO ERTX01          TEST NAME.                               F2513010
05677  0 50000 0 03652          CLA TAG3            COMPARE TAG NAME                         F2513020
05700  0 76700 0 00022          ALS 18              WITH BEST TEST                           F2513030
05701 -0 32000 0 05142          ANA DECMSK          OF CURRENT DO.                           F2513040
05702  0 40200 0 05245          SUB ERTX01          IF THIS TAG IS                           F2513050
05703 -0 10000 0 05706          TNZ RTX164          BEST TEST,                               F2513060
05704  0 50000 0 05237          CLA XTG             STORE ITS INDEX                          F2513070
05705  0 60100 0 05220          STO TETTGX          IN TETTGX.                               F2513080
05706  0 02000 0 05307 RTX164   TRA RTX06           GO TO FIND FOR NEXT TAG.                 F2513090
05707  0 50000 0 05116 RTX180   CLA INST26          RTX184 LOCATION.                         F2513100
05710  0 62100 0 05414          STA RTX69+1         RESET AT END OF ROUTINE.                 F2513110
05711  0 53400 4 05125          LXA LADMX,4         PREPARE FOR ADTAG TXI.                   F2513120
05712  1 00004 4 05713          TXI RTX180+4,4,4                                             F2513130
05713 -0 63400 4 05237          SXD XTG,4                                                    F2513140
05714  0 50000 0 05113          CLA INST20          ADTGA LOCATION.                          F2513150
05715  0 62100 0 06507          STA TGA8                                                     F2513160
05716  0 07400 4 04516 RTX184   TSX ADTGSE,4        SEARCH FOR ADTAG.                        F2513170
05717  0 02000 0 05745          TRA RTX192          END OF TABLE, START TX PHASE.            F2513180
05720 -0 75400 2 00000          PXD 0,2             ENTRY FOUND, CONTINUE ADTG CYCLE.        F2513190
05721  0 77100 0 00022          ARS 18              POSIND IN ADDRESS.                       F2513200
05722  0 60100 0 05240          STO POSIND                                                   F2513210
05723  0 50000 0 03653          CLA TAG4            LOOK AT                                  F2513220
05724  0 77100 0 00025          ARS 21              CARRY BITS.                              F2513230
05725  3 00002 2 05732          TXH RTX190,2,2      S1, BLOCK A.                             F2513240
05726 -3 00001 2 05730          TXL RTX188,2,1      S3                                       F2513250
05727  0 77100 0 00002          ARS 2               S2                                       F2513260
05730 -0 32000 0 05131 RTX188   ANA L(3)                                                     F2513270
05731 -0 10000 0 05716          TNZ RTX184          CARRY T1 OR T2 BLOCK F.                  F2513280
05732  0 50000 0 05234 RTX190   CLA N3IND                                                    F2513290
05733  0 10000 0 05320          TZE RTX020          DECREMENT IS CONSTANT.                   F2513300
05734  0 07400 4 06224          TSX CILV,4          DECREMENT IS VARIABLE.                   F2513310
05735  0 50000 0 05176          CLA CIL00           INSTRUCTION IS COMPILED                  F2513320
05736 -0 32000 0 05141          ANA ADMSK           AND ENTRY IS MADE                        F2513330
05737  0 07400 4 06476          TSX TGA,4           IN APPENDED DRM TG WORD.                 F2513340
05740  0 07400 4 06625          TSX CIL23,4                                                  F2513350
05741  0 50000 0 05042          CLA L(TXI)          COMPILE                                  F2513360
05742  0 60100 0 05177          STO CIL01           TXI AND PUT                              F2513370
05743  0 07400 4 04345          TSX CIT,4           IN CIB.                                  F2513380
05744  0 02000 0 05716          TRA RTX184          GET NEW ADTAG.                           F2513390
05745  0 50000 0 05115 RTX192   CLA INST24          RESET MODIFIED                           F2513400
05746  0 62100 0 05414          STA RTX69+1         ADDRESSES FOR                            F2513410
05747  0 50000 0 05114          CLA INST22          TXI CYCLE.                               F2513420
05750  0 62100 0 06507          STA TGA8                                                     F2513430
05751 -0 53400 1 05220 RTX195   LXD TETTGX,1        DETERMINE IF THIS DO HAS A TEST.         F2513440
05752  3 00000 1 05770          TXH RTX197,1,0      THIS DO HAS A TEST.                      F2513450
05753 -0 53400 2 05230 RTX196   LXD DOIND,2         THIS DO HAS NO TEST.  THIS INFORMATION   F2513460
05754  0 50000 2 01076          CLA DOTAGZ,2        IS ENTERED IN A DRUM TABLE.              F2513470
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05755  0 76700 0 00004          ALS 4                ELIMINATE BITS                  F2513480
05756  0 77100 0 00004          ARS 4                INSERTED BY DOGS.               F2513490
05757  0 60100 0 05251          STO SXDTXZ           ENTER                           F2513500
05760  0 76600 0 00301          WRS 193              DOTAG                           F2513510
05761  0 46000 0 05064          LDA DRADS3           WORD                            F2513520
05762  0 70000 0 05251          CPY SXDTXZ           ONE                             F2513530
05763  0 70000 0 05251          CPY SXDTXZ           INTO                            F2513540
05764  0 50000 0 05064          CLA DRADS3           DOCAR                           F2513550
05765  0 40000 0 05127          ADD L(2)             DRUM                            F2513560
05766  0 60100 0 05064          STO DRADS3           TABLE.                          F2513570
05767  0 02000 0 06222          TRA RTX280                                           F2513580
05770  0 76000 0 00140 RTX197   PSE 096              CLEAR SENSE LIGHTS.             F2513590
05771  0 07400 4 04213          TSX TGFM,4           FILL OUT TAG WORDS.             F2513600
05772  0 07400 4 04204          TSX ISC,4            FIND DOSUB.                     F2513610
05773  0 07400 4 00004          TSX DIAG,4           SC NOT MODIFIED BY CURRENT DO.  F2513620
05774 -0 75400 2 00000          PXD 0,2              FORM                            F2513630
05775  0 77100 0 00022          ARS 18               POSITION                        F2513640
05776  0 60100 0 05240          STO POSIND           INDICATOR.                      F2513650
05777  0 07400 4 06224          TSX CILV,4           OBTAIN LOCATION FOR TEST,       F2513660
06000 -0 53400 2 05230          LXD DOIND,2          ISOLATE                         F2513670
06001  0 07400 4 06620          TSX NBITS,4          NBITS.                          F2513680
06002  0 60100 0 05235          STO N1N2N3                                           F2513690
06003  0 50000 2 01101          CLA DOTAGZ+3,2                                       F2513700
06004 -0 32000 0 05104          ANA 6ONES                                            F2513710
06005 -0 10000 0 06045          TNZ RTX210           N2 IS VARIABLE                  F2513720
06006  0 53400 1 05240          LXA POSIND,1                                         F2513730
06007 -2 00001 1 06015 RTX198   TNX RTX200,1,1       IS POSITION S3.                 F2513740
06010  0 50000 0 03653          CLA TAG4             CHECK FOR DORC                  F2513750
06011 -0 32000 1 05152          ANA BITMSK+2,1                                       F2513760
06012  0 60100 0 05254          STO N1SBX            N1 BIT.                         F2513770
06013  0 07400 4 04566          TSX N1S02,4                                          F2513780
06014 -0 10000 0 06045          TNZ RTX210           TXL VARIABLE DECREMENT.         F2513790
06015 -0 53400 1 03652 RTX200   LXD TAG3,1                                           F2513800
06016  3 00000 1 06021          TXH RTX201,1,0                                       F2513810
06017  0 07400 4 04230          TSX ENTR,4           NOT NORMAL TAG, LAY OUT SIMULATED F2513820
06020  0 02000 0 06024          TRA RTX202           TAU ENTRY INTO WRKSC.           F2513830
06021  0 50000 0 03652 RTX201   CLA TAG3             PREPARE FOR                     F2513840
06022  0 77100 0 00022          ARS 18               SUBCOM ROUTINE.                 F2513850
06023  0 07400 4 04236          TSX SUBCOM,4         LAY OUT TAU ENTRY.              F2513860
06024 -0 53400 2 05230 RTX202   LXD DOIND,2          PREPARE FOR AND CALL CXIJ       F2513870
06025  0 53400 1 05240          LXA POSIND,1         ROUTINE TO COMPUTE XGN3.        F2513880
06026  0 50000 2 01101          CLA DOTAGZ+3,2       PTCH06 CALLS TELC ROUTINE       F2513890
06027  0 07400 4 04451          TSX CXIJ+2,4                                         F2513900
06030 -2 00001 1 06033          TNX RTX204,1,1                                       F2513910
06031  0 07400 4 04410          TSX TELC+2,4         COMPUTES LOAD VALUE FOR         F2513920
06032  0 50000 0 05245          CLA ERTX01           DEC, STORES IN ERTX01.          F2513930
06033  0 60100 0 05177 RTX204   STO CIL01            FINAL TXL DECREMENT.            F2513940
06034 -0 50000 0 05047          CAL L(TXL)                                           F2513950
06035 -0 60200 0 05177          ORS CIL01                                            F2513960
06036  0 07400 4 06634          TSX CILNAM,4         ENTER TAG NAME IN CIL03.        F2513970
06037  0 50000 0 05224          CLA A                ALPHA PLUS ONE IS               F2513980
06040  0 40000 0 05061          ADD L1DEC            ENTERED AS THE SYMBOLIC         F2513990
06041  0 60100 0 05200          STO CIL02            ADDRESS.                        F2514000
06042  0 07400 4 04345          TSX CIT,4            ENTER TXL IN BUFFER.            F2514010
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06043   0 50000 0 05133         CLA L(0)          ELIMINATE VARIABLE INDICATOR BIT.          F2514020
06044   0 02000 0 06055         TRA RTX214                                                   F2514030
06045   0 50000 0 05047 RTX210  CLA L(TXL)        COMPILE INSTRUCTION FOR VARIABLE DECREMENT.F2514040
06046   0 60100 0 05177         STO CIL01                                                    F2514050
06047   0 07400 4 06634         TSX CILNAM,4      ENTER TAG NAME.                            F2514060
06050   0 50000 0 05224         CLA A             ALPHA PLUS ONE IS                          F2514070
06051   0 40000 0 05061         ADD L1DEC         ENTERED AS THE                             F2514080
06052   0 60100 0 05200         STO CIL02         SYMBOLIC ADDRESS.                          F2514090
06053   0 07400 4 04345         TSX CIT,4         ENTER COMPILED TXL IN BUFFER.              F2514100
06054   0 50000 0 05154         CLA BIT20         TEST VARIABLE INDICATOR.                   F2514110
06055  -0 53400 2 05230 RTX214  LXD DOIND,2       ENTERONE IN BIT 20 IF                      F2514120
06056  -0 60200 2 01106         ORS DOTAGZ+8,2    VARIABLE DECREMENT.                        F2514130
06057   0 50000 0 05176         CLA CIL00         STORE LOCATION                             F2514140
06060   0 76700 0 00030         ALS 24            OF                                         F2514150
06061  -0 60200 2 01104         ORS DOTAGZ+6,2    TEST.                                      F2514160
06062   0 76000 0 00141         PSE 097           SET SENSE INDICATOR SO                     F2514170
06063  -0 53400 1 05221 RTX222  LXD RTXTGX,1      START SCAN FOR TIXING.                     F2514180
06064  -0 63400 1 05237         SXD XTG,1                                                    F2514190
06065   0 07400 4 04162 RTX226  TSX FIND,4        FIND VALID TAG.  FILL TAG WORDS.           F2514200
06066   0 02000 0 06201         TRA RTX260        END OF DO.                                 F2514210
06067  -0 63400 1 05237         SXD XTG,1         PRESERVE X OF TAG UNDER CONDSIDERATION.    F2514220
06070   0 07400 4 04373 RTX228  TSX SCLMN1,4      COMPARE LARGEST S INDES                    F2514230
06071   0 40200 0 05230         SUB DOIND         WITH INDEX OF THE DO.                      F2514240
06072   0 10000 0 06144         TZE RTX234        DO IS OUTER, OBTAIN TAG.                   F2514250
06073  -0 53400 2 03652         LXD TAG3,2                                                   F2514260
06074   3 00000 2 06103         TXH RTX229,2,0    CURRENT TAG VALID, FILL OUT WRKSC.         F2514270
06075   0 50000 0 03652         CLA TAG3          NEW TAG, DETERMINE                         F2514280
06076   0 77100 0 00013         ARS 11            IF TAU ENTRY                               F2514290
06077   0 76000 0 00001         LBT               EXISTS.                                    F2514300
06100   0 02000 0 06110         TRA RTX229+5      NO,TSX ENTR.                               F2514310
06101   0 50000 0 03652         CLA TAG3          YES, TSX                                   F2514320
06102   0 02000 0 06105         TRA RTX229+2      SUBCOM.                                    F2514330
06103   0 50000 0 03652 RTX229  CLA TAG3          CURRENT TAG                                F2514340
06104   0 77100 0 00022         ARS 18            VALID.                                     F2514350
06105  -0 32000 0 05153         ANA 11BITS        FILL OUT                                   F2514360
06106   0 07400 4 04236         TSX SUBCOM,4      WRKSC AND                                  F2514370
06107   0 02000 0 06111         TRA RTX230        CONTINUE.                                  F2514380
06110   0 07400 4 04230         TSX ENTR,4        ARTIFICIAL WRKSC ENTRY.                    F2514390
06111   0 53400 4 05240 RTX230  LXA POSIND,4                                                 F2514400
06112   2 00001 4 06114         TIX CLA,4,1       MOVE RIGHT ONE POSITION.                   F2514410
06113   0 02000 0 06130         TRA RTX232        POSITION IS RIGHT, IGNORE CARRY.           F2514420
06114   0 50000 0 03653 CLA     CLA TAG4          POSITION IS LEFT OR CENTER,                F2514430
06115   0 77100 0 00001         ARS 1             OR TYPE 1 AND 2                            F2514440
06116  -0 50100 0 03653         ORA TAG4          CARRY BITS FOR LEFT                        F2514450
06117  -3 00001 4 06122         TXL ARS,4,1       AND CENTER POSITIONS.                      F2514460
06120   0 77100 0 00027         ARS 23            S2 CARRY BIT IN POSITION 35.               F2514470
06121   0 02000 0 06123         TRA LBT                                                      F2514480
06122   0 77100 0 00025 ARS     ARS 21            S3 CARRY BIT IN POSITION 35                F2514490
06123   0 76000 0 00001 LBT     LBT               TEST FOR DOSUB CARRY BIT.                  F2514500
06124   0 02000 0 06130         TRA RTX232        NO CARRY, CONTINUE.                        F2514510
06125   0 50000 0 05220         CLA TETTGX        CARRY, SEE IF THIS                         F2514520
06126   0 40200 0 05237         SUB XTG           TAG IS BEST TEST.                          F2514530
06127  -0 10000 0 06200         TNZ RTX254        NO, GET NEXT TAG.                          F2514540
06130   0 50000 0 05046 RTX232  CLA L(TIX)        COMPILE TIX INSTRUCTION.                   F2514550
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06131   0 60100 0 05177          STO CIL01                                F2514560
06132   0 50000 0 05235          CLA N1N2N3      TEST FOR VARIABLE DECREMENT.     F2514570
06133   0 10000 0 06147          TZE RTX238      DECREMENT IS CONSTANT.           F2514580
06134  -0 76000 0 00141          MSE 097         DECREMENT IS VARIABLE8 TURN OFF  F2514590
06135   0 76100 0 00000          NOP             LIGHT INDICATION FIRST           F2514600
06136   0 07400 4 06224          TSX CILV,4      TIX AFTER TXL AND ASSIGN         F2514610
06137   0 07400 4 06625          TSX CIL23,4     LOCATION.                        F2514620
06140   0 50000 0 05176          CLA CIL00       WHEN DECREMENT IS VARIABLE, LOCATION F2514630
06141  -0 32000 0 05141          ANA ADMSK       MUST BE STORED IN TGA WORD       F2514640
06142   0 07400 4 06477          TSX TGAT,4      FOR SXD ADDRESS IS OBJECT TIME.  F2514650
06143   0 02000 0 06177          TRA RTX250      NOW PERFORM COMPILING.           F2514660
06144   0 50000 0 05050 RTX234   CLA L(DED)      COMPILE OP WHICH INDICATES       F2514670
06145   0 60100 0 05177          STO CIL01       SC IS DEAD.                      F2514680
06146   0 02000 0 06171          TRA RTX242      ASSIGN LOCATION IF NECESSARY.    F2514690
06147   0 53400 1 05240 RTX238   LXA POSIND,1    DECREMENT IS CONSTANT.           F2514700
06150  -0 53400 2 05230          LXD DOIND,2     TEST FOR DUPLICATES              F2514710
06151   0 07400 4 04447          TSX CXIJ,4      AND COMPUTE ACCORDINGLY.         F2514720
06152   0 60100 0 05245          STO ERTX01      XN3G IN ERTX01.                  F2514730
06153   0 56000 0 03653          LDQ TAG4        TEST                             F2514740
06154   0 76300 1 00033          LLS 27,1        FOR                              F2514750
06155   0 76000 0 00001          LBT             DUPES.                           F2514760
06156   0 02000 0 06167          TRA RTX240      NO DUPES.                        F2514770
06157   1 00001 1 06160 RTX239   TXI RTX239+1,1,1 DUPES EXIST                     F2514780
06160   0 56000 0 03653          LDQ TAG4        TEST DUPE                        F2514790
06161   0 76300 1 00033          LLS 27,1        BITS OF POSITIONS                F2514800
06162   0 76000 0 00001          LBT             TO THE LEFT OF DOSUB             F2514810
06163   0 02000 0 06157          TRA RTX239      UNTIL THAT POSITION IS           F2514820
06164   0 07400 4 04447          TSX CXIJ,4      IN XA, THEN CALLCXIJ             F2514830
06165   0 40000 0 05245          ADD ERTX01      AND COMPUTE AND ADD              F2514840
06166   0 60100 0 05245          STO ERTX01      DECREMENT ADJUSTMENT.            F2514850
06167   0 50000 0 05245 RTX240   CLA ERTX01      PUT COMPUTED DE EREMTN           F2514860
06170   0 62100 0 05177          STA CIL01       IN CIL01 WORD.                   F2514870
06171  -0 76000 0 00141 RTX242   MSE 097         A LOC MUST BE ASSIGNED IF        F2514880
06172   0 02000 0 06176          TRA RTX246                                       F2514890
06173   0 07400 4 06224          TSX CILV,4      THIS IS FIRST TIX AFTER          F2514900
06174   0 07400 4 06625          TSX CIL23,4     TEST.                            F2514910
06175   0 02000 0 06177          TRA RTX250                                       F2514920
06176   0 07400 4 06465 RTX246   TSX CIL023,4                                     F2514930
06177   0 07400 4 04345 RTX250   TSX CIT,4       COMPILE INST.                    F2514940
06200   0 02000 0 06065 RTX254   TRA RTX226      RETURN FOR NEXT TG.              F2514950
06201   0 53400 4 05125 RTX260   LXA LADMX,4     START DRMTG SEARCH AND           F2514960
06202   1 00004 4 06203          TXI RTX260+2,4,4                                 F2514970
06203  -0 63400 4 05237          SXD XTG,4       COMPILING                        F2514980
06204   0 07400 4 04516 RTX264   TSX ADTGSE,4    FIND VALID TAG, FILL OUT TAG WDS. F2514990
06205   0 02000 0 06216          TRA RTX270      END OF TABLE                     F2515000
06206  -0 75400 2 00000          PXD 0,2         STORE POSITION                   F2515010
06207   0 77100 0 00022          ARS 18          OF DOSUB                         F2515020
06210   0 60100 0 05240          STO POSIND      IN POSIND.                       F2515030
06211   0 50000 0 05117          CLA INST30      MODIFY TGTG                      F2515040
06212   0 62100 0 06200          STA RTX254      TIX COMPILING                    F2515050
06213   0 50000 0 05113          CLA INST20      ROUTINE TO                       F2515060
06214   0 62100 0 06507          STA TGA8                                         F2515070
06215   0 02000 0 06070          TRA RTX228      AND EXECUTE.                     F2515080
06216   0 50000 0 05120 RTX270   CLA INST32      ADTG PORTION FINISHED.           F2515090
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06217   0 62100 0 06200         STA RTX254          REMODIFY TIX COMPILING                          F2515100
06220   0 50000 0 05114         CLA INST22          ROUTINE FOR TGTGS.                              F2515110
06221   0 62100 0 06507         STA TGA8            END OF BETA CYCLE8 RETURN TO 1 PLUS             F2515120
06222  -0 53400 4 05325 RTX280 LXD RTX024,4        LOCATION OF THE INSTRUCTION                     F2515130
06223   0 02000 4 00001         TRA 1,4             CALLING RTX.                                    F2515140
                                ********************************************************************F2515150
                                CILV IS CALLED WHEN AN INSTRUCTION NUMBER IS NEEDED FOR A COMF2515160
                                PILED BETA STATE INSTRUCTION.                                       F2515170
06224   0 50000 0 05244 CILV    CLA VCTR            THIS ROUTINE UPDATES                            F2515180
06225   0 60100 0 05176         STO CIL00           VCTR AND                                        F2515190
06226   0 40000 0 05110         ADD L(8)            STORE IT INTO CIL00                             F2515200
06227   0 60100 0 05244         STO VCTR            IT IS CALLED WHEN                               F2515210
06230  -0 32000 0 05141         ANA ADMSK           WE NEED A LOCATION                              F2515220
06231   0 40200 0 05060         SUB MAXLOC          FOR A COMPILED                                  F2515230
06232   0 10000 0 06234         TZE CILV1           INSTRUCTION.                                    F2515240
                                                                                                    F2515250
06233   0 02000 4 00001         TRA 1,4                                                             F2515260
06234   0 07400 4 00004 CILV1   TSX DIAG,4           TOO MANY INSTRUCTION NUMBERS.                   F2515270
                                ********************************************************************F2515280
                                N3BIT PLACES THE VARIABLE N3 BIT OF A DO IN THE WORK N3IND.         F2515290
06235  -0 53400 2 05230 N3BIT   LXD DOIND,2         THIS ROUTIN E ISOLATES                          F2515300
06236   0 50000 2 01076         CLA DOTAGZ,2        THE N3 BIT SO THAT                              F2515310
06237   0 77100 0 00017         ARS 15              IT CAN BE EASILY TESTED.                        F2515320
06240  -0 32000 0 05126         ANA L(1)                                                            F2515330
06241   0 60100 0 05234         STO N3IND                                                           F2515340
06242   0 02000 4 00001         TRA 1,4             RETURN                                          F2515350
                                TETG DETERMINES FOR WHICH DOS A GIVEN TAG IS A TEST.  THIS          F2515360
                                INFORMATION IS RECORDED IN TAG4.                                    F2515370
06243   0 50000 0 03652  TETG   CLA TAG3            ISOLATE                                         F2515380
06244  -0 32000 0 05141         ANA ADMSK           TAG NAME.                                       F2515390
06245   0 60100 0 05241         STO ER40                                                            F2515400
06246   0 50000 0 03653         CLA TAG4            ISOLATE DUPES INDICATORS                        F2515410
06247   0 77100 0 00011         ARS 9                                                               F2515420
06250  -0 32000 0 05076         ANA L(7)            IF THERE ARE DUPES                              F2515430
06251   0 60100 0 05242         STO ER41            THIS INSURES THAT TEST BITS                     F2515440
06252   0 40200 0 05126         SUB L(1)            ARE ENTERED ONLY FOR                            F2515450
06253   0 32000 0 05242         ANS ER41            RIGHTMOST DUPE.                                 F2515460
06254   0 53400 1 05131         LXA L(3),1                                                          F2515470
06255   0 50000 1 03652         CLA TAG2+3,1        SELECT DOTAG WHICH                              F2515480
06256   0 10000 0 06275         TZE TETG5           CONTROLS THIS                                   F2515490
06257  -0 73400 2 00000         PDX 0,2             SUBSCRIPT.                                      F2515500
06260   0 50000 2 01106         CLA DOTAGZ+8,2                                                      F2515510
06261  -0 32000 0 05105         ANA TETMSK          ISOLATE TEST NAME                               F2515520
06262   0 77100 0 00022         ARS 18              OF THIS SUBSCRIPT.                              F2515530
06263   0 40200 0 05241         SUB ER40            DOES TEST NAME EQUAL TAG NAME.                  F2515540
06264  -0 10000 0 06275         TNZ TETG5           NO, GO TO NEXT SUBSCRIPT.                       F2515550
06265   0 56000 0 05242         LDQ ER41            TEST NAME EQUALS TAG NAME,                      F2515560
06266   0 76300 1 00044         LLS 36,1            SEE IF THIS SUBSCRIPT                           F2515570
06267   0 76000 0 00001         LBT                 IS A LEFT DUPE.                                 F2515580
06270   0 02000 0 06272         TRA TETG3           NOT A LEFT DUPE, ENTER TEST BIT.                F2515590
06271   0 02000 0 06275         TRA TETG5           LEFT DUPE, IGNORE.                              F2515600
06272   0 50000 0 05136 TETG3   CLA BIT1           ENTER TEST BIT                                  F2515610
06273   0 77100 1 00012         ARS 10,1            FOR THIS                                        F2515620
06274  -0 60200 0 03653         ORS TAG4            SUBSCRIPT.                                      F2515630
06275   2 00001 1 06255 TETG5   TIX TETG+10,1,1     DEAL WITH NEXT SUBSCRIPT.
```

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06276  0 02000 4 00001          TRA 1,4                                                          F2515640
                                   ***************************************************************F2515650
                                   PRES DETERMINES THE TXI BLOCK NJMBER FOR A GIVEN TAG AND PUTSF2515660
                                   IT IN INDEX REGISTER B.                                      F2515670
06277  0 50000 0 03653 PRES     CLA TAG4              FIRST THE TEST                            F2515680
06300  0 76500 0 00032          LRS 26                BITS ARE ISOLATED                         F2515690
06301  0 76700 0 00041          ALS 33                AND STORED.                               F2515700
06302  0 60100 0 05241          STO ER40              TEST BITS 1,2.                            F2515710
06303  0 76300 0 00005          LLS 5                 THEN THE GROUP NO.                        F2515720
06304  0 76700 0 00024          ALS 20                IS LEFT                                   F2515730
06305 -0 50100 0 03653          ORA TAG4              IN THE MQ WHILE THE                       F2515740
06306  0 77100 0 00025          ARS 21                CARRY BITS ARE ORED                       F2515750
06307 -0 32000 0 05132          ANA L(5)              AND STORED.                               F2515760
06310  0 60100 0 05242          STO ER41              CARRY BITS 101.                           F2515770
06311  0 76300 0 00005          LLS 5                 THE GROUP NO. IS THEN                     F2515780
06312 -0 50100 0 05240          ORA POSIND            SHIFTED TO BE COMBINED                    F2515790
06313  0 56000 0 05241          LDQ ER40              WITH THE POS. THE TEST                    F2515800
06314  0 76300 0 00001          LLS 1                 BITS ARE SEPARATED SO THAT                F2515810
06315  0 76700 0 00001          ALS 1                 THEY CAN OR PROPERLY WITH                 F2515820
06316  0 76300 0 00002          LLS 2                 CARRY BITS LT, LC, CT, CC.                F2515830
06317 -0 50100 0 05242          ORA ER41              THIS RESULTS IN THE MASK                  F2515840
06320  0 60100 0 05243          STO ARG               USED FOR TABLE SEARCH.                    F2515850
06321 -0 63400 4 05241          SXD ER40,4                                                      F2515860
06322  0 53400 1 05126          LXA L(1),1            THIS BLOCK REPRESENTS                     F2515870
06323  1 00042 1 06324          TXI PRES10,1,34       SETS OF CALLING SEQUENCES TO              F2515880
06324 -0 63400 1 06364 PRES10   SXD S3,1              SEARCH ROUTINE. MASK IS                   F2515890
06325  1 00012 1 06326          TXI PRES20,1,10       STORED AND BLOCK TEST                     F2515900
06326  0 50000 0 05144 PRES20   CLA SMSK1             INDEX DECREMENT IS STORED.                F2515910
06327  0 60100 0 05143          STO SMSK              FIRST 11 ENTRIES ARE                      F2515920
06330  0 07400 4 06354          TSX SEARCH,4          SEARCHED. THEN 12,12,4.                   F2515930
06331  0 50000 0 05145          CLA SMSK2             RETURN TO ROUTINE                         F2515940
06332  0 60100 0 05143          STO SMSK              AFTER SEARCHING LAST                      F2515950
06333  2 00014 1 06334          TIX PRES30,1,12       BLOCK INDICATES AN ERROR.                 F2515960
06334 -0 63400 1 06364 PRES30   SXD S3,1                                                        F2515970
06335  1 00014 1 06336          TXI PRES40,1,12                                                 F2515980
06336  0 07400 4 06354 PRES40   TSX SEARCH,4                                                    F2515990
06337  0 50000 0 05147          CLA SMSK4                                                       F2516000
06340  0 60100 0 05143          STO SMSK                                                        F2516010
06341  2 00020 1 06342          TIX PRES50,1,16                                                 F2516020
06342 -0 63400 1 06364 PRES50   SXD S3,1                                                        F2516030
06343  1 00020 1 06344          TXI PRES60,1,16                                                 F2516040
06344  0 07400 4 06354 PRES60   TSX SEARCH,4                                                    F2516050
06345  0 50000 0 05146          CLA SMSK3                                                       F2516060
06346  0 60100 0 05143          STO SMSK                                                        F2516070
06347  2 00006 1 06350          TIX PRES70,1,6                                                  F2516080
06350 -0 63400 1 06364 PRES70   SXD S3,1                                                        F2516090
06351  1 00006 1 06352          TXI PRES80,1,6                                                  F2516100
06352  0 07400 4 06354 PRES80   TSX SEARCH,4                                                    F2516110
06353  0 07400 4 00004 ERROR    TSX DIAG,4            ALL SEARCHES FAILED.                      F2516120
                                   ***************************************************************F2516130
                                   SEARCH IS CALLED BY PRES TO COMPARE CONSTANTS IN THE RX TABLEF2516140
                                   AGAINST VARIOUS PERMUTATIONS OF AN ARGUMENT WORD.  A MATCHINGF2516150
                                   COMPARISON MEANS THE CONSTANT WILL YIELD THE CORRECT BLOCK NUF2516160
                                   NUMBER.                                                      F2516170
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```
06354   0 50000 1 06450 SEARCH CLA RXTA+45,1
06355   0 77100 0 00003        ARS 3
06356   0 60100 0 05217        STO WRKRXT
06357   0 50000 0 05243        CLA ARG
06360  -0 32000 0 05143        ANA SMSK
06361   0 40200 0 05217        SUB WRKRXT
06362   0 10000 0 06366        TZE S8
06363   2 00001 1 06364        TIX S3,1,1
D 06364   3 00000 1 06354 S3     TXH SEARCH,1
06365   0 02000 4 00001        TRA 1,4
06366   0 50000 1 06450 S8     CLA RXTA+45,1
06367  -0 32000 0 05076        ANA L(7)
06370   0 73400 2 00000        PAX 0,2
06371  -0 53400 4 05241        LXD ER40,4
06372   0 02000 4 00001        TRA 1,4
06373 +000000006600     RXTA   OCT 6600
06374 +000000006400            OCT 6400
06375 +000000006200            OCT 6200
06376 +000000005600            OCT 5600
06377 +000000004600            OCT 4600
06400 +000000004200            OCT 4200
06401 +000000003600            OCT 3600
06402 +000000003400            OCT 3400
06403 +000000002400            OCT 2400
06404 +000000001600            OCT 1600
06405 +000000005501            OCT 5501
06406 +000000005400            OCT 5400
06407 +000000005302            OCT 5302
06410 +000000005200            OCT 5200
06411 +000000004541            OCT 4541
06412 +000000004501            OCT 4501
06413 +000000004445            OCT 4445
06414 +000000004400            OCT 4400
06415 +000000001541            OCT 1541
06416 +000000001501            OCT 1501
06417 +000000001445            OCT 1445
06420 +000000001400            OCT 1400
06421 +000000001215            OCT 1215
06422 +000000001200            OCT 1200
06423 +000000002723            OCT 2723
06424 +000000002733            OCT 2733
06425 +000000002623            OCT 2623
06426 +000000002633            OCT 2633
06427 +000000003324            OCT 3324
06430 +000000003302            OCT 3302
06431 +000000003223            OCT 3223
06432 +000000003200            OCT 3200
06433 +000000001334            OCT 1334
06434 +000000001324            OCT 1324
06435 +000000001315            OCT 1315
06436 +000000001302            OCT 1302
06437 +000000001233            OCT 1233
06440 +000000001223            OCT 1223
06441 +000000002600            OCT 2600
```

```
THIS ROUTINE TAKES
THE ARGUMENT MASK, EDITS
IT AND THEN SEARCHES
PRESCRIBED BLOCKS OF
THE RX TABLE.
SUCCESSFUL SEARCH.
INDEX FOR NEXT ENTRY.
TEST FOR END OF BLOCK.

TABLE ENTRY CONTAINS
BLOCK NOS. 0-5 WHICH
CORRESPOND TO BLOCKS
A-F.

6L, 760 MASK
6C
6R
5L
4L
4R
3L
3C
2C
1L
5C, 774 MASK
5C
5R
5R
4C
4C
4C
4C
1C
1C
1C
1C
1R, 773 MASK
1R
2L
2L
2L
2L
3R
3R
3R
3R
1R
1R
1R
1R
1R
1R
2L, 763 MASK
```

```
F2516180
F2516190
F2516200
F2516210
F2516220
F2516230
F2516240
F2516250
F2516260
F2516270
F2516280
F2516290
F2516300
F2516310
F2516320
F2516330
F2516340
F2516350
F2516360
F2516370
F2516380
F2516390
F2516400
F2516410
F2516420
F2516430
F2516440
F2516450
F2516460
F2516470
F2516480
F2516490
F2516500
F2516510
F2516520
F2516530
F2516540
F2516550
F2516560
F2516570
F2516580
F2516590
F2516600
F2516610
F2516620
F2516630
F2516640
F2516650
F2516660
F2516670
F2516680
F2516690
F2516700
F2516710
```

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06442 +000000002610          OCT 2610            2L                                          F2516720
06443 +000000002233          OCT 2233            2R                                          F2516730
06444 +000000002223          OCT 2223            2R                                          F2516740
06445 +000000002215          OCT 2215            2R                                          F2516750
06446 +000000002200          OCT 2200            2R                                          F2516760
                                 ***********************************************************F2516770
                                 CN3IJ COMPUTES THE INDEX INCREMENTING VALUE FOR EACH PASS THRF2516780
                                 THROUGH A DO LOOP.  THIS IS THE NORMAL TXI DECREMENT.       F2516790
06447  0 56000 2 01102 CN3IJ  LDQ DOTAGZ+4,2       COMPUTES DECREMENT AND                    F2516800
06450  0 76300 0 00022        LLS 18               LEAVES IT IN ACCUMULATOR.                 F2516810
06451  3 00002 1 06457        TXH CN3IJ5,1,2       IF POSIND=3, S1 POS.                      F2516820
06452  0 20000 0 03644        MPY WRKSC+6          D1N3 FOR S2 OR S3.                        F2516830
06453  0 76500 0 00022        LRS 18                                                         F2516840
06454  3 00001 1 06457        TXH CN3IJ5,1,1       POSIND=2 S2 POS.                          F2516850
06455  0 20000 0 03645        MPY WRKSC+7          D2D1N3 FOR S3.                            F2516860
06456  0 76500 0 00022        LRS 18                                                         F2516870
06457 -0 75400 1 00000 CN3IJ5 PXD 0,1              PLACE TWICE                               F2516880
06460  0 76700 0 00001        ALS 1                POSIND IN                                 F2516890
06461 -0 73400 1 00000        PDX 0,1              INDEX REGISTER.                           F2516900
06462  0 20000 1 03644        MPY WRKSC+6,1        CN3D1D2 OR CN3D1 OR CN3.                  F2516910
06463  0 77100 0 00001        ARS 1                                                          F2516920
06464  0 02000 4 00001        TRA 1,4              RESULT IS N3G.                            F2516930
                                 ***********************************************************F2516940
                                 CIL023 FILLS OUT THE LOCATION, ADDRESS, AND TAG NAME WORDS FOF2516950
                                 FOR NON-LOCATION COMPILED INSTRUCTIONS ADDRESSING THE FOLLOWIF2516960
                                 ING INSTRUCTIONS                                            F2516970
06465  0 50000 0 05133 CIL023 CLA L(0)             ROUTINE PLACES SPECIAL                    F2516980
06466  0 60100 0 05176        STO CIL00                                                      F2516990
06467  0 50000 0 05061        CLA L1DEC            SYMBOL FOR ADDRESS                        F2517000
06470  0 60100 0 05201        STO CIL03                                                      F2517010
06471  0 50000 0 05077        CLA BCD15            AND INITIALIZES LOC. WORD                 F2517020
06472  0 60100 0 05200        STO CIL02            AND PLACES TAG IN                         F2517030
06473  0 50000 0 03652        CLA TAG3             TAG WD. THIS IS DOEN                      F2517040
06474  0 62100 0 05201        STA CIL03            FOR INST. OF K DECREMENT.                 F2517050
06475  0 02000 4 00001        TRA 1,4                                                        F2517060
                                 ***********************************************************F2517070
                                 TGA MAKES AN ENTRY IN APPENDED TAGTAG SHOWING THE LOCATION OFF2517080
                                 A GIVEN VARIABLE DECREMENT TXI OR TIX.  FOR REFERENCE BY THE F2517090
                                 ALPHA STATE WHEN COMPILING CECREMENT INITIALIZATION         F2517100
                                 INSTRUCTIONS.                                               F2517110
06476  0 76700 0 00022 TGA    ALS 18               FOR RX LOC.                               F2517120
06477  0 77100 0 00003 TGAT   ARS 3                FOR TX LOC, DIV VCTOR BY 8.               F2517130
06500  0 60100 0 05202        STO ERTGA                                                      F2517140
06501  0 53400 1 05240        LXA POSIND,1                                                   F2517150
06502  0 50000 0 05237        CLA XTG              CALCULATES X LOC OF TTGA.                 F2517160
06503  0 77100 0 00002        ARS 2                INDEX QUANTITY FOR TTGA IS                F2517170
06504 -0 73400 2 00000        PDX 0,2              ONE FOURTH THAT FOR TTG.                  F2517180
06505  0 50000 0 05202        CLA ERTGA                                                      F2517190
06506  2 00001 1 06511 TGA5   TIX TGA10,1,1        SHIFT LEFT FOR S1 OR S2                   F2517200
06507 -0 60200 2 02646 TGA8   ORS MXTGA,2          ADDRESS IS ORIGIN PLUS MAX                F2517210
06510  0 02000 4 00001        TRA 1,4              ADD TG WD. LINKAGE TRANSFER.              F2517220
06511  0 76700 0 00006 TGA10  ALS 6                                                          F2517230
06512  0 02000 0 06506        TRA TGA5                                                       F2517240
                                 ***********************************************************F2517250
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                                EDCB COMPILES TXI-SXD-TIX INSTRUCTIONS AND STORES THE SXD LOCF2517260
                                ATION FOR BLOCKS B,C,D, OR E WHEN THE DECREMENTS ARE CONSTANTF2517270
                                AND KNOWN.                                                    F2517280
06513 -0 63400 4 06533 EDCB     SXD EDCB5,4          COMPILES TXI SXD TIX                     F2517290
06514  0 50000 0 05042          CLA L(TXI)           INSTRUCTIONS WHEN                        F2517300
06515  0 60100 0 05177          STO CIL01            DECREMENTS ARE KNOWN.                    F2517310
06516  0 50000 0 05245          CLA ERTX01           ASSUMES DECREMENTS TO                    F2517320
06517  0 62100 0 05177          STA CIL01            BE IN ERTX01 AND                         F2517330
06520  0 07400 4 06465          TSX CIL023,4         ERTX02.                                  F2517340
06521  0 07400 4 04345          TSX CIT,4            COMPILE TXI INSTRUCITON.                 F2517350
06522  0 07400 4 04472          TSX CSXD,4           COMPILE SXD SKELETON.                    F2517360
06523  0 50000 0 05176          CLA CIL00                                                     F2517370
06524 -0 32000 0 05141          ANA ADMSK                                                     F2517380
06525  0 76700 0 00014          ALS 12               BELOW, PLACE SXD LOC. INTO               F2517390
06526 -0 53400 4 05250          LXD BLKNUM,4         DOTAG WORD 7. APPROPRIATE                F2517400
06527  3 00002 4 06534          TXH EDCB10,4,2       BITS DEPEND ON BLOCK NOS.                F2517410
06530 -0 53400 2 03647          LXD TAG2,2           BLOCKS D, E SHIFT LEFT 12.               F2517420
06531  3 00001 4 06533          TXH EDCB5,4,1        BLOCKS C, B USE S1 DOTAG.                F2517430
06532  0 76700 0 00006          ALS 6                BLOCK C, SHIFT LEFT 12.                  F2517440
D 06533 -3 00000 0 06535 EDCB5  TXL EDCB20,0         BLOCK B, SHIGT LEFT 18.                  F2517450
06534 -0 53400 2 03650 EDCB10   LXD TAG2+1,2         BLOCK D,E      USE S2 DOTAG.             F2517460
06535 -0 60200 2 01104 EDCB20   ORS DOTAGZ+6,2       PLACE LOC. INTO WD 7.                    F2517470
06536  0 50000 0 05046          CLA L(TIX)           COMPILE                                  F2517480
06537  0 60100 0 05177          STO CIL01            TIX.                                     F2517490
06540  0 50000 0 05246          CLA ERTX02           COMPILE                                  F2517500
06541  0 62100 0 05177          STA CIL01            TIX DECREMENT.                           F2517510
06542  0 07400 4 06465          TSX CIL023,4                                                  F2517520
06543  0 07400 4 04345          TSX CIT,4                                                     F2517530
06544 -0 53400 4 06533          LXD EDCB5,4                                                   F2517540
06545  0 02000 4 00001          TRA 1,4                                                       F2517550
                                ************************************************************F2517560
                                BCDE COMPILES TXI-SXD-TIX INSTRUCTIONS AND MAKES PROPER TABLEF2517570
                                ENTRIES IN DOTAG AND TGA WHEN BLOCK B,C,D, OR E IS VARIABLE. F2517580
                                                                                              F2517590
06546 -0 63400 4 06567 BCDE     SXD BCDE2,4                                                   F2517600
06547  0 07400 4 06224          TSX CILV,4           OBTAIN LOC. FOR FIRST INST.              F2517610
06550  0 50000 0 05176          CLA CIL00            MAKE LOCATION ENTRY INTO                 F2517620
06551 -0 32000 0 05141          ANA ADMSK            APPENDED TAG WORD.                       F2517630
06552  0 07400 4 06476          TSX TGA,4                                                     F2517640
06553  0 50000 0 05042          CLA L(TXI)           PLACE OPERATION IN                       F2517650
06554  0 60100 0 05177          STO CIL01            COMPILED INSTRUCTIN.                     F2517660
06555  0 07400 4 06625          TSX CIL23,4          FILL OUT REMAINING WORDS.                F2517670
06556  0 07400 4 04345          TSX CIT,4                                                     F2517680
06557  0 07400 4 04472          TSX CSXD,4                                                    F2517690
06560 -0 53400 2 05250          LXD BLKNUM,2                                                  F2517700
06561 -3 00002 2 06570          TXL BCDE5,2,2        TEST FOR BLOCKS B OR C.                  F2517710
06562  0 50000 0 05176          CLA CIL00            BLOCK D OR E.                            F2517720
06563 -0 53400 1 03650          LXD TAG2+1,1         PLACE LOC. OF SXD INST.                  F2517730
06564 -0 32000 0 05141          ANA ADMSK            INTO DOTAG ENTRY FOR                     F2517740
06565  0 76700 0 00014          ALS 12               CENTER SUBSCRIPT.                        F2517750
06566 -0 60200 1 01104          ORS DOTAGZ+6,1                                                F2517760
D 06567 -3 00000 0 06577 BCDE2  TXL BCDE9,0          BLOCKS D,E CONTINUE.                     F2517770
06570  0 50000 0 05176 BCDE5    CLA CIL00            BLOCK B OR C .                           F2517780
06571 -0 53400 1 03647          LXD TAG2,1           PLACE LOC. FOR SXD OF                    F2517790
06572 -0 32000 0 05141          ANA ADMSK            REMAINING TWO BLOCKS.
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06573   0 76700 0 00014         ALS 12              DISTINGUISH BETWEEN BLOCK B, C.          F2517800
06574   3 00001 2 06576         TXH BCDE8,2,1                                                F2517810
06575   0 76700 0 00006         ALS 6                                                        F2517820
06576  -0 60200 1 01104 BCDE8   ORS DOTAGZ+6,1                                               F2517830
06577  -0 75400 2 00000 BCDE9   PXD 0,2             BLOCK NUMBER MUST BE                     F2517840
06600   0 76700 0 00016         ALS 14              STORED IN PROPER POS.                    F2517850
06601   0 53400 1 05240         LXA POSIND,1        OF TAG 4 WORD.                           F2517860
06602  -3 00001 1 06606         TXL BCDE10-1,1,1                                             F2517870
06603  -3 00002 1 06607         TXL BCDE10,1,2      IF POSITION IS LEFT,                     F2517880
06604  -0 50000 0 05140         CAL BIT8            PLACE A ONE IN BIT 7 OF TAG4             F2517890
06605   0 02000 0 06607         TRA BCDE10          TO INDICATE BLOCK D SPECIAL.             F2517900
06606   0 77100 0 00003         ARS 3                                                        F2517910
06607  -0 53400 2 05237 BCDE10  LXD XTG,2                                                    F2517920
06610  -0 60200 2 02341         ORS MXTGTG+3,2                                               F2517930
06611   0 07400 4 06224         TSX CILV,4          OBTAIN LOC. FOR THIRD                    F2517940
06612   0 50000 0 05046         CLA L(TIX)          INST. AND OPERATION PART                 F2517950
06613   0 60100 0 05177         STO CIL01           FOR 2ND WORD.                            F2517960
06614   0 07400 4 06625         TSX CIL23,4         FILL OUT REMAINING WORDS.                F2517970
06615   0 07400 4 04345         TSX CIT,4                                                    F2517980
06616  -0 53400 4 06567         LXD BCDE2,4                                                  F2517990
06617   0 02000 4 00001         TRA 1,4                                                      F2518000
                                ************************************************************F2518010
                                NBITS ISOLATES THE VARIABLE PARAMETER BITS FOR A GIVEN DOTAG.F2518020
06620   0 50000 2 01076 NBITS   CLA DOTAGZ,2        ROUTINE FOR ISOLATING                    F2518030
06621   0 77100 0 00017         ARS 15              THE N BITS OF A DO.                      F2518040
06622  -0 32000 0 05076         ANA L(7)                                                     F2518050
06623   0 60100 0 05235         STO N1N2N3                                                   F2518060
06624   0 02000 4 00001         TRA 1,4                                                      F2518070
                                ************************************************************F2518080
                                CIL23 FILLS OUT THE ADDRESS AND TAG NAME WORDS FOR A COMPILEDF2518090
                                INSTRUCTION WHEN THE ADDRESS IS TO BE THE NEXT SEQUENTIAL INSF2518100
                                TRUCTION AND THE LOCATION WORD IS FILLED ELSEWHERE.          F2518110
06625   0 50000 0 05176 CIL23   CLA CIL00            THIS ROUTINE PLACES TAG IN               F2518120
06626   0 60100 0 05200         STO CIL02           TAG WD. OF CIL03 AND 1                   F2518130
06627   0 50000 0 03652         CLA TAG3            IN DECREMENT FOR THE                     F2518140
06630  -0 32000 0 05141         ANA ADMSK           RELATIVE PART,                           F2518150
06631  -0 50100 0 05061         ORA L1DEC           PLACES THE LOCATION IN                   F2518160
06632   0 60100 0 05201         STO CIL03           THE ADDRESS WORD CIL02 .                 F2518170
06633   0 02000 4 00001         TRA 1,4                                                      F2518180
                                ************************************************************F2518190
                                CILNAM ENTERS ONLY THE TAG NAME.                             F2518200
06634   0 50000 0 03652 CILNAM  CLA TAG3            THIS ROUTINE.                            F2518210
06635  -0 32000 0 05141         ANA ADMSK           ENTERS THE                               F2518220
06636   0 60100 0 05201         STO CIL03           TAG NAME                                 F2518230
06637   0 02000 4 00001         TRA 1,4             IN CIL.                                  F2518240
                                ************************************************************F2518250
                                                                                             F2518260
                                                                                             F2518270
                                   MASTER RECORD CARD = FN049                                F2518275
                                BEGIN ALPHA STATE                                            F2518280
                                THE ALPHA STATE, AC, IS CALLED BY MAN TO COMPILE ALL INITIALF2518290
                                ZATION  AND LOAD INSTRUCTIONS WHEN AN ALPH OF A DO IS UNDER CF2518300
                                CONSIDERATION.                                               F2518310
                    05256       ORG RTX                                                      F2518320
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05256 -0 63400 4 06252 AC     SXD AC248,4          STORE LINKAGE                          F2518330
05257  0 60100 0 05244        STO VCTR             DOTAG ALPHA IS LOCATION.               F2518340
05260  0 50000 2 01104        CLA DOTAGZ+6,2       PLACE                                  F2518350
05261  0 77100 0 00033        ARS 27               SXD LOCATION                           F2518360
05262 -0 32000 0 05170        ANA 6ONESR           IN                                     F2518370
05263  0 76700 0 00003        ALS 3                CIL00 AND                              F2518380
05264  0 40000 0 05225        ADD B                TXL LOCATION                           F2518390
05265  0 60100 0 05176        STO CIL00            IN                                     F2518400
05266  0 50000 2 01076        CLA DOTAGZ,2         ERTX01 FOR                             F2518410
05267 -0 32000 0 05071        ANA NOPRET                                                  F2518420
05270  0 60100 0 05251        STO SXDTXZ                                                  F2518430
05271  0 76600 0 00301        WRS 193              OF SXDTX TABLE.                        F2518440
05272 -0 50000 0 05251        CAL SXDTXZ           MAKE                                   F2518450
05273  0 36100 0 05176        ACL CIL00            SXDTX                                  F2518460
05274  0 60200 0 05245        SLW ERTX01           TABLE                                  F2518470
05275  0 46000 0 05063        LDA DRADS2           ENTRY                                  F2518480
05276  0 70000 0 05251        CPY SXDTXZ           ON                                     F2518490
05277  0 70000 0 05176        CPY CIL00            DRUM 1.                                F2518500
05300  0 70000 0 05245        CPY ERTX01                                                  F2518510
05301  0 50000 0 05063        CLA DRADS2           RESET DRUM                             F2518520
05302  0 40000 0 05131        ADD L(3)             ADDRESS FOR                            F2518530
05303  0 60100 0 05063        STO DRADS2           NEXT ENTRY.                            F2518540
05304  0 50000 0 05123 AC05   CLA ALLONE           INITIALIZE CIL WORDS                   F2518550
05305  0 60100 0 05176        STO CIL00            TO ALL ONES AND                        F2518560
05306  0 60100 0 05177        STO CIL01            PUT                                    F2518570
05307  0 60100 0 05200        STO CIL02            INTO CIT                               F2518580
05310  0 60100 0 05201        STO CIL03            AS FIRST ALPHA STAGE                   F2518590
05311  0 07400 4 04352        TSX CITSP,4          ENTRY.                                 F2518600
05312  0 07400 4 04153        TSX SCAN,4           SCAN AND FIND PICK                     F2518610
05313 -0 63400 1 05221        SXD RTXTGX,1                                                F2518620
05314 -0 63400 1 05237        SXD XTG,1            BY A DO WITHIN ALPHA                   F2518630
05315  0 07400 4 04162 AC010  TSX FIND,4           AND BETA.                              F2518640
05316  0 02000 0 06240        TRA AC240+1          END OF DO FOR DOTAG.                   F2518650
05317 -0 63400 1 05237        SXD XTG,1            STORE TGTG INDEX IN XTG.               F2518660
05320  0 07400 4 04373 AC014  TSX SCLMN1,4         OBTAIN X FOR MINLEV OF S.C.            F2518670
05321 -0 53400 1 05237        LXD XTG,1            SET UP FOR FIND ROUTINE.               F2518680
05322  0 40200 0 05230        SUB DOIND            TEST TO SEE IF THIS IS                 F2518690
05323 -0 10000 0 05315 AC016  TNZ AC010            THE OUTERMOST DO.                      F2518700
05324 -0 53400 1 03652        LXD TAG3,1           IF IT IS PROCEED TO                    F2518710
05325  3 00000 1 05340        TXH AC018,1,0        COMPILE PROPER INST.                   F2518720
05326  0 50000 0 03652        CLA TAG3             NO CURRENT TG, USE NEW TG.             F2518730
05327  0 77100 0 00013        ARS 11               CHECK RESET TAG BIT                    F2518740
05330  0 76000 0 00001        LBT                  OR INSERTED COUNTER.                   F2518750
05331  0 02000 0 05334        TRA AC016I           RESET TYPE ENTRY, USE NEW TAG.         F2518760
05332  0 07400 4 04230        TSX ENTR,4           CTR. TYPE ENTRY, SIMULATE              F2518770
05333  0 02000 0 05343        TRA AC020            WRKSC AND CONTINUE.                    F2518780
05334  0 50000 0 03652 AC016I CLA TAG3            RESET TYPE ENTRY                       F2518790
05335 -0 32000 0 05153        ANA 11BITS           LAY OUT TAU ENTRIES                    F2518800
05336  0 07400 4 04236        TSX SUBCOM,4                                                F2518810
05337  0 02000 0 05355        TRA AC021            DECRENENT AND CONTINUE.                F2518820
05340  0 50000 0 03652 AC018  CLA TAG3             CURRENT TAG VALID, LAY                 F2518830
05341  0 77100 0 00022        ARS 18               OUT TAU DNTRIES INTO                   F2518840
05342  0 07400 4 04236 AC019  TSX SUBCOM,4         WRKSC AND CONTINUE                     F2518850
05343  0 07400 4 04560 AC020  TSX N1STET,4                                                F2518860
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05344   0 50000 0 05254          CLA N1SBX      VALUE IS CONSTANT                          F2518870
05345  -0 10000 0 05400          TNZ AC030      VARIABLE, TRA AC030.                       F2518880
05346   0 07400 4 04406          TSX TELC,4     COMPUTE LOAD                               F2518890
05347   0 50000 0 05245          CLA ERTX01     VALUE                                      F2518900
05350   0 76700 0 00022          ALS 18         AND PLACE                                  F2518910
05351   0 40000 0 05061          ADD L1DEC      IN                                         F2518920
05352   0 07400 4 04601          TSX FIXCON,4   FIXCON.                                    F2518930
05353   0 60100 0 05200          STO CIL02      FIXCON LOCATION SYMBOL.                    F2518940
05354   0 02000 0 05357          TRA AC022      CONTINUE.                                  F2518950
                                                                                          F2518960
05355   0 50000 0 05100 AC021    CLA BCD0       LXD ADDRESS TO BCD ZERO.                   F2518970
05356   0 60100 0 05200          STO CIL02                                                 F2518980
05357   0 50000 0 05051 AC022    CLA L(LXD)                                                F2518990
05360   0 60100 0 05177          STO CIL01      LXD                                        F2519000
05361   0 07400 4 07131          TSX CIL03I,4   FILL OUT LOCATION AND TG WORDS.            F2519010
05362   0 50000 0 05200          CLA CIL02      PLACE LXD ADDRESS                          F2519020
05363   0 60100 0 07621          STO ORO00+27   IN ORO TABLE.                             F2519030
05364   0 73400 4 00000          PAX 0,4        RELATIVE PART OF FIXCON NAME               F2519040
05365  -0 32000 0 05104          ANA 6ONES                                                 F2519050
05366   0 60100 0 05200          STO CIL02      ADDRESS.                                   F2519060
05367  -0 63400 4 05201          SXD CIL03,4    RELATIVE ADDRESS.                          F2519070
05370   0 50000 0 05222          CLA LOCIND     TEST LOCATION INDICATOR.                   F2519080
05371   0 10000 0 05376          TZE AC024                                                 F2519090
05372   0 40200 0 05126          SUB L(1)                                                  F2519100
05373   0 60100 0 05222          STO LOCIND     A LOCATION MUST BE                         F2519110
05374   0 50000 0 05224          CLA A          ASSIGNED FOR 1ST LXD                       F2519120
05375   0 60100 0 05176          STO CIL00      COMPILED FOR AN ALPHA.                     F2519130
05376   0 07400 4 04345 AC024    TSX CIT,4      PUT IN DOFILE.                             F2519140
05377   0 76100 0 00000          NOP                                                       F2519150
05400   0 50000 0 03653 AC030    CLA TAG4       VARIABLE CASE, THE BITS FOR                F2519160
05401   0 77100 0 00003          ARS 3          DEFINING A SUB BY A DO OR                  F2519170
05402  -0 32000 0 05076          ANA L(7)       A RELCON OR BOTH ARE                       F2519180
05403   0 60100 0 05210          STO RELCO      ISOLATED IN 3 SEPARATE                     F2519190
05404   0 50000 0 03653          CLA TAG4       WORDS, DEFDO, RELCO, AND                   F2519200
05405  -0 32000 0 05076          ANA L(7)       ORDEDO.                                    F2519210
05406   0 60100 0 05253          STO DEFDO                                                 F2519220
05407  -0 50100 0 05210          ORA RELCO                                                 F2519230
05410   0 60100 0 05252          STO OREDO                                                 F2519240
05411   0 50000 0 05254          CLA N1SBX      IF CONSTANT LOAD,                          F2519250
05412   0 10000 0 05567          TZE AC100+2    TRA AC100+2.                               F2519260
05413   0 50000 0 05127          CLA L(2)       IF VARIABLE LOAD, FILL                     F2519270
05414   0 07400 4 07137          TSX BITP,4     ORO TABLE.                                 F2519280
05415   0 02000 0 05417          TRA AC040      S1 NOT DEFINED.                            F2519290
05416   0 60100 0 07567          STO ORO00+1    S1 DEFINED. STO SYMBOL IN ORO+1.           F2519300
05417   0 50000 0 05126 AC040    CLA L(1)       REPEAT FOR                                 F2519310
05420   0 07400 4 07137          TSX BITP,4     S2.                                        F2519320
05421   0 02000 0 05426          TRA AC046      S2 NOT DEFINED.                            F2519330
05422   0 60100 0 07572          STO ORO00+4    S2 DEFINED. PUT SUBSCRIPT                  F2519340
05423   0 50000 0 03644          CLA WRKSC+6    SYMBOL IN ORO+4 AND                        F2519350
05424   0 07400 4 04601          TSX FIXCON,4   D1 SYMBOL                                  F2519360
05425   0 60100 0 07575          STO ORO00+7    IN ORO+7.                                  F2519370
05426   0 50000 0 05133 AC046    CLA L(0)       REPEAT FOR                                 F2519380
05427   0 07400 4 07137          TSX BITP,4                                                F2519390
05430   0 02000 0 05443          TRA AC048      S3 NOT DEFINED.                            F2519400
05431   0 60100 0 07613          STO ORO00+21   S3 DEFINED. PUT SUBSCRIPT
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      05432   0 56000 0 03644         LDQ WRKSC+6          SYMBOL IN ORO+21                    F2519410
      05433   0 20000 0 03645         MPY WRKSC+7          AND                                 F2519420
      05434   0 76700 0 00021         ALS 17               PUT                                 F2519430
      05435   0 07400 4 04601         TSX FIXCON,4         D1D2 IN                             F2519440
      05436   0 60100 0 07616         STO ORO00+24         ORO+24.                             F2519450
      05437   0 50000 0 03644         CLA WRKSC+6                                              F2519460
      05440   0 07400 4 04601         TSX FIXCON,4         OBTAIN SYMBOL FOR D1                F2519470
      05441   0 60100 0 07575         STO ORO00+7          AND STORE IN ORO+7.                 F2519480
      05442   0 76000 0 00140         PSE 96               TURN OFF SENSE LIGHTS.              F2519490
      05443   0 07400 4 07172 AC048   TSX COSE,4           TEST COEFFS GREATER THAN 1.         F2519500
      05444   0 50000 0 05152         CLA OPMSK                                                F2519510
      05445  -0 32000 0 03653         ANA TAG4             COEFS, 011 RELCONS, 100 CUPE.       F2519520
      05446  -0 10000 0 05472         TNZ AC049            SOME OF ABOVE EXIST.                F2519530
M     05447  -0 53400 1 03650         LXD TAG21,1          NONE OF ABOVE EXIST,                F2519540
      05450  -3 00000 1 05452         TXL AC048+7,1,0      IF S2 DEF BY DO,                    F2519550
      05451  -0 50000 1 01100         CAL DOTAGZ+2,1       ISOLATE N1.                         F2519560
M     05452  -0 53400 1 03651         LXD TAG22,1          IF S3 DEF BY DO,                    F2519570
      05453  -3 00000 1 05455         TXL AC048+10,1,0     OR N1S OF S2 AND S3.                F2519580
      05454  -0 50100 1 01100         ORA DOTAGZ+2,1       IF EITHER N1 IS GREATER             F2519590
      05455   0 40200 0 05126         SUB L(1)             THAN 1, RETURN.                     F2519600
      05456   0 10000 0 05460         TZE AC048I           IS S1 IS                            F2519610
      05457   0 12000 0 05472         TPL AC049            DEFINED BY A DO,                    F2519620
      05460  -0 53400 1 03647 AC048I  LXD TAG2,1           IS/LATE N1.                         F2519630
      05461  -3 00000 1 05464         TXL AC048I+4,1,0     IF NOT ISOLATE                      F2519640
      05462   0 50000 1 01100         CLA DOTAGZ+2,1       S1 (BCD).                           F2519650
      05463   0 02000 0 05465         TRA AC048I+5                                             F2519660
      05464   0 50000 0 03637         CLA WRKSC+1                                              F2519670
      05465   0 60100 0 05200         STO CIL02            STO S1 OR N1 SYMBOL.                F2519680
      05466   0 07400 4 07131         TSX CIL03I,4         FILL OUT                            F2519690
      05467   0 50000 0 05051         CLA L(LXD)           COMPILED INSTRUCTION                F2519700
      05470   0 60100 0 05177         STO CIL01            WORDS AND CONTINUE                  F2519710
      05471   0 02000 0 05564         TRA AC100-1          TO INIT PORTION,                    F2519720
      05472   0 53400 1 05127 AC049   LXA L(2),1                                               F2519730
      05473   0 50000 0 05252         CLA OREDO            IS LEFT SUB A RELCON,               F2519740
      05474  -0 32000 0 05130         ANA L(4)             DORC, OR DOSUB.                     F2519750
      05475   0 10000 0 05503         TZE AC049A           NO, COMPILE CLA, SUB.               F2519760
      05476  -0 53400 2 03647         LXD TAG2,2           YES, IS IT A DOSUB.                 F2519770
      05477  -3 00000 2 05505         TXL AC049B,2,0       NO.                                 F2519780
      05500   0 50000 2 01100         CLA DOTAGZ+2,2       YES, IS N1(S1)=1.                   F2519790
      05501   0 40200 0 05126         SUB L(1)                                                 F2519800
      05502  -0 10000 0 05505         TNZ AC049B           NO.                                 F2519810
      05503   0 50000 0 07350 AC049A  CLA KLX01                                               F2519820
      05504   0 07400 4 07271         TSX LXC,4            COMPILE CLA, SUB.                   F2519830
      05505   0 50000 0 05252 AC049B  CLA OREDO                                               F2519840
      05506   0 77100 0 00002         ARS 2                DEFINITION.                         F2519850
      05507   0 76000 0 00001         LBT                  OF S1.                              F2519860
      05510   0 02000 0 05523         TRA AC064            S1 IS NOT DEF., TAKE S2.            F2519870
      05511   0 53400 1 05131         LXA L(3),1           S1 DEFINED, GO TO                   F2519880
      05512   0 07400 4 04670         TSX OP2,4            OPTIMIZING ROUTINE.                 F2519890
      05513   0 53400 1 05127         LXA L(2),1           AT LEAST 4 COMP INST.               F2519900
      05514  -0 76000 0 00141         MSE 97               TEST ON COEF                        F2519910
      05515   0 02000 0 05517         TRA AC050            GREATER THAN 1.                     F2519920
      05516   1 00002 1 05521         TXI AC050I,1,2                                           F2519930
      05517   0 50000 0 07353 AC050   CLA KLX02           L(LXI02)                            F2519940
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05520   0 02000 0 05522         TRA AC050I+1                                    F2519950
05521   0 50000 0 07352 AC050I  CLA KLX02I      L(LXI05)                       F2519960
05522   0 07400 4 07271         TSX LXC,4        COMPILER.                      F2519970
05523   0 50000 0 05252 AC064   CLA OREDO                                       F2519980
05524   0 77100 0 00001         ARS 1            S2                             F2519990
05525   0 76000 0 00001         LBT              DEFINED.                       F2520000
05526   0 02000 0 05540         TRA AC080        S2 NOT DEFINED. S3.            F2520010
05527   0 53400 1 05127         LXA L(2),1       CALL OP2 ROUTINE               F2520020
05530   0 07400 4 04670         TSX OP2,4        TO OPTIMIZE.                   F2520030
05531   0 53400 1 05106         LXA L(6),1       COUNTER FOR COMPILING.         F2520040
05532  -0 76000 0 00142         MSE 98           IS COEF GREATER THAN 1.        F2520050
05533   0 02000 0 05536         TRA AC068        NO                             F2520060
05534   0 50000 0 07354         CLA KLX03        YES.                           F2520070
05535   1 00002 1 05537         TXI AC068+1,1,2  INCREMENT COMPILING COUNTER.   F2520080
05536   0 50000 0 07356 AC068   CLA KLX03I                                      F2520090
05537   0 07400 4 07271         TSX LXC,4        COMPILE S2 LOAD VALUE.         F2520100
05540   0 50000 0 05252 AC080   CLA OREDO                                       F2520110
05541   0 76000 0 00001         LBT                                             F2520120
05542   0 02000 0 05554         TRA AC096        S3 NOT DEFINED, EXIT.          F2520130
05543   0 53400 1 05126         LXA L(1),1       CALL OP2 ROUTINE               F2520140
05544   0 07400 4 04670         TSX OP2,4        FOR OPTIMIZATION.              F2520150
05545   0 53400 1 05106         LXA L(6),1       COMPILING COUNTER.             F2520160
05546  -0 76000 0 00143         MSE 99           TEST FOR COEF GREATER THAN 1.  F2520170
05547   0 02000 0 05552         TRA AC084        NONE.                          F2520180
05550   0 50000 0 07355         CLA KLX05        C3 GREATER THAN 1, COMPILE     F2520190
05551   1 00002 1 05553         TXI AC084+1,1,2  KLX05 BLOCK.                   F2520200
05552   0 50000 0 07357 AC084   CLA KLX05I       C3=1, COMPILE KLX05I           F2520210
05553   0 07400 4 07271         TSX LXC,4        BLOCK.                         F2520220
05554   0 07400 4 07131 AC096   TSX CIL03I,4     COMPILE                        F2520230
05555   0 50000 0 05051         CLA L(LXD)       LXD.                           F2520240
05556   0 60100 0 05177         STO CIL01                                       F2520250
05557   0 50000 0 07620         CLA ORO00+26     ERASABLE OBJECT TIME SYMBOL.   F2520260
05560   0 73400 1 00000         PAX 0,1                                         F2520270
05561  -0 32000 0 05104         ANA 6ONES                                       F2520280
05562  -0 63400 1 05201         SXD CIL03,1                                     F2520290
05563   0 60100 0 05200         STO CIL02                                       F2520300
05564   0 07400 4 04345         TSX CIT,4        PUT IN BUFFER.                 F2520310
05565   0 50000 0 07620 AC100   CLA ORO00+26                                    F2520320
05566   0 60100 0 07621         STO ORO00+27                                    F2520330
05567   0 53400 1 05131         LXA L(3),1       PREPARE TO                     F2520340
05570  -0 63400 1 05207 AC109   SXD AX,1         CHECK FOR                      F2520350
05571   0 50000 1 03652         CLA TAG2+3,1     DUPES.                         F2520360
05572  -0 73400 2 00000         PDX 0,2          SAVE INDEX OF S.               F2520370
05573  -3 00000 2 05743         TXL AC160,2,0    POS. NOT MOD. BY DO.           F2520380
05574  -2 00001 1 05601 AC110   TNX AC116,1,1                                   F2520390
05575   0 34000 1 03652         CAS TAG2+3,1     SKIP DUPES                     F2520400
05576   0 02000 0 05574         TRA AC110        EXCEPT                         F2520410
05577   0 02000 0 05743         TRA AC160        RIGHTMOST.                     F2520420
05600   0 02000 0 05574         TRA AC110                                       F2520430
05601   0 50000 2 01106 AC116   CLA DOTAGZ+8,2   ISOLATE                        F2520440
05602  -0 32000 0 05171         ANA 6TO17        NAME OF TEST                   F2520450
05603   0 60100 0 05204         STO TETTG        FOR THIS DO                    F2520460
05604   0 50000 0 03652         CLA TAG3         AND                            F2520470
05605  -0 32000 0 05172         ANA 24TO35       COMPARE                        F2520480
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05606  0 76700 0 00022          ALS 18                 WITH                                    F2520490
05607  0 34000 0 05204          CAS TETTG              CURRENT TAG.                            F2520500
05610  0 02000 0 05743          TRA AC160              NOT A TEST TAG.                         F2520510
05611  0 02000 0 05613          TRA AC120              THIS IS A TEST TAG.                     F2520520
05612  0 02000 0 05743          TRA AC160              NOT A TEST TAG.                         F2520530
05613  0 50000 2 01101 AC120    CLA DOTAGZ+3,2         THIS IS TEST TAG,                       F2520540
05614 -0 32000 0 05104          ANA 6ONES              18 N2 CONSTANT.                         F2520550
05615 -0 10000 0 05622          TNZ AC128                                                      F2520560
05616  0 50000 2 01106          CLA DOTAGZ+8,2         IF RIGHT TEST HAS VARIABLE DECREMENT    F2520570
05617 -0 32000 0 05154          ANA BIT20              GO TO AC138 +4                          F2520580
05620  0 10000 0 05627          TZE AC138              INSTEAD OF                              F2520590
05621  0 02000 0 05633          TRA AC138+4                                                    F2520600
05622  0 50000 2 01101 AC128    CLA DOTAGZ+3,2                                                 F2520610
05623  0 60100 0 05200          STO CIL02              PUT N2 WORD AS                          F2520620
05624  0 50000 0 05133          CLA L(0)               SYMBOLIC ADDRESS AND                    F2520630
05625  0 60100 0 05201          STO CIL03              ZERO AS THE                             F2520640
05626  0 02000 0 05660          TRA AC140              RELATIVE ADDRESS.                       F2520650
05627  0 56000 2 01104 AC138    LDQ DOTAGZ+6.2         CONSTANT N2 CASE.                       F2520660
05630 -0 77300 0 00011          RQL 9                  IS TEST                                 F2520670
05631 -0 76300 0 00014          LGL 12                 MODIFIED.                               F2520680
05632  0 10000 0 05743          TZE AC160              NO, TAKE NEXT SUB.                      F2520690
05633  0 50000 2 01101          CLA DOTAGZ+3,2         YES, ISOLATE N2.                        F2520700
05634 -0 53400 1 05207          LXD AX,1                                                       F2520710
05635  0 07400 4 04451          TSX CXIJ+2,4           IF POSITION IS                          F2520720
05636 -2 00001 1 05647          TNX AC139,1,1                                                  F2520730
05637  0 60100 0 05070          STO ESTORE                                                     F2520740
05640  0 50000 2 01106          CLA DOTAGZ+8,2         DOES TEST                               F2520750
05641 -0 32000 0 05154          ANA BIT20              HAVE VARIABLE DECREMENT.                F2520760
05642 -0 10000 0 05646          TNZ AC139-1                                                    F2520770
05643  0 50000 0 05070          CLA ESTORE                                                     F2520780
05644  0 07400 4 04410          TSX TELC+2,4                                                   F2520790
05645  0 02000 0 05647          TRA AC139                                                      F2520800
05646  0 50000 0 05070          CLA ESTORE                                                     F2520810
05647  0 76700 0 00022 AC139    ALS 18                                                         F2520820
05650  0 07400 4 04601          TSX FIXCON,4           ASSIGN SYMBOL FOR                       F2520830
05651  0 73400 1 00000          PAX 0,1                LOAD PORTION                            F2520840
05652 -0 32000 0 05104          ANA 6ONES              AND COMPILE                             F2520850
05653  0 60100 0 05200          STO CIL02              CLAL(GN2 + LOAD PORT.)                  F2520860
05654  0 50000 0 05133          CLA L(0)                                                       F2520870
05655  0 60100 0 05201          STO CIL03                                                      F2520880
05656 -0 63400 1 05201          SXD CIL03,1                                                    F2520890
05657  0 02000 0 05665          TRA AC144                                                      F2520900
05660  0 50000 0 05126 AC140    CLA L(1)                                                       F2520910
05661 -0 53400 1 05207          LXD AX,1               COMPUTE G AND DETERMINE                 F2520920
05662  0 07400 4 04451          TSX CXIJ+2,4           IF GREATER THAN ONE.                    F2520930
05663  0 40200 0 05126          SUB L(1)                                                       F2520940
05664 -0 10000 0 05673          TNZ AC146                                                      F2520950
05665  0 50000 0 05053 AC144    CLA L(CLA)             G = 1,                                  F2520960
05666  0 60100 0 05177          STO CIL01              COMPILE                                 F2520970
05667  0 50000 0 05133          CLA L(0)               CLA N2, FOLLOWED                        F2520980
05670  0 60100 0 05176          STO CIL00              LATER BY STD.                           F2520990
05671  0 07400 4 04345          TSX CIT,4                                                      F2521000
05672  0 02000 0 05704          TRA AC150                                                      F2521010
05673  0 40000 0 05126 AC146    ADD L(1)               G GREATER THAN 1,                       F2521020
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05674   0 76700 0 00022         ALS 18              COMPILE                  F2521030
05675   0 07400 4 04601         TSX FIXCON,4        LDQ, MPY, ALS.           F2521040
05676   0 60100 0 07577         STO OR000+9                                  F2521050
05677   0 50000 0 05200         CLA CIL02                                    F2521060
05700   0 60100 0 07567         STO OR000+1                                  F2521070
05701   0 50000 0 07352         CLA KLX02I                                   F2521080
05702   0 53400 1 05131         LXA L(3),1                                   F2521090
05703   0 07400 4 07271         TSX LXC,4                                    F2521100
05704  -0 53400 1 05207 AC150   LXD AX,1                                     F2521110
05705   0 50000 1 03652         CLA TAG3,1                                   F2521120
05706  -0 73400 2 00000         PDX 0,2                                      F2521130
05707   0 50000 2 01106         CLA DOTAGZ+8,2                               F2521140
05710  -0 32000 0 05154         ANA BIT20                                    F2521150
05711  -0 53400 2 05207         LXD AX,2                                     F2521160
05712   0 10000 0 05733         TZE AC157                                    F2521170
05713  -2 00001 2 05733         TNX AC157,2,1                                F2521180
05714   0 53400 1 05126         LXA L(1),1                                   F2521190
05715   0 50000 0 07351         CLA KLX01I                                   F2521200
05716   0 07400 4 07271         TSX LXC,4                                    F2521210
05717   0 50000 0 05166         CLA INST13                                   F2521220
05720   0 60100 0 05554         STO AC096                                    F2521230
05721   0 07400 4 07172         TSX COSE,4                                   F2521240
05722  -0 53400 2 05207         LXD AX,2                                     F2521250
05723  -3 00002 2 05540         TXL AC080,2,2                                F2521260
05724   0 02000 0 05523         TRA AC064                                    F2521270
05725   0 50000 0 05167 AC155   CLA INST14                                   F2521280
05726   0 60100 0 05554         STO AC096                                    F2521290
05727  -0 53400 2 05207         LXD AX,2                                     F2521300
05730  -0 53400 4 05173         LXD BBOX,4                                   F2521310
05731   1 00004 4 05732         TXI AC155+5,4,4                              F2521320
05732  -0 63400 4 05173         SXD BBOX,4                                   F2521330
05733   0 07400 4 07211 AC157   TSX TESTLO,4                                 F2521340
05734   0 50000 0 05255         CLA TETLOC          IN TETLO.                F2521350
05735   0 60100 0 05200         STO CIL02           COMPILE                  F2521360
05736   0 50000 0 05052         CLA L(STD)          STD TETLO                F2521370
05737   0 60100 0 05177         STO CIL01           AND RETURN TO            F2521380
T
05740  -0 63400 0 05176         SXD CIL00           AC160 TO                 F2521390
T
05741  -0 63400 0 05201         SXD CIL03           CONSIDER NEXT            F2521400
05742   0 07400 4 04345         TSX CIT,4           SUB OF TAG.              F2521410
05743  -0 53400 1 05207 AC160   LXD AX,1                                     F2521420
05744   2 00001 1 05570         TIX AC109,1,1       REDUCE POS. CTR.         F2521430
05745   0 50000 0 03653         CLA TAG4            CHECK SUSBIT             F2521440
05746   0 12000 0 05770         TPL AC165           FOR FORVAR.              F2521450
05747  -0 53400 2 05230         LXD DOIND,2         FORVAR, IS IT            F2521460
05750   0 50000 2 01103         CLA DOTAGZ+5,2      WITHIN THE CURRENT DO.   F2521470
05751  -0 32000 0 05136         ANA BIT1                                     F2521480
05752   0 10000 0 05770         TZE AC165           NO, AC165.               F2521490
05753   0 50000 0 05133         CLA L(0)            YES,                     F2521500
05754   0 60100 0 05200         STO CIL02           COMPILE                  F2521510
05755   0 07400 4 07131         TSX CIL03I,4        INSTRUCTIONS             F2521520
05756   0 50000 0 05043         CLA L(PXD)          TO                       F2521530
05757   0 60100 0 05177         STO CIL01           STORE                    F2521540
05760   0 07400 4 04345         TSX CIT,4           THE                      F2521550
05761   0 50000 2 01077         CLA DOTAGZ+1,2      VALUE                    F2521560
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05762   0 60100 0 05200          STO CIL02
05763   0 50000 0 05044          CLA L(STO)
05764   0 60100 0 05177          STO CIL01
05765  -0 75400 0 00000          PXD 0,0
05766   0 60100 0 05201          STO CIL03
05767   0 07400 4 04345          TSX CIT,4
05770   0 50000 0 05237 AC165    CLA XTG
05771   0 77100 0 00002          ARS 2
05772  -0 73400 1 00000          PDX 0,1
05773  -0 50000 1 02646          CAL MXTGA,1
05774   0 60200 0 05211          SLW WRKTGA
05775   0 10000 0 06237          TZE AC240
05776   0 53400 1 05131          LXA L(3),1
05777  -0 63400 1 05207 AC166    SXD AX,1
06000  -0 50000 0 05211          CAL WRKTGA
06001   0 77100 0 00022          ARS 18
06002  -2 00001 1 06005 AC168    TNX AC170,1,1
06003   0 77100 0 00006          ARS 6
06004   0 02000 0 06002          TRA AC168
06005  -0 32000 0 05170 AC170    ANA 6ONESR
06006   0 10000 0 06060          TZE AC190
06007   0 76700 0 00003          ALS 3
06010   0 60100 0 05255          STO TETLOC
06011   0 53400 4 05133          LXA L(0),4
06012  -0 53400 1 05207          LXD AX,1
06013   0 50000 0 03653          CLA TAG4
06014  -3 00002 1 06035          TXL AC173,1,2
06015  -0 32000 0 05140          ANA BIT8
06016  -0 10000 0 06021 AC171    TNZ AC172
06017   0 50000 0 03653          CLA TAG4
06020   0 02000 0 06042          TRA AC176
06021   0 56000 0 03640 AC172    LDQ WRKSC+2
06022   0 20000 0 03644          MPY WRKSC+6
06023   0 76700 0 00021          ALS 17
06024   0 60100 0 07612          STO ORO00+20
06025   0 50000 0 03636          CLA WRKSC
06026   0 60100 0 07611          STO ORO00+19
06027   0 53400 1 05131          LXA L(3),1
06030  -0 63400 1 05212          SXD N3X,1
06031   0 53400 1 05127          LXA L(2),1
06032  -0 63400 1 05213          SXD XX,1
06033   0 07400 4 06701          TSX PC,4
06034   0 02000 0 06060          TRA AC190
06035  -3 00001 1 06037 AC173    TXL AC174,1,1
06036   0 77100 0 00003          ARS 3
06037   0 77100 0 00035 AC174    ARS 29
06040  -0 32000 0 05076          ANA L(7)
06041   0 73400 4 00000          PAX 0,4
06042   3 00000 4 06045 AC176    TXH AC176+3,4,0
06043   0 07400 4 06324          TSX AORO,4
06044   0 02000 0 06060          TRA AC190
06045   3 00001 4 06050          TXH AC178,4,1
06046   0 07400 4 06435          TSX BORO,4
06047   0 02000 0 06060          TRA AC190
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OF                                                          F2521570
THE                                                         F2521580
SUBSCRIPT                                                   F2521590
INTO                                                        F2521600
ITS                                                         F2521610
SYMBOL.                                                     F2521620
START SCANNING                                              F2521630
TGA FOR LOCATIONS                                           F2521640
INDICATING VARIABLE                                         F2521650
DECREMENTS OF TXI                                           F2521660
AND TIX INSTRUCTIONS-                                       F2521670
NONE, AC240.                                                F2521680
YES, ISOLATE                                                F2521690
APP. TGTG AND                                               F2521700
CHECK FOR                                                   F2521710
LOCATIONS                                                   F2521720
OF TXI                                                      F2521730
INSTRUCTIONS                                                F2521740
WITH VARIABLE                                               F2521750
DECREMENTS.                                                 F2521760
NONE, AC190.                                                F2521770
STORE                                                       F2521780
LOC. OF TXI.                                                F2521790
                                                            F2521800
IS                                                          F2521810
POSITION                                                    F2521820
                                                            F2521830
POSITION IS S1, IS                                          F2521840
THIS BLOCK D SPECIAL.                                       F2521850
NO, BLOCK A.                                                F2521860
TSX AORO                                                    F2521870
TES, SET UP                                                 F2521880
CID1 AS G                                                   F2521890
FOR XX POSITION.                                            F2521900
C1 IS G FOR                                                 F2521910
N3X POSITION.                                               F2521920
PREPARE TO                                                  F2521930
CALL PC ROUTINE                                             F2521940
TO COMPILE                                                  F2521950
INITIALIZATION                                              F2521960
INSTRUCTIONS                                                F2521970
FOR BLOCK D SPECIAL.                                        F2521980
                                                            F2521990
IS POSITION S3)                                             F2522000
ISOLATE BLKNUM                                              F2522010
FROM TAG4 AND                                               F2522020
CALLPROPER ROUTINE                                          F2522030
TO COMPILE INITIALIZATION                                   F2522040
INSTRUCTIONS FOR THAT BLOCK.                                F2522050
BLOCK A                                                     F2522060
                                                            F2522070
                                                            F2522080
BLOCK B                                                     F2522090
                                                            F2522100
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06050   3 00002 4 06053 AC178   TXH AC182,4,2                                  F2522110
06051   0 07400 4 06453         TSX CORO,4      BLOCK C                        F2522120
06052   0 02000 0 06060         TRA AC190                                      F2522130
06053   3 00003 4 06056 AC182   TXH AC186,4,3                                  F2522140
06054   0 07400 4 06502         TSX DORO,4      BLOCK D.                       F2522150
06055   0 02000 0 06060         TRA AC190                                      F2522160
06056   0 07400 4 06541 AC186   TSX EORO,4      BLOCK E.                       F2522170
06057   0 02000 0 06060         TRA AC190                                      F2522180
06060  -0 53400 1 05207 AC190   LXD AX,1        IF ALL SUBS HAVE NOT BEEN      F2522190
06061   2 00001 1 05777         TIX AC166,1,1   CONSIDERED FOR TXIS, TAKE NEXT RT. F2522200
06062   0 53400 1 05131         LXA L(3),1      THIS REPRESENTS END OF         F2522210
06063  -0 63400 1 05207 AC200   SXD AX,1        TXI PHASE, START TIX.          F2522220
06064   0 50000 0 05211         CLA WRKTGA      ISOLATE APP. TGTG ENTRY.       F2522230
06065  -2 00001 1 06070 AC210   TNX AC214+1,1,1                                F2522240
06066   0 77100 0 00006         ARS 6                                          F2522250
06067   0 02000 0 06065 AC214   TRA AC210                                      F2522260
06070  -0 32000 0 05170         ANA 6ONESR                                     F2522270
06071   0 10000 0 06235         TZE AC236       IS THERE A TIX VAR. DEC. LOC.  F2522280
06072   0 76700 0 00003         ALS 3           YES, STORE TIX REL. LOC.       F2522290
06073   0 60100 0 05255         STO TETLOC      IN TETLOC WORD.                F2522300
06074  -0 53400 1 05207         LXD AX,1                                       F2522310
06075   0 50000 1 03652         CLA TAG2+3,1    ISOLATE                        F2522320
06076  -0 73400 2 00000         PDX 0,2         N3 FOR                         F2522330
06077   0 50000 2 01102 AC121   CLA DOTAGZ+4,2   THIS DO.                      F2522340
06100   0 40200 0 05126         SUB L(1)        DOES N3 = 1.                   F2522350
06101   0 10000 0 06107         TZE AC220+2                                    F2522360
06102   0 07400 4 07237         TSX XORO,4      NO, PLACE N SYMBOLS            F2522370
06103   0 53400 1 05106         LXA L(6),1      IN APPROP. ORO LOCS            F2522380
06104  -0 53400 2 05207         LXD AX,2        AND COMPUTE                    F2522390
06105   0 50000 2 07367 AC220   CLA KTX00+3,2   X QUANTITY                     F2522400
06106   0 07400 4 07271         TSX LXC,4       ON O.C. LEVEL.                 F2522410
06107  -0 53400 1 05207         LXD AX,1                                       F2522420
06110   0 50000 0 05160         CLA INST4       TRA AC224. MODIFY ADRO         F2522430
06111   0 60100 0 06424         STO AORO30      ROUTINE TO COMPUTE G.          F2522440
06112   0 50000 0 05161         CLA INST5       TRAAC228.                      F2522450
06113   0 60100 0 06430         STO AORO40                                     F2522460
06114   0 07400 4 06324         TSX AORO,4      COMPUTE G, PUT IN ORO+19.      F2522470
06115   0 02000 0 06172 AC224   TRA AC230       G1 = 1.                        F2522480
06116  -0 53400 1 05207 AC228   LXD AX,1        G1 NOT = 1,                    F2522490
06117   0 50000 1 03652         CLA TAG2+3,1    COMPILE INSTRUCTIONS           F2522500
06120  -0 73400 2 00000         PDX 0,2         TO COMPUTE AND INITIALIZE      F2522510
06121   0 50000 2 01102         CLA DOTAGZ+4,2  TIX DECREMENT.                 F2522520
06122   0 40200 0 05126         SUB L(1)                                       F2522530
06123  -0 10000 0 06166         TNZ AC228I      N3 NOT = 1.                    F2522540
06124   0 50000 2 01100         CLA DOTAGZ+2,2  N3 = 1, DOES                   F2522550
06125   0 40200 0 05126         SUB L(1)        N1 = 1.                        F2522560
06126  -0 10000 0 06135         TNZ AC122       N1 NOT = 1.                    F2522570
06127   0 50000 2 01101         CLA DOTAGZ+3,2  N3, N1=1.                      F2522580
06130   0 60100 0 07566         STO ORO00       G GREATER THAN 1.              F2522590
06131   0 50000 0 07360         CLA K1AORO                                     F2522600
06132   0 53400 1 05130         LXA L(4),1                                     F2522610
06133   0 07400 4 07271         TSX LXC,4                                      F2522620
06134   0 02000 0 06231         TRA AC234       EXIT TIX INITIALIZATION.       F2522630
06135   0 07400 4 04741 AC122   TSX OP3,4       N3= 1, N1 NOT = 1,             F2522640
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06136   0 50000 0 05054          CLA L(ADD)          COMPILE                                  F2522650
06137   0 60100 0 05177          STO CIL01           TIX                                      F2522660
06140   0 50000 0 07603          CLA ORO00+13        INITIALIZATION                           F2522670
06141   0 73400 1 00000          PAX 0,1             GROUP                                    F2522680
06142  -0 32000 0 05104          ANA 6ONES           FOR                                      F2522690
06143   0 60100 0 05200          STO CIL02           THIS                                     F2522700
06144  -0 63400 1 05201          SXD CIL03,1         CASE.                                    F2522710
06145   0 07400 4 04345          TSX CIT,4                                                    F2522720
06146   0 50000 0 05044          CLA L(STO)                                                   F2522730
06147   0 60100 0 05177          STO CIL01                                                    F2522740
06150   0 50000 0 05133          CLA L(0)                                                     F2522750
06151   0 60100 0 05201          STO CIL03                                                    F2522760
06152   0 50000 0 07620          CLA ORO00+26        ERASEABLE STORAGE                        F2522770
06153   0 73400 4 00000          PAX 0,4             SYMBOL FOR ADDRESS.                      F2522780
06154  -0 32000 0 05104          ANA 6ONES                                                    F2522790
06155   0 60100 0 05200          STO CIL02                                                    F2522800
06156  -0 63400 4 05201          SXD CIL03,4                                                  F2522810
06157   0 07400 4 04345          TSX CIT,4                                                    F2522820
06160   0 50000 0 07620          CLA ORO00+26        PLACE ERASEABLE SYMBOL                   F2522830
06161   0 60100 0 07566          STO ORO00           IN ORO00 FOR LXC BLOCK.                  F2522840
06162   0 53400 1 05130          LXA L(4),1                                                   F2522850
06163   0 50000 0 07360          CLA K1AORO                                                   F2522860
06164   0 07400 4 07271          TSX LXC,4                                                    F2522870
06165   0 02000 0 06231          TRA AC234           EXIT TIX INITIALIZATION.                 F2522880
06166   0 53400 1 05130 AC228I   LXA L(4),1                                                   F2522890
06167   0 50000 0 07371          CLA LTX040          COMPILE TIX INITIALIZATION               F2522900
06170   0 07400 4 07271          TSX LXC,4           GROUP FOR THIS CASE.                     F2522910
06171   0 02000 0 06231          TRA AC234           EXIT TIX INITIALIZATION.                 F2522920
06172  -0 53400 1 05207 AC230   LXD AX,1            G=1,                                     F2522930
06173   0 50000 1 03652          CLA TAG2+3,1        DOES                                     F2522940
06174  -0 73400 2 00000          PDX 0,2             N3 = 1.                                  F2522950
06175   0 50000 2 01102          CLA DOTAGZ+4,2                                               F2522960
06176   0 40200 0 05126          SUB L(1)                                                     F2522970
06177  -0 10000 0 06226          TNZ AC230I          NO.                                      F2522980
06200   0 50000 2 01100          CLA DOTAGZ+2,2      YES, DOES N1= 1.                         F2522990
06201   0 40200 0 05126          SUB L(1)                                                     F2523000
06202  -0 10000 0 06211          TNZ ACI23           NO.                                      F2523010
06203   0 50000 2 01101          CLA DOTAGZ+3,2      G,N3,N1 = 1,                             F2523020
06204   0 60100 0 07566          STO ORO00           COMPILE TIX                              F2523030
06205   0 50000 0 07362          CLA K2AORO          INITIALIZATION                           F2523040
06206   0 53400 1 05127          LXA L(2),1          FOR THIS                                 F2523050
06207   0 07400 4 07271          TSX LXC,4           CASE.                                    F2523060
06210   0 02000 0 06231          TRA AC234           EXIT TIX INITIALIZATION.                 F2523070
06211   0 07400 4 04741 ACI23    TSX OP3,4           N3=1, N1 NOT = 1.                        F2523080
06212   0 50000 0 05054          CLA L(ADD)          COMPILE                                  F2523090
06213   0 60100 0 05177          STO CIL01           TIX                                      F2523100
06214   0 50000 0 07603          CLA ORO00+13        INITIALIZATION                           F2523110
06215   0 73400 1 00000          PAX 0,1             FOR                                      F2523120
06216  -0 32000 0 05104          ANA 6ONES           THIS                                     F2523130
06217   0 60100 0 05200          STO CIL02           CASE.                                    F2523140
06220  -0 63400 1 05201          SXD CIL03,1                                                  F2523150
06221   0 07400 4 04345          TSX CIT,4                                                    F2523160
06222   0 50000 0 07363          CLA K3AORO                                                   F2523170
06223   0 53400 1 05126          LXA L(1),1                                                   F2523180
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06224  0 07400 4 07271          TSX LXC,4                                                  F2523190
06225  0 02000 0 06231          TRA AC234          EXIT TIX INITIALIZATION.                F2523200
06226  0 53400 1 05127 AC230I   LXA L(2),1         G =1, N3 NOT = 1.                       F2523210
06227  0 50000 0 07372          CLA LTX042                                                 F2523220
06230  0 07400 4 07271          TSX LXC,4         THIS CASE.                               F2523230
06231  0 50000 0 05157 AC234    CLA INST3          RESET MODIFIED AORO.                    F2523240
06232  0 60100 0 06424          STO AORO30         LXC L(4),1.                             F2523250
06233  0 50000 0 05156          CLA INST2                                                  F2523260
06234  0 60100 0 06430          STO AORO40         LXD L(2),1.                             F2523270
06235 -0 53400 1 05207  AC236   LXD AX,1                                                   F2523280
06236  2 00001 1 06063          TIX AC200,1,1                                              F2523290
06237  0 02000 0 05315 AC240    TRA AC010                                                  F2523300
06240  0 53400 2 05125          LXA LADMX,2        START ADTG COMPILING.                   F2523310
06241  1 00004 2 06242          TXI AC240+3,2,4                                            F2523320
06242 -0 63400 2 05237          SXD XTG,2                                                  F2523330
06243  0 50000 0 05162          CLA INST8          L(TRA AC244).                           F2523340
06244  0 62100 0 06237          STA AC240          MODIFY RETURN FOR ADTG ENTRY.           F2523350
06245  0 62100 0 05323          STA AC016                                                  F2523360
06246  0 50000 0 05163          CLA INST10                                                 F2523370
06247  0 62100 0 05773          STA AC165+3                                                F2523380
06250  0 07400 4 04516 AC244    TSX ADTGSE,4       FIND VALID ADTG ENTRY.                  F2523390
06251  0 02000 0 06253          TRA AC250          END OF TABLE , GET NEXT DO.             F2523400
D 06252 -3 00000 0 05320 AC248  TXL AC014,0        VALID ENTRY, CONTINUE AC CYCLE.         F2523410
06253  0 50000 0 05164 AC250    CLA INST11         REINITIALIZE                            F2523420
06254  0 62100 0 06237          STA AC240          INSTRUCTIONS                            F2523430
06255  0 62100 0 05323          STA AC016          MODIFIED                                F2523440
06256  0 50000 0 05165          CLA INST12         FOR DMTAG                               F2523450
06257  0 62100 0 05773          STA AC165+3        CYCLE.                                  F2523460
06260  0 50000 0 05222          CLA LOCIND         COMPILE AT LEAST                        F2523470
06261  0 10000 0 06272          TZE AC260          A BSS INST SO                           F2523480
06262  0 50000 0 05224          CLA A              THAT TRA INST                           F2523490
06263  0 60100 0 05176          STO CIL00          WILL FUNCTION                           F2523500
06264  0 50000 0 05133          CLA L(0)           PROPERLY.                               F2523510
06265  0 60100 0 05200          STO CIL02                                                  F2523520
06266  0 60100 0 05201          STO CIL03                                                  F2523530
06267  0 50000 0 05056          CLA L(BSS)                                                 F2523540
06270  0 60100 0 05177          STO CIL01                                                  F2523550
06271  0 07400 4 04345          TSX CIT,4                                                  F2523560
06272 -0 53400 4 06252 AC260    LXD AC248,4        END OF                                  F2523570
06273  0 02000 4 00001          TRA 1,4            ALPAHA CYCLE.                           F2523580
                                ***********************************************************F2523590
                                CDORO TAKES COEF. AND DIM. AND FILLS OUT ORO.              F2523600
06274 -0 63400 4 06277 CDORO    SXD CDORO1,4                                               F2523610
06275 -0 53400 2 05207          LXD AX,2                                                   F2523620
06276 -0 76000 0 00144          MSE 100                                                    F2523630
D 06277  3 00000 0 06300 CDORO1 TXH CDORO1+1,0     WHICH SUB IS IT.                        F2523640
06300 -3 00002 2 06307          TXL CDORO3,2,2     S2 OR S3, TRA.                          F2523650
06301  0 50000 0 03636          CLA WRKSC          S1,                                     F2523660
06302  0 40200 0 05061          SUB L1DEC          IS C1 GREATER THAN1.                    F2523670
06303  0 10000 4 00001          TZE 1,4            C1=1, RETURN.                           F2523680
06304  0 76000 0 00144          PSE 100            C1 NOT = 1, TURN ON                     F2523690
06305  0 50000 0 03636          CLA WRKSC          SENSE LIGHT , ISOLATE C1.               F2523700
06306  0 02000 0 06317          TRA CDORO7+1                                               F2523710
06307  0 56000 0 03644 CDORO3   LDQ WRKSC+6        ISOLATE D1.                             F2523720
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06310 -3 00001 2 06313          TXL CDORO5,2,1        WHICH SUB IS IT.                          F2523730
06311  0 20000 0 03640          MPY WRKSC+2           S2, FORM C2D1.                            F2523740
06312  0 02000 0 06316          TRA CDORO7                                                      F2523750
06313  0 20000 0 03642 CDORO5   MPY WRKSC+4           S3, FORM                                  F2523760
06314  0 76500 0 00022          LRS 18                C3D1D2.                                   F2523770
06315  0 20000 0 03645          MPY WRKSC+7                                                     F2523780
06316  0 76700 0 00021 CDORO7   ALS 17                ASSIGN SYMBOL                             F2523790
06317  0 07400 4 04601          TSX FIXCON,4          FOR G AND PUT                             F2523800
06320  0 60100 0 07611          STO ORO00+19          IN ORO + 19.                              F2523810
06321 -0 53400 4 06277          LXD CDORO1,4          RESTORE LINKAGE,                          F2523820
06322 -0 53400 2 05207          LXD AX,2              PUT AX POSITION IN                        F2523830
06323  0 02000 4 00001          TRA 1,4               I.R. B AND RETURN.                        F2523840
                                  ***********************************************************F2523850
                                  AORO, BORO, CORO, DORO, AND EORO ARE CALLED TO MAKE APPROPRIAF2523860
                                  COMPILING TABLE (ORO) ENTRIES AND TO CALLL ROUTINES TO MAKE  F2523870
                                  COMPUTATIONS AND COMPILE INSTRUCTIONS TO INTIALIZE VARIABLE DF2523880
                                  DECREMENTS FOR BLOCKS A, B, C, D, AND E RESPECTIVELY.        F2523890
06324 -0 63400 4 06346 AORO     SXD AORO5,4                                                     F2523900
06325  0 50000 1 03652          CLA TAG2+3,1          LOCATION IS                               F2523910
06326 -0 73400 2 00000          PDX 0,2               SPECIFIED IN ORO +14                      F2523920
06327  0 50000 2 01076          CLA DOTAGZ,2          BY COMBINING TETLOC                       F2523930
06330 -0 32000 0 05141          ANA ADMSK             WITH PROPER BETA.                         F2523940
06331  0 76700 0 00022          ALS 18                                                          F2523950
06332 -0 50100 0 05255          ORA TETLOC                                                      F2523960
06333  0 60100 0 07604          STO ORO00+14                                                    F2523970
06334  0 50000 2 01102          CLA DOTAGZ+4,2                                                  F2523980
06335  0 60100 0 07566          STO ORO00                                                       F2523990
06336 -0 53400 1 05207          LXD AX,1                                                        F2524000
06337 -3 00002 1 06347          TXL AORO10,1,2        S2 OR S3.                                 F2524010
06340  0 50000 0 03636          CLA WRKSC             S1 , IS                                   F2524020
06341  0 40200 0 05061          SUB L1DEC             C1=1.                                     F2524030
06342  0 10000 0 06424          TZE AORO30            YES                                       F2524040
06343  0 40000 0 05061          ADD L1DEC             NO, ASSIGN                                F2524050
06344  0 07400 4 04601          TSX FIXCON,4          SYMBOL FOR C1.                            F2524060
06345  0 60100 0 07611          STO ORO00+19                                                    F2524070
D 06346 -3 00000 0 06430 AORO5  TXL AORO40,0                                                    F2524080
06347 -3 00001 1 06367 AORO10   TXL AORO20,1,1        IS SUB S2.                                F2524090
06350  0 56000 0 03640          LDQ WRKSC+2           YES, FOR C2D1.                            F2524100
06351  0 20000 0 03644          MPY WRKSC+6           IF S2 IS A                                F2524110
06352  0 76700 0 00021          ALS 17                DUPE, ADD C1.                             F2524120
06353  0 60100 0 05245          STO ERAORO                                                      F2524130
06354  0 56000 0 03653          LDQ TAG4                                                        F2524140
06355  0 76300 0 00031          LLS 25                                                          F2524150
06356  0 76000 0 00001          LBT                                                             F2524160
06357  0 02000 0 06363          TRA AORO14            NO DUPES.                                 F2524170
06360  0 50000 0 03636          CLA WRKSC                                                       F2524180
06361  0 40000 0 05245          ADD ERAORO                                                      F2524190
06362  0 60100 0 05245          STO ERAORO                                                      F2524200
06363  0 50000 0 05245 AORO14   CLA ERAORO            CONTAINS C2D1, ETC.                       F2524210
06364  0 07400 4 04601          TSX FIXCON,4          ASSIGN SYMBOL FOR                         F2524220
06365  0 60100 0 07611          STO ORO00+19          G AND PUT IN ORO+19                       F2524230
06366  0 02000 0 06430          TRA AORO40                                                      F2524240
06367  0 56000 0 03642 AORO20   LDQ WRKSC+4           S3, FORM                                  F2524250
06370  0 20000 0 03644          MPY WRKSC+6           C3D1D2.                                   F2524260
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06371   0 76500 0 00022         LRS 18                                          F2524270
06372   0 20000 0 03645         MPY WRKSC+7                                     F2524280
06373   0 76700 0 00021         ALS 17                                          F2524290
06374   0 60100 0 05245         STO ERAORO                                      F2524300
06375   0 56000 0 03653         LDQ TAG4            CHECK DUPES                 F2524310
06376   0 76300 0 00032         LLS 26              AND MAKE G                  F2524320
06377   0 76000 0 00001         LBT                 ADJUSTMENTS                 F2524330
06400   0 02000 0 06420         TRA AORO24          ACCORDINGLY.                F2524340
06401   0 77100 0 00001         ARS 1                                           F2524350
06402   0 76000 0 00001         LBT                                             F2524360
06403   0 02000 0 06411         TRA AORO22                                      F2524370
06404   0 56000 0 03640         LDQ WRKSC+2                                     F2524380
06405   0 20000 0 03644         MPY WRKSC+6                                     F2524390
06406   0 76700 0 00021         ALS 17                                          F2524400
06407   0 40000 0 05245         ADD ERAORO                                      F2524410
06410   0 60100 0 05245         STO ERAORO                                      F2524420
06411   0 50000 0 03653 AORO22  CLA TAG4                                        F2524430
06412   0 77100 0 00013         ARS 11                                          F2524440
06413   0 76000 0 00001         LBT                                             F2524450
06414   0 02000 0 06420         TRA AORO24                                      F2524460
06415   0 50000 0 03636         CLA WRKSC                                       F2524470
06416   0 40000 0 05245         ADD ERAORO                                      F2524480
06417   0 60100 0 05245         STO ERAORO                                      F2524490
06420   0 50000 0 05245 AORO24  CLA ERAORO                                      F2524500
06421   0 07400 4 04601         TSX FIXCON,4        ASSIGN SYMBOL FOR           F2524510
06422   0 60100 0 07611         STO ORO00+19        G FOR S3.                   F2524520
06423   0 02000 0 06430         TRA AORO40                                      F2524530
06424   0 53400 1 05127 AORO30  LXA L(2),1          SUB IS S1, C1=1.            F2524540
06425   0 50000 0 07362         CLA K2AORO          COMPILE CLA, STD.           F2524550
06426   0 07400 4 07271         TSX LXC,4                                       F2524560
06427   0 02000 0 06433         TRA AORO50                                      F2524570
06430   0 53400 1 05130 AORO40  LXA L(4),1          COMPILE LDQ,MPY, STD.       F2524580
06431   0 50000 0 07360         CLA K1AORO                                      F2524590
06432   0 07400 4 07271         TSX LXC,4                                       F2524600
06433  -0 53400 4 06346 AORO50  LXD AORO5,4        RESTORE LINKAGE.            F2524610
06434   0 02000 4 00001         TRA 1,4                                         F2524620
                                ****************************************************F2524630
06435  -0 63400 4 05236 BORO    SXD LINKC,4         FOR B BLOCK                 F2524640
06436   0 56000 0 03640         LDQ WRKSC+2         COMPUTE G AS                F2524650
06437   0 20000 0 03644         MPY WRKSC+6         C2D1. PLACE                 F2524660
06440   0 76700 0 00021         ALS 17              THIS AND C1                 F2524670
06441   0 60100 0 07611         STO ORO00+19        IN ORO.                     F2524680
06442   0 50000 0 03636         CLA WRKSC                                       F2524690
06443   0 60100 0 07612         STO ORO00+20                                    F2524700
06444   0 53400 1 05127         LXA L(2),1          INITIALIZE N3X              F2524710
06445  -0 63400 1 05212         SXD N3X,1           POS. TO S2.                 F2524720
06446   0 53400 1 05131         LXA L(3),1          INITIALIZE XX               F2524730
06447  -0 63400 1 05213         SXD XX,1            POS. TO S1.                 F2524740
06450   0 07400 4 06701         TSX PC,4                                        F2524750
06451  -0 53400 4 05236         LXD LINKC,4                                     F2524760
06452   0 02000 4 00001         TRA 1,4                                         F2524770
                                ****************************************************F2524780
06453  -0 63400 4 06465 CORO    SXD CORO05,4                                    F2524790
06454   0 56000 0 03644         LDQ WRKSC+6         FORM C3D1D2 AND             F2524800
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06455  0 20000 0 03645        MPY WRKSC+7          STORE IN                                F2524810
06456  0 76500 0 00022        LRS 18               ORO+19                                  F2524820
06457  0 20000 0 03642        MPY WRKSC+4          FOR USE BY                              F2524830
06460  0 76700 0 00021        ALS 17               PC IN COMPUTING                         F2524840
06461  0 60100 0 07611        STO ORO00+19         BLOCK C DECREMENTS.                     F2524850
06462  0 50000 0 03653        CLA TAG4             TEST                                    F2524860
06463  0 77100 0 00011        ARS 9                FOR                                     F2524870
06464  0 76000 0 00001        LBT                  DUPES.                                  F2524880
D 06465 -3 00000 0 06473 CORO05 TXL CORO10,0       NO DUPES.                               F2524890
06466  0 56000 0 03644        LDQ WRKSC+6          IF DUPES, FORM                          F2524900
06467  0 20000 0 03640        MPY WRKSC+2          C2D1, ADD TO                            F2524910
06470  0 76700 0 00021        ALS 17               ORO+19 , AND STORE                      F2524920
06471  0 40000 0 07611        ADD ORO00+19         IN ORO+19 FOR                           F2524930
06472  0 60100 0 07611        STO ORO00+19         USE BY PC.                              F2524940
06473  0 53400 1 05126 CORO10 LXA L(1),1           SET N3X POSITION                        F2524950
06474 -0 63400 1 05212        SXD N3X,1            TO S3,                                  F2524960
06475  0 53400 1 05131        LXA L(3),1           XX POSITION TO S1                       F2524970
06476 -0 63400 1 05213        SXD XX,1             AND CALL PC TO COMPUTE                  F2524980
06477  0 07400 4 06701        TSX PC,4             AND COMPILE BLKC INIT.                  F2524990
06500 -0 53400 4 06465        LXD CORO05,4         RESTORE LINKAGE AND                     F2525000
06501  0 02000 4 00001        TRA 1,4              RETURN TO MAIN ROUTINE.                 F2525010
                              ***********************************************************F2525020
06502 -0 63400 4 06522 DORO   SXD DORO5,4          BLOCK D NORMAL.                         F2525030
06503  0 56000 0 03642        LDQ WRKSC+4          COMPUTES C3D1D2, G1                     F2525040
06504  0 20000 0 03644        MPY WRKSC+6          AND C2D1, G2 IF DUP.                    F2525050
06505  0 76500 0 00022        LRS 18               EXIST IN THE CASE                       F2525060
06506  0 20000 0 03645        MPY WRKSC+7          110 C1 ADDED TO G2.                     F2525070
06507  0 76700 0 00021        ALS 17               IN THE CASE 101                         F2525080
06510  0 60100 0 07611        STO ORO00+19         C1 ADDED TO G1.                         F2525090
06511  0 56000 0 03640        LDQ WRKSC+2                                                  F2525100
06512  0 20000 0 03644        MPY WRKSC+6                                                  F2525110
06513  0 76700 0 00021        ALS 17                                                       F2525120
06514  0 60100 0 07612        STO ORO00+20                                                 F2525130
06515  0 50000 0 03653        CLA TAG4                                                     F2525140
06516  0 77100 0 00011        ARS 9                                                        F2525150
06517 -0 32000 0 05076        ANA L(7)                                                     F2525160
06520  0 10000 0 06532        TZE DORO20                                                   F2525170
06521  0 76000 0 00001        LBT                                                          F2525180
D 06522 -3 00000 0 06527 DORO5  TXL DORO10,0                                               F2525190
06523  0 50000 0 03636        CLA WRKSC                                                    F2525200
06524  0 40000 0 07611        ADD ORO00+19                                                 F2525210
06525  0 60100 0 07611        STO ORO00+19                                                 F2525220
06526  0 02000 0 06532        TRA DORO20                                                   F2525230
06527  0 50000 0 03636 DORO10 CLA WRKSC                                                    F2525240
06530  0 40000 0 07612        ADD ORO00+20                                                 F2525250
06531  0 60100 0 07612        STO ORO00+20                                                 F2525260
06532  0 53400 1 05126 DORO20 LXA L(1),1           SET N3X POS. TO S3,                     F2525270
06533 -0 63400 1 05212        SXD N3X,1                                                    F2525280
06534  0 53400 1 05127        LXA L(2),1           XX POS. TO S2.                          F2525290
06535 -0 63400 1 05213        SXD XX,1                                                     F2525300
06536  0 07400 4 06701        TSX PC,4             MAKE COMPUTATIONS AND COMPILE           F2525310
06537 -0 53400 4 06522        LXD DORO5,4          INSTRUCTIONS TO INIT. VAR.              F2525320
06540  0 02000 4 00001        TRA 1,4              BLOCK D DECREMENTS.                     F2525330
                              ***********************************************************F2525340
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06541 -0 63400 4 06645 EORO   SXD EORO06,4                                                F2525350
06542  0 07400 4 06502        TSX DORO,4          COMP. INSTR. FOR 1ST TXI-SXD-TIX.       F2525360
06543  0 50000 0 07605        CLA ORO00+15        UPDATE                                  F2525370
06544  0 40000 0 05110        ADD L(8)            TXI RELATIVE                            F2525380
06545  0 60100 0 07604        STO ORO00+14        INSTRUCTION NUMBER.                     F2525390
06546  0 40000 0 05135        ADD L(16)           UPDATE TIX RELATIVE                     F2525400
06547  0 60100 0 07605        STO ORO00+15        INSTRUCTION NUMBER.                     F2525410
06550  0 53400 1 05131        LXA L(3),1          SEE IF                                  F2525420
06551  0 50000 1 03652        CLA TAG2+3,1        X FOR                                   F2525430
06552 -0 73400 2 00000        PDX 0,2             XX POSITION                             F2525440
06553  0 50000 2 01103        CLA DOTAGZ+5,2      IS                                      F2525450
06554 -0 32000 0 05137        ANA BIT2            COMPUTABLE.                             F2525460
06555  0 10000 0 06644        TZE EORO06-1        X COMPUTABLE.                           F2525470
06556  0 50000 2 01102        CLA DOTAGZ+4,2      X NOT COMPUTABLE,                       F2525480
06557  0 40200 0 05126        SUB L(1)            IS N3=1.                                F2525490
06560 -0 10000 0 06644        TNZ EORO06-1        N3 NOT =1.                              F2525500
06561  0 50000 2 01100        CLA DOTAGZ+2,2      N3=1, IS                                F2525510
06562  0 40200 0 05126        SUB L(1)            N1 = 1.                                 F2525520
06563 -0 10000 0 06610        TNZ EORO2           N1 NOT = 1.                             F2525530
06564  0 50000 0 03636        CLA WRKSC           N3,NU = 1,                              F2525540
06565  0 40200 0 05061        SUB L1DEC           DOES C1=1.                              F2525550
06566 -0 10000 0 06571        TNZ EORO1           NO.                                     F2525560
06567  0 50000 2 01101        CLA DOTAGZ+3,2      N3, N1, C1 = 1 .                        F2525570
06570  0 02000 0 06674        TRA EORO22          ISOLATE N2 SYMBOL.                      F2525580
06571  0 50000 2 01101 EORO1  CLA DOTAGZ+3,2      ISOLATE                                 F2525590
06572  0 60100 0 07566        STO ORO00           N2 SYMBOL.                              F2525600
06573  0 50000 0 03636        CLA WRKSC           ASSIGN SYMBOL                           F2525610
06574  0 07400 4 04601        TSX FIXCON,4        FOR C1, AND                             F2525620
06575  0 60100 0 07611        STO ORO00+19        COMPILE LDQ L(N2),                      F2525630
06576  0 50000 0 07360        CLA K1AORO          MPY L(C1), ARS 17.                      F2525640
06577  0 53400 1 05131        LXA L(3),1                                                  F2525650
06600  0 07400 4 07271        TSX LXC,4                                                   F2525660
06601  0 53400 1 05126 EORO3  LXA L(1),1          COMPILE                                 F2525670
06602  0 50000 0 07376        CLA LXCIE1          SUB L(1),                               F2525680
06603  0 07400 4 07271        TSX LXC,4                                                   F2525690
06604  1 00001 1 06605        TXI EORO3+4,1,1     COMPILE                                 F2525700
06605  0 50000 0 07400        CLA LXCEIP          STD L(TIX), STD L(TXI).                 F2525710
06606  0 07400 4 07271        TSX LXC,4                                                   F2525720
06607  0 02000 0 06664        TRA EORO18+3                                                F2525730
06610  0 07400 4 04741 EORO2  TSX OP3,4           COMPILE CLA (N2 - N1)                   F2525740
06611  0 50000 0 03636        CLA WRKSC           OR CLA N2, SUB N1.                      F2525750
06612  0 40200 0 05061        SUB L1DEC           DOES C1=1.                              F2525760
06613  0 10000 0 06601        TZE EORO3           UES, EORO3.                             F2525770
06614  0 50000 0 05054        CLA L(ADD)          NO, COMPILE                             F2525780
06615  0 60100 0 05177        STO CIL01           ADD L(1),                               F2525790
06616  0 50000 0 07603        CLA ORO00+13        STO 1)+3,                               F2525800
06617  0 73400 4 00000        PAX 0,4                                                     F2525810
06620 -0 32000 0 05104        ANA 6ONES           MPY L(C1.,                              F2525820
06621  0 60100 0 05200        STO CIL02           ALS 17,                                 F2525830
06622 -0 63400 4 05201        SXD CIL03,4         STO 1)+3,                               F2525840
06623  0 07400 4 04345        TSX CIT,4           AND GO TO                               F2525850
06624  0 50000 0 05044        CLA L(STO)          EORO3.                                  F2525860
06625  0 60100 0 05177        STO CIL01                                                   F2525870
06626  0 50000 0 07620        CLA ORO00+26                                                F2525880
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06627  0 60100 0 07567          STO ORO00+1                                                  F2525890
06630  0 73400 4 00000          PAX 0,4                                                      F2525900
06631 -0 32000 0 05104          ANA 6ONES                                                    F2525910
06632  0 60100 0 05200          STO CIL02                                                    F2525920
06633 -0 63400 4 05201          SXD CIL03,4                                                  F2525930
06634  0 07400 4 04345          TSX CIT,4            FIXCON SYMBOL                           F2525940
06635  0 50000 0 03636          CLA WRKSC            FOR C1.                                 F2525950
06636  0 07400 4 04601          TSX FIXCON,4                                                 F2525960
06637  0 60100 0 07577          STO ORO00+9                                                  F2525970
06640  0 50000 0 07352          CLA KLX02I                                                   F2525980
06641  0 53400 1 05130          LXA L(4),1                                                   F2525990
06642  0 07400 4 07271          TSX LXC,4                                                    F2526000
06643  0 02000 0 06601          TRA EORO3                                                    F2526010
06644  0 07400 4 07226          TSX PXORO,4          C1 GREATER THAN 1.                      F2526020
D 06645 -3 00000 0 06647 EORO06 TXL EORO08,0                                                 F2526030
06646  0 02000 0 06666          TRA EORO20           X CONSTANT, EORO20.                     F2526040
06647  0 53400 1 05106 EORO08 LXA L(6),1             X NOT CONST.,                           F2526050
06650  0 50000 0 03636          CLA WRKSC            COMPILE                                 F2526060
06651  0 40200 0 05061          SUB L1DEC            INSTRUCTIONS                            F2526070
06652  0 10000 0 06657          TZE EORO15           TO COMPUTE                              F2526080
06653  1 00002 1 06654          TXI EORO10,1,2       XGN3.                                   F2526090
06654  0 50000 0 03636 EORO10 CLA WRKSC                                                      F2526100
06655  0 07400 4 04601          TSX FIXCON,4                                                 F2526110
06656  0 60100 0 07577          STO ORO00+9                                                  F2526120
06657  0 50000 0 07373 EORO15 CLA LXCI                                                       F2526130
06660  0 07400 4 07271          TSX LXC,4                                                    F2526140
06661  0 53400 1 05130 EORO18 LXA L(4),1             COMPILE LLS, SUB,                       F2526150
06662  0 50000 0 07375          CLA LXCIE            STD,STD.                                F2526160
06663  0 07400 4 07271          TSX LXC,4                                                    F2526170
06664 -0 53400 4 06645          LXD EORO06,4                                                 F2526180
06665  0 02000 4 00001          TRA 1,4                                                      F2526190
06666  0 76500 0 00043 EORO20 LRS 35                                                         F2526200
06667  0 76100 0 00000          NOP                                                          F2526210
06670  0 20000 0 03636          MPY WRKSC                                                    F2526220
06671  0 76700 0 00021          ALS 17                                                       F2526230
06672  0 76100 0 00000          NOP                                                          F2526240
06673  0 07400 4 04601          TSX FIXCON,4                                                 F2526250
06674  0 60100 0 07612 EORO22 STO ORO00+20           PUT SYMBOL IN                           F2526260
06675  0 53400 1 05126          LXA L(1),1           ORO+20 AND COMPILE                      F2526270
06676  0 50000 0 07377          CLA LXCIEP           CLA (SYMBOL),                           F2526280
06677  0 07400 4 07271          TSX LXC,4                                                    F2526290
06700  0 02000 0 06601          TRA EORO3                                                    F2526300
                                   ***********************************************************F2526310
                                   PC IS A SUBROUTINE CALLED BY AORO, BORO, ETC. TO MAKE COMPUTAF2526320
                                   TIONS  AND TO CALL COMPILING ROUTINES FOR TXI DECREMENT INTIAF2526330
                                   LIZATION.                                                 F2526340
06701 -0 63400 4 06717 PC       SXD PC04,4                                                   F2526350
06702 -0 53400 1 05212          LXD N3X,1                                                    F2526360
06703  0 50000 1 03652          CLA TAG2+3,1                                                 F2526370
06704 -0 73400 2 00000          PDX 0,2                                                      F2526380
06705  0 50000 2 01076          CLA DOTAGZ,2                                                 F2526390
06706 -0 32000 0 05141          ANA ADMSK            FORM LOCATION                           F2526400
06707  0 76700 0 00022          ALS 18               WORDS AND PUT                           F2526410
06710 -0 50100 0 05255          ORA TETLOC           IN ORO+14                               F2526420
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06711  0 60100 0 07604          STO ORO00+14        AND ORO+15.                  F2526430
06712  0 40000 0 05135          ADD L(16)                                        F2526440
06713  0 60100 0 07605          STO ORO00+15                                     F2526450
06714  0 50000 2 01076          CLA DOTAGZ,2        IS N3 FOR THIS DO            F2526460
06715  0 77100 0 00017          ARS 15              VARIABLE.                    F2526470
06716  0 76000 0 00001          LBT                                              F2526480
D 06717 -3 00000 0 06731 PC04   TXL PC10,0          NO, PC10.                    F2526490
06720  0 50000 2 01102          CLA DOTAGZ+4,2      YES,                         F2526500
06721  0 60100 0 07566          STO ORO00           COMPILE                      F2526510
06722  0 50000 0 07611          CLA ORO00+19        LDQ L(G), (N3X POS.),        F2526520
06723  0 07400 4 04601          TSX FIXCON,4        MPY N3, (N3X POS.),          F2526530
06724  0 60100 0 07611          STO ORO00+19        ALS 17,                      F2526540
06725  0 53400 1 05130          LXA L(4),1          STO C(ORO+12)                F2526550
06726  0 50000 0 07402          CLA K1BORO                                       F2526560
06727  0 07400 4 07271          TSX LXC,4                                        F2526570
06730  0 02000 0 06736          TRA PC20                                         F2526580
06731  0 56000 2 01102 PC10     LDQ DOTAGZ+4,2      N3 CONSTANT, PUT             F2526590
06732  0 20000 0 07611          MPY ORO00+19        N3G SYMBOL IN                F2526600
06733  0 76300 0 00043          LLS 35              ORO+19                       F2526610
06734  0 07400 4 04601          TSX FIXCON,4                                     F2526620
06735  0 60100 0 07611          STO ORO00+19                                     F2526630
06736 -0 53400 1 05213 PC20     LXD XX,1            ISOLATE N3 FOR               F2526640
06737  0 50000 1 03652 PCI      CLA TAG2+3,1        XX POSITION                  F2526650
06740 -0 73400 2 00000          PDX 0,2                                          F2526660
06741  0 50000 2 01102          CLA DOTAGZ+4,2      DOES N3 = 1.                 F2526670
06742  0 40200 0 05126          SUB L(1)                                         F2526680
06743 -0 10000 0 07050          TNZ PC21            NO, PC22.                    F2526690
06744  0 50000 2 01103          CLA DOTAGZ+5,2      YES, IS X CONST.             F2526700
06745 -0 32000 0 05137          ANA BIT2                                         F2526710
06746  0 10000 0 07050          TZE PC21            YES, PC21.                   F2526720
06747 -3 00002 1 07027          TXL PCI31,1,2       NO, IS POS. S2.              F2526730
06750  0 50000 2 01100          CLA DOTAGZ+2,2      NO, IS N1 = 1.               F2526740
06751  0 40200 0 05126          SUB L(1)                                         F2526750
06752 -0 10000 0 06773          TNZ PCI22           NO, PCI22.                   F2526760
06753  0 50000 2 01101          CLA DOTAGZ+3,2      YES, DOES C1 = 1.            F2526770
06754  0 60100 0 07567          STO ORO00+1                                      F2526780
06755  0 50000 0 03636          CLA WRKSC                                        F2526790
06756  0 40200 0 05061          SUB L1DEC                                        F2526800
06757 -0 10000 0 06764          TNZ PCI21           NO, PCI21.                   F2526810
06760  0 53400 1 05126          LXA L(1),1          YES, COMPILE                 F2526820
06761  0 50000 0 07353          CLA KLX02           CLA N1,                      F2526830
06762  0 07400 4 07271          TSX LXC,4           SUBL(1), AND                 F2526840
06763  0 02000 0 07044          TRA PCI33                                        F2526850
06764  0 50000 0 03636 PCI21    CLA WRKSC                                        F2526860
06765  0 07400 4 04601          TSX FIXCON,4        COMPILE                      F2526870
06766  0 60100 0 07577          STO ORO00+9         LDQ L(N2)                    F2526880
06767  0 50000 0 07352          CLA KLX02I          MPY LC1)                     F2526890
06770  0 53400 1 05130          LXA L(4),1          ALS 17                       F2526900
06771  0 07400 4 07271          TSX LXC,4           STO 1) +3.                   F2526910
06772  0 02000 0 07113          TRA PC60                                         F2526920
06773  0 07400 4 04741 PCI22    TSX OP3,4           COMPILE CLA L(N2-N1)         F2526930
06774  0 50000 0 03636          CLA WRKSC                                        F2526940
06775  0 40200 0 05061          SUB L1DEC           IS C1 = 1.                   F2526950
06776  0 10000 0 07113          TZE PC60            YES, PC 60.                  F2526960
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06777  0 50000 0 03636          CLA WRKSC          NO, OBTAIN                  F2526970
07000  0 07400 4 04601          TSX FIXCON,4       SYMBOL FOR                  F2526980
07001  0 60100 0 07577          STO ORO00+9        C1 AND                      F2526990
07002  0 50000 0 05054 PCI22R   CLA L(ADD)         COMPILE                     F2527000
07003  0 60100 0 05177          STO CIL01          ADD L(1)                    F2527010
07004  0 50000 0 07603          CLA ORO00+13       STO 1) +3                   F2527020
07005  0 73400 1 00000          PAX 0,1            LDQ 1) +3                   F2527030
07006 -0 63400 1 05201          SXD CIL03,1        MPY L(G)                    F2527040
07007 -0 32000 0 05104          ANA 6ONES          ALS17                       F2527050
07010  0 60100 0 05200          STO CIL02          STD 1) +3                   F2527060
07011  0 07400 4 04345          TSX CIT,4          SUB L(1),                   F2527070
07012  0 50000 0 05044          CLA L(STO)         THEN GO                     F2527080
07013  0 60100 0 05177          STO CIL01          TO PC60.                    F2527090
07014  0 50000 0 07620          CLA ORO00+26                                   F2527100
07015  0 60100 0 07567          STO ORO00+1                                    F2527110
07016  0 73400 4 00000          PAX 0,4                                        F2527120
07017 -0 32000 0 05104          ANA 6ONES                                      F2527130
07020  0 60100 0 05200          STO CIL02                                      F2527140
07021 -0 63400 4 05201          SXD CIL03,4                                    F2527150
07022  0 07400 4 04345          TSX CIT,4                                      F2527160
07023  0 53400 1 05130          LXA L(4),1                                     F2527170
07024  0 50000 0 07352          CLA KLX02I                                     F2527180
07025  0 07400 4 07271          TSX LXC,4                                      F2527190
07026  0 02000 0 07044          TRA PCI33                                      F2527200
07027  0 50000 0 07612 PCI31    CLA ORO00+20       XX POS 2 , X VAR., N3 = 1,  F2527210
07030  0 07400 4 04601          TSX FIXCON,4       ASSIGN SYMBOL FOR G         F2527220
07031  0 60100 0 07577          STO ORO00+9        AND PUT IN ORO+9            F2527230
07032  0 50000 2 01100          CLA DOTAGZ+2,2     IS N1 = 1                   F2527240
07033  0 40200 0 05126          SUB L(1)                                       F2527250
07034  0 10000 0 07037          TZE PCI32          YES, PCI32.                 F2527260
07035  0 07400 4 04741          TSX OP3,4          NO, COMPILE CLA (N2-N1)     F2527270
07036  0 02000 0 07002          TRA PCI22R         OR CLA N2, SUB N1.          F2527280
07037  0 50000 2 01101 PCI32    CLA DOTAGZ+3,2     COMPILE                     F2527290
07040  0 60100 0 07567          STO ORO00+1        LDQ N2,                     F2527300
07041  0 53400 1 05130          LXA L(4),1         MPY G,                      F2527310
07042  0 50000 0 07352          CLA KLX02I         ALS 17,                     F2527320
07043  0 07400 4 07271          TSX LXC,4          STO1)+3,                    F2527330
07044  0 53400 1 05126 PCI33    LXA L(1),1                                     F2527340
07045  0 50000 0 07404          CLA LXCI61                                     F2527350
07046  0 07400 4 07271          TSX LXC,4                                      F2527360
07047  0 02000 0 07113          TRA PC60                                       F2527370
07050  0 07400 4 07226 PC21     TSX PXORO,4        IS X CONSTANT.              F2527380
07051  0 02000 0 07053          TRA PC22           NO, PC22.                   F2527390
07052  0 02000 0 07102          TRA PC50           YES. PC50.                  F2527400
07053 -0 53400 1 05213 PC22     LXD XX,1           X NOT CONSTANT,             F2527410
07054 -3 00002 1 07073          TXL PC40,1,2       IS POSITION S1.             F2527420
07055  0 53400 1 05106          LXA L(6),1         TES, COMPILE                F2527430
07056  0 50000 0 03636          CLA WRKSC          INSTRUCTIONS                F2527440
07057  0 40200 0 05061          SUB L1DEC          TO COMPUTE                  F2527450
07060  0 10000 0 07065          TZE PC30           N3X-1, AND                  F2527460
07061  1 00002 1 07062          TXI PC25,1,2       TO TO PC60.                 F2527470
07062  0 40000 0 05061 PC25     ADD L1DEC                                      F2527480
07063  0 07400 4 04601          TSX FIXCON,4                                   F2527490
07064  0 60100 0 07577          STO ORO00+9                                    F2527500
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07065   0 50000 0 07373 PC30    CLA LXCI                                                F2527510
07066   0 07400 4 07271         TSX LXC,4                                               F2527520
07067   0 53400 1 05127         LXA L(2),1                                              F2527530
07070   0 50000 0 07374         CLA LXCI6                                               F2527540
07071   0 07400 4 07271         TSX LXC,4                                               F2527550
07072   0 02000 0 07113         TRA PC60                                                F2527560
07073   0 50000 0 07612 PC40    CLA ORO00+20            POS. IS S2,                     F2527570
07074   0 07400 4 04601         TSX FIXCON,4            COMPILE INSTRUCTIONS            F2527580
07075   0 60100 0 07612         STO ORO00+20            TO COMPUT N3X-1 AND             F2527590
07076   0 53400 1 05134         LXA L(10),1             GO TO PC60.                     F2527600
07077   0 50000 0 07403         CLA LX2CI                                               F2527610
07100   0 07400 4 07271         TSX LXC,4                                               F2527620
07101   0 02000 0 07113         TRA PC60                                                F2527630
07102   0 76500 0 00043 PC50    LRS 35                  X IS CONSTANT,                  F2527640
07103   0 20000 0 07612         MPY ORO00+20            FORM GN3X-1 FOR                 F2527650
07104   0 76700 0 00021         ALS 17                  XX POS. AND COMPILE             F2527660
07105   0 40200 0 05061         SUB L1DEC                                               F2527670
07106   0 07400 4 04601         TSX FIXCON,4                                            F2527680
07107   0 60100 0 07612         STO ORO00+20                                            F2527690
07110   0 53400 1 05126         LXA L(1),1                                              F2527700
07111   0 50000 0 07401         CLA XK                                                  F2527710
07112   0 07400 4 07271         TSX LXC,4                                               F2527720
07113  -0 53400 1 05212 PC60    LXD N3X,1                                               F2527730
07114   0 50000 1 03652         CLA TAG2+3,1            IS                              F2527740
07115  -0 73400 2 00000         PDX 0,2                 N3                              F2527750
07116   0 53400 1 05131         LXA L(3),1              OF                              F2527760
07117   0 50000 2 01076         CLA DOTAGZ,2            CURRENT                         F2527770
07120   0 77100 0 00017         ARS 15                  DO                              F2527780
07121   0 76000 0 00001         LBT                     VARIABLE.                       F2527790
07122   0 02000 0 07127         TRA PC61                CONSTANT, PC61.                 F2527800
07123   0 50000 0 07405         CLA LXCI8               VARIABLE, COMPILE               F2527810
07124   0 07400 4 07271 PC62    TSX LXC,4               STD, ADD N3G, STD.              F2527820
07125  -0 53400 4 06717         LXD PC04,4                                              F2527830
07126   0 02000 4 00001         TRA 1,4                                                 F2527840
07127   0 50000 0 07562 PC61    CLA LXCI8P              CONSTANT. COMPILE               F2527850
07130   0 02000 0 07124         TRA PC62                STD, ADD C(ORO+12), STD.        F2527860
                                ********************************************************F2527870
                                CIL03I FILLS OUT LOCATION AND TAG NAME WORDS FOR COMPILED INSF2527880
                                TRUCTIONS WITHOUT LOCATIONS.                            F2527890
07131   0 50000 0 05133 CIL03I  CLA L(0)                PLACE 0 IN LOCATION             F2527900
07132   0 60100 0 05176         STO CIL00               WORD AND TAG IN                 F2527910
07133   0 50000 0 03652         CLA TAG3                TAG WORD OF COMPILED            F2527920
07134  -0 32000 0 05141         ANA ADMSK               INSTRUCGIN.                     F2527930
07135   0 60100 0 05201         STO CIL03                                               F2527940
07136   0 02000 4 00001         TRA 1,4                                                 F2527950
                                ********************************************************F2527960
                                BITP CHECKS SUBSCRIPTS FOR DEFINITION.  IF DEFINED BY RELCON F2527970
                                OR DOSUB IT OBTAINS OBJECT PROGRAM SYMBOLS FOR N1 OR S1 RESPEF2527980
                                CTIVELY.                                                F2527990
07137   0 62100 0 07162 BITP    STA BITP14                                              F2528000
07140   0 62100 0 07147         STA BITP02              INITIALIZE SHIFTS,              F2528010
07141   0 62100 0 07153         STA BITP04              STORE LINKAGE                   F2528020
07142   0 73400 2 00000         PAX 0,2                 AND PLACE 0,1,2 IN              F2528030
07143   0 76700 0 00001         ALS 1                   XB FOR S3, S2, AND              F2528040
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07144  0 73400 1 00000          PAX 0,1              S1 RESPECTIVELY.                          F2528050
07145 -0 63400 4 07166          SXD BITP25,4                                                   F2528060
07146  0 50000 0 05252          CLA OREDO            CHECK TO SEE IT                           F2528070
A 07147  0 77100 0 00000 BITP02 ARS                  DEFINED BY DO, RELCON,                    F2528080
07150  0 76000 0 00001          LBT                  OR DORC. RETURN AS  NOT                   F2528090
07151  0 02000 4 00001          TRA 1,4              DEFINED IF NOT DEFINED.                   F2528100
07152  0 50000 0 05253          CLA DEFDO            DEFINED. CHECK TO SEE                     F2528110
A 07153  0 77100 0 00000 BITP04 ARS                  IF DEFINED BY DO.                         F2528120
07154  0 76000 0 00001          LBT                                                            F2528130
07155  0 02000 0 07167          TRA BITP30           DEFINED AS RELCON.                        F2528140
07156  0 50000 2 03651          CLA TAG2+2,2         DEFINED BY DO, CHECK                      F2528150
07157 -0 73400 2 00000          PDX 0,2              TO SEE IF N1 IS                           F2528160
07160  0 50000 0 05254 BITP10 CLA N1SBX             VARIABLE. IF SO, RETURN                   F2528170
07161  3 00007 0 00100          TXH 64,0,7           AS UNDEFINED.                             F2528180
A 07162  0 77100 0 00000 BITP14 ARS                  IF NOT,                                   F2528190
07163  0 76000 0 00001          LBT                  CONTINUE.                                 F2528200
07164  0 02000 0 07151          TRA BITP02+2         SYMBOL HAS VARIABLE N1.                   F2528210
07165  0 50000 2 01100 BITP20 CLA DOTAGZ+2,2        DOSUB, N2.                                F2528220
D 07166 -3 00000 0 07170 BITP25 TXL BITP40,0         SUBMLEFT IN ACC.                          F2528230
07167  0 50000 1 03643 BITP30 CLA WRKSC+5,1         RELCON S SYMBOL FROM WRKSC.               F2528240
07170 -0 53400 4 07166 BITP40 LXD BITP25,4          RESTORE LINKAGE                           F2528250
07171  0 02000 4 00002          TRA 2,4              SYMBOL IN ACC.                            F2528260
                                ***********************************************************F2528270
                                COSE TESTS COEFFICIENTS AND OBTAINS OBJECT PROGRAM SYMBOLS FRF2528280
                                THOSE GREATER THAN 1                                           F2528290
07172  0 53400 1 05106 COSE    LXA L(6),1           COEFFICIENT INDEX.                        F2528300
07173  0 53400 2 05131          LXA L(3),2           SENSE LIGHT INDEX.                        F2528310
07174 -0 63400 4 05236          SXD LINKC,4          STORE LINKAGE.                            F2528320
07175  0 50000 1 03644 COSE5   CLA WRKSC+6,1        ISOLATE COEFFIEIENT.                      F2528330
07176  0 10000 0 07205          TZE COSE08           NO SUB FOR THIS DIM.                      F2528340
07177  0 40200 0 05061          SUB L1DEC                                                      F2528350
07200  0 10000 0 07205          TZE COSE08           C=1, CHECK NEXT C.                        F2528360
07201  0 76000 2 00144          PSE 100,2            C NOT = 1, SENSE LIGHT.                   F2528370
07202  0 50000 1 03644          CLA WRKSC+6,1        ASSIGN FIXCON SYMBOL                      F2528380
07203  0 07400 4 04601          TSX FIXCON,4         FOR C NOT = 1. STORE IN                   F2528390
07204  0 60100 2 07602          STO ORO00+12,2       ORO+910, OR 11.                           F2528400
07205  2 00002 1 07206 COSE08 TIX COSE10,1,2        BUMP COEF. INDEX.                         F2528410
07206  2 00001 2 07175 COSE10 TIX COSE5,2,1         BUMP S.6. TEST AND LOOP.                  F2528420
07207 -0 53400 4 05236          LXD LINKC,4          RESTORE LINKAGE                           F2528430
07210  0 02000 4 00001          TRA 1,4              AND RETURN.                               F2528440
                                ***********************************************************F2528450
                                TESTLO OBTAINS THE TEST LOCATION TO BE THE SYMBOLIC ADDRESS OF2528460
                                OF THE STD INITIALIZING INSTRUCTION.                           F2528470
07211  0 50000 2 03652 TESTLO CLA TAG2+3,2          INITIALIZE INDEX                          F2528480
07212 -0 73400 2 00000          PDX 0,2              FOR TEST DOTAG.                           F2528490
07213  0 50000 0 05133          CLA L(0)             ISOLATE                                   F2528500
07214  0 56000 2 01104          LDQ DOTAGZ+6,2       SXD                                       F2528510
07215 -0 77300 0 00003          RQL 3                LOCATION                                  F2528520
07216 -0 76300 0 00006          LGL 6                AND PUT                                   F2528530
07217  0 76700 0 00003          ALS 3                IN TETLOC                                 F2528540
07220  0 60100 0 05255          STO TETLOC           ADDRESS                                   F2528550
07221  0 50000 2 01076          CLA DOTAGZ,2         PUT TXL                                   F2528560
07222 -0 32000 0 05141          ANA ADMSK            LOCATION                                  F2528570
07223  0 76700 0 00022          ALS 18               IN TETLOC                                 F2528580
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07224 -0 60200 0 05255          ORS TETLOC            DECREMENT.                                F2528590
07225  0 02000 4 00001          TRA 1,4                                                         F2528600
                                   ***************************************************************F2528610
                                   PREFACE TO ORO EXAMINES VARIABLIITY OF X QUANTITY.           F2528620
07226  0 50000 1 03652 PXORO    CLA TAG2+3,1          IF X IS                                   F2528630
07227 -0 73400 2 00000          PDX 0,2               CONSTANT IT IS                            F2528640
07230  0 50000 2 01103          CLA DOTAGZ+5,2        LEFT IN THE                               F2528650
07231 -0 32000 0 05137          ANA BIT2              DECREMENT OF                              F2528660
07232 -0 10000 0 07237          TNZ XORO              ACC.                                      F2528670
07233  0 50000 2 01103          CLA DOTAGZ+5,2                                                  F2528680
07234 -0 32000 0 05141          ANA ADMSK                                                       F2528690
07235  0 76700 0 00022          ALS 18                                                          F2528700
07236  0 02000 4 00002          TRA 2,4                                                         F2528710
                                   ***************************************************************F2528720
                                   XORO FILLS OUT ORO FOR N1, N2, N3, GIVEN DO IN B AND POS IN AF2528730
07237 -0 63400 4 07260 XORO     SXD XORO32,4                                                    F2528740
07240  0 50000 2 01076          CLA DOTAGZ,2                                                    F2528750
07241  0 77100 0 00017          ARS 15                                                          F2528760
07242 -0 32000 0 05076          ANA L(7)                                                        F2528770
07243  0 60100 0 05235          STO N1N2N3                                                      F2528780
07244  0 50000 0 05067          CLA L(ORO)            ORIGIN OF ORO TABLE.                      F2528790
07245  0 40000 0 05130          ADD L(4)              CALCULATES ADDRESS                        F2528800
07246  3 00002 1 07250          TXH XORO10,1,2        FOR STORING INTO                          F2528810
07247  0 40000 0 05131          ADD L(3)              ORO TABLE.                                F2528820
07250  3 00001 1 07252 XORO10   TXH XORO20,1,1                                                  F2528830
07251  0 40000 0 05066          ADD L(17)                                                       F2528840
07252  0 62100 0 07263 XORO20   STA XORO36            STORE ADRS FOR NS.                        F2528850
07253  0 53400 1 05131          LXA L(3),1                                                      F2528860
07254  0 56000 0 05235 XORO30   LDQ N1N2N3                                                      F2528870
07255 -0 77300 1 00044          RQL 36,1                                                        F2528880
07256  0 50000 2 01100          CLA DOTAGZ+2,2                                                  F2528890
07257  0 16200 0 07261          TQP XORO34            N IS CONSTANT.                            F2528900
D 07260 -3 00000 0 07263 XORO32 TXL XORO36,0          N IS VARIABLE                             F2528910
07261  0 76700 0 00022 XORO34   ALS 18                                                          F2528920
07262  0 07400 4 04601          TSX FIXCON,4                                                    F2528930
07263  0 60100 1 00000 XORO36   STO 0,1                                                         F2528940
07264  2 00001 2 07265          TIX XORO40,2,1                                                  F2528950
07265  2 00001 1 07254 XORO40   TIX XORO30,1,1                                                  F2528960
07266  0 60100 0 07566          STO ORO00                                                       F2528970
07267 -0 53400 4 07260          LXD XORO32,4                                                    F2528980
07270  0 02000 4 00001          TRA 1,4                                                         F2528990
                                   ***************************************************************F2529000
                                   THIS ROUTINE EXAMINES A BLOCK OF CONSTANTS AND COMPILES ONE IF2529010
                                   INSTRUCTION FOR EACH.  THE CALLER INDICATES THE FIRST CONSTANF2529020
                                   BY A REFERENCE IN THE ACCUMULATOR, AND INDICATES THE NUMBER OF2529030
                                   OF INSTRUCTIONS IN INDEX REGISTER A.                         F2529040
07271 -0 63400 4 07336 LXC      SXD LXC19,4                                                     F2529050
07272  0 60100 0 05206          STO ERLXC                                                       F2529060
07273 -0 75400 1 00000          PXD 0,1                                                         F2529070
07274  0 77100 0 00022          ARS 18                                                          F2529080
07275  0 40000 0 05206          ADD ERLXC                                                       F2529090
07276  0 62100 0 07312          STA LXC10                                                       F2529100
07277  0 50000 0 05222          CLA LOCIND            TEST TO SEE IF                            F2529110
07300  0 10000 0 07310          TZE LXC08             THIS IS THE FIRST                         F2529120
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07301  0 40200 0 05126          SUB L(1)          LXD COMPILED. IF SO,                F2529130
07302  0 60100 0 05222          STO LOCIND        PLACE A IN                          F2529140
07303 -0 53400 2 05230          LXD DOIND,2       DECREMENT                           F2529150
07304  0 50000 2 01076          CLA DOTAGZ,2      OF LOCATION WORD                    F2529160
07305 -0 32000 0 05142          ANA DECMSK        FOR FIRST COMPILED                  F2529170
07306  0 60100 0 05176          STO CIL00         INSTRUCTION.                        F2529180
07307  0 02000 0 07312          TRA LXC10                                             F2529190
07310  0 50000 0 05133 LXC08    CLA L(0)                                              F2529200
07311  0 60100 0 05176          STO CIL00                                             F2529210
07312  0 56000 1 00000 LXC10    LDQ 0,1           SKELETAL INSTRUCTION.               F2529220
07313  0 76300 0 00000          LLS 0                                                 F2529230
07314 -0 76300 0 00022          LGL 18                                                F2529240
07315 -0 60000 0 05177          STQ CIL01         COMPILE OP. WORD.                   F2529250
07316 -0 12000 0 07337          TMI LXC20                                             F2529260
07317  0 62100 0 07320          STA LXC15         SYMBOL.ADDR. TYPE INSTRUCTION.      F2529270
A 07320  0 50000 0 00000 LXC15  CLA                                                   F2529280
07321  0 60100 0 05200          STO CIL02         SYMBOLIC ADDRESS.                   F2529290
07322  0 50000 0 05133          CLA L(0)          RELATIVE                            F2529300
07323  0 60100 0 05201          STO CIL03         ADDRESS.                            F2529310
07324 -0 50000 0 05200          CAL CIL02         TEST CIL02                          F2529320
07325 -0 32000 0 05104          ANA 6ONES         WORD.                               F2529330
07326  0 10000 0 07344          TZE LXC30         FIRST CHARACTER IS ZERO.            F2529340
07327 -0 32000 0 05102          ANA BIT01                                             F2529350
07330 -0 10000 0 07344          TNZ LXC30         FIRST CHARACTER ALPHABETIC.         F2529360
07331 -0 50000 0 05200          CAL CIL02         FIRST CHARACTER NUMBERIC,           F2529370
07332  0 76700 0 00022          ALS 18            PLACE REIGHT HALF OF CIL02          F2529380
07333  0 62200 0 05201          STD CIL03         IN CIL03, LEFT HALF                 F2529390
07334 -0 50000 0 05104          CAL 6ONES         IN CIL02.                           F2529400
07335  0 32000 0 05200          ANS CIL02                                             F2529410
D 07336 -3 00000 0 07344 LXC19  TXL LXC30,0       SHIF TYPE INSTRUCTION,              F2529420
07337  0 76700 0 00022 LXC20    ALS 18                                                F2529430
07340 -0 32000 0 05142          ANA DECMSK                                            F2529440
07341  0 60100 0 05201          STO CIL03                                             F2529450
07342  0 50000 0 05133          CLA L(0)                                              F2529460
07343  0 60100 0 05200          STO CIL02                                             F2529470
07344  0 07400 4 04345 LXC30    TSX CIT,4                                             F2529480
07345  2 00001 1 07310          TIX LXC08,1,1     COUNT COMPILED INSTR. IN BLK.       F2529490
07346 -0 53400 4 07336          LXD LXC19,4                                           F2529500
07347  0 02000 4 00001          TRA 1,4                                               F2529510
                                ***********************************************************F2529520
07350  0 00000 0 07406 KLX01       LXI00                                              F2529530
07351  0 00000 0 07407 KLX01I      LXI00+1                                            F2529540
07352  0 00000 0 07412 KLX02I      LXI05                                              F2529550
07353  0 00000 0 07410 KLX02       LXI02                                              F2529560
07354  0 00000 0 07424 KLX03       LXI16                                              F2529570
07355  0 00000 0 07442 KLX05       LXI30                                              F2529580
07356  0 00000 0 07416 KLX03I      LXI10                                              F2529590
07357  0 00000 0 07434 KLX05I      LXI24                                              F2529600
07360  0 00000 0 07473 K1AORO      A1C00                                              F2529610
07361  0 00000 0 07474 KIAORO      A1C01                                              F2529620
07362  0 00000 0 07477 K2AORO      A1000                                              F2529630
07363  0 00000 0 07500 K3AORO      A1001                                              F2529640
07364  0 00000 0 07501 KTX00       TXC00                                              F2529650
07365  0 00000 0 07507             TXC08                                              F2529660
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07366  0 00000 0 07515              TXC18                                  F2529670
07367  0 00000 0 07531 KTX04        TXC30                                  F2529680
07370  0 00000 0 07532 KTX05        TXC31                                  F2529690
07371  0 00000 0 07534 LTX040       TX040                                  F2529700
07372  0 00000 0 07536 LTX042       TX042                                  F2529710
07373  0 00000 0 07456 LXCI         XCI                                    F2529720
07374  0 00000 0 07466 LXCI6        XCI6                                   F2529730
07375  0 00000 0 07553 LXCIE        XCIE                                   F2529740
07376  0 00000 0 07554 LXCIE1       XCIE+1                                 F2529750
07377  0 00000 0 07563 LXCIEP       XCIEP                                  F2529760
07400  0 00000 0 07564 LXCEIP       XCEIP                                  F2529770
07401  0 00000 0 07552 XK           XKI                                    F2529780
07402  0 00000 0 07452 K1BORO       L(BIC)                                 F2529790
07403  0 00000 0 07540 LX2CI        X2CI                                   F2529800
07404  0 00000 0 07467 LXCI61       XCI6+1                                 F2529810
07405  0 00000 0 07470 LXCI8        XCI8                                   F2529820
07406  0 07603 2 34321 LXI00        14545,2,ORO00+13   CLA                 F2529830
07407  0 07620 6 26346              11494,6,ORO00+26   STO                 F2529840
07410  0 07567 2 34321 LXI02        14545,2,ORO00+1    CLA                 F2529850
07411  0 07620 6 26346              11494,6,ORO00+26   STO                 F2529860
07412  0 07567 4 32450 LXI05        13608,4,ORO00+1    LDQ                 F2529870
07413  0 07577 4 44770              18936,4,ORO00+9    MPY                 F2529880
07414 -2 00021 2 14362         TNX  6386,2,17          ALS 17              F2529890
07415  0 07620 6 26346              11494,6,ORO00+26   STO                 F2529900
07416  0 07572 4 32450 LXI10        13608,4,ORO00+4    LDQ                 F2529910
07417  0 07575 4 44770              18936,4,ORO00+7    MPY                 F2529920
07420 -2 00021 2 14362         TNX  6386,2,17          ALS 17              F2529930
07421  0 07575 6 26422              11538,6,ORO00+7    SUB                 F2529940
07422  0 07620 2 12424              5396,2,ORO00+26    ADD                 F2529950
07423  0 07620 6 26346              11494,6,ORO00+26   STO                 F2529960
07424  0 07572 4 32450 LXI16        13608,4,ORO00+4    LDQ                 F2529970
07425  0 07600 4 44770              18936,4,ORO00+10   MPY                 F2529980
07426 -2 00022 4 35162         TNX  14962,4,18         LRS                 F2529990
07427  0 07575 4 44770              18936,4,ORO00+7    MPY                 F2530000
07430 -2 00021 2 14362         TNX  6386,2,17          ALS                 F2530010
07431  0 07575 6 26422              11538,6,ORO00+7    SUB                 F2530020
07432  0 07620 2 12424              5396,2,ORO00+26    ADD                 F2530030
07433  0 07620 6 26346              11494,6,ORO00+26   STO                 F2530040
07434  0 07613 4 32450 LXI24        13608,4,ORO00+21   LDQ                 F2530050
07435  0 07616 4 44770              18936,4,ORO00+24   MPY                 F2530060
07436 -2 00021 2 14362         TNX  6386,2,17          ALS                 F2530070
07437  0 07616 6 26422              11538,6,ORO00+24   SUB                 F2530080
07440  0 07620 2 12424              5396,2,ORO00+26    ADD                 F2530090
07441  0 07620 6 26346              11494,6,ORO00+26   STO                 F2530100
07442  0 07613 4 32450 LXI30        13608,4,ORO00+21   LDQ                 F2530110
07443  0 07601 4 44770              18936,4,ORO00+11   MPY                 F2530120
07444 -2 00022 4 35162         TNX  14962,4,18         LRS                 F2530130
07445  0 07616 4 44770              18936,4,ORO00+24   MPY                 F2530140
07446 -2 00021 2 14362         TNX  6386,2,17          ALS                 F2530150
07447  0 07616 6 26422              11538,6,ORO00+24   SUB                 F2530160
07450  0 07620 2 12424              5396,2,ORO00+26    ADD                 F2530170
07451  0 07620 6 26346              11494,6,ORO00+26   STO                 F2530180
07452  0 07611 4 32450 L(BIC)       13608,4,ORO00+19   LDQ                 F2530190
07453  0 07566 4 44770              18936,4,ORO00      MPY                 F2530200
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07454 -2 00021 2 14362          TNX 6386,2,17          ALS     F2530210
07455  0 07602 6 26346              11494,6,ORO00+12  STO     F2530220
07456  0 07570 2 34321 XCI          14545,2,ORO00+2   CLA     F2530230
07457  0 07567 6 26422              11538,6,ORO00+1   SUB     F2530240
07460  0 07571 2 12424              5396,2,ORO00+3    ADD     F2530250
07461 -2 00043 4 35162          TNX 14962,4,35        LRS     F2530260
07462  0 07571 2 46547              19815,2,ORO00+3   DVP     F2530270
07463  0 07571 4 44770              18936,4,ORO00+3   MPY     F2530280
07464 -2 00022 4 35162          TNX 14962,4,18        LRS     F2530290
07465  0 07577 4 44770              18936,4,ORO00+9   MPY     F2530300
07466 -2 00043 4 34362 XCI6     TNX 14578,4,35        LLS     F2530310
07467  0 07603 6 26422              11538,6,ORO00+13  SUB     F2530320
07470  0 07605 6 26324 XCI8         11476,6,ORO00+15  STD     F2530330
07471  0 07602 2 12424              5396,2,ORO00+12   ADD     F2530340
07472  0 07604 6 26324              11476,6,ORO00+14  STD     F2530350
07473  0 07566 4 32450 A1C00        13608,4,ORO00     LDQ     F2530360
07474  0 07611 4 44770 A1C01        18936,4,ORO00+19  MPY     F2530370
07475 -2 00021 2 14362          TNX 6386,2,17         ALS     F2530380
07476  0 07604 6 26324              11476,6,ORO00+14  STD     F2530390
07477  0 07566 2 34321 A1000        14545,2,ORO00     CLA     F2530400
07500  0 07604 6 26324 A1001        11476,6,ORO00+14  STD     F2530410
07501  0 07570 2 34321 TXC00        14545,2,ORO00+2   CLA     F2530420
07502  0 07567 6 26422              11538,6,ORO00+1   SUB     F2530430
07503  0 07571 2 12424              5396,2,ORO00+3    ADD     F2530440
07504 -2 00043 4 35162          TNX 14962,4,35        LRS     F2530450
07505  0 07571 2 46547              19815,2,ORO00+3   DVP     F2530460
07506  0 07571 4 44770              18936,4,ORO00+3   MPY     F2530470
07507  0 07573 2 34321 TXC08        14545,2,ORO00+5   CLA     F2530480
07510  0 07572 6 26422              11538,6,ORO00+4   SUB     F2530490
07511  0 07574 2 12424              5396,2,ORO00+6    ADD     F2530500
07512 -2 00043 4 35162          TNX 14962,4,35        LRS     F2530510
07513  0 07574 2 46547              19815,2,ORO00+6   DVP     F2530520
07514  0 07574 4 44770              18936,4,ORO00+6   MPY     F2530530
07515  0 07614 2 34321 TXC18        14545,2,ORO00+22  CLA     F2530540
07516  0 07613 6 26422              11538,6,ORO00+21  SUB     F2530550
07517  0 07615 2 12424              5396,2,ORO00+23   ADD     F2530560
07520 -2 00043 4 35162          TNX 14962,4,35        LRS     F2530570
07521  0 07615 2 46547              19815,2,ORO00+23  DVP     F2530580
07522  0 07615 4 44770              18936,4,ORO00+23  MPY     F2530590
07523 -2 00022 4 35162          TNX 14962,4,18        LRS     F2530600
07524  0 07575 4 44770              18936,4,ORO00+7   MPY     F2530610
07525 -2 00022 4 35162          TNX 14962,4,18        LRS     F2530620
07526  0 07576 4 44770              18936,4,ORO00+8   MPY     F2530630
07527 -2 00022 4 35162          TNX 14962,4,18        LRS     F2530640
07530  0 07601 4 44770              18936,4,ORO00+11  MPY     F2530650
07531 -2 00043 4 34362 TXC30    TNX 14578,4,35        LLS     F2530660
07532  0 07621 2 12424 TXC31        5396,2,ORO00+27   ADD     F2530670
07533  0 07603 6 26422              11538,6,ORO00+13  SUB     F2530680
07534 -2 00022 4 35162 TX040    TNX 14962,4,18        LRS     F2530690
07535  0 07611 4 44770              18936,4,ORO00+19  MPY     F2530700
07536 -2 00043 4 34362 TX042    TNX 14578,4,35        LLS     F2530710
07537  0 07604 6 26324              11476,6,ORO00+14  STD     F2530720
07540  0 07573 2 34321 X2CI         14545,2,ORO00+5   CLA     F2530730
07541  0 07572 6 26422              11538,6,ORO00+4   SUB     F2530740
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      07542  0 07574 2 12424              5396,2,OR000+6     ADD                                  F2530750
      07543 -2 00043 4 35162         TNX 14962,4,35         LRS                                  F2530760
      07544  0 07574 2 46547              19815,2,OR000+6    DVP                                  F2530770
      07545  0 07574 4 44770              18936,4,OR000+6    MPY                                  F2530780
      07546 -2 00022 4 35162         TNX 14962,4,18         LRS                                  F2530790
      07547  0 07612 4 44770              18936,4,OR000+20   MPY                                  F2530800
      07550 -2 00043 4 34362         TNX 14578,4,35         LLS                                  F2530810
      07551  0 07603 6 26422              11538,6,OR000+13   SUB                                  F2530820
      07552  0 07612 2 34321 XKI          14545,2,OR000+20   CLA                                  F2530830
      07553 -2 00043 4 34362 XCIE    TNX 14578,4,35         LLS                                  F2530840
      07554  0 07603 6 26422              11538,6,OR000+13   SUB                                  F2530850
      07555  0 07605 6 26324              11476,6,OR000+15   STD                                  F2530860
      07556  0 07604 6 26324              11476,6,OR000+14   STD                                  F2530870
      07557  0 07605 6 26324 XCI8P        11476,6,OR000+15   STD                                  F2530880
      07560  0 07611 2 12424              5396,2,OR000+19    ADD                                  F2530890
      07561  0 07604 6 26324              11476,6,OR000+14   STD                                  F2530900
      07562  0 00000 0 07557 LXCI8P       XCI8P                                                   F2530910
      07563  0 07612 2 34321 XCIEP        14545,2,OR000+20   CLA                                  F2530920
      07564  0 07605 6 26324 XCEIP        11476,6,OR000+15   STD                                  F2530930
      07565  0 07604 6 26324              11476,6,OR000+14   STD                                  F2530940
                                          ***************************************************************F2530950
                        07566  OR000 BSS 12                                                       F2530960
M     07602 +010000000001      OR012 OCT 010000000001                                             F2530970
      07603 +060000000003            OCT 060000000003                                             F2530980
                        07604  OR014 BSS 12                                                       F2530990
M     07620 +010000000003      OR026 OCT 010000000003      1)+3 SYMBOL.                           F2531000
                                          ***************************************************************F2531010
                                                                                                  F2531020
                                          ***************************************************************F2531030
                                          SYNONYMS                                                F2531040
                        01242 ZEKSUM SYN TGTG+100                                                 F2531050
M                       03650 TAG21  SYN TAG2+1                                                   F2531060
M                       03651 TAG22  SYN TAG2+2                                                   F2531070
M                       05256 RTXAC  SYN RTX                                                      F2531080
M                       05256 RTXAC  SYN AC                                                       F2531090
                        05245 ERAORO SYN ERTX01                                                   F2531100
                        05241 CPYWD1 SYN ER40                                                     F2531110
                        05242 CPYWD2 SYN ER41                                                     F2531120
M                       05243 ERDRM1 SYN ARG                                                      F2531130
M                       05243 ERDRM1 SYN ARG                                                      F2531140
                        05246 ERDRM  SYN ERTX02                                                   F2531150
                        05202 ERAB   SYN ERTGA                                                    F2531160
                        03636 ADTGA  SYN OADTGA+100                                               F2531170
                        03466 ADTGMX SYN ADTG+400                                                 F2531180
                        01076 DOTAGZ SYN DOTAG+450                                                F2531190
M                       07602 OR012  SYN OR000+12                                                 F2531200
                        07603 OR013  SYN OR000+13                                                 F2531210
                        07610 OR018  SYN OR000+18                                                 F2531220
M                       07620 OR026  SYN OR000+26                                                 F2531230
                        02336 MXTGTG SYN TGTG+672                                                 F2531240
                        02646 MXTGA  SYN OMXTGA+200                                               F2531250
                        00004  DIAG  EQU 4                                                        F2531260
A                       00000        END                                                          F2531270
A                             0OR012 07602,07602
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A
A
A
A
A
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OORO26 07620,07620
ORTXAC 05256,05256
OTAG21 03650,03650
OTAG22 03651,03651
ERDRM1 05243,05243
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1          REM BLOCK SIX OF SECTION TWO.
1                                        BLOCK SIX OF SECTION TWO.
                                            MASTER RECORD CARD = FN053                                  F2600010
                                         DOFILE INVERSION ROUTINE--BLOCK 6                              F2600020
                    00030          ORG 24                ORIGIN FOR DFI INSTRUCTIONS.                   F2600030
00030  0 77200 0 00224 DFI01  REW 148                REWIND OUTPUT TAPE 4                           F2600040
00031  0 77200 0 00223        REW 147                AND INPUT TAPE 3                               F2600050
00032  0 76200 0 00224 DFI02  RDS 148                SPACE                                          F2600060
00033  0 70000 0 00163        CPY ERAS               OVER                                           F2600070
00034  0 02000 0 00032        TRA DFI02              FIRST FILE                                     F2600080
00035  0 02000 0 00037        TRA DFI03              OF OUTPUT TAPE                                 F2600090
00036  0 07400 4 00004        TSX DIAG,4             FALSE END OF RECORD.                           F2600100
00037 -0 76000 0 00143 DFI03  MSE 99                 TEST SENSE LIGHT 3 FOR EMPTY INPUT             F2600110
00040  0 02000 0 00044        TRA DFI05              NOT EMPTY                                      F2600120
00041  0 76000 0 00142        PSE 98                 TURN ON SENSE LIGHT 2, EMPTY OUTPUT.           F2600130
00042  0 77000 0 00224 DFI04  WEF 148                WRITE END OF FILE ON OUTPUT TAPE.              F2600140
00043  0 02000 0 00154        TRA EXIT               EXIT FROM DFI ROUTINE.                         F2600150
00044  0 53400 1 00156 DFI05  LXA L(0),1             INITIALIZE TO BEGIN READING INTO N             F2600160
00045 -0 76000 0 00143        MSE 99                 TURN OFF                                       F2600170
00046  0 76100 0 00000        NOP                    SENSE LIGHT 3                                  F2600180
00047 -0 76000 0 00012        RTT                    TURN OFF                                       F2600190
00050  0 76100 0 00000        NOP                    TAPE CHECK INDICATOR                           F2600200
00051  0 53400 2 00157  DFI10 LXA L(5),2             INITIALIZE TAPE ERROR COUNTER                  F2600210
00052 -0 63400 1 00163        SXD ERAS,1             SAVE INDEX 1 IN CAS OF REREAD                  F2600220
00053  0 76200 0 00223 DFI11  RDS 147                PREPARE TO READ INPUT TAPE                     F2600230
00054  0 70000 1 00200 DFI12  CPY NOR,1              COPY FIRST OF FOUR WORDS                       F2600240
00055  0 02000 0 00060        TRA DFI13                                                             F2600250
00056  0 02000 0 00042        TRA DFI04              END OF FILE--GO TO EXIT                        F2600260
00057  0 02000 0 00111        TRA DFI20              END OF RECORD//GO TO REDUND TEST               F2600270
00060  0 70000 1 00201 DFI13  CPY NOR+1,1            COPY SECOND OF FOUR WORDS                      F2600280
00061  0 02000 0 00064        TRA DFI14                                                             F2600290
00062  0 07400 4 00004        TSX DIAG,4             FLASE END OF FILE.                             F2600300
00063  0 07400 4 00004        TSX DIAG,4             FALSE END OF RECORD.                           F2600310
00064  0 70000 1 00202 DFI14  CPY NOR+2,1            COPY THIRD OF FOUR WORDS                       F2600320
00065  0 02000 0 00070        TRA DFI15                                                             F2600330
00066  0 07400 4 00004        TSX DIAG,4             FLASE END OF FILE.                             F2600340
00067  0 07400 4 00004        TSX DIAG,4             FALSE END OF RECORD.                           F2600350
00070  0 70000 1 00203 DFI15  CPY NOR+3,1            COPY FOURTH OF FOUR WORDS                      F2600360
00071  0 02000 0 00074        TRA DFI16                                                             F2600370
00072  0 07400 4 00004        TSX DIAG,4             FLASE END OF FILE.                             F2600380
00073  0 07400 4 00004        TSX DIAG,4             FALSE END OF RECORD.                           F2600390
00074  0 50000 1 00201 DFI16  CLA NOR+1,1                                                            F2600400
00075  0 10000 0 00122        TZE DFI30              2ND WORD ZERO MEANS END OF NEST                F2600410
00076  0 40200 0 00160        SUB ALLONE             2ND WORD ALL ONES .                            F2600420
00077  0 10000 0 00107        TZE DFI19              MEANS BEGINNING OF BLOCK                       F2600430
00100 -0 76000 0 00143        MSE 99                 WAS PREVIOUS FOUR WORDS BEG OF BLOCK           F2600440
00101  0 02000 0 00104        TRA DFI17              NO, LEAVE FIRST WORD PLUS                      F2600450
00102 -0 50000 0 00161        CAL L(M0)              MAKE SIGN OF                                   F2600460
00103 -0 60200 1 00200        ORS NOR,1              FIRST WORD MINUS                               F2600470
00104  1 77774 1 00105 DFI17  TXI DFI18,1,-4         INDEX BY  4 FOR NEXT 4 WORDS                   F2600480
00105  3 70300 1 00054 DFI18  TXH DFI12,1,-3904      TEST AND CONTINUE NEXT  4 WORDS                F2600490
00106  0 07400 4 00004        TSX DIAG,4             NOR BUFFER SIZE EXCEEDED.                      F2600500
00107  0 76000 0 00143 DFI19  PSE 99                 TURN ON BEGIN OF BLOCK IND                     F2600510
00110  0 02000 0 00054        TRA DFI12              CONTINUE NEXT FOUR WORDS                       F2600520
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00111  0 76600 0 00333 DFI20  WRS 219          DELAY UNTIL TAPE DISCONNECTS                    F2600530
00112 -0 76000 0 00012         RTT              TEST TAPE CHECK                                 F2600540
00113  0 02000 0 00115         TRA DFI21        ERROR                                           F2600550
00114  0 02000 0 00051         TRA DFI10        IF NO ERROR RETRN TO READ NEXT RECORD           F2600560
00115  2 00001 2 00117 DFI21   TIX DFI22,2,1    REDUCE ERROR COUNTER BY 1                       F2600570
00116  0 07400 4 00004         TSX DIAG,4       TAPE CHECK. TRIED 5 TIMES.                      F2600580
00117  0 76400 0 00223 DFI22   BST 147          RESTORE TAPE POSITION                           F2600590
00120 -0 53400 1 00163         LXD ERAS,1       AND INDEX 1                                     F2600600
00121  0 02000 0 00053         TRA DFI11        FOR ANOTHER TRY                                 F2600610
00122  0 70000 0 00163 DFI30   CPY ERAS         CHECK THAT END OF RECORD                        F2600620
00123  0 07400 4 00004         TSX DIAG,4       HAS BEEN REACHED---END OF NEST.                 F2600630
00124  0 07400 4 00004         TSX DIAG,4       RECORD IS ONLY FOUR WORDS.                      F2600640
00125  0 76600 0 00333         WRS 219          DELAY UNTIL TAPE DISCONNECTSP                   F2600650
00126 -0 76000 0 00012         RTT              TEST TAPE CHECK                                 F2600660
00127  0 02000 0 00131         TRA DFI40        ERROR                                           F2600670
00130  0 02000 0 00133         TRA DFI50        PROCEED TO PROCESS THIS NEST                    F2600680
00131  2 00001 2 00117 DFI40   TIX DFI22,2,1    REDUCE ERROR COUNT BY 1 AND RETRY               F2600690
00132  0 07400 4 00004         TSX DIAG,4       TAPE CHECK.  TRIED 5 TIMES.                     F2600700
00133 -0 63400 1 00146 DFI50   SXD DFI55,1      STORE INDEX FOR END OF BLOCK TEST               F2600710
00134  1 00004 1 00135 DFI51   TXI DFI52,1,4                                                    F2600720
00135  0 50000 1 00200 DFI52   CLA NOR,1        SCAN UP EVERY FOURTH WORD                       F2600730
00136  0 12000 0 00134         TPL DFI51        TO TEST FOR MINUS                               F2600740
00137 -0 63400 1 00163         SXD ERAS,1       SAVE FOR NEXT END OF BLOCK TEST                 F2600750
00140  0 50200 1 00200         CLS NOR,1        RESTORE PLUS SIGN TO                            F2600760
00141  0 60100 1 00200         STO NOR,1        FIRST WORD OF BLOCK                             F2600770
00142  0 76600 0 00224 DFI53   WRS 148          SELECT OUTPUT TAPE                              F2600780
00143  0 53400 2 00162         LXA L(100),2     PREPARE FOR NEXT 100 WORDS                      F2600790
00144  0 70000 1 00200 DFI54   CPY NOR,1        WRITE BLOCK IN                                  F2600800
00145  1 77777 1 00146         TXI DFI55,1,-1   FORWARD DIRECTION                               F2600810
D 00146 -3 00000 1 00151 DFI55 TXL DFI60,1      UNTIL END OF BLOCK                              F2600820
00147  2 00001 2 00144         TIX DFI54,2,1    IF WORDS IN RECORD                              F2600830
00150  0 02000 0 00142         TRA DFI53        START ANOTHER RECORD                            F2600840
00151 -0 53400 1 00163 DFI60   LXD ERAS,1       IF INDEX 1 HAS NOT REACHED 0                    F2600850
00152  3 00000 1 00133         TXH DFI50,1,0    PROCESS NEXT BLOCK                              F2600860
00153  0 02000 0 00044         TRA DFI05        RETURN TO PROCESS NEXT NEST                     F2600870
00154  0 76200 0 00221  EXIT   RDS 145          SKIP OVER DIAGNOSTIC RECORD ON SYSTEM TAPE.     F2600880
00155  0 02000 0 00004         TRA 4

                        CONSTANTS AND ERAS STORAGE FOR DFI                                     F2600900
                                                                                               F2600910
00156  0 00000 0 00000 L(0)       0                                                           F2600920
00157  0 00000 0 00005  L(5)      5                                                           F2600930
00160 +377777777777     ALLONE OCT 377777777777                                            F2600940
00161 -0 00000 0 00000 L(M0)  MZE 0                                                          F2600950
00162  0 00000 0 00144 L(100)      100                                                       F2600960
                00163 ERAS   BSS 1                                                           F2600970
                00200        ORG 128          ORIGIN FOR NOR                                 F2600980
                00200 NOR    BSS 3904                                                       F2600990
                00004  DIAG  EQU 4                                                          F2601000
A               00000        END
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1                ORG 3641
1                                07071
                                                ORG 3641
                                                     MASTER RECORD CARD = FN055
                                                  ROUTINE TO HANDLE ADDITIONAL SUBROUTINES IF DESIRED          F3B12180
          07071   2 00001 4 01306               TIX M13505,4,1          COMPARE M1D FOR PRESENT SUBROUTINES    F3B12190
          07072  -0 53400 4 02170               LXD L(0),4              COMPARE ADD IT, OPEN SUBS, IN M1D2     F3B12200
          07073   0 34000 4 07122  OP1          CAS M1D2,4              WITH CURRENT NAME.                     F3B12210
          07074   1 77777 4 07077               TXI OP2,4,-1            NOT FOUND, GET NEXT M1D2 ENTRY         F3B12220
          07075   0 02000 0 07101               TRA OP3                 FOUND                                  F3B12230
          07076   1 77777 4 07077               TXI OP2,4,-1            NOT FOUND, GET NEXT M1D2 ENTRY.        F3B12240
          07077   3 77776 4 07073  OP2          TXH OP1,4,M1D2L         TEST FOR END OF M1D2.                  F3B12250
          07100   0 07400 4 00004               TSX 4,4                 CURRENT SUB NOT IN M1D2                F3B12260
          07101  -0 63400 4 02312  OP3          SXD CCELL,4             SAVE 1RC FOR LATER BRANCH OF SAME INST. F3B12270
          07102   1 77776 1 07103               TXI OP3+2,1,-2          INDEX TO GET NEXT 4 WORD INSTR.        F3B12280
          07103   0 07400 4 07136               TSX TEST,4              TEST FOR END OF CUR. COMPAIL REC.      F3B12290
          07104  -0 53400 4 02312               LXD CCELL,4             GO TO THE COMPILER FOR PART. SUBROUTINE F3B12300
          07105   0 02000 4 07106  OP4          TRA OP4+1,4             COMPAIL INSTRUCTION                    F3B12310
          07106   0 02000 0 07170               TRA XDIM                OPEN SUB IS XDIM                       F3B12320
          07107   0 02000 0 07171               TRA DIM                 OPEN SUB IS DIM                        F3B12330
A         07110   0 00000 0 00000               HTR                     SPACE FOR BRANCHING TO 10 ADDITIONAL   F3B12340
A         07111   0 00000 0 00000               HTR                     OPEN SUBROUTINES THE LIST OF TRANSFERS F3B12350
A         07112   0 00000 0 00000               HTR                     TO ADDITIONAL OPEN SUBS MUST BE ORDER- F3B12360
A         07113   0 00000 0 00000               HTR                     ED IN THE SAME WAY AS THE ADDITIONAL OPEN F3B12370
A         07114   0 00000 0 00000               HTR                     SUB NAMES ARE ORDERED IN THE DICTION-  F3B12380
A         07115   0 00000 0 00000               HTR                     ARY M1D2.                              F3B12390
A         07116   0 00000 0 00000               HTR                                                            F3B12400
A         07117   0 00000 0 00000               HTR                                                            F3B12410
A         07120   0 00000 0 00000               HTR                                                            F3B12420
A         07121   0 00000 0 00000               HTR                                                            F3B12430
                                                     THE DICTIONARY FOR ADDITIONAL OPEN SUBROUTINES, AND     F3B12440
                                                     CONSTANTS USED IN THE DISCRIMINATION PROCEDURE.         F3B12450
          07122  672431446060       M1D2       BCD 1XDIM                   OPEN SUB XDIM                    F3B12460
          07123  243144606060                  BCD 1DIM                    OPEN SUB DIM                     F3B12470
A         07124   0 00000 0 00000               HTR                     SPACE FOR ADDING 10 ADDITIONAL OPEN SUBS. F3B12480
A         07125   0 00000 0 00000               HTR                                                            F3B12490
A         07126   0 00000 0 00000               HTR                                                            F3B12500
A         07127   0 00000 0 00000               HTR                                                            F3B12510
A         07130   0 00000 0 00000               HTR                                                            F3B12520
A         07131   0 00000 0 00000               HTR                                                            F3B12530
A         07132   0 00000 0 00000               HTR                                                            F3B12540
A         07133   0 00000 0 00000               HTR                                                            F3B12550
A         07134   0 00000 0 00000               HTR                                                            F3B12560
A         07135   0 00000 0 00000               HTR                                                            F3B12570
                                                     FOUR SUBROUTINES USED IN COMPILING OPEN SUBROUTINES     F3B12580
                                                     1.TEST                                                 F3B12590
          07136  -0 63400 4 07230  TEST         SXD C,4                 SAVE LINKAGE                           F3B12600
          07137  -0 75400 1 00000               PXD 0,1                 COMPARE CURRENT VALUE OF IR1 WITH      F3B12610
          07140   0 34000 0 02305               CAS M1ALWN              2S COMPL. OF WORD COUNT.               F3B12620
          07141   0 02000 4 00001               TRA 1,4                                                        F3B12630
          07142   0 07400 4 00341               TSX M10210,4          CURRENT RECORD EXHAUSTED                 F3B12640
          07143   0 07400 4 00004               TSX 4,4                 STOP. NO OF WDS. IN CUR REC EXCEEDS WD. F3B12650
                                                                        COUNT                                  F3B12660
          07144  -0 53400 4 07230               LXD C,4                 RESTORE LINKAGE                        F3B12670
          07145   0 02000 4 00001               TRA 1,4                 RETURN                                 F3B12680
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                                    2 TEARG1. ROUTINE TO DET. IF TOO FEW ARGS SPECIFIED          F3B12690
07146  0 50000 1 02327 TEARG1 CLA AIL,1          TEST FOR ALL ONES IN 1ST WD OF CUR. INSTR     F3B12700
07147  0 40200 0 02211         SUB ALLONE                                                       F3B12710
07150  0 10000 0 02155         TZE ERROR1         ALL ONES. GO TO PROPER STOP                   F3B12720
07151  0 02000 4 00001         TRA 1,4            NOT ALL ONES. RETURN                          F3B12730
                                    3 TEARG2. ROUTINE TO DET. IF TOO MANY ARGS. SPECIFIED        F3B12740
07152  0 50000 1 02327 TEARG2 CLA AIL,1          TEST FOR ALL ONES IN TST WORD OF              F3B12750
07153  0 02000 0 07235         TRA SUBPAT                                                       F3B12760
07154  0 50000 1 02331 ARGTAG CLA AIL+2,1        PLACE SUMB ADDRESS OF CURRENT ARG             F3B12770
07155  0 60100 0 02324         STO M1CW+2         IN M1CW+2                                     F3B12780
07156  0 50000 1 02332         CLA AIL+3,1        PLACE RELATIVE ADD. AND TAG OF CUR-           F3B12790
07157  0 60100 0 02325         STO M1CW+3         RENT ARG. IN M1CW+3                           F3B12800
07160 -0 32000 0 02207         ANA TGMSK          TEST FOR TAG                                  F3B12810
07161  0 10000 4 00001         TZE 1,4            NO TAG. RETURN                                F3B12820
07162 -0 63400 4 07230         SXD C,4            ARG TAGGED. SAVE LINKAGE                      F3B12830
07163 -0 76000 0 00143         MSE 99             TEST FOR END OF CHTAG TABLE                   F3B12840
07164  0 07400 4 01016         TSX M12500,4       CHTAG TABLE NOT EXHAUSTED.                    F3B12850
07165  0 76000 0 00143         PSE 99             END OF CHTAG TABLE. RESTORE IN-               F3B12860
07166 -0 53400 4 07230         LXD C,4            DICATOR AND LINKAGE                           F3B12870
07167  0 02000 4 00001         TRA 1,4            RETURN                                        F3B12880
                                    THE ROUTINE FOR COMPILING THE OPEN SUBROUTINES DIMAND XDIM   F3B12890
07170  0 76000 0 00144  XDIM  PSE 100            TURN ON SENSE LIGHT 100 FOR XDIM              F3B12900
07171  0 07400 4 07146  DIM   TSX TEARG1,4       TEST NO. OF ARGS SPECIFIED                    F3B12910
07172  0 07400 4 07154         TSX ARGTAG,4       TEST WHETHER FIRST ARG. IS TAGGED             F3B12920
07173  1 77774 1 07174         TXI O1,1,-4        INDEX COMPAIL RECORD TO BEG. OF NEXT REC.     F3B12930
07174  0 07400 4 07136  O1    TSX TEST,4         TEST FOR END OF CURRENT AIL RECORD            F3B12940
07175  0 07400 4 07152         TSX TEARG2,4       TEST NO. OF ARGS. SPECIFIED                   F3B12950
07176  0 07400 4 00707         TSX CIT00,4        COMPILE FIRST INST. FOR DIM AND XDIM          F3B12960
07177  0 00000 0 02322         HTR M1CW           LOCATION (1ST WD)                             F3B12970
07200  0 00000 0 02215         HTR L(CLA)         CLA(2ND WD.)                                  F3B12980
07201  0 00000 0 02324         HTR M1CW+2         FIRST ARG (3RD WD)                            F3B12990
07202  0 00000 0 02325         HTR M1CW+3         REL. ADD END TAG OF 1ST ARG (4TH WD)          F3B13000
07203  0 07400 4 07154         TSX ARGTAG,4       TEST WHETHER 2ND. ARG TAGGED ETC.             F3B13010
07204 -0 50000 0 07231         CAL L(SUB)         PREPARE OP. WD (2ND WD) OF 2ND AIL            F3B13020
07205 -0 76000 0 00144         MSE 100            ENTRY. OP. IS SUB. FOR XDIM                   F3B13030
07206 -0 50000 0 07232         CAL L(FSB)         FSB FOR DIM                                   F3B13040
07207  0 60200 0 02323         SLW M1CW+1                                                       F3B13050
07210  0 07400 4 00707         TSX CIT00,4        COMPILE 2ND INST FOR DIM OR XDIM              F3B13060
07211  0 00000 0 02170         HTR L(0)           0 (1ST WD)                                    F3B13070
07212  0 00000 0 02323         HTR M1CW+1         SUB(XDIM), FSB(DIM) (2ND. WD)                 F3B13080
07213  0 00000 0 02324         HTR M1CW+2         2ND. ARG (3RD WD)                             F3B13090
07214  0 00000 0 02325         HTR M1CW+3         REL. ADD AND TAG OF 2ND ARG (4TH WD)          F3B13100
07215  0 07400 4 00707         TSX CIT00,4        COMPILE 3RD INST FOR DIM AND XDIM             F3B13110
07216  0 00000 0 02170         HTR L(0)           0(1ST WD)                                     F3B13120
07217  0 00000 0 07233         HTR L(TPL)         TPL(2ND WD)                                   F3B13130
07220  0 00000 0 02245         HTR L(017)         OCT. 17 IN BITS S-5                           F3B13140
07221  0 00000 0 02177         HTR L(2D)          REL. ADD 2, TAG 0 (4TH WD)                    F3B13150
07222  0 07400 4 00707         TSX CIT00,4        COMPILE LAST INST FOR DIM AND XDIM            F3B13160
07223  0 00000 0 02170         HTR L(0)           0 (1STWD)                                     F3B13170
07224  0 00000 0 07234         HTR L(PXD)         PXD (2ND WD)                                  F3B13180
07225  0 00000 0 02170         HTR L(0)           0 (3RD WD)                                    F3B13190
07226  0 00000 0 02170         HTR L(0)           0 (4TH WD)                                    F3B13200
07227  1 77774 1 00774         TXI RESUME,1,-4    INDEX CUR AIL RECORD TO BEGINNING             F3B13210
                                                  OF NEXT 4WD INST AND RETURN TO MAIN PROG      F3B13220
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                                        CONSTANTS AND ERASIBLE STORAGE FOR FOUR                          F3B13230
                                        SUBROUTINES USED IN COMPILING OPEN SUBROUTINES                   F3B13240
                                                                                                         F3B13250
A     07230  0 00000 0 00000  C       HTR                                                               F3B13260
                         77776  M1D2L  EQU -2              THE 2S COMPL OF THE LENGTH OF                  F3B13270
                                                          M1D2. THIS CARD MUST BE CHANGED WHEN           F3B13280
                                                          ADDITIONS TO M1D2 ARE MADE                     F3B13290
                         02170 L(0)·   SYN 1144                                                         F3B13291
                         01306 M13505  SYN 710                                                          F3B13292
                         02312 CCELL   SYN 1226                                                         F3B13293
                         02305 M1ALWN  SYN 1221                                                         F3B13294
                         00341 M10210  SYN 225                                                          F3B13295
                         02327 AIL     SYN 1239                                                         F3B13300
                         02211 ALLONE  SYN 1161                                                         F3B13301
                         02155 ERROR1  SYN 1133                                                         F3B13302
                         02163 ERROR2  SYN 1139                                                         F3B13303
                         02322 M1CW    SYN 1234                                                         F3B13304
                         02207 TGMSK   SYN 1159                                                         F3B13305
                         01016 M12500  SYN 526                                                          F3B13310
                                        CONSTANS USED IN COMPILING THE OPEN SUBRTNS. XDIM AND DIM        F3B13320
                         00707 CITOO   SYN 455                                                          F3B13330
                         02215 L(CLA)  SYN 1165                                                         F3B13340
      07231  626422000000     L(SUB)  BCD 1SUB000                                                       F3B13350
      07232  266222000000     L(FSB)  BCD 1FSB000                                                       F3B13360
      07233  634743000000     L(TPL)  BCD 1TPL000                                                       F3B13370
      07234  476724000000     L(PXD)  BCD 1PXD000                                                       F3B13380
                         02245 L(017)  SYN 1189                                                         F3B13390
                         02177 L(2D)   SYN 1151                                                         F3B13400
                         00774 RESUME  SYN 508                                                          F3B13401
      07235  0 40200 0 02211 SUBPAT  SUB ALLONE                                                        F3B13402
      07236  0 10000 4 00001         TZE 1,4                                                           F3B13403
      07237  0 02000 0 02163         TRA ERROR2                                                        F3B13414
A     07240  0 00000 0 00000  ROOM    HTR  SPACE FROM ROOM MAY BE USED FOR ADD. OPEN SUB. COMPILATION
                         07071         END 3641
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1          REM    MASTER RECORD CARD = FN056
1                                        MASTER RECORD CARD = FN056
                                         THE FOLLOWING PROGRAM CONSTITUTES THE FIRST SECTION OF THE   F3B00010
                                         MERGE. IT PERFORMS THE INITIAL MERGE OF THE AIL FILE AND THE F3B00020
                                         DO FILE OF COMPILED INSTRUCTIONS. IN ADDITION TO MERGING     F3B00030
                                         THESE TWO FILES, IT INSERTS THE ARITHMETIC OPEN SUBROUTINES  F3B00040
                                         IN THEIR CORRECT POSITION IN THE FILE OF COMPILED INSTRUCT-  F3B00050
                                         IONS AND EFFECTS APPROPRIATE GENERALIZED TAG CHANGES IN AIL  F3B00060
                                         FILE INSTRUCTIONS                                           F3B00070
                    00030          ORG 24                                                            F3B00080
                                         TAPE POSITIONING TO READ FORTAG INTO CORE STORAGE            F3B00090
00030   0 53400 1 02164          LXA M1ECTR,1          LOAD 5 INTO IRA TP RD ERROR CTR.               F3B00100
00031   0 76200 0 00222 M10000   RDS 146               READ BINARY TAPE 2 WITH FORTAG TBL             F3B00110
00032   0 70000 0 05737          CPY ERAS              THE 7TH RECORD OF 5TH FILE WHICH IS            F3B00120
00033   0 07400 2 00064          TSX M10043,2          THE TAPE TABLES HAVING 11 RECORDS.             F3B00130
00034   0 76100 0 00031          NOP M10000            TAPE 2 STANDS AT DOTAGB RECORD                 F3B00140
00035  -0 53400 1 05737          LXD ERAS,1            COUNT FILE. TAPE 2 BACKSPACED NO.              F3B00150
00036   1 00007 1 00037          TXI M10010,1,7        RECORDS IN DOTAGB PLUS 7 TO START FORTAG.      F3B00160
00037   0 76400 0 00222 M10010   BST 146                                                              F3B00170
00040   2 00001 1 00037          TIX M10010,1,1                                                       F3B00180
                                         READ FORTAG INTO CORE STORAGE                               F3B00190
00041  -0 76000 0 00012          RTT                   TURN-OFF TAPE INDICATOR,                       F3B00200
00042   0 76100 0 00000          NOP                   IF ON.                                         F3B00210
00043   0 53400 1 02164          LXA M1ECTR,1          LOAD 5 INTO IRA TP RD ERROR CTR.               F3B00220
00044   0 76200 0 00222 M10020   RDS 146               READ TAPE 2 POSITIONED AT FORTAG TBL           F3B00230
00045   0 70000 0 02326          CPY FORTAG-1          AND TEST FIRST WORD TO GUARANTEE               F3B00240
00046   0 50000 0 02326          CLA FORTAG-1          BEGINNING OF FORTAG TABLE.                     F3B00250
00047   0 40200 0 02174          SUB M1CON+4           FORTAG IS TABLE NO. 4.                         F3B00260
00050   0 10000 0 00052          TZE M10030            TABLE NO. IS FIRST WORD OF TAPE TABLES.        F3B00270
00051   0 07400 4 00004          TSX 4,4               WRONG TABLE. IS NOT FORTAG.                    F3B00280
00052   0 70000 0 02326 M10030   CPY FORTAG-1          READ 2ND FORTAG TABLE WORD AND TEST            F3B00290
00053   0 50000 0 02326          CLA FORTAG-1          THERE ARE FORTAG ENTRIES.                      F3B00300
00054   0 10000 0 00061          TZE M10040            FORTAG TABLE ENTRIES ARE 1 WORD.               F3B00310
00055   0 53400 2 02170          LXA M1CON,2           LOAD 0 INTO INDEX REG. B.                      F3B00320
00056   0 70000 2 02327 M10035   CPY FORTAG,2          READ 3RD AND SUCCEEDING WORDS                  F3B00330
00057   1 77777 2 00056          TXI M10035,2,-1       OF FORTAG INTO CONSEC. LOCATIONS.              F3B00340
00060   0 07400 4 00004          TSX 4,4               EOF SKIP. FORTAG NOT LAST REC. OF FILE.        F3B00350
00061   0 07400 2 00064 M10040   TSX M10043,2          TEST IF TAPE READ CORRECTLY.                   F3B00360
00062   0 76100 0 00044          NOP M10020            RE-READ TAPE LOCATION.                         F3B00370
00063   0 02000 0 00075          TRA M10050            CONTINUE IN MAIN PROGRAM.                      F3B00380
00064   0 76600 0 00333 M10043   WRS 219               DELAY 704 FOR RTT TEST.                        F3B00390
00065  -0 76000 0 00012          RTT                                                                  F3B00400
00066   0 02000 0 00070          TRA M10045            TO TAPE READ ERROR ROUTINE.                    F3B00410
00067   0 02000 2 00002          TRA 2,2               TAPE 2 READ CORRECTLY. RETURN MAIN RTN.        F3B00420
00070   0 50000 2 00001 M10045   CLA 1,2               TAPE READ ERROR RTN. INITIALIZE                F3B00430
00071   0 62100 0 00073          STA M10048            TIX ADDRESS TO RETURN TO PROPER                F3B00440
00072   0 76400 0 00222          BST 146               RE-READ TAPE LOCATION.                         F3B00450
00073   2 00001 1 00000 M10048   TIX 0,1,1                                                            F3B00460
00074   0 07400 4 00004          TSX 4,4               BINARY READ 5 TIMES UNSUCCESSFULLY             F3B00470
                                         POSITIONING OF TAPE 2, TAPE 3, TAPE 4, TO READ COMPAIL       F3B00480
                                         WRITE MERGE 1, AND READ DO FILE, RESP.                       F3B00490
00075   0 77200 0 00223 M10050   REW 147               REWIND TAPE 3 TO WRITE MERGE 1.                F3B00500
00076   0 77200 0 00224          REW 148               REWIND TAPE 4 FOR COMPDO FILE.                 F3B00510
00077   0 76200 0 00224          RDS 148               SPACE OVER TRALEV THE 1ST FILE ON              F3B00520
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00100   0 70000 0 05737 M10055 CPY ERAS            TAPE 4 TO GET TO FIRST RECORD                F3B00530
00101   0 02000 0 00100        TRA M10055          OF COMPDO FILE.                              F3B00540
00102   0 02000 0 00104        TRA M10060          END OF TRALEV FILE.                          F3B00550
00103   0 02000 0 00077        TRA M10055-1        SPACE OVER NEXT TRALEV RECORD.               F3B00560
00104   0 53400 2 02170 M10060 LXA M1CON,2         LOAD 0 INTO IRB.                             F3B00570
00105   1 00021 2 00106        TXI M10060+2,2,17                                                F3B00580
00106   0 76400 0 00222        BST 146             BACKSPACE BINARY TAPE 2 BY                   F3B00590
00107   2 00001 2 00106        TIX M10060+2,2,1    13 RECORDS TO POSITION TAPE 2                F3B00600
00110   0 53400 1 02164        LXA M1ECTR,1        TO READ COMPAIL RECORD COUNT FILE.           F3B00610
00111   0 76200 0 00222 M10063 RDS 146                                                          F3B00620
00112   0 70000 0 05737        CPY ERAS                                                         F3B00630
00113   0 07400 2 00064        TSX M10043,2                                                     F3B00640
00114   0 76100 0 00111        NOP M10063          BACKSPACE TAPE 2 OVER COMPAIL                F3B00650
00115   0 53400 2 05737        LXA ERAS,2          RECORD COUNT, A EOF MARK, AND                F3B00660
00116   1 00002 2 00117        TXI M10070,2,2      OVER COMPAIL RECORDS                         F3B00670
00117   0 76400 0 00222 M10070 BST 146             TO POSITION TAPE 2 TO FIRST                  F3B00680
00120   2 00001 2 00117        TIX M10070,2,1      RECORD OF COMPAIL FILE.                      F3B00690
00121  -0 76000 0 00141        MSE 97              TURN-OFF SENSE LIGHTS 1,3, AND 4.            F3B00700
00122   0 76100 0 00000        NOP                 SENSE LIGHT 2 USED BY SEC. 2                 F3B00710
00123  -0 76000 0 00143        MSE 99              TO INDICATE TO SEC. 3 THERE                  F3B00720
00124   0 76100 0 00000        NOP                 ARE NO COMPDO INSTR IF                       F3B00730
00125  -0 76000 0 00144        MSE 100             LIGHT 2 IS ON.                               F3B00740
00126   0 76100 0 00000        NOP                                                              F3B00750
                               CHANGE TAG TABLE EDIT                                            F3B00760
00127   0 53400 4 02164 PEC00  LXA M1ECTR,4        LOAD 5 INTO IRC DR RD ERROR CTR.             F3B00770
00130   0 76200 0 00303 PEC01  RDS 195             UNEDITED CHTG TABLE ON LOG DR 3.             F3B00780
00131   0 46000 0 02170        LDA M1CON           0=DR ORG UCHTG - 2                           F3B00790
00132   0 70000 0 05737        CPY ERAS            TABLE LENGTH TO ERAS                         F3B00800
00133   0 70000 0 05740        CPY ERAS+1          CHECK SUM INTO ERAS+1.                       F3B00810
00134  -0 50000 0 05737        CAL ERAS            CHECK DRUM READ                              F3B00820
00135   0 40200 0 05740        SUB ERAS+1          TEST IF TABLE LENGTH READ                    F3B00830
00136   0 10000 0 00141        TZE PEC02           CORRECTLY FROM DRUM 3.                       F3B00840
00137   2 00001 4 00130        TIX PEC01,4,1       READ DRUM 5 TIMES IF LENGTH WRONG.           F3B00850
00140   0 07400 4 00004        TSX 4,4             DRUM READ 5 TIMES UNSUCCESSFULLY.            F3B00860
00141   0 53400 4 02164 PEC02  LXA M1ECTR,4        LOAD 5 INTO IRC DR RD ERROR CTR.             F3B00870
00142   0 50000 0 05737 PEC03  CLA ERAS            TEST IF THERE ARE ANY ENTRIES                F3B00880
00143   0 10000 0 00235        TZE PEC20           IN CHG TAG TABLE.                            F3B00890
00144   0 73400 3 00000        PAX 0,3             UNEDITED TABLE LENGTH TO IRA, IRB            F3B00900
00145   0 40200 0 00154        SUB PEC05           COMPUTE CORE ADDRESS INTO WHICH              F3B00910
00146   0 62100 0 00151        STA PEC04           CHG TAG TABLE ENTRIES TO BE                  F3B00920
00147   0 76200 0 00303        RDS 195             READ PLUS TABLE LENGTH FOR TIX OPER.         F3B00930
00150   0 46000 0 02172        LDA M1CON+2         DRUM READ ADDRESS OF 2.                      F3B00940
00151   0 70000 1 00000 PEC04  CPY 0,1             READ CHG TAG TABLE INTO UCHTG BLOCK          F3B00950
00152   2 00001 1 00151        TIX PEC04,1,1                                                    F3B00960
00153   0 53400 1 02170        LXA M1CON,1         LOAD 0 INTO IRA.                             F3B00970
00154  -0 50000 1 05263 PEC05  CAL UCHTG,1         UNEDITED CHG TAG TABLE ENTRIES CONSIST       F3B00980
00155   0 36100 1 05264        ACL UCHTG+1,1       OF 3 WORDS. TEST LOG SUM OF                  F3B00990
00156   0 40200 1 05265        SUB UCHTG+2,1       2 WORDS EQUALS DRUM CHECK                    F3B01000
00157   0 10000 0 00162        TZE PEC06           SUM FOR THE ENTRY.                           F3B01010
00160   2 00001 4 00142        TIX PEC03,4,1       DRUM READ ERROR. TRY 5 TIMES.                F3B01020
00161   0 07400 4 00004        TSX 4,4             DRUM READ 5 TIMES UNSUCCESSFULLY.            F3B01030
00162   1 77775 1 00163 PEC06  TXI PEC07,1,-3      MODIFY TABLE ADDR FOR NEXT 3 WORDS.          F3B01040
00163   2 00003 2 00154 PEC07  TIX PEC05,2,3       TEST FOR END CHG TAG BLOCK                   F3B01050
                               BEGIN EDIT OF UCHTG                                              F3B01060
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00164   0 53400 3 02170 PEC10  LXA M1CON,3          LOAD 0 INTO IRA, IRB                          F3B01070
00165   0 50000 0 05740        CLA ERAS+1           PUT UCHTG TABLE LENGTH IN ADDRESS AND         F3B01080
00166  -0 50100 0 02326        ORA FORTAG-1         FORTAG TABLE LENGTH IN DECREMENT              F3B01090
00167   0 76000 0 00006        COM 0                PORTIONS OF ACCUM.                            F3B01100
00170   0 40000 0 02212        ADD M1CON+18         OBTAIN 25 COMP OF FORTAG                      F3B01110
00171   0 62200 0 00213        STD PEC16            LENGTH AND UCHTG LENGTH AND                   F3B01120
00172   0 76700 0 00022        ALS 18               STORE IN DEC OF TEST INST.                    F3B01130
00173   0 62200 0 00211        STD PEC14                                                          F3B01140
00174   0 50000 1 02327 PEC11  CLA FORTAG,1         SUCCESSIVE DUPLICATES IN                      F3B01150
00175   0 34000 1 02330        CAS FORTAG+1,1       FORTAG TABLE NOT COMPARED TO                  F3B01160
00176   0 02000 0 00200        TRA PEC12            UCHTG TABLE ENTRIES.                          F3B01170
00177   1 77777 1 00174        TXI PEC11,1,-1       IRA KEEPS TRACK OF FORTAG ENTRIES.            F3B01180
00200   0 76700 0 00022 PEC12  ALS 18               IRC KEEPS TRACK OF UCHTG ENTRIES.             F3B01190
00201   0 60100 0 05737        STO ERAS             MOVE TAG OF CURRENT FORTAG ENTRY              F3B01200
00202   0 53400 4 02170        LXA M1CON,4          INTO DECREMENT AND COMPARE WITH               F3B01210
00203   0 50000 4 05264 PEC13  CLA UCHTG+1,4        TAG1 IN DECREMENT OF UCHTG                    F3B01220
00204  -0 32000 0 02205        ANA M1CON+13         ENTRIES. IF TAGS ARE EQUAL,                   F3B01230
00205   0 34000 0 05737        CAS ERAS             TEST FORTAG INTERNAL                          F3B01240
00206   1 77775 4 00211        TXI PEC14,4,-3       FORMULA LIES WITHIN RANGE                     F3B01250
00207   0 02000 0 00243        TRA PEC30            GIVEN IN FIRST WORD                           F3B01260
00210   1 77775 4 00211        TXI PEC14,4,-3       OF UCHTG ENTRY.                               F3B01270
D 00211 3 00000 4 00203 PEC14  TXH PEC13,4          2S COMP OF UCHTG LENGTH IN DECREMENT.         F3B01280
00212   1 77777 1 00213 PEC15  TXI PEC16,1,-1       END OF UCHTG TABLE.                           F3B01290
D 00213 3 00000 1 00174 PEC16  TXH PEC11,1          2S COMP OF FORTAG LENGTH IN DECREMENT.        F3B01300
                       END OF EDIT, COMPUTE CHTGE2                                              F3B01310
00214  -0 75400 2 00000 PEC17  PXD 0,2             END OF FORTAG TABLE.                          F3B01320
00215   0 60100 0 02274        STO CHTGL            SAVE VALUE OF IRB FROM                        F3B01330
00216   0 50000 0 02170        CLA M1CON            EDIT CHG TAG TABLE ROUTINE                    F3B01340
00217   0 60100 0 02275        STO CHTGE1           AS TABLE LENGTH CONTROL                       F3B01350
00220   0 53400 4 02170        LXA M1CON,4          WORD FOR CHANGE TAG TABLE                     F3B01360
00221   0 50000 4 05741        CLA CHTG,4           SEARCH ROUTINE AT M12500.                     F3B01370
00222   0 60100 0 02277        STO CHTGFN           CALCULATE NUMBER OF ENTRIES                   F3B01380
00223   1 77776 4 00224 PEC18  TXI PEC18+1,4,-2     IN EDITED CHG TAG TABLE WITH                  F3B01390
00224  -0 75400 4 00000        PXD 0,4              SAME INTERNAL FORMULA                         F3B01400
00225   0 40200 0 02274        SUB CHTGL            NUMBER AND RECORD IN                          F3B01410
00226   0 10000 0 00232        TZE PEC19            CONTROL WORDS CHTGE1 AND CHTGE2               F3B01420
00227   0 50000 4 05741        CLA CHTG,4           TO PREVENT SEARCHING ENTIRE                   F3B01430
00230   0 40200 0 02277        SUB CHTGFN           EDITED CHG TAG TABLE IN                       F3B01440
00231   0 10000 0 00223        TZE PEC18            SEARCH AT M12500.                             F3B01450
00232  -0 75400 4 00000 PEC19  PXD 0,4                                                           F3B01460
00233   0 60100 0 02276        STO CHTGE2                                                         F3B01470
00234   0 02000 0 00271        TRA RST000                                                         F3B01480
                       ROUTINE FOR EMPTY UCHTG TABLE                                            F3B01490
00235   0 50000 0 02170 PEC20  CLA M1CON            PLACE ZEROS INTO 3 CONTROL                    F3B01500
00236   0 60100 0 02274        STO CHTGL            WORDS FOR CHANGE TAG TABLE SEARCH             F3B01510
00237   0 60100 0 02275        STO CHTGE1           ROUTINE TO INDICATE NO ENTRIES                F3B01520
00240   0 60100 0 02276        STO CHTGE2           IN EDITED CHG TAG TABLE.                      F3B01530
00241   0 76000 0 00143        PSE 99               SENSE LIGHT 3 TURNED ON TO INDICATE           F3B01540
00242   0 02000 0 00271        TRA RST000           NO ENTRIES IN EDITED CHG TAG TABLE            F3B01550
                       SEARCH FOR INT FMLA NO OF CUR. FORTAG ENTRY IN UCHTG                     F3B01560
00243   0 50000 1 02327 PEC30  CLA FORTAG,1         TAG OF FORTAG ENTRY EQUAL                     F3B01570
00244  -0 32000 0 02205        ANA M1CON+13         TO TAG1 OF UCHTG ENTRY.                       F3B01580
00245   0 60100 0 02273        STO COMBOX           TEST FORTAG INTERNAL FORMULA                  F3B01590
00246   0 50000 4 05263        CLA UCHTG,4          NUMBER LIES WITHIN RANGE                      F3B01600
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00247 -0 32000 0 02205          ANA M1CON+13        GIVEN IN FIRST WORD OF UCHTG          F3B01610
00250  0 34000 0 02273          CAS COMBOX          ENTRY. IF RANGE CONDITION IS          F3B01620
00251  1 77775 4 00211          TXI PEC14,4,-3      SATISFIED, PRODUCE ENTRY              F3B01630
00252  1 77775 4 00211          TXI PEC14,4,-3      FOR EDITED CHG TAG TABLE.             F3B01640
00253  0 50000 4 05263          CLA UCHTG,4         EDITED CHG TAG ENTRY CONSISTS         F3B01650
00254  0 76700 0 00026          ALS 22              OF 2 WORDS. FIRST WORD HAS            F3B01660
00255  0 77100 0 00004          ARS 4               INTERNAL FORMULA NUMBER               F3B01670
00256  0 34000 0 02273          CAS COMBOX          IN DECREMENT AND ZEROS IN             F3B01680
00257  0 02000 0 00262          TRA PEC31           ADDRESS. SECOND WORD HAS              F3B01690
00260  0 02000 0 00262          TRA PEC31           TAG1 IN DECREMENT AND TAG2            F3B01700
00261  1 77775 4 00211          TXI PEC14,4,-3      IN ADDRESS TAKEN FROM 2ND             F3B01710
00262  0 50000 0 02273 PEC31    CLA COMBOX          WORD OF UCHTG ENTRY. CONTINUE         F3B01720
00263  0 60100 2 05741          STO CHTG,2          WITH FORTAG AND UCHTG TAG             F3B01730
00264  0 50000 4 05264          CLA UCHTG+1,4       COMPARISON LOOP UNTIL FORTAG          F3B01740
00265  0 60100 2 05742          STO CHTG+1,2        TABLE EXHAUSTED.                      F3B01750
00266  1 77776 2 00267          TXI PEC32,2,-2                                            F3B01760
00267  3 76646 2 00212 PEC32    TXH PEC15,2,-602    CHTG BLOCK EXCEEDS ALLOCATED 600 WORDS F3B01770
00270  0 07400 4 00004          TSX 4,4             CHTG BLOCK EXCEEDS ALLOCATED 600 WORDS. F3B01780
                                SXTX TABLE READ ROUTINE                               F3B01790
00271 -0 76000 0 00142 RST000   MSE 98              TEST IF DO FILE EMPTY.                F3B01800
00272  0 02000 0 00274          TRA RST005-1        SENSE LIGHT 2 ON INDICATES            F3B01810
00273  0 02000 0 00340          TRA M10200          NO SXTX ENTRIES.                      F3B01820
00274  0 53400 4 02164          LXA M1ECTR,4        LOAD 5 INTO IRC DR RD ERROR CTR.      F3B01830
00275  0 76200 0 00301 RST005   RDS 193            SXDTX TABLE ON LOGICAL DRUM 1,        F3B01840
00276  0 46000 0 02213          LDA M1CON+19        STARTING AT LOCATION 202              F3B01850
00277  0 70000 0 05737          CPY ERAS            1ST WORD IS ORIGIN + 2+ TAB LENGTH.   F3B01860
00300  0 70000 0 05740          CPY ERAS+1          2ND DR WD IS CK SUM FOR 1ST WD.       F3B01870
00301 -0 50000 0 05737          CAL ERAS            SXDTX TABLE ENTRY HAS 3 WORDS.        F3B01880
00302  0 40200 0 05740          SUB ERAS+1          THIRD WORD IS CHECK SUM.              F3B01890
00303  0 10000 0 00306          TZE RST020          TEST THAT FIRST 2 WORDS OFF           F3B01900
00304  2 00001 4 00275          TIX RST005,4,1      DRUM READ CORRECTLY.                  F3B01910
00305  0 07400 4 00004          TSX 4,4             DRUM READ 5 TIMES UNSUCCESSFULLY.     F3B01920
00306  0 53400 4 02164 RST020   LXA M1ECTR,4        LOAD 5 INTO IRC DR RD ERROR CTR       F3B01930
00307  0 50000 0 05737 RST021   CLA ERAS            SUBTRACT ORIGIN+2 FROM FIRST          F3B01940
00310  0 40200 0 02214          SUB M1CON+20        WORD TO GET SXDTX TABLE LENGTH.       F3B01950
00311 -0 10000 0 00314          TNZ RST030                                                F3B01960
00312  0 60100 0 02300          STO SXTXL           STORE 0 AS SXDTX LENGTH IF NO         F3B01970
00313  0 02000 0 00340          TRA M10200          ENTRIES AND GO TO READ AIL RTN.       F3B01980
00314  0 60100 0 02300 RST030   STO SXTXL          STORE SXDTX LENGTH AND LOAD           F3B01990
00315  0 73400 3 00000          PAX 0,3             SXDTX LENGTH INTO IRA, IRB.           F3B02000
00316  0 40200 0 00327          SUB RST040+3        CALC. ADDRESS TO READ IN SXTX TABLE.  F3B02010
00317  0 62100 0 00324          STA RST040          INITIAL WORD OF TABLE IS              F3B02020
00320  0 62100 0 00466          STA M10305          FORTAG + 300. INITIALIZE              F3B02030
00321  0 62100 0 00474          STA M10310+1        ADDRESSES FOR SXTX TABLE SEARCH.      F3B02040
00322  0 76200 0 00301          RDS 193             READ SXTX ENTRIES FROM                F3B02050
00323  0 46000 0 02214          LDA M1CON+20        DRUM 1, LOC. 204.                     F3B02060
00324  0 70000 2 00000 RST040   CPY 0,2             CPY LOOP                              F3B02070
00325  2 00001 2 00324          TIX RST040,2,1      SXTX TABLE LENGTH IN IRB.             F3B02080
00326  0 53400 2 02170          LXA M1CON,2                                               F3B02090
00327 -0 50000 2 03003          CAL SXTX,2          TEST LOGICAL SUM OF 1ST TWO           F3B02100
00330  0 36100 2 03004          ACL SXTX+1,2        WORDS EQUAL CHECK SUM IN 3RD          F3B02110
00331  0 40200 2 03005          SUB SXTX+2,2        WORD FOR EACH SXTX ENTRY.             F3B02120
00332  0 10000 0 00335          TZE RST060          PROGRAM AUTOMATICALLY TRIES           F3B02130
00333  2 00001 4 00307          TIX RST021,4,1      RE-READING DRUM 3 TIMES IF ERROR.     F3B02140
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00334   0 07400 4 00004         TSX 4,4                 DRUM READ 5 TIMES UNSUCCESSFULLY.          F3B02150
00335   1 77775 2 00336 RST060  TXI RST060+1,2,-3                                                  F3B02160
00336   2 00003 1 00327         TIX RST040+3,1,3        SXTX TABLE LENGTH IN IRA.                  F3B02170
00337   0 02000 0 00340         TRA M10200              SXTX TABLE IN CORES SUCCESSFULLY.          F3B02180
                                READ AIL, READ DO ROUTINES                                         F3B02190
00340   0 53400 4 02170 M10200  LXA M1CON,4             0 IN IRC WHEN SKIPPING CLOSED SRTNS.       F3B02200
00341   0 50000 0 02171 M10210  CLA M1CON+1             STORE 1 IN M1TRC, TP 2.                    F3B02210
00342   0 60100 0 02306         STO M1TRC               READ ERROR COUNTER.                        F3B02220
00343   0 76200 0 00222 M10220  RDS 146                 READ 1 RECORD OF AIL, THE 2ND              F3B02230
00344   0 53400 1 02170         LXA M1CON,1             FILE ON TP 2 ALREADY POSITIONED.           F3B02240
00345   0 70000 1 02327 M10230  CPY AIL,1               AIL REC. READ OVER FORTAG FILE.            F3B02250
00346   1 77777 1 00345         TXI M10230,1,-1         IRA GIVES POSITION IN AIL RECORD.          F3B02260
00347   0 02000 0 00521         TRA M10800              END OF AIL FILE.                           F3B02270
00350   0 76600 0 00333         WRS 219                 END OF AIL RECORD.                         F3B02280
00351  -0 76000 0 00012         RTT                                                                F3B02290
00352   0 02000 0 00501         TRA M10700              REDUNDANCY WHEN READING TP 2.              F3B02300
00353  -0 63400 1 02305 M10240  SXD M1ALWN,1            STORE 2S COMPL AIL WORD COUNT              F3B02310
00354   0 53400 1 02170         LXA M1CON,1             IN CURRENT AIL REC, USUALLY 100            F3B02320
00355  -0 75400 4 00000         PXD 0,4                 RD RTN ENTRY VIA TSX                       F3B02330
00356   0 10000 0 00360         TZE PAT1                ROUTINE TO SKIP OVER FORTRAN FUNCTIONS     F3B02340
00357   0 02000 4 00002 RET1    TRA 2,4                 IRC VALUE SET BY TSX RETURN F FCN TEST     F3B02350
00360  -0 50000 1 02327 PAT1    CAL AIL,1               A FORTRAN FCN, A CLOSED SUBRTN,            F3B02360
00361  -0 32000 1 02330         ANA AIL+1,1             IS IDENTIFIED BY 4 WORDS                   F3B02370
00362  -0 32000 1 02331         ANA AIL+2,1             FILLED WITH 1 BITS.                        F3B02380
00363  -0 32000 1 02332         ANA AIL+3,1             TEST IF AIL ENTRY IS ALL 1 BITS,           F3B02390
00364   0 60200 0 05737         SLW ERAS                INDICATES SUCCEEDING ENTRIES               F3B02400
00365   0 50000 0 05737         CLA ERAS                BELONG TO A FORTRAN FCN AND                F3B02410
00366   0 40200 0 02211         SUB M1CON+17            ARE SKIPPED OVER HERE.                     F3B02420
00367  -0 10000 0 00410         TNZ PAT5                AIL ENTRY NOT A FORTRAN FCN.               F3B02430
00370   0 50000 0 02176         CLA M1CON+6             AIL ENTRY IS A FORTRAN FCN.                F3B02440
00371   0 62200 0 00411         STD PAT5+1              STORE 1 IN DECRE. F FCN EXISTS.            F3B02450
00372   1 77774 1 00420         TXI OUT34,1,-4          TO TEST IF LAST AIL INSTR OF BUFFER.       F3B02460
00373  -0 75400 1 00000 PAT2    PXD 0,1                 COMPARE NO. CURRENT WORD OF                F3B02470
00374   0 34000 0 02305         CAS M1ALWN              AIL REC WITH AIL REC COUNT                 F3B02480
00375   0 02000 0 00400         TRA PAT3                TO TEST IF LAST INSTR IN REC.              F3B02490
00376   0 07400 4 00341         TSX M10210,4            READ NEXT AIL RECORD.                      F3B02500
00377   0 07400 4 00004         TSX 4,4                 WD COUNT NOT EQUAL TO REC COUNT            F3B02510
00400   0 50000 1 02327 PAT3    CLA AIL,1               TEST IF OPEN SUBRTN END,                   F3B02520
00401  -0 10000 0 00403         TNZ PAT4                BY 1S IN FIRST WORD OF ENTRY.              F3B02530
00402   1 77774 1 00373         TXI PAT2,1,-4           OS IN 1ST WORD INDICATES F FCN ENTRY       F3B02540
00403   0 40200 0 02211 PAT4    SUB M1CON+17            -377777777777.                             F3B02550
00404  -0 10000 0 00410         TNZ PAT5                1ST DESIRED AIL ENTRY FOUND                F3B02560
00405  -0 50000 1 02327         CAL AIL,1               TEST IF CURRENT ENTRY                      F3B02570
00406  -0 32000 1 02330         ANA AIL+1,1             AN OPEN SUBRTN END OR                      F3B02580
00407   0 02000 0 00412         TRA OUT24               ANOTHER FORTRAN FCN.                       F3B02590
00410   0 53400 4 02170 PAT5    LXA M1CON,4                                                        F3B02600
TD 00411  -3 00000 0 00426      TXL M10250              UNCON. TR TO READ IN DO RECORD.            F3B02610
00412  -0 32000 1 02331 OUT24   ANA AIL+2,1             CONTINUATION OF TEST IF                    F3B02620
00413  -0 32000 1 02332         ANA AIL+3,1             CURRENT ENTRY F FCN OR                     F3B02630
00414   0 76000 0 00006         COM                     OPEN SUBRTN ENTRY.                         F3B02640
00415  -0 32000 0 02211         ANA M1CON+17            -377777777777.                             F3B02650
00416   0 10000 0 00372         TZE PAT2-1              ENTRY INDICATES F FCN.                     F3B02660
00417   1 77774 1 00373         TXI PAT2,1,-4           OPEN SUBRTN END.                           F3B02670
00420  -0 75400 1 00000 OUT34   PXD 0,1                 COMPARE NO. CURRENT WORD OF                F3B02680
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00421   0 34000 0 02305         CAS M1ALWN          AIL REC WITH AIL REC COUNT                    F3B02690
00422   0 02000 0 00425         TRA OUT43           TO TEST IF LAST INSTR IN RECORD.              F3B02700
00423   0 07400 4 00341 OUT41   TSX M10210,4        READ NEXT AIL RECORD.                         F3B02710
00424   0 07400 4 00004         TSX 4,4             WORD COUNT EXCEEDS TOTAL COUNT IN REC.        F3B02720
00425   1 77774 1 00373 OUT43   TXI PAT2,1,-4       ADD 4 IRA, AT LEAST 1 INSTR IN ROUTINE        F3B02730
00426   0 50000 0 02171 M10250  CLA M1CON+1         STORE 1 IN M1TRC, TP 2                        F3B02740
00427   0 60100 0 02306         STO M1TRC           READ ERROR COUNTER.                           F3B02750
00430   0 76200 0 00224 M10260  RDS 148             READ 1 RECORD OF DO, THE 1ST                  F3B02760
00431   0 53400 2 02170         LXA M1CON,2         FILE ON TP 2 ALREADY POSITIONED.              F3B02770
00432   0 70000 2 02473 M10270  CPY DO,2            DO REC. READ 100 WDS BEYOND AIL.              F3B02780
00433   1 77777 2 00432         TXI M10270,2,-1     IRB GIVES POSITION IN DO RECORD.              F3B02790
00434   0 02000 0 00531         TRA M10850          TO END OF DO FILE RTN.                        F3B02800
00435   0 76600 0 00333         WRS 219             TO END OF DO RECORD RTN.                      F3B02810
00436  -0 76000 0 00012         RTT                 IF DO FILE EMPTY, NO SXTX TABLE MADE.         F3B02820
00437   0 02000 0 00511         TRA M10750          REDUNDANCY WHEN READING TP 2.                 F3B02830
00440  -0 63400 2 02304         SXD M1DOWN,2        STORE 2S COMPL DO WORD COUNT.                 F3B02840
00441   0 50000 0 02300         CLA SXTXL           TEST IF SXDTX TABLE EMPTY                     F3B02850
00442  -0 10000 0 00445         TNZ M10285-2        FROM STORED TABLE LENGTH.                     F3B02860
00443   0 53400 2 02170         LXA M1CON,2         NO SXTX ENTRIES, GO TO AIL AND DO             F3B02870
00444   0 02000 0 00454         TRA M10290          COMPILATION ROUTINES.                         F3B02880
00445  -0 63400 4 02302         SXD CBOX,4          SAVE IRC FOR TSX TEST                         F3B02890
00446   1 00004 2 00447         TXI M10285,2,4      ADD 4 IRB GET 1ST WD LAST DO INSTR.           F3B02900
00447   0 50000 2 02474 M10285  CLA DO+1,2          TEST CURRENT DO INST AN SXD                   F3B02910
00450   0 40200 0 02246         SUB M1ABC+25        BY EXAMINING 2ND WORD OF INSTR.               F3B02920
00451   0 10000 0 00463         TZE M10300          CURRENT INSTR IS SXD.                         F3B02930
00452   3 00000 2 00446         TXH M10285-1,2,0    IRB ZERO MEANS ALL DO ENTRIES                 F3B02940
00453  -0 53400 4 02302         LXD CBOX,4          IN BLOCK EXAMINED FOR SXD.                    F3B02950
00454  -0 75400 4 00000 M10290  PXD 0,4             IRC NOT ZERO AFTER 1ST DO REC                 F3B02960
00455   0 10000 0 00457         TZE M10295          IN CORES. IRC PERMITS RE-ENTRY                F3B02970
00456   0 02000 4 00002         TRA 2,4             VIA TSX TO DO + AIL CMP RTN                   F3B02980
00457  -0 76000 0 00141 M10295  MSE 97              TEST IF END AIL FILE.                         F3B02990
00460   0 02000 0 00626         TRA M11010          TO COMPARE AIL + DO FMLA NOS.                 F3B03000
00461   0 76000 0 00141         PSE 97              SENSE LIGHT 1 ON IF AIL EOF.                  F3B03010
00462   0 02000 0 00636         TRA M11030          TO COMPILE DO INSTR.                          F3B03020
00463   0 50000 2 02475 M10300  CLA DO+2,2          SEARCH SXTX TABLE FOR ENTRY                   F3B03030
00464   0 60100 0 02301         STO SXLOC           EQUAL TO ADDR PORTION GIVEN IN                F3B03040
00465   0 53400 4 02300         LXA SXTXL,4         3RD WD CURRENT SXD DO INSTR.                  F3B03050
00466   0 50000 4 00000 M10305  CLA 0,4             ADDR SXTX ORGIN PLUS LENGTH                   F3B03060
00467   0 40200 0 02301         SUB SXLOC                                                         F3B03070
00470   0 10000 0 00473         TZE M10310          SXTX ENTRY CORR TO SXD FOUND.                 F3B03080
00471   2 00003 4 00466         TIX M10305,4,3                                                    F3B03090
00472   0 02000 0 00452         TRA M10285+3        NO SXTX ENTRY CORR TO SXD FOUND.              F3B03100
00473   2 00001 4 00474 M10310  TIX M10310+1,4,1    ROUTINE PUT 2ND WORD SXTX                     F3B03110
00474   0 50000 4 00000         CLA 0,4             TABLE ENTRY INTO ADDRESS WD                   F3B03120
00475   0 60100 2 02475         STO DO+2,2          CURRENT SXD DO INSTR.                         F3B03130
00476   0 50000 0 02170         CLA M1CON           CHANGE SXD FMLA NO. TO                        F3B03140
00477   0 60100 2 02473         STO DO,2            ZEROS IN DO RECORD BUFFER.                    F3B03150
00500   0 02000 0 00452         TRA M10285+3        TO CONTINUE SXD SEARCH OF DO REC.             F3B03160
                                ERROR ROUTINES,     END OF FILE ROUTINES                          F3B03170
00501   0 50000 0 02306 M10700  CLA M1TRC           REDUNDANCY CHECK READING                      F3B03180
00502   0 40200 0 02164         SUB M1ECTR          AIL RECORD. TEST IF                           F3B03190
00503   0 10000 0 00510         TZE M1EATC          TAPE 2 READ ALREADY 5                         F3B03200
00504   0 40000 0 02165         ADD M1ECTR+1        TIMES. IF NOT, INCREASE                       F3B03210
00505   0 60100 0 02306         STO M1TRC           COUNT BY 1 IN TAPE READ                       F3B03220
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00506   0 76400 0 00222 M10705 BST 146          COUNTER AND READ AIL                          F3B03230
00507   0 02000 0 00343        TRA M10220       RECORD AGAIN.                                 F3B03240
00510   0 07400 4 00004 M1EATC TSX 4,4          AIL REC. READ 5 TIMES UNSUCCESSFULLY.         F3B03250
00511   0 50000 0 02306 M10750 CLA M1TRC        REDUNDANCY CHECK READING                      F3B03260
00512   0 40200 0 02164        SUB M1ECTR       DO RECORD. TEST IF                            F3B03270
00513   0 10000 0 00520        TZE M1EDTC       TAPE 2 READ ALREADY 5                         F3B03280
00514   0 40000 0 02165        ADD M1ECTR+1     TIMES. IF NOT, INCREASE                       F3B03290
00515   0 60100 0 02306        STO M1TRC        COUNT BY 1 IN TAPE READ                       F3B03300
00516   0 76400 0 00224 M10755 BST 148          COUNTER AND READ DO                           F3B03310
00517   0 02000 0 00430        TRA M10260       RECORD AGAIN                                  F3B03320
00520   0 07400 4 00004 M1EDTC TSX 4,4          DO REC. READ 5 TIMES UNSUCCESSFULLY.          F3B03330
00521   0 76000 0 00141 M10800 PSE 97           END OF FILE FOR AIL ROUTINE.                  F3B03340
00522  -0 76000 0 00142        MSE 98           TURN SENSE LIGHT 1 ON FOR AIL                 F3B03350
00523   0 02000 0 00526        TRA M10810       EOF AND TEST IF ENTRIES IN SXTX TBL           F3B03360
00524   0 76000 0 00142        PSE 98           BY LIGHT 2 ON.                                F3B03370
00525   0 02000 0 00536        TRA M10900       TO WR ON TP 3 INSTR IN BUFFER.                F3B03380
00526  -0 75400 4 00000 M10810 PXD 0,4          IRC ZERO IF DO FILE NOT READ YET.             F3B03390
00527   0 10000 0 00426        TZE M10250       TO READ DO FILE RECORD.                       F3B03400
00530   0 02000 0 00636        TRA M11030       TO COMPILE DO INSTRUCTIONS.                   F3B03410
00531   0 76000 0 00142 M10850 PSE 98           END OF FILE FOR DO ROUTINE.                   F3B03420
00532  -0 76000 0 00141        MSE 97           TURN SENSE LIGHT 2 ON FOR DO                  F3B03430
00533   0 02000 0 00751        TRA M12000       EOF AND TEST IF AIL AT EOF.                   F3B03440
00534   0 76000 0 00141        PSE 97                                                         F3B03450
00535   0 02000 0 00536        TRA M10900                                                     F3B03460
                               M1 TERMINAL ROUTINE                                            F3B03470
00536   0 76600 0 00223 M10900 WRS 147          ROUTINE WR ON TP 3 INSTR REMAINING            F3B03480
00537  -0 53400 2 02317        LXD BBOX,2       IN CIB BUFFER FROM CIT.                       F3B03490
00540   0 76000 0 00140        PSE 96           TURN-OFF ALL SENSE LIGHTS.                    F3B03500
00541   0 70000 1 02637 M10910 CPY CIB,1                                                      F3B03510
00542   1 77777 1 00543        TXI M10920,1,-1                                                F3B03520
00543   1 00001 2 00544 M10920 TXI M10920+1,2,1 IRB 2S COMP NO WORDS CIB BUFFER.              F3B03530
00544   3 00001 2 00541        TXH M10910,2,1                                                 F3B03540
00545   0 77000 0 00223 M10930 WEF 147          WR FORTRAN FCNS 2ND FILE TP 3.                F3B03550
00546  -0 53400 2 00411 PAT10  LXD PAT5+1,2     WRITE FORTRAN FCNS AS 2ND FILE ON TAPE 3.     F3B03560
00547   3 00000 2 00553        TXH PAT12,2,0    1 IN DECREMENT IF F FCNS IN AIL FILE.         F3B03570
00550   0 77000 0 00223 PAT11  WEF 147          WR 2ND TAPE MARK ON TP 3 FOR MERGE 1 END.     F3B03580
00551   0 76200 0 00221        RTB 1            SPACE OVER DIAGNOSTIC RECORD.                 F3B03590
00552   0 02000 0 00004        TRA 4            TO READ IN MERGE 2.                           F3B03600
00553  -0 63400 1 02166 PAT12  SXD M1ECTR+2,1                                                F3B03610
00554  -0 63400 2 02167        SXD M1ECTR+3,2                                                 F3B03620
00555   0 53400 1 02164        LXA M1ECTR,1     LOAD 5 INTO IRC TP RD ERROR CTR.              F3B03630
00556   0 76200 0 00222        RDS 146          READ AIL RECORD COUNT, THE                    F3B03640
00557   0 70000 0 05737        CPY ERAS         NEXT FILE AFTER AIL EOF                       F3B03650
00560   0 07400 2 00064        TSX M10043,2     TO BACKSPACE TP 2 TO                          F3B03660
00561   0 76100 0 00556        NOP PAT12+3      START OF AIL FILE TO GET                      F3B03670
00562  -0 53400 1 02166        LXD M1ECTR+2,1   F FCNS AT BEGINNING OF COMPAIL FILE.          F3B03680
00563  -0 53400 2 02167        LXD M1ECTR+3,2                                                 F3B03690
00564   0 53400 2 05737        LXA ERAS,2                                                     F3B03700
00565   1 00002 2 00566        TXI PAT13,2,2                                                  F3B03710
00566   0 76400 0 00222 PAT13  BST 146                                                        F3B03720
00567   2 00001 2 00566        TIX PAT13,2,1                                                  F3B03730
00570   0 76000 0 00142        PSE 98           PUT LIGHT 2 ON FOR DO EOF.                    F3B03740
00571   0 76000 0 00143        PSE 99           PUT LIGHT 3 ON FOR NO CHTG TBL.               F3B03750
00572   0 50000 0 02170        CLA M1CON        INITIALIZE BBOX WITH 0. BBOX                  F3B03760
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00573   0 60100 0 02317         STO BBOX          KEEPS COUNT OF RECORDS IN CIB BUFFER.        F3B03770
00574   0 07400 4 00341         TSX M10210,4      TO READ AIL FILE FOR FORTRAN FCNS.           F3B03780
00575   0 76100 0 00000         NOP               NOP NEEDED FOR ROUTINE AT RET1.              F3B03790
00576  -0 50000 1 02327 PAT14   CAL AIL,1         TEST FOR FORTRAN FCN. AIL                    F3B03800
00577  -0 32000 1 02330         ANA AIL+1,1       WORD ALL ONES IF A FORTRAN FCN.              F3B03810
00600  -0 32000 1 02331         ANA AIL+2,1                                                    F3B03820
00601  -0 32000 1 02332         ANA AIL+3,1                                                    F3B03830
00602   0 60200 0 05737         SLW ERAS                                                       F3B03840
00603   0 50000 0 05737         CLA ERAS                                                       F3B03850
00604   0 40200 0 02211         SUB M1CON+17                                                   F3B03860
00605  -0 10000 0 00615         TNZ OUT           ENTRY IS NOT A FORTRAN FCN.                  F3B03870
00606   1 77774 1 00607 PAT15   TXI PAT15+1,1,-4                                               F3B03880
00607  -0 75400 1 00000         PXD 0,1           TEST IF LAST WORD OF                         F3B03890
00610   0 34000 0 02305         CAS M1ALWN        AIL BUFFER.                                  F3B03900
00611   0 02000 0 00751         TRA M12000        TO AIL COMPILATION ROUTINE.                  F3B03910
00612   0 07400 4 00341 PAT16   TSX M10210,4      TO READ NEXT AIL ENTRY.                      F3B03920
00613   0 07400 4 00004         TSX 4,4           NO. OF WORDS OF AIL REC NOT A MULTIPLE OF 4  F3B03930
00614   0 02000 0 00751         TRA M12000        TO AIL COMPILATION ROUTINE.                  F3B03940
00615   1 77777 2 00616 OUT     TXI OUT1,2,-1     MAKE IRB VALUE ZERO.                         F3B03950
00616  -0 63400 2 00411 OUT1    SXD PAT5+1,2      DECREMENT ZERO MEANS NO FORTRAN FCNS.        F3B03960
00617   0 76200 0 00222 OUT13   RDS 146           SPACE OVER REMAINING                         F3B03970
00620   0 70000 0 05737 OUT14   CPY ERAS          AIL ENTRIES WHICH ARE                        F3B03980
00621   0 02000 0 00620         TRA OUT14         NOT FORTRAN FCNS TO POSITION                 F3B03990
00622   0 02000 0 00624         TRA OUT22         TAPE 2 AT END OF AIL FILE.                   F3B04000
00623   0 02000 0 00617         TRA OUT13                                                      F3B04010
00624   0 53400 1 02170 OUT22   LXA M1CON,1                                                    F3B04020
00625   0 02000 0 00536         TRA M10900        TO WR ANY F FCN ENTRIES IN CIB BUFFER.       F3B04030
                        COMPAIL INSTR USUALLY MERGED AHEAD OF COMPDO INSTR IF BOTH           F3B04040
                        HAVE SAME FMLA NO, EXCEPT FOR READ AND WRITE,WHEN DO PRECEDES        F3B04050
                        THE AIL FOR TIMING REASONS. FMLA NO. DECREMENT PART HERE.            F3B04060
                        COMPARISON OF AIL AND DO FMLA NOS AND                                F3B04070
                        COMPILATION OF DO INSTRUCTIONS                                       F3B04080
00626   0 50000 2 02473 M11010  CLA DO,2          COMPARE AIL AND DO INTERNAL                  F3B04090
00627   0 62200 0 02307         STD M1DOFN        FORMULA NOS.                                 F3B04100
00630   0 07400 4 00744 M11015  TSX ERR2,4        TEST FOR FORTRAN FCNS.                       F3B04110
00631  -0 32000 0 02205         ANA M1CON+13      +077777000000.                               F3B04120
00632   0 34000 0 02307         CAS M1DOFN              COMPARE AIL AND                        F3B04130
00633   0 02000 0 00636         TRA M11030        AIL FMLA NO GREATER DO NO.                   F3B04140
00634   0 02000 0 00667         TRA M11070        AIL FMLA NO. EQUALS DO NO.                   F3B04150
00635   0 02000 0 00751         TRA M12000        AIL FMLA NO. LESS DO NO.                     F3B04160
00636   0 53400 4 02174 M11030  LXA M1CON+4,4     COMPILE DO INSTR BY                          F3B04170
00637   0 50000 2 02473 M11031  CLA DO,2          GATHERING 4 WORDS FROM                       F3B04180
00640   0 60100 4 02326         STO M1CW+4,4      DO REC BUFFER AND PLACING                    F3B04190
00641   1 77777 2 00642         TXI M11035,2,-1   THEM IN CALLING SEQ LOCATIONS.               F3B04200
00642   2 00001 4 00637 M11035  TIX M11031,4,1                                                 F3B04210
00643   0 07400 4 00707         TSX CIT00,4       TO CIT COMPILING ROUTINE.                    F3B04220
00644   0 00000 0 02322         HTR M1CW          CALLING SEQ FOR LOCATIONS                    F3B04230
00645   0 00000 0 02323         HTR M1CW+1        OF 4 COMPILED WORDS.                         F3B04240
00646   0 00000 0 02324         HTR M1CW+2                                                     F3B04250
00647   0 00000 0 02325         HTR M1CW+3                                                     F3B04260
00650  -0 75400 2 00000         PXD 0,2           TEST IF END OF CUR DO REC                    F3B04270
00651   0 34000 0 02304         CAS M1DOWN        BY COMPARING CURRENT DO WD                   F3B04280
00652   0 02000 0 00655         TRA M11055        POSITION WITH TOTAL DO                       F3B04290
00653   0 07400 4 00426         TSX M10250,4      REC WORD COUNT.                              F3B04300
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00654   0 07400 4 00004          TSX 4,4          NO OF WORDS NOT A MULTIPLE OF 4          F3B04310
00655  -0 76000 0 00141 M11055   MSE 97           END OF AIL FILE IF LIGHT 1 ON.           F3B04320
00656   0 02000 0 00661          TRA M11060                                                F3B04330
00657   0 76000 0 00141          PSE 97           AIL AT EOF. CONTINUE                     F3B04340
00660   0 02000 0 00636          TRA M11030       COMPILING DO INSTR.                      F3B04350
00661   0 50000 2 02473 M11060   CLA DO,2         GET NEXT DO INST SAME BLOCK              F3B04360
00662  -0 32000 0 02205          ANA M1CON+13     AS PREVIOUS ONE.                         F3B04370
00663   0 34000 0 02307          CAS M1DOFN       AIL AND DO FMLA NOS IN DECREMENTS.       F3B04380
00664   0 02000 0 00626          TRA M11010       DO FMLA NO. GREATER AIL NO.              F3B04390
00665   0 76100 0 00000          NOP              DO FMLA NO. EQUALS AIL NO.               F3B04400
00666   0 02000 0 00636          TRA M11030       DO FMLA NO. LESS AIL NO.                 F3B04410
00667   1 77777 1 00670 M11070   TXI M11070+1,1,-1                                         F3B04420
00670   0 50000 1 02327          CLA AIL,1        TEST IF CURRENT AIL OPER RDS             F3B04430
00671   0 40200 0 02236          SUB M1ABC+17                                              F3B04440
00672   0 10000 0 00677          TZE M11080                                                F3B04450
00673   0 50000 1 02327          CLA AIL,1        TEST IF CURRENT AIL OPER WRS             F3B04460
00674   0 40200 0 02247          SUB M1ABC+26                                              F3B04470
00675   0 10000 0 00677          TZE M11080                                                F3B04480
00676   1 00001 1 00751          TXI M12000,1,1   RESTORE IRA CURRENT AIL VALUE.           F3B04490
00677   1 00001 1 00700 M11080   TXI ERR3,1,1     TO TEST IF SPACING TAPE.                 F3B04500
00700   0 50000 2 02473 ERR3     CLA DO,2         TEST IF BOTH AIL AND DO HAVE SAME FORMULA NO.F3B04510
00701  -0 32000 0 02206          ANA M1CON+14     DETERMINE IF DO OR AIL INSTR COMPILED FIRST. F3B04520
00702   0 10000 0 00704          TZE RET2         LXD BEFORE RDS HAS ZERO LOCATION.        F3B04530
00703   0 02000 0 00751          TRA M12000       TO COMPILE AIL INSTRUCTION.              F3B04540
00704   0 50000 0 02210 RET2     CLA M1CON+16     INCREASE AIL 1ST WD ADDRESS              F3B04550
00705  -0 60200 1 02327          ORS AIL,1        FOR SEC. 4 PURPOSES.                     F3B04560
00706   0 02000 0 00636          TRA M11030       TO COMPILE DO INSTR.                     F3B04570
                                  COMPILING ROUTINE,CIT00                                 F3B04580
00707  -0 60000 0 02314 CIT00    STQ E1C          E1C CELL FOR SAVING MQ.                  F3B04590
00710  -0 63400 1 02315          SXD E2C,1        E2C CELL FOR SAVING IRA.                 F3B04600
00711  -0 63400 2 02316          SXD E3C,2        E3C CELL FOR SAVING IRB.                 F3B04610
00712  -0 53400 2 02317          LXD BBOX,2       2S COMP NO. ALREADY IN BLOCK.            F3B04620
00713   3 77634 2 00723          TXH CIT04,2,-100 TR NO. WDS IN BLOCK LESS 100.            F3B04630
00714  -3 00000 2 00723          TXL CIT04,2,0    TR NO. WDS IN BLOCK EQUALS 0.            F3B04640
00715   0 76600 0 00223          WRS 147          WRITE-OUT BLOCK OF 100                   F3B04650
00716   0 53400 1 02170          LXA M1CON,1      WORDS WHICH MAKE UP                      F3B04660
00717   0 70000 1 02637 CIT01    CPY CIB,1        25 COMPILED INSTR. ON TP 3.              F3B04670
00720   1 77777 1 00721          TXI CIT02,1,-1                                            F3B04680
00721   1 00001 2 00722 CIT02    TXI CIT03,2,1    WRITING OF CIB BUFFER                    F3B04690
00722   3 00001 2 00717 CIT03    TXH CIT01,2,1    FINISHED WHEN IRB IS 0.                  F3B04700
00723   0 53400 1 02174 CIT04    LXA M1CON+4,1    ROUTINE TO PLACE 4 WORDS                 F3B04710
00724   0 50000 0 02171          CLA M1CON+1      OF COMPILED INSTR IN CIB                 F3B04720
00725   0 62100 0 00726          STA CIT05        BUFFER OF 100 WORDS.                     F3B04730
00726   0 50000 4 00000 CIT05    CLA 0,4          IRC CONTAINS 2S COMP LOC OF              F3B04740
00727   0 62100 0 00730          STA CIT06        CALLING SEQ LESS 1.                      F3B04750
A 00730 0 50000 0 00000 CIT06    CLA              INSTR ADDRESS SEQUENTIALLY               F3B04760
00731   0 60100 2 02637          STO CIB,2        M1CW, M1CW+1, M1CW+2                     F3B04770
00732   0 50000 0 00726          CLA CIT05        AND M1CW+3.                              F3B04780
00733   0 40000 0 02171          ADD M1CON+1                                               F3B04790
00734   0 62100 0 00726          STA CIT05                                                 F3B04800
00735   1 77777 2 00736          TXI CIT07,2,-1                                            F3B04810
00736   2 00001 1 00726 CIT07    TIX CIT05,1,1    IRA LOADED WITH 4.                       F3B04820
00737  -0 63400 2 02317          SXD BBOX,2       2S COMPL NO. WORDS ALREADY IN BLOCK.     F3B04830
00740   0 56000 0 02314          LDQ E1C          RESTORE MQ, IRA, IRB.                    F3B04840
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00741 -0 53400 1 02315         LXD E2C,1          IRA GIVES AIL REC POSITION.                    F3B04850
00742 -0 53400 2 02316         LXD E3C,2          IRB GIVES DO REC POSITION.                     F3B04860
00743  0 02000 4 00005         TRA 5,4            RETURN TO TSX ADDR PLUS 5.                     F3B04870
00744  0 50000 1 02327 ERR2    CLA AIL,1          TEST IF FORTRAN FCN DEFINED IN MIDDLE OF       F3B04880
00745  0 34000 0 02211         CAS M1CON+17       PROGRAM, BY FIRST INSTR WORD ALL ONES.         F3B04890
00746  0 02000 4 00001         TRA 1,4            RETURN TO NEXT INSTR. OF MAIN PROGRAM.         F3B04900
00747  0 07400 4 00004         TSX 4,4            FORTRAN FUNCTION IN MIDDLE OF PROGRAM          F3B04910
00750  0 07400 4 00004 ERROR3  TSX 4,4            WORD ALL 1S COMPARED HIGH TO AC WITH ALL 1S    F3B04920
                               COMPILATION OF AIL INSTRUCTIONS                                   F3B04930
00751  0 07400 4 00744 M12000  TSX ERR2,4         TEST 1ST AIL WORD ALL ONES.                    F3B04940
00752  0 62200 0 02310         STD M1ALFN         SAVE FMLA NO. 1ST INSTR ARITH BLOCK.           F3B04950
00753 -0 12000 0 01070 M12005  TMI M13000         MINUS MEANS OPEN SUBROUTINE.                   F3B04960
00754  0 53400 4 02174         LXA M1CON+4,4      COMPILE AIL INST BY                            F3B04970
00755  0 50000 1 02327 M12010  CLA AIL,1          MOVING 4 WORDS OF INSTR                        F3B04980
00756  0 60100 4 02326         STO M1CW+4,4       INTO COMPILED WORD BUFFER.                     F3B04990
00757  1 77777 1 00760         TXI M12020,1,-1                                                   F3B05000
00760  2 00001 4 00755 M12020  TIX M12010,4,1                                                    F3B05010
00761  0 50000 0 02325 M12021  CLA M1CW+3         TEST IF TAGGED INSTR, BITS 24-26.              F3B05020
00762 -0 32000 0 02207 M12022  ANA M1CON+15       1,2 OR 3 GIVEN IN TAG. ONE                     F3B05030
00763  0 10000 0 00767         TZE M12030         DIM TAGS NOT CHANGED.                          F3B05040
00764 -0 76000 0 00143         MSE 99             SENSE LIGHT 3 ON IF NO                         F3B05050
00765  0 07400 4 01016         TSX M12500,4       ENTRIES IN EDITED CHANGE                       F3B05060
00766  0 76000 0 00143         PSE 99             TAG TABLE.                                     F3B05070
00767  0 07400 4 00707 M12030  TSX CIT00,4        TO CIT COMPILING IF TAG UNCHANGED.             F3B05080
00770  0 00000 0 02322         HTR M1CW           CALLING SEQ FOR LOCATIONS                      F3B05090
00771  0 00000 0 02323         HTR M1CW+1         OF 4 COMPILED WORDS.                           F3B05100
00772  0 00000 0 02324         HTR M1CW+2                                                        F3B05110
00773  0 00000 0 02325         HTR M1CW+3                                                        F3B05120
00774 -0 75400 1 00000 M12035  PXD 0,1            TEST IF END OF CUR AIL REC                     F3B05130
00775  0 34000 0 02305         CAS M1ALWN         BY COMPARING CURRENT AIL WD                    F3B05140
00776  0 02000 0 01001         TRA M12040         POSITION WITH TOTAL AIL                        F3B05150
00777  0 07400 4 00341         TSX M10210,4       REC WORD COUNT.                                F3B05160
01000  0 07400 4 00004         TSX 4,4            NO OF WORDS OF AIL REC NOT A MULTIPLE OF 4     F3B05170
01001  0 50000 1 02327 M12040  CLA AIL,1          NEXT AIL INST SAME BLOCK AS                    F3B05180
01002 -0 32000 0 02205         ANA M1CON+13       PREVIOUS ONE. +077777000000.                   F3B05190
01003  0 34000 0 02310         CAS M1ALFN                                                        F3B05200
01004  0 02000 0 01010         TRA M12050         NEXT AIL FMLA NO. GR THAN PREV.                F3B05210
01005  0 76100 0 00000         NOP                                                               F3B05220
01006  0 50000 1 02327         CLA AIL,1          TEST IF OPEN SRTN. IF NOT,                     F3B05230
01007  0 02000 0 00753         TRA M12005         COMPILE AIL INSTR                              F3B05240
01010 -0 76000 0 00142 M12050  MSE 98             END OF DO FILE IF LIGHT 2 ON.                  F3B05250
01011  0 02000 0 00630         TRA M11015         TO CMP AIL AND DO FMLA NOS.                    F3B05260
01012  0 76000 0 00142         PSE 98                                                            F3B05270
01013  3 00001 2 00751         TXH M12000,2,1     IN THE MAIN MERGE IF IRB                       F3B05280
01014 -3 00000 2 00751         TXL M12000,2,0     ANY VALUE EXCEPT 1.                            F3B05290
01015  0 02000 0 00576         TRA PAT14          TO TEST FOR FORTRAN FCN.                       F3B05300
                               CHANGE TAG TABLE SEARCH                                           F3B05310
01016  0 50000 0 02325 M12500  CLA M1CW+3         SYMBOLIC TAG IN BINARY BITS                    F3B05320
01017  0 62100 0 02303         STA TAGBOX         24-35 4TH WD COMPILED INSTR.                   F3B05330
01020 -0 63400 4 02302         SXD CBOX,4         IRC HAS TSX RTN ADDR TO M12030.                F3B05340
01021 -0 53400 4 02275 M12503  LXD CHTGE1,4                                                      F3B05350
01022  0 50000 4 05741         CLA CHTG,4         CMP INT FMLA NO CUR AIL INSTR                  F3B05360
01023  0 34000 0 02310         CAS M1ALFN         WITH CUR CHTG TABLE BLOCK.                     F3B05370
01024  0 02000 0 01027         TRA M12510         CHTG FMLA NO GREATER AIL NO.                   F3B05380
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01025   0 02000 0 01031         TRA M12515          CHTG FMLA NO EQUALS AIL NO.                F3B05390
01026   0 02000 0 01046         TRA M12540          CHTG FMLA NO LESS AIL NO.                  F3B05400
01027  -0 53400 4 02302 M12510  LXD CBOX,4          IRC HAS TSX RTN ADDR TO                    F3B05410
01030   0 02000 4 00002         TRA 2,4             AIL COMP AT M12030.                        F3B05420
01031   0 50000 0 02276 M12515  CLA CHTGE2          SEARCH CUR CHTG BLOCK FOR                  F3B05430
01032   0 62200 0 01044         STD M12530+1        CUR AIL INST TAG                           F3B05440
01033   1 77777 4 01034 M12520  TXI M12520+1,4,-1                                              F3B05450
01034   0 50000 4 05741         CLA CHTG,4          GET TAG1 FROM 2ND WORD OF                  F3B05460
01035   0 76500 0 00022         LRS 18              CHTG TABLE.                                F3B05470
01036   0 40200 0 02303         SUB TAGBOX          TAG BOX HAS AIL TAG IN ADDR.               F3B05480
01037  -0 10000 0 01043         TNZ M12530          CHTG TAG AND AIL TAG DIFFERENT.            F3B05490
01040   0 76300 0 00022         LLS 18              CHTG AND AIL TAGS SAME, SO                 F3B05500
01041   0 62100 0 02325         STA M1CW+3          REPLACE CUR AIL TAG WITH CHTG T2.          F3B05510
01042   0 02000 0 01027         TRA M12510          RTN VIA TSX TO AIL COMP AT M12030.         F3B05520
01043   1 77777 4 01044 M12530  TXI M12530+1,4,-1   IRC ENDS CHTG BLOCK SAME FMLA NO.           F3B05530
D  01044   3 00000 4 01033         TXH M12520,4        DECREMENT IS CHTGE2 VALUE.                 F3B05540
01045   0 02000 0 01027         TRA M12510                                                     F3B05550
01046   0 50000 0 02276 M12540  CLA CHTGE2          UPDATE CHTGE1. CHTGE1 HAS IRC              F3B05560
01047   0 60100 0 02275         STO CHTGE1          VALUE TO GET 1ST ENTRY OF                  F3B05570
01050   0 40200 0 02274         SUB CHTGL           CHTG BLOCK ALL SAME FMLA NO.               F3B05580
01051  -0 10000 0 01054         TNZ M12550          CHTGL HAS 2S COMP NO WDS CHTG TABLE.       F3B05590
01052   0 76000 0 00143         PSE 99              SENSE LIGHT 3 ON MEANS CHTG                F3B05600
01053   0 02000 0 01027         TRA M12510          EMPTY OR EXHAUSTED.                        F3B05610
01054  -0 53400 4 02275 M12550  LXD CHTGE1,4        COMPUTE NEW CHTGE2. CHTGE2 IS              F3B05620
01055   0 50000 4 05741         CLA CHTG,4          DECREMENT VALUE IN M12530 TO               F3B05630
01056   0 60100 0 02277         STO CHTGFN          INDICATE LAST ENTRY IN CHTG                F3B05640
01057   1 77776 4 01060 M12555  TXI M12555+1,4,-2   BLOCK ALL WITH SAME FMLA NO.                F3B05650
01060  -0 75400 4 00000         PXD 0,4             THIS OBVIATES SEARCHING ENTIRE             F3B05660
01061   0 40200 0 02274         SUB CHTGL           CHTG TABLE WHEN TESTING AIL                F3B05670
01062   0 10000 0 01066         TZE M12570          INSTR FOR CHANGING ITS TAG.                F3B05680
01063   0 50000 4 05741         CLA CHTG,4          ROUTINE ENTERED WHEN AIL                   F3B05690
01064   0 40200 0 02277         SUB CHTGFN          FMLA NO. GREATER THAN CHTG                 F3B05700
01065   0 10000 0 01057         TZE M12555          FMLA, SO MUST UPDATE CHTGE1                F3B05710
01066  -0 63400 4 02276 M12570  SXD CHTGE2,4        AND CHTGE2 TO GET NEXT ENTRY.              F3B05720
01067   0 02000 0 01021         TRA M12503          TO CMP AIL AND CHTG FMLA NOS.              F3B05730
                                 EXPONENTIAL OPEN SUBROUTINES                                 F3B05740
01070   0 76000 0 00002 M13000  CHS                 CHANGE MINUS SIGN OF                       F3B05750
01071   0 60100 0 02322         STO M1CW            INT FMLA NO, IF ANY, TO M1CW               F3B05760
01072   1 77777 1 01073         TXI M13005,1,-1     DECREASE COUNT IN IR1                      F3B05770
01073   0 50000 1 02327 M13005  CLA AIL,1            SECOND WORD                                F3B05780
01074   0 40200 0 02237         SUB M1ABC+18        FIXED EXP, FLOATING EXP OR SPECIAL OP      F3B05790
01075   0 10000 0 01101         TZE M13020          FIXED EXPONENT                             F3B05800
~~01076~~   ~~0 40000 0 02240~~         ~~ADD M1ABC+19~~        ~~TEST FOR FLOATING POINT~~                ~~F3B05810~~
01077   0 10000 0 01102         TZE M13020+1        IF NEITHER, THEN NOT EXPONENTIAL           F3B05820
01100   1 77777 1 01304         TXI M13500,1,-1     DETERMINATION OF SPECIAL OP.               F3B05830
01101   0 76000 0 00144 M13020  PSE 100             FIXED EXP. LITE 100 ON                     F3B05840
01102   1 77777 1 01103         TXI M13020+2,1,-1   3RD WORD                                   F3B05850
01103   0 50000 1 02327         CLA AIL,1           INFO ON LOC OF ARG                         F3B05860
01104   0 60100 0 02324         STO M1CW+2          TO M1CW+2                                  F3B05870
01105   1 77777 1 01106 M13025  TXI M13025+1,1,-1                                              F3B05880
01106   0 50000 1 02327         CLA AIL,1           REL ADD AND TAG, IF ANY.                   F3B05890
01107   0 60100 0 02325         STO M1CW+3          TO M1CW+3                                  F3B05900
01110   1 77777 1 01111 M13030  TXI M13030+1,1,-1   DECREASE BY 1                              F3B05910
01111  -0 75400 1 00000         PXD 0,1             TEST FOR END OF CUR AIL REC                F3B05920
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01112   0 34000 0 02305          CAS M1ALWN          2S COMPLIMENT OF NUMBER OF WORDS                F3B05930
01113   0 02000 0 01116          TRA M13040          OF CURRENT AIL RECORD                           F3B05940
01114   0 07400 4 00341          TSX M10210,4        BACK TO READ NEXT AIL RECORD                    F3B05950
01115   0 07400 4 00004          TSX 4,4             NO OF WORDS OF AIL REC NOT A MULTIPLE OF 4      F3B05960
01116   1 77776 1 01117 M13040   TXI M13040+1,1,-2   DECREASE BY 2                                    F3B05970
01117   0 50000 0 02324          CLA M1CW+2          LOCATION OF ARGUMENT                            F3B05980
01120   0 40200 0 02241          SUB M1ABC+20        SUBTRACT A PLUS SIGN                            F3B05990
01121   0 10000 0 01212          TZE M13200          ARG IN AC                                       F3B06000
01122   0 50000 0 02324          CLA M1CW+2          LOCATION AGAIN                                  F3B06010
01123   0 40200 0 02237          SUB M1ABC+18        SUBTRACT ASTERISK                               F3B06020
01124   0 10000 0 01230          TZE M13250          ARG IN MQ                                       F3B06030
                                 ARGUMENT STORED, FIXED OR FLOATING                                  F3B06040
01125   0 50000 1 02327          CLA AIL,1           VALUE OF EXPONENT, 3RD WORD                     F3B06050
01126   0 40200 0 02176          SUB M1CON+6         OF SECOND AIL ENTRY                             F3B06060
01127  -0 10000 0 01135          TNZ M13060          EXP GREATER THAN 1                              F3B06070
01130   0 50000 0 02215          CLA M1ABC           EXP EQUALS 1, COMPILE A CLA INSTR               F3B06080
01131   0 60100 0 02323          STO M1CW+1          AND PLACE IT IN OP CODE                         F3B06090
01132  -0 76000 0 00144          MSE 100             TURN OFF SENSE LIGHT, ADJUST                    F3B06100
01133   0 76100 0 00000          NOP                 COUNT FOR NEXT AIL ENTRY, AND                   F3B06110
01134   1 77776 1 00761          TXI M12021,1,-2     TRANSFER BACK FOR CHTG SEARCH                   F3B06120
01135   0 50000 0 02325 M13060   CLA M1CW+3          EXPONENT GREATER THAN 1                         F3B06130
01136  -0 32000 0 02207          ANA M1CON+15        TEST IF TAG NEEDS CHANGING                      F3B06140
01137   0 10000 0 01143          TZE M13070          ARG TAGGED                                      F3B06150
01140  -0 76000 0 00143          MSE 99              END OF CHTG TABLE                               F3B06160
01141   0 07400 4 01016          TSX M12500,4        TRANSFER BACK TO CHTG TABLE                     F3B06170
01142   0 76000 0 00143          PSE 99              SEARCH                                          F3B06180
01143   0 07400 4 00707 M13070   TSX CITOO,4         COMPILE FIRST INST                              F3B06190
01144   0 00000 0 02322          HTR M1CW            LOCATION OF INTERNAL FORMULA NO                 F3B06200
01145   0 00000 0 02216          HTR M1ABC+1         LOCATION OF LDQ INSTRUCTION                     F3B06210
01146   0 00000 0 02324          HTR M1CW+2          LOCATION OF ARGUMENT                            F3B06220
01147   0 00000 0 02325          HTR M1CW+3          TAG                                             F3B06230
01150   0 50000 1 02327 M13080   CLA AIL,1           VALUE OF EXPONENT                               F3B06240
01151   0 40200 0 02177          SUB M1CON+7         SUBTRACT 2                                      F3B06250
01152   0 10000 0 01175          TZE M13115          EXPONENT EQUAL TO 2                             F3B06260
01153   0 62200 0 02311          STD CCOUNT          EXP-2 TO COUNT                                  F3B06270
01154  -0 76000 0 00144          MSE 100             ARG FIXED OR FLOATING                           F3B06280
01155   0 02000 0 01260          TRA M13300          FLOATING ARGUMENT                               F3B06290
01156   0 76000 0 00144          PSE 100                                                             F3B06300
                                 FIXED ARGUMENT, STORED, IN AC, INMQ, EXP GREATER THAN 2             F3B06310
01157   0 07400 4 00707 M13090   TSX CITOO,4         COMPILE INSTRUCTIONS FOR FIXED ARG.             F3B06320
01160   0 00000 0 02170          HTR M1CON           FOR THE EXPON.                                  F3B06330
01161   0 00000 0 02217          HTR M1ABC+2         ENTIAL ROUTINE. THE LOCATION                    F3B06340
01162   0 00000 0 02324          HTR M1CW+2          OF THE ARGUMENT HAS ALREADY                     F3B06350
01163   0 00000 0 02325          HTR M1CW+3          BEEN CONSIDERED, AND TH LOOP                    F3B06360
01164   0 07400 4 00707          TSX CITOO,4         WILL COMPILE N-2 PAIRS OF                       F3B06370
01165   0 00000 0 02170          HTR M1CON           MPY AND LRS INSTRUCTIONS                        F3B06380
01166   0 00000 0 02220          HTR M1ABC+3                                                         F3B06390
01167   0 00000 0 02170          HTR M1CON                                                           F3B06400
01170   0 00000 0 02203          HTR M1CON+11                                                        F3B06410
01171  -0 53400 4 02311          LXD CCOUNT,4        LOAD EXPONENT -2 IN IR 4 AND                    F3B06420
01172   1 77777 4 01173 M13110   TXI M13110+1,4,-1   COMPILE N-2 PAIRS OF INSTRUCTIONS               F3B06430
01173  -0 63400 4 02311          SXD CCOUNT,4        RESTORE CCOUNT DURING LOOP                      F3B06440
01174   3 00000 4 01157          TXH M13090,4                                                        F3B06450
01175  -0 76000 0 00144 M13115   MSE 100             ARG FIXED OR FLOATING                           F3B06460
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01176   0 02000 0 01276          TRA M13330          FLOATING ARGUMENT                          F3B06470
01177   0 07400 4 00707          TSX CIT00,4         COMPILE LAST 2 INST FOR                    F3B06480
01200   0 00000 0 02170          HTR M1CON           EXP GREATER OR EQUAL 2, IN WHICH           F3B06490
01201   0 00000 0 02217          HTR M1ABC+2         CASE WE MUST COMPILE ONLY ONE              F3B06500
01202   0 00000 0 02324          HTR M1CW+2          PAIR OF INSTRUCTIONS                       F3B06510
01203   0 00000 0 02325          HTR M1CW+3                                                     F3B06520
01204   0 07400 4 00707          TSX CIT00,4                                                    F3B06530
01205   0 00000 0 02170          HTR M1CON                                                      F3B06540
01206   0 00000 0 02221          HTR M1ABC+4                                                    F3B06550
01207   0 00000 0 02170          HTR M1CON                                                      F3B06560
01210   0 00000 0 02202          HTR M1CON+10                                                   F3B06570
01211   1 77776 1 00774          TXI M12035,1,-2     BACK TO CONTINUE AIL ROUTINES              F3B06580
                                 ARG IN AC, FIXED OR FLOATING                                   F3B06590
01212   0 50000 1 02327 M13200   CLA AIL,1           TEST TO SEE IF EXPONENT                    F3B06600
01213   0 40200 0 02176          SUB M1CON+6         EQUALS 1, IF YES, TRANSFER                 F3B06610
01214  -0 10000 0 01220          TNZ M13210          BACK TO PICK UP NEXT RECORD                F3B06620
01215  -0 76000 0 00144          MSE 100             IF NO, CONTINUE TO                         F3B06630
01216   0 76100 0 00000          NOP                 COMPILE PROPER INSTRUCTIONS                F3B06640
01217   1 77776 1 00774          TXI M12035,1,-2                                                F3B06650
01220   0 50000 0 02242 M13210   CLA M1ABC+21        EXP GREATER THAN 1,0                       F3B06660
01221   0 60100 0 02324          STO M1CW+2          STORE VALUE OF EXPONENT IN INSTR. AREA     F3B06670
01222   0 07400 4 00707          TSX CIT00,4         COMPILE FIRST INST                         F3B06680
01223   0 00000 0 02322          HTR M1CW            CALLING SEQUENCE FOR ARG-                  F3B06690
01224   0 00000 0 02222          HTR M1ABC+5         UMENT IN ACC, COMPILE                      F3B06700
01225   0 00000 0 02324          HTR M1CW+2          A STO INSTRUCTION, AND CONTINUE            F3B06710
01226   0 00000 0 02325          HTR M1CW+3          AS IF IT WERE STORED INITIALLY             F3B06720
01227   0 02000 0 01143          TRA M13070                                                     F3B06730
                                 ARG IN MQ, FIXED OR FLOATING                                   F3B06740
01230   0 50000 1 02327 M13250   CLA AIL,1           VALUE OF EXPONENT AND TEST TO              F3B06750
01231   0 40200 0 02176          SUB M1CON+6         SEE IF EXPONENT = 1, IF IT IS              F3B06760
01232  -0 10000 0 01250          TNZ M13265          EQUAL TO ONE, WE KNOW THAT                 F3B06770
01233   0 07400 4 00707          TSX CIT00,4         THE VALUE OF THE                           F3B06780
01234   0 00000 0 02322          HTR M1CW            ARGUMENT IS RETAINED AS THE                F3B06790
01235   0 00000 0 02232          HTR M1ABC+13        ANSWER.                                    F3B06800
01236   0 00000 0 02170          HTR M1CON                                                      F3B06810
01237   0 00000 0 02170          HTR M1CON                                                      F3B06820
01240   0 07400 4 00707          TSX CIT00,4                                                    F3B06830
01241   0 00000 0 02170          HTR M1CON                                                      F3B06840
01242   0 00000 0 02223          HTR M1ABC+6                                                    F3B06850
01243   0 00000 0 02170          HTR M1CON                                                      F3B06860
01244   0 00000 0 02204          HTR M1CON+12                                                   F3B06870
01245  -0 76000 0 00144          MSE 100             TURN OF SENSE LIGHT                        F3B06880
01246   0 76100 0 00000          NOP                                                            F3B06890
01247   1 77776 1 00774          TXI M12035,1,-2     BACK TO AIL ROUTINE                        F3B06900
01250   0 50000 0 02242 M13265   CLA M1ABC+21        EXP GREATER 1,                             F3B06910
01251   0 60100 0 02324          STO M1CW+2          PLACE 0100000000000IN LOCATION POS.        F3B06920
01252   0 07400 4 00707          TSX CIT00,4         COMPILE FIRST INST                         F3B06930
01253   0 00000 0 02322          HTR M1CW            ZERO                                       F3B06940
01254   0 00000 0 02224          HTR M1ABC+7         COMPILE A STQ INSTRUCTION                  F3B06950
01255   0 00000 0 02324          HTR M1CW+2          AND THEN TRANSFER TO DETER-                F3B06960
01256   0 00000 0 02325          HTR M1CW+3          MINE THE VALUE OF THE                      F3B06970
01257   0 02000 0 01150          TRA M13080          EXPONENT.                                  F3B06980
                                 FLOATING ARG, STORED, IN AC, IN MQ, EXP GREATER 2              F3B06990
01260   0 07400 4 00707 M13300   TSX CIT00,4                                                    F3B07000
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01261   0 00000 0 02170          HTR M1CON           INST COMPILING LOOP FOR FLOATING          F3B07010
01262   0 00000 0 02225          HTR M1ABC+8         ARGUMENT, COMPILE A FMP                   F3B07020
01263   0 00000 0 02324          HTR M1CW+2          INSTRUCTION, AND A LRS INSTR-             F3B07030
01264   0 00000 0 02325          HTR M1CW+3          UCTION.                                   F3B07040
01265   0 07400 4 00707          TSX CIT00,4                                                   F3B07050
01266   0 00000 0 02170          HTR M1CON           ZERO, FOR INTERNAL FMLA. NO.              F3B07060
01267   0 00000 0 02220          HTR M1ABC+3                                                   F3B07070
01270   0 00000 0 02170          HTR M1CON           PLACE 43 INDECREMENT OF                   F3B07080
01271   0 00000 0 02204          HTR M1CON+12        RELATIVE ADDRESS.                         F3B07090
01272  -0 53400 4 02311          LXD CCOUNT,4        LOAD N-2 IN IR 4                          F3B07100
01273   1 77777 4 01274 M13320   TXI M13320+1,4,-1   DECREASE COUNT BY 1                       F3B07110
01274  -0 63400 4 02311          SXD CCOUNT,4        REPLACE CCOUNT                            F3B07120
D 01275   3 00000 4 01260          TXH M13300,4        BACK TO COMILE N-2 PRS. OF INST.          F3B07130
01276   0 07400 4 00707 M13330   TSX CIT00,4         COMPILE LAST INST FOR                     F3B07140
01277   0 00000 0 02170          HTR M1CON           EXP GREATER OR EQUAL 2                    F3B07150
01300   0 00000 0 02225          HTR M1ABC+8                                                   F3B07160
01301   0 00000 0 02324          HTR M1CW+2                                                    F3B07170
01302   0 00000 0 02325          HTR M1CW+3                                                    F3B07180
01303   1 77776 1 00774          TXI M12035,1,-2     BACK TO STANDARD AIL ROUTINE              F3B07190
01304  -0 53400 4 02203 M13500   LXD M1CON+11,4      SPECIAL OPS. LOAD COUNT OF 22 IN IR 4     F3B07200
01305   0 50000 1 02327          CLA AIL,1           COMPARE SPECIAL OP. FUNCTION NAME         F3B07210
01306   0 34000 4 02273 M13505   CAS M1D+18,4        IS THIRD WORD OF 1ST AIL ENTRY            F3B07220
01307   0 02000 0 07071          TRA OP1-2           NEW ROUTINE HANDLING ADD. SUBROUTINES     F3B07230
01310   0 02000 0 01312          TRA M13510          INCONSTANT AREA                           F3B07240
01311   0 02000 0 07071          TRA OP1-2           NEW ROUTINE HANDLING ADD. SUBROUTINES     F3B07250
01312  -0 63400 4 02312 M13510   SXD CCELL,4         IRC TO CCELL                              F3B07260
01313   1 77776 1 01314          TXI M13510+2,1,-2   DECREASE CONTENTS OF IR 1 BY 2           F3B07270
01314  -0 75400 1 00000          PXD 0,1             END OF AIL REC                            F3B07280
01315   0 34000 0 02305          CAS M1ALWN          2 IS COMP. OF NO. OF WORDS OF CUR-        F3B07290
01316   0 02000 0 01321          TRA M13520          RENT AIL RECORD                           F3B07300
01317   0 07400 4 00341          TSX M10210,4        TO GET NEXT AIL RECORD                    F3B07310
01320   0 07400 4 00004          TSX 4,4             NO OF WORDS OF AIL REC NOT A MULTIPLE OF 4 F3B07320
01321  -0 53400 4 02312 M13520   LXD CCELL,4                                                   F3B07330
01322   0 02000 4 01345 M13525   TRA M13525+19,4     CHOOSE APPROPRIATE SPECIAL OP BRANCH      F3B07340
01323   1 77776 1 01345          TXI M13550,1,-2     (XABS)                                    F3B07350
01324   1 77776 1 01345          TXI M13550,1,-2     (ABS)                                     F3B07360
01325   1 77776 1 01412          TXI M13600,1,-2     (XINT)                                    F3B07370
01326   1 77776 1 01411          TXI M13595,1,-2     (INT)                                     F3B07380
01327   1 77776 1 01412          TXI M13600,1,-2     (XFIX)                                    F3B07390
01330   1 77776 1 02063          TXI M13900,1,-2     (FLOAT)                                   F3B07400
01331   1 77776 1 01513          TXI M13680,1,-2     (XMOD)                                    F3B07410
01332   1 77776 1 01514          TXI M13681,1,-2     (MOD)                                     F3B07420
01333   1 77776 1 01514          TXI M13681,1,-2     (XSIGN)                                   F3B07430
01334   1 77776 1 01514          TXI M13681,1,-2     (SIGN)                                    F3B07440
01335   1 77776 1 01514          TXI M13681,1,-2     (XMAX0 )                                  F3B07450
01336   1 77776 1 01514          TXI M13681,1,-2     (MAX1 0                                   F3B07460
01337   1 77776 1 01513          TXI M13680,1,-2     (XMAX1B)                                  F3B07470
01340   1 77776 1 01513          TXI M13680,1,-2     (MAX0B)                                   F3B07480
01341   1 77776 1 01514          TXI M13681,1,-2     (XMIN0B)                                  F3B07490
01342   1 77776 1 01514          TXI M13681,1,-2     (MINIBO)                                  F3B07500
01343   1 77776 1 01513          TXI M13680,1,-2     (XMINIB)                                  F3B07510
01344   1 77776 1 01513          TXI M13680,1,-2     (MINOBO)                                  F3B07520
                                  XABS, ABS BRANCH                                          F3B07530
01345   0 07400 4 02156 M13550   TSX ERROR1+1,4      INFO ON LOC OF ARG, CHECK FOR ALL 1S      F3B07540
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01346  0 60100 0 02324          STO M1CW+2          TO M1CW+2                          F3B07550
01347  1 77777 1 01350          TXI M13555,1,-1     INCREMENT IR 1.                    F3B07560
01350  0 50000 1 02327 M13555   CLA AIL,1          REL ADD AND TAG, IF ANY,           F3B07570
01351  0 60100 0 02325          STO M1CW+3          TO M1CW+3                          F3B07580
01352  0 50000 0 02324          CLA M1CW+2          LOCATION OF ARGUMENT               F3B07590
01353  0 40200 0 02241          SUB M1ABC+20        SUBTRACT PLUS SIGN                 F3B07600
01354  0 10000 0 01373          TZE M13575          ARG IN AC                          F3B07610
01355  0 50000 0 02324          CLA M1CW+2          LOCATION OF ARGUMENT               F3B07620
01356  0 40200 0 02237          SUB M1ABC+18        ONE ASTERISK                       F3B07630
01357  0 10000 0 01401          TZE M13580          ARG IN MQ                          F3B07640
                                 ARG STORED                                           F3B07650
01360  0 50000 0 02325          CLA M1CW+3          RELATIVE ADDRESS AND TAG (IF ANY)  F3B07660
01361 -0 32000 0 02207          ANA M1CON+15        ARG TAGGED,                        F3B07670
01362  0 10000 0 01366          TZE M13570          ARG NOT TAGGED                     F3B07680
01363 -0 76000 0 00143          MSE 99              END OF CHTG TABLE                  F3B07690
01364  0 07400 4 01016          TSX M12500,4        CHANGE TAG TABLE SEARCH            F3B07700
01365  0 76000 0 00143          PSE 99                                                 F3B07710
01366  0 07400 4 00707 M13570   TSX CIT00,4         COMPILE FIRST INST                 F3B07720
01367  0 00000 0 02322          HTR M1CW            INTERNAL FMLA NO.                  F3B07730
01370  0 00000 0 02215          HTR M1ABC           COMPILE ACLA INSTRUCTION           F3B07740
01371  0 00000 0 02324          HTR M1CW+2                                             F3B07750
01372  0 00000 0 02325          HTR M1CW+3                                             F3B07760
                                 ARG IN AC,(STORED)                                   F3B07770
01373  0 07400 4 00707 M13575   TSX CIT00,4         COMPILE FIRST (SECOND) INST        F3B07780
01374  0 00000 0 02170          HTR M1CON           ZERO                               F3B07790
01375  0 00000 0 02226          HTR M1ABC+9         SSP                                F3B07800
01376  0 00000 0 02170          HTR M1CON           ZERO                               F3B07810
01377  0 00000 0 02170          HTR M1CON           ZERO                               F3B07820
01400  1 77777 1 00774          TXI M12035,1,-1     AIL ROUTINE                        F3B07830
                                 ARG IN MQ                                            F3B07840
01401  0 50000 0 02242 M13580   CLA M1ABC+21        010000000000                       F3B07850
01402  0 60100 0 02324          STO M1CW+2          LOCATION OF ARG                    F3B07860
01403  0 07400 4 00707          TSX CIT00,4         COMPILE FIRST INST                 F3B07870
01404  0 00000 0 02322          HTR M1CW            INT. FMLA NO.                      F3B07880
01405  0 00000 0 02224          HTR M1ABC+7         STQ                                F3B07890
01406  0 00000 0 02324          HTR M1CW+2                                             F3B07900
01407  0 00000 0 02325          HTR M1CW+3                                             F3B07910
01410  0 02000 0 01366          TRA M13570          COMPILE INSTRUCTION AS IF STORED   F3B07920
                                 XFIX, XINT, INT BRANCH                               F3B07930
01411  0 76000 0 00144 M13595   PSE 100             FLOATING PT                        F3B07940
01412  0 07400 4 02156 M13600   TSX ERROR1+1,4              INFO ON LOC OF ARG        F3B07950
01413  0 60100 0 02324          STO M1CW+2          TO M1CW+2                          F3B07960
01414  1 77777 1 01415          TXI M13605,1,-1                                        F3B07970
01415  0 50000 1 02327 M13605   CLA AIL,1           REL ADD AND TAG, IF ANY,           F3B07980
01416  0 60100 0 02325          STO M1CW+3          TO M1CW+3                          F3B07990
01417  0 50000 0 02324          CLA M1CW+2          LOCATION OF ARG.                   F3B08000
01420  0 40200 0 02241          SUB M1ABC+20        PLUS SIGN                          F3B08010
01421  0 10000 0 01440          TZE M13630          ARG IN AC                          F3B08020
01422  0 50000 0 02324          CLA M1CW+2          LOCATION OF ARG.                   F3B08030
01423  0 40200 0 02237          SUB M1ABC+18        ASTERISK                           F3B08040
01424  0 10000 0 01503          TZE M13670          ARG IN MQ                          F3B08050
                                 ARG STORED                                           F3B08060
01425  0 50000 0 02325          CLA M1CW+3          4TH WORD                           F3B08070
01426 -0 32000 0 02207          ANA M1CON+15        ARG TAGGED                         F3B08080
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01427  0 10000 0 01433          TZE M13620          NOT TAGGED                                F3B08090
01430 -0 76000 0 00143          MSE 99              END OF CHTG TABLE                         F3B08100
01431  0 07400 4 01016          TSX M12500,4        CHTG TABLE SEARCH                         F3B08110
01432  0 76000 0 00143          PSE 99                                                        F3B08120
01433  0 07400 4 00707 M13620   TSX CIT00,4         COMPILE FIRST INST                        F3B08130
01434  0 00000 0 02322          HTR M1CW            INT. FMLA NO. IF ANY.                     F3B08140
01435  0 00000 0 02215          HTR M1ABC           CLA INSTRUCTION                           F3B08150
01436  0 00000 0 02324          HTR M1CW+2                                                    F3B08160
01437  0 00000 0 02325          HTR M1CW+3                                                    F3B08170
                                    ARG IN AC(STORED)                                         F3B08180
01440  0 07400 4 00707 M13630   TSX CIT00,4         COMPILE FIRST (SECOND) INST               F3B08190
01441  0 00000 0 02170          HTR M1CON           ZERO                                      F3B08200
01442  0 00000 0 02227          HTR M1ABC+10        UFA OP CODE                               F3B08210
01443  0 00000 0 02243          HTR M1ABC+22        060000000000                              F3B08220
01444  0 00000 0 02170          HTR M1CON           ZERO                                      F3B08230
01445 -0 76000 0 00144          MSE 100             TEST FOR FLOATING PT.                     F3B08240
01446  0 02000 0 01450          TRA M13640          XINT                                      F3B08250
01447  0 02000 0 01475          TRA M13660          INT                                       F3B08260
                                    XFIX, XINT, ARG STORED, IN AC, IN MQ                      F3B08270
01450  0 07400 4 00707 M13640   TSX CIT00,4         COMPILE 4 INST                            F3B08280
01451  0 00000 0 02170          HTR M1CON           ZERO                                      F3B08290
01452  0 00000 0 02220          HTR M1ABC+3         LRS INSTRUCTION                           F3B08300
01453  0 00000 0 02170          HTR M1CON           ZERO                                      F3B08310
01454  0 00000 0 02170          HTR M1CON           ZERO                                      F3B08320
01455  0 07400 4 00707          TSX CIT00,4                                                   F3B08330
01456  0 00000 0 02170          HTR M1CON                                                     F3B08340
01457  0 00000 0 02230          HTR M1ABC+11        ANA                                       F3B08350
01460  0 00000 0 02243          HTR M1ABC+22        060000000000                              F3B08360
01461  0 00000 0 02176          HTR M1CON+6                                                   F3B08370
01462  0 07400 4 00707          TSX CIT00,4         +000001000000                             F3B08380
01463  0 00000 0 02170          HTR M1CON                                                     F3B08390
01464  0 00000 0 02223          HTR M1ABC+6         LLS                                       F3B08400
01465  0 00000 0 02170          HTR M1CON                                                     F3B08410
01466  0 00000 0 02170          HTR M1CON                                                     F3B08420
01467  0 07400 4 00707          TSX CIT00,4                                                   F3B08430
01470  0 00000 0 02170          HTR M1CON                                                     F3B08440
01471  0 00000 0 02221          HTR M1ABC+4         ALS                                       F3B08450
01472  0 00000 0 02170          HTR M1CON                                                     F3B08460
01473  0 00000 0 02203          HTR M1CON+11        +000022000000                             F3B08470
01474  1 77777 1 00774          TXI M12035,1,-1     CONTINUE WITH ROUTINE                     F3B08480
                                    INT, ARG STORED, IN AC, IN MQ                             F3B08490
01475  0 07400 4 00707 M13660   TSX CIT00,4         COMPILE 1 INST                            F3B08500
01476  0 00000 0 02170          HTR M1CON                                                     F3B08510
01477  0 00000 0 02231          HTR M1ABC+12        FAD                                       F3B08520
01500  0 00000 0 02243          HTR M1ABC+22        060000000000                              F3B08530
01501  0 00000 0 02170          HTR M1CON           ZERO                                      F3B08540
01502  1 77777 1 00774          TXI M12035,1,-1     CONTINUE WITH AIL ROUTINE                 F3B08550
                                    XFIX, XINT, INT, ARG IN MQ                                F3B08560
01503  0 50000 0 02242 M13670   CLA M1ABC+21        COMPILE FIRST INST                        F3B08570
01504  0 60100 0 02324          STO M1CW+2          010000000000                              F3B08580
01505  0 07400 4 00707          TSX CIT00,4                                                   F3B08590
01506  0 00000 0 02322          HTR M1CW            INT. FMLA NO.                             F3B08600
01507  0 00000 0 02224          HTR M1ABC+7         STQ                                       F3B08610
01510  0 00000 0 02324          HTR M1CW+2                                                    F3B08620
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01511   0 00000 0 02325          HTR M1CW+3                                          F3B08630
01512   0 02000 0 01433          TRA M13620          TRANSFER TO CONTINUE AS STORED  F3B08640
                                 ALL MUTIVARIATE FUNCTIONS                           F3B08650
01513   0 76000 0 00144 M13680   PSE 100             PLACE SENSE SW. ON FOR FIXPT.   F3B08660
01514   0 50000 1 02325 M13681   CLA AIL-2,1         TEST INTERNAL FORMULA NO.       F3B08670
01515   0 40200 0 02211          SUB M1CON+17        -377777777777. SHOULD BE AT     F3B08680
01516   0 10000 0 02155          TZE ERROR1          LEAST TWO ARGUMENTS FOR MULTIVARIATE FCNS. F3B08690
01517   0 50000 1 02327          CLA AIL,1           LOCATION OF ARGUMENT            F3B08700
01520   0 60100 0 02324 RET3     STO M1CW+2          LOCATION OF ARGUMENT            F3B08710
01521   1 77777 1 01522          TXI M13685,1,-1     ADJUST COUNT IN IR 1.           F3B08720
01522   0 50000 1 02327 M13685   CLA AIL,1           REL ADD + TAG OF                F3B08730
01523   0 60100 0 02325          STO M1CW+3          FIRST ARG TO M1CW+3             F3B08740
01524   1 77777 1 01525          TXI M13690,1,-1                                     F3B08750
01525  -0 75400 1 00000 M13690   PXD 0,1             END OF AIL REC                  F3B08760
01526   0 34000 0 02305          CAS M1ALWN          2S COMPLIMENT OF NO. OF WORDS   F3B08770
01527   0 02000 0 01532          TRA M13700          IN AIL RECORD                   F3B08780
01530   0 07400 4 00341          TSX M10210,4        BRING IN NEXT AIL REC.          F3B08790
01531   0 07400 4 00004          TSX 4,4             NO OF WORDS OF AIL REC NOT A MULTIPLE OF 4 F3B08800
01532   0 50000 0 02325 M13700   CLA M1CW+3          REL. ADDRESS + TAG, IF ANY      F3B08810
01533  -0 32000 0 02207          ANA M1CON+15        +000000002000                   F3B08820
01534   0 10000 0 01540          TZE M13710          FIRST ARG TAGGED                F3B08830
01535  -0 76000 0 00143          MSE 99              END OF CHTG TABLE               F3B08840
01536   0 07400 4 01016          TSX M12500,4        CHTG TABLE SEARCH               F3B08850
01537   0 76000 0 00143          PSE 99                                              F3B08860
01540   0 50000 0 02201 M13710   CLA M1CON+9         SIGN, MODULO OR MAX, MIN        F3B08870
01541   0 34000 0 02312          CAS CCELL           COMPARE TO 10                   F3B08880
01542   0 76100 0 00000          NOP                                                 F3B08890
01543   0 02000 0 01706          TRA M13770          MAX OR MIN BRANCH               F3B08900
01544   0 50000 0 02175          CLA M1CON+5         SIGN OR MODULO, +000012000000   F3B08910
01545   0 34000 0 02312          CAS CCELL                                           F3B08920
01546   0 76100 0 00000          NOP                                                 F3B08930
01547   0 02000 0 02122          TRA M13950          SIGN BRANCH                     F3B08940
01550  -0 76000 0 00144          MSE 100             XMOD OR MOD                     F3B08950
01551   0 02000 0 01604          TRA M13735          FLOATING PT., MOD BRANCH        F3B08960
                                 XMOD BRANCH                                         F3B08970
01552   0 07400 4 00707          TSX CIT00,4         COMPILE 3 INST, FOR MULTIVARIATE F3B08980
01553   0 00000 0 02322          HTR M1CW            XMOD.                           F3B08990
01554   0 00000 0 02232          HTR M1ABC+13        CLM                             F3B09000
01555   0 00000 0 02170          HTR M1CON                                           F3B09010
01556   0 00000 0 02170          HTR M1CON                                           F3B09020
01557   0 07400 4 00707          TSX CIT00,4                                         F3B09030
01560   0 00000 0 02170          HTR M1CON                                           F3B09040
01561   0 00000 0 02216          HTR M1ABC+1         LDQ                             F3B09050
01562   0 00000 0 02324          HTR M1CW+2          A                               F3B09060
01563   0 00000 0 02325          HTR M1CW+3                                          F3B09070
01564   0 07400 4 00707          TSX CIT00,4                                         F3B09080
01565   0 00000 0 02170          HTR M1CON                                           F3B09090
01566   0 00000 0 02223          HTR M1ABC+6         LLS                             F3B09100
01567   0 00000 0 02170          HTR M1CON                                           F3B09110
01570   0 00000 0 02170          HTR M1CON                                           F3B09120
01571   0 50000 0 02170          CLA M1CON           ZERO, TO REPLACE 1,S.           F3B09130
01572   0 60100 0 02322          STO M1CW            INTERNAL FMLA NO.               F3B09140
01573   0 50000 0 02233          CLA M1ABC+14        DVP OP CODE                     F3B09150
01574   0 60100 0 02323          STO M1CW+1                                          F3B09160
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01575  1 77776 1 01576        TXI M13725,1,-2     DECREASE IR 1 BY 2                          F3B09170
01576  0 07400 4 02156 M13725 TSX ERROR1+1,4      CHECK FOR END OF CALLING SEQUENCE           F3B09180
01577  0 60100 0 02324        STO M1CW+2          SYMBOLIC ADDRESS OF 2ND ARGUM.              F3B09190
01600  1 77777 1 01601        TXI M13730,1,-1                                                 F3B09200
01601  0 50000 1 02327 M13730 CLA AIL,1           REL ADD AND TAG OF                          F3B09210
01602  0 60100 0 02325        STO M1CW+3          SECOND ARG TO M1CW+3                        F3B09220
01603  1 77777 1 00762        TXI M12022,1,-1     BACK TO END OF AIL ROUTINE                  F3B09230
                              MOD BRANCH                                                      F3B09240
01604  0 07400 4 00707 M13735 TSX CIT00,4         COMPILE FIRST INST                          F3B09250
01605  0 00000 0 02322        HTR M1CW                                                        F3B09260
01606  0 00000 0 02250        HTR M1ABC+27        CLS A                                       F3B09270
01607  0 00000 0 02324        HTR M1CW+2                                                      F3B09280
01610  0 00000 0 02325        HTR M1CW+3                                                      F3B09290
01611  0 50000 0 02324        CLA M1CW+2          SAVE FIRST ARG IN 3RD WORD                  F3B09300
01612  0 60100 0 02320        STO 3WD                                                         F3B09310
01613  0 50000 0 02325        CLA M1CW+3          SAVE REL ADD AND TAG IN 4WD                 F3B09320
01614  0 60100 0 02321        STO 4WD                                                         F3B09330
01615  1 77776 1 01616        TXI M13741,1,-2                                                 F3B09340
01616  0 07400 4 02156 M13741 TSX ERROR1+1,4      CHECK THAT NEXT WORD IS LAST ARG.           F3B09350
01617  0 60100 0 02324        STO M1CW+2          SYMBOLIC AD OF 2ND ARG.                     F3B09360
01620  1 77777 1 01621        TXI M13745,1,-1                                                 F3B09370
01621  0 50000 1 02327 M13745 CLA AIL,1           REL ADD AND TAG OF                          F3B09380
01622  0 60100 0 02325        STO M1CW+3          SECOND ARG TO M1CW+3                        F3B09390
01623 -0 32000 0 02207        ANA M1CON+15        TEST IF TAGGED                              F3B09400
01624  0 10000 0 01630        TZE M13755          SECOND ARG TAGGED                           F3B09410
01625 -0 76000 0 00143        MSE 99              END OF CHTG TABLE                           F3B09420
01626  0 07400 4 01016        TSX M12500,4        BACK TO AIL ROUTINE                         F3B09430
01627  0 76000 0 00143        PSE 99                                                          F3B09440
01630  0 07400 4 00707 M13755 TSX CIT00,4         COMPILE LAST 9 INSTS                        F3B09450
01631  0 00000 0 02170        HTR M1CON                                                       F3B09460
01632  0 00000 0 02234        HTR M1ABC+15        FDP B                                       F3B09470
01633  0 00000 0 02324        HTR M1CW+2                                                      F3B09480
01634  0 00000 0 02325        HTR M1CW+3                                                      F3B09490
01635  0 07400 4 00707        TSX CIT00,4                                                     F3B09500
01636  0 00000 0 02170        HTR M1CON                                                       F3B09510
01637  0 00000 0 02224        HTR M1ABC+7         STQ                                         F3B09520
01640  0 00000 0 02242        HTR M1ABC+21        010000000000                                F3B09530
01641  0 00000 0 02170        HTR M1CON                                                       F3B09540
01642  0 07400 4 00707        TSX CIT00,4                                                     F3B09550
01643  0 00000 0 02170        HTR M1CON                                                       F3B09560
01644  0 00000 0 02215        HTR M1ABC           CLA                                         F3B09570
01645  0 00000 0 02242        HTR M1ABC+21        010000000000                                F3B09580
01646  0 00000 0 02170        HTR M1CON                                                       F3B09590
01647  0 07400 4 00707        TSX CIT00,4                                                     F3B09600
01650  0 00000 0 02170        HTR M1CON                                                       F3B09610
01651  0 00000 0 02227        HTR M1ABC+10        UFA                                         F3B09620
01652  0 00000 0 02243        HTR M1ABC+22        060000000000                                F3B09630
01653  0 00000 0 02170        HTR M1CON                                                       F3B09640
01654  0 07400 4 00707        TSX CIT00,4                                                     F3B09650
01655  0 00000 0 02170        HTR M1CON                                                       F3B09660
01656  0 00000 0 02231        HTR M1ABC+12        FAD                                         F3B09670
01657  0 00000 0 02243        HTR M1ABC+22        060000000000                                F3B09680
01660  0 00000 0 02170        HTR M1CON                                                       F3B09690
01661  0 07400 4 00707        TSX CIT00,4                                                     F3B09700
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01662  0 00000 0 02170          HTR M1CON                                                  F3B09710
01663  0 00000 0 02222          HTR M1ABC+5          STO                                   F3B09720
01664  0 00000 0 02242          HTR M1ABC+21         060000000000                          F3B09730
01665  0 00000 0 02170          HTR M1CON                                                  F3B09740
01666  0 07400 4 00707          TSX CIT00,4                                                F3B09750
01667  0 00000 0 02170          HTR M1CON                                                  F3B09760
01670  0 00000 0 02216          HTR M1ABC+1          LDQ                                   F3B09770
01671  0 00000 0 02242          HTR M1ABC+21         060000000000                          F3B09780
01672  0 00000 0 02170          HTR M1CON                                                  F3B09790
01673  0 07400 4 00707          TSX CIT00,4                                                F3B09800
01674  0 00000 0 02170          HTR M1CON                                                  F3B09810
01675  0 00000 0 02225          HTR M1ABC+8          FMP                                   F3B09820
01676  0 00000 0 02324          HTR M1CW+2           B                                     F3B09830
01677  0 00000 0 02325          HTR M1CW+3                                                 F3B09840
01700  0 07400 4 00707          TSX CIT00,4                                                F3B09850
01701  0 00000 0 02170          HTR M1CON                                                  F3B09860
01702  0 00000 0 02231          HTR M1ABC+12         FAD                                   F3B09870
01703  0 00000 0 02320          HTR 3WD              A                                     F3B09880
01704  0 00000 0 02321          HTR 4WD                                                    F3B09890
01705  1 77777 1 00774          TXI M12035,1,-1      AIL ROUTINE                           F3B09900
                                   MAX, MIN BRANCH                                         F3B09910
01706  0 50000 0 02200 M13770   CLA M1CON+8          +000004000000                         F3B09920
01707  0 34000 0 02312          CAS CCELL            FOR MIN BRANCH                        F3B09930
01710  0 76100 0 00000          NOP                                                        F3B09940
01711  0 02000 0 02017          TRA M13855           MIN BRANCH                            F3B09950
                                   ALL MAX ROUTINES                                        F3B09960
01712  0 07400 4 00707          TSX CIT00,4          COMPILE FIRST INST                    F3B09970
01713  0 00000 0 02322          HTR M1CW                                                   F3B09980
01714  0 00000 0 02215          HTR M1ABC            CLA A1                                F3B09990
01715  0 00000 0 02324          HTR M1CW+2           SYMBOLIC ADDRESS OF FIRST ARGUMENT    F3B10000
01716  0 00000 0 02325          HTR M1CW+3           RELATIVE ADDRESS + TAG, IF ANY        F3B10010
01717  0 50000 1 02327 M13780   CLA AIL,1            END MARK, IF ANY, TO ENDT, THIS WILL  F3B10020
01720  0 60100 0 02313          STO ENDT             BE ALL 1S IF END.                     F3B10030
01721  1 77776 1 01722          TXI M13785,1,-2                                            F3B10040
01722  0 50000 1 02327 M13785   CLA AIL,1            SYMBOLIC ADDRESS OF ITH ARG, I EQUAL 2,...,N F3B10050
01723  0 60100 0 02324          STO M1CW+2           TO M1CW+2                             F3B10060
01724  1 77777 1 01725          TXI M13790,1,-1                                            F3B10070
01725  0 50000 1 02327 M13790   CLA AIL,1            REL ADD AND TAG OF                    F3B10080
01726  0 60100 0 02325          STO M1CW+3           ITH ARG TO M1CW+3                     F3B10090
01727 -0 32000 0 02207          ANA M1CON+15         TEST IF ITHARGUMENT TAGGED            F3B10100
01730  0 10000 0 01734          TZE M13800           ITH ARG NOT TAGGED                    F3B10110
01731 -0 76000 0 00143          MSE 99               END OF CHTG TABLE                     F3B10120
01732  0 07400 4 01016          TSX M12500,4         CHTG TABLE SEARCH                     F3B10130
01733  0 76000 0 00143          PSE 99                                                     F3B10140
01734  0 50000 0 02200 M13800   CLA M1CON+8          000004000000                          F3B10150
01735  0 34000 0 02312          CAS CCELL            COMPARE FOR MINIMUM BR.               F3B10160
01736  0 76100 0 00000          NOP                                                        F3B10170
01737  0 02000 0 02025          TRA M13860           MIN BRANCH                            F3B10180
01740  0 07400 4 00707          TSX CIT00,4          COMPILE 3 INSTRUCTIONS FOR            F3B10190
01741  0 00000 0 02170          HTR M1CON            ITH ARG                               F3B10200
01742  0 00000 0 02216          HTR M1ABC+1          LDQ                                   F3B10210
01743  0 00000 0 02324          HTR M1CW+2           ITH ARGUMENT I=2....,N                F3B10220
01744  0 00000 0 02325          HTR M1CW+3                                                 F3B10230
01745  0 07400 4 00707          TSX CIT00,4                                                F3B10240
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01746  0 00000 0 02170          HTR M1CON                                                    F3B10250
01747  0 00000 0 02235          HTR M1ABC+16        TLQ                                      F3B10260
01750  0 00000 0 02245          HTR M1ABC+24        +170000000000                            F3B10270
01751  0 00000 0 02177          HTR M1CON+7         +000002000000                            F3B10280
01752  0 07400 4 00707          TSX CIT00,4                                                  F3B10290
01753  0 00000 0 02170          HTR M1CON                                                    F3B10300
01754  0 00000 0 02215          HTR M1ABC           CLA AI                                   F3B10310
01755  0 00000 0 02324          HTR M1CW+2                                                   F3B10320
01756  0 00000 0 02325          HTR M1CW+3                                                   F3B10330
01757  0 50000 0 02313          CLA ENDT            I=N                                      F3B10340
01760  0 40200 0 02211          SUB M1CON+17        -377777777777                            F3B10350
01761  0 10000 0 01771          TZE M13830          LAST ARGUMENT                            F3B10360
01762  1 77777 1 01763          TXI M13820,1,-1                                              F3B10370
01763 -0 75400 1 00000 M13820   PXD 0,1             END OF AIL REC                           F3B10380
01764  0 34000 0 02305          CAS M1ALWN          2S COMPL. OF NO. OF WORS OF AIL REC      F3B10390
01765  0 02000 0 01717          TRA M13780          TO COMPILE INSTR. FOR ALL ARGUMENTS      F3B10400
01766  0 07400 4 00341          TSX M10210,4        PACK TO READ NEXT AIL RECORD             F3B10410
01767  0 07400 4 00004          TSX 4,4             NO OF WORDS OF AIL REC NOT A MULTIPLE OF 4 F3B10420
01770  0 02000 0 01717          TRA M13780                                                   F3B10430
01771 -0 76000 0 00144 M13830   MSE 100             TEST FOR FIXED PT AND TURN OFF SW.       F3B10440
01772  1 77777 1 00774          TXI M12035,1,-1     OUT FOR XMAX0, MAX1, XMIN0, MINI         F3B10450
01773  0 50000 0 02312          CLA CCELL           NO. OF FUNCTION FIXED MAX.               F3B10460
01774  0 77100 0 00022          ARS 18                                                       F3B10470
01775  0 76000 0 00001          LBT                 TEST FOR FLOATING MAX OR MIN             F3B10480
01776  0 02000 0 01440          TRA M13630          XMAX1, XMIN1, FIXED MAX OR MIN           F3B10490
01777  0 07400 4 00707          TSX CIT00,4         COMPILE LAST 3 INSTRUCTIONS              F3B10500
02000  0 00000 0 02170          HTR M1CON           FOR MAX0, MIN0                           F3B10510
02001  0 00000 0 02220          HTR M1ABC+3         LRS                                      F3B10520
02002  0 00000 0 02170          HTR M1CON                                                    F3B10530
02003  0 00000 0 02203          HTR M1CON+11        18                                       F3B10540
02004  0 07400 4 00707          TSX CIT00,4                                                  F3B10550
02005  0 00000 0 02170          HTR M1CON                                                    F3B10560
02006  0 00000 0 02244          HTR M1ABC+23        ORA                                      F3B10570
02007  0 00000 0 02243          HTR M1ABC+22        060000000000                             F3B10580
02010  0 00000 0 02170          HTR M1CON                                                    F3B10590
02011  0 07400 4 00707          TSX CIT00,4                                                  F3B10600
02012  0 00000 0 02170          HTR M1CON                                                    F3B10610
02013  0 00000 0 02231          HTR M1ABC+12        FAD                                      F3B10620
02014  0 00000 0 02243          HTR M1ABC+22        060000000000                             F3B10630
02015  0 00000 0 02170          HTR M1CON                                                    F3B10640
02016  1 77777 1 00774          TXI M12035,1,-1     BACK TO END OF AIL ROUTINE               F3B10650
                                   ALL MIN ROUTINE COMPILE FIRST INST                        F3B10660
02017  0 07400 4 00707 M13855   TSX CIT00,4                 COMPILE FIRST INST               F3B10670
02020  0 00000 0 02322          HTR M1CW                                                     F3B10680
02021  0 00000 0 02216          HTR M1ABC+1         LDQ A1                                   F3B10690
02022  0 00000 0 02324          HTR M1CW+2                                                   F3B10700
02023  0 00000 0 02325          HTR M1CW+3                                                   F3B10710
02024  0 02000 0 01717          TRA M13780          TO STORE NEEDED INFORMATION              F3B10720
02025  0 07400 4 00707 M13860   TSX CIT00,4         COMPILE 3 INST FOR                       F3B10730
02026  0 00000 0 02170          HTR M1CON           ITH ARG                                  F3B10740
02027  0 00000 0 02215          HTR M1ABC           CLA A2....N                              F3B10750
02030  0 00000 0 02324          HTR M1CW+2                                                   F3B10760
02031  0 00000 0 02325          HTR M1CW+3                                                   F3B10770
02032  0 07400 4 00707          TSX CIT00,4                                                  F3B10780
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02033  0 00000 0 02170          HTR M1CON                                                  F3B10790
02034  0 00000 0 02235          HTR M1ABC+16        TLQ                                    F3B10800
02035  0 00000 0 02245          HTR M1ABC+24        +000002000000                          F3B10810
02036  0 00000 0 02177          HTR M1CON+7         +170000000000                          F3B10820
02037  0 07400 4 00707          TSX CIT00,4                                                F3B10830
02040  0 00000 0 02170          HTR M1CON                                                  F3B10840
02041  0 00000 0 02216          HTR M1ABC+1         LDQ A2....N                            F3B10850
02042  0 00000 0 02324          HTR M1CW+2                                                 F3B10860
02043  0 00000 0 02325          HTR M1CW+3                                                 F3B10870
02044  0 50000 0 02313          CLA ENDT            I=N                                    F3B10880
02045  0 40200 0 02211          SUB M1CON+17        -377777777777                          F3B10890
02046  0 10000 0 02050          TZE M13880          LAST ARGUMENT                          F3B10900
02047  1 77777 1 01763          TXI M13820,1,-1     TO TEST IF END OF AIL RECORD.          F3B10910
02050  0 07400 4 00707 M13880   TSX CIT00,4         COMPILE TWO INST                       F3B10920
02051  0 00000 0 02170          HTR M1CON                                                  F3B10930
02052  0 00000 0 02224          HTR M1ABC+7         STQ                                    F3B10940
02053  0 00000 0 02242          HTR M1ABC+21        010000000000                           F3B10950
02054  0 00000 0 02170          HTR M1CON                                                  F3B10960
02055  0 07400 4 00707          TSX CIT00,4                                                F3B10970
02056  0 00000 0 02170          HTR M1CON                                                  F3B10980
02057  0 00000 0 02215          HTR M1ABC           CLA                                    F3B10990
02060  0 00000 0 02242          HTR M1ABC+21        010000000000                           F3B11000
02061  0 00000 0 02170          HTR M1CON                                                  F3B11010
02062  0 02000 0 01771          TRA M13830          TEST SW, 4 AND GO TO VARIOUS ROUTES    F3B11020
                                    FLOAT BRANCH                                           F3B11030
02063  0 07400 4 02156 M13900   TSX ERROR1+1,4      TO TEST IF ONLY ONE ARGUMENT           F3B11040
02064  0 60100 0 02324          STO M1CW+2          SYMBOLIC LOCATION OF ARGUMENT          F3B11050
02065  1 77777 1 02066          TXI M13905,1,-1                                            F3B11060
02066  0 50000 1 02327 M13905   CLA AIL,1           REL ADD AND TAG, IF ANY,               F3B11070
02067  0 60100 0 02325          STO M1CW+3          TO M1CW+3                              F3B11080
02070  0 50000 0 02324          CLA M1CW+2                                                 F3B11090
02071  0 40200 0 02241          SUB M1ABC+20        PLUS SIGN                              F3B11100
02072  0 10000 0 02111          TZE M13915          ARG IN AC                              F3B11110
02073  0 50000 0 02324          CLA M1CW+2                                                 F3B11120
02074  0 40200 0 02237          SUB M1ABC+18        ASTERISK                               F3B11130
02075  0 10000 0 02112          TZE M13920          ARG IN MQ                              F3B11140
                                    ARG STORED                                             F3B11150
02076  0 50000 0 02325          CLA M1CW+3          RELATIVE ADDRESS AND TAG, IF ANY       F3B11160
02077 -0 32000 0 02207          ANA M1CON+15                ARG TAGGED                     F3B11170
02100  0 10000 0 02104          TZE M13910          ARG NOT TAGGED                         F3B11180
02101 -0 76000 0 00143          MSE 99                                                     F3B11190
02102  0 07400 4 01016          TSX M12500,4        CHTG TABLE SEARCH                      F3B11200
02103  0 76000 0 00143          PSE 99                                                     F3B11210
02104  0 07400 4 00707 M13910   TSX CIT00,4                                                F3B11220
02105  0 00000 0 02322          HTR M1CW                                                   F3B11230
02106  0 00000 0 02215          HTR M1ABC           CLA A                                  F3B11240
02107  0 00000 0 02324          HTR M1CW+2                                                 F3B11250
02110  0 00000 0 02325          HTR M1CW+3                                                 F3B11260
                                    ARG IN AC (STORED)                                     F3B11270
02111  0 02000 0 01777 M13915   TRA M13830+6        TO COMILE 3 INSTR. AS MAX OR MIN       F3B11280
                                    ARG IN MQ                                              F3B11290
02112  0 50000 0 02242 M13920   CLA M1ABC+21        010000000000                           F3B11300
02113  0 60100 0 02324          STO M1CW+2          SYMBOLIC LOCATION                      F3B11310
02114  0 07400 4 00707          TSX CIT00,4                                                F3B11320
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02115   0 00000 0 02322          HTR M1CW                                          F3B11330
02116   0 00000 0 02224          HTR M1ABC+7          STQ                          F3B11340
02117   0 00000 0 02324          HTR M1CW+2                                        F3B11350
02120   0 00000 0 02325          HTR M1CW+3                                        F3B11360
02121   0 02000 0 02104          TRA M13910           TO COMPILE A CLA INSTRUCTION  F3B11370
                                 XSIGN, SIGN BRANCH                                F3B11380
02122   0 07400 4 00707 M13950   TSX CIT00,4                                       F3B11390
02123   0 00000 0 02322          HTR M1CW                                          F3B11400
02124   0 00000 0 02215          HTR M1ABC            CLA A1                       F3B11410
02125   0 00000 0 02324          HTR M1CW+2                                        F3B11420
02126   0 00000 0 02325          HTR M1CW+3                                        F3B11430
02127   1 77776 1 02130          TXI M13955,1,-2      DECREASE IR 1 BY -2          F3B11440
02130   0 07400 4 02156 M13955   TSX ERROR1+1,4       TEST IF ONLY 2 ARGUMENTS     F3B11450
02131   0 60100 0 02324          STO M1CW+2           SYMBOLIC ADDRESS.            F3B11460
02132   1 77777 1 02133          TXI M13960,1,-1                                   F3B11470
02133   0 50000 1 02327 M13960   CLA AIL,1            REL ADD AND TAG, IF ANY, TO  F3B11480
02134   0 60100 0 02325          STO M1CW+3           M1CW+3                       F3B11490
02135  -0 32000 0 02207          ANA M1CON+15                ARG TAGGED            F3B11500
02136   0 10000 0 02142          TZE M13965           ARG NOT TAGGED               F3B11510
02137  -0 76000 0 00143          MSE 99                                            F3B11520
02140   0 07400 4 01016          TSX M12500,4         BACK TO CHTG TABLE SEARCH    F3B11530
02141   0 76000 0 00143          PSE 99                                            F3B11540
02142   0 07400 4 00707 M13965   TSX CIT00,4                                       F3B11550
02143   0 00000 0 02170          HTR M1CON                                         F3B11560
02144   0 00000 0 02216          HTR M1ABC+1          LDQ A2                       F3B11570
02145   0 00000 0 02324          HTR M1CW+2                                        F3B11580
02146   0 00000 0 02325          HTR M1CW+3                                        F3B11590
02147   0 07400 4 00707          TSX CIT00,4                                       F3B11600
02150   0 00000 0 02170          HTR M1CON                                         F3B11610
02151   0 00000 0 02223          HTR M1ABC+6          LLS                          F3B11620
02152   0 00000 0 02170          HTR M1CON                                         F3B11630
02153   0 00000 0 02170          HTR M1CON                                         F3B11640
02154   1 77777 1 00774          TXI M12035,1,-1      AIL ROUTINE                  F3B11650
02155   0 07400 4 00004 ERROR1   TSX 4,4              A MULTI VARIATE FN. HAS ONLY 1 VARIABLE  F3B11660
02156   0 50000 1 02325 ERR1     CLA AIL-2,1          INT. FORMULA NO. OF ARGURMENT F3B11670
02157   0 40200 0 02211          SUB M1CON+17         -377777777777                F3B11680
02160  -0 10000 0 02163          TNZ ERROR2           SHOULD BE ALL 1S, FOR PARTICULAR ROUTINE  F3B11690
02161   0 50000 1 02327          CLA AIL,1            LOCATION OF ARGUMENT         F3B11700
02162   0 02000 4 00001          TRA 1,4              BACK TO CONTINUE             F3B11710
02163   0 07400 4 00004 ERROR2   TSX 4,4              A UNIVARIATE OR 2VAR. ROUTINE NOT CORRECT  F3B11720
02164 +000000000005      M1ECTR  DEC 5,6,0,0                                       F3B11730
02165 +000000000006
02166 +000000000000
02167 +000000000000
02170 +000000000000      M1CON   DEC 0,1,2,3,4,10B17,1B17,2B17,4B17,8B17,17B17,18B17,35B17  F3B11740
02171 +000000000001
02172 +000000000002
02173 +000000000003
02174 +000000000004
02175 +000012000000
02176 +000001000000
02177 +000002000000
02200 +000004000000
02201 +000010000000
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02202 +000021000000
02203 +000022000000
02204 +000043000000
02205 +077777000000          OCT 77777000000,77777,2000,370,777777777777,1000001,312,314      F3B11750
02206 +000000077777
02207 +000000002000
02210 +000000000370
02211 -377777777777
02212 +000001000001
02213 +000000000312
02214 +000000000314
02215  234321000000    M1ABC  BCD 7CLA000LDQ000MPY000LRS000ALS000STO000LLS000                  F3B11760
02216  432450000000
02217  444770000000
02220  435162000000
02221  214362000000
02222  626346000000
02223  434362000000
02224  626350000000          BCD 7STQ000FMP000SSP000UFA000ANA000FAD000CLM000                  F3B11770
02225  264447000000
02226  626247000000
02227  642621000000
02230  214521000000
02231  262124000000
02232  234344000000
02233  246547000000          BCD 7DVP000FDP000TLQ000RTB000*000000*0000+00000                  F3B11780
02234  262447000000
02235  634350000000
02236  516322000000
02237  540000000000
02240  005400000000
02241  200000000000
02242  010000000000          BCD 31000006000000RA000                                          F3B11790
02243  060000000000
02244  465121000000
02245 +170000000000          OCT 170000000000                                                 F3B11800
02246  626724000000          BCD 3SXD000WTB000CLS000                                          F3B11810
02247  666322000000
02250  234362000000
02251  672122626060    M1D    BCD 7XABS  ABS   XINT  INT   XFIX  FLOAT XMOD                  F3B11820
02252  212262606060
02253  673145636060
02254  314563606060
02255  672631676060
02256  264346216360
02257  674446246060
02260  444624606060          BCD 4MOD   XSIGN SIGN  XMAX0                                    F3B11830
02261  676231274560
02262  623127456060
02263  674421670060
02264  442167016060          BCD 7MAX1  XMAX1 MAX0  XMIN0 MIN1  XMIN1 MIN0                   F3B11840
02265  674421670160
02266  442167006060
02267  674431450060
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02270  443145016060
02271  674431450160
02272  443145006060
02273  0 00000 0 00000 COMBOX      TAG OR INT FMLA NO OF FORTAG ENTRY DURING CHTG EDIT          F3B11850
02274  0 00000 0 00000 CHTGL       2S COMP OF NO OF WORDS IN CHTG TABLE                         F3B11860
02275  0 00000 0 00000 CHTGE1      2S COMP OF CUR. ENTRY POINT IN CHTG TABLE                    F3B11870
02276  0 00000 0 00000 CHTGE2      2S COMP OF NEXT ENTRY POINT IN CHTG TABLE                    F3B11880
02277  0 00000 0 00000 CHTGFN      INT FMLA NO APPEARING IN CURRENT CHTG TABLE BLOCK            F3B11890
02300  0 00000 0 00000 SXTXL       LENGTH OF SXTX TABLE                                         F3B11900
02301  0 00000 0 00000 SXLOC       LOCATION WORD OF CURRENT DO INST                             F3B11910
02302  0 00000 0 00000 CBOX        IRC DURING CHTG TABLE SEARCH, SXTX TABLE SEARCH              F3B11920
02303  0 00000 0 00000 TAGBOX      TAG OF CUR AIL INST DURING CHTG TABLE SEARCH                 F3B11930
02304  0 00000 0 00000 M1DOWN      2S COMP OF NO OF WORDS IN CUR DO REC                         F3B11940
02305  0 00000 0 00000 M1ALWN      2S COMP OF NO OF WORDS IN CUR AIL REC                        F3B11950
02306  0 00000 0 00000 M1TRC       NO OF REC READS                                              F3B11960
02307  0 00000 0 00000 M1DOFN      INT FMLA NO OF CUR BLOCK OF DO INST                          F3B11970
02310  0 00000 0 00000 M1ALFN      INT FMLA NO OF CUR BLOCK OF AIL INST                         F3B11980
02311  0 00000 0 00000 CCOUNT      COUNT NO OF PAIRS OF MPY,LRS INST FOR EXP ROUTINE            F3B11990
02312  0 00000 0 00000 CCELL       IND SPECIAL OP ROUTINE                                       F3B12000
02313  0 00000 0 00000 ENDT        IND APPEARANCE OF END MARK IN MAX,MIN ROUTINES               F3B12010
02314  0 00000 0 00000 E1C         CELL FOR SAVING MQ                                           F3B12020
02315  0 00000 0 00000 E2C         CELL FOR SAVING IRA                                          F3B12030
02316  0 00000 0 00000 E3C         CELL FOR SAVING IRB                                          F3B12040
02317  0 00000 0 00000 BBOX        2S COMP OF NO OF WORDS  ALREADY ENTERED IN BLOCK             F3B12050
02320  0 00000 0 00000 3WD         TEMP STORAGE FOR THID WD OF COMPILED INST                    F3B12060
02321  0 00000 0 00000 4WD         TEMP STORAGE FORFOURTH WD OF COMPILED INST                   F3B12070
                 02322 M1CW    BSS 4 FOUR WORD INST SPACE FOR COMPILING                       F3B12080
02326  0 00000 0 00000         PZE  LENGTH OF FORTAG TABLE                                    F3B12090
                 02327 FORTAG  BSS 1500 AIL,DO,CIB LATER SHARE THIS BLOCK                     F3B12100
                 05263 UCHTG   BSS 300                                                        F3B12110
                 05737 ERAS    BSS 2  ORIGEN + SXTX LENGTH, SXTX, CHTG LENGTH                 F3B12120
                 05741 CHTG    BSS 600                                                        F3B12130
                 02327 AIL     SYN FORTAG                                                     F3B12140
                 02473 DO      SYN FORTAG+100                                                 F3B12150
                 02637 CIB     SYN FORTAG+200                                                 F3B12160
                 03003 SXTX    SYN FORTAG+300                                                 F3B12170
                 07073  OP1    SYN 3643
                 00030          END 24                                                        F3B13420
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1            FIN
1            REM    MASTER RECORD CARD = FN058
1                      MASTER RECORD CARD = FN058
                    THE FOLLOWING PROGRAM CONSTITUTES THE SECOND SECTION OF THE  F3B00010
                    MERGE. IT PREPARES THE TIFGO FILE OF COMPILED INSTRUCTIONS   F3B00020
                    - I.E., THE INSTRUCTIONS WHICH ARE NEEDED TO COMPLETE THE    F3B00030
                    TRANSLATION OF CONTROL FORMULAS AS WELL AS THOSE WHICH BECOMEF3B00040
                    NECESSARY AS A RESULT OF THE INTERRELATION BETWEEN CONTROL   F3B00050
                    FORMULAS AND DO FORMULAS - FOR LATER MERGING WITH THE FILE OFF3B00060
                    INSTRUCTIONS CREATED IN THE FIRST SECTION OF THE MERGE       F3B00070
                00030          ORG 24                                            F3B00080
                    POSITIONING OF TAPE 2, TAPE 3, TAPE 4                        F3B00090
00030  0 53400 4 02274 M20000 LXA M2CON,4          PLACE A ZERO IN IR 4          F3B00100
00031  1 00013 4 00032 COR1   TXI M20000+2,4,11    ADD 13 FOR SPACING TAPE TO TIFGO TABLE  F3B00110
00032  0 76200 0 00222        RDS 146              POSITION TAPE 2 TO TIFGO TABLE, BY SPACING  F3B00120
00033  2 00001 4 00032        TIX M20000+2,4,1     OVER 7 RECORDS                F3B00130
00034  0 77200 0 00223        REW 147              REWIND TAPE 3                 F3B00140
00035  0 77200 0 00224        REW 148              REWIND TAPE 4                 F3B00150
                    PROGRAM TO READ TRASTO FROM DRUM                             F3B00160
00036  0 53400 4 02330        LXA M2ECTR,4         LOAD COUNT OF 5 FOR ERROR ROUTINE  F3B00170
00037  0 76200 0 00303 RDRA2  RDR 3                SELECT DRUM 3                 F3B00180
00040  0 46000 0 02332        LDA 0456             LOCATE DRUM ADDRESS OF TRASTO F3B00190
00041  0 70000 0 02345        CPY TRSWC            WORD COUNT                    F3B00200
00042  0 70000 0 02346        CPY WCCHS            CHECK SUM                     F3B00210
00043  0 50000 0 02345        CLA TRSWC            DOES WORD COUNT AGREE         F3B00220
00044  0 40200 0 02346        SUB WCCHS            WITH ITS CHECK SUM            F3B00230
00045  0 10000 0 00050        TZE RDRA1            YES                           F3B00240
00046  2 00001 4 00037        TIX RDRA2,4,1        NO, TRY 4 MORE TIMES          F3B00250
00047  0 07400 4 00004        TSX 4,4              WORD COUNT MOT EQUAL TO CHECK SUM  F3B00260
00050  0 50000 0 02345 RDRA1  CLA TRSWC            ARE THERE ENTRIES IN TRASTO   F3B00270
00051  0 10000 0 00321        TZE RTT00            NO                            F3B00280
00052  0 40000 0 02333        ADD ORTRST           INITIAL LOCATION OF TRASTO WORK AREA  F3B00290
00053  0 62100 0 00062        STA RDRB1            INITIALIZE ADDRESSES OF CPY INSTR.  F3B00300
00054  0 62100 0 00070        STA RDRB2                                          F3B00310
00055  0 62100 0 00100        STA RDRB5                                          F3B00320
00056  0 53400 4 02330        LXA M2ECTR,4         LOAD COUNT OF 5 FOR ERROR ROUTINE  F3B00330
00057  0 76200 0 00303 RDRA3  RDR 3                SELECT DRUM 3                 F3B00340
00060  0 53400 1 02345        LXA TRSWC,1          PLACE WORD COUNT IN IR 1      F3B00350
00061  0 46000 0 02336        LDA 0460             INITIAL DRUM ADDRESS          F3B00360
00062  0 70000 1 00000 RDRB1  CPY 0,1              AND COPY ALL OF THE TRASTO    F3B00370
00063  2 00001 1 00062        TIX RDRB1,1,1        ENTRIES.                      F3B00380
00064  0 76000 0 00000        CLM                  CLEAR ACC.                    F3B00390
00065  0 53400 1 02345        LXA TRSWC,1          NEW WORD COUNT IN IR 1        F3B00400
00066 -3 00000 1 00074 RDRB3  TXL RDRB4,1,0        CHECK COUNT DURING LOOP       F3B00410
00067  0 53400 2 02331        LXA L(3),2           PLACE COUNT OF 3 IN IR 2 IN ORDER TO  F3B00420
00070  0 36100 1 00000 RDRB2  ACL 0,1             ADD LOGICALLY EVERYTHREE TRASTO  F3B00430
00071 -2 00001 1 00074        TNX RDRB4,1,1        WORDS, COUNT ALL ENTRIES      F3B00440
00072  2 00001 2 00070        TIX RDRB2,2,1        IR 2 USED TO COUNT EVERY THREE  F3B00450
00073  1 77777 1 00066        TXI RDRB3,1,-1       WORDS, SKIP OVER 4TH WORD.    F3B00460
00074  0 60200 0 02347 RDRB4  SLW CHS1             AFTER ALL WORDS ARE COUNTED   F3B00470
00075  0 76000 0 00000        CLM                  CLEAR ACC                     F3B00480
00076  0 53400 1 02345        LXA TRSWC,1          WORD COUNT OF TRASTO ENTRIES  F3B00490
00077  1 77775 1 00100        TXI RDRB5,1,-3       ADD OLD CHECKS SUMS, AND      F3B00500
00100  0 36100 1 00000 RDRB5  ACL 0,1             ACCUMULATE SUM LOGICALLY      F3B00510
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00101   2 00004 1 00100         TIX RDRB5,1,4                                                   F3B00520
00102   0 60200 0 02350         SLW CHS2                                                        F3B00530
00103   0 50000 0 02347         CLA CHS1            COMPUTED CHECK SUM.                         F3B00540
00104   0 40200 0 02350         SUB CHS2            DO CHECK SUMS MATCH                         F3B00550
00105   0 10000 0 00110         TZE STRS            YES                                         F3B00560
00106   2 00001 4 00057         TIX RDRA3,4,1       IF THE SUMS DONT AGREE, TRY  4 MORE TIMES   F3B00570
00107   0 07400 4 00004 COR3    TSX 4,4             CHECK SUMS INCORRECT AFTER 5 TRIES          F3B00580
                                PROGRAM TO SORT TRASTO ENTRIES BY TYPE                          F3B00590
00110   0 50000 0 02345 STRS    CLA TRSWC           INITIALIZATION OF ALL MODIFIED ADDRESSES    F3B00600
00111   0 40000 0 02333         ADD TRSORG                                                      F3B00610
00112   0 62100 0 00135         STA A4                                                          F3B00620
00113   0 62100 0 00140         STA A1                                                          F3B00630
00114   0 62100 0 00144         STA A3                                                          F3B00640
00115   0 62100 0 00154         STA B1                                                          F3B00650
00116   0 62100 0 00162         STA B5                                                          F3B00660
00117   0 62100 0 00174         STA C3                                                          F3B00670
00120   0 62100 0 00204         STA D2                                                          F3B00680
00121   0 62100 0 00210         STA D3                                                          F3B00690
00122   0 62100 0 00220         STA E2                                                          F3B00700
00123   0 62100 0 00226         STA E4                                                          F3B00710
00124   0 62100 0 00240         STA F3                                                          F3B00720
00125  -0 63400 0 02337         SXD 1BOX,0          CLEAR DECREMENT OF WORK AREA                F3B00730
00126  -0 63400 0 02340         SXD 2BOX,0                                                      F3B00740
00127  -0 63400 0 02341         SXD 3BOX,0                                                      F3B00750
00130  -0 63400 0 02342         SXD 4BOX,0                                                      F3B00760
00131  -0 63400 0 02343         SXD 5BOX,0                                                      F3B00770
00132  -0 63400 0 02344         SXD 6BOX,0                                                      F3B00780
00133   0 53400 1 02345         LXA TRSWC,1         WORD COUNT IN IR 1                          F3B00790
00134   1 77776 1 00135         TXI A4,1,-2                                                     F3B00800
00135   0 50000 1 00000  A4     CLA 0,1             OBTAIN WORD 3, AND SEPARATE TYPES           F3B00810
00136  -0 12000 0 00203         TMI D1              ENTRY IS TYPE 4,5 OR 6, 3RD WD. MINUS       F3B00820
                                ENTRY IS TYPE 1, 2, OR 3                                        F3B00830
00137   1 00002 1 00140         TXI A1,1,2          RESTORE LOOP COUNT                          F3B00840
00140   0 50000 1 00000  A1     CLA 0,1             OBTAIN WORD 1                               F3B00850
00141   0 12000 0 00153         TPL B2              ENTRY IS TYPE 1 OR 2                        F3B00860
                                ENTRY IS TYPE 3                                                 F3B00870
00142   0 53400 4 02277         LXA L(4),4          MINUS IN FIRST AND THIRD WDS.               F3B00880
00143  -0 53400 2 02341         LXD 3BOX,2          PLACE A COUNT OF 4 IN IR 4,                 F3B00890
00144  -0 50000 1 00000  A3     CAL 0,1             CLEAR IR 2, AND GET 1ST WD. IN ACC          F3B00900
00145   0 60200 2 04030         SLW TYPE3,2         PLACE IN PROPER MEMORY LOC.                 F3B00910
00146   1 77777 2 00147         TXI A2,2,-1         SUB. 1 FROM IR 2, LOOP BACK                 F3B00920
00147  -0 63400 2 02341  A2     SXD 3BOX,2          TO GET 4 WORDS IN PROPER LOC.               F3B00930
00150  -2 00001 1 00247         TNX PACK,1,1        EXIT FOR END OF TRASTO                      F3B00940
00151   2 00001 4 00144         TIX A3,4,1                                                      F3B00950
00152   1 77776 1 00135         TXI A4,1,-2         PICK UP NEXT TRASTO ENTRY                   F3B00960
                                ENTRY IS TYPE 1 OR 2                                            F3B00970
00153   1 77777 1 00154  B2     TXI B1,1,-1                                                     F3B00980
00154  -0 50000 1 00000  B1     CAL 0,1             OBTAIN WORD 2                               F3B00990
00155  -0 32000 0 02335         ANA MASK            EXAMINE PREFIX, IF TYPE 2 HAS MINUS SIGN    F3B01000
00156   0 10000 0 00171         TZE C1              ENTRY IS TYPE 1                             F3B01010
                                ENTRY IS TYPE 2                                                 F3B01020
00157   1 00001 1 00160         TXI B3,1,1          RESTORE COUNT TO GET WORD 1                 F3B01030
00160   0 53400 4 02277  B3     LXA L(4),4          COUNT 4 IN IR 4                             F3B01040
00161  -0 53400 2 02340         LXD 2BOX,2          CLEAR IR 2                                  F3B01050
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00162 -0 50000 1 00000  B5    CAL 0,1              1ST WORD                                F3B01060
00163  0 60200 2 03210        SLW TYPE2,2          PROPER OUTPUT AREA                      F3B01070
00164  1 77777 2 00165        TXI B4,2,-1          DECREASE COUNT IN IR 2 BY -1            F3B01080
00165 -0 63400 2 02340  B4    SXD 2BOX,2           PLACE COUNT IN PROPER PLACE             F3B01090
00166 -2 00001 1 00247        TNX PACK,1,1         EXIT                                    F3B01100
00167  2 00001 4 00162        TIX B5,4,1                                                   F3B01110
00170  1 77776 1 00135        TXI A4,1,-2          TRANSFER BACK TO SORT NEXT ENTRY         F3B01120
                              ENTRY IS TYPE 1                                              F3B01130
00171  1 00001 1 00172  C1    TXI C2,1,1           RESTORE COUNT TO GET WD 1.               F3B01140
00172  0 53400 4 02277  C2    LXA L(4),4                                                   F3B01150
00173 -0 53400 2 02337        LXD 1BOX,2                                                   F3B01160
00174 -0 50000 1 00000  C3    CAL 0,1                                                      F3B01170
00175  0 60200 2 02370        SLW TYPE1,2          STORE IN PROPER MEMORY POSITION         F3B01180
00176  1 77777 2 00177        TXI C4,2,-1                                                  F3B01190
00177 -0 63400 2 02337  C4    SXD 1BOX,2           SAVE COUNT OF TYPE 1 ENTRY              F3B01200
00200 -2 00001 1 00247        TNX PACK,1,1         EXIT                                    F3B01210
00201  2 00001 4 00174        TIX C3,4,1                                                   F3B01220
00202  1 77776 1 00135        TXI A4,1,-2          BACK FOR NEXT ENTRY                     F3B01230
                              ENTRY IS TYPE 4, 5 OR 6                                      F3B01240
00203  1 00002 1 00204  D1    TXI D2,1,2                                                   F3B01250
00204  0 50000 1 00000  D2    CLA 0,1              OBTAIN WORD 1                           F3B01260
00205  0 12000 0 00217        TPL E1               ENTRY IS TYPE 4 OR 6                    F3B01270
                              ENTRY IS TYPE 5                                              F3B01280
00206  0 53400 4 02277        LXA L(4),4                                                   F3B01290
00207 -0 53400 2 02343        LXD 5BOX,2           COUNT OF ENTRIES FOR TYPE 5             F3B01300
00210 -0 50000 1 00000  D3    CAL 0,1                                                      F3B01310
00211  0 60200 2 05470        SLW TYPE5,2          STORE IN PROPER MEMORY POS.             F3B01320
00212  1 77777 2 00213        TXI D4,2,-1                                                  F3B01330
00213 -0 63400 2 02343  D4    SXD 5BOX,2           SAVE COUNT FOR TYPE 1 ENTRY             F3B01340
00214 -2 00001 1 00247        TNX PACK,1,1         EXIT                                    F3B01350
00215  2 00001 4 00210        TIX D3,4,1                                                   F3B01360
00216  1 77776 1 00135        TXI A4,1,-2          OBTAIN NEXT TRASTO ENTRY                F3B01370
                              ENTRY IS TYPE 4 OR 6                                         F3B01380
00217  1 77777 1 00220  E1    TXI E2,1,-1                                                  F3B01390
00220 -0 50000 1 00000  E2    CAL 0,1              OBTAIN WORD 2                           F3B01400
00221 -0 32000 0 02335        ANA MASK             TEST IF MINUS                           F3B01410
00222  0 10000 0 00235        TZE F1               ENTRY IS TYPE 4                         F3B01420
                              ENTRY IS TYPE 6                                              F3B01430
00223  1 00001 1 00224        TXI E3,1,1           RESTORE COUNT TO GET WORD 1             F3B01440
00224  0 53400 4 02277  E3    LXA L(4),4                                                   F3B01450
00225 -0 53400 2 02344        LXD 6BOX,2                                                   F3B01460
00226 -0 50000 1 00000  E4    CAL 0,1                                                      F3B01470
00227  0 60200 2 06310        SLW TYPE6,2          STORE IN PROPER MEMORY POS              F3B01480
00230  1 77777 2 00231        TXI E5,2,-1                                                  F3B01490
00231 -0 63400 2 02344  E5    SXD 6BOX,2           SAVE COUNT FOR TYPE 6 ENTRY             F3B01500
00232 -2 00001 1 00247        TNX PACK,1,1         EXIT                                    F3B01510
00233  2 00001 4 00226        TIX E4,4,1                                                   F3B01520
00234  1 77776 1 00135        TXI A4,1,-2          OBTAIN NEXT TRASTO ENTRY                F3B01530
                              ENTRY IS TYPE 4                                              F3B01540
00235  1 00001 1 00236  F1    TXI F2,1,1                                                   F3B01550
00236  0 53400 4 02277  F2    LXA L(4),4                                                   F3B01560
00237 -0 53400 2 02342        LXD 4BOX,2                                                   F3B01570
00240 -0 50000 1 00000  F3    CAL 0,1                                                      F3B01580
00241  0 60200 2 04650        SLW TYPE4,2          STORE IN PROPER MEMORY POS              F3B01590
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00242   1 77777 2 00243          TXI F4,2,-1                                        F3B01600
00243  -0 63400 2 02342  F4      SXD 4BOX,2          SAVE COUNT FOR TYPE 4 ENTRY    F3B01610
00244  -2 00001 1 00247          TNX PACK,1,1        EXIT                           F3B01620
00245   2 00001 4 00240          TIX F3,4,1                                         F3B01630
00246   1 77776 1 00135          TXI A4,1,-2         OBTAIN NEXT TRASTO ENTRIES     F3B01640
                                  TYPE 2 TO TRASTO                                 F3B01650
00247  -0 53400 1 02337  PACK    LXD 1BOX,1          PACK TRASTO ENTRIES TO GETHER  F3B01660
00250  -0 53400 4 02340          LXD 2BOX,4          IN MEMORY IN ORDER OF TYPES 1 THRU F3B01670
00251  -3 00000 4 00261          TXL H5,4,0          6.                             F3B01680
00252  -0 53400 2 02274          LXD L(0),2                                         F3B01690
00253  -0 50000 2 03210  G4      CAL TYPE2,2                                        F3B01700
00254   0 60200 1 02370          SLW TYPE1,1                                        F3B01710
00255   1 77777 1 00256          TXI G1,1,-1                                        F3B01720
00256   1 77777 2 00257  G1       TXI G2,2,-1                                        F3B01730
00257   1 00001 4 00260  G2       TXI G3,4,1                                         F3B01740
00260   3 00000 4 00253  G3       TXH G4,4,0          INDEX C REDUCES TO ZERO        F3B01750
                                  TYPE 3 TO TRASTO                                 F3B01760
00261  -0 53400 2 02341  H5      LXD 3BOX,2                                         F3B01770
00262  -3 00000 2 00271          TXL I5,2,0                                         F3B01780
00263  -0 50000 4 04030  H4      CAL TYPE3,4                                        F3B01790
00264   0 60200 1 02370          SLW TYPE1,1                                        F3B01800
00265   1 77777 1 00266          TXI H1,1,-1                                        F3B01810
00266   1 77777 4 00267  H1       TXI H2,4,-1                                        F3B01820
00267   1 00001 2 00270  H2       TXI H3,2,1                                         F3B01830
00270   3 00000 2 00263  H3       TXH H4,2,0                                         F3B01840
                                  TYPE 4 TO TRASTO                                 F3B01850
00271  -0 53400 4 02342  I5      LXD 4BOX,4                                         F3B01860
00272  -3 00000 4 00301          TXL J5,4,0                                         F3B01870
00273  -0 50000 2 04650  I4      CAL TYPE4,2                                        F3B01880
00274   0 60200 1 02370          SLW TYPE1,1                                        F3B01890
00275   1 77777 1 00276          TXI I1,1,-1                                        F3B01900
00276   1 77777 2 00277  I1       TXI I2,2,-1                                        F3B01910
00277   1 00001 4 00300  I2       TXI I3,4,1                                         F3B01920
00300   3 00000 4 00273  I3       TXH I4,4,0                                         F3B01930
                                  TYPE 5 TO TRASTO                                 F3B01940
00301  -0 53400 2 02343  J5      LXD 5BOX,2                                         F3B01950
00302  -3 00000 2 00311          TXL K5,2,0                                         F3B01960
00303  -0 50000 4 05470  J4      CAL TYPE5,4                                        F3B01970
00304   0 60200 1 02370          SLW TYPE1,1                                        F3B01980
00305   1 77777 1 00306          TXI J1,1,-1                                        F3B01990
00306   1 77777 4 00307  J1       TXI J2,4,-1                                        F3B02000
00307   1 00001 2 00310  J2       TXI J3,2,1                                         F3B02010
00310   3 00000 2 00303  J3       TXH J4,2,0                                         F3B02020
                                  TYPE 6 TO TRASTO                                 F3B02030
00311  -0 53400 4 02344  K5      LXD 6BOX,4                                         F3B02040
00312  -3 00000 4 00321          TXL CALL,4,0                                       F3B02050
00313  -0 50000 2 06310  K4      CAL TYPE6,2                                        F3B02060
00314   0 60200 1 02370          SLW TYPE1,1                                        F3B02070
00315   1 77777 1 00316          TXI K1,1,-1                                        F3B02080
00316   1 77777 2 00317  K1       TXI K2,2,-1                                        F3B02090
00317   1 00001 4 00320  K2       TXI K3,4,1                                         F3B02100
00320   3 00000 4 00313  K3       TXH K4,4,0                                         F3B02110
                                  PROGRAM TO READ TIFGO TABLE                      F3B02120
00321  -0 76000 0 00012  RTT00 RTT                  TURN OFF TAPE CHECK INDICATOR AND LITES F3B02130
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                 00321 CALL    SYN RTT00                                                  F3B02140
00322  0 76100 0 00000         NOP                                                        F3B02150
00323  0 53400 2 02330         LXA M2ECTR,2        LOAD COUNT OF 5 FOR ERROR ROUTINE      F3B02160
00324  0 76200 0 00222  RTTD3  RTB 2               SELECT TAPE 2 TO READ TIFGO            F3B02170
00325  0 70000 0 05471         CPY TIFGO-1                                                F3B02180
00326  0 50000 0 05471         CLA TIFGO-1         IDENTIFICATION FOR TIFGO TABLE         F3B02190
00327  0 40200 0 02276         SUB L(2)            IS TABLE CALLED FOR                    F3B02200
00330  0 10000 0 00332         TZE RTTD1           YES                                    F3B02210
00331  0 07400 4 00004         TSX 4,4             NOT TIFGO FILE                         F3B02220
00332  0 70000 0 05471  RTTD1  CPY TIFGO-1         GET WORD COUNT                         F3B02230
00333  0 53400 1 02274         LXA L(0),1                                                 F3B02240
00334  0 50000 0 05471         CLA TIFGO-1         TEST WD. COUNT                         F3B02250
00335  0 10000 0 00342         TZE RTTD5           NO TIFGO ENTRIES                       F3B02260
00336  0 70000 1 05472  RTTD2  CPY TIFGO,1         COPY                                   F3B02270
00337  1 77777 1 00336         TXI RTTD2,1,-1      LOOP                                   F3B02280
00340  0 07400 4 00004         TSX 4,4             EOF INCORRECT                          F3B02290
00341  0 76600 0 00333         IOD                 EOR                                    F3B02300
00342 -0 76000 0 00012  RTTD5  RTT                 IS TAPE CHECK ON                       F3B02310
00343  0 02000 0 00346         TRA RTTD4           YES                                    F3B02320
00344 -0 63400 1 05471         SXD TIFGO-1,1       NO                                     F3B02330
00345  0 02000 0 00351         TRA RTTE1           TO READ TRAD TABLE                     F3B02340
00346  0 76400 0 00202  RTTD4  BST 2                                                      F3B02350
00347  2 00001 2 00324         TIX RTTD3,2,1                                              F3B02360
00350  0 07400 4 00004 COR4    TSX 4,4             ERROR READING TIFGO TABLE AFTER 5 TRIES F3B02370
                                   PROGRAM TO READ TRAD TABLE                             F3B02380
00351  0 53400 2 02330 RTTE1   LXA M2ECTR,2        LOAD COUNT OF 5 FOR ERROR ROUTINE      F3B02390
00352  0 76200 0 00222  RTTE5  RTB 2               READ TRAD TABLE FROM TAPE 2            F3B02400
00353  0 70000 0 06766         CPY TRAD-1          IDENTIFICATION NUMBER                  F3B02410
00354  0 50000 0 06766         CLA TRAD-1                                                 F3B02420
00355  0 40200 0 02331         SUB L(3)            IS TABLE CALLED FOR                    F3B02430
00356  0 10000 0 00360         TZE RTTE2           YES                                    F3B02440
00357  0 07400 4 00004         TSX 4,4             TRAD TABLE NOT CALLED FOR              F3B02450
00360  0 70000 0 06766  RTTE2  CPY TRAD-1          GET WORD COUNT                         F3B02460
00361  0 50000 0 06766         CLA TRAD-1          TEST WORD COUNT FOR NUMBER OF ENTRIES  F3B02470
00362  0 10000 0 00370         TZE RTTE6                                                  F3B02480
00363  0 53400 1 02274         LXA L(0),1                                                 F3B02490
00364  0 70000 1 06767  RTTE3  CPY TRAD,1          COPY TRAD ENTRIES AND GET 2S COMP.     F3B02500
00365  1 77777 1 00364         TXI RTTE3,1,-1      OF NUMBER OF ENTRIES.                  F3B02510
00366  0 07400 4 00004         TSX 4,4             EOF INCORRECT                          F3B02520
00367  0 76600 0 00333         IOD                 EOR                                    F3B02530
00370 -0 76000 0 00012  RTTE6  RTT                 IS TAPE CHECK ON                       F3B02540
00371  0 02000 0 00373         TRA RTTE4           YES                                    F3B02550
00372  0 02000 0 00376         TRA RTTC0           NO                                     F3B02560
00373  0 76400 0 00202  RTTE4  BST 2               ERROR ROUTINE FOR READING TRAD         F3B02570
00374  2 00001 2 00352         TIX RTTE5,2,1       ENTRIES                                F3B02580
00375  0 07400 4 00004 COR5    TSX 4,4             AFTER 5 TRIES                          F3B02590
                                   PROGRAM TO READ TRALEV                                 F3B02600
00376  0 76000 0 00000  RTTC0  CLM                 CLEAR ACCUMULATOR                      F3B02610
00377  0 60200 0 03210         SLW TRALEV-1        SET WORD PRECEDING ENTRIES TO ZERO     F3B02620
00400  0 53400 2 02330 RTTC4   LXA M2ECTR,2        LOAD COUNT OF 5 FOR ERROR ROUTINE      F3B02630
00401  0 76200 0 00224  RTTC2  RTB 4               READ TRALEV ENTRIES FROM TP. 4         F3B02640
00402  0 70000 0 03211         CPY TRALEV          IDENTIFICATION                         F3B02650
00403 -0 76000 0 00012         RTT                 IS TAPE CHECK ON                       F3B02660
00404  0 02000 0 00406         TRA RTTC1           YES                                    F3B02670
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00405  0 02000 0 00411          TRA RTTC3          NO                                          F3B02680
00406  0 76400 0 00204  RTTC1   BST 4              ERROR ROUTINE FOR READING TRALEV            F3B02690
00407  2 00001 2 00401          TIX RTTC2,2,1                                                  F3B02700
00410  0 07400 4 00004  COR6    TSX 4,4            AFTER 5 TRIES                               F3B02710
00411  0 50000 0 03211  RTTC3   CLA TRALEV         IS TRALEV EMPTY                             F3B02720
00412  0 10000 0 00450          TZE OUT            YES                                         F3B02730
00413  0 53400 2 02330          LXA M2ECTR,2       LOAD COUNT OF 5 FOR ERROR ROUTINE           F3B02740
00414 -0 53400 1 02305  RTTA3   LXD M2CON+9,1      RESET IR 1 TO ALL ONES                      F3B02750
00415  0 70000 1 03211  RTTA1   CPY TRALEV,1       COPY LOOP. ADD COUNT TO READ ADDRESS        F3B02760
00416  1 77777 1 00415          TXI RTTA1,1,-1                                                 F3B02770
00417  0 07400 4 00004          TSX 4,4            EOF INCORRECT                               F3B02780
00420  0 76600 0 00333          IOD                EOR                                         F3B02790
00421 -0 76000 0 00012          RTT                IS TAPE CHECK ON                            F3B02800
00422  0 02000 0 00424          TRA RTTA2          YES                                         F3B02810
00423  0 02000 0 00431          TRA RTTB1          NO                                          F3B02820
00424  0 76400 0 00204  RTTA2   BST 4              BACKSPACE TAPE 4                            F3B02830
00425  0 76200 0 00224          RTB 4              READ AGAIN                                  F3B02840
00426  0 70000 0 03211          CPY TRALEV         GET WORD COUNT                              F3B02850
00427  2 00001 2 00414          TIX RTTA3,2,1      TRY AGAIN TO READ IN ENTRIES                F3B02860
00430  0 07400 4 00004  COR7    TSX 4,4            ERROR READING TAPE 4                        F3B02870
00431 -0 63400 1 00442  RTTB1   SXD RTTB4,1        SAVE WORD COUNT OF FIRST RECORD, 2S COMP.   F3B02880
00432  0 53400 2 02330          LXA M2ECTR,2       LOAD COUNT OF 5 FOR ERROR ROUTINE           F3B02890
00433  0 76200 0 00224  RTTB5   RTB 4                                                          F3B02900
00434 -0 53400 1 00442          LXD RTTB4,1        REPLACE COUNT IN IR 1 OF FIRST RECORD       F3B02910
00435  0 70000 1 03211  RTTB2   CPY TRALEV,1       COPY SECOND RECORD ETC, IN PROPER PLACE     F3B02920
00436  1 77777 1 00435          TXI RTTB2,1,-1     SUBTRACT 1 FROM COUNT                       F3B02930
00437  0 02000 0 00447          TRA RTTB6          EOF                                         F3B02940
00440  0 76600 0 00333          IOD                EOR                                         F3B02950
00441 -0 76000 0 00012          RTT                IS TAPE CHECK ON                            F3B02960
D 00442 -3 00000 1 00444  RTTB4   TXL RTTB3,1        YES, COMPARE TO WORD COUNT OF FIRST         F3B02970
00443  0 02000 0 00447          TRA RTTB6          RECORD, NO.                                 F3B02980
00444  0 76400 0 00204  RTTB3   BST 4                                                          F3B02990
00445  2 00001 2 00433          TIX RTTB5,2,1                                                  F3B03000
00446  0 07400 4 00004  COR8    TSX 4,4            ERROR TRYING TO READ TRALEV FROM TAPE 4     F3B03010
00447 -0 63400 1 03210  RTTB6   SXD TRALEV-1,1     SAVE TRALEV WORD COUNT                      F3B03020
00450  0 50000 0 02345  OUT     CLA TRSWC          TIFGO WORD COUNT.                           F3B03030
00451  0 76000 0 00006          COM                                                            F3B03040
00452  0 40000 0 02275          ADD M2CON+1        2S COMPLIMENT OF WORD COUNT                 F3B03050
00453  0 73400 1 00000          PAX 0,1            IN IR 1                                     F3B03060
00454 -0 63400 1 02367          SXD CTRSWC,1       SAVE WORD COUNT                             F3B03070
00455 -0 53400 1 02314          LXD M2CON+16,1     PLACE 5 IN IR 1                             F3B03080
00456  0 76200 0 00222  RDS     RDS 146            MOVE UP TAPE 2, 3 FILES TO TIFGO            F3B03090
00457  0 70000 0 02366  CPY     CPY M2CW+4         FILE                                        F3B03100
00460  0 02000 0 00457          TRA CPY                                                        F3B03110
00461  0 02000 0 00463          TRA TIX            END OF RECORD                               F3B03120
00462  0 02000 0 00456          TRA RDS                                                        F3B03130
00463  2 00001 1 00456  TIX     TIX RDS,1,1                                                    F3B03140
00464  0 77200 0 00224  REW     REW 148            TAPE 4 REWOUND                              F3B03150
00465  0 76000 0 00000          CLM                SET ACC. TO ZERO                            F3B03160
00466  0 60200 0 02345          SLW TIFFN          REPLACE INDEX COUNTERS                      F3B03170
00467  0 60200 0 02346          SLW CTRAST         CELLS TO ZEROS                              F3B03180
00470  0 60200 0 02347          SLW ETRAL                                                      F3B03190
00471  0 60200 0 02350          SLW LEVNO                                                      F3B03200
00472  0 60200 0 02331          SLW CBOX                                                       F3B03210
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00473  0 60200 0 02355          SLW BBOX                                                  F3B03220
00474  0 60200 0 02332          SLW LOX                                                   F3B03230
00475  0 60200 0 07324          SLW ASNO                                                  F3B03240
00476  0 60200 0 07323          SLW EASCO                                                 F3B03250
00477  0 60200 0 02356          SLW ETRAST                                                F3B03260
00500  0 60200 0 02357          SLW NETRAL                                                F3B03270
00501  0 60200 0 07322          SLW TFRCO                                                 F3B03280
00502  0 53400 1 02274          LXA M2CON,1          INITIALIZE IR 1 TO ZERO              F3B03290
                                    M2 MAIN PROGRAM-        TIFGO FMLA NO NOT IN          F3B03300
                                    TRALEV                                                F3B03310
00503 -0 75400 1 00000 M21000 PXD 0,1              TEST TO SEE IF AT END OF TIFGO        F3B03320
00504  0 40200 0 05471          SUB TIFGO-1          NO. OF TIFGO ENTRIES                 F3B03330
00505  0 10000 0 00751          TZE M21900           END OF TIFGO                         F3B03340
00506  0 50000 1 05472          CLA TIFGO,1          FIRST WD. OF TIFGO ENTRY,            F3B03350
00507  0 62200 0 02345          STD TIFFN            SAVE INTERNAL FMLA. NO.              F3B03360
00510 -0 12000 0 00514          TMI M21010           SIGNIFIES AN IF                      F3B03370
00511 -0 32000 0 02306          ANA M2CON+10         TEST DIFFERTENT TYPES                F3B03380
00512  0 40200 0 02300          SUB M2CON+4                                               F3B03390
00513  0 10000 0 00730          TZE M21600           TIFGO ENTRY AN ASSIGN                F3B03400
00514  0 50000 0 02347 M21010 CLA ETRAL            DETERMINE CURRENT TIFGO ENTRY         F3B03410
00515  0 40200 0 03210          SUB TRALEV-1         FOR CORRESPONDING TRALEV ENTRY        F3B03420
00516  0 10000 0 00523          TZE M21020           END OF TRALEV                        F3B03430
00517 -0 53400 2 02347          LXD ETRAL,2          IR 2, CURRENT TRALEV ENTRY           F3B03440
00520  0 50000 2 03211          CLA TRALEV,2         TRALEV, FMLA WD.                     F3B03450
00521  0 40000 0 02345          ADD TIFFN            TIFGO FMLA NO.                       F3B03460
00522  0 10000 0 00776          TZE M22000           TIFGO ENTRY IN TRALEV                F3B03470
00523  0 50000 1 05472 M21020 CLA TIFGO,1                                                F3B03480
00524 -0 12000 0 00672          TMI M21800           TIFGO ENTRY AN IF(E)                 F3B03490
00525 -0 32000 0 02306          ANA M2CON+10                                              F3B03500
00526  0 10000 0 00536          TZE M21030           TIFGO ENTRY A GO TO A                F3B03510
00527  0 34000 0 02277          CAS M2CON+3                                               F3B03520
00530  1 77777 1 00650          TXI M21500,1,-1      TIFGO ENTRY AN IF OVERFLOW           F3B03530
00531  1 77777 1 00625          TXI M21400,1,-1      TIFGO ENTRY AN IF DIVCK              F3B03540
00532  0 34000 0 02276          CAS M2CON+2                                               F3B03550
00533  1 77777 1 00602          TXI M21300,1,-1      TIFGO ENTRY AN IF SENSE              F3B03560
00534  1 77777 1 00550          TXI M21100,1,-1      TIFGO ENTRY A GO TO (A),1            F3B03570
00535  1 77776 1 00503          TXI M21000,1,-2      TIFGO ENTRY A GO TO N(A)             F3B03580
                                    TIFGO ENTRY A GO TO A                                 F3B03590
00536  1 77777 1 00537 M21030 TXI M21030+1,1,-1                                           F3B03600
00537  0 50000 1 05472          CLA TIFGO,1          2ND WORD BETA IN ADDRESS             F3B03610
00540  0 76700 0 00022          ALS 18               SHIFT TO DECREMENT                   F3B03620
00541  0 60100 0 02364          STO M2CW+2           3RD WD OF INSTRUCTION AREA           F3B03630
00542  0 07400 4 02177          TSX CIT200,4         COMPILE INSTRUCTION                  F3B03640
00543  0 00000 0 02345          HTR TIFFN            ALPHA                                F3B03650
00544  0 00000 0 02315          HTR M2ABC            TRA                                  F3B03660
00545  0 00000 0 02364          HTR M2CW+2           BETA                                 F3B03670
00546  0 00000 0 02274          HTR M2CON            0                                    F3B03680
00547  1 77777 1 00503          TXI M21000,1,-1                                           F3B03690
                                    TIFGO ENTRY A GO TO (A),I                             F3B03700
00550  0 50000 1 05472 M21100 CLA TIFGO,1          2ND WORD OF TIFGO ENTRY              F3B03710
00551  0 73400 2 00000          PAX 0,2              CTRAD U  IN IR 2                     F3B03720
00552 -0 63400 2 02332          SXD LOX,2            SAVE CTRAD U IN INDEX CELL DECR.     F3B03730
00553 -0 32000 0 02305          ANA M2CON+9          SAVE CTRAD 1 IN ACCUMULATOR          F3B03740
00554  0 40000 0 02303          ADD M2CON+7          ADD ONE, CTRAD 1+I                   F3B03750
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00555  0 40200 0 02332          SUB LOX              CTRAD U                                  F3B03760
00556  0 60100 0 02365          STO M2CW+3           4TH WD OF INSTRUCTION                    F3B03770
00557  0 07400 4 02177 M21110   TSX CIT200,4         COMPILE                                  F3B03780
00560  0 00000 0 02345          HTR TIFFN            ALPHA                                    F3B03790
00561  0 00000 0 02274          HTR M2CON            ZERO                                     F3B03800
00562  0 00000 0 02345          HTR TIFFN            ALPHA                                    F3B03810
00563  0 00000 0 02365          HTR M2CW+3           NO. OF TRAD ENTRUES CTRAD 1+1-CTRAD 2    F3B03820
00564  1 00001 2 00565          TXI M21120,2,1       STEP UP COUNT TO NEXT TRAD ENTRY         F3B03830
00565  0 50000 1 05472 M21120   CLA TIFGO,1          2ND WORD OF TIFGO ENTRY                  F3B03840
00566  0 62200 0 00600          STD M21140           STORE IN TXL INSTRUCTION                 F3B03850
00567  0 50000 2 07361 M21125   CLA TRAD+250,2       BRING IN NEXT TRAD ENTRY                 F3B03860
00570  0 76700 0 00022          ALS 18               PUT BETA1 IN DECREMENT                   F3B03870
00571  0 60100 0 02364          STO M2CW+2           3RD WD. OF CIT                           F3B03880
00572  0 07400 4 02177          TSX CIT200,4         COMPILE                                  F3B03890
00573  0 00000 0 02274          HTR M2CON            ZERO                                     F3B03900
00574  0 00000 0 02315          HTR M2ABC            TRA                                      F3B03910
00575  0 00000 0 02364          HTR M2CW+2           TRAD BI                                  F3B03920
00576  0 00000 0 02274          HTR M2CON            ZERO                                     F3B03930
00577  1 00001 2 00600          TXI M21140,2,1       STEP UP TRAD ENTRY                       F3B03940
D 00600 -3 00000 2 00567 M21140 TXL M21125,2         TEST IF LAST TRAD ENTRY, NO              F3B03950
00601  1 77777 1 00503          TXI M21000,1,-1      BACK TO NEXT TIFGO.                      F3B03960
                                   TIFGO ENTRY AN IF SENSE                                    F3B03970
00602  0 07400 4 02177 M21300   TSX CIT200,4         COMPILE                                  F3B03980
00603  0 00000 0 02345          HTR TIFFN            ALPHA                                    F3B03990
00604  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04000
00605  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04010
00606  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04020
00607  0 50000 1 05472          CLA TIFGO,1          2ND. WORD OF TIFGO ENTRY                 F3B04030
00610 -0 32000 0 02306          ANA M2CON+10         SAVE ADDRESS, BETA 2                     F3B04040
00611  0 76700 0 00022          ALS 18               SHIFT TO DECREMENT                       F3B04050
00612  0 53400 2 02276          LXA M2CON+2,2        LOAD 2 IN IR 2, 2 SETS OF INSTRUCTION    F3B04060
00613  0 60100 0 02364 M21310   STO M2CW+2           STORE BETA 2 IN 3RD WD.                  F3B04070
00614  0 07400 4 02177          TSX CIT200,4         COMPILE                                  F3B04080
00615  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04090
00616  0 00000 0 02315          HTR M2ABC            TRA                                      F3B04100
00617  0 00000 0 02364          HTR M2CW+2           BETA 2, BETA 1                           F3B04110
00620  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04120
00621  0 50000 1 05472          CLA TIFGO,1          2ND WORD                                 F3B04130
00622 -0 32000 0 02305          ANA M2CON+9          SAVE DECREMENT                           F3B04140
00623  2 00001 2 00613          TIX M21310,2,1       COMPILE SECOND TRA                       F3B04150
00624  1 77777 1 00503          TXI M21000,1,-1      BACK TO OBTAIN NEXT TIFGO                F3B04160
                                   TIFGO ENTRY AN IF DIV CK                                   F3B04170
00625  0 07400 4 02177 M21400   TSX CIT200,4         COMPILE                                  F3B04180
00626  0 00000 0 02345          HTR TIFFN            ALPHA                                    F3B04190
00627  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04200
00630  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04210
00631  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04220
00632  0 50000 1 05472          CLA TIFGO,1          2ND WORD OF TIFGO ENTRY                  F3B04230
00633 -0 32000 0 02305          ANA M2CON+9          SAVE DECREMENT                           F3B04240
00634  0 53400 2 02276          LXA M2CON+2,2        COUNT OF 2 IN IR 2                       F3B04250
00635  0 60100 0 02364 M21410   STO M2CW+2           COMPILE                                  F3B04260
00636  0 07400 4 02177          TSX CIT200,4         COMPILE                                  F3B04270
00637  0 00000 0 02274          HTR M2CON            ZERO                                     F3B04280
00640  0 00000 0 02315          HTR M2ABC            TRA                                      F3B04290
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00641   0 00000 0 02364          HTR M2CW+2          BETA1,                                  F3B04300
00642   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04310
00643   0 50000 1 05472          CLA TIFGO,1         2ND WORD                                F3B04320
00644  -0 32000 0 02306          ANA M2CON+10        SAVE BETA 2                             F3B04330
00645   0 76700 0 00022          ALS 18              PLACE IN DECREMENT                      F3B04340
00646   2 00001 2 00635          TIX M21410,2,1      COMPILE 2ND TRA INSTR.                  F3B04350
00647   1 77777 1 00503          TXI M21000,1,-1     BACK TO GET NEXT TIFGO                  F3B04360
                                  TIFGO ENTRY AN IF OVERFLOW                                F3B04370
00650   0 50000 1 05472 M21500   CLA TIFGO,1         2ND WORD OF TIFGO ENTRY                 F3B04380
00651  -0 32000 0 02305          ANA M2CON+9         SAVE DECREMENT                          F3B04390
00652   0 60100 0 02364          STO M2CW+2          3RD WORD, BETA 1                        F3B04400
00653   0 07400 4 02177          TSX CIT200,4        COMPILE                                 F3B04410
00654   0 00000 0 02345          HTR TIFFN           ALPHA                                   F3B04420
00655   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04430
00656   0 00000 0 02364          HTR M2CW+2          BETA 1                                  F3B04440
00657   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04450
00660   0 50000 1 05472          CLA TIFGO,1         2ND WORD OF TIFGO ENTRY                 F3B04460
00661  -0 32000 0 02306          ANA M2CON+10        SAVE BETA 2                             F3B04470
00662   0 76700 0 00022          ALS 18              SHIFT TO DECREMENT                      F3B04480
00663   0 60100 0 02364          STO M2CW+2          3RD WORD OF COMPILED INSTRUCTIONS       F3B04490
00664   0 07400 4 02177 M21515   TSX CIT200,4        COMPILE                                 F3B04500
00665   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04510
00666   0 00000 0 02315          HTR M2ABC           TRA                                     F3B04520
00667   0 00000 0 02364          HTR M2CW+2          BETA 2                                  F3B04530
00670   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04540
00671   1 77777 1 00503          TXI M21000,1,-1     BACK TO NEXT TIFGO ENTRY                F3B04550
                                  TIFGO ENTRY AN IF (E)                                     F3B04560
00672  -0 32000 0 02306 M21800   ANA M2CON+10        SAVE ADDRESS OF 1ST WD, BETA 1          F3B04570
00673   0 76700 0 00022          ALS 18              PLACE IN DECREMENT                      F3B04580
00674   0 60100 0 02364          STO M2CW+2          3RD WORD OF CIT                         F3B04590
00675   0 07400 4 02177          TSX CIT200,4        COMPILE                                 F3B04600
00676   0 00000 0 02345          HTR TIFFN           ALPHA                                   F3B04610
00677   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04620
00700   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04630
00701   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04640
00702   1 77777 1 00703          TXI M21810,1,-1     STEP COUNT FOR 2ND TIFGO WORD           F3B04650
00703   0 50000 1 05472 M21810   CLA TIFGO,1         2ND WD. OF TIFGO ENTRY                  F3B04660
00704  -0 32000 0 02305          ANA M2CON+9         SAVE DECREMENT BETA 2                   F3B04670
00705   0 60100 0 02366          STO M2CW+4          5TH WD.                                 F3B04680
00706   0 50000 0 02345          CLA TIFFN           ALPHA                                   F3B04690
00707  -0 50100 0 02301          ORA M2CON+5         10(8) INSTR. NO. WITHIN INTERNAL FMLANO. F3B04700
00710   0 60100 0 02362          STO M2CW            INTERNAL FMLA NO.                       F3B04710
00711   0 07400 4 02177          TSX CIT200,4        COMPILE                                 F3B04720
00712   0 00000 0 02362          HTR M2CW            ALPHA, 10(8)                            F3B04730
00713   0 00000 0 02316          HTR M2ABC+1         TZE                                     F3B04740
00714   0 00000 0 02366          HTR M2CW+4          BETA 2 C(M2CW+4)                        F3B04750
00715   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04760
00716   0 50000 1 05472          CLA TIFGO,1         2ND WORD OF TIFGO ENTRY                 F3B04770
00717  -0 32000 0 02306          ANA M2CON+10        SAVE ADDRESS. BETA 3                    F3B04780
00720   0 76700 0 00022          ALS 18              SHIFT TO DECREMENT                      F3B04790
00721   0 60100 0 02366          STO M2CW+4          STORE BETA 3                            F3B04800
00722   0 07400 4 02177          TSX CIT200,4        COMPILE                                 F3B04810
00723   0 00000 0 02274          HTR M2CON           ZERO                                    F3B04820
00724   0 00000 0 02317          HTR M2ABC+2         TPL                                     F3B04830
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00725   0 00000 0 02366         HTR M2CW+4          BETA 3 C(M2CW+4)                    F3B04840
00726   0 00000 0 02274         HTR M2CON           ZERO                                F3B04850
00727   0 02000 0 00664         TRA M21515          TR. TO COMPILE TRA TO BETA 1        F3B04860
                                TIFGO ENTRY AN ASSIGN                                   F3B04870
00730   0 50000 0 07324 M21600  CLA ASNO            CURRENT ASSIGN NO.                  F3B04880
00731   0 60100 0 02365         STO M2CW+3          4TH WORD OF CIT                     F3B04890
00732   0 40000 0 02303         ADD M2CON+7         +000001000000                       F3B04900
00733   0 60100 0 07324         STO ASNO            REPLACE ASSIGN NO.                  F3B04910
00734   0 07400 4 02177         TSX CIT200,4        COMPILE                             F3B04920
00735   0 00000 0 02345         HTR TIFFN           ALPHA                               F3B04930
00736   0 00000 0 02274         HTR M2CON           ZERO                                F3B04940
00737   0 00000 0 02307         HTR M2CON+11        +050000000000                       F3B04950
00740   0 00000 0 02365         HTR M2CW+3          CURRENT ASSIGN NO.                  F3B04960
                                                                                        F3B04970
00741   1 77777 1 00742 M21610  TXI M21610+1,1,-1                                       F3B04980
00742   0 50000 1 05472         CLA TIFGO,1         2ND WD. OF TIFGO ENTRY              F3B04990
00743   0 76700 0 00022         ALS 18              PLACE BETA IN DECREMENT             F3B05000
00744  -0 53400 2 07323         LXD EASCO,2         CURRENT ASCO ENTRY PT. IN IR 2      F3B05010
00745   0 60100 2 07325         STO ASCO,2          STORE BETA IN PROPER ASCO LOC       F3B05020
00746   1 77777 2 00747         TXI M21620,2,-1     STEP COUNT FOR NEXT ASCO ENTRY      F3B05030
00747  -0 63400 2 07323 M21620  SXD EASCO,2         PT. AND STORE                       F3B05040
00750   1 77777 1 00503         TXI M21000,1,-1     BACK FOR NEXT TIFGO                 F3B05050
                                M2 TERMINAL ROUTINE                                     F3B05060
00751  -0 53400 2 02355 M21900  LXD BBOX,2          2S COMPL. OF NO OF WDS IN BLOCK     F3B05070
00752  -0 53400 4 07322         LXD TFRCO,4                                             F3B05080
00753   1 00003 4 00754         TXI M21900+3,4,3    STEP UP BLOCK COUNT BY 3            F3B05090
00754  -3 00000 2 00764         TXL M21920,2,0      TEST IF AT END OF BLOCK             F3B05100
00755   0 76600 0 00222         WRS 146             SELECT TAPE 2                       F3B05110
00756   1 00001 4 00757         TXI M21910-1,4,1    STEPUP IR 4 BY 1                    F3B05120
00757  -0 53400 1 02274         LXD M2CON,1         ZEROS IN IR 1                       F3B05130
00760   0 70000 1 06622 M21910  CPY CIB2,1          WRITE REMAINING CITS                F3B05140
00761   1 77777 1 00762         TXI M21910+2,1,-1   DECREASE COUNT IN IR 1              F3B05150
00762   1 00001 2 00763         TXI M21910+3,2,1    INCREASE COUNT IN IR 2              F3B05160
00763   3 00001 2 00760         TXH M21910,2,1      TEST IF AT END                      F3B05170
00764   0 77000 0 00222 M21920  WEF 146             WRITE END OF FILE                   F3B05180
00765   0 76400 0 00222         BST 146                                                 F3B05190
00766   2 00001 4 00765         TIX M21920+1,4,1                                        F3B05200
00767   0 76200 0 00222 M21925  RDS 146             POSITION TAPE 2 AT BEGINNING        F3B05210
00770   0 70000 0 02366         CPY M2CW+4          OF TIFGO FILE                       F3B05220
00771   0 02000 0 00770         TRA M21925+1        BACK TO READ LOOP                   F3B05230
00772   0 02000 0 00774         TRA M22000-2                                            F3B05240
00773   0 02000 0 00767         TRA M21925                                              F3B05250
00774   0 76200 0 00221         RTB 1                                                   F3B05260
00775   0 02000 0 00004         TRA 4                                                   F3B05270
                                M2-MAIN PROGRAM-TIFGO FMLA NO IN                        F3B05280
                                TRALEV                                                  F3B05290
00776   1 77777 2 00777 M22000  TXI M22000+1,2,-1   UPDATE TRALEV ENTRY                F3B05300
00777  -0 63400 2 02347         SXD ETRAL,2         POINT, SAVE IN PROPER CELL          F3B05310
01000  -0 53400 2 02274         LXD M2CON,2         RESET IR 2 WITH ZERO                F3B05320
01001   0 07400 4 01456         TSX M22700,4        TRASTO FMLA NO SEARCH, M2 SUBROUTINE F3B05330
01002   0 02000 0 01004         TRA M22006          CUR TIFGO FMLA NO NOT IN TRASTO     F3B05340
01003   0 02000 0 01015         TRA M22015          CUR TIFGO FMLA NO IN TRASTO         F3B05350
01004  -0 53400 2 02347 M22006  LXD ETRAL,2         2S COMPL. OF TRALEV ENTRY PT. COUNT F3B05360
01005   0 50000 2 03211         CLA TRALEV,2        TRALEV ENTRY                        F3B05370
01006  -0 12000 0 01013         TMI M22013          IS IT START OF NEXT ENTRY 2
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01007 -0 75400 2 00000         PXD 0,2              TRALEV ENTRY PT CT. IN ACC                          F3B05380
01010  0 40200 0 03210         SUB TRALEV-1         TRALEV WORD COUNT                                   F3B05390
01011  0 10000 0 01013         TZE M22013           IS IT END OF TRALEV TABLE, YES                      F3B05400
01012  1 77777 2 01005         TXI M22006+1,2,-1    NO, UPDATE TRALEV TABLE                             F3B05410
01013 -0 63400 2 02347 M22013  SXD ETRAL,2          START OF NEXT ENTRY, SAVE COUNT                     F3B05420
01014  0 02000 0 00523         TRA M21020           OF TRALEV, BACK TO COMPILE INSTR.                   F3B05430
01015 -0 63400 2 02356 M22015  SXD ETRAST,2         SAVE TRASTO ENTRY PT.                               F3B05440
01016  0 50000 0 02274         CLA M2CON            INITIALIZE ADDCO                                    F3B05450
01017  0 60100 0 02333         STO ADDCO                                                                F3B05460
01020  0 50000 1 05472         CLA TIFGO,1          OBTAIN TIFGO TYPE, TRANSFER TO ROUTINES             F3B05470
01021 -0 12000 0 01360         TMI M22600           IF(E)                                               F3B05480
01022 -0 32000 0 02306         ANA M2CON+10                                                             F3B05490
01023  0 10000 0 01033         TZE M22020           GO TO A                                             F3B05500
01024  0 34000 0 02277         CAS M2CON+3                                                              F3B05510
01025  1 77777 1 01344         TXI M22500,1,-1      IF OVERFLOW                                         F3B05520
01026  1 77777 1 01252         TXI M22400,1,-1      IF DIV CK                                           F3B05530
01027  0 34000 0 02276         CAS M2CON+2                                                              F3B05540
01030  1 77777 1 01236         TXI M22300,1,-1      IF SENSE                                            F3B05550
01031  1 77777 1 01123         TXI M22200,1,-1      GO TO (A),1                                         F3B05560
01032  1 77777 1 01072         TXI M22100,1,-1      GO TO N (A)                                         F3B05570
                               TIFGO ENTRY A GO TO A                                                    F3B05580
01033  0 50000 0 02345 M22020  CLA TIFFN            CURRENT TIFGO FMLA NO.                              F3B05590
01034  0 60100 0 02362 PAT1    STO M2CW                                                                 F3B05600
01035  0 50000 0 02301 PAT2    CLA M2CON+5          +10,INCREMENT                                       F3B05610
01036  0 60100 0 02360 PAT3    STO CLOC             FOR LOC WD OF 1ST INSTR OF TRASTO BLOCK             F3B05620
01037  0 07400 4 01477 M22022  TSX M22750,4         TRASTO LEV.NO.SEARCH                                F3B05630
01040  0 07400 4 01560         TSX M22800,4         CUR.TIFGO LEV.NO.IN TRASTO                          F3B05640
01041 -0 53400 2 02346         LXD CTRAST,2         CUR.TIFGO NO.NOT IN TRASTO                          F3B05650
01042  1 77774 2 01043 M22025  TXI M22025+1,2,-4    UPDATE TRASTO ENTRY POINT                           F3B05660
01043  0 07400 4 01456         TSX M22700,4         TRASTO FMLA NO SEARCH                               F3B05670
01044  0 02000 0 01052         TRA M22035           TIFGO FMLA NO.NOT AGAIN FOUND                       F3B05680
01045  0 50000 0 02333         CLA ADDCO            TIFGO FMLA NO AGAIN FOUND                           F3B05690
01046  0 10000 0 01037         TZE M22022           TIFGO ENTRY NOT YET FOUND IN TRASTO                 F3B05700
01047  0 50000 0 02274         CLA M2CON            TIFGO ENTRY ALREADY FOUND IN TRASTO                 F3B05710
01050  0 60100 0 02362         STO M2CW             ADJUST LOCATION WORD TO ZERO                        F3B05720
01051  0 02000 0 01037         TRA M22022           BACK TO LEVEL NO. SEARCH                            F3B05730
01052  0 50000 0 02333 M22035  CLA ADDCO            NO. OF TIMES TIFGO ENTRY APPEARS IN TRASTO          F3B05740
01053  0 10000 0 01056         TZE M22040           TIFGO ENTRY NEVER FOUND IN TRASTO                   F3B05750
01054  0 50000 0 02311         CLA M2CON+13         TIFGO ENTRY FOUND IN TRASTO                         F3B05760
01055  0 60100 0 02362         STO M2CW             +170000000000 , NEW. LOC. WORD                      F3B05770
01056  0 50000 1 05473 M22040  CLA TIFGO+1,1        TIFGO BETA                                          F3B05780
01057  0 76700 0 00022         ALS 18               PUT INTO DECREMENT                                  F3B05790
01060  0 60100 0 02364         STO M2CW+2           3RD WORD                                            F3B05800
~~01061  0 07400 4 02177         TSX CIT200,4         COMPILE FINAL INSTRUCTION~~                       ~~F3B05810~~
01062  0 00000 0 02362         HTR M2CW             17(8)                                               F3B05820
01063  0 00000 0 02315         HTR M2ABC            TRA                                                 F3B05830
01064  0 00000 0 02364         HTR M2CW+2           BETA                                                F3B05840
01065  0 00000 0 02274         HTR M2CON            ZERO                                                F3B05850
01066 -0 53400 2 02347         LXD ETRAL,2          UPDATE TRALEV ENTRY POINT                           F3B05860
01067  1 77777 2 01070 M22050  TXI M22050+1,2,-1                                                        F3B05870
01070 -0 63400 2 02347         SXD ETRAL,2          UPDATE TRALEV TO NEXT ENTRY                         F3B05880
01071  1 77776 1 00503         TXI M21000,1,-2      BACK TO TEST AGAIN.                                 F3B05890
                               TIFGO ENTRY A GO TO N (A)                                                F3B05900
01072  0 50000 0 02345 M22100  CLA TIFFN            CURRENT TIFGO ALPHA                                 F3B05910
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01073  0 76000 0 00002          CHS                  MAKE LOCATION WORD POSITIVE                F3B05920
01074  0 60100 0 02362 PAT5     STO M2CW                                                        F3B05930
01075  0 50000 0 02301 PAT6     CLA M2CON+5          +10                                        F3B05940
01076  0 60100 0 02360 PAT7     STO CLOC             SAVE INCREMENT                             F3B05950
01077  0 07400 4 01477 M22105   TSX M22750,4         TRASTO LEV NO SEARCH                       F3B05960
01100  0 07400 4 01560          TSX M22800,4         CUR TIFGO LEV NO.IN TRASTO                 F3B05970
01101 -0 53400 2 02346          LXD CTRAST,2         CUR TIFGO LEV NO NOT IN TRASTO             F3B05980
01102  1 77774 2 01103 M22110   TXI M22110+1,2,-4    UPDATE TRASTO ENTRY POINT                  F3B05990
01103  0 07400 4 01456          TSX M22700,4         TRASTO FMLA NO SEARCH                      F3B06000
01104  0 02000 0 01112          TRA M22120           TIFGO FMLA NO.NOT AGAIN FOUND              F3B06010
01105  0 50000 0 02333          CLA ADDCO            TIFGO FMLA NO.AGAIN FOUND                  F3B06020
01106  0 10000 0 01077          TZE M22105           TIFGO ENTRY NOT YET FOUND IN TRASTO        F3B06030
01107  0 50000 0 02274          CLA M2CON            TIFGO ENTRY ALREADY FOUND IN TRASTO        F3B06040
01110  0 60100 0 02362          STO M2CW             ADJUST LOCATION WROD TO ZERO               F3B06050
01111  0 02000 0 01077          TRA M22105           BACK TO LEVEL NO. SEARCH                   F3B06060
01112 -0 53400 2 02347 M22120   LXD ETRAL,2          UPDATE TRALEV ENTRY POINT                  F3B06070
01113  0 50000 2 03211          CLA TRALEV,2         BEGINNING OF TRALEV BLOCK                  F3B06080
01114 -0 12000 0 01121          TMI M22130                                                      F3B06090
01115 -0 75400 2 00000          PXD 0,2              TEST IF END OF TRALEV                      F3B06100
01116  0 40200 0 03210          SUB TRALEV-1                                                    F3B06110
01117  0 10000 0 01121          TZE M22130                                                      F3B06120
01120  1 77777 2 01113          TXI M22120+1,2,-1    SPACE OVER TO NEXT ENTRY                   F3B06130
01121 -0 63400 2 02347 M22130   SXD ETRAL,2                                                     F3B06140
01122  1 77777 1 00503          TXI M21000,1,-1                                                 F3B06150
                                  TIFGO ENTRY A GO TO (A),1                                     F3B06160
01123  0 50000 1 05472 M22200   CLA TIFGO,1          COMPUTE N+1 (CTRAD1- CTRAD2+1)             F3B06170
01124  0 73400 2 00000          PAX 0,2              STORE IN M2CW+3                            F3B06180
01125 -0 63400 2 02332          SXD LOX,2            STORE COMPILING FIRST                      F3B06190
01126 -0 32000 0 02305          ANA M2CON+9          INSTRUCTION                                F3B06200
01127  0 40000 0 02303          ADD M2CON+7                                                     F3B06210
01130  0 40200 0 02332          SUB LOX                                                         F3B06220
01131  0 60100 0 02365          STO M2CW+3                                                      F3B06230
01132  0 76000 0 00006          COM                  COMPUTE 2S COMP OF                         F3B06240
01133  0 40000 0 02304          ADD M2CON+8          N-1 IN ORDER TO                            F3B06250
01134  0 62200 0 01140          STD M22220           OBTAIN TRALEV ENTRY                        F3B06260
01135 -0 53400 2 02347          LXD ETRAL,2          POINT FOR LAST ADDRESS                     F3B06270
01136 -0 63400 2 01165          SXD M22240+1,2                                                  F3B06280
01137 -0 63400 2 01231          SXD M22275+1,2                                                  F3B06290
D 01140  1 00000 2 01141 M22220 TXI M22220+1,2                                                  F3B06300
01141 -0 63400 2 02357          SXD NETRAL,2         TRALEV. ENTRY PT. FOR LAST ADDRESS         F3B06310
01142 -0 63400 2 02347          SXD ETRAL,2          CURRENT TRALEV ENTRY PT.                   F3B06320
01143  0 07400 4 02177          TSX CIT200,4         COMPILE FIRST INSTRUCTION                  F3B06330
01144  0 00000 0 02345          HTR TIFFN            ALPHA                                      F3B06340
01145  0 00000 0 02274          HTR M2CON            ZERO                                       F3B06350
01146  0 00000 0 02345          HTR TIFFN            ALPHA                                      F3B06360
01147  0 00000 0 02365          HTR M2CW+3           NO. OF ADDRESS IN TRAD                     F3B06370
01150  0 07400 4 01477 M22225   TSX M22750,4         TRASTO LEVEL NO SEARCH                     F3B06380
01151  0 07400 4 02013          TSX M23000,4         COR TIFGO LEV NO IN TRASTO                 F3B06390
01152 -0 53400 2 02346          LXD CTRAST,2         CUR TIFGO LEV NO NOT IN TRASTO             F3B06400
01153  1 77774 2 01154 M22230   TXI M22230+1,2,-4    UPDATE TRASTO ENTRY POINT                  F3B06410
01154  0 07400 4 01456          TSX M22700,4         TRASTO FMLA NO.SEARCH                      F3B06420
01155  0 07400 4 02077          TSX M23050,4         TIFGO FMLA NO.NOT AGAIN FOUND              F3B06430
01156  0 02000 0 01150          TRA M22225           TIFGO FMLA NO AGAIN FOUND                  F3B06440
01157  0 50000 0 02356 M22235   CLA ETRAST           RESET CTRAST CELL FOR                      F3B06450
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01160  0 60100 0 02346         STO CTRAST          TRASTO LEV NO SEARCH                                  F3B06460
01161 -0 53400 2 02347         LXD ETRAL,2         UPDATE TRALEV ENTRY POINT                             F3B06470
01162  1 00001 2 01163         TXI M22240-1,2,1                                                          F3B06480
01163 -0 63400 2 02347         SXD ETRAL,2                                                               F3B06490
01164 -3 00000 2 01166 M22240  TXL M22240+2,2,0                                                          F3B06500
D 01165 -3 00000 2 01150       TXL M22225,2                                                              F3B06510
01166  0 50000 0 02333         CLA ADDCO                                                                 F3B06520
01167  0 10000 0 01232         TZE M22275+2        TIFGO ENTRY NEVER FOUND IN TRASTO                     F3B06530
01170 -0 53400 2 02357         LXD NETRAL,2        RESET ETRAL FOR SECOND                                F3B06540
01171 -0 63400 2 02347         SXD ETRAL,2         PASS THROUGH TRASTO                                   F3B06550
01172  0 50000 0 02301         CLA M2CON+5         INITIALIZE LOCATION                                   F3B06560
01173  0 60100 0 02360         STO CLOC            COUNTER                                               F3B06570
01174  0 60100 0 02362         STO M2CW            SET LOCATION WORD FOR FIRST                           F3B06580
01175  0 50000 0 02345 M22245  CLA TIFFN           TRASTO INSERT                                         F3B06590
01176 -0 60200 0 02362         ORS M2CW                                                                  F3B06600
01177  0 50000 0 02274         CLA M2CON           INITIALIZE ADDCO FOR                                  F3B06610
01200  0 60100 0 02333         STO ADDCO           TRASTO LEV.NO.SEARCH AND TRANSFER TO PERFORM          F3B06620
01201  0 07400 4 01477 M22250  TSX M22750,4        TRASTO LEV.NO.SEARCH                                  F3B06630
01202  0 07400 4 01560         TSX M22800,4        CUR TIFGO LEV NO FOUND                                F3B06640
01203 -0 53400 2 02346         LXD CTRAST,2        CUR TIFGO NO.NOT FOUND                                F3B06650
01204  1 77774 2 01205 M22255  TXI M22255+1,2,-4   UPDATE TRASTO ENTRY POINT                             F3B06660
01205  0 07400 4 01456         TSX M22700,4        TRASTO FMLA NO.SEARCH                                 F3B06670
01206  0 02000 0 01214         TRA M22265          TIFGO FMLA NO.NOT AGAIN FOUND                         F3B06680
01207  0 50000 0 02333         CLA ADDCO           TIFGO FMLA NO.AGAIN FOUND                             F3B06690
01210  0 10000 0 01201         TZE M22250          CUR TIFGO ADD NOT YET FOUND IN TRASTO                 F3B06700
01211  0 50000 0 02274         CLA M2CON           CURTIFGO ADD ALREADY FOUND IN TRASTO                  F3B06710
01212  0 60100 0 02362         STO M2CW            ADJUST LOCATION WORD                                  F3B06720
01213  0 02000 0 01201         TRA M22250                                                                F3B06730
01214  0 50000 0 02333 M22265  CLA ADDCO                                                                 F3B06740
01215  0 10000 0 01223         TZE M22270          CUR. TIFGO NEVER FOUND IN TRASTO                      F3B06750
01216  0 07400 4 02163         TSX M23075,4        CUR. TIFGO ADD. FOUND IN TRASTO                       F3B06760
01217  0 50000 0 02360         CLA CLOC            UPDATE LOCATION WORD FOR NEXT ENTRY                   F3B06770
01220  0 40000 0 02301         ADD M2CON+5         BLOCK OF TRASTO UNSERTS                               F3B06780
01221  0 60100 0 02360         STO CLOC                                                                  F3B06790
01222  0 60100 0 02362         STO M2CW                                                                  F3B06800
01223  0 50000 0 02356 M22270  CLA ETRAST          RESET CTRAST FOR TRASTO                               F3B06810
01224  0 60100 0 02346         STO CTRAST          LEV. NO. SEARCH                                       F3B06820
01225 -0 53400 2 02347         LXD ETRAL,2         UPDATE TRALEV ENTRY POINT                             F3B06830
01226  1 00001 2 01227         TXI M22275-1,2,1                                                          F3B06840
01227 -0 63400 2 02347         SXD ETRAL,2                                                               F3B06850
01230 -3 00000 2 01232 M22275  TXL M22275+2,2,0                                                          F3B06860
D 01231 -3 00000 2 01175       TXL M22245,2                                                              F3B06870
01232 -0 53400 2 02357         LXD NETRAL,2        UPDATE TRALEV ENTRY POINT                             F3B06880
01233  1 77777 2 01234         TXI M22280,2,-1     FOR NEXT TIFGO ENTRY                                  F3B06890
01234 -0 63400 2 02347 M22280  SXD ETRAL,2                                                               F3B06900
01235  1 77777 1 00503         TXI M21000,1,-1     BACK TO NEXT TIFGO                                    F3B06910
                                  TIFGO ENTRY AN IF SENSE                                               F3B06920
01236 -0 53400 2 02347 M22300  LXD ETRAL,2         UPDATE TRALEV                                         F3B06930
01237 -0 63400 2 01165         SXD M22240+1,2                                                            F3B06940
01240 -0 63400 2 01231         SXD M22275+1,2                                                            F3B06950
01241  1 77777 2 01242 M22305  TXI M22305+1,2,-1                                                         F3B06960
01242 -0 63400 2 02357         SXD NETRAL,2                                                              F3B06970
01243 -0 63400 2 02347         SXD ETRAL,2                                                               F3B06980
01244  0 07400 4 02177         TSX CIT200,4        COMPILE INFO. INSTRUCTION                             F3B06990
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01245  0 00000 0 02345        HTR TIFFN          ALPHA                                          F3B07000
01246  0 00000 0 02274        HTR M2CON          ZERO                                           F3B07010
01247  0 00000 0 02274        HTR M2CON          ZERO                                           F3B07020
01250  0 00000 0 02274        HTR M2CON          ZERO                                           F3B07030
01251  0 02000 0 01150        TRA M22225         TRASTO LEVEL NO. SEARCH                        F3B07040
                                  TIFGO ENTRY AN IF DIV CK                                      F3B07050
01252 -0 53400 2 02347 M22400 LXD ETRAL,2        UPDATE TRALEV                                  F3B07060
01253  1 77776 2 01254        TXI M22400+2,2,-2                                                 F3B07070
01254 -0 63400 2 01277        SXD M22425+1,2                                                    F3B07080
01255 -0 63400 2 01342        SXD M22465+1,2                                                    F3B07090
01256  0 07400 4 02177        TSX CIT200,4       COMPILE INFO. INSTRUCTION                      F3B07100
01257  0 00000 0 02345        HTR TIFFN          ALPHA                                          F3B07110
01260  0 00000 0 02274        HTR M2CON          ZERO                                           F3B07120
01261  0 00000 0 02274        HTR M2CON          ZERO                                           F3B07130
01262  0 00000 0 02274        HTR M2CON          ZERO                                           F3B07140
01263  0 07400 4 01477 M22410 TSX M22750,4       TRASTO LEVEL NO SEARCH                         F3B07150
01264  0 07400 4 02013        TSX M23000,4       CUR. TIFGO LEVEL NO. IN TRASTO                 F3B07160
01265 -0 53400 2 02346        LXD CTRAST,2       CUR. TIFGO LEVEL NO. NOT IN TRASTO             F3B07170
01266  1 77774 2 01267 M22415 TXI M22415+1,2,-4  UPDATE TRASTO ENTRY POINT                      F3B07180
01267  0 07400 4 01456        TSX M22700,4       TRASTO FMLA. NO. SEARCH                        F3B07190
01270  0 07400 4 02077        TSX M23050,4       TIFGO FMLA. NO NOT AGAIN FOUND                 F3B07200
01271  0 02000 0 01263        TRA M22410         TIFGO FMLA. NO. AGAIN FOUND                    F3B07210
01272  0 50000 0 02356 M22420 CLA ETRAST         RESET CTRAST CELL FOR                          F3B07220
01273  0 60100 0 02346        STO CTRAST         TRASTO LEVEL NO. SEARCH                        F3B07230
01274 -0 53400 2 02347        LXD ETRAL,2        UPDATE TRALEV ENTRY POINT                      F3B07240
01275  1 77777 2 01276        TXI M22425,2,-1                                                   F3B07250
01276 -0 63400 2 02347 M22425 SXD ETRAL,2                                                       F3B07260
D 01277  3 00000 2 01263        TXH M22410,2                                                      F3B07270
01300  0 50000 0 02333        CLA ADDCO                                                         F3B07280
01301  0 10000 0 01343        TZE M22465+2       TIFGO ENTRY NEVER FOUND IN TRASTO              F3B07290
01302  1 00002 2 01303        TXI M22430,2,2     RESET ETRAL FOR SECOND                         F3B07300
01303 -0 63400 2 02347 M22430 SXD ETRAL,2        PASS THROUGH TREASTO                           F3B07310
01304  0 50000 0 02301        CLA M2CON+5                INITIALIZE LOCATION                    F3B07320
01305  0 60100 0 02360        STO CLOC                   COUNTER                                F3B07330
01306  0 60100 0 02362        STO M2CW                   SET LOCATION WORD FOR                  F3B07340
01307  0 50000 0 02345 M22435 CLA TIFFN                  FIRST TRASTO INSERT                    F3B07350
01310 -0 60200 0 02362        ORS M2CW                                                          F3B07360
01311  0 50000 0 02274        CLA M2CON                  INITIALIZE ADDCO FOR                   F3B07370
01312  0 60100 0 02333        STO ADDCO                  TRASTO LEV NO SEARCH                   F3B07380
01313  0 07400 4 01477 M22440 TSX M22750,4               TRASTO LEV NO SEARCH                   F3B07390
01314  0 07400 4 01560        TSX M22800,4               CUR TIFGO LEV NO FOUND IN TRASTO       F3B07400
01315 -0 53400 2 02346        LXD CTRAST,2               CUR TIFGO LEV NO NOT FOUND IN TRASTO   F3B07410
01316  1 77774 2 01317 M22445 TXI M22445+1,2,-4          UPDATE TRASTO ENTRY POINT              F3B07420
01317  0 07400 4 01456        TSX M22700,4               TRASTO FMLA NO SEARCH                  F3B07430
01320  0 02000 0 01326        TRA M22455                 TIFGO FMLA NO NOT AGAIN FOUND          F3B07440
01321  0 50000 0 02333        CLA ADDCO                  TIFGO FMLA NO AGAIN FOUND              F3B07450
01322  0 10000 0 01313        TZE M22440                 CUR TIFGO ADD NOT YET FOUND IN TRASTOF3B07460
01323  0 50000 0 02274        CLA M2CON                  CUR TIFGO ENTRY ALREADY FOUND IN TRASF3B07470
01324  0 60100 0 02362        STO M2CW                   ADJUST LOCATION WORD                   F3B07480
01325  0 02000 0 01313        TRA M22440         TRASTO LEV. NO, SEARCH                         F3B07490
01326  0 50000 0 02333 M22455 CLA ADDCO                                                         F3B07500
01327  0 10000 0 01335        TZE M22460                 CUR TIFGO ADD NEVER FOUND IN TRASTO    F3B07510
01330  0 07400 4 02163        TSX M23075,4               CUR TIFGO ADD FOUND IN TRASTO          F3B07520
01331  0 50000 0 02360        CLA CLOC                   UPDATE LOCATION WORD FOR               F3B07530
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01332   0 40000 0 02301         ADD M2CON+5              NEXT BLOCK OF TRASTO INSERTS          F3B07540
01333   0 60100 0 02360         STO CLOC                                                       F3B07550
01334   0 60100 0 02362         STO M2CW                                                       F3B07560
01335   0 50000 0 02356 M22460  CLA ETRAST               RESET CTRAST FOR TRASTO LEV           F3B07570
01336   0 60100 0 02346         STO CTRAST               NO SEARCH                             F3B07580
01337  -0 53400 2 02347         LXD ETRAL,2              UPDATE TRALEV ENTRY                   F3B07590
01340   1 77777 2 01341         TXI M22465,2,-1          POINT                                 F3B07600
01341  -0 63400 2 02347 M22465  SXD ETRAL,2                                                   F3B07610
D  01342   3 00000 2 01307      TXH M22435,2       TEST END OF TRALEV ENTRIES .               F3B07620
01343   1 77777 1 00503         TXI M21000,1,-1    NEXT TIFGO.                                F3B07630
                                TIFGO ENTRY AN IF OVERFLOW                                     F3B07640
01344  -0 53400 2 02347 M22500  LXD ETRAL,2        INITIALIZE AND RECORD END OF               F3B07650
01345   1 77776 2 01346         TXI M22500+2,2,-2  TRALEV ENTRY                               F3B07660
01346  -0 63400 2 01277         SXD M22425+1,2                                                F3B07670
01347  -0 63400 2 01342         SXD M22465+1,2                                                F3B07680
01350   0 07400 4 01477 M22505  TSX M22750,4             TRASTO LEV NO SEARCH                  F3B07690
01351   0 07400 4 02027 COR12   TSX M23025,4                                                  F3B07700
01352  -0 53400 2 02346         LXD CTRAST,2             CUR TIFGO LEV NO NOT IN TRASTO        F3B07710
01353   1 77774 2 01354 M22510  TXI M22510+1,2,-4        UPDATE TRASTO ENTRY POINT             F3B07720
01354   0 07400 4 01456         TSX M22700,4             TRASTO FMLA NO SEARCH                 F3B07730
01355   0 07400 4 02113         TSX M23060,4             TRASTO FMLA NO NOT AGAIN FOUND        F3B07740
01356   0 02000 0 01350         TRA M22505               TRASTO FMLA NO AGAIN FOUND            F3B07750
01357   0 02000 0 01272         TRA M22420         CONTINUE AS IN DVCH.                        F3B07760
                                TIFGO ENTRY AN IF (E)                                          F3B07770
01360  -0 53400 2 02347 M22600  LXD ETRAL,2        PERMUTE WDS. OF THIS TRALEV ENTRY          F3B07780
01361   0 50000 2 03211         CLA TRALEV,2       SO THAT                                    F3B07790
01362   0 60100 0 02361         STO SAVE           A1, A2, A3, BECOMES A2, A3, A1             F3B07800
01363   0 50000 2 03212         CLA TRALEV+1,2           A2 FIRST                              F3B07810
01364   0 60100 2 03211         STO TRALEV,2                                                   F3B07820
01365   0 50000 2 03213         CLA TRALEV+2,2           A3 SECOND                             F3B07830
01366   0 60100 2 03212         STO TRALEV+1,2                                                F3B07840
01367   0 50000 0 02361         CLA SAVE                 A1 THIRD                              F3B07850
01370   0 60100 2 03213         STO TRALEV+2,2                                                 F3B07860
01371   1 77775 2 01372 M22610  TXI M22610+1,2,-3                                              F3B07870
01372  -0 63400 2 01342         SXD M22465+1,2                                                F3B07880
01373   0 07400 4 02177         TSX CIT200,4             COMPILE INFO INSTRUCTION              F3B07890
01374   0 00000 0 02345         HTR TIFFN          ALPHA                                       F3B07900
01375   0 00000 0 02274         HTR M2CON          ZERO                                        F3B07910
01376   0 00000 0 02274         HTR M2CON          ZERO                                        F3B07920
01377   0 00000 0 02274         HTR M2CON          ZERO                                        F3B07930
01400   0 07400 4 01477 M22620  TSX M22750,4              TRASTO LEV NO SEARCH                 F3B07940
01401   0 07400 4 02043         TSX M23035,4             CUR TIFGO LEV NO FOUND IN TRASTO      F3B07950
01402  -0 53400 2 02346         LXD CTRAST,2             CUR TIFGO LEV NO NOT FOUND IN TRASTO  F3B07960
01403   1 77774 2 01404 M22625  TXI M22625+1,2,-4        UPDATE TRASTO ENTRY POINT             F3B07970
01404   0 07400 4 01456         TSX M22700,4             TRASTO FMLA NO SEARCH                 F3B07980
01405   0 07400 4 02127         TSX M23065,4             TRASTO FMLA NO NOT AGAIN FOUND        F3B07990
01406   0 02000 0 01400         TRA M22620               TRASTO FMLA NO AGAIN FOUND            F3B08000
01407   0 50000 0 02356 M22630  CLA ETRAST               RESET CTRAST CELL FOR                 F3B08010
01410   0 60100 0 02346         STO CTRAST               TRASTO LEV NO SEARCH                  F3B08020
01411  -0 53400 2 02347         LXD ETRAL,2              UPDATE TRALEV                         F3B08030
01412   1 77777 2 01413         TXI M22635,2,-1          ENTRY POINT                           F3B08040
01413  -0 63400 2 02347 M22635  SXD ETRAL,2                                                   F3B08050
01414   0 07400 4 01477 M22640  TSX M22750,4             TRASTO LEVEL NO SEARCH                F3B08060
01415   0 07400 4 02062         TSX M23040,4             CUR TIFGO LEV NO FOUND IN TRASTO      F3B08070
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01416 -0 53400 4 02346         LXD CTRAST,4                CUR TIFGO LEV NO NOT FOUND IN TRASTO F3B08080
01417  1 77774 2 01420         TXI M22645,2,-4             UPDATE TRASTO ENTRY POINT            F3B08090
01420  0 07400 4 01456 M22645  TSX M22700,4                TRASTO FMLA NO SEARCH                F3B08100
01421  0 07400 4 02147         TSX M23070,4                TIFGO FMLA NO NOT AGAIN FOUND        F3B08110
01422  0 02000 0 01414         TRA M22640                  TIFGO FMLA NO AGAIN FOUND            F3B08120
01423  0 50000 0 02356 M22650  CLA ETRAST                  RESET CTRAST CELL FOR                F3B08130
01424  0 60100 0 02346         STO CTRAST                  TRASTO LEV NO SEARCH                 F3B08140
01425 -0 53400 2 02347         LXD ETRAL,2                                                      F3B08150
01426  1 77777 2 01427         TXI M22655,2,-1             UPDATE TRALEV                        F3B08160
01427 -0 63400 2 02347 M22655  SXD ETRAL,2                 ENTRY POINT                          F3B08170
01430  0 50000 0 02333         CLA ADDCO                   SET ADDCO FOR                        F3B08180
01431  0 40000 0 02301         ADD M2CON+5                 TRA ADDRESS                          F3B08190
01432  0 60100 0 02333         STO ADDCO                                                        F3B08200
01433  0 07400 4 01477 M22660  TSX M22750,4                TRASTO LEV NO SEARCH                 F3B08210
01434  0 07400 4 02013         TSX M23000,4                CUR TIFGO LEV NO FOUND IN TRASTO     F3B08220
01435 -0 53400 2 02346         LXD CTRAST,2                CUR TIFGO LEV NO NOT FOUND IN TRASTO F3B08230
01436  1 77774 2 01437         TXI M22665,2,-4             UPDATE TRASTO ENTRY POINT            F3B08240
01437  0 07400 4 01456 M22665  TSX M22700,4                TRASTO FMLA NO SEARCH                F3B08250
01440  0 07400 4 02077         TSX M23050,4                TIFGO FMLA NO NOT AGAIN FOUND        F3B08260
01441  0 02000 0 01433         TRA M22660                  TIFO FMLA NO AGAIN FOUND             F3B08270
01442 -0 53400 2 02347         LXD ETRAL,2                                                      F3B08280
01443  1 77777 2 01444         TXI M22670,2,-1             UPDATE TRALEV ENTRY POINT            F3B08290
01444 -0 63400 2 02347 M22670  SXD ETRAL,2                 FOR NEXT TIFGO ENTRY                 F3B08300
01445  0 50000 0 02333         CLA ADDCO                                                        F3B08310
01446  0 40200 0 02301         SUB M2CON+5                                                      F3B08320
01447  0 10000 0 00535 COR13   TZE M21030-1                                                     F3B08330
01450  1 00003 2 01451         TXI M22675,2,3              RESET ETRAL FOR                      F3B08340
01451 -0 63400 2 02347 M22675  SXD ETRAL,2                 SECOND PASS THROUGH TRASTO           F3B08350
01452  0 50000 0 02356         CLA ETRAST                  RESET CTRAST FOR SECOND              F3B08360
01453  0 60100 0 02346         STO CTRAST                  PASS THROUGH TRASTO                  F3B08370
01454  0 50000 0 02302         CLA M2CON+6                 INITIALIZE LOCATION                  F3B08380
01455  1 77777 1 01305         TXI M22435-2,1,-1                                                F3B08390
                               M2 CLOSED SUBROUTINES                                            F3B08400
                               TRASTO FMLA NO SEARCH                                            F3B08410
01456 -0 75400 2 00000 M22700  PXD 0,2                     PLACE COUNT OF TRALEV ENTRY IN AC.   F3B08420
01457  0 40200 0 02367         SUB TRASTO-1                TRASTO WORD COUNT                    F3B08430
01460  0 10000 4 00001         TZE 1,4                     EQUAL. TR BACK                       F3B08440
01461  0 50000 2 02370         CLA TRASTO,2                TRASTO ENTRY                         F3B08450
01462 -0 32000 0 02306         ANA M2CON+10                SAVE DECREMENT                       F3B08460
01463  0 76700 0 00022         ALS 18                      SHIFT B TO DECREMENT PORTION         F3B08470
01464  0 34000 0 02345         CAS TIFFN                   CURRENT TIFGO FMLA. NO.              F3B08480
01465  0 02000 0 01470         TRA M22710                  TRASTO GREATER THAN TIFGO            F3B08490
01466  0 02000 0 01475         TRA M22715                  TRASTO EQUAL TO TIFGO FMLA NO        F3B08500
01467  1 77774 2 01456         TXI M22700,2,-4             TRAS TO LESS THAN TIFGO, BACK TO BRING NEXT F3B08510
01470  0 50000 2 02370 M22710  CLA TRASTO,2                TRASTO ENTRY                         F3B08520
01471 -0 32000 0 02305         ANA M2CON+9                 MASK OUT ADDRESS                     F3B08530
01472  0 34000 0 02345         CAS TIFFN                   INTERNAL FORMULA NO. ALPHA           F3B08540
01473  1 77774 2 01456         TXI M22700,2,-4             TRASTO                               F3B08550
01474  1 77774 2 01456         TXI M22700,2,-4                                                  F3B08560
01475 -0 63400 2 02346 M22715  SXD CTRAST,2                                                     F3B08570
01476  0 02000 4 00002         TRA 2,4                     TRASTO NOT FOUND                     F3B08580
                               TRASTO LEVEL NO SEARCH                                           F3B08590
01477 -0 63400 4 02331 M22750  SXD CBOX,4                  TR COUNT STORED FOR LINKAGE          F3B08600
01500 -0 53400 2 02347         LXD ETRAL,2                 CURRENT TRALEV ENTRY PT. IN IR 2     F3B08610
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01501  0 50000 2 03211         CLA TRALEV,2        LOAD TRALEV WORD                                  F3B08620
01502  0 62100 0 02350         STA LEVNO           CURRENT LEVEL NO.                                 F3B08630
01503 -0 53400 2 02346         LXD CTRAST,2        CURRENT TRASTO ENTRY PT.                          F3B08640
01504  0 50000 0 02340         CLA TWOL            TWOS COMPLIMENT OF NO OF WDS. IN DEC. FIELD       F3B08650
01505  0 10000 0 01527         TZE M22770          TYPE 2                                            F3B08660
01506  0 50000 0 02346         CLA CTRAST          CURRENT TRASTO ENTRY PT.                          F3B08670
01507 -0 10000 0 01513         TNZ M22760                                                            F3B08680
01510  0 50000 0 02337         CLA ONEL            TYPE 1                                            F3B08690
01511  0 10000 0 01550         TZE M22787                                                            F3B08700
01512  0 02000 0 01527         TRA M22770                                                            F3B08710
01513  0 50000 0 02337 M22760  CLA ONEL            TEST TYPE 1                                       F3B08720
01514 -0 10000 0 01524         TNZ M22767                                                            F3B08730
01515  0 40000 0 02340 M22762  ADD TWOL            NO. OF TYPE 2                                     F3B08740
01516 -0 73400 4 00000         PDX 0,4                                                               F3B08750
01517 -0 75400 4 00000         PXD 0,4                                                               F3B08760
01520  0 34000 0 02346         CAS CTRAST          COMPARE                                           F3B08770
01521  0 02000 0 01527         TRA M22770                                                            F3B08780
01522  0 02000 0 01527         TRA M22770                                                            F3B08790
01523  0 02000 0 01550         TRA M22787                                                            F3B08800
01524  0 34000 0 02346 M22767  CAS CTRAST                                                            F3B08810
01525  0 02000 0 01515         TRA M22762                                                            F3B08820
01526  0 02000 0 01515         TRA M22762                                                            F3B08830
01527  0 50000 2 02371 M22770  CLA TRASTO+1,2      LEVEL NOS.                                        F3B08840
01530 -0 32000 0 02306         ANA M2CON+10        SAVE ADDRESS, TEST UPPER LEVEL                    F3B08850
01531  0 34000 0 02350         CAS LEVNO           COMPARE TO CURRENT TIFGO LEVEL NO.                F3B08860
01532  0 02000 0 01535         TRA M22777          LESS THAN                                         F3B08870
01533  0 02000 0 01556         TRA M22795                                                            F3B08880
01534  0 02000 0 01556         TRA M22795                                                            F3B08890
01535  0 50000 2 02371 M22777  CLA TRASTO+1,2      LEVEL NOS.                                        F3B08900
01536 -0 32000 0 02305         ANA M2CON+9         SAVE DECREMENT                                    F3B08910
01537  0 77100 0 00022         ARS 18              PLACE IN ADDRESS                                  F3B08920
01540  0 34000 0 02350         CAS LEVNO           CURRENT TIFGO LEVEL NO.                           F3B08930
01541  0 02000 0 01556         TRA M22795          EXIT, NOT FOUND                                   F3B08940
01542  0 02000 0 01543         TRA M22783          EQUAL TO OR GREATER THAN                          F3B08950
01543  0 50000 0 02333 M22783  CLA ADDCO           NO. OF TIMES TIFGO APPEARS                        F3B08960
01544  0 40000 0 02301         ADD M2CON+5         ADD 10(8) INCREMENT                               F3B08970
01545  0 60100 0 02333         STO ADDCO           RESTORE                                           F3B08980
01546 -0 53400 4 02331         LXD CBOX,4          RESTORE LINKAGE, LEVEL NO.                        F3B08990
01547  0 02000 4 00001         TRA 1,4             FOUND.                                            F3B09000
01550  0 50000 2 02372 M22787  CLA TRASTO+2,2      TAGS, WORD 3, TYPE 2 LEVEL NO.                    F3B09010
01551 -0 32000 0 02305         ANA M2CON+9         SAVE DECREMENT                                    F3B09020
01552  0 77100 0 00022         ARS 18              SHIFT TO ADDRESS                                  F3B09030
01553  0 34000 0 02350         CAS LEVNO           COMPARE LEVEL NO.                                 F3B09040
~~01554  0 02000 0 01543         TRA M22783~~                                                          ~~F3B09050~~
01555  0 02000 0 01556         TRA M22795                                                            F3B09060
01556 -0 53400 4 02331 M22795  LXD CBOX,4                                                            F3B09070
01557  0 02000 4 00002         TRA 2,4             NOT FOUND, BACK TO MAIN ROUTINE                   F3B09080
                               INDEXING INSTRUCTION COMPILER                                         F3B09090
01560 -0 63400 4 02331 M22800  SXD CBOX,4          SAVE COUNT IN 4 FOR LINKAGE                       F3B09100
01561 -0 53400 2 02274         LXD M2CON,2         PLACE ZERO IN IR 2                                F3B09110
01562  0 50000 0 02346         CLA CTRAST          CURRENT TRASTO ENTRY POINT                        F3B09120
01563 -0 10000 0 01567         TNZ M22810                                                            F3B09130
01564  0 50000 2 02337 M22805  CLA ONEL,2          LENGTH OF TYPE 1 ENTRY ETC.                       F3B09140
01565 -0 10000 2 01600         TNZ M22819,2        ENTRIES EXIST                                     F3B09150
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01566   1 77777 2 01564          TXI M22805,2,-1     GET NEXT TYPE ENTRY                          F3B09160
01567   0 50000 0 02274 M22810   CLA M2CON           ZERO IN ACC.                                 F3B09170
01570   0 40000 2 02337          ADD ONEL,2          LENGTH OF TYPE 1 ENTRY ETC                   F3B09180
01571  -0 73400 4 00000          PDX 0,4             PLACE THIS RESULT INIR 4                     F3B09190
01572  -0 75400 4 00000          PXD 0,4             PUT BACK IN ACC., CLEARING ADDRESS           F3B09200
01573   0 10000 0 01577          TZE M22815                                                       F3B09210
01574   0 40200 0 02346          SUB CTRAST          CURRENT TRASTO ENTRY POINT                   F3B09220
01575  -0 12000 2 01600          TMI M22819,2        PROPER TYPE                                  F3B09230
01576   0 40000 0 02346          ADD CTRAST                                                       F3B09240
01577   1 77777 2 01570 M22815   TXI M22810+1,2,-1   SORT ACCORDING TO TYPE                       F3B09250
01600   0 02000 0 01606 M22819   TRA M22825                  TYPE I INSERTS                       F3B09260
01601   0 02000 0 01633          TRA M22850                  TYPE II INSERTS                      F3B09270
01602   0 02000 0 01654          TRA M22875                  TYPE III INSERTS                     F3B09280
01603   0 02000 0 01677          TRA M22900                  TYPE IV INSERTS                      F3B09290
01604   0 02000 0 01732          TRA M22925                  TYPE V INSERTS                       F3B09300
01605   0 02000 0 01752          TRA M22950                  TYPE VI INSERTS                      F3B09310
01606  -0 53400 2 02346 M22825   LXD CTRAST,2                TYPE I INSERTS                       F3B09320
01607   0 50000 2 02372          CLA TRASTO+2,2      3RD WRD OF TRASTO ENTRY                      F3B09330
01610   0 76500 0 00022          LRS 18              ADDRESS PORTION IN MQ                        F3B09340
01611   0 60100 0 02365          STO M2CW+3          DECREMENT, T1, IN 4TH WORD                   F3B09350
01612  -0 50000 0 02310          CAL M2CON+12        +140000000000                                F3B09360
01613   0 60200 0 02364          SLW M2CW+2          SYMBOLIC ADDRESS                             F3B09370
01614   0 76300 0 00022          LLS 18              PUT BACK T2 IN ACC                           F3B09380
01615  -0 60200 0 02364          ORS M2CW+2          PUT IN ADDRESS PART OF 3RD WD                F3B09390
01616   0 07400 4 02177          TSX CIT200,4        COMPILE INSTRUCTIONS                         F3B09400
01617   0 00000 0 02362          HTR M2CW            INT. FMLA NO. IF ANY                         F3B09410
01620   0 00000 0 02320          HTR M2ABC+3         SXD                                          F3B09420
01621   0 00000 0 02364          HTR M2CW+2          +140000000000, T2                            F3B09430
01622   0 00000 0 02365          HTR M2CW+3          T1                                           F3B09440
01623   0 60100 0 02365          STO M2CW+3          PUT T2 IN 4TH WRD.                           F3B09450
01624   0 07400 4 02177          TSX CIT200,4        COMPILE                                      F3B09460
01625   0 00000 0 02274          HTR M2CON           ZERO                                         F3B09470
01626   0 00000 0 02321          HTR M2ABC+4         LXD                                          F3B09480
01627   0 00000 0 02364          HTR M2CW+2          14(8),T2                                     F3B09490
01630   0 00000 0 02365          HTR M2CW+3          T2                                           F3B09500
01631  -0 53400 4 02331 M22848   LXD CBOX,4          RESTORE LINKAGE                              F3B09510
01632   0 02000 4 00001          TRA 1,4             BACK TO MAIN ROUTINE                         F3B09520
01633  -0 53400 2 02346 M22850   LXD CTRAST,2                TYPE II INSERTS                      F3B09530
01634  -0 50000 2 02371          CAL TRASTO+1,2      2ND WORD OF TRASTO ENTRY                     F3B09540
01635   0 60200 0 02364          SLW M2CW+2          SAVE IN 3RD WORD FOR COMPILER                F3B09550
01636  -0 50000 2 02372          CAL TRASTO+2,2      3RD WD OF ENTRY                              F3B09560
01637  -0 32000 0 02306          ANA M2CON+10        SAVE ADDRESS                                 F3B09570
01640   0 60200 0 02365          SLW M2CW+3          STORE IN 4TH WD                              F3B09580
01641   0 07400 4 02177          TSX CIT200,4        COMPILER                                     F3B09590
01642   0 00000 0 02362          HTR M2CW            INTERNAL FMLA NO., IF ANY                    F3B09600
01643   0 00000 0 02322          HTR M2ABC+5         PXD                                          F3B09610
01644   0 00000 0 02274          HTR M2CON           ZERO                                         F3B09620
01645   0 00000 0 02365          HTR M2CW+3          ZERO,T1                                      F3B09630
01646   0 07400 4 02177          TSX CIT200,4        COMPILER                                     F3B09640
01647   0 00000 0 02274          HTR M2CON           ZERO                                         F3B09650
01650   0 00000 0 02323          HTR M2ABC+6         STO                                          F3B09660
01651   0 00000 0 02364          HTR M2CW+2          S(BCD)                                       F3B09670
01652   0 00000 0 02274          HTR M2CON           ZERO                                         F3B09680
01653   0 02000 0 01631          TRA M22848          TO RESTORE LINKAGE                           F3B09690
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01654 -0 53400 2 02346 M22875 LXD CTRAST,2                TYPE III INSERTS                F3B09700
01655  0 50000 2 02372        CLA TRASTO+2,2     3RD WRD OF TRASTO ENTRY                 F3B09710
01656  0 76500 0 00022        LRS 18             SHIFT N TO MG                           F3B09720
01657  0 40000 0 02303        ADD M2CON+7        1 TO ADDRESS FOR SIGN                   F3B09730
01660  0 60100 0 02365        STO M2CW+3         4TH WORD                                F3B09740
01661  0 76000 0 00000        CLM                CLEAR ACC                               F3B09750
01662  0 76300 0 00022        LLS 18             PUT N BACK IN ACC.                      F3B09760
01663  0 76000 0 00006        COM                COMPLIMENT                              F3B09770
01664  0 40000 0 02275        ADD M2CON+1        ADD ONE, 2 S COMPLIMENT                 F3B09780
01665 -0 32000 0 02306        ANA M2CON+10       SAVE ADDRESS                            F3B09790
01666  0 60100 0 02363        STO M2CW+1         2ND WORD OF COMPILER                    F3B09800
01667 -0 50000 0 02324        CAL M2ABC+7        TXI                                     F3B09810
01670 -0 60200 0 02363        ORS M2CW+1         IN DECREMENT                            F3B09820
01671  0 07400 4 02177        TSX CIT200,4       COMPILER                                F3B09830
01672  0 00000 0 02362        HTR M2CW                                                   F3B09840
01673  0 00000 0 02363        HTR M2CW+1         TXI, N(COMP)                            F3B09850
01674  0 00000 0 02311        HTR M2CON+13       +170000000000                           F3B09860
01675  0 00000 0 02365        HTR M2CW+3         1,                                      F3B09870
01676  0 02000 0 01631        TRA M22848         RESTORE LINKAGE                         F3B09880
01677 -0 53400 2 02346 M22900 LXD CTRAST,2                TYPE IV INSERT                  F3B09890
01700  0 50000 2 02372        CLA TRASTO+2,2     3RD WRD OF TRASTO ENTRY                 F3B09900
01701  0 76000 0 00002        CHS                CHANGE SIGN TO PLUS                     F3B09910
01702  0 76500 0 00022        LRS 18             T1, TO ADDRESS. T2 TO M2                F3B09920
01703  0 76100 0 00000 COR14  NOP                                                       F3B09930
01704  0 60100 0 02365 PAT9   STO M2CW+3                                                 F3B09940
01705  0 50000 0 02360 PAT10  CLA CLOC           INCREMENT FOR LOC WD OF 1ST ENTRY       F3B09950
01706  0 40000 0 02301 PAT11  ADD M2CON+5        ADD 10                                  F3B09960
01707  0 60100 0 02360 PAT12  STO CLOC           RESTORE WITH NEW INCREMENT              F3B09970
01710  0 60100 0 02364 PAT13  STO M2CW+2         ALS O PLACE IN 3RD WD OF COMPILER       F3B09980
01711  0 50000 0 02345 PAT14  CLA TRSWC          WORD COUNT                              F3B09990
01712 -0 60200 0 02364 PAT15  ORS M2CW+2         SAVE IN DECREMENT OF 3RD WD             F3B10000
01713  0 07400 4 02177 RET3   TSX CIT200,4       COMPILER                                F3B10010
01714  0 00000 0 02362        HTR M2CW                                                   F3B10020
01715  0 00000 0 02320        HTR M2ABC+3        SXD                                     F3B10030
01716  0 00000 0 02364 COR16  HTR M2CW+2         WORD COUNT, INCREMENTED LOC WD          F3B10040
01717  0 00000 0 02365        HTR M2CW+3         T1                                      F3B10050
01720  0 50000 2 02372        CLA TRASTO+2,2     3RD WORD OF TRASTO ENTRY                F3B10060
01721 -0 32000 0 02306        ANA M2CON+10       SAVE ADDRESS                            F3B10070
01722  0 40000 0 02303        ADD M2CON+7        1 TO ADDRESS FOR C                      F3B10080
01723  0 60100 0 02365        STO M2CW+3         4TH WORD                                F3B10090
01724  0 07400 4 02177        TSX CIT200,4       COMPILER                                F3B10100
01725  0 00000 0 02364 COR17  HTR M2CW+2         LOC WORD                                F3B10110
01726  0 00000 0 02325        HTR M2ABC+8        TIX                                     F3B10120
01727  0 00000 0 02311        HTR M2CON+13       17(8)                                   F3B10130
01730  0 00000 0 02365        HTR M2CW+3         1T2                                     F3B10140
01731  0 02000 0 01631        TRA M22848         BACK TO RESTORE LINKAGE                 F3B10150
01732 -0 53400 2 02346 M22925 LXD CTRAST,2                TYPE V INSERTS                  F3B10160
01733  0 50000 2 02372        CLA TRASTO+2,2     3RD WORD                                F3B10170
01734  0 76000 0 00002        CHS                CHANGE SIGN TO PLUS                     F3B10180
01735  0 76500 0 00022        LRS 18             SHIFT T TO ADDRESS, N TO MQ             F3B10190
01736  0 40000 0 02303        ADD M2CON+7        1 FOR SIGN                              F3B10200
01737  0 60100 0 02365        STO M2CW+3         4TH WRD. FOR COMPILER                   F3B10210
01740 -0 50000 0 02324        CAL M2ABC+7        TXI                                     F3B10220
01741  0 77100 0 00022        ARS 18             SHIFT TO ADDRESS PORTION                F3B10230
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01742   0 76300 0 00022          LLS 18              CONTENTS OF MQ                                F3B10240
01743   0 60200 0 02363          SLW M2CW+1          1 TXI, N                                      F3B10250
01744   0 07400 4 02177          TSX CIT200,4        COMPILER                                      F3B10260
01745   0 00000 0 02362          HTR M2CW                                                          F3B10270
01746   0 00000 0 02363          HTR M2CW+1          TXI, N                                        F3B10280
01747   0 00000 0 02311          HTR M2CON+13        17(8)                                         F3B10290
01750   0 00000 0 02365          HTR M2CW+3          1,T                                           F3B10300
01751   0 02000 0 01631          TRA M22848          RESTORE LINKAGE                               F3B10310
01752  -0 53400 2 02346 M22950   LXD CTRAST,2                TYPE VI INSERTS                       F3B10320
01753   0 50000 2 02372          CLA TRASTO+2,2      3RD WORD OF TRASTO ENTRY                      F3B10330
01754   0 76000 0 00002          CHS                                                               F3B10340
01755  -0 50100 0 02312          ORA M2CON+14        +120000000000                                 F3B10350
01756   0 60100 0 02364          STO M2CW+2          3RD WD OF COMPILER                            F3B10360
01757   0 50000 0 02277          CLA M2CON+3         +000000000004                                 F3B10370
01760  -0 50100 0 02334 COR18    ORA COR28           +000004                                       F3B10380
01761   0 60100 0 02366          STO M2CW+4          5TH WORD                                      F3B10390
01762   0 07400 4 02177          TSX CIT200,4        COMPILER                                      F3B10400
01763   0 00000 0 02362          HTR M2CW                                                          F3B10410
01764   0 00000 0 02320          HTR M2ABC+3         SXD                                           F3B10420
01765   0 00000 0 02313          HTR M2CON+15        60000000000                                   F3B10430
01766   0 00000 0 02366          HTR M2CW+4          4,4                                           F3B10440
01767   0 07400 4 02177          TSX CIT200,4        COMPILER                                      F3B10450
01770   0 00000 0 02274          HTR M2CON           ZERO                                          F3B10460
01771   0 00000 0 02326          HTR M2ABC+9         TSX                                           F3B10470
01772   0 00000 0 02364          HTR M2CW+2          12(8),T                                       F3B10480
01773   0 00000 0 02277          HTR M2CON+3         ZERO,4                                        F3B10490
01774   0 50200 2 02372          CLS TRASTO+2,2      3RD WORD                                      F3B10500
01775   0 60100 0 02365          STO M2CW+3          4TH WD OF COMPILER                            F3B10510
01776  -0 50100 0 02310          ORA M2CON+12        14 IN DECREMENT                               F3B10520
01777   0 60100 0 02364          STO M2CW+2          3RD WD, SAVE T                                F3B10530
02000   0 07400 4 02177          TSX CIT200,4        COMPILER                                      F3B10540
02001   0 00000 0 02274          HTR M2CON           ZERO                                          F3B10550
02002   0 00000 0 02321          HTR M2ABC+4         LXP                                           F3B10560
02003   0 00000 0 02364          HTR M2CW+2          14(8),T                                       F3B10570
02004   0 00000 0 02365          HTR M2CW+3          ZERO,T                                        F3B10580
02005   0 07400 4 02177          TSX CIT200,4        COMPILER                                      F3B10590
02006   0 00000 0 02274          HTR M2CON           ZERO                                          F3B10600
02007   0 00000 0 02327          HTR M2ABC+10        LXD                                           F3B10610
02010   0 00000 0 02313          HTR M2CON+15        6(8)                                          F3B10620
02011   0 00000 0 02366          HTR M2CW+4          5   4                                         F3B10630
02012   0 02000 0 01631          TRA M22848          BACK TO RESTORE LINKAGE                       F3B10640
                                 INITIAL TRANSFER COMPILERS FOR TIFGO ENTRIES                      F3B10650
                                 WHEN A TRASTO ENTRY IS ASSOCIATED WITH                            F3B10660
                                 THE TRANSFER ADDRESS                                              F3B10670
                                 TRANSFER WITH LOCATION 0                                          F3B10680
02013  -0 63400 4 02270 M23000   SXD ADD6+3,4        SAVE CONTENTS OF IR4 FOR LINKAGE              F3B10690
02014   0 50000 0 02345          CLA TIFFN           CURRENT TIF60 FMLA. NO. IN DECR.              F3B10700
02015   0 60100 0 02364          STO M2CW+2          3RD WORD                                      F3B10710
02016   0 50000 0 02333          CLA ADDCO           8 TIMES NO. OF TIMES ADDRESS IS IN TRASTO     F3B10720
02017  -0 60200 0 02364          ORS M2CW+2          PLACE IN ADDRESS                              F3B10730
02020   0 07400 4 02177          TSX CIT200,4        COMPILER                                      F3B10740
02021   0 00000 0 02274          HTR M2CON           ZERO                                          F3B10750
02022   0 00000 0 02315          HTR M2ABC           TRA                                           F3B10760
02023   0 00000 0 02364          HTR M2CW+2          TIFEN, ADDCO                                  F3B10770
```

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02024   0 00000 0 02274         HTR M2CON           ZERO                                F3B10780
02025   0 02000 0 02271 COR20   TRA PAT17                                               F3B10790
02026   0 02000 4 00006         TRA 6,4             BACK TO MAIN ROUTINE                F3B10800
                                INFO INSTRUCTION FOR IF OVERFLOW                        F3B10810
02027  -0 63400 4 02270 M23025  SXD ADD6+3,4        SAVE LINKAGE                        F3B10820
02030   0 50000 0 02345         CLA TIFFN           TIFGO FMLA NO.                      F3B10830
02031   0 60100 0 02364         STO M2CW+2          3RD WD.                             F3B10840
02032   0 50000 0 02333         CLA ADDCO           COUNT                               F3B10850
02033  -0 60200 0 02364         ORS M2CW+2          ADDRESS                             F3B10860
02034   0 07400 4 02177         TSX CIT200,4        COMPILER                            F3B10870
02035   0 00000 0 02345         HTR TIFFN           TIFGO FMLA NO.                      F3B10880
02036   0 00000 0 02274         HTR M2CON           ZERO                                F3B10890
02037   0 00000 0 02364         HTR M2CW+2          TIFFN, ADDCO                        F3B10900
02040   0 00000 0 02274         HTR M2CON                                               F3B10910
02041   0 02000 0 02271 COR22   TRA PAT17                                               F3B10920
02042   0 02000 4 00006         TRA 6,4                                                 F3B10930
                                TRANSFER ON ZERO WITH LOCATION FMLA NO + 8              F3B10940
02043  -0 63400 4 02270 M23035  SXD ADD6+3,4                                           F3B10950
02044   0 50000 0 02345         CLA TIFFN                                               F3B10960
02045   0 60100 0 02362         STO M2CW            INT.FMLA NO                         F3B10970
02046   0 60100 0 02364         STO M2CW+2          3RD WD                              F3B10980
02047   0 50000 0 02333         CLA ADDCO           COUNT                               F3B10990
02050  -0 60200 0 02362         ORS M2CW            ADDRESS OF FIRST WD.                F3B11000
02051   0 40000 0 02301         ADD M2CON+5         ADD 10                              F3B11010
02052  -0 60200 0 02364         ORS M2CW+2          ADD 10 TO COUNT                     F3B11020
02053   0 07400 4 02177         TSX CIT200,4        COMPILER                            F3B11030
02054   0 00000 0 02362         HTR M2CW            INT FMLANO, ADDCO                   F3B11040
02055   0 00000 0 02316         HTR M2ABC+1         TZE                                 F3B11050
02056   0 00000 0 02364         HTR M2CW+2          INT. FMLA NO., ADDCO+10             F3B11060
02057   0 00000 0 02274         HTR M2CON           ZERO                                F3B11070
02060   0 02000 0 02271 COR24   TRA PAT17                                               F3B11080
02061   0 02000 4 00006         TRA 6,4                                                 F3B11090
                                TRANSFER ON PLUS WITH LOCATION 0                        F3B11100
02062  -0 63400 4 02270 M23040  SXD ADD6+3,4        SAVE LINKAGE                        F3B11110
02063   0 50000 0 02345         CLA TIFFN           TIFGO INT. FMLA NO.                 F3B11120
02064   0 60100 0 02364         STO M2CW+2          3RD WD                              F3B11130
02065   0 50000 0 02333         CLA ADDCO                                               F3B11140
02066   0 40000 0 02301         ADD M2CON+5         10 TO ADDCO                         F3B11150
02067  -0 60200 0 02364         ORS M2CW+2          IN ADDRESS OF 3RD WD                F3B11160
02070   0 07400 4 02177         TSX CIT200,4        COMPILER                            F3B11170
02071   0 00000 0 02274         HTR M2CON           ZERO                                F3B11180
02072   0 00000 0 02317         HTR M2ABC+2         TPL                                 F3B11190
02073   0 00000 0 02364         HTR M2CW+2          TIFFN, ADDCO+10                     F3B11200
02074   0 00000 0 02274         HTR M2CON           ZERO                                F3B11210
02075   0 02000 0 02271 COR26   TRA PAT17                                               F3B11220
02076   0 02000 4 00006         TRA 6,4                                                 F3B11230
                                INITIAL TRANSFER COMPILERS FOR TIFGO                    F3B11240
                                ENTRIES WHEN THERE IS NO TRASTO ENTRY                   F3B11250
                                FOR THE TRANSFER ADDRESS                                F3B11260
                                TRANSFER WITH LOCATION 0                                F3B11270
02077  -0 63400 4 02331 M23050  SXD CBOX,4         SAVE LINKAGE                        F3B11280
02100  -0 53400 2 02347         LXD ETRAL,2         IN IRZ CURRENT TRALEV ENTRY PT.     F3B11290
02101   0 50000 2 03211         CLA TRALEV,2        CURRENT TRALEV ENTRY                F3B11300
02102  -0 32000 0 02305         ANA M2CON+9         SAVE DECREMENT, OF TRAVEV ENTRY     F3B11310
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02103   0 60100 0 02364          STO M2CW+2          SRD WORD                          F3B11320
02104   0 07400 4 02177          TSX CIT200,4        COMPILER                          F3B11330
02105   0 00000 0 02274          HTR M2CON           ZERO                              F3B11340
02106   0 00000 0 02315          HTR M2ABC           TRA                               F3B11350
02107   0 00000 0 02364          HTR M2CW+2          AI                                F3B11360
02110   0 00000 0 02274          HTR M2CON           ZERO                              F3B11370
02111  -0 53400 4 02331          LXD CBOX,4          RESTORE LINKAGE                   F3B11380
02112   0 02000 4 00002          TRA 2,4                                               F3B11390
                                 INFO INSTRUCTION FOR IF OVERFLOW                      F3B11400
02113  -0 63400 4 02331 M23060   SXD CBOX,4          SAVE LINKAGE                      F3B11410
02114  -0 53400 2 02347          LXD ETRAL,2         CURRENT TRALEV ENTRY DT.          F3B11420
02115   0 50000 2 03211          CLA TRALEV,2        TRALEV ENTRY                      F3B11430
02116  -0 32000 0 02305          ANA M2CON+9         SAVE DECREMENT                    F3B11440
02117   0 60100 0 02364          STO M2CW+2          3RD WD                            F3B11450
02120   0 07400 4 02177          TSX CIT200,4        COMPILER                          F3B11460
02121   0 00000 0 02345          HTR TIFFN           TIFGO INT. FMLA NO                F3B11470
02122   0 00000 0 02274          HTR M2CON           ZERO                              F3B11480
02123   0 00000 0 02364          HTR M2CW+2          AI                                F3B11490
02124   0 00000 0 02274          HTR M2CON           ZERO                              F3B11500
02125  -0 53400 4 02331          LXD CBOX,4          RESTORE LINKAGE                   F3B11510
02126   0 02000 4 00002          TRA 2,4                                               F3B11520
                                 TRANSFER ON ZERO WITH LOCATION FMLA NO + 8            F3B11530
02127  -0 63400 4 02331 M23065   SXD CBOX,4          SAVE LINKAGE                      F3B11540
02130  -0 53400 2 02347          LXD ETRAL,2         CURRENT TRALEV ENTRY PT           F3B11550
02131   0 50000 2 03211          CLA TRALEV,2        SAVE DECREMENT OF TRALEV          F3B11560
02132  -0 32000 0 02305          ANA M2CON+9         ENTRY                             F3B11570
02133   0 60100 0 02364          STO M2CW+2                                            F3B11580
02134   0 50000 0 02345          CLA TIFFN           TIFGO FMLA NO.                    F3B11590
02135   0 60100 0 02362          STO M2CW                                              F3B11600
02136   0 50000 0 02301          CLA M2CON+5         10 (8)                            F3B11610
02137  -0 60200 0 02362          ORS M2CW            ADD TO ADDRESS                    F3B11620
02140   0 07400 4 02177          TSX CIT200,4                                          F3B11630
02141   0 00000 0 02362          HTR M2CW            TIFFN+10(8)                       F3B11640
02142   0 00000 0 02316          HTR M2ABC+1         TZE                               F3B11650
02143   0 00000 0 02364          HTR M2CW+2          AI                                F3B11660
02144   0 00000 0 02274          HTR M2CON           ZERO                              F3B11670
02145  -0 53400 4 02331          LXD CBOX,4                                            F3B11680
02146   0 02000 4 00002          TRA 2,4                                               F3B11690
                                 TRANSFER ON PLUS WITH LOCATION 0                      F3B11700
02147  -0 63400 4 02331 M23070   SXD CBOX,4          SAVE LINKAGE                      F3B11710
02150  -0 53400 2 02347          LXD ETRAL,2                                           F3B11720
02151   0 50000 2 03211          CLA TRALEV,2                                          F3B11730
02152  -0 32000 0 02305          ANA M2CON+9         DECREMENT OF TRALEV ENTRY         F3B11740
02153   0 60100 0 02364          STO M2CW+2                                            F3B11750
02154   0 07400 4 02177          TSX CIT200,4                                          F3B11760
02155   0 00000 0 02274          HTR M2CON           ZERO                              F3B11770
02156   0 00000 0 02317          HTR M2ABC+2         TPL                               F3B11780
02157   0 00000 0 02364          HTR M2CW+2          AI                                F3B11790
02160   0 00000 0 02274          HTR M2CON           ZERO                              F3B11800
02161  -0 53400 4 02331          LXD CBOX,4                                            F3B11810
02162   0 02000 4 00002          TRA 2,4                                               F3B11820
                                 FINAL TRANSFER COMPILER FOR TIFGO                     F3B11830
                                 ENTRIES WHEN A TRASTO ENTRY IS ASSOCIATED             F3B11840
                                 WITH THE TRANSFER ADDRESS                             F3B11850
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02163 -0 63400 4 02331 M23075 SXD CBOX,4          SAVE LINKAGE                                F3B11860
02164 -0 53400 2 02347        LXD ETRAL,2                                                     F3B11870
02165  0 50000 2 03211        CLA TRALEV,2                                                    F3B11880
02166 -0 32000 0 02305        ANA M2CON+9         SAVE DECREMENT OF TRALEV                    F3B11890
02167  0 60100 0 02364        STO M2CW+2          ENTRY                                       F3B11900
02170  0 07400 4 02177        TSX CIT200,4                                                    F3B11910
02171  0 00000 0 02311        HTR M2CON+13        +170000000000                               F3B11920
02172  0 00000 0 02315        HTR M2ABC           TRA                                         F3B11930
02173  0 00000 0 02364        HTR M2CW+2          AI                                          F3B11940
02174  0 00000 0 02274        HTR M2CON           ZERO                                        F3B11950
02175 -0 53400 4 02331        LXD CBOX,4                                                      F3B11960
02176  0 02000 4 00001        TRA 1,4                                                         F3B11970
                              M2 COMPILER CIT200                                          F3B11980
02177  0 60100 0 02351 CIT200 STO E1C2            SAVE AC                                     F3B11990
02200 -0 60000 0 02352        STQ E2C2            SAVE MQ                                     F3B12000
02201 -0 63400 1 02353        SXD E3C2,1          SAVE IR 1                                   F3B12010
02202 -0 63400 2 02354        SXD E4C2,2          SAVE IR 2                                   F3B12020
02203 -0 53400 2 02355        LXD BBOX,2          2 S COMP. OF NO. OF WDS. IN BLOCK           F3B12030
02204  3 77634 2 02217        TXH CIT204,2,-100   COMPARE TO 100.                             F3B12040
02205 -3 00000 2 02217        TXL CIT204,2,0      LAST ENTRY                                  F3B12050
02206  0 76600 0 00222        WRS 146             SELECT TAPE 2                               F3B12060
02207  0 50000 0 07322        CLA TFRCO           TIFGO FILE REC. COUNT                       F3B12070
02210  0 40000 0 02303        ADD M2CON+7         ADD 1 TO DECREMENT                          F3B12080
02211  0 60100 0 07322        STO TFRCO           TIFGO FILE REC. COUNT                       F3B12090
02212  0 53400 1 02274        LXA M2CON,1         ZERO IN IR 1                                F3B12100
02213  0 70000 1 06622 CIT201 CPY CIB2,1          OUTPUT AREA                                 F3B12110
02214  1 77777 1 02215        TXI CIT202,1,-1     SET COUNT FOR NEXT WORD                     F3B12120
02215  1 00001 2 02216 CIT202 TXI CIT203,2,1      SET UP COUNT OF BLOCK                       F3B12130
02216  3 00001 2 02213 CIT203 TXH CIT201,2,1      BACK TO CONTINUE WRITING                    F3B12140
02217  0 53400 1 02277 CIT204 LXA M2CON+3,1       COUNT OF 4 IN IR 1                          F3B12150
02220  0 50000 0 02275        CLA M2CON+1         1 IN ACC                                    F3B12160
02221  0 62100 0 02222        STA CIT205          TO GET NEXT ENTRY                           F3B12170
02222  0 50000 4 00000 CIT205 CLA 0,4             ADDRESS OF NEXT ENTRY                       F3B12180
02223  0 62100 0 02224        STA CIT206                                                      F3B12190
A    02224  0 50000 0 00000 CIT206 CLA            NEXT ENTRY                                  F3B12200
02225  0 60100 2 06622        STO CIB2,2          OUTPUT AREA                                 F3B12210
02226  0 50000 0 02222        CLA CIT205          ADDRESS                                     F3B12220
02227  0 40000 0 02275        ADD M2CON+1         ONE                                         F3B12230
02230  0 62100 0 02222        STA CIT205          RESTORE ADDRESS                             F3B12240
02231  1 77777 2 02232        TXI CIT207,2,-1     DECREASE BLOCK COUNT                        F3B12250
02232  2 00001 1 02222 CIT207 TIX CIT205,1,1      GET NEXT ENTRY                              F3B12260
02233 -0 63400 2 02355        SXD BBOX,2          SAVE COUNT                                  F3B12270
02234  0 50000 0 02351        CLA E1C2            RESTORE AC                                  F3B12280
02235  0 56000 0 02352        LDQ E2C2            RESTORE MQ                                  F3B12290
02236 -0 53400 1 02353        LXD E3C2,1          RESTORE IR 1                                F3B12300
02237 -0 53400 2 02354        LXD E4C2,2          RESTORE IR 2                                F3B12310
02240  0 02000 4 00005        TRA 5,4             BACK TO MAIN ROUTINE                        F3B12320
02241 -0 63400 4 02260 ADD1   SXD ADD4,4          SAVE LINKAGE                                F3B12330
02242 -0 53400 2 02346 ADD2   LXD CTRAST,2        CURRENT TRASTO ENTRY POINT                  F3B12340
02243  0 50000 2 02372        CLA TRASTO+2,2      3RD WD OF TRASTO ENTRY                      F3B12350
02244  0 12000 0 02254        TPL ADD3            SORT OUT TYPES 1,2,3                        F3B12360
02245  0 50000 2 02371        CLA TRASTO+1,2      TYPES 4,5,6. TEST 2ND WD                    F3B12370
02246 -0 12000 0 02254        TMI ADD3            TYPE 2                                      F3B12380
02247  0 50000 2 02370        CLA TRASTO,2        1ST WORD                                    F3B12390
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02250 -0 12000 0 02254          TMI ADD3            TYPE 3                                    F3B12400
02251  0 50000 0 02333          CLA ADDCO           COUNT TIMES 8                             F3B12410
02252  0 40000 0 02301          ADD M2CON+5         ADD ONE                                   F3B12420
02253  0 60100 0 02333          STO ADDCO           RESTORE NEW COUNT                         F3B12430
02254  1 77774 2 02255 ADD3     TXI ADD3+1,2,-4     SKIP TO NEXT ENTRY                        F3B12440
02255  0 07400 4 01456          TSX M22700,4        TRASTO FMLA NO SEARCH                     F3B12450
02256  0 02000 0 02263          TRA ADD5                                                      F3B12460
02257  0 07400 4 01477          TSX M22750,4        TRASTO LEVEL NO SEA RCH                   F3B12470
D 02260 -3 00000 0 02265 ADD4   TXL ADD6,0                                                    F3B12480
02261 -0 53400 2 02346          LXD CTRAST,2        END                                       F3B12490
02262  1 77774 2 02255          TXI ADD3+1,2,-4     BACK FOR NEXT ENTRY                       F3B12500
02263 -0 53400 4 02260 ADD5     LXD ADD4,4                                                    F3B12510
02264  0 02000 4 00001          TRA 1,4             BACK TO MAIN ROUTINE, VIA PAT 18          F3B12520
02265  0 50000 0 02333 ADD6     CLA ADDCO                                                     F3B12530
02266  0 40200 0 02301          SUB M2CON+5                                                   F3B12540
02267  0 60100 0 02333          STO ADDCO                                                     F3B12550
D 02270 -3 00000 0 02242        TXL ADD2,0                                                    F3B12560
02271  0 07400 4 02241 PAT17    TSX ADD1,4                                                    F3B12570
02272 -0 53400 4 02270 PAT18    LXD ADD6+3,4                                                  F3B12580
02273  0 02000 4 00006 PAT19    TRA 6,4                                                       F3B12590
02274 +000000000000     M2CON DEC 0,1,2,4,6,8,16,1B17,3B17                                   F3B12600
02275 +000000000001
02276 +000000000002
02277 +000000000004
02300 +000000000006
02301 +000000000010
02302 +000000000020
02303 +000001000000
02304 +000003000000
02305 +077777000000             OCT 77777000000,77777,50000000000,140000000000               F3B12610
02306 +000000077777
02307 +050000000000
02310 +140000000000
02311 +170000000000     COR27   OCT 170000000000,120000000000,60000000000,5000000            F3B12620
02312 +120000000000
02313 +060000000000
02314 +000005000000
02315  635121000000     M2ABC BCD 6TRA000TZE000TPL000SXD000LXP000PXD000                      F3B12630
02316  637125000000
02317  634743000000
02320  626724000000
02321  436747000000
02322  476724000000
02323  626346000000             BCD 5STO000TXI000TIX000TSX000LXD000                          F3B12640
02324  636731000000
02325  633167000000
02326  636267000000
02327  436724000000
02330 +000000000005     M2ECTR DEC 5                                                         F3B12650
                 02274  L(0)  SYN M2CON                                                      F3B12660
                 02276  L(2)  SYN M2CON+2                                                    F3B12670
                 02277  L(4)  SYN M2CON+3                                                    F3B12680
02331 +000000000003     L(3)  DEC 3                                                         F3B12690
                 02331 CBOX   SYN L(3) IRC STORED IN DECR FIELD FOR ALL CLSD SUBROUTINE LINKAGEF3B12700
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02332 +000000000456      0456  OCT 456                                                          F3B12710
                  02332 LOX    SYN 0456 LOWER INDEX FOR TRAD IN DECR FIELD                      F3B12720
02333  0 00000 0 02370 TRSORG      TRASTO                                                        F3B12730
                  02333 ORTRST SYN TRSORG                                                        F3B12740
                  02333 ADDCO  SYN TRSORG 8 TIMES THE NUM OF TIMES THE CURRENT ADDRESS OF THE    F3B12750
                                        CURRENT TIFGO ENTRY APPEARS IN TRASTO, IN ADDR FIELD     F3B12760
02334 +000004000000     COR28  OCT 4000000                                                       F3B12770
02335 -200000000000      MASK  OCT -200000000000                                                 F3B12780
02336 +000000000460      0460  OCT 460                                                           F3B12790
02337  0 00000 0 00000 1BOX                                                                      F3B12800
02340  0 00000 0 00000 2BOX                                                                      F3B12810
02341  0 00000 0 00000 3BOX                                                                      F3B12820
02342  0 00000 0 00000 4BOX                                                                      F3B12830
02343  0 00000 0 00000 5BOX                                                                      F3B12840
02344  0 00000 0 00000 6BOX                                                                      F3B12850
                  02337 ONEL   SYN 1BOX                 TWOS COMPS                               F3B12860
                  02340 TWOL   SYN ONEL+1               OF THE LENGTHS                           F3B12870
                  02341 THREEL SYN ONEL+2               OF VARIOUS TYPES                         F3B12880
                  02342 FOURL  SYN ONEL+3               OF ENTRY BLOCKS                          F3B12890
                  02343 FIVEL  SYN ONEL+4               IN TRASTO                                F3B12900
                  02344 SIXL   SYN ONEL+5               IN DECREMENT FIELD                       F3B12910
02345  0 00000 0 00000  TRSWC                          WORD COUNT                                F3B12920
                  02345 TIFFN  SYN TRSWC CURRENT TIFGO FMLA NUM IN DEC FIELD                     F3B12930
02346  0 00000 0 00000 WCCHS                                                                     F3B12940
                  02346 CTRAST SYN WCCHS CURRENT TRASTO ENTRY POINT IN DEC FIELD (TWOS COMP)     F3B12950
02347  0 00000 0 00000 CHS1                                                                      F3B12960
                  02347 ETRAL  SYN CHS1 CURRENT TRALEV ENTRY POINT IN DEC FIELD (TWOS COMP)      F3B12970
02350  0 00000 0 00000 CHS2                                                                      F3B12980
                  02350 LEVNO  SYN CHS2 LEVEL NUM OF CURRENT ADDR OF CURR TIFGO ENTRY IN ADDRESSF3B12990
02351  0 00000 0 00000 E1C2                             CELL FOR SAVING AC                       F3B13000
02352  0 00000 0 00000 E2C2                             CELL FOR SAVING MQ                       F3B13010
02353  0 00000 0 00000 E3C2                             CELL FOR SAVING IRA IN DEC FIELD         F3B13020
02354  0 00000 0 00000 E4C2                             CELL FOR SAVING IRB IN DEC FIELD         F3B13030
02355  0 00000 0 00000 BBOX        TWOS COMP OF NO OF WDS ALREADY ENTERED IN BLOCK               F3B13040
02356  0 00000 0 00000 ETRAST      TRASTO ENTRY POINT FOR INITIAL TIFGO FMLA NO MATCH IN DEC     F3B13050
02357  0 00000 0 00000 NETRAL      TRALEV ENTRY POINT FOR LAST ADD IN DEC FIELD(TWOS COMP)       F3B13060
02360  0 00000 0 00000 CLOC        INCREMENT FOR LOC WD OF FIRST INST IN CUR BLOCK               F3B13070
                                     OF TRASTO INSERTIONS (IN ADDR FIELD)                        F3B13080
02361  0 00000 0 00000 SAVE        TEMP STORAGE FOR FIRST TRALEV ENTRY FOR IF (E)                F3B13090
                  02362 M2CW   BSS 5 FOUR WORD INSTRUCTION STORAGE                               F3B13100
02367  0 00000 0 00000 CTRSWC                                                                    F3B13110
                  02370 TRASTO BSS 400                                                           F3B13120
                  02370  TYPE1 SYN TRASTO                                                        F3B13130
                  03210  TYPE2 BSS 400                                                           F3B13140
                  04030  TYPE3 BSS 400                                                           F3B13150
                  04650  TYPE4 BSS 400                                                           F3B13160
                  05470  TYPE5 BSS 400                                                           F3B13170
                  06310  TYPE6 BSS 400                                                           F3B13180
                  03211 TRALEV SYN TYPE2+1                                                       F3B13190
                  05472  TIFGO SYN TYPE2+1202                                                    F3B13200
                  06622 CIB2   SYN TYPE2+1802                                                    F3B13210
                  06767 TRAD   SYN CIB2+101                                                      F3B13220
                  07322        ORG 3794                                                          F3B13230
                  07322  TFRCO BSS 1                                                             F3B13240
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07323 EASCO  BSS 1 CURRENT ASCO ENTRY POINT IN DECR FIELD (TWOS COMP)          F3B13250
07324 ASNO   BSS 1  ONE LESS THAN CUR ASSIGN NUM IN DEC FIELD                  F3B13260
07325  ASCO  BSS 300                                                          F3B13270
00030        END 24                                                           F3B13280
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1          REM    MASTER RECORD CARD = FN060
1                    MASTER RECORD CARD = FN060
                     THE FOLLOWING PROGRAM CONSTITUTES THE FINAL SECTION OF THE   F3B00010
                     MERGE.  IT MERGES THE FILE OF INSTRUCTIONS PREPARED BY THE   F3B00020
                     FIRST SECTION WITH THE FILE PREPARED BY THE SECOND SECTION.  F3B00030
                     IN ADDITION TO MERGING THESE TWO FILES, IT INSERTS IN THEIR  F3B00040
                     PROPER POSITION THE INDEXING INSTRUCTIONS NECESSITATED BY THEF3B00050
                     APPEARANCE OF RELATIVE CONSTANTS.                            F3B00060
                  00030          ORG 24                                          F3B00070
                     READ TSXCOM INTO HIGH SPEED STORAGE                          F3B00080
      00030  0 53400 4 01202 M30000 LXA M3ECTR,4        ERORR COUNT IN IR 4       F3B00090
      00031  0 76200 0 00303        RDS 195             SELECT DRUM 3             F3B00100
      00032  0 46000 0 01147        LDA L(704)          DRUM ADDRESS              F3B00110
      00033  0 70000 0 01226        CPY TSXCOM-2        WORD COUNT OF TSXCOM TABLE F3B00120
      00034  0 70000 0 01227        CPY TSXCOM-1        CHECK SUM OF WORD COUNT   F3B00130
      00035  0 50000 0 01226        CLA TSXCOM-2        WD. COUNT                 F3B00140
      00036  0 40200 0 01227        SUB TSXCOM-1        CHECK SUM                 F3B00150
      00037  0 10000 0 00042        TZE M30010          EQUAL                     F3B00160
D     00040  2 00000 4 00031        TIX M30000+1,4      NOT EQUAL, TRY 4 MORE TIMES F3B00170
      00041  0 07400 4 00004        TSX 4,4             WORD COUNT NOT EQUAL TO CHECK SUM F3B00180
      00042  0 53400 4 01202 M30010 LXA M3ECTR,4       ERROR COUNT IN IR4        F3B00190
      00043  0 50000 0 01226        CLA TSXCOM-2        WORD COUNT                F3B00200
      00044  0 77100 0 00022        ARS 18              PLACE IN ADDRESS          F3B00210
      00045  0 10000 0 00073        TZE M30050          NO TSX INSTRUCTION        F3B00220
      00046  0 73400 3 00000        PAX 0,3             PLACE WORD COUNT IN IR 1 AND 2 F3B00230
      00047  0 40000 0 01142        ADD L(1)            ADD ONE TO WORD COUNT     F3B00240
      00050  0 40000 0 00061        ADD M30025          INITIAL ADDRESS           F3B00250
      00051  0 62100 0 00055        STA M30020                                    F3B00260
      00052  0 76200 0 00303        RDS 195             SELECT DRUM 3             F3B00270
      00053  0 46000 0 01150        LDA L(706)          DRUM ADDRESS              F3B00280
      00054  1 00001 1 00055        TXI M30020,1,1      INCCREMENT BY 1           F3B00290
      00055  0 70000 1 00000 M30020 CPY 0,1             TSXCOM TABLE INTO STOORAGE F3B00300
      00056  2 00001 1 00055        TIX M30020,1,1      COPY LOOP                 F3B00310
      00057  0 53400 1 01141        LXA L(0),1                                    F3B00320
      00060 -0 50000 0 01141        CAL L(0)            ZEROS IN ACC.             F3B00330
      00061  0 36100 1 01230 M30025 ACL TSXCOM,1        COMPUTE NEW CHECK SUMS AND COMPARE F3B00340
      00062  1 77777 1 00063        TXI M30025+2,1,-1   TO GIVEN CHECK SUM        F3B00350
      00063  2 00001 2 00061        TIX M30025,2,1                                F3B00360
      00064 -0 63400 1 01227        SXD TSXCOM-1,1                                F3B00370
      00065  0 60200 0 01226        SLW TSXCOM-2                                  F3B00380
      00066  0 50000 0 01226        CLA TSXCOM-2                                  F3B00390
      00067  0 40200 1 01230        SUB TSXCOM,1                                  F3B00400
      00070  0 10000 0 00073        TZE M30050          END.  CHECK SUMS AGREE    F3B00410
      00071  2 00001 4 00043        TIX M30010+1,4,1    NOT EQUAL) BACK TO TRY 4 MORE T IMES F3B00420
      00072  0 07400 4 00004        TSX 4,4             READ DRUM 5 MORE TIMES    F3B00430
      00073  0 02000 0 02673 M30050 TRA TSXPT1                                    F3B00440
                     PROGRAM FOR PART 3 OF MERGE                                  F3B00450
      00074  0 07400 4 00654        TSX READTF,C        INITIALIZE TIFGO FILE BUFFER F3B00460
      00075  0 07400 4 00700        TSX READFF,C        FIRST FILE BUFFERS        F3B00470
      00076 -0 76000 0 00142        MSE 98              IS TIFGO FILE  USED UP    F3B00480
      00077  0 02000 0 00101        TRA C4              NO                        F3B00490
      00100  0 02000 0 00150        TRA G1              YES, GO TO END OF TIFGO ROUTINE F3B00500
      00101  0 50000 0 07322  C4    CLA 3794            TIFGO RECORD COUNT        F3B00510
      00102  0 40000 0 01151        ADD L(1D)           ADD ONE TO DECREMENT      F3B00520
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00103  0 60100 0 07322        STO 3794          NEW TIFGO RECORD COUNT                          F3B00530
00104  0 50000 1 02362  C6    CLA FFLBUF,A      OBTAIN ALPHA FOR NEXT CIT IN IST FILE BUFFER    F3B00540
00105  0 62200 0 01221        STD FFLCFN                                                        F3B00550
00106  0 50000 2 02216        CLA TFGBUF,B      OBTAIN  FOR NEXT CIT AND SAVE IN                F3B00560
00107 -0 32000 0 01162        ANA MASK          TIFGO BUFFER                                    F3B00570
00110  0 62200 0 01213        STD TFGCFN                                                        F3B00580
00111  0 34000 0 01221        CAS FFLCFN        COMPARE FIRST FILE TO TIFGO FILE                F3B00590
00112  0 02000 0 00234        TRA E1                ALPHA LESS THAN BETA                        F3B00600
00113  0 02000 0 00337        TRA J1                ALPHA EQUALS BETA                           F3B00610
                                                    ALPHA GREATER THAN BETA                     F3B00620
00114  0 53400 4 01145  C5    LXA L(4),C            COMPILE  THIS TIFGO FILE INSTRUCTION        F3B00630
00115  0 50000 2 02216  C2    CLA TFGBUF,B      SET UP FOR WORDS                                F3B00640
00116  0 60100 4 01220        STO TFGCOM+4,C                                                    F3B00650
00117  1 77777 2 00120        TXI C1,B,-1                                                       F3B00660
00120  2 00001 4 00115  C1    TIX C2,C,1                                                        F3B00670
00121  0 07400 4 01022        TSX CIT00,C       COMPILER                                        F3B00680
00122  0 00000 0 01214        HTR TFGCOM                                                        F3B00690
00123  0 00000 0 01215        HTR TFGCOM+1                                                      F3B00700
00124  0 00000 0 01216        HTR TFGCOM+2                                                      F3B00710
00125  0 00000 0 01217        HTR TFGCOM+3                                                      F3B00720
00126 -0 75400 2 00000        PXD 0,B               COMPARE WORD COUNT                          F3B00730
00127  0 34000 0 01212        CAS TFGWC             WITH BUFFER SIZE                            F3B00740
00130  0 02000 0 00137        TRA C7            WORD COUNT LESS THAN BUFFER SSIZE               F3B00750
00131  0 02000 0 00133        TRA C3                WC EQUALS BS                                F3B00760
00132  0 07400 4 00004        TSX 4,4           WORD COUNT INCORRECT                            F3B00770
00133  0 07400 4 00654  C3    TSX READTF,C      READ TIFGO FILE INTO BUFFER                     F3B00780
00134 -0 76000 0 00142        MSE 98                IS TIFGO FILE USED UP                       F3B00790
00135  0 02000 0 00137        TRA C7                NO    TEST LOCATION WD OF NEXT ENTRY        F3B00800
00136  0 02000 0 00150        TRA G1                YES GO TO END OF TIFGO FILE ROUTINE         F3B00810
00137  0 50000 2 02216  C7    CLA TFGBUF,B      WORD COUNT LESS THAN BUFFER SIZE                F3B00820
00140 -0 32000 0 01164        ANA 2BIT              IS LOCATION WORD SPECIAL                    F3B00830
00141 -0 10000 0 00114        TNZ C5                YES  BACK TO COMPILE NEXT ENTRY             F3B00840
00142  0 50000 2 02216        CLA TFGBUF,B          NO                                          F3B00850
00143 -0 32000 0 01162        ANA MASK              DOES NEXT INSTRUCTION IN TIFGO FILE         F3B00860
00144  0 34000 0 01213        CAS TFGCFN            BELONG TO CURRENT COMPILED BLOCK            F3B00870
00145  0 02000 0 00104        TRA C6                NO                                          F3B00880
00146  0 76100 0 00000        NOP                   YES                                         F3B00890
00147  0 02000 0 00114        TRA C5                YES                                         F3B00900
                                  END OF TIFGO FILE ROUTINE                                     F3B00910
00150 -0 76000 0 00141  G1    MSE 97                IS FIRST FILE USED UP.  TEST SWITCH         F3B00920
00151  0 02000 0 00153        TRA G2                        NO                                  F3B00930
00152  0 02000 0 00443        TRA OUT               YES   GO TO TERMINAL ROUT INE               F3B00940
00153  0 50000 1 02362  G2    CLA FFLBUF,A      ENTRY IN FIRST FILE BUFFER                      F3B00950
00154  0 62200 0 01221        STD FFLCFN        STORE INTERNAL FORMULA NO. FOR ENTRY            F3B00960
00155  0 53400 4 01145  G5    LXA L(4),C            COMPILE                                     F3B00970
00156  0 50000 1 02362  G4    CLA FFLBUF,A          FIRST                                       F3B00980
00157  0 60100 4 01226        STO FFLCOM+4,C        FILE                                        F3B00990
00160  1 77777 1 00161        TXI G3,A,-1           INSTRUCTION                                 F3B01000
00161  2 00001 4 00156  G3    TIX G4,C,1                                                        F3B01010
00162  0 07400 4 01022        TSX CIT00,C       COMPILER                                        F3B01020
00163  0 00000 0 01222        HTR FFLCOM                                                        F3B01030
00164  0 00000 0 01223        HTR FFLCOM+1                                                      F3B01040
00165  0 00000 0 01224        HTR FFLCOM+2                                                      F3B01050
00166  0 00000 0 01225        HTR FFLCOM+3                                                      F3B01060
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00167 -0 75400 1 00000        PXD 0,A
00170  0 34000 0 01220        CAS FFLWC
00171  0 02000 0 00201        TRA G8
00172  0 02000 0 00174        TRA G7
00173  0 07400 4 00004        TSX 4,4
00174  0 07400 4 00700  G7    TSX READFF,C
00175 -0 76000 0 00141        MSE 97
00176  0 02000 0 00201        TRA G8
00177  0 07400 4 00724        TSX M31000,C
00200  0 02000 0 00443        TRA OUT
00201  0 50000 1 02362  G8     CLA FFLBUF,A
00202  0 10000 0 00155        TZE G5
00203  0 07400 4 00724        TSX M31000,C
00204  0 50000 1 02362  G9     CLA FFLBUF,A
00205 -0 32000 0 01162        ANA MASK
00206  0 34000 0 01221        CAS FFLCFN
00207  0 02000 0 00153        TRA G2
00210  0 76100 0 00000        NOP
00211  0 53400 4 01145        LXA L(4),C
00212  0 50000 1 02362  G10    CLA FFLBUF,A
00213  0 60100 4 01226        STO FFLCOM+4,C
00214  1 77777 1 00215        TXI G11,A,-1
00215  2 00001 4 00212  G11    TIX G10,C,1
00216  0 07400 4 01022        TSX CIT00,C
00217  0 00000 0 01222        HTR FFLCOM
00220  0 00000 0 01223        HTR FFLCOM+1
00221  0 00000 0 01224        HTR FFLCOM+2
00222  0 00000 0 01225        HTR FFLCOM+3
00223 -0 75400 1 00000        PXD 0,A
00224  0 34000 0 01220        CAS FFLWC
00225  0 02000 0 00204        TRA G9
00226  0 02000 0 00230        TRA G12
00227  0 07400 4 00004        TSX 4,4
00230  0 07400 4 00700  G12    TSX READFF,C
00231 -0 76000 0 00141        MSE 97
00232  0 02000 0 00204        TRA G9
00233  0 02000 0 00443        TRA OUT

00234  0 53400 4 01145  E1     LXA L(4),C
00235  0 50000 1 02362  E3     CLA FFLBUF,A
00236  0 60100 4 01226        STO FFLCOM+4,C
00237  1 77777 1 00240        TXI E2,A,-1
00240  2 00001 4 00235  E2     TIX E3,C,1
00241  0 07400 4 01022        TSX CIT00,C
00242  0 00000 0 01222        HTR FFLCOM
00243  0 00000 0 01223        HTR FFLCOM+1
00244  0 00000 0 01224        HTR FFLCOM+2
00245  0 00000 0 01225        HTR FFLCOM+3
00246 -0 75400 1 00000        PXD 0,A
00247  0 34000 0 01220        CAS FFLWC
00250  0 02000 0 00257        TRA F1
00251  0 02000 0 00253        TRA E4
00252  0 07400 4 00004        TSX 4,4
00253  0 07400 4 00700  E4     TSX READFF,C
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```
    COMPARE WORD COUNT WITH BUFFER SIZE                F3B01070
TO TEST IF FIRST FILE IS NOW EMPPTY                    F3B01080
WORD COUNT LES THAN BUFFER SIZE                        F3B01090
    WC EQUALS BS                                       F3B01100
WORD COUNT INCORRECT                                   F3B01110
                                                       F3B01120
TEST IF FIRST FILE IS USED UP                          F3B01130
NO                                                     F3B01140
YES, GO TO TSX COM TABLE SEARCH                        F3B01150
TERMINAL ROUTINE                                       F3B01160
TEST IF NEXT FIRST FILE ENTRY                          F3B01170
BELONGS TOSAME BLOCK OF INSTRUCTIONS                   F3B01180
NO                                                     F3B01190
TEST IF NEXT FIRST FILE ALPHA                          F3B01200
IS GREATER THAN PREVIOUS ONE                           F3B01210
INTERNAL FORMULA NUMBER                                F3B01220
YES, BACK TO COMPILE NEXT INSTRUCTION                  F3B01230
                                                       F3B01240
NO, COMPILE THIS INSTRUCTION                           F3B01250
ENTRY IN FIRST FILE BUFFER, SET                        F3B01260
UP FOUR WORDS OF ENTRY                                 F3B01270
STEP UP IR COUNTS                                      F3B01280
                                                       F3B01290
COMPILER                                               F3B01300
                                                       F3B01310
                                                       F3B01320
                                                       F3B01330
                                                       F3B01340
TEST IF FIRS T FILE BUFFER                             F3B01350
IS EMPTY                                               F3B01360
NO                                                     F3B01370
YES                                                    F3B01380
WORD COUNT INCORRECT                                   F3B01390
READ IN TO REFILL BUFFER                               F3B01400
TEST IF AT END OF FIRST FILE                           F3B01410
                                                       F3B01420
TERMINAL ROUTINE                                       F3B01430
    ALPHA LESS THAN BETA                               F3B01440
    COMPILE                                            F3B01450
    FIRST                                              F3B01460
    FILE                                               F3B01470
    INSTRUCTION SET UP FOUR WORDS                      F3B01480
                                                       F3B01490
COMPILER                                               F3B01500
                                                       F3B01510
                                                       F3B01520
                                                       F3B01530
                                                       F3B01540
    COMPARE WORD COUNT                                 F3B01550
    WITH BUFFER SIZE                                   F3B01560
    WC LESS THAN BS                                    F3B01570
    WC EQUALS BS                                       F3B01580
WORD COUNT INCORRECT                                   F3B01590
READ FIRST FILE                                        F3B01600
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00254 -0 76000 0 00141        MSE 97                  IS FIRST FILE USED UP                  F3B01610
00255  0 02000 0 00257        TRA F1                  NO                                     F3B01620
00256  0 02000 0 00312        TRA H1                  YES                                    F3B01630
00257  0 50000 1 02362  F1    CLA FFLBUF,A            DOES NEXT INSTRUCTION IN               F3B01640
00260  0 10000 0 00234        TZE E1                  FIRST FILE HAVE ZERO LOC WORD          F3B01650
00261  0 07400 4 00724        TSX M31000,C        TSX COM TABLE SEARCH                       F3B01660
00262  0 50000 1 02362  F2    CLA FFLBUF,A        TEST KF PRESENT ALPHA IS                   F3B01670
00263 -0 32000 0 01162        ANA MASK            GREATER THAN ALPHA OF                      F3B01680
00264  0 34000 0 01221        CAS FFLCFN          PREVIOUS CIT                               F3B01690
00265  0 02000 0 00104        TRA C6              NEXT INTERNAL FORMULA NO.                  F3B01700
00266  0 76100 0 00000        NOP                                                            F3B01710
00267  0 53400 4 01145        LXA L(4),C                                                     F3B01720
00270  0 50000 1 02362  F3    CLA FFLBUF,A        PREPARE TO COMPILE THIS INSTRUCTION        F3B01730
00271  0 60100 4 01226        STO FFLCOM+4,C      SET UP FOUR WORDS                          F3B01740
00272  1 77777 1 00273        TXI F4,A,-1                                                    F3B01750
00273  2 00001 4 00270  F4    TIX F3,C,1                                                     F3B01760
00274  0 07400 4 01022        TSX CIT00,C         COMPILER                                   F3B01770
00275  0 00000 0 01222        HTR FFLCOM                                                     F3B01780
00276  0 00000 0 01223        HTR FFLCOM+1                                                   F3B01790
00277  0 00000 0 01224        HTR FFLCOM+2                                                   F3B01800
00300  0 00000 0 01225        HTR FFLCOM+3                                                   F3B01810
00301 -0 75400 1 00000        PXD 0,A             COUNT OF POSITION OM FIRST FILE            F3B01820
00302  0 34000 0 01220        CAS FFLWC           TEST IF FIRST FILE BUFFER                  F3B01830
00303  0 02000 0 00262        TRA F2              IS EMPTY                                   F3B01840
00304  0 02000 0 00306        TRA F5              NO, GET NEXT CIT ENTRY                     F3B01850
00305  0 07400 4 00004        TSX 4,4             WORD COUNT INCORRECT                       F3B01860
00306  0 07400 4 00700  F5    TSX READFF,C        READ FIRST FILE                            F3B01870
00307 -0 76000 0 00141        MSE 97              TEST IF AT END OF FIRST FILE               F3B01880
00310  0 02000 0 00262        TRA F2              BACK TO GET  NEXT FIRST FILE ENTRY         F3B01890
00311  0 02000 0 00313        TRA H0                                                         F3B01900
                                  END OF FIRST FILE ROUTINE                                  F3B01910
00312  0 07400 4 00724  H1    TSX M31000,C        READ TIFGO FILE                            F3B01920
00313 -0 76000 0 00142  H0    MSE 98              END OF TIFGO FILE                          F3B01930
00314  0 02000 0 00316        TRA H2              NO                                         F3B01940
00315  0 02000 0 00443        TRA OUT             YES, TO TERMINAL ROUTINE                   F3B01950
00316  0 53400 4 01145  H2    LXA L(4),C              COMPILE                                F3B01960
00317  0 50000 2 02216  H4    CLA TFGBUF,B            TIFGO                                  F3B01970
00320  0 60100 4 01220        STO TFGCOM+4,C          FILE                                   F3B01980
00321  1 77777 2 00322        TXI H3,B,-1             INSTRUCTION                            F3B01990
00322  2 00001 4 00317  H3    TIX H4,C,1                                                     F3B02000
00323  0 07400 4 01022        TSX CIT00,C         COMPILER                                   F3B02010
00324  0 00000 0 01214        HTR TFGCOM                                                     F3B02020
00325  0 00000 0 01215        HTR TFGCOM+1                                                   F3B02030
00326  0 00000 0 01216        HTR TFGCOM+2                                                   F3B02040
00327  0 00000 0 01217        HTR TFGCOM+3                                                   F3B02050
00330 -0 75400 2 00000        PXD 0,B                 COMPARE WORD COUNT                     F3B02060
00331  0 34000 0 01212        CAS TFGWC               WITH BUFFER SIZE                       F3B02070
00332  0 02000 0 00316        TRA H2                  WC LESS THAN BS                        F3B02080
00333  0 02000 0 00335        TRA H5                  WC EQUALS BS                           F3B02090
00334  0 07400 4 00004        TSX 4,4             WORD COUNT INCORRECT                       F3B02100
00335  0 07400 4 00654  H5    TSX READTF,C        BUFFER NOW EMPTY, READ NEXT BLOCK          F3B02110
00336  0 02000 0 00313        TRA H0                                                         F3B02120
                                                      ALPHA EQUALS BETA                      F3B02130
00337  0 50000 2 02216  J1    CLA TFGBUF,B        TEST IF LOC. WORD OF TIFGO FILE IS         F3B02140
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00340   0 12000 0 00376         TPL L1          MINUS NO                                F3B02150
                                                BETA IS MINUS , YES                     F3B02160
                                                                                        F3B02170
00341   0 76000 0 00003         SSP                                                     F3B02180
00342   0 60100 2 02216         STO TFGBUF,B    SAVE LOCATION WORD                      F3B02190
00343   0 40000 0 01203         ADD L(370)      370(8) TO LOC. WORD OF FIRST FILE       F3B02200
00344   0 60100 1 02362         STO FFLBUF,A    SAVE NEW LOCATION                       F3B02210
00345   0 53400 4 01145  J4     LXA L(4),C          COMPILE                             F3B02220
00346   0 50000 2 02216  J3     CLA TFGBUF,B        TIFGO                               F3B02230
00347   0 60100 4 01220         STO TFGCOM+4,C      FILE                                F3B02240
00350   1 77777 2 00351         TXI J2,B,-1         INSTRUCTION                         F3B02250
00351   2 00001 4 00346  J2     TIX J3,C,1      RESET IR 4                              F3B02260
00352   0 07400 4 01022         TSX CIT00,C     COMPILER                                F3B02270
00353   0 00000 0 01214         HTR TFGCOM                                              F3B02280
00354   0 00000 0 01215         HTR TFGCOM+1                                            F3B02290
00355   0 00000 0 01216         HTR TFGCOM+2                                            F3B02300
00356   0 00000 0 01217         HTR TFGCOM+3                                            F3B02310
00357  -0 75400 2 00000         PXD 0,B             COMPARE WORD COUNT                  F3B02320
00360   0 34000 0 01212         CAS TFGWC           WITH BUFFER SIZE                    F3B02330
00361   0 02000 0 00370         TRA K3              WC LESS THAN BS                     F3B02340
00362   0 02000 0 00364         TRA K1              WC EQUALS BS                        F3B02350
00363   0 07400 4 00004         TSX 4,4         WORD COUNT INCORRECT                    F3B02360
00364   0 07400 4 00654  K1     TSX READTF,C                                            F3B02370
00365  -0 76000 0 00142         MSE 98              IS TIFGO FILE USED UP               F3B02380
00366   0 02000 0 00370         TRA K3              NO                                  F3B02390
00367   0 02000 0 00150         TRA G1              YES                                 F3B02400
00370   0 50000 2 02216  K3     CLA TFGBUF,B        DOES NEXT INSTRUCTION IN            F3B02410
00371  -0 32000 0 01162         ANA MASK            TIFGO FILE BELONG TO CURRENT        F3B02420
00372   0 34000 0 01213         CAS TFGCFN          COMPILED BLOCK                      F3B02430
00373   0 02000 0 00234         TRA E1              NO                                  F3B02440
00374   0 76100 0 00000         NOP                 YES                                 F3B02450
00375   0 02000 0 00345         TRA J4              YES                                 F3B02460
                                                    BETA IS PLUS                        F3B02470
00376   0 53400 4 01145  L1     LXA L(4),C          OR TIFGO FILE                       F3B02480
00377  -0 50000 2 02216  L2     CAL TFGBUF,B        WITH FIRST FILE                     F3B02490
00400  -0 60200 1 02362         ORS FFLBUF,A        INSTRUCTION                         F3B02500
00401   1 77777 1 00402         TXI L8,A,-1     RESET IR COUNTS                         F3B02510
00402   1 77777 2 00403  L8     TXI L3,B,-1                                             F3B02520
00403   2 00001 4 00377  L3     TIX L2,C,1                                              F3B02530
00404   1 00004 1 00405         TXI L5,A,4                                              F3B02540
00405   0 53400 4 01145  L5     LXA L(4),C          COMPILE                             F3B02550
00406   0 50000 1 02362  L7     CLA FFLBUF,A        FIRST                               F3B02560
00407   0 60100 4 01226         STO FFLCOM+4,C      FILE                                F3B02570
00410   1 77777 1 00411         TXI L6,A,-1         INSTRUCTION                         F3B02580
00411   2 00001 4 00406  L6     TIX L7,C,1                                              F3B02590
00412   0 07400 4 01022         TSX CIT00,C                                             F3B02600
00413   0 00000 0 01222         HTR FFLCOM                                              F3B02610
00414   0 00000 0 01223         HTR FFLCOM+1                                            F3B02620
00415   0 00000 0 01224         HTR FFLCOM+2                                            F3B02630
00416   0 00000 0 01225         HTR FFLCOM+3                                            F3B02640
00417  -0 75400 1 00000         PXD 0,A             COMPARE WORD COUNT                  F3B02650
00420   0 34000 0 01220         CAS FFLWC           WITH BUFFER SIZE                    F3B02660
00421   0 02000 0 00430         TRA M3              WC LESS THAN BS                     F3B02670
00422   0 02000 0 00424         TRA M1              WC EQUALS BS                        F3B02680
00423   0 07400 4 00004         TSX 4,4         WORD COUNT INCORRECT
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00424  0 07400 4 00700  M1     TSX READFF,C                                                    F3B02690
00425 -0 76000 0 00141         MSE 97                  IS FIRST FILE USED UP                   F3B02700
00426  0 02000 0 00430         TRA M3                  NO                                      F3B02710
00427  0 02000 0 00330 COR1    TRA H3+6                                                        F3B02720
00430  0 50000 1 02362  M3     CLA FFLBUF,A            DOES NEXT INSTRUCTION IN                F3B02730
00431 -0 32000 0 01162         ANA MASK                FIRST FILE BELONG TO CURRENT            F3B02740
00432  0 34000 0 01221         CAS FFLCFN              COMPILED BLOCK                          F3B02750
00433  0 02000 0 00436         TRA M4                  NO                                      F3B02760
00434  0 76100 0 00000         NOP                     YES                                     F3B02770
00435  0 02000 0 00405         TRA L5                  YES                                     F3B02780
00436 -0 75400 2 00000 M4      PXD 0,2             TEST IF TIFGO FILE BUFFER IS EMPTY          F3B02790
00437  0 34000 0 01212         CAS TFGWC                                                       F3B02800
00440  0 02000 0 00137         TRA C7                                                          F3B02810
00441  0 02000 0 00133         TRA C3                                                          F3B02820
00442  0 07400 4 00004         TSX 4,4             WORD COUNT INCORRECT                        F3B02830
                                   M3 TERMINAL ROUTINE                                         F3B02840
00443 -0 53400 1 01207  OUT    LXD BBOX,1          2S C OMPLIMENT OF NO. OF WORDS              F3B02850
00444  0 50000 1 02523 PAT1    CLA CIB-3,1         ENTERED IN BLICK                            F3B02860
00445  0 40200 0 01172 PAT2    SUB L(TRA)          TEST IF TRA INSTRUCTION                     F3B02870
00446  0 10000 0 01137 PAT3    TZE RTN             YES                                         F3B02880
00447  0 02000 0 01066 COR2    TRA PAT4            NO                                          F3B02890
00450 -0 63400 1 00454 RET1    SXD N2,1            SAVE INDEX REG. NO. IN COMPARE INSTR.       F3B02900
00451  0 53400 1 01141         LXA L(0),1          INITIALIZE IR 1 TO 1                        F3B02910
00452  0 70000 1 02526  N1     CPY CIB,1           REMAINDER OF                                F3B02920
00453  1 77777 1 00454         TXI N2,1,-1             INSTRUCTIONS IN BUFFER                  F3B02930
D 00454  3 00000 1 00452  N2     TXH N1,1            TEST IF AT END OF BUFFER                    F3B02940
00455  0 77000 0 00204         WEF 4               YES, WRITE END OF FILE                      F3B02950
00456 -0 53400 4 07322 M32000  LXD 3794,4   WRITE DO FILE C + FORTRAN FUNCTION FILE AS 2ND FILE F3B02960
00457  1 00003 4 00460         TXI M32005,4,3      POSITION TAPE 2 TO READ DO FILE C           F3B02970
00460  0 76400 0 00222 M32005  BST 146                                                         F3B02980
00461  2 00001 4 00460         TIX M32005,4,1                                                  F3B02990
00462  0 76200 0 00222         RDS 146             READ DO FILE C INTO STORAGE                 F3B03000
00463  0 70000 0 07323         CPY 3795                                                        F3B03010
00464  0 53400 4 07323         LXA 3795,4          WORD COUNT                                  F3B03020
00465  1 00004 4 00466         TXI BST,4,4                                                     F3B03030
00466  0 76400 0 00222 BST     BST 146             BACK TO FIRST WD.                           F3B03040
00467  2 00001 4 00466         TIX BST,4,1                                                     F3B03050
00470  0 76200 0 00222         RDS 146             PAST IDENTIFICATION COUNT                   F3B03060
00471  0 76200 0 00222         RDS 146             WORD COUNT                                  F3B03070
00472  0 76600 0 00224         WRS 148             ZERO ON TAPE 4                              F3B03080
00473  0 70000 0 01141         CPY L(0)                                                        F3B03090
00474  0 50000 0 01141         CLA L(0)            RESTORE BBOX TO ZERO                        F3B03100
00475  0 60100 0 01207         STO BBOX                                                        F3B03110
00476  0 76000 0 00140         PSE 96              TURN OFF ALL SENSE SWITCHES                 F3B03120
00477  0 07400 4 00654 READ    TSX READTF,4        TREAD TIFGO FILE                            F3B03130
00500 -0 76000 0 00142         MSE 98              TEST IF AT END OF TIFGO FILE                F3B03140
00501  0 02000 0 00503         TRA COMP            NO                                          F3B03150
00502  0 02000 0 00522         TRA FREAD           YES                                         F3B03160
00503  0 53400 4 01145 COMP    LXA L(4),4          4 IN IR 4                                   F3B03170
00504  0 50000 2 02216         CLA TFGBUF,2        SET UP FOUR WORDS FOR COMPILATION           F3B03180
00505  0 60100 4 01220         STO TFGCOM+4,4                                                  F3B03190
00506  1 77777 2 00507         TXI COMP1,2,-1                                                  F3B03200
00507  2 00001 4 00504 COMP1   TIX COMP+1,4,1                                                  F3B03210
00510  0 07400 4 01022         TSX CIT00,4         COMPILER                                    F3B03220
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00511  0 00000 0 01214          HTR TFGCOM                                                    F3B03230
00512  0 00000 0 01215          HTR TFGCOM+1                                                  F3B03240
00513  0 00000 0 01216          HTR TFGCOM+2                                                  F3B03250
00514  0 00000 0 01217          HTR TFGCOM+3                                                  F3B03260
00515 -0 75400 2 00000          PXD 0,2            COUNT OF TIFGO                             F3B03270
00516  0 34000 0 01212          CAS TFGWC          COMPARE TO CURRENT FMLA. NO.               F3B03280
00517  0 02000 0 00503          TRA COMP           LESS THAN, COMPILE ENTRIESP                F3B03290
00520  0 02000 0 00477          TRA READ           EQUAL TO.  READ NEXT ENTRY                 F3B03300
00521  0 07400 4 00004          TSX 4,4            WORD COUNT INCORRECT                       F3B03310
00522  0 07400 4 00700 FREAD    TSX READFF,4       READ FIRST FILE                            F3B03320
00523 -0 76000 0 00141          MSE 97             TEST IF AT END OF FIRST FILE               F3B03330
00524  0 02000 0 00526          TRA FCOMP          NO                                         F3B03340
00525  0 02000 0 00545          TRA WRITE          YES                                        F3B03350
00526  0 53400 4 01145 FCOMP    LXA L(4),4         SET UP COUNT AND FOUR WORSD OF ENTRY       F3B03360
00527  0 50000 1 02362          CLA FFLBUF,1                                                  F3B03370
00530  0 60100 4 01226          STO FFLCOM+4,4                                                F3B03380
00531  1 77777 1 00532          TXI FCOMP1,1,-1                                               F3B03390
00532  2 00001 4 00527 FCOMP1   TIX FCOMP+1,4,1                                               F3B03400
00533  0 07400 4 01022          TSX CIT00,4        COMPILER                                   F3B03410
00534  0 00000 0 01222          HTR FFLCOM                                                    F3B03420
00535  0 00000 0 01223          HTR FFLCOM+1                                                  F3B03430
00536  0 00000 0 01224          HTR FFLCOM+2                                                  F3B03440
00537  0 00000 0 01225          HTR FFLCOM+3                                                  F3B03450
00540 -0 75400 1 00000          PXD 0,1            CHECK WORD COUNT                           F3B03460
00541  0 34000 0 01220          CAS FFLWC          AND COMPARE TO FIRST FILE WORD COUNT       F3B03470
00542  0 02000 0 00526          TRA FCOMP                                                     F3B03480
00543  0 02000 0 00522          TRA FREAD                                                     F3B03490
00544  0 07400 4 00004          TSX 4,4            WORD COUNT INCORRECT                       F3B03500
00545 -0 53400 1 01207 WRITE    LXD BBOX,1         TWOS COMPLIMENT OF NO. OF ENTRIES          F3B03510
00546 -3 00000 1 00555          TXL WRITE2+1,1,0                                              F3B03520
00547  0 76600 0 00224          WRS 148            SELECT TAPE 4                              F3B03530
00550 -0 63400 1 00554          SXD WRITE2,1                                                  F3B03540
00551  0 53400 1 01141          LXA L(0),1                                                    F3B03550
00552  0 70000 1 02526 WRITE1   CPY CIB,1          REMAINDER OF BUFFER ONTO TAPE 4            F3B03560
00553  1 77777 1 00554          TXI WRITE2,1,-1                                               F3B03570
D 00554  3 00000 1 00552 WRITE2 TXH WRITE1,1                                                  F3B03580
00555  0 77000 0 00224          WEF 148                                                       F3B03590
00556  0 53400 4 07323          LXA 3795,4                                                    F3B03600
00557  1 00003 4 00560          TXI POS,4,3                                                   F3B03610
00560  0 76400 0 00222 POS      BST 146            BACKSPACE OVER DO FILE C                   F3B03620
00561  2 00001 4 00560          TIX POS,4,1                                                   F3B03630
00562  0 76200 0 00222 M32010   RDS 146                    WRITE ASCO OVER DO FILE C ON TAPE 2 F3B03640
00563  0 76200 0 00222          RDS 146                                                       F3B03650
00564  0 76600 0 00222          WRS 146            SELECT TAPE 2                              F3B03660
00565  0 70000 0 07324          CPY 3796           COPY ASCO OVER DOFILE C                    F3B03670
00566  0 50000 0 07324          CLA 3796                                                      F3B03680
00567  0 10000 0 00576          TZE M32030-1       NO ASCO ENTRIES                            F3B03690
00570 -0 73400 1 00000          PDX 0,1            NUMBER OF ASCO ENTRIES IN IR 1             F3B03700
00571  0 77100 0 00022          ARS 18             SHIFT WORD COUNT                           F3B03710
00572  0 40000 0 00574          ADD M32020         INITIAL ADDRESS                            F3B03720
00573  0 62100 0 00574          STA M32020         INITIALIZE COPY ADDRESS                    F3B03730
00574  0 70000 1 07325 M32020   CPY 3797,1         ASCO TABLR                                 F3B03740
00575  2 00001 1 00574          TIX M32020,1,1                                                F3B03750
00576  0 77000 0 00222          WEF 146            END OF FILE AFTER ASCO TABLE               F3B03760
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00577  0 53400 4 01202 M32030 LXA M3ECTR,4        ERROR COUNT                                          F3B03770
00600  0 76200 0 00302        RDS 194             READ FIXCON INTO STORAGE                             F3B03780
00601  0 70000 0 01226        CPY FIXCON-2        DRUM CHECK SUM CHCHECKING                            F3B03790
00602  0 70000 0 01227        CPY FIXCON-1                                                             F3B03800
00603  0 50000 0 01226        CLA FIXCON-2        WORD COUNT                                           F3B03810
00604  0 40200 0 01227        SUB FIXCON-1        CHECK SUM                                            F3B03820
00605  0 10000 0 00610        TZE M32040          CORRECTP                                             F3B03830
00606  2 00001 4 00600        TIX M32030+1,4,1    TRY 4 MORE TIMES                                     F3B03840
00607  0 07400 4 00004        TSX 4,4             WORD COUNT INCORRECT                                 F3B03850
00610  0 53400 4 01202 M32040 LXA M3ECTR,4        ERROR COUNT                                          F3B03860
00611  0 50000 0 01226        CLA FIXCON-2        WORD COUNT                                           F3B03870
00612  0 10000 0 00634        TZE M32065          NO FIXCON ENTRIES                                    F3B03880
00613  0 73400 3 00000        PAX 0,3             INITIALIZE WORD COUNT                                F3B03890
00614  0 40000 0 00623        ADD M32055          INITIAL ADDRESS                                      F3B03900
00615  0 62100 0 00620        STA M32050                                                               F3B03910
00616  0 76200 0 00302        RDS 194                                                                  F3B03920
00617  0 46000 0 01143        LDA L(2)            READ DRUM 2 FOR FIXCON TABLE                         F3B03930
00620  0 70000 1 00000 M32050 CPY 0,1                                                                  F3B03940
00621  2 00001 1 00620        TIX M32050,1,1                                                           F3B03950
00622  0 53400 1 01141        LXA L(0),1          SET IR 1 TO ZERO                                     F3B03960
00623  0 50000 1 01230 M32055 CLA FIXCON,1        FIRST ENTRY                                          F3B03970
00624  0 40200 1 01231        SUB FIXCON+1,1      CHECK SUM                                            F3B03980
00625  0 10000 0 00630        TZE M32060          CORRECT                                              F3B03990
00626  2 00001 4 00611        TIX M32040+1,4,1    TRY 4 MORE TIMES                                     F3B04000
00627  0 07400 4 00004        TSX 4,4             WORD COUNT INCORRECT                                 F3B04010
00630  1 77776 1 00631 M32060 TXI M32060+1,1,-2   SKIP OVER CHECK SUM                                  F3B04020
00631  2 00002 2 00623        TIX M32055,2,2      NEXT ENTRY                                           F3B04030
00632 -0 63400 1 00644        SXD M32070+2,1      END OF TABLE COUNT                                   F3B04040
00633  0 53400 2 01141        LXA L(0),2          RESET IR 2 TO ZERO                                   F3B04050
00634  0 76600 0 00222 M32065 WRS 146                 WRITE FIXCON ON TAPE 2                          F3B04060
00635  0 50000 0 01226        CLA FIXCON-2                                                             F3B04070
00636  0 77100 0 00001        ARS 1               SET UP FIX CON ENTRIES WHITHOUT                      F3B04080
00637  0 60100 0 01226        STO FIXCON-2        CHECK SUMS FOR WRITING OUT ON TAPE 2                 F3B04090
00640  0 70000 0 01226        CPY FIXCON-2                                                             F3B04100
00641  0 10000 0 00645        TZE M32075          NO FIXCON ENTRY                                      F3B04110
00642  0 70000 2 01230 M32070 CPY FIXCON,2                                                             F3B04120
00643  1 77776 2 00644        TXI M32070+2,2,-2                                                        F3B04130
D      00644  3 00000 2 00642        TXH M32070,2                                                     F3B04140
00645  0 77000 0 00222 M32075 WEF 146             WRITE END OF FILE AFTER FIXCON                       F3B04150
00646  0 53400 4 01145        LXA L(4),4                                                               F3B04160
00647  0 76400 0 00222        BST 146             BACKSPACE TAPE 2 FOR SECTION 4                       F3B04170
00650  2 00001 4 00647        TIX M32075+2,4,1                                                         F3B04180
00651  0 76000 0 00140        PSE 96              TURN OFF ALL SENSE SWITCHES                          F3B04190
00652  0 76200 0 00221        RTB 1                                                                    F3B04200
00653  0 02000 0 00004        TRA 4                                                                    F3B04210
                              M3 CLOSED SUBROUTINES                                                    F3B04220
                              SUBROUTINE FOR READING A RECORD OF TIFGO FILE                            F3B04230
00654 -0 63400 1 01211 READTF SXD E3M3,A          SAVE LINKAGE IN IR 1                                 F3B04240
00655  0 53400 1 01202        LXA M3ECTR,1        ERROR COUNT                                          F3B04250
00656  0 76200 0 00222 M3B3   RDS 146             TAPE 2 TO READ TIFGO FILE                            F3B04260
00657  0 53400 2 01141        LXA L(0),B          RESET IR2 TO ZERO                                    F3B04270
00660  0 70000 2 02216 M3B1   CPY TFGBUF,B        COPY TIFGO FILE FROM TAPE INTO BUFFER                F3B04280
00661  1 77777 2 00660        TXI M3B1,B,-1       SET UP COUNT                                         F3B04290
00662  0 02000 0 00675        TRA M3B4                EOF                                              F3B04300
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00663  0 76600 0 00333         WRS 219             EOR) ON TAPE 3                          F3B04310
00664 -0 76000 0 00012         RTT                 IS TAPE CHECK INDICATOR ON              F3B04320
00665  0 02000 0 00672         TRA M3B2                YES                                 F3B04330
00666 -0 63400 2 01212         SXD TFGWC,B             NO                                  F3B04340
00667  0 53400 2 01141         LXA L(0),B          RESET INDEX OF TIFGO BUFFER             F3B04350
00670 -0 53400 1 01211         LXD E3M3,A          RESTORE INDEX OF FIRST FILE BUFFER      F3B04360
00671  0 02000 4 00001         TRA 1,C             EXIR. BACK TO MAIN ROUTINE              F3B04370
00672  0 76400 0 00222 M3B2    BST 146                                                     F3B04380
00673  2 00001 1 00656         TIX M3B3,A,1        ERROR ROUTINE                           F3B04390
00674  0 07400 4 00004         TSX 4,4             ERROR READING TAPE 2. TIFGO FILE        F3B04400
00675  0 76000 0 00142 M3B4    PSE 98              INDICATE END OF TIFGO FILE              F3B04410
00676 -0 53400 1 01211         LXD E3M3,A          RESTORE INDEX OF FIRST FILE BUFFER      F3B04420
00677  0 02000 4 00001         TRA 1,C             TRANSFER TO MAIN ROUTINE                F3B04430
                               SUBROUTINE FOR READING A RECORD OF FIRST FILE               F3B04440
00700 -0 63400 2 01210 READFF  SXD E2M3,B          SAVE COUNT IN IR 2 FOR LINKAGE          F3B04450
00701  0 53400 2 01202         LXA M3ECTR,B        ERROR COUNT                             F3B04460
00702  0 76200 0 00223 M3A3    RDS 147             READ FIRST FILE FROM TAPE 3             F3B04470
00703  0 53400 1 01141         LXA L(0),A          INITIALIZE IR1 TO ZERO                  F3B04480
00704  0 70000 1 02362 M3A1    CPY FFLBUF,A        COPY FIRST FILE INTO BUFFER             F3B04490
00705  1 77777 1 00704         TXI M3A1,A,-1                                               F3B04500
00706  0 02000 0 00721         TRA M3A4            EOF                                     F3B04510
00707  0 76600 0 00333         WRS 219             EOR DELAY 704  TO MAKE TAPE TEST        F3B04520
00710 -0 76000 0 00012         RTT                                                         F3B04530
00711  0 02000 0 00716         TRA M3A2            ERROR ROUTINE                           F3B04540
00712 -0 63400 1 01220         SXD FFLWC,A         SAVE LOCATON WORD OF FIRST FILE         F3B04550
00713  0 53400 1 01141         LXA L(0),A          RESET INDEX OF FIRST FILE BUFFER        F3B04560
00714 -0 53400 2 01210         LXD E2M3,B          RESTORE INDEX OF TIFGO FILE BUFFER      F3B04570
00715  0 02000 4 00001         TRA 1,C                                                     F3B04580
00716  0 76400 0 00223 M3A2    BST 147             BACKSPACE TAPE 3 TO TRY AGAIN           F3B04590
00717  2 00001 2 00702         TIX M3A3,B,1                                                F3B04600
00720  0 07400 4 00004         TSX 4,4             ERROR READING FIRST FILE FROM TAPE 3    F3B04610
00721  0 76000 0 00141 M3A4    PSE 97              INDICATE END OF FIRST FILE              F3B04620
00722 -0 53400 2 01210         LXD E2M3,B          RESTORE INDEX OF TIFGO FILE BUFFER      F3B04630
00723  0 02000 4 00001         TRA 1,C                                                     F3B04640
                               TSXCOM TABLE SEARCH                                         F3B04650
00724 -0 63400 1 01211 M31000  SXD E3M3,1          SAVE LINKAGE OF FIRST FILE BUFFER       F3B04660
00725 -0 63400 4 01210         SXD E2M3,4          SAVE LINKAGE FROMT TSX INSTR.           F3B04670
00726  0 60000 0 01065         STZ DUP             REINITIALIZE HTE INSTR.                 F3B04680
00727  0 50000 0 01226 M31005  CLA TSXCOM-2        TEST WORD COUNT OF CHECK SUM            F3B04690
00730  0 40200 0 01227         SUB TSXCOM-1                                                F3B04700
00731  0 10000 0 01017         TZE M31080          CHECK SUM EQUALS WORD COUNT             F3B04710
00732 -0 53400 1 01226         LXD TSXCOM-2,1      WORD COUNT IN IR1                       F3B04720
00733  0 50000 1 01230         CLA TSXCOM,1        FIRST ENTRY                             F3B04730
00734 -0 32000 0 01162         ANA MASK            SAVE DECREMENT, INTERNAL FMLA. NO.      F3B04740
00735  0 40200 0 01221         SUB FFLCFN          FIRST FILE LOCATION NO.                 F3B04750
00736 -0 10000 0 01017         TNZ M31080          NOT EQUAL.  NO TSXCOM ENTRY             F3B04760
                               CUR FIRST FILE FMLA NO APPEARS IN TSXCOM                    F3B04770
00737 -0 50000 1 01231 M31015  CAL TSXCOM+1,1                                              F3B04780
00740 -0 32000 0 01165         ANA PMASK           SAVE SIGN OF SECOND WD. OF ENTRY        F3B04790
00741  0 10000 0 01057 COR3    TZE CIT07+6         TYPE 1 ENTRY NEGATIVE                   F3B04800
00742  0 50000 1 01230         CLA TSXCOM,1        TYPE 2 ENTRY                            F3B04810
00743 -0 32000 0 01163         ANA AMASK           SAVE ADDRESS AND STORE IN               F3B04820
00744  0 60100 0 01225         STO FFLCOM+3        4TH WORD OF FIRST FILE COMPILER         F3B04830
00745  0 50000 1 01231         CLA TSXCOM+1,1      SECOND WORD OF ENTRY                    F3B04840
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00746  0 60100 0 01224         STO FFLCOM+2        3RD. WORD OF COMPILER                    F3B04850
00747  0 07400 4 01022         TSX CIT00,4         COMPILE INSTRUCTION                      F3B04860
00750  0 00000 0 01141         HTR L(0)            ZERO                                     F3B04870
00751  0 00000 0 01156         HTR L(LXD)          LXD INSTRUCTION                          F3B04880
00752  0 00000 0 01224         HTR FFLCOM+2                                                 F3B04890
00753  0 00000 0 01225         HTR FFLCOM+3                                                 F3B04900
00754  1 77776 1 00755         TXI M31030,1,-2     STEP UP COUNT FOR NEXT TSXCOM ENTRY      F3B04910
00755 -0 63400 1 01226 M31030   SXD TSXCOM-2,1      SAVE NEW WORD COUNT                      F3B04920
00756  0 02000 0 00727         TRA M31005          BACK TO SEARCH REMAING ENTRIES           F3B04930
00757  0 07400 4 01022 M31035  TSX CIT00,4             TYPE I ENTRY                         F3B04940
00760  0 00000 0 01141         HTR L(0)            ZERO                                     F3B04950
00761  0 00000 0 01157         HTR L(SXD)          SXD                                      F3B04960
00762  0 00000 0 01152         HTR L(6H)           +060000000000                            F3B04970
00763  0 00000 0 01155         HTR L(5.4)          000004000004                             F3B04980
00764  0 50000 1 01231         CLA TSXCOM+1,1      SECOND WORD OF ENTRY                     F3B04990
00765 -0 32000 0 01163         ANA AMASK           SAVE ADDRESS                             F3B05000
00766 -0 50100 0 01153         ORA L(10H)          ADD 120000000000                         F3B05010
00767  0 60100 0 01224         STO FFLCOM+2        IN 3RD. WORD OF COMPILER                 F3B05020
00770  0 07400 4 01022         TSX CIT00,4         FOR NEXT INSTRUCTION                     F3B05030
00771  0 00000 0 01141         HTR L(0)            ZERO                                     F3B05040
00772  0 00000 0 01160         HTR L(TSX)          TSX                                      F3B05050
00773  0 00000 0 01224         HTR FFLCOM+2        12(8) PLUS ADDRESS                       F3B05060
00774  0 00000 0 01145         HTR L(4)            +000000000004                            F3B05070
00775  0 50000 1 01231 M31050  CLA TSXCOM+1,1      SECOND WORD                              F3B05080
00776 -0 32000 0 01163         ANA AMASK           SAVE ADDRESS                             F3B05090
00777  0 60100 0 01225         STO FFLCOM+3        STORE IN 4TH. WORD OF COMPILED INSTR.    F3B05100
01000 -0 50100 0 01154         ORA L(12H)          ADD 12(8) AND DTORE IN 3RD.              F3B05110
01001  0 60100 0 01224         STO FFLCOM+2        WORD OF INSTRUCTION IN COMPILER          F3B05120
01002  0 07400 4 01022         TSX CIT00,4                                                  F3B05130
01003  0 00000 0 01141         HTR L(0)            ZERO                                     F3B05140
01004  0 00000 0 01161         HTR L(LXP)          LXP                                      F3B05150
01005  0 00000 0 01224         HTR FFLCOM+2        12(8) PLUS ADDDRESS                      F3B05160
01006  0 00000 0 01225         HTR FFLCOM+3        ADDRESS                                  F3B05170
01007  1 77776 1 01010         TXI M31063-1,1,-2   RESET IR1 FOR NEXT ENTRY                 F3B05180
01010 -0 63400 1 01226         SXD TSXCOM-2,1      SAVE WORD COUNT                          F3B05190
01011  0 07400 4 01022 M31063  TSX CIT00,4       COMPILE INSTRUCTION                      F3B05200
01012  0 00000 0 01141         HTR L(0)            ZERO000000000                            F3B05210
01013  0 00000 0 01156         HTR L(LXD)          LXD                                      F3B05220
01014  0 00000 0 01152         HTR L(6H)           +060000000000                            F3B05230
01015  0 00000 0 01155         HTR L(5.4)          000004000004                             F3B05240
01016  0 02000 0 00727         TRA M31005          CONTI UE TABLE SEARCH                    F3B05250
01017 -0 53400 1 01211 M31080  LXD E3M3,1          END OF TSXCOM TABLE SEARCH               F3B05260
01020 -0 53400 4 01210         LXD E2M3,4          RESTORE IR COUNTS FROM LINKAGE           F3B05270
01021  0 02000 4 00001         TRA 1,4             AND GO BACK TO MAIN ROUTINE              F3B05280
                                   COMPILING ROUTINE,CIT00                                 F3B05290
01022 -0 60000 0 01204 CIT00   STQ E1C             SAVE CONTENTS OF MQ                      F3B05300
01023 -0 63400 1 01205         SXD E2C,1           SAVE CONTENTS OF IR1                     F3B05310
01024 -0 63400 2 01206         SXD E3C,2           SAVE CONTENTS OF IR12                    F3B05320
01025 -0 53400 2 01207         LXD BBOX,2          2S COMPLIMENT OF NO. OF WORDS OF ENTRY   F3B05330
01026  3 77634 2 01036         TXH CIT04,2,-100    TEST IF LESS THAN 100 AND GREATER        F3B05340
01027 -3 00000 2 01036         TXL CIT04,2,0       THAN ZERO . IF SO. COMPILE INSTRUCTION   F3B05350
01030  0 76600 0 00224         WRS 148                                                      F3B05360
01031  0 53400 1 01141         LXA M1CON,1         SET COUNT IN IR 1 TO ZERO                F3B05370
01032  0 70000 1 02526 CIT01   CPY CIB,1           REFILL BUFFER                            F3B05380
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01033   1 77777 1 01034         TXI CIT02,1,-1      RESET COUNTS FOR FIRST ENTRY IN BUFFER      F3B05390
01034   1 00001 2 01035 CIT02   TXI CIT03,2,1                                                   F3B05400
01035   3 00001 2 01032 CIT03   TXH CIT01,2,1                                                   F3B05410
01036   0 53400 1 01145 CIT04   LXA M1CON+4,1       COUNT OF 4 IN IR1                           F3B05420
01037   0 50000 0 01142         CLA M1CON+1                                                     F3B05430
01040   0 62100 0 01041         STA CIT05                                                       F3B05440
01041   0 50000 4 00000 CIT05   CLA 0,4             LINKAGE FROM MAIN ROUTINE PLUS 1            F3B05450
01042   0 62100 0 01043         STA CIT06                                                       F3B05460
A 01043 0 50000 0 00000 CIT06   CLA                 FIRST PARAMETER, 2ND,) 3RD,) AND4TH,        F3B05470
01044   0 60100 2 02526         STO CIB,2           AND STORE IN PROPER OUTPUT AREA              F3B05480
01045   0 50000 0 01041         CLA CIT05                                                       F3B05490
01046   0 40000 0 01142         ADD M1CON+1                                                     F3B05500
01047   0 62100 0 01041         STA CIT05           TO GET NEXT WORD                            F3B05510
01050   1 77777 2 01051         TXI CIT07,2,-1      DECREASE COUNT IN IR1 AND 2 BY ONE          F3B05520
01051   2 00001 1 01041 CIT07   TIX CIT05,1,1                                                   F3B05530
01052  -0 63400 2 01207         SXD BBOX,2          SAVE COUNT OF CIB BUFFER                    F3B05540
01053   0 56000 0 01204         LDQ E1C             REDTORE MQ                                  F3B05550
01054  -0 53400 1 01205         LXD E2C,1           RESTORE IR 1                                F3B05560
01055  -0 53400 2 01206         LXD E3C,2           RESTORE IR2                                 F3B05570
01056   0 02000 4 00005         TRA 5,4             BACK TO MAIN ROUTINE                        F3B05580
01057   0 50000 1 01231         CLA TSXCOM+1,1                                                  F3B05590
01060   0 34000 0 01065         CAS DUP                                                         F3B05600
01061   0 02000 0 01063         TRA DIF                                                         F3B05610
01062   1 77776 1 00755         TXI M31030,1,-2                                                 F3B05620
01063   0 60100 0 01065 DIF     STO DUP                                                         F3B05630
01064   0 02000 0 00757         TRA M31035                                                      F3B05640
A 01065 0 00000 0 00000 DUP     HTR                                                             F3B05650
01066   0 07400 4 01022 PAT4    TSX CIT00,4         COMPILER FOR LOAD BUTTON SEQUENCE           F3B05660
01067   0 00000 0 01175 PAT5    HTR ZERO                                                        F3B05670
01070   0 00000 0 01166 PAT6    HTR L(RCD)          RCD                                         F3B05680
01071   0 00000 0 01175 PAT7    HTR ZERO                                                        F3B05690
01072   0 00000 0 01175 PAT8    HTR ZERO                                                        F3B05700
01073   0 07400 4 01022 PAT9    TSX CIT00,4         COMPILE INSTRUCTION                         F3B05710
01074   0 00000 0 01175 PAT10   HTR ZERO                                                        F3B05720
01075   0 00000 0 01167 PAT11   HTR L(CPY)          CPY                                         F3B05730
01076   0 00000 0 01175 PAT12   HTR ZERO                                                        F3B05740
01077   0 00000 0 01175 PAT13   HTR ZERO                                                        F3B05750
01100   0 07400 4 01022 PAT14   TSX CIT00,4                                                     F3B05760
01101   0 00000 0 01175 PAT15   HTR ZERO                                                        F3B05770
01102   0 00000 0 01170 PAT16   HTR L(XIT)          XIT                                         F3B05780
01103   0 00000 0 01173 PAT17   HTR L(15H)          +170000000000                               F3B05790
01104   0 00000 0 01177 PAT18   HTR L(2D)           000002000000                                F3B05800
01105   0 07400 4 01022 PAT19   TSX CIT00,4                                                     F3B05810
01106   0 00000 0 01175 PAT20   HTR ZERO                                                        F3B05820
01107   0 00000 0 01171 PAT21   HTR L(HPR)          HPR                                         F3B05830
01110   0 00000 0 01175 PAT22   HTR ZERO                                                        F3B05840
01111   0 00000 0 01200 PAT23   HTR L(7-)           7 PLUS LOC, NO, OF RCD INSTR,               F3B05850
01112   0 07400 4 01022 PAT24   TSX CIT00,4                                                     F3B05860
01113   0 00000 0 01175 PAT25   HTR ZERO                                                        F3B05870
01114   0 00000 0 01167 PAT26   HTR L(CPY)          CPY                                         F3B05880
01115   0 00000 0 01175 PAT27   HTR ZERO                                                        F3B05890
01116   0 00000 0 01176 PAT28   HTR ONED            000000000001                                F3B05900
01117   0 07400 4 01022 PAT29   TSX CIT00,4                                                     F3B05910
01120   0 00000 0 01175 PAT30   HTR ZERO                                                        F3B05920
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01121   0 00000 0 01170 PAT31   HTR L(XIT)          XIT                                F3B05930
01122   0 00000 0 01175 PAT32   HTR ZERO                                               F3B05940
01123   0 00000 0 01175 PAT33   HTR ZERO                                               F3B05950
01124   0 07400 4 01022 PAT34   TSX CIT00,4                                            F3B05960
01125   0 00000 0 01174 PAT35   HTR L(LOC)          +003777000370                      F3B05970
01126   0 00000 0 01171 PAT36   HTR L(HPR)          HPR                                F3B05980
01127   0 00000 0 01175 PAT37   HTR ZERO                                               F3B05990
01130   0 00000 0 01201 PAT38   HTR L(1,7)          000001000007                       F3B06000
01131   0 07400 4 01022 PAT39   TSX CIT00,4                                            F3B06010
01132   0 00000 0 01175 PAT40   HTR ZERO                                               F3B06020
01133   0 00000 0 01172 PAT41   HTR L(TRA)          TRA TO FINAL HALT                  F3B06030
01134   0 00000 0 01174 PAT42   HTR L(LOC)                                             F3B06040
01135   0 00000 0 01175 PAT43   HTR ZERO                                               F3B06050
01136  -0 53400 1 01207 PAT44   LXD BBOX,1          RESTORE COUNT IN IR1               F3B06060
01137   0 76600 0 00224 RTN     WRS 148                                                F3B06070
01140   0 02000 0 00450 PAT46   TRA RET1            BACK TO COMPLETE TERMINAL ROUTINE  F3B06080
                                WORKING STORAGE AND CONSTANTS                          F3B06090
                  00001  A      EQU 1                                                  F3B06100
                  00002  B      EQU 2                                                  F3B06110
                  00004  C      EQU 4                                                  F3B06120
01141 +000000000000      L(0)   DEC 0                                                  F3B06130
                  01141  M1CON  SYN L(0)                                              F3B06140
01142 +000000000001      L(1)   DEC 1                                                  F3B06150
01143 +000000000002     L(2)    DEC 2                                                  F3B06160
01144 +000000000003      L(3)   DEC 3                                                  F3B06170
01145 +000000000004      L(4)   DEC 4                                                  F3B06180
01146 +000000000010      L(8)   DEC 8                                                  F3B06190
01147 +000000001300     L(704)  DEC 704                                                F3B06200
01150 +000000001302     L(706)  DEC 706                                                F3B06210
01151 +000001000000     L(1D)   DEC 1B17                                               F3B06220
01152 +060000000000     L(6H)   OCT 60000000000                                        F3B06230
01153 +120000000000     L(10H)  OCT 120000000000                                       F3B06240
01154 +140000000000     L(12H)  OCT 140000000000                                       F3B06250
01155 +000004000004     L(5,4)  OCT 4000004                                            F3B06260
01156  436724000000     L(LXD)  BCD 1LXD000                                            F3B06270
01157  626724000000     L(SXD)  BCD 1SXD000                                            F3B06280
01160  636267000000     L(TSX)  BCD 1TSX000                                            F3B06290
01161  436747000000     L(LXP)  BCD 1LXP000                                            F3B06300
01162 +077777000000      MASK   OCT 77777000000                                        F3B06310
01163 +000000077777      AMASK  OCT 77777                                              F3B06320
01164 +100000000000      2BIT   OCT 100000000000                                       F3B06330
01165 -300000000000      PMASK  OCT 700000000000                                       F3B06340
01166  512324000000     L(RCD)  BCD 1RCD000                                            F3B06350
01167  234770000000     L(CPY)  BCD 1CPY000                                            F3B06360
01170  673163000000     L(XIT)  BCD 1XIT000                                            F3B06370
01171  304751000000     L(HPR)  BCD 1HPR000                                            F3B06380
01172  635121000000     L(TRA)  BCD 1TRA000                                            F3B06390
01173 +170000000000     L(15H)  OCT 170000000000                                       F3B06400
01174 +003777000370     L(LOC)  OCT 3777000370                                         F3B06410
01175   0 00000 0 00000 ZERO    PZE                                                    F3B06420
01176 +000001000000     ONED    DEC 1B17                                               F3B06430
01177 +000002000000     L(2D)   DEC 2B17                                               F3B06440
01200 +000000000007     L(7-)   DEC 7                                                  F3B06450
01201 +000001000007     L(1,7)  OCT 1000007                                            F3B06460
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01202 +000000000005     M3ECTR DEC 5                                                                F3B06470
01203 +000000000370     L(370) OCT 370                                                              F3B06475
01204   0 00000 0 00000 E1C          CELL FOR SAVING MQ                                             F3B06480
01205   0 00000 0 00000 E2C          CELL FOR SAVING IRA                                            F3B06490
01206   0 00000 0 00000 E3C          CELL FOR SAVING IRB                                            F3B06500
01207   0 00000 0 00000 BBOX         2S COMP OF NO OF WORDS  ALREADY ENTERED IN BLOCK               F3B06510
01210   0 00000 0 00000 E2M3                                                                        F3B06520
01211   0 00000 0 00000 E3M3                                                                        F3B06530
                                    SENSE LITE 98 ON FOR END OF TIFGO FILE                         F3B06540
01212   0 00000 0 00000 TFGWC                        TIFGO WORD COUNT                              F3B06550
01213   0 00000 0 00000 TFGCFN       CURRENT FORMULA NUM FOR TIFGO INSTRUCTION                      F3B06560
                01214 TFGCOM BSS 4                  TIFGO COMPILER                                 F3B06570
                                    SENSE LITE 97 ON FOR END OF FIRST FILE                         F3B06580
01220   0 00000 0 00000 FFLWC                        FIRST FILE WORD COUNT                         F3B06590
01221   0 00000 0 00000 FFLCFN       CURRENT FORMULA NUM FOR FIRST FILE INSTR                       F3B06600
                01222 FFLCOM BSS 4                  FIRST FILE COMPILER                            F3B06610
01226   0 00000 0 00000      PZE                                                                    F3B06620
01227   0 00000 0 00000      PZE                                                                    F3B06630
                01230 TSXCOM BSS 502                                                               F3B06640
                01230 FIXCON SYN TSXCOM                                                            F3B06650
                02216 TFGBUF BSS 100                TIFGO BUFFER                                   F3B06660
                02362 FFLBUF BSS 100                FIRST FILE BUFFER                              F3B06670
                02526  CIB   BSS 100                                                               F3B06680
                02673        ORG 1467                                                              F3B06681
02673   0 60200 0 01226 TSXPT1 SLW TSXCOM-2                                                        F3B06682
02674   0 07400 4 00654        TSX READTF,4                                                        F3B06683
02675   0 07400 4 00700        TSX READFF,4                                                        F3B06684
02676  -0 76000 0 00141        MSE 97                                                              F3B06685
02677   0 02000 0 02702        TRA TSXPT2                                                          F3B06686
02700   0 76000 0 00141        PSE 97                                                              F3B06687
02701   0 02000 0 00076        TRA M30050+3                                                        F3B06688
02702   0 50000 0 01230 TSXPT2 CLA TSXCOM                                                          F3B06689
02703   0 34000 0 02362        CAS FFLBUF                                                          F3B06690
02704   0 02000 0 00076        TRA M30050+3                                                        F3B06691
02705   0 02000 0 00076        TRA M30050+3                                                        F3B06692
02706   0 50000 0 01230        CLA TSXCOM                                                          F3B06693
02707   0 62200 0 01221        STD FFLCFN                                                          F3B06694
02710   0 07400 4 00724        TSX M31000,4                                                        F3B06695
02711   0 02000 0 00076        TRA M30050+3                                                        F3B06696
                00030          END 24                                                              F3B06700
```

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1
1   REM 704 FORTRAN II, 4-1-6-2 SYSTEM                                  F4400010
                        704 FORTRAN II, 4-1-6-2 SYSTEM                  F4400010
                        SECTION 4 - FLOW ANALYSIS                       F4400020
                        ROBERT C. BRILL - NOVEMBER 13, 1958             F4400030
                                                                        F4400040
                        NOTE - THIS LISTING CORRESPONDS TO THE FORTRAN II 4-1-6-2  F4400050
                        SYSTEM TAPE.  TO MAKE IT CORRESPOND TO THE 8-1-6-2 SYSTEM  F4400060
                        TAPE MAKE THE FOLLOWING CHANGES IN THIS LISTING.           F4400070
                             IN RECORD F0730000, LOCATION 77, CHANGE               F4400080
                                  000674000000 TO 003140000000                     F4400090
                             IN RECORD F0730000, LOCATION 632, CHANGE              F4400100
                                  000000000215 TO 000000001037                     F4400110
                                                                                   F4400120
                                                                                   F4400130
                        DEFINITION STATEMENTS                                      F4400140
00215 BBBB.J  SYN 141                THESE FIRST TWO DEFINITIONS MAKE              F4400150
00674 BBSIZE  SYN 444                   THE PROGRAM COMPATIBLE WITH                F4400160
                                        SECTION 5 (TAG ANALYSIS).  THEIR           F4400170
                                        VALUES ARE THOSE OF PREDL (BLOCK           F4400180
                                        LENGTH OF PRED TABLE) AND 6*BBBL           F4400190
                                        (BLOCK LENGTH OF BB TABLE) RES-            F4400200
                                        PECTIVELY, AS GIVEN IN THE                 F4400210
                                        SECTION 5 LISTING.                         F4400220
04230 NOINS   SYN 2200               BLOCK LENGTH OF COMPILED                      F4400230
                                        INSTRUCTION TABLE (CIT)-PART 1             F4400240
00454 ZINSTM  SYN 300                SAME AS PREVIOUS - PART 2                     F4400250
00144 ZINSTR  SYN 100                SAME AS PREVIOUS - PART 6                     F4400260
01274 ZBB     SYN 700                LENGTH OF BB LIST                             F4400270
00310 ZTIFRD  SYN 200                BLOCK LENGTH OF TIFRD                         F4400280
01750 XFRET=  SYN 1000               TABLE LENGTH AND DRUM ADD FOR FRET            F4400290
00372 ZFRET=  SYN 250                BLOCK LENGTH OF FRET                          F4400300
00620 XSET    SYN 400                LENGTH OF SET TABLE                           F4400310
00310 ZSET    SYN 200                BLOCK LENGTH OF SET TABLE                     F4400320
00031 ZNLIST  SYN 25                 LENGTH OF NLIST                               F4400330
05360 XTRA    SYN 2800               LENGTH OF TRA TABLE                           F4400340
01274 ZTRA    SYN 700                BLOCK LENGTH OF TRA TABLE                     F4400350
00017 ZTAG    SYN 15                 BLOCK LENGTH OF TAGLIST                       F4400360
00000 XXXXXX  SYN 0                  THE APPEARANCE OF THIS SYMBOL IN              F4400370
                                        THE LISTING INDICATES THAT ITS             F4400380
                                        VALUE IS SET BY THE PROGRAM.               F4400390
00004 RDFORT  SYN 4                  A TSX RDFORT,4 CALLS IN THE DIAG-             F4400400
                                        NOSTIC ROUTINE. A RDS SYSTAP               F4400410
                                        FOLLOWED BY A TRA RDFORT CALLS             F4400420
                                        IN THE NEXT RECORD OF THE                  F4400430
                                        FORTRAN PROGRAM.                           F4400440
07774 BBOX.=  SYN 4092               THE FOLLOWING ARE THE ADDRESSES               F4400450
07775 DOBOX=  SYN 4093                  OF SPECIAL COUNTERS                        F4400460
07776 SSBOX=  SYN 4094                                                             F4400470
07777 TTBOX=  SYN 4095                                                             F4400480
07775 SUCCBX  SYN 4093                                                             F4400490
07776 PREDBX  SYN 4094                                                             F4400500
07777 BBTBOX  SYN 4095                                                             F4400510
00221 SYSTAP  SYN 145                FORTRAN SYSTEM TAPE (LOGICAL 1)               F4400520
00222 TBLTAP  SYN 146                TIFGO, TRAD, FRET, AND DOTAG                  F4400530
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00223 TAGTAP SYN 147
00223 BLT    SYN 147
00224 INSTTP SYN 148
00301 TIFDRM SYN 193
00301 DOCRDR SYN 193
00301 DODRUM SYN 193
00301 TRADRM SYN 193
00302 FRTDRM SYN 194
00303 BBLDRM SYN 195
00303 SETDRM SYN 195
01750 TIFADD SYN 1000
03270 DOADDR SYN 1720
02260 BBLADD SYN 1200
01750 FRTADD SYN 1000
01275 SETADD SYN 701
07773 BBLIST SYN 4091
06500 DOLIST SYN BBLIST-ZBB+1
06024 INST.A SYN DOLIST-300
06024 TIFRD  SYN DOLIST-300
03710 TRAD.= SYN TIFRD-1100
06023 FRET.= SYN DOLIST-301
06023 DVFQ.= SYN FRET.=
04216 DOTAG  SYN DVFQ.=-301-600
04216 DOCARE SYN DOTAG
06024 TRA..M SYN DOLIST-300
04524 SET..M SYN TRA..M-ZTRA-4
04214 TIFRDM SYN SET..M-200
03703 INST.M SYN TIFRDM-201
07774 SETLOC SYN BBLIST+1
07773 TRATBL SYN BBLIST
02413 BBTABL SYN TRATBL-2800
02414 FIXDOS SYN BBTABL+1
01114 NLIST  SYN BBTABL-ZBB-3
01062 FRET   SYN NLIST-26
01062 SETTAB SYN NLIST-25-1
01260 SNSLT  SYN NLIST+100
01120 DOBLOK SYN BBTABL-ZBB+1
00443 LCNTR  SYN DOBLOK-300-1
06500 TAG    SYN BBLIST-ZBB+1
06460 INST.R SYN TAG-15-1
06314 BBTAGS SYN INST.R-100
06024 INSTA  SYN INST.A
03703 INSTM  SYN INST.M
06460 INSTR  SYN INST.R
07773 PRED   SYN TRATBL
04524 SETM   SYN SET..M
06024 TRAM   SYN TRA..M
01574 BGINS  SYN INSTA-NOINS
04053 FRETN= SYN FRET.=-1000
04530 NDTRA  SYN TRAM-700
03227 NDINS  SYN INSTM-300
03704 NTIFR  SYN TIFRDM-200
07464 NDSET  SYN SETLOC-ZSET
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   TAPE (LOGICAL 2)                          F4400540
TAGLIST TAPE (LOGICAL 3)                     F4400550
BBLIST TAPE (LOGICAL 3)                      F4400560
CIT TAPE (LOGICAL 4)                         F4400570
TIFRD DRUM (LOGICAL 1)                       F4400580
DOCARE DRUM (LOGICAL 1)                      F4400590
DOLIST DRUM (LOGICAL 1)                      F4400600
INITIAL TRA TABLE DRUM (LOGICAL 1)           F4400610
FRET DRUM (LOGICAL 2)                        F4400620
BBLIST DRUM (LOGICAL 3)                      F4400630
SET DRUM (LOGICAL 3)                         F4400640
DRUM ADDRESS FOR TIFRD                       F4400650
DRUM ADDRESS FOR DO LIST                     F4400660
DRUM ADDRESS FOR BB LIST                     F4400670
DRUM ADDRESS FOR FRET                        F4400680
DRUM ADDRESS FOR SET TABLE                   F4400690
THE FOLLOWING ARE THE BASE                   F4400700
   ADDRESSES OF ALL TABLES                   F4400710
                                             F4400720
                                             F4400730
                                             F4400740
                                             F4400750
                                             F4400760
                                             F4400770
                                             F4400780
                                             F4400790
                                             F4400800
                                             F4400810
                                             F4400820
                                             F4400830
                                             F4400840
                                             F4400850
                                             F4400860
                                             F4400870
                                             F4400880
                                             F4400890
                                             F4400900
                                             F4400910
                                             F4400920
                                             F4400930
                                             F4400940
                                             F4400950
                                             F4400960
                                             F4400970
                                             F4400980
                                             F4400990
                                             F4401000
                                             F4401010
END OF INST. BLOCK (PART 1)                  F4401020
BEGINNING OF FRET (PART 1)                   F4401030
END OF TRA TABLE BLOCK (PART 2)              F4401040
END OF INST. BLOCK (PART 2)                  F4401050
END OF TIFRD BLOCK (PART 2)                  F4401060
END OF SET BLOCK (PART 3)                    F4401070
```