For	Read
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NB: This is a conditional assembly, the first record being IFZ ΦP16 and represents the off-line (non-ΦP16) version of BASIC.

```
0002 * NAME: BASIC-16A     DOC 70181826000  REV A                          BSIC0020
0006 *                                                                    BSIC0060
0008 * DESCRIPTION: STAND ALONE INTERPRETER FOR THE BASIC LANGUAGE        BSIC0080
0012 *                                                                    BSIC0120
0013 * REVISION HISTORY                                                  BSIC0130
0014 *    REV       DATE          ECO NO                                 BSIC0140
0015 *                                                                    BSIC0150
0016 *     A        ----          RELEASED                               BSIC0160
0017 *                                                                    BSIC0170
0018 * DOCUMENTATION REFERENCES                                          BSIC0180
0019 *    TITLE                                  DOC NO                  BSIC0190
0020 *                                                                    BSIC0200
0021 *    BASIC USER'S MANUAL                    70130072543             BSIC0210
0025 *                                                                    BSIC0250
0026 *    ************************************************************  BSIC0260
0027 *    *                                                          *  BSIC0270
0028 *    *            ***** PROPRIETARY INFORMATION *****           *  BSIC0280
0029 *    *                                                          *  BSIC0290
0030 *    *               ***** DO NOT DUPLICATE *****               *  BSIC0300
0031 *    *                                                          *  BSIC0310
0032 *    *     COPY NUMBER:----  ISSUED TO:----------------         *  BSIC0320
0033 *    *                                                          *  BSIC0330
0034 *    *     THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF    *  BSIC0340
0035 *    *     HONEYWELL INFORMATION SYSTEMS INC.  THE INFORMATION  *  BSIC0350
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0037 *    *     SUBMITTED AND NO PART OF THIS DOCUMENT OR ITS CON-   *  BSIC0370
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0039 *    *     TO A THIRD PARTY WITHOUT THE EXPRESS WRITTEN         *  BSIC0390
0040 *    *     PERMISSION OF HONEYWELL INFORMATION SYSTEMS INC.     *  BSIC0400
0041 *    *                                                          *  BSIC0410
0042 *    *     RETURN TO:                                           *  BSIC0420
0043 *    *               HONEYWELL INFORMATION SYSTEMS INC.         *  BSIC0430
0044 *    *               CSD FRAMINGHAM                             *  BSIC0440
0045 *    *               SMALL COMPUTER STANDARD SOFTWARE           *  BSIC0450
0046 *    *               DEPT 653                                   *  BSIC0460
0047 *    *                                                          *  BSIC0470
0048 *    ************************************************************  BSIC0480
```

CBAP 31 OCT 1972

```
0049                    *                                                                    BsIC0490
0050                    * COPYRIGHT 1971 BY HONEYWELL INFORMATION SYSTEMS INC.,              BsIC0500
0051                    * COMPUTER SYSTEMS DIVISION, FRAMINGHAM, MASSACHUSETTS.              BsIC0510
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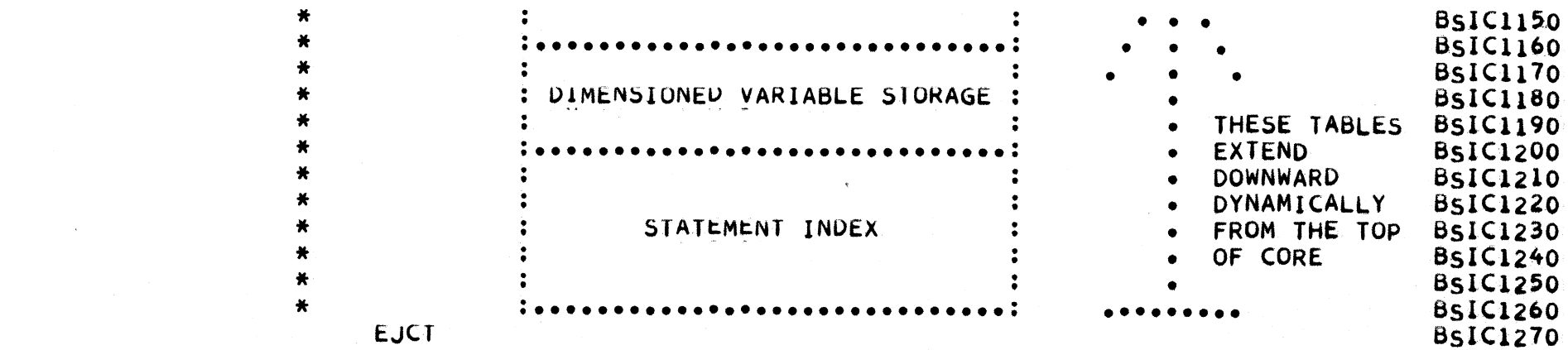
0054                    * COPYRIGHT OWNER.  ALL RIGHTS RESERVED.                             BsIC0540
0055                    ************************************************************************BsIC0550
0056                         EJCT                                                           BsIC0560
```

```
*                                                                       BSIC0570
*                                                                       BSIC0580
*                                                                       BSIC0590
*                                                                       BSIC0600
*                                                                       BSIC0610
*                                                                       BSIC0620
*          BBBBBBB   AAAAAA   SSSSSS   IIIIII   CCCCCC                  BSIC0630
*          BBBBBBBB AAAAAAAA SSSSSSSS  IIIIII  CCCCCCCC                 BSIC0640
*          BB    BB AA    AA SS    SS    II    CC    CC                 BSIC0650
*          BBBBBBB  AA    AA SSS         II    CC                       BSIC0660
*          BBBBBBB  AAAAAAAA  SSSSS      II    CC                       BSIC0670
*          BB    BB AAAAAAAA     SSSS    II    CC                       BSIC0680
*          BB    BB AA    AA SS    SS    II    CC    CC                 BSIC0690
*          BBBBBBBB AA    AA SSSSSSSS  IIIIII  CCCCCCCC                 BSIC0700
*          BBBBBBB  AA    AA  SSSSSS   IIIIII   CCCCCC                  BSIC0710
*                                                                       BSIC0720
*                                                                       BSIC0730
*                                                                       BSIC0740
*                                                                       BSIC0750
*                                                                       BSIC0760
     EJCT                                                               BSIC0770
```

```
0078  *          MEMORY ORGANIZATION AND TABLE FORMATS                    BSIC0780
0079  *                                                                   BSIC0790
0080  *                GENERAL ORGANIZATION                               BSIC0800
0081  *                                                                   BSIC0810
0082  *        .................................                          BSIC0820
0083  *        :                               :                          BSIC0830
0084  *        :                               :                          BSIC0840
0085  *        :     BASIC-16 INTERPRETER      :                          BSIC0850
0086  *        :                               :                          BSIC0860
0087  *        :                               :                          BSIC0870
0088  *        :.............................. :                          BSIC0880
0089  *        :                               :                          BSIC0890
0090  *        :        MATH PACKAGE           :                          BSIC0900
0091  *        :                               :                          BSIC0910
0092  *        :.............................. :     .........            BSIC0920
0093  *        :                               :       .                  BSIC0930
0094  *        :                               :       .                  BSIC0940
0095  *        :     PROGRAM TEXT STORAGE      :       .                  BSIC0950
0096  *        :                               :       .                  BSIC0960
0097  *        :                               :       .  THESE TABLES    BSIC0970
0098  *        :.............................. :       .  EXTEND UPWARD   BSIC0980
0099  *        :                               :       .  DYNAMICALLY     BSIC0990
0100  *        :    DEFINED FUNCTION INDEX     :       .  FROM THE TOP    BSIC1000
0101  *        :                               :       .  OF THE MATH     BSIC1010
0102  *        :.............................. :       .  PACKAGE         BSIC1020
0103  *        :                               :       .                  BSIC1030
0104  *        :        FOR-NEXT STACK         :       .                  BSIC1040
0105  *        :                               :       .                  BSIC1050
0106  *        :.............................. :       .                  BSIC1060
0107  *        :                               :     .   .   .            BSIC1070
0108  *        :                               :      .  .  .             BSIC1080
0109  *        :        PUSH DOWN STACK        :       . . .              BSIC1090
0110  *        :                               :        ...               BSIC1100
0111  *        :                               :         .                BSIC1110
0112  *        :.............................. :     .........            BSIC1120
0113  *        :                               :         .                BSIC1130
0114  *        :    SIMPLE VARIABLE STORAGE    :        ...               BSIC1140
```



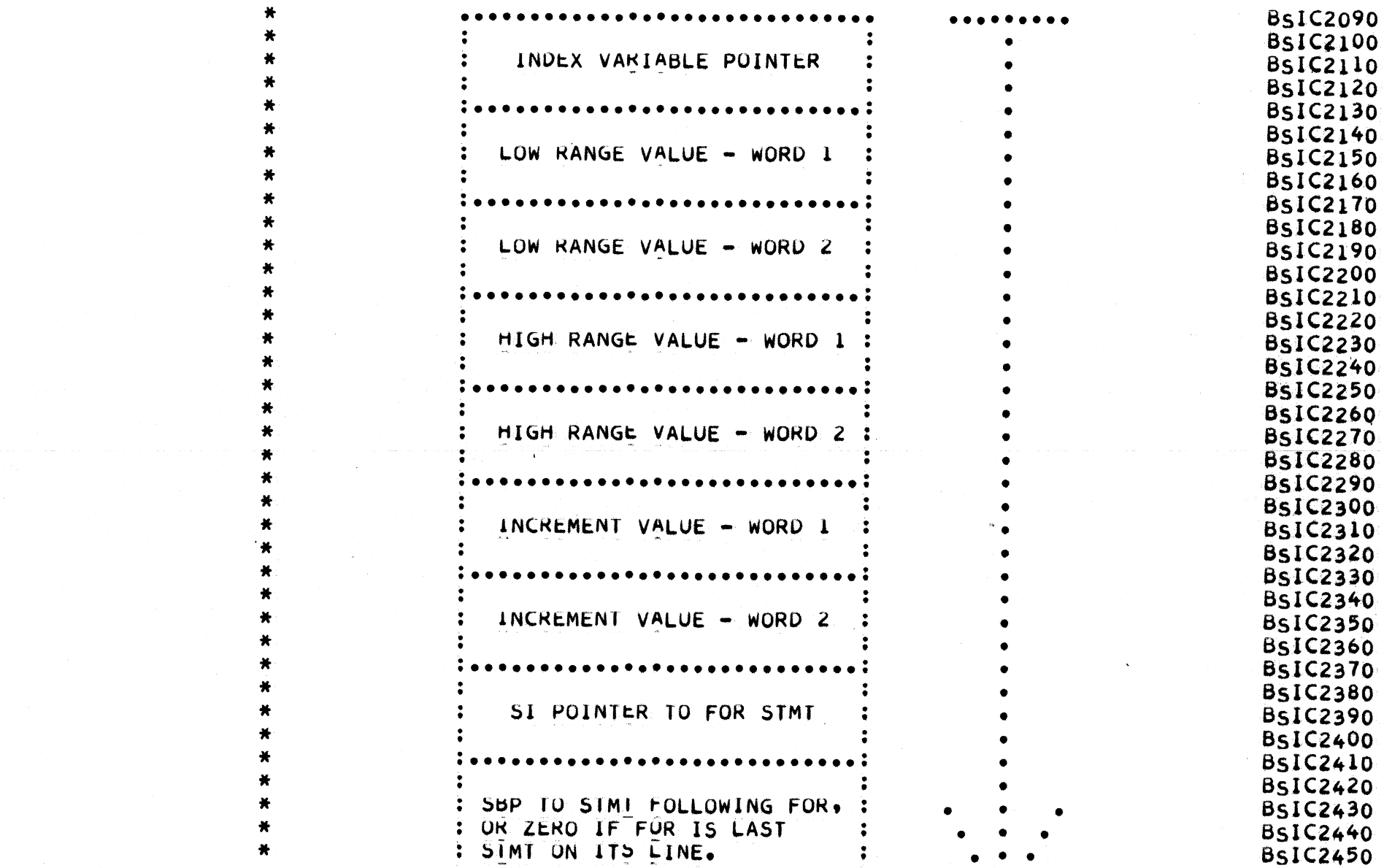

```
0115  *                                                          BsIC1150
0116  *                                                          BsIC1160
0117  *                                                          BsIC1170
0118  *                                                          BsIC1180
0119  *                                                          BsIC1190
0120  *                                                          BsIC1200
0121  *                                                          BsIC1210
0122  *                                                          BsIC1220
0123  *                                                          BsIC1230
0124  *                                                          BsIC1240
0125  *                                                          BsIC1250
0126  *                                                          BsIC1260
0127        EJCT                                                  BsIC1270
```

```
0128  *          PROGRAM TEXT STORAGE FORMAT                                  BSIC1280
0129  *                                                                       BSIC1290
0130  *                                                                       BSIC1300
0131  *                                                                       BSIC1310
0132  *     PURPOSE:  TO STORE THE USERS SOURCE PROGRAM.                      BSIC1320
0133  *                                                                       BSIC1330
0134  *     ENTRY LENGTH:  VARIABLE, ONE WORD MINIMUM.                        BSIC1340
0135  *                                                                       BSIC1350
0136  *     ENTRY FORMAT:  EACH ENTRY IS A BYTE STRING CORRESPONDING          BSIC1360
0137  *                    TO THE USERS SOURCE STATEMENT, WITH THE            BSIC1370
0138  *                    LINE NUMBER REMOVED.  IF A STATEMENT HAS           BSIC1380
0139  *                    AN ODD NUMBER OF BYTES, AN EXTRA BYTE WILL         BSIC1390
0140  *                    BE ADDED TO IT TO FILL UP THE LAST WORD            BSIC1400
0141  *                    THAT THE STRING OCCUPIES.                          BSIC1410
0142  *                                                                       BSIC1420
0143  *     POINTERS:                                                         BSIC1430
0144  *                                                                       BSIC1440
0145  *               PTB - ADDRESS OF LOWEST WORD IN THE TABLE,              BSIC1450
0146  *                     INITIALIZED TO THE ADDRESS OF THE                 BSIC1460
0147  *                     FIRST WORD ABOVE THE MATH PACKAGE,                BSIC1470
0148  *                     PTB IS NEVER ALTERED.                             BSIC1480
0149  *                                                                       BSIC1490
0150  *               PTH - ADDRESS OF THE LAST WORD IN THE TABLE             BSIC1500
0151  *                     +1, IS INITIALLY SET TO THE SAME                  BSIC1510
0152  *                     VALUE AS PTB.                                     BSIC1520
0153  *                                                                       BSIC1530
0154  *                                                                       BSIC1540
0155  *                                                                       BSIC1550
0156        EJCT                                                             BSIC1560
```

```
*          DEFINED FUNCTION INDEX
*
*
*     PURPOSE:  TO SAVE THE ADDRESS OF THE PROTOTYPE EXPRESSION
*               AND THE DUMMY VARIABLE NAME FOR THE DEFINED
*               EXPRESSION.
*
*     ENTRY LENGTH:  THREE WORDS
*
*     ENTRY FORMAT:
*
*
*             ......................................      .........
*             :                  :                 :          .
*             :     00000000     :  FUNCTION NAME  :          .
*             :                  :                 :          .
*             :..................:.................:          .
*             :                                    :          .
*             :        DUMMY VARIABLE NAME         :          .
*             :                                    :          .
*             :....................................:      .   .   .
*             :                                    :       .  .  .
*             : POINTER TO FIRST BYTE OF EXPRESSION :       . . .
*             :                                    :         ...
*             :....................................:          .
*
*
*     POINTERS:
*
*              DFB - POINTER TO FIRST WORD OF FIRST
*                    ENTRY IN THE INDEX.  IF INDEX
*                    IS EMPTY, DFB=0.
*
*              DFT - POINTER TO LAST WORD OF LAST
*                    ENTRY IN THE INDEX.  IF INDEX
*                    IS EMPTY, DFT=0.
*
```

```
0194                *                                                    BsIC1940
0195                *                                                    BsIC1950
0196                     EJCT                                            BsIC1960
```

```
0197  *          FOR-NEXT STACK FORMAT                                  BSIC1970
0198  *                                                                 BSIC1980
0199  *                                                                 BSIC1990
0200  *    PURPOSE:  TO SAVE LOOP CONTROL INFORMATION FOR               BSIC2000
0201  *              FOR-NEXT LOOPS.                                    BSIC2010
0202  *                                                                 BSIC2020
0203  *    ENTRY LENGTH:  NINE WORDS                                    BSIC2030
0204  *                                                                 BSIC2040
0205  *    ENTRY FORMAT:                                                BSIC2050
0206  *                                                                 BSIC2060
0207  *                                                                 BSIC2070
0208       EJCT                                                        BSIC2080
```


INDEX VARIABLE POINTER
LOW RANGE VALUE - WORD 1
LOW RANGE VALUE - WORD 2
HIGH RANGE VALUE - WORD 1
HIGH RANGE VALUE - WORD 2
INCREMENT VALUE - WORD 1
INCREMENT VALUE - WORD 2
SI POINTER TO FOR STMT
SBP TO STMT FOLLOWING FOR, OR ZERO IF FOR IS LAST STMT ON ITS LINE.

```
0246  *            :                              :        •••          BsIC2460
0247  *            :..............................:         •           BsIC2470
0248  *                                                                  BsIC2480
0249  *                                                                  BsIC2490
0250  *          NOTE:  THE INDEX VARIABLE POINTER IS THE                BsIC2500
0251  *                 DIFFERENCE BETWEEN THE TOP OF THE                BsIC2510
0252  *                 SIMPLE VARIABLE STORAGE TABLE AND                BsIC2520
0253  *                 THE FIRST WORD CONTAINING THE                    BsIC2530
0254  *                 VALUE OF THE INDEX VARIABLE.                     BsIC2540
0255  *                                                                  BsIC2550
0256  *                                                                  BsIC2560
0257       EJCT                                                         BsIC2570
```

```
0258          *     POINTERS:                                                  BSIC2580
0259          *                                                                BSIC2590
0260          *                FNB - ADDRESS OF THE FIRST WORD OF THE          BSIC2600
0261          *                      FIRST ENTRY IN THE FOR-NEXT               BSIC2610
0262          *                      TABLE.  IF THE TABLE IS EMPTY,            BSIC2620
0263          *                      FNB=0.                                    BSIC2630
0264          *                                                                BSIC2640
0265          *                FNT - ADDRESS OF THE LAST WORD OF THE           BSIC2650
0266          *                      LAST ENTRY IN THE FOR-NEXT                BSIC2660
0267          *                      TABLE.  IF THE TABLE IS EMPTY,            BSIC2670
0268          *                      FNT=0.                                    BSIC2680
0269          *                                                                BSIC2690
0270          *                                                                BSIC2700
0271          *                                                                BSIC2710
0272               EJCT                                                       BSIC2720
```

```
0273  *          PUSH DOWN STACK FORMAT                                  BSIC2730
0274  *                                                                  BSIC2740
0275  *                                                                  BSIC2750
0276  *                                                                  BSIC2760
0277  *     PURPOSE:  TO HOLD RETURN ADDRESSES AND INTERMEDIATE          BSIC2770
0278  *               RESULTS FOR RE-ENTRANT SUBROUTINES.                BSIC2780
0279  *                                                                  BSIC2790
0280  *     ENTRY LENGTH:  ONE WORD                                      BSIC2800
0281  *                                                                  BSIC2810
0282  *     ENTRY FORMAT:  THERE IS NO FIXED FORMAT FOR PUSH             BSIC2820
0283  *                    DOWN STACK ENTRIES, OTHER THAN THE            BSIC2830
0284  *                    FACT THAT EACH ENTRY OCCUPIES ONE             BSIC2840
0285  *                    WORD.                                         BSIC2850
0286  *                                                                  BSIC2860
0287  *     POINTERS:                                                    BSIC2870
0288  *                                                                  BSIC2880
0289  *                PDLP - POINTS TO THE FREE WORD                    BSIC2890
0290  *                       AT THE TOP OF THE STACK.  IT               BSIC2900
0291  *                       IS INITIALIZED TO THE ADDRESS              BSIC2910
0292  *                       OF THE FIRST FREE WORD ABOVE               BSIC2920
0293  *                       THE TABLES BELOW THE PUSH                  BSIC2930
0294  *                       DOWN STACK.                                BSIC2940
0295  *                                                                  BSIC2950
0296  *                                                                  BSIC2960
0297  *                                                                  BSIC2970
0298        EJCT                                                        BSIC2980
```

```
*         SIMPLE VARIABLE STORAGE FORMAT
*
*
*    PURPOSE:  TO HOLD THE VALUES OF SIMPLE VARIABLES
*              USED IN A BASIC PROGRAM.
*
*    ENTRY LENGTH:  THREE WORDS
*
*    ENTRY FORMAT:
*
*
*              :..............................      .........
*              :                             :          .
*              :        VARIABLE NAME        :          .
*              :                             :          .
*              :.............................:          .
*              :                             :          .
*              :   VARIABLE VALUE - WORD 1   :          .
*              :                             :          .
*              :.............................:      .   .   .
*              :                             :       .  .  .
*              :   VARIABLE VALUE - WORD 2   :        . . .
*              :                             :         ...
*              :.............................:          .
*
*
*    POINTERS:
*
*              SVB - POINTS TO THE FIRST WORD OF THE
*                    FIRST ENTRY IN THE TABLE.  IF
*                    THE TABLE IS EMPTY, SVB=0.
*
*              SVT - POINTS TO THE LAST WORD OF THE
*                    LAST ENTRY IN THE TABLE.  IF
*                    THE TABLE IS EMPTY, SVT=0.
*
*
```

```
0336                *                                                    BSIC3360
0337                     EJCT                                            BSIC3370
```

```
0338  *          DIMENSIONED VARIABLE STORAGE FORMAT                    BSIC3380
0339  *                                                                 BSIC3390
0340  *                                                                 BSIC3400
0341  *    PURPOSE:  TO HOLD SUBSCRIPT BOUNDS AND TO PROVIDE            BSIC3410
0342  *              STORAGE FOR ARRAY ELEMENTS OF DIMENSIONED          BSIC3420
0343  *              VARIABLES.                                         BSIC3430
0344  *                                                                 BSIC3440
0345  *    ENTRY LENGTH:                                                BSIC3450
0346  *          THE ENTRY LENGTH FOR A GIVEN ARRAY MAY BE              BSIC3460
0347  *          CALCULATED BY THE FOLLOWING FORMULAR:                  BSIC3470
0348  *                                                                 BSIC3480
0349  *              GIVEN:                                             BSIC3490
0350  *                                                                 BSIC3500
0351  *                   N = NUMBER OF DIMENSIONS                      BSIC3510
0352  *                   L(X) = UPPER BOUND OF DIMENSION X + 1         BSIC3520
0353  *                                                                 BSIC3530
0354  *                THEN:                                            BSIC3540
0355  *                                                                 BSIC3550
0356  *                   ENTRY LENGTH = L(1)*L(2)*...*L(N)*2+N+3       BSIC3560
0357  *                                                                 BSIC3570
0358  *                                                                 BSIC3580
0359  *    ENTRY FORMAT:                                                BSIC3590
0360  *                                                                 BSIC3600
0361  *                                                                 BSIC3610
0362       EJCT                                                        BSIC3620
```

```
0363  *          :.....................................:     .........   BsIC3630
0364  *          :                                     :        .        BsIC3640
0365  *          :                                     :        .        BsIC3650
0366  *          : L(1)*L(2)*...*L(N)*2 WORDS OF STORAGE :      .        BsIC3660
0367  *          : FOR ARRAY ELEMENTS.                 :        .        BsIC3670
0368  *          :                                     :        .        BsIC3680
0369  *          :                                     :        .        BsIC3690
0370  *          :.....................................:        .        BsIC3700
0371  *          :                                     :        .        BsIC3710
0372  *          :   UPPER BOUND + 1 OF DIMENSION N    :        .        BsIC3720
0373  *          :                                     :        .        BsIC3730
0374  *          :.....................................:        .        BsIC3740
0375  *          :                 .                   :        .        BsIC3750
0376  *          :                 .                   :        .        BsIC3760
0377  *          :                 .                   :        .        BsIC3770
0378  *          :.....................................:        .        BsIC3780
0379  *          :                                     :        .        BsIC3790
0380  *          :   UPPER BOUND + 1 OF DIMENSION 1    :        .        BsIC3800
0381  *          :                                     :        .        BsIC3810
0382  *          :.....................................:        .        BsIC3820
0383  *          :                                     :        .        BsIC3830
0384  *          : ADDRESS OF FIRST WORD OF THIS ENTRY :        .        BsIC3840
0385  *          :                                     :        .        BsIC3850
0386  *          :.....................................:        .        BsIC3860
0387  *          :                                     :        .        BsIC3870
0388  *          : ADDRESS OF THE LAST WORD OF THE NEXT :       .        BsIC3880
0389  *          : LOWER ENTRY IN THIS TABLE, ZERO IF  :        .        BsIC3890
0390  *          : THIS IS THE LOWEST ENTRY.           :        .        BsIC3900
0391  *          :                                     :        .        BsIC3910
0392  *          :.....................................:     .  .  .     BsIC3920
0393  *          :                :                    :      .  .  .     BsIC3930
0394  *          :  VARIABLE NAME : NO. OF DIMENSIONS  :       .  .  .     BsIC3940
0395  *          :                :                    :        ...       BsIC3950
0396  *          :.....................................:        .        BsIC3960
0397  *                                                                    BsIC3970
0398  *                                                                    BsIC3980
0399  *    POINTERS:                                                       BsIC3990
```

```
0400                *                                                    BSIC4000
0401                *          DVB - ADDRESS OF THE FIRST WORD OF THE    BSIC4010
0402                *                FIRST ENTRY IN THE TABLE.  IF THE   BSIC4020
0403                *                TABLE IS EMPTY, DVB=0.              BSIC4030
0404                *                                                    BSIC4040
0405                *          DVT - ADDRESS OF THE LAST WORD OF THE     BSIC4050
0406                *                LAST ENTRY IN THE TABLE.  IF THE    BSIC4060
0407                *                TABLE IS EMPTY, DVT=0.              BSIC4070
0408                *                                                    BSIC4080
0409                *                                                    BSIC4090
0410                     EJCT                                            BSIC4100
```

```
*          STATEMENT INDEX FORMAT
*
*
*     PURPOSE:  TO MAINTAIN A SEQUENTIAL LIST OF ALL
*               STATEMENT NUMBERS IN A BASIC PROGRAM
*               AND POINTERS TO THE CORRESPONDING
*               STATEMENT TEXT IN THE PROGRAM TEXT
*               TABLE.
*
*     ENTRY LENGTH:  TWO WORDS
*
*     ENTRY FORMAT:
*
*
*           ..............................       .........
*           :                            :           .
*           :  BINARY REPRESENTATION OF  :           .
*           :  STATEMENT NUMBER          :           .
*           :                            :           .
*           :............................:           .
*           :                            :           .
*           :  POINTER TO FIRST BYTE OF  :           .
*           :  THIS STATEMENT IN THE     :        .  .  .
*           :  PROGRAM TEXT TABLE.       :         . . .
*           :                            :          ...
*           :............................:           .
*
*
*     POINTERS:
*
*                SIB - POINTER TO THE FIRST WORD OF THE FIRST
*                      ENTRY IN THE INDEX.  IF THE INDEX IS
*                      EMPTY, SIB=SIT+1.
*
*                SIT - POINTS TO THE LAST WORD OF THE LAST
*                      ENTRY IN THE INDEX.  SIT IS INITIALLY
*                      SET TO THE ADDRESS OF THE LAST AVAILABLE
```

```
0448  *                    MEMORY LOCATION, AND IS NEVER ALTERED.          BSIC4480
0449  *                                                                    BSIC4490
0450  *               SIP - POINTS TO THE FIRST WORD OF THE                BSIC4500
0451  *                     INDEX ENTRY FOR THE STATEMENT                  BSIC4510
0452  *                     CURRENTLY BEING EXECUTED.  IF,                 BSIC4520
0453  *                     HOWEVER, THE CURRENT STATEMENT                 BSIC4530
0454  *                     IS BEING EXECUTED IN THE IMMEADIATE            BSIC4540
0455  *                     MODE, SIP=0.                                   BSIC4550
0456  *                                                                    BSIC4560
0457  *                                                                    BSIC4570
0458       EJCT                                                          BSIC4580
```

```
0459  *          RETURN STACK FORMAT                                    BSIC4590
0460  *                                                                 BSIC4600
0461  *                                                                 BSIC4610
0462  *    PURPOSE:  TO HOLD RETURN INFORMATION FOR                     BSIC4620
0463  *              GOSUB-RETURN SEQUENCES.                            BSIC4630
0464  *                                                                 BSIC4640
0465  *    TABLE SIZE:  FIXED LENGTH, 16 WORDS                          BSIC4650
0466  *                                                                 BSIC4660
0467  *    ENTRY LENGTH:  TWO WORDS                                     BSIC4670
0468  *                                                                 BSIC4680
0469  *    ENTRY FORMAT:                                                BSIC4690
0470  *                                                                 BSIC4700
0471  *                                                                 BSIC4710
0472  *          .................................     .........        BSIC4720
0473  *          :                               :         .            BSIC4730
0474  *          : S1 POINTER TO GOSUB STATEMENT :         .            BSIC4740
0475  *          :                               :         .            BSIC4750
0476  *          :...............................:         .            BSIC4760
0477  *          :                               :         .            BSIC4770
0478  *          :  SBP TO STATEMENT FOLLOWING   :         .            BSIC4780
0479  *          :  GOSUB, OR ZERO IF GOSUB IS   :       .   .   .      BSIC4790
0480  *          :  LAST STATEMENT ON ITS LINE   :         . . .        BSIC4800
0481  *          :                               :           ...        BSIC4810
0482  *          :...............................:           .          BSIC4820
0483  *                                                                 BSIC4830
0484  *                                                                 BSIC4840
0485  *    POINTERS:                                                    BSIC4850
0486  *                                                                 BSIC4860
0487  *              RTB - POINTER TO THE FIRST WORD OF                 BSIC4870
0488  *                    THE FIRST AVAILABLE ENTRY,                   BSIC4880
0489  *                    NEVER IS ALTERED.                            BSIC4890
0490  *                                                                 BSIC4900
0491  *              RTM - POINTER TO THE LAST WORD OF                  BSIC4910
0492  *                    THE LAST AVAILABLE ENTRY,                    BSIC4920
0493  *                    NEVER IS ALTERED.                            BSIC4930
0494  *                                                                 BSIC4940
0495  *              RTP - POINTER TO THE FIRST WORD OF                 BSIC4950
```

```
0496                *                       THE NEXT FREE ENTRY.  IF THE                    BsIC4960
0497                *                       TABLE IS EMPTY, RTP=RTB.  IF                    BsIC4970
0498                *                       THE TABLE IS FULL, RTP=RTM+1.                   BsIC4980
0499                *                                                                       BsIC4990
0500                *                                                                       BsIC5000
0501                *                                                                       BsIC5010
0502                     EJCT                                                               BsIC5020
```

```
0503                *          SYSTEM CONFIGURATION                                  BsIC5030
0504                *                                                                BsIC5040
0505                *                                                                BsIC5050
0506                *          THE SYMBOL OP16 IS USED TO CONFIGURE                  BsIC5060
0507                *    THE ASSEMBLY FOR EITHER OP16 OR STAND ALONE                 BsIC5070
0508                *    USE.  IF IT IS SET TO ZERO, A STAND ALONE VERSION           BsIC5080
0509                *    WILL BE ASSEMBLED.  IF NON-ZERO, AN OP16 VERSION            BsIC5090
0510                *    WILL BE ASSEMBLED.                                          BsIC5100
0511                *                                                                BsIC5110
0512                *                                                                BsIC5120
0513      000000    OP16 SET   0                STAND ALONE VERSION                   BsIC5130
0514                *                                                                BsIC5140
0515                *                                                                BsIC5150
0516                *                                                                BsIC5160
0517                     EJCT                                                        BsIC5170
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0518  *          EXTERNAL LINKAGE DECLARATIONS                                BSIC5180
0519  *                                                                       BSIC5190
0520  *                                                                       BSIC5200
0521  *                                                                       BSIC5210
0522        ENT   ERR      WE SUPPLY THE ERROR REPORTING ROUTINE             BSIC5220
0523        ENT   TYPE     MESSAGE TYPER                                     BSIC5230
0524        ENT   LODF     LOAD MODE FLAG                                    BSIC5240
0525        ENT   LSIF     PUNCH MODE FLAG                                   BSIC5250
0526        ENT   CPOS     ASR POSITION COUNTER                              BSIC5260
0527        ENT   BRKF     PROGRAM BREAK FLAG                                BSIC5270
0528        ENT   SBP      SOURCE BYTE POINTER                               BSIC5280
0529        ENT   DBP      DESTINATION BYTE POINTER                          BSIC5290
0530        ENT   SCHR     CHARACTER STORE ROUTINE                           BSIC5300
0531        ENT   JOB      JOB COMMAND PROCESSOR                             BSIC5310
0532        ENT   GNBC     GETS NEXT NON-BLANK CHARACTER                     BSIC5320
0533        ENT   GCHR     GETS NEXT CHARACTER                               BSIC5330
0534        ENT   PTB      PROGRAM TEXT BASE ADDRESS (LOW POINTER)           BSIC5340
0535        ENT   SIT      STATEMENT INDEX TABLE ADDRESS(HIGH POINTER)       BSIC5350
0536        ENT   SBUF     USED AS INPUT BUFFER FOR INITIALIZATION           BSIC5360
0537        ENT   ATND     ADDRESS OF ARCTANGENT FUNCTION                    BSIC5370
0538        ENT   TAND     ADDRESS OF TANGENT FUNCTION                       BSIC5380
0539        ENT   SIND     ADDRESS OF SINE FUNCTION                          BSIC5390
0540        ENT   COSD     ADDRESS OF COSINE FUNCTION                        BSIC5400
0541        ENT   SQRD     ADDRESS OF SQUARE ROOT FUNCTION                   BSIC5410
0542        ENT   DELT     ROUTINE TO FLAG ERROR OF                          BSIC5420
0543        ENT   SCVL     STORES A AND B REGISTERS INTO THE FLOATING        BSIC5430
0544  *                    ACCUMULATOR                                       BSIC5440
0545        ENT   PCVL     PRINTS CONTENTS OF THE FLOATING POINT             BSIC5450
0546  *                    ACCUMULATOR                                       BSIC5460
0547        ENT   IDMS     ID MESSAGE                                        BSIC5470
0548        ENT   DFQ      MEESAGE FOR LIBRARY FUNCTION DELETION             BSIC5480
0549        ENT   SQRQ     MESSAGE ABOUT DELETING SQUARE ROOT FUNCTION       BSIC5490
0550        ENT   SCTQ     MESSAGE ABOUT DELETING SIN, COS, TAN              BSIC5500
0551        ENT   ATNQ     MESSAGE ABOUT DELESIMG +QBS+MFDMS                 BSIC5510
0552        ENT   AYON     MESSAGE REQUESTS A YES OR NO ANSWER               BSIC5520
0553        ENT   HMAM     MESSAGE TO SET HIGH POINTER-SIT                   BSIC5530
0554        ENT   AYOH     REQUESTS A YES OR A HIGH ADDRESS                  BSIC5540
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0555                ENT   USPM          MESSAGE TO INDICATE AMOUNT OF USER SPACE   BSIC5550
0556                ENT   ISSM          FLAG INSUFFICIENT USER SPACE               BSIC5560
0557                ENT   C215                                                     BSIC5570
0558                ENT   C300                                                     BSIC5580
0559                ENT   C337                                                     BSIC5590
0560                ENT   C1                                                       BSIC5600
0561                ENT   C10                                                      BSIC5610
0562                ENT   C221                                                     BSIC5620
0563                ENT   C223                                                     BSIC5630
0564                ENT   C240                                                     BSIC5640
0565                ENT   C241                                                     BSIC5650
0566                ENT   C260                                                     BSIC5660
0567                ENT   C307                                                     BSIC5670
0568                ENT   M1                                                       BSIC5680
0569                ENT   M12                                                      BSIC5690
0570                ENT   M100                                                     BSIC5700
0571                ENT   F1                                                       BSIC5710
0572                ENT   FM1                                                      BSIC5720
0573                ENT   CLST          SUBROUTINE CALL LIST                       BSIC5730
0578           *                                                                   BSIC5780
0579                EXT   INIT                                                     BSIC5790
0580                EXT   LFCR          ASR LINE ADVANCE                           BSIC5800
0581                EXT   IPUT          INPUT LINE                                 BSIC5810
0582                EXT   INA1          INPUT ONE CHARACTER                        BSIC5820
0583                EXT   OTA1          OUTPUT ONE CHARACTER                       BSIC5830
0584                EXT   BRKC          PROGRAM BREAK CHECK                        BSIC5840
0585                EXT   ITAPE         INTIIALIZE PAPER TAPE PUNCHING             BSIC5850
0586                EXT   ETAPE         TERMINATE PAPER TAPE PUNCHING              BSIC5860
0587                EXT   SINF          SINE FUNCTION                              BSIC5870
0588                EXT   COSF          COSINE FUNCTION                            BSIC5880
0589                EXT   TANF          TANGENT FUNCTION                           BSIC5890
0590                EXT   ATNF          ARCTANGENT FUNCTION                        BSIC5900
0591                EXT   EXPF          EXPONENTIATION FUNCTION                    BSIC5910
0592                EXT   ABSF          ABSOLUTE VALUE FUNCTION                    BSIC5920
0593                EXT   LOGF          LOGARITHM FUNCTION                         BSIC5930
0594                EXT   SQRF          SQUARE ROOT FUNCTION                       BSIC5940
0595                EXT   RNDF          RANDOM NUMBER FUNCTION                     BSIC5950
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0596          EXT   SGNF     SIGN FUNCTION                                  BsIC5960
0597          EXT   L$22     FLOATING POINT LOAD                            BsIC5970
0598          EXT   H$22     FLOATING POINT STORE                           BsIC5980
0599          EXT   M$11     INTEGER MULTIPLY                               BsIC5990
0600          EXT   A$22     FLOATING POINT ADDITION                        BsIC6000
0601          EXT   S$22     FLOATING POINT SUBTRACTION                     BsIC6010
0602          EXT   M$22     FLOATING POINT MULTIPLY                        BsIC6020
0603          EXT   D$22     FLOATING POINT DIVISION                        BsIC6030
0604          EXT   N$22     FLOATING POINT TWOS COMPLEMENT                 BsIC6040
0605          EXT   E$22     FLOATING POINT EXPONENTIATION                  BsIC6050
0606          EXT   TINT     FLOATING POINT INTEGER TEST                    BsIC6060
0607          EXT   IFLT     FLOATING POINT TO INTEGER CONVERSION           BsIC6070
0608          EXT   FINT     INTEGER TO FLOATING POINT CONVERSION           BsIC6080
0609          EXT   CSRH-    FORCES SPECIAL CROSS SECTOR LINK               BsIC6090
0610    *                                                                   BsIC6100
0611    *                                                                   BsIC6110
0612    *                                                                   BsIC6120
0613          EJCT                                                         BsIC6130
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0614                    *           TEMPORARY STORAGE                                          BSIC6140
0615                    *                                                                      BSIC6150
0616                    *                                                                      BSIC6160
0617                    *                                                                      BSIC6170
0618                    *                                                                      BSIC6180
0620                         ORG    '20              START WAY DOWN LOW                        BSIC6200
0625                    *                                                                      BSIC6250
0626                         SETB   SZHG             INSURE ADDR. CONS. GO IN RIGHT PLACE      BSIC6260
0627                    *                                                                      BSIC6270
0628                    *                                                                      BSIC6280
0629                    *                                                                      BSIC6290
0630                    *    TABLE POINTERS                                                    BSIC6300
0631                    *                                                                      BSIC6310
0632                    *                                                                      BSIC6320
0633 00020   000000     PTB  BSZ    1               PROGRAM TEXT TABLE BASE POINTER           BSIC6330
0634 00021   000000     PTH  BSZ    1               PROGRAM TEXT TABLE HIGH POINTER           BSIC6340
0635 00022   000000     DFB  BSZ    1               DEFINED FUNCTION INDEX BASE POINTER       BSIC6350
0636 00023   000000     DFT  BSZ    1               DEFINED FUNCTION INDEX HIGH POINTER       BSIC6360
0637 00024   000000     FNB  BSZ    1               FOR-NEXT TABLE BASE POINTER               BSIC6370
0638 00025   000000     FNT  BSZ    1               FOR-NEXT TABLE HIGH POINTER               BSIC6380
0639 00026   000000     SVB  BSZ    1               SIMPLE VARIABLE STORAGE BASE POINTER      BSIC6390
0640 00027   000000     SVT  BSZ    1               SIMPLE VARIABLE STORAGE HIGH POINTER      BSIC6400
0641 00030   000000     DVB  BSZ    1               DIMENSIONED VARIABLE STORAGE BASE POINTER BSIC6410
0642 00031   000000     DVT  BSZ    1               DIMENSIONED VARIABLE STORAGE HIGH POINTER BSIC6420
0643 00032   000000     SIB  BSZ    1               STATEMENT INDEX BASE POINTER              BSIC6430
0644 00033   000000     SIT  BSZ    1               STATEMENT INDEX HIGH POINTER              BSIC6440
0645 00034   000000     SIP  BSZ    1               CURRENT STATEMENT POINTER                 BSIC6450
0646 00035   000000     PDLP BSZ    1               PUSH DOWN STACK POINTER                   BSIC6460
0647 00036   000000     RIP  BSZ    1               RETURN STACK POINTER                      BSIC6470
0648                    *                                                                      BSIC6480
0649                    *    PRIMARY BYTE POINTERS                                             BSIC6490
0650                    *                                                                      BSIC6500
0651 00037   000000     SBP  BSZ    1               PRIMARY BYTE FETCH POINTER                BSIC6510
0652 00040   000000     DBP  BSZ    1               PRIMARY BYTE STORE POINTER                BSIC6520
0653                    *                                                                      BSIC6530
0654                    *    FLOATING POINT ACCUMULATORS                                       BSIC6540
0655                    *                                                                      BSIC6550
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0656 00041  000000  CVAL BSZ  2          PRIMARY FLOATING POINT ACCUMULATOR          BSIC6560
0657 00043  000000  LVAL BSZ  2          SECONDARY FLOATING POINT ACCUMULATOR        BSIC6570
0658                *                                                               BSIC6580
0659                *    MISCELLANEOUS TEMPORARY STORAGE                            BSIC6590
0660                *                                                               BSIC6600
0661 00045  000000  CPOS BSZ  1          CURRENT CARRIAGE POSITION COUNTER           BSIC6610
0662 00046  000000  RDT1 BSZ  1          READ STMT                                   BSIC6620
0663 00047  000000  FSC  BSZ  1          FREE SPACE COUNTER                          BSIC6630
0664 00050  000000  SNUM BSZ  1          STATEMENT NUMBER SAVE                       BSIC6640
0665 00051  000000  SEQI BSZ  1          SEQUENCING INHIBITION FLAG                  BSIC6650
0666 00052  000000  DEFN BSZ  1          DUMMY VARIABLE NAME                         BSIC6660
0667 00053  000000  DEFV BSZ  2          DUMMY VARIABLE VALUE                        BSIC6670
0668 00055  000000  LOP  BSZ  1          LAST OPERATOR PRECEDENCE                    BSIC6680
0669 00056  000000  ILT1 BSZ  1          INPUT EDITOR                                BSIC6690
0670 00057  000000  ILT2 BSZ  1          DITTO                                       BSIC6700
0671 00060  000000  ILT3 BSZ  1          DITTO                                       BSIC6710
0672 00061  000000  ADT1 BSZ  1          ASSIGN DIMENSIONED VARIABLE                 BSIC6720
0673 00062  000000  ADT2 BSZ  1          DITTO                                       BSIC6730
0674 00063  000000  ADT3 BSZ  1          DITTO                                       BSIC6740
0675 00064  000000  ADT4 BSZ  1          DITTO                                       BSIC6750
0676 00065  000000  ADT5 BSZ  1          DITTO                                       BSIC6760
0677 00066  000000  ADT6 BSZ  1          DITTO                                       BSIC6770
0678 00067  000000  ADT7 BSZ  1          DITTO                                       BSIC6780
0679 00070  000000  ADT8 BSZ  1          DITTO                                       BSIC6790
0680 00071  000000  DPTR BSZ  1          LOCATE DIMENSIONED VARIABLE                 BSIC6800
0681 00072  000000  DCT1 BSZ  1          DITTO                                       BSIC6810
0682 00073  000000  DCT2 BSZ  1          DITTO                                       BSIC6820
0683 00074  000000  CHAR BSZ  1          LAST CHARACTER FETCHED                      BSIC6830
0684 00075  000000  LCHR BSZ  1          LAST CHARACTER STORED                       BSIC6840
0685 00076  000000  TMP1 BSZ  1          MISCELLANEOUS                               BSIC6850
0686 00077  000000  TMP2 BSZ  1          MISCELLANEOUS                               BSIC6860
0687 00100  000000  TMP3 BSZ  1          MISCELLANEOUS                               BSIC6870
0688 00101  000000  CON1 BSZ  1          PROGRAM BREAK POINT SAVE                    BSIC6880
0689 00102  000000  CON2 BSZ  1          PROGRAM BREAK POINT SAVE                    BSIC6890
0690 00103  000000  BRKF BSZ  1          PROGRAM BREAK FLAG                          BSIC6900
0691 00104  000000  DIMF BSZ  1          DIMENSION STATEMENT FLAG                    BSIC6910
0692 00105  000001  LODF OCT  1          MUST BE INITIALLY NONZERO OR ELSE******     BSIC6920
```

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0693 00106  000000  LSTF BSZ  1        LIST MODE FLAG                    BSIC6930
0694 00107          VARN BSS  1        VARIABLE NAME STORAGE             BSIC6940
0698                *                                                    BSIC6980
0699                *    BUFFERS                                         BSIC6990
0700                *                                                    BSIC7000
0701 00110  000000  SBUF BSZ  80       COMMAND INPUT BUFFER              BSIC7010
0702 00230  000000  IBUF BSZ  80       DATA INPUT BUFFER                 BSIC7020
0703        000231  WORK EQU  IBUF+1    OUTPUT EDITOR SCRATCH AREA        BSIC7030
0704 00350  000000  RSTK BSZ  16       RETURN STACK                      BSIC7040
0705                *                                                    BSIC7050
0706                *                                                    BSIC7060
0707                *                                                    BSIC7070
0708                     EJCT                                            BSIC7080
```

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0709                    *           SPECIAL TEMPORARY STORAGE                                   BSIC7090
0710                    *                                                                       BSIC7100
0711                    *                                                                       BSIC7110
0712                    *           THE FOLLOWING DEFINES NON-CONFLICTING GROUPS                BSIC7120
0713                    *     OF TEMPORARY STORAGE THAT ARE ONLY USED WHEN                      BSIC7130
0714                    *     THE CONTENTS OF THE LAST 30 WORDS OF THE INPUT BUFFER,            BSIC7140
0715                    *     IBUF, ARE INDETERMINANT.                                          BSIC7150
0716                    *                                                                       BSIC7160
0717                    *                                                                       BSIC7170
0718                    *                                                                       BSIC7180
0719          000312    TMPL SET    IBUF+50           LOW LIMIT OF STORAGE AREA                 BSIC7190
0720          000370    TMPH SET    *                 CURRENT LOCATION                          BSIC7200
0721                    *                                                                       BSIC7210
0722                    *                                                                       BSIC7220
0723                    *                                                                       BSIC7230
0724                         ORG    TMPL                                                       BSIC7240
0725                    *                                                                       BSIC7250
0726 00312              IFT1 BSS    1                 IF STATEMENT                              BSIC7260
0727 00313              IFT2 BSS    1                 DITTO                                     BSIC7270
0728                    *                                                                       BSIC7280
0729                    *                                                                       BSIC7290
0730                         ORG    TMPL                                                       BSIC7300
0731                    *                                                                       BSIC7310
0732          000034    LIT1 EQU    SIP               LIST COMMAND                              BSIC7320
0733 00312              LIT2 BSS    1                 DITTO                                     BSIC7330
0734 00313              LIT3 BSS    1                 DITTO                                     BSIC7340
0735 00314              LIT4 BSS    1                 DITTO                                     BSIC7350
0736 00315              LIT5 BSS    1                 DITTO                                     BSIC7360
0737                    *                                                                       BSIC7370
0738                    *                                                                       BSIC7380
0739                         ORG    TMPL                                                       BSIC7390
0740                    *                                                                       BSIC7400
0741 00312              SIT1 BSS    1                 SOURCE TEXT EDITOR                        BSIC7410
0742 00313              SIT2 BSS    1                 DITTO                                     BSIC7420
0743 00314              SIT3 BSS    1                 DITTO                                     BSIC7430
0744 00315              SIT4 BSS    1                 DITTO                                     BSIC7440
0745 00316              SIT5 BSS    1                 DITTO                                     BSIC7450
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0746 00317           SIT6 BSS   1              DITTO                                    BSIC7460
0747 00320           SIT7 BSS   1              DITTO                                    BSIC7470
0748                 *                                                                 BSIC7480
0749                 *                                                                 BSIC7490
0750                      ORG   TMPL                                                   BSIC7500
0751                 *                                                                 BSIC7510
0752 00312           CLT1 BSS   1              CALL STATEMENT                           BSIC7520
0753 00313           CLT2 BSS   1              DITTO                                    BSIC7530
0754 00314 000000    CLT3 BSZ   1              DITTO                                    BSIC7540
0755                 *                                                                 BSIC7550
0756                 *                                                                 BSIC7560
0757                      ORG   TMPL+20         THIS GROUP MAYNOT OVERLAY THE LIST       BSIC7570
0758                 *                          COMMAND TEMPORARY STORAGE                BSIC7580
0759                 *                                                                 BSIC7590
0760 00336           SIGN BSS   1              OUTPUT EDITOR                            BSIC7600
0761 00337           EXP  BSS   1              DITTO                                    BSIC7610
0762 00340           ECTR BSS   1              DITTO                                    BSIC7620
0763 00341           INHC BSS   1              DITTO                                    BSIC7630
0764                 *                                                                 BSIC7640
0765                 *                                                                 BSIC7650
0766                      ORG   TMPL                                                   BSIC7660
0767                 *                                                                 BSIC7670
0768 00312           PRT1 BSS   1              PRINT STATEMENT                          BSIC7680
0769                 *                                                                 BSIC7690
0770                 *                                                                 BSIC7700
0771                      ORG   TMPH            END OF DEFINITIONS                       BSIC7710
0772                 *                                                                 BSIC7720
0773                 *                                                                 BSIC7730
0774                 *                                                                 BSIC7740
0775                      EJCT                                                         BSIC7750
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0776                    *          THE FOLLOWING MESSAGES ARE USED BY THE INITIALIZATION      BSIC7760
0777                    *    ROUTINE WHICH SETS THE HIGH AND LOW POINTERS(SIT AND PTB).  THE  BSIC7770
0778                    *    SPACE USED BY THE MESSAGES IS LATER USED FOR INPUT AND OUTPUT    BSIC7780
0779                    *    BUFFERS.                                                         BSIC7790
0780          000370    HERE SET  *                                                           BSIC7800
0781                    ORG  *-130                                                            BSIC7810
0783 00166    141301    IDMS BCI  13,BASIC-16A  REV. A  01-21-7                               BSIC7830
     00167    151711
     00170    141655
     00171    130666
     00172    140640
     00173    120322
     00174    142726
     00175    127240
     00176    140640
     00177    120260
     00200    130655
     00201    131261
     00202    126667
0784 00203    130400         VFD  8,'261,8,'000                                             BSIC7840
0789 00204    120314    USPM BCI  19, LOCATIONS FOR USER STORAGE AND TABLES                   BSIC7890
     00205    147703
     00206    140724
     00207    144717
     00210    147323
     00211    120306
     00212    147722
     00213    120325
     00214    151705
     00215    151240
     00216    151724
     00217    147722
     00220    140707
     00221    142640
     00222    140716
     00223    142240
     00224    152301
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      00225   141314
      00226   142723
0790  00227   000000          OCT   0                                          BSIC7900
0791  00230   120301    AINQ  BCI   2, AIN                                     BSIC7910
      00231   152316
0792  00232   137640          VFD   8,'277,8,'240                              BSIC7920
0793  00233   124301    AYON  BCI   9,(ANSWER YES OR NO)                       BSIC7930
      00234   147323
      00235   153705
      00236   151240
      00237   154705
      00240   151640
      00241   147722
      00242   120316
      00243   147651
0794  00244   000000          OCT   0                                          BSIC7940
0795  00245   151640    SCTQ  BCI   8,S SIN, COS, TAN                          BSIC7950
      00246   151711
      00247   147254
      00250   120303
      00251   147723
      00252   126240
      00253   152301
      00254   147240
0796  00255   137400          VFD   8,'277,8,0                                 BSIC7960
0797  00256   120323    SQRQ  BCI   2, SQR                                     BSIC7970
      00257   150722
0798  00260   137400          VFD   8,'277,8,0                                 BSIC7980
0799  00261   142317    DFQ   BCI   19,DO YOU WISH TO DELETE LIBRARY FUNCTION  BSIC7990
      00262   120331
      00263   147725
      00264   120327
      00265   144723
      00266   144240
      00267   152317
      00270   120304
      00271   142714
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      00272   142724
      00273   142640
      00274   146311
      00275   141322
      00276   140722
      00277   154640
      00300   143325
      00301   147303
      00302   152311
      00303   147716
0800  00304   000000          OCT   0                                          BSIC8000
0801  00305   147713    HMAM  BCI   10,OK IO USE ALL OF COR                     BSIC8010
      00306   120324
      00307   147640
      00310   152723
      00311   142640
      00312   140714
      00313   146240
      00314   147706
      00315   120303
      00316   147722
0802  00317   142677          VFD   8,'305,8,'277                              BSIC8020
0803  00320   000000          VFD   8,'000                                     BSIC8030
0804  00321   124301    AYOH  BCI   20,(ANSWER YES OR GIVE HIGH OCTAL ADDRESS)  BSIC8040
      00322   147323
      00323   153705
      00324   151240
      00325   154705
      00326   151640
      00327   147722
      00330   120307
      00331   144726
      00332   142640
      00333   144311
      00334   143710
      00335   120317
      00336   141724
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      00337   140714
      00340   120301
      00341   142304
      00342   151305
      00343   151723
      00344   124640
0805  00345   000000          OCT   0                                    BSIC8050
0806  00346   144716    ISSM  BCI   12,INSUFFICIENT USER SPACE           BSIC8060
      00347   151725
      00350   143306
      00351   144703
      00352   144705
      00353   147324
      00354   120325
      00355   151705
      00356   151240
      00357   151720
      00360   140703
      00361   142640
0807  00362   000000          OCT   0                                    BSIC8070
0808                          ORG   HERE                                 BSIC8080
0809                          EJCT                                       BSIC8090
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0810                    *          CONSTANTS AND FIXED POINTERS                  BsIC8100
0811                    *                                                        BsIC8110
0812                    *                                                        BsIC8120
0813                    *                                                        BsIC8130
0814 00370  000000      C0    OCT  0                                             BsIC8140
0815 00371  000001      C1    OCT  1                                             BsIC8150
0816 00372  000010      C10   OCT  10                                            BsIC8160
0817 00373  000011      C11   OCT  11                                            BsIC8170
0818 00374  000012      C12   OCT  12                                            BsIC8180
0819 00375  000016      C16   OCT  16                                            BsIC8190
0820 00376  000002      C2    OCT  2                                             BsIC8200
0821 00377  000020      C20   OCT  20                                            BsIC8210
0822 00400  000212      C212  OCT  212                                           BsIC8220
0823 00401  000215      C215  OCT  215                                           BsIC8230
0824 00402  000221      C221  OCT  221                                           BsIC8240
0825 00403  000223      C223  OCT  223                                           BsIC8250
0826 00404  000023      C23   OCT  23                                            BsIC8260
0827 00405  000240      C240  OCT  240                                           BsIC8270
0828 00406  000241      C241  OCT  241                                           BsIC8280
0829 00407  000242      C242  OCT  242                                           BsIC8290
0830 00410  000250      C250  OCT  250                                           BsIC8300
0831 00411  000251      C251  OCT  251                                           BsIC8310
0832 00412  000252      C252  OCT  252                                           BsIC8320
0833 00413  000253      C253  OCT  253                                           BsIC8330
0834 00414  000254      C254  OCT  254                                           BsIC8340
0835 00415  000255      C255  OCT  255                                           BsIC8350
0836 00416  000256      C256  OCT  256                                           BsIC8360
0837 00417  000257      C257  OCT  257                                           BsIC8370
0838 00420  000260      C260  OCT  260                                           BsIC8380
0839 00421  000261      C261  OCT  261                                           BsIC8390
0840 00422  000272      C272  OCT  272                                           BsIC8400
0841 00423  000273      C273  OCT  273                                           BsIC8410
0842 00424  000275      C275  OCT  275                                           BsIC8420
0843 00425  000277      C277  OCT  277                                           BsIC8430
0844 00426  000003      C3    OCT  3                                             BsIC8440
0845 00427  000300      C300  OCT  300                                           BsIC8450
0846 00430  000305      C305  OCT  305                                           BsIC8460
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0847 00431   000307      C307  OCT   307                                                    BSIC8470
0848 00432   000333      C333  OCT   333                                                    BSIC8480
0849 00433   000336      C336  OCT   336                                                    BSIC8490
0850 00434   000337      C337  OCT   337                                                    BSIC8500
0851 00435   000004      C4    OCT   4                                                      BSIC8510
0852 00436   000043      C43   OCT   43                                                     BSIC8520
0853 00437   000005      C5    OCT   5                                                      BSIC8530
0854 00440   000050      C50   OCT   50                                                     BSIC8540
0855 00441   000054      C54   OCT   54                                                     BSIC8550
0856 00442   000013      CMAX  DEC   11          MAXIMUM SUBROUTINE IDENTIFIER + 1        BSIC8560
0857 00443   000021      DTAC  OCT   21          'DATA'                                   BSIC8570
0858 00444   040300      F1    DEC   1.0                                                  BSIC8580
     00445   000000
0859 00446   041120      F10   DEC   10.0                                                 BSIC8590
     00447   000000
0860 00450   022134      F10R  DEC   1.0E-17     USED IN CONVERSION OF VERY SMALL CONSTANTS BSIC8600
     00451   035725
0861 00452   137500      FM1   DEC   -1.0                                                 BSIC8610
     00453   000000
0862 00454   000006      GTC   OCT   6           'GOTO'                                   BSIC8620
0863 00455   000176      INTF  OCT   176         INTEGER CONSTANT FLAG                    BSIC8630
0864 00456   000177      RELF  OCT   177         REAL CONSTANT FLAG                       BSIC8640
0865 00457   040511      LE10  OCT   040511,127307  NATURAL LOG OF 10                    BSIC8650
     00460   127307
0867 00461   0 004016    LSBP  DAC   IDNT+IDNT    POINTER TO RESERVED NAME LIST          BSIC8670
0871 00462   177777      M1    OCT   -1                                                   BSIC8710
0872 00463   177770      M10   OCT   -10                                                  BSIC8720
0873 00464   177700      M100  OCT   -100                                                 BSIC8730
0874 00465   177766      M12   OCT   -12                                                  BSIC8740
0875 00466   177776      M2    OCT   -2                                                   BSIC8750
0876 00467   177757      M21   OCT   -21                                                  BSIC8760
0877 00470   177773      M5    OCT   -5                                                   BSIC8770
0878 00471   177725      M53   OCT   -53                                                  BSIC8780
0879 00472   177772      M6    OCT   -6                                                   BSIC8790
0880 00473   000105      MCOL  DEC   69          MAX NO. OF ASR COLUMNS - 2              BSIC8800
0881 00474   033723      ROND  DEC   .000005     ROUNDING FACTOR                          BSIC8810
     00475   161326
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0882 00476   0 000350    RIB  DAC   RSTK          RETURN STACK BASE POINTER                          BsIC8820
0883 00477   0 000367    RIM  DAC   RSTK+15        RETURN STACK HIGH POINTER                          BsIC8830
0884 00500   177751       SMAX OCT   -27           POINTER TO IDENTIFIERS THAT REQUIRE SPACES         BsIC8840
0885 00501   023417       SNMX DEC   9999          LARGEST LEGAL STATEMENT NUMBER                     BsIC8850
0886 00502   000025       SIPC OCT   25            'STEP'                                             BsIC8860
0887 00503   000043       TABC OCT   43            'TAB('                                             BsIC8870
0888 00504   000026       THNC OCT   26            'THEN'                                             BsIC8880
0889 00505   000024       TOC  OCT   24            'TO'                                               BsIC8890
0890 00506   000022       DIMC OCT   22            'DIM'                                              BsIC8900
0891 00507   000042       FNC  OCT   42            'FN'                                               BsIC8910
0892         000507       DEFF EQU   FNC                                                              BsIC8920
0893 00510   000026       SYSL OCT   26            PNTR TO FIRST SYS FUNCTION - 1                     BsIC8930
0894 00511   000042       SYSH OCT   42            PNTR TO LAST SYS FUNCTION + 1                      BsIC8940
0895 00512   0 000231    WRKD DAC   WORK          POINTER TO OUTPUT EDITOR SCRATCH AREA              BsIC8950
0896 00513   0 000237    WKD7 DAC   WORK+6        POINTER TO 7TH WORD OF SCRATCH AREA                BsIC8960
0897         000375       REMF EQU   C16           'REM'                                              BsIC8970
0898 00514   0 000053    DFVD DAC   DEFV          POINTER TO DUMMY VARIABLE VALUE                    BsIC8980
0899 00515  -0 10 00515 CJST JST*  *             PROTOTYPE CALL                                     BsIC8990
0900 00516   0 004063    CLST DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9000
0901 00517   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9010
0902 00520   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9020
0903 00521   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9030
0904 00522   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9040
0905 00523   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9050
0906 00524   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9060
0907 00525   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9070
0908 00526   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9080
0909 00527   0 004063         DAC   CL01-1        SUBROUTINE LINKAGE ADDRESS                         BsIC9090
0910 00530   0 01 04013 CJMP  JMP   CL06          SUBROUTINE RETURN COMMAND                          BsIC9100
0911                      *                                                                         BsIC9110
0912                      *                                                                         BsIC9120
0913                      *                                                                         BsIC9130
0914                           EJCT                                                                 BsIC9140
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0915                    *          SYSTEM FUNCTION ADDRESS LIST                                  BsIC9150
0916                    *                                                                        BsIC9160
0917                    *                                                                        BsIC9170
0918                    *                                                                        BsIC9180
0919                    *                                                                        BsIC9190
0920          000530    SFNL EQU   *-1                                                           BsIC9200
0921 00531    0 000000  SIND DAC   SINF          SINE FUNCTION                                  BsIC9210
0922 00532    0 000000  COSD DAC   COSF          COSINE FUNCTION                                BsIC9220
0923 00533    0 000000  TAND DAC   TANF          TANGENT FUNCTION                               BsIC9230
0924 00534    0 000000  AIND DAC   ATNF          ARCTANGENT FUNCTION                            BsIC9240
0925 00535    0 000000       DAC   EXPF          EXPONENTIAL FUNCTION                           BsIC9250
0926 00536    0 000000       DAC   ABSF          ABSOLUTE VALUE FUNCTION                        BsIC9260
0927 00537    0 000000       DAC   LOGF          NATURAL LOGARITHM FUNCTION                     BsIC9270
0928 00540    0 000000  SQRD DAC   SQRF          SQUARE ROOT FUNCTION                           BsIC9280
0929 00541    0 000000       XAC   INTF          INTEGER PART FUNCTION                          BsIC9290
0930 00542    0 000000       DAC   RNDF          RANDOM NUMBER FUNCTION                         BsIC9300
0931 00543    0 000000       DAC   SGNF          SIGN FUNCTION                                  BsIC9310
0932                    *                                                                        BsIC9320
0933                    *                                                                        BsIC9330
0934                    *                                                                        BsIC9340
0935 00544    0 000545  DELT DAC   *+1                                                          BsIC9350
0936 00545    0 000000       DAC   **            DELETED FUNCTION ERROR ROUTINE                 BsIC9360
0937 00546    0 10 05243     JST   ERR           FLAG ERROR                                     BsIC9370
0938 00547    142306         BCI   1,DF          DF                                             BsIC9380
0939                    *                                                                        BsIC9390
0940                    *                                                                        BsIC9400
0941          000550    SZHG SET   *             ADDRESS CONSTANTS START HERE                   BsIC9410
0942                    *                                                                        BsIC9420
0943                    *                                                                        BsIC9430
0944                         ORG   '776          PUT 2 POINTERS IN A KNOWN LOCATION             BsIC9440
0945 00776    0 000516       DAC   CLST          ADDRESS OF 'CALL' LINKAGE TABLE                BsIC9450
0946 00777    0 00 00000     PZE   CSRH          ADDRESS OF HIGHEST CROSS SECTOR LINK           BsIC9460
0947                    *                                                                        BsIC9470
0948                    *                                                                        BsIC9480
0949                    *                                                                        BsIC9490
0950                         EJCT                                                               BsIC9500
```

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0951                    *          COMMAND INPUT DISCRIMINATOR                                  BSIC9510
0952                    *                                                                       BSIC9520
0953                    *                                                                       BSIC9530
0954                    *          THIS ROUTINE WILL OUTPUT A QUESTION MARK AND                 BSIC9540
0955                    *     THEN INPUT A USER RESPONSE LINE.  DEPENDING ON THE                BSIC9550
0956                    *     USERS INPUT, THE FOLLOWING ACTION WILL BE TAKEN:                  BSIC9560
0957                    *                                                                       BSIC9570
0958                    *          1)  IF A LINE NUMBER STARTS THE INPUT LINE,                  BSIC9580
0959                    *     CONTROL WILL BE PASSED TO THE SOURCE TEXT EDITOR.                 BSIC9590
0960                    *                                                                       BSIC9600
0961                    *          2)  IF THE INPUT IS A SYSTEM COMMAND, CONTROL                BSIC9610
0962                    *     WILL BE PASSED TO THE APPROPRIATE PROCESSING ROUTINE.             BSIC9620
0963                    *                                                                       BSIC9630
0964                    *          3)  IF NONE OF THE ABOVE, IT WILL BE EXECUTED                BSIC9640
0965                    *     AS AN IMMEADIATE MODE STATEMENT.                                  BSIC9650
0966                    *                                                                       BSIC9660
0967                    *                                                                       BSIC9670
0968                         ORG   '1000          MAIN BODY OF PROGRAM STARTS HERE            BSIC9680
0969                    *                                                                       BSIC9690
0971 01000  0 10 00000 CMOD JST   INIT  <RA       FIRST TIME INITIALIZATION                   BSIC9710
0972                    *                                                                       BSIC9720
0973                    *     THE PREVIOUS INSTRUCTION WILL BE REPLACED WITH                    BSIC9730
0974                    *     A 'CRA' BY THE INITIALIZATION ROUTINE.                            BSIC9740
0975                    *                                                                       BSIC9750
0982 01001  0 04 00034       STA   SIP           SET SIP TO INDICATE A COMMAND LINE          BSIC9820
0983 01002  0 02 00045       LDA   CPOS          IF NOT AT START OF ASR LINE,                BSIC9830
0984 01003  100040           SZE                 OUTPUT CARRIAGE RETURN, LINE FEED           BSIC9840
0985 01004  0 10 00000       JST   LFCR          X                                           BSIC9850
0986 01005  0 02 00425       LDA   C277          REQUEST USER INPUT                          BSIC9860
0987 01006  0 10 01504       JST   ILIN          X                                           BSIC9870
0989 01007  0 000220    SSBP DAC   SBUF+SBUF     BYTE POINTER TO SYSTEM INPUT BUFFER         BSIC9890
0993 01010  0 02 01007       LDA   SSBP          SET POINTER TO FIRST CHARACTER OF           BSIC9930
0997 01011  0 04 00037       STA   SBP           THE INPUT BUFFER                            BSIC9970
0998 01012  140040           CRA                 RESET THE PROGRAM BREAK FLAG                BSIC9980
0999 01013  0 04 00103       STA   BRKF          X                                           BSIC9990
1000 01014  0 10 03054       JST   XCHR          EXAMINE FIRST INPUT ITEM                    BSI10000
1001 01015  0 11 00455       CAS   INTF          TEST FOR LINE NUMBER                        BSI10010
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1002 01016   100000          SKP                NO                                          BSI10020
1003 01017   0 01 01313      JMP   STMT         YES ... GO TO TEXT EDITOR                   BSI10030
1004 01020   0 04 00105      STA   LODF         NO ... RESET LOAD MODE FLAG                 BSI10040
1005 01021   0 11 00456      CAS   RELF         DOES LINE START WITH A REAL CONSTANT?       BSI10050
1006 01022   100000          SKP                X                                           BSI10060
1007 01023   0 01 04572      JMP   ISN1         YES ... REPORT STATEMENT NUMBER ERROR       BSI10070
1008 01024   0 10 03173      JST   DLCK         NULL LINE ?                                 BSI10080
1009 01025   100000          SKP                NO                                          BSI10090
1010 01026   0 01 01000      JMP   CMOD         YES ... GET ANOTHER INPUT LINE              BSI10100
1011 01027   0 11 00436      CAS   C43          TEST FOR SYSTEM COMMAND                     BSI10110
1012 01030   0 11 00441      CAS   C54          X                                           BSI10120
1013 01031   0 01 03213      JMP   ESMT         NO....EXECUTE IMMEADIATE COMMAND            BSI10130
1014 01032   0 01 03213      JMP   ESMT         NO....EXECUTE IMMEADIATE COMMAND            BSI10140
1015 01033   0 04 00000      STA   0            POINTER TO SYSTEM FUNCTION IN INDEX         BSI10150
1016 01034  -1 01 00771      JMP*  *-'43,1      BRANCH TO PROCESS A SYSTEM FUNCTION         BSI10160
1017 01035   0 001045        DAC   JOB          JOB COMMAND                                 BSI10170
1018 01036   0 001052        DAC   CLER         CLEAR COMMAND                               BSI10180
1019 01037   0 001054        DAC   RUN          RUN COMMAND                                 BSI10190
1020 01040   0 001137        DAC   LIST         LIST COMMAND                                BSI10200
1021 01041   0 001121        DAC   CONT         CONTINUE COMMAND                            BSI10210
1022 01042   0 001130        DAC   QUIT         QUIT COMMAND                                BSI10220
1023 01043   0 001132        DAC   LOAD         LOAD COMMAND                                BSI10230
1024 01044   0 001135        DAC   PNCH         PUNCH COMMAND                               BSI10240
1025                 *                                                                     BSI10250
1026                 *                                                                     BSI10260
1027                 *                                                                     BSI10270
1028                       EJCT                                                            BSI10280
```

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1029                    *          JOB COMMAND PROCESSOR                                    BSI10290
1030                    *                                                                   BSI10300
1031                    *                                                                   BSI10310
1032                    *          THE JOB COMMAND CLEARS ALL TABLES INCLUDING THE          BSI10320
1033                    *     PROGRAM STORAGE AREA.                                         BSI10330
1034                    *                                                                   BSI10340
1035                    *                                                                   BSI10350
1036                    *                                                                   BSI10360
1037 01045   0 02 00020 JOB  LDA   PTB              CLEAR THE PROGRAM TEXT TABLE          BSI10370
1038 01046   0 04 00021      STA   PTH              X                                     BSI10380
1039 01047   0 02 00033      LDA   SIT              DELETE ALL ENTRIES IN THE             BSI10390
1040 01050   141206          AOA                    STATEMENT INDEX                       BSI10400
1041 01051   0 04 00032      STA   SIB              X                                     BSI10410
1042                    *                                                                   BSI10420
1043                    *     FALL THROUGH TO 'CLEAR' PROCESSOR                             BSI10430
1044                    *                                                                   BSI10440
1045                    *                                                                   BSI10450
1046                    *                                                                   BSI10460
1047                    *                                                                   BSI10470
1048                         EJCT                                                           BSI10480
```

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1049                    *           CLEAR COMMAND PROCESSOR                                    BSI10490
1050                    *                                                                      BSI10500
1051                    *                                                                      BSI10510
1052                    *           THE CLEAR COMMAND INITIALIZES ALL TABLES EXECPT            BSI10520
1053                    *     THE PROGRAM TEXT STORAGE AREA AND THE STATEMENT INDEX.           BSI10530
1054                    *                                                                      BSI10540
1055                    *                                                                      BSI10550
1056 01052   0 10 02770 CLER  JST   CLRT              CLEAR THE TABLES                        BSI10560
1057 01053   0 01 01000       JMP   CMOD              GO PROCESS NEXT COMMAND                 BSI10570
1058                    *                                                                      BSI10580
1059                    *                                                                      BSI10590
1060                    *                                                                      BSI10600
1061                         EJCT                                                              BSI10610
```

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1062                    *          RUN COMMAND PROCESSOR                                                    BSI10620
1063                    *                                                                                   BSI10630
1064                    *                                                                                   BSI10640
1065                    *          ALL USERS TABLES WILL BE CLEARED, ALL DIM STATEMENTS                     BSI10650
1066                    *     WILL BE PROCESSED, AND THEN PROGRAM EXECUTION WILL BE STARTED                 BSI10660
1067                    *     AT THE LOWEST NUMBERED STATEMENT.                                             BSI10670
1068                    *                                                                                   BSI10680
1069                    *                                                                                   BSI10690
1070                    *                                                                                   BSI10700
1071 01054  0 10 02770 RUN  JST  CLRT      CLEAR USER TABLES                                                BSI10710
1072 01055  0 04 00051      STA  SEQ1      RESET SEQUENCING INIBITION FLAG                                  BSI10720
1073 01056  0 04 00104      STA  DIMF      SET DIMENSION STATEMENT FLAG                                     BSI10730
1074 01057  0 10 03011      JST  IPDS      SET UP THE PUSH DOWN STACK                                       BSI10740
1075 01060  0 02 00032      LDA  SIB       SETUP TO PROCESS ALL DIM STMTS                                   BSI10750
1076 01061  0 07 00376      SUB  C2        X                                                                BSI10760
1077 01062  0 04 00034      STA  SIP       X                                                                BSI10770
1078 01063  0 02 00506 RN01 LDA  DIMC      FIND THE NEXT DIMENSION STATEMENT                                BSI10780
1079 01064  0 10 04457      JST  SSR       X                                                                BSI10790
1080 01065  0 01 01100      JMP  RN02      ALL DIMENSION STMTS HAVE BEEN PROCESSED                          BSI10800
1081 01066  0 10 04632 RN03 JST  PVN       ISOLATE VARIABLE NAME                                            BSI10810
1082 01067  0 10 04751      JST  ADV       CREATE TABLE ENTRY FOR THIS VARIABLE                             BSI10820
1083 01070  0 01 01117      JMP  RN04      ERROR...ILLEGAL DIMENSIONED VARIABLE NAME                        BSI10830
1084 01071  0 10 03047      JST  GCHR      FETCH ITEM TERMINATOR                                            BSI10840
1085 01072  0 11 00414      CAS  C254      IF COMMA, THEN MORE NAMES FOLLOW                                 BSI10850
1086 01073  100000         SKP            NO                                                               BSI10860
1087 01074  0 01 01066      JMP  RN03      GO PROCESS NEXT VARIABLE                                         BSI10870
1088 01075  0 10 03065      JST  UCHR      NOT COMMA, MUST BE : OR C/R                                      BSI10880
1089 01076  0 10 03116      JST  GDLM      X                                                                BSI10890
1090 01077  0 01 01063      JMP  RN01      GO CHECK FOR MORE DIMENSION STMTS                                BSI10900
1091                    *                                                                                   BSI10910
1092 01100  0 02 01007 RN02 LDA  SSBP      RESTORE POINTER TO COMMAND LINE                                  BSI10920
1096 01101  0 04 00037      STA  SBP       X                                                                BSI10960
1097 01102  0 02 00032      LDA  SIB       SET SI POINTER TO START                                          BSI10970
1098 01103  0 07 00376      SUB  C2        EXECUTION AT LOWEST NUMBERED                                     BSI10980
1099 01104  0 04 00034      STA  SIP       X                                                                BSI10990
1100 01105  0 02 00374      LDA  C12       RESET DIMENSION STMT FLAG                                        BSI11000
1101 01106  0 04 00104      STA  DIMF      X                                                                BSI11010
```

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1102 01107   0 10 03047       JST   GCHR          STEP OVER 'RUN'                          BsI11020
1103 01110   0 10 03054       JST   XCHR          TEST FOR STARTING LINE NUMBER            BsI11030
1104 01111   0 10 03173       JST   DLCK          X                                        BsI11040
1105 01112   100000           SKP                 MAYBE                                    BsI11050
1106 01113   0 01 04600       JMP   ASQ           NO ... START AT LOWEST NUMBERED LINE     BsI11060
1107 01114   140040           CRA                 SIP&0 SO THAT ERROR DIAGNOSTICS          BsI11070
1108 01115   0 04 00034       STA   SIP           WILL COME OUT RIGHT                      BsI11080
1109 01116   0 01 03324       JMP   GOTO          EXECUTE A 'GOTO' STATEMENT               BsI11090
1110                  *                                                                   BsI11100
1111 01117   0 10 05243 RN04  JST   ERR           REPORT DIMENSION VARIBALE NAME ERROR     BsI11110
1112 01120   142316           BCI   1,DN                                                  BsI11120
1113                  *                                                                   BsI11130
1114                  *                                                                   BsI11140
1115                  *                                                                   BsI11150
1116                       EJCT                                                           BsI11160
```

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1117                    *          CONTINUE COMMAND PROCESSOR                                    BsI11170
1118                    *                                                                        BsI11180
1119                    *                                                                        BsI11190
1120                    *          IF A PREVIOUS BREAK OPERATION HAS BEEN                        BsI11200
1121                    *     PERFORMED AND IF SEQUENCING HAS NOT BEEN INHIBITED.                BsI11210
1122                    *     STATEMENT EXECUTION WILL BE RESUMED AT THE POINT                   BsI11220
1123                    *     WHERE IT WAS INTERRUPTED.                                          BsI11230
1124                    *                                                                        BsI11240
1125                    *                                                                        BsI11250
1126                    *                                                                        BsI11260
1127 01121  0 02 00101 CONT LDA   CON1          IS THERE A BREAK OUTSTANDING ?                   BsI11270
1128 01122  101040        SNZ                  X                                                BsI11280
1129 01123  0 01 01000     JMP   CMOD          NO....GO GET NEXT COMMAND                        BsI11290
1130 01124  0 04 00034     STA   SIP           YES...SET POINTER TO STMT WE WERE AT             BsI11300
1131 01125  0 02 00102     LDA   CON2          SET BYTE POINTER TO THE FIRST                    BsI11310
1132 01126  0 04 00037     STA   SBP           CHARACTER OF THAT STATEMENT                      BsI11320
1133 01127  0 01 03213     JMP   ESMT          GO CONTINUE EXECUTION                            BsI11330
1134                    *                                                                        BsI11340
1135                    *                                                                        BsI11350
1136                    *                                                                        BsI11360
1137                        EJCT                                                                 BsI11370
```

```
1138                    *           QUIT COMMAND PROCESSOR                                  BsI11380
1139                    *                                                                   BsI11390
1140                    *                                                                   BsI11400
1142                    *           THIS ROUTINE WILL HALT THE CENTRAL                      BsI11420
1143                    *     PROCESSOR.  IF THE START BUTTON IS DEPRESSED,                 BsI11430
1144                    *     CONTROL WILL BE RETURNED TO COMMAND MODE.                     BsI11440
1152                    *                                                                   BsI11520
1153                    *                                                                   BsI11530
1154                    *                                                                   BsI11540
1156 01130   000000     QUIT HLT                    STOP THE COMPUTER                       BsI11560
1157 01131   0 01 01000      JMP    CMOD            ON RESTART, GET THE NEXT COMMAND        BsI11570
1165                    *                                                                   BsI11650
1166                    *                                                                   BsI11660
1167                    *                                                                   BsI11670
1168                         EJCT                                                           BsI11680
```

1130 JMP * 1131

1131 22000

```
1169                    *          LOAD COMMAND PROCESSOR                                  BsI11690
1170                    *                                                                  BsI11700
1171                    *                                                                  BsI11710
1172                    *          WHEN IN LOAD MODE, THE PAPER TAPE READER WILL BE        BsI11720
1173                    *     TURNED ON WHEN EACH LINE IS REQUESTED, AND THE INPUT         BsI11730
1174                    *     PREFIX CHARACTER WILL NOT BE PRINTED.                        BsI11740
1175                    *                                                                  BsI11750
1176                    *                                                                  BsI11760
1177                    *                                                                  BsI11770
1178 01132  140040     LOAD CRA                    SET THE LOAD FLAG                      BsI11780
1179 01133  0 04 00105      STA   LODF             X                                      BsI11790
1180 01134  0 01 01000      JMP   CMOD             START READING IN TEXT                  BsI11800
1181                    *                                                                  BsI11810
1182                    *                                                                  BsI11820
1183                    *                                                                  BsI11830
1184                         EJCT                                                          BsI11840
```

```
1185                        *           PUNCH COMMAND PROCESSOR                                  BsI11850
1186                        *                                                                    BsI11860
1187                        *                                                                    BsI11870
1188                        *                                                                    BsI11880
1189 01135   0 10 00000 PNCH JST   ITAPE              INITIALIZE TAPE OUTPUT                     BsI11890
1190 01136   0 12 00106      IRS   LSTF               TURN ON PUNCH FLAG                         BsI11900
1191                        *                                                                    BsI11910
1192                        *    FALL THROUGH TO LIST PROCESSOR                                  BsI11920
1193                        *                                                                    BsI11930
1194                        *                                                                    BsI11940
1195                        *                                                                    BsI11950
1196                             EJCT                                                            BsI11960
```

```
1197                    *          LIST COMMAND PROCESSOR                                    BsI11970
1198                    *                                                                    BsI11980
1199                    *                                                                    BsI11990
1200                    *          THIS ROUTINE PRINTS A SOURCE LISTING                      BsI12000
1201                    *     OF THE PROGRAM THAT IS CURRENTLY STORED. THE LISTING           BsI12010
1202                    *     IS PRECEEDED AND FOLLOWED BY TWO BLANK LINES.                  BsI12020
1203                    *                                                                    BsI12030
1204                    *                                                                    BsI12040
1205 01137  0 02 00400 LIST LDA  C212          PRINT A COUPLE OF BLANK LINES                BsI12050
1206 01140  0 10 00000      JST  OTA1          X                                            BsI12060
1207 01141  0 10 00000      JST  OTA1          X                                            BsI12070
1208 01142  140040         CRA                                                             BsI12080
1209 01143  0 04 00314      STA  LTT4          INITIALIZE LOW LIST RANGE POINTER            BsI12090
1210 01144  0 02 00444      LDA  F1            INITILAIZE HIGH LIST RANGE POINTER TO        BsI12100
1211 01145  0 04 00315      STA  LTT5          SOME VALUE > 9999                            BsI12110
1212 01146  0 10 03047      JST  GCHR          STEP OVER 'LIST'                             BsI12120
1213 01147  0 10 03054      JST  XCHR          TEST FOR LIST PARAMETERS                     BsI12130
1214 01150  0 10 03173      JST  DLCK          X                                            BsI12140
1215 01151  100000         SKP                ......YES......                              BsI12150
1216 01152  0 01 01170      JMP  LT11          NO ... START LISTING                         BsI12160
1217 01153  0 11 00414      CAS  C254          IS FIRST PARAMETER MISSING ?                 BsI12170
1218 01154  100000         SKP                NO                                           BsI12180
1219 01155  0 01 01161      JMP  LT13          YES ... LIST UPTO SECOND PARAMETER           BsI12190
1220 01156  0 10 04556      JST  ISN           INPUT LOW RANGE PARAMETER                    BsI12200
1221 01157  0 07 00371      SUB  C1            ADJUST AS RANGE CHECK IN EXCLUSIVE           BsI12210
1222 01160  0 04 00314      STA  LTT4          SAVE IT                                      BsI12220
1223 01161  0 10 03047 LT13 JST  GCHR          GET PARAMETER DELIMITER                      BsI12230
1224 01162  0 10 03173      JST  DLCK          SECOND PARAMETER MISSING ?                   BsI12240
1225 01163  100000         SKP                NO                                           BsI12250
1226 01164  0 01 01170      JMP  LT11          YES ... START LISTING                        BsI12260
1227 01165  0 10 04556      JST  ISN           INPUT THE SECOND PARAMETER                   BsI12270
1228 01166  141206         AOA                ADJUST AS RANGE CHECK IS EXCLUSIVE           BsI12280
1229 01167  0 04 00315      STA  LTT5          SAVE IT                                      BsI12290
1230 01170  0 02 00032 LT11 LDA  SIB           START SCAN AT LOWEST NUMBERED STATEMENT      BsI12300
1231 01171  0 11 00033 LT01 CAS  SII           ARE WE PAST END OF TABLE?                    BsI12310
1232 01172  0 01 01305      JMP  LT02          YES...GO FINISH UP                           BsI12320
1233 01173  000000         OCT  0             NEVER CAN EXECUTE THIS WORD                  BsI12330
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1234 01174   0 04 00034       STA   LTT1    SAVE POINTER IN SAFE PLACE                    BSI12340
1235 01175  -0 02 00034       LDA*  SIP     GET NO. OF CURRENT STATEMENT                  BSI12350
1236 01176   0 11 00314       CAS   LTT4    IS IT IN LISTING RANGE ?                      BSI12360
1237 01177   0 11 00315       CAS   LTT5    X                                             BSI12370
1238 01200   0 01 01302       JMP   LT14    ....NO....MOVE ON TO NEXT STATEMENT           BSI12380
1239 01201   0 01 01302       JMP   LT14    ....NO....MOVE ON TO NEXT STATEMENT           BSI12390
1240 01202   0 10 02736       JST   PLN     PRINT LINE NUMBER OF THIS STATEMENT           BSI12400
1241 01203   0 35 00034       LDX   LTT1    X POINTS TO SI ENTRY FOR THIS STATEMENT       BSI12410
1243 01204   1 02 00001       LDA   1,1     SET SBP TO START OF SOURCE FOR THIS           BSI12430
1248 01205   0 04 00037       STA   SBP     STATEMENT                                     BSI12480
1249 01206   0 10 03054       JST   XCHR    IF NEXT CHARACTER IS NOT A                    BSI12490
1250 01207   0 11 00401       CAS   C215    SPECIAL IDENTIFIER, PRINT A                   BSI12500
1251 01210   0 10 02764       JST   SPAC    SPACE TO MAKE THE LISTING LINE UP             BSI12510
1252 01211   101000           NOP                                                         BSI12520
1253 01212   0 10 02764 LI12  JST   SPAC    X                                             BSI12530
1254 01213   0 10 03047 LT03  JST   GCHR    GET THE NEXT SOURCE CHARACTER                 BSI12540
1255 01214   0 11 00455       CAS   INTF    TEST FOR INTEGER CONSTANT                     BSI12550
1256 01215   100000           SKP           NO                                            BSI12560
1257 01216   0 01 01257       JMP   LT04    YES...GO PRINT IT                             BSI12570
1258 01217   0 11 00456       CAS   RELF    NO...TEST FOR REAL CONSTANT                   BSI12580
1259 01220   100000           SKP           NO                                            BSI12590
1260 01221   0 01 01262       JMP   LT05    YES...GO PRINT IT                             BSI12600
1261 01222   0 11 00401       CAS   C215    TEST FOR NORMAL CHARACTER                     BSI12610
1262 01223   0 10 00000       JST   DTA1    YES...PRINT IT                                BSI12620
1263 01224   0 01 01274       JMP   LT06    GO SEE IF IT WAS CARRIAGE RETURN              BSI12630
1264 01225   140407           TCA           SPECIAL IDENTIFIER...NEGATE FOR TABLE SCAN    BSI12640
1265 01226   0 04 00312       STA   LTT2    SAVE FOR LATER REFERENCE                      BSI12650
1266 01227   0 04 00313       STA   LTT3    SAVE FOR COUNTING                             BSI12660
1267 01230   0 11 00500       CAS   SMAX    DOES THIS IDENTIFIER REQUIRE A LEADING SPACBSI12670
1268 01231   0 10 02764       JST   SPAC    YES...PRINT ONE                               BSI12680
1269 01232   101000           NOP           NO                                            BSI12690
1270 01233   0 35 00037       LDX   SBP     SAVE POINTER TO CURRENT STATEMENT             BSI12700
1271 01234   0 02 00461       LDA   LSBP    SET POINTER TO START OF THE                   BSI12710
1275 01235   0 04 00037       STA   SBP     IDENTIFIER LIST                               BSI12750
1276 01236   0 12 00313 LI09  IRS   LTT3    ARE WE AT THE CORRECT ENTRY?                  BSI12760
1277 01237   0 01 01253       JMP   LT07    NO...GO FEED THROUGH CURRENT ENTRY            BSI12770
1278 01240   0 10 03047 LI08  JST   GCHR    GET CHARACTER OF EXPANSION                    BSI12780
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01241   100040              SZE          DO NOT PRINT IT IF IDENTIFIER MARK          BSI12790
01242   0 10 00000          JST    OTA1  PRINT CHARACTER OF IDENTIFIER EXPANSION     BSI12800
01243   100040              SZE          HAS ALL OF THE IDENTIFIER BEEN PRINTED?     BSI12810
01244   0 01 01240          JMP    LT08  NO...GO PRINT NEXT CHARACTER OF IDENTIFIER  BSI12820
01245   0 15 00037          STX    SBP   RESTORE POINTER TO STMT WE ARE PRINTING     BSI12830
01246   0 02 00312          LDA    LTT2  PRINT TRAILING SPACE                        BSI12840
01247   0 11 00500          CAS    SMAX  IF REQUIRED                                 BSI12850
01250   0 01 01212          JMP    LT12  REQUIRED...GO PRINT SPACE                   BSI12860
01251   0 01 01213          JMP    LT03  NOT REQUIRED                                BSI12870
01252   0 01 01213          JMP    LT03  NOT REQUIRED                                BSI12880
01253   0 10 03047 LT07     JST    GCHR  STEP THROUGH CURRENT IDENTIFIER             BSI12890
01254   100040              SZE          END OF IDENTIFIER?                          BSI12900
01255   0 01 01253          JMP    LT07  NO...CONTINUE SCAN                          BSI12910
01256   0 01 01236          JMP    LT09  HIT THE END OF IT                           BSI12920
                   *                                                                 BSI12930
                   *        HERE TO PRINT CONSTANTS                                  BSI12940
                   *                                                                 BSI12950
01257   0 10 03077 LT04     JST    GCPK  PACK THE INTEGER CONSTANT                   BSI12960
01260   0 10 00000          JST    FINT  FLOAT IT                                    BSI12970
01261   0 01 01266          JMP    LT10  NOW TREAT AS REAL                           BSI12980
01262   0 10 03077 LT05     JST    GCPK  PACK FIRST WORD OF REAL CONSTANT            BSI12990
01263   000201              IAB          X                                           BSI13000
01264   0 10 03077          JST    GCPK  PACK SECOND WORD OF THE CONSTANT            BSI13010
01265   000201              IAB          PUT NUMBER IN NORMAL FORM                   BSI13020
01266   0 10 03207 LT10     JST    SCVL  PRINT ROUTINE LOOKS FOR NUMBER IN CVAL      BSI13030
01267   140040              CRA          CLEAR CARRIAGE POSITION COUNTER TO          BSI13040
01270   0 04 00045          STA    CPOS  PREVENT A C/R-L/F FROM BEING GENERATED      BSI13050
01271   0 02 00405          LDA    C240  SURPASS ALL SPACES IN NUMBER                BSI13060
01272   0 10 02154          JST    PCVL  PRINT THE NUMBER                            BSI13070
01273   0 01 01213          JMP    LT03  GO WORK ON NEXT CHARACTER                   BSI13080
                   *                                                                 BSI13090
                   *        HERE FOR END FOR LINE TEST                               BSI13100
                   *                                                                 BSI13110
01274   0 11 00401 LT06     CAS    C215  IS CURRENT CHAR A C/R ?                     BSI13120
01275   0 01 01213          JMP    LT03  NO...GO PROCESS NEXT ITEM                   BSI13130
01276   0 10 00000          JST    LFCR  ADVANCE ASR LINE                            BSI13140
01277   0 13 00103          IMA    BRKF  HAS THE USER HAD ENOUGH ?                   BSI13150
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1316 01300   100040          SZE                          X                                    BsI13160
1317 01301   0 01 01305       JMP   LT02                   YES ... RETURN TO COMMAND MODE       BsI13170
1318 01302   0 02 00034 LT14  LDA   LTT1                   UPDATE SI POINTER TO                 BsI13180
1319 01303   0 06 00376       ADD   C2                     NEXT ENTRY                           BsI13190
1320 01304   0 01 01171       JMP   LT01                   GO TEST FOR END OF LISTING           BsI13200
1321                     *                                                                      BsI13210
1322                     *     HERE AT END OF LISTING                                           BsI13220
1323                     *                                                                      BsI13230
1324 01305   0 10 00000 LT02  JST   LFCR                   PRINT A COUPLE OF BLANK LINES        BsI13240
1325 01306   0 10 00000       JST   LFCR                   X                                    BsI13250
1326 01307   0 13 00106       IMA   LSTF                   FETCH AND CLEAR PUNCH FLAG           BsI13260
1327 01310   100040           SZE                          WERE WE PUNCHING ?                   BsI13270
1328 01311   0 10 00000       JST   ETAPE                  YES ... PUNCH TRAILER                BsI13280
1329 01312   0 01 01000       JMP   CMOD                   GO PROCESS NEXT COMMAND              BsI13290
1330                     *                                                                      BsI13300
1331                     *                                                                      BsI13310
1332                           EJCT                                                             BsI13320
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1333                    *          SOURCE TEXT EDITOR                                                    BSI13330
1334                    *                                                                                BSI13340
1335                    *                                                                                BSI13350
1336                    *     FUNCTION:                                                                  BSI13360
1337                    *                                                                                BSI13370
1338                    *          THIS ROUTINE IS CALLED BY THE COMMAND LINE                            BSI13380
1339                    *     RESPONSE ROUTINE WHEN A STATEMENT NUMBER IS DETECTED AT                    BSI13390
1340                    *     THE BEGINNING OF A RESPONSE LINE. DEPENDING ON THE                         BSI13400
1341                    *     LINE ENTERED, THE FOLLOWING ACTIONS MAY BE TAKEN:                          BSI13410
1342                    *                                                                                BSI13420
1343                    *          1. IF IT IS A LINE NUMBER IMMEDIATELY FOLLOWED BY A                   BSI13430
1344                    *     CARRIAGE RETURN, ANY EXISTING LINE WITH THAT NUMBER WILL                   BSI13440
1345                    *     BE DELETED FROM STORAGE.                                                   BSI13450
1346                    *          2. IF A CARRIAGE RETURN DOES NOT IMMEDIATELY FOLLOW                   BSI13460
1347                    *     THE LINE NUMBER, AND A STATEMENT WITH THAT NUMBER ALREADY                  BSI13470
1348                    *     EXISTS, THE PREVIOUS COPY WILL BE DELETED AND THE NEW TEXT                 BSI13480
1349                    *     WILL BE INSERT IN ITS PLACE.                                               BSI13490
1350                    *          3. IF A CARRIAGE RETURN DOES NOT IMMEDIATELY FOLLOW                   BSI13500
1351                    *     THE LINE NUMBER, AND A STATEMENT WITH THAT NUMBER DOES                     BSI13510
1352                    *     NOT EXIST, THE NEW LINE WILL BE ADDED TO THE PROGRAM.                      BSI13520
1353                    *                                                                                BSI13530
1354                    *                                                                                BSI13540
1355                    *                                                                                BSI13550
1356 01313  0 10 02770 SIMT JST   CLRT      CLEAR ALL TABLES EXECPT PROGRAM TEXT AND SI                  BSI13560
1357 01314  0 04 00320       STA   STI7      CLEAR MEMORY OVERFLOW FLAG                                   BSI13570
1358 01315  0 10 04556       JST   ISN       GET THE STATEMENT NUMBER IN SNUM                             BSI13580
1359 01316  0 02 00037       LDA   SBP       SAVE POINTER TO NEW STATEMENT                                BSI13590
1360 01317  0 04 00312       STA   STI1      UNTIL WE ARE READY FOR IT                                    BSI13600
1361 01320  0 10 04475       JST   SISR      DO WE ALREADY HAVE A STMT WITH THAT NUMBER?                  BSI13610
1362 01321  0 01 01450       JMP   ST01      NO...GO APPEND A STATEMENT                                   BSI13620
1363 01322  0 10 04540 SI02 JST   SES       FIND END OF STATEMENT                                        BSI13630
1364 01323  0 11 00401       CAS   C215      IS IT ACTUAL END OF LINE?                                    BSI13640
1365 01324  0 01 01322       JMP   ST02      NO... CONTINUE SCAN                                          BSI13650
1366 01325  0 02 00037       LDA   SBP       CALCULATE THE NUMBER OF                                      BSI13660
1367 01326  141206           AOA             BYTES IN THE LINE TO BE                                      BSI13670
1368 01327  1 07 00001       SUB   1,1       DELETED, ROUNDING UP IF IT ENDS                              BSI13680
1369 01330  0 03 00466       ANA   M2        ON A HALF WORD BOUNDRY                                       BSI13690
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1370 01331    0 04 00313       STA   STT2          X                                                    BSI13700
1371 01332    1 06 00001       ADD   1,1           GET ADDRESS OF FIRST WORD OF                         BSI13710
1372 01333    0404 77          LGR   1             NEXT STATEMENT                                       BSI13720
1373 01334    0 07 00371       SUB   C1                                                                BSI13730
1374 01335    0 04 00315       STA   STT4          IT IS FIRST SOURCE ADDRESS-1 FOR TABLE MOVE          BSI13740
1375 01336    1 02 00001       LDA   1,1           GET ADDRESS OF FIRST WORD OF STATEMENT               BSI13750
1376 01337    0404 77          LGR   1             IT IS FIRST DESTINATION ADDRESS FOR                  BSI13760
1377 01340    0 04 00316       STA   STT5          TABLE MOVE                                           BSI13770
1378 01341    0 02 00315 ST04  LDA   STT4          ANY MORE TEXT TO                                     BSI13780
1379 01342    0 11 00021       CAS   PTH           BE MOVED?                                            BSI13790
1380 01343    000000           OCT   0             NEVER CAN EXECUTE THIS WORD                          BSI13800
1381 01344    0 01 01352       JMP   ST03          NO...HOLE IN TABLE IS FILLED                         BSI13810
1382 01345    0 12 00315       IRS   STT4          GET ADDRESS OF NEXT SOURCE WORD                      BSI13820
1383 01346   -0 02 00315       LDA*  STT4          MOVE NEXT WORD                                       BSI13830
1384 01347   -0 04 00316       STA*  STT5          X                                                    BSI13840
1385 01350    0 12 00316       IRS   STT5          BUMP DESTINATION ADDRESS POINTER                     BSI13850
1386 01351    0 01 01341       JMP   ST04          GO CHECK FOR COMPLETION                              BSI13860
1387 01352    0 02 00316 ST03  LDA   STT5          UPDATE PROGRAM TEXT HIGH POINTER                     BSI13870
1388 01353    0 04 00021       STA   PTH           X                                                    BSI13880
1389 01354    0 15 00316       STX   STT5          SAVE INDEX AS CLRT DESTROYS IT                       BSI13890
1390 01355    0 10 02770       JST   CLRT          ACCOUNT FOR THE SPACE WE OPENED UP                   BSI13900
1391 01356    0 35 00316       LDX   STT5          RESTORE INDEX AS CLRT HAS DONE ITS THING             BSI13910
1392                     *                                                                              BSI13920
1393                     *     UPDATE STATEMENT INDEX POINTERS                                          BSI13930
1394                     *                                                                              BSI13940
1395                     *          ALL POINTERS TO STATEMENTS THAT WERE PHYSICALLY                     BSI13950
1396                     *     LOCATED ABOVE THE STATEMENT THAT WAS DELETED MUST BE                     BSI13960
1397                     *     ADJUSTED TO POINT TO THE NEW LOCATION OF THE STATEMENTS.                 BSI13970
1398                     *                                                                              BSI13980
1399 01357    0 02 00032       LDA   SIB           START SCAN AT BASE OF TABLE                          BSI13990
1400 01360    0 11 00033 ST06  CAS   SIT           PAST END OF INDEX ?                                  BSI14000
1401 01361    0 01 01375       JMP   ST05          YES...STATEMENT INDEX IS UPDATED                     BSI14010
1402 01362    000000           OCT   0             NEVER CAN EXECUTE THIS WORD                          BSI14020
1403 01363    141206           AOA                 GET POINTER TO SBP OF CURRENT ENTRY                  BSI14030
1404 01364    0 04 00315       STA   STT4          X                                                    BSI14040
1405 01365   -0 02 00315       LDA*  STT4          DOES SBP IN CURRENT ENTRY POINT TO A                 BSI14050
1406 01366    1 11 00001       CAS   1,1           STATEMENT ABOVE THE DELETED ONE?                     BSI14060
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1407 01367   0 07 00313       SUB   STT2            YES...CORRECT THE POINTER                BSI14070
1408 01370   101000           NOP                   X                                        BSI14080
1409 01371  -0 04 00315       STA*  STT4            SET CORRECT POINTER VALUE                BSI14090
1410 01372   0 02 00315       LDA   STT4            UPDATE STATEMENT INDEX POINTER           BSI14100
1411 01373   141206           AOA                   X                                        BSI14110
1412 01374   0 01 01360       JMP   ST06            CONTINUE SCAN                            BSI14120
1413                      *                                                                  BSI14130
1414                      *    DELETION/REPLACEMENT CHECK                                    BSI14140
1415                      *                                                                  BSI14150
1416 01375   0 02 00312 S105 LDA   STT1            RESTORE POINTER TO THE NEW               BSI14160
1417 01376   0 04 00037       STA   SBP             LINE                                     BSI14170
1418 01377   0 10 03054       JST   XCHR            DOES A CARRIAGE RETURN                   BSI14180
1419 01400   0 05 00401       ERA   C215            IMMEDIATELY FOLLOW THE                   BSI14190
1420 01401   100040           SZE                   LINE NUMBER?                             BSI14200
1421 01402   0 01 01421       JMP   ST07            NO...GO APPEND A STATEMENT               BSI14210
1422                      *                                                                  BSI14220
1423                      *    HERE TO DELETE STATEMENT INDEX ENTRY                          BSI14230
1424                      *                                                                  BSI14240
1426 01403   1 02 77777 S108 LDA   -1,1            MOVE ENTRY BELOW CURRENT                 BSI14260
1430 01404   1 04 00001       STA   1,1             ENTRY INTO POSITION OF                   BSI14300
1432 01405   1 02 77776       LDA   -2,1            THE CURRENT ENTRY                        BSI14320
1436 01406   1 04 00000       STA   0,1             X                                        BSI14360
1437 01407   0 02 00000       LDA   0               HAVE ALL ENTRIES BELOW THE               BSI14370
1441 01410   0 11 00032       CAS   SIB             DELETED ENTRY BEEN MOVED UP?             BSI14410
1442 01411   100000           SKP                   NO...KEEP GOING                          BSI14420
1443 01412   0 01 01416       JMP   ST09            YES...WRAP UP                            BSI14430
1447 01413   0 07 00376       SUB   C2              DECREMENT THE TABLE POINTER              BSI14470
1448 01414   0 04 00000       STA   0               X                                        BSI14480
1449 01415   0 01 01403       JMP   ST08            CONTINUE WITH TABLE COMPRESSION          BSI14490
1450 01416   0 12 00032 S109 IRS   SIB             CORRECT THE STATEMENT INDEX              BSI14500
1451 01417   0 12 00032       IRS   SIB             BASE POINTER                             BSI14510
1452 01420   0 01 01443       JMP   ST10            GO CLOSE OUT THIS OPERATION              BSI14520
1453                      *                                                                  BSI14530
1454                      *    ADD STATEMENT TEXT TO TOP OF PROGRAM TEXT TABLE               BSI14540
1455                      *                                                                  BSI14550
1456 01421   0 02 00021 S107 LDA   PTH             PUT BYTE POINTER TO NEW STATEMENT IN     BSI14560
1457 01422   0414 77         LGL   1               SECOND WORD OF THE                       BSI14570
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1458 01423   1 04 00001        STA   1,1                STATEMENT INDEX ENTRY                    BSI14580
1459 01424   0 02 00040        LDA   DBP                CALCULATE NUMBER OF                      BSI14590
1460 01425   0 07 00037        SUB   SBP                WORDS IN THE STATEMENT                   BSI14600
1461 01426   0 07 00371        SUB   C1                 X                                        BSI14610
1462 01427   0404 77           LGR   1                  X                                        BSI14620
1463 01430   140401            CMA                      X                                        BSI14630
1464 01431   0 04 00312        STA   STT1               SAVE FOR COUNTING                        BSI14640
1465 01432   140407            TCA                      MAKE SURE THERE IS ENOUGH FREE           BSI14650
1466 01433   0 06 00047        ADD   FSC                SPACE FOR THE STATEMENT                  BSI14660
1467 01434   101400            SMI                      X                                        BSI14670
1468 01435   0 01 01502        JMP   ST14               NO ... FAIL SOFT PROCESSING REQUIRED     BSI14680
1469 01436   0 10 03077 ST11   JST   GCPK               MOVE TWO CHARACTERS TO                   BSI14690
1470 01437  -0 04 00021        STA*  PTH                THE PROGRAM TEXT TABLE                   BSI14700
1471 01440   0 12 00021        IRS   PTH                BUMP THE TABLE POINTER                   BSI14710
1472 01441   0 12 00312        IRS   STT1               BUMP THE WORD COUNTER                    BSI14720
1473 01442   0 01 01436        JMP   ST11               MORE TO MOVE                             BSI14730
1474                     *                                                                      BSI14740
1475                     *     HERE FOR FINAL WRAP UP                                           BSI14750
1476                     *                                                                      BSI14760
1477 01443   0 04 00051 ST10   STA   SEQI               SET EXECUTION INHIBITION TRIGGER         BSI14770
1478 01444   0 02 00320        LDA   STT7               HAS MEMORY OVERFLOW BEEN DETECTED ?      BSI14780
1479 01445   101040            SNZ                      X                                        BSI14790
1480 01446   0 01 01052        JMP   CLER               NO .... GO PROCESS NEXT COMMAND LINE     BSI14800
1481 01447   0 01 03027        JMP   MEMO               YES ... REPORT IT                        BSI14810
1482                     *                                                                      BSI14820
1483                     *     HERE FOR NEW STATEMENT ADDITION                                  BSI14830
1484                     *                                                                      BSI14840
1485 01450   0 02 00376 ST01   LDA   C2                 MAKE SURE THAT THEREIS ROOM FOR          BSI14850
1486 01451   0 10 03041        JST   UFSC               A NEW STATEMENT INDEX ENTRY              BSI14860
1488 01452   0 35 00032        LDX   SIB                START SEARCH TO FIND POSITION OF THIS ENTRYBSI14880
1489 01453   0 02 00000 ST13   LDA   0                  ARE WE AT THE END OF THE TABLE?          BSI14890
1490 01454   0 11 00033        CAS   SIT                X                                        BSI14900
1498 01455   0 01 01471        JMP   ST12               YES...ADD ENTRY TO TOP OF TABLE          BSI14980
1499 01456   000000            OCT   0                  NEVER CAN EXECUTE THIS WORD              BSI14990
1504 01457   1 02 00000        LDA   0,1                COMPARE NUMBER OF THIS ENTRY             BSI15040
1505 01460   0 11 00050        CAS   SNUM               WITH NUMBER OF LINE TO BE INSERTED       BSI15050
1506 01461   0 01 01471        JMP   ST12               NEW ENTRY GOES JUST BEFORE THIS ENTRY    BSI15060
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1507 01462  000000          OCT   0          NEVER CAN EXECUTE THIS WORD                  BSI15070
1509 01463  1 04 77776      STA   -2,1       NEW ENTRY GOES ABOVE THIS...MOVE THIS        BSI15090
1513 01464  1 02 00001      LDA   1,1        ENTRY INTO VACATED POSITION                  BSI15130
1515 01465  1 04 77777      STA   -1,1       BELOW IT.                                    BSI15150
1520 01466  0 12 00000      IRS   0          BUMP TABLE POINTER TO NEXT ENTRY             BSI15200
1521 01467  0 12 00000      IRS   0          X                                            BSI15210
1522 01470  0 01 01453      JMP   ST13       X                                            BSI15220
1530 01471  0 02 00000 ST12 LDA   0          SET POINTER TO ENTRY                         BSI15300
1531 01472  0 07 00376      SUB   C2         BEING CREATED                                BSI15310
1532 01473  0 04 00000      STA   0          X                                            BSI15320
1533 01474  0 02 00050      LDA   SNUM       STATEMENT NUMBER GOES INTO                   BSI15330
1534 01475  1 04 00000      STA   0,1        THE FIRST WORD OF THE ENTRY                  BSI15340
1535 01476  0 02 00032      LDA   SIB        UPDATE STATEMENT INDEX BASE                  BSI15350
1536 01477  0 07 00376      SUB   C2         POINTER TO ACCOUNT FOR                       BSI15360
1537 01500  0 04 00032      STA   SIB        THE NEW ENTRY                                BSI15370
1538 01501  0 01 01375      JMP   ST05       GO ADD LINE TO TEXT STORAGE                  BSI15380
1539                  *                                                                  BSI15390
1540                  *                                                                  BSI15400
1541 01502  0 12 00320 ST14 IRS   STT7       SET MEMORY OVERFLOW FLAG                     BSI15410
1542 01503  0 01 01403      JMP   ST08       GO DELETE HANGING SI ENTRY                   BSI15420
1543                  *                                                                  BSI15430
1544                  *                                                                  BSI15440
1545                        EJCT                                                         BSI15450
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1546                    *          USER INPUT PROCESSOR                                    BSI15460
1547                    *                                                                  BSI15470
1548                    *                                                                  BSI15480
1549                    *    CALLING SEQUENCE:                                             BSI15490
1550                    *                                                                  BSI15500
1551                    *          LDA   CHAR          INPUT REQUEST CHAR...SEE BELOW      BSI15510
1552                    *          JST   ILIN                                              BSI15520
1553                    *          DAC   BUF+BUF       80 WORD BUFFER ... SEE BELOW        BSI15530
1554                    *          ......RETURN                                            BSI15540
1555                    *                                                                  BSI15550
1556                    *          THIS ROUTINE WILL CALL THE ROUTINE IPUT TO INPUT        BSI15560
1557                    *    A SOURCE LINE INTO THE PROVIDED BUFFER, STARTING AT           BSI15570
1558                    *    WORD 41.  THE CARRIAGE RETURN THAT TERMINATES THE RECORD IS   BSI15580
1559                    *    ASSUMED TO BE PLACED INTO THE BUFFER.                         BSI15590
1560                    *          AFTER THE LINE HAS BEEN INPUT, A LEXICAL SCAN           BSI15600
1561                    *    OF THE LINE IS PERFORMED TO DO THE FOLLOWING FUNCTIONS:       BSI15610
1562                    *                                                                  BSI15620
1563                    *          1)  REMOVE ALL NONSIGNIFICANT SPACES                    BSI15630
1564                    *          2)  CONVERT ALL CONSTANTS TO THEIR BINARY EQUIVILANTS   BSI15640
1565                    *          3)  TO REPLACE ALL RESERVED IDENTIFIERS WITH THEIR ONE  BSI15650
1566                    *              BYTE REPRESENTATIONS                                BSI15660
1567                    *                                                                  BSI15670
1568                    *          THE EXTRA 40 WORDS OF BUFFER SPACE IS REQUIRED          BSI15680
1569                    *    FOR CASES WHEN THE COMPRESSED TEXT IS LARGER THAN THE         BSI15690
1570                    *    ORIGINAL TEXT.  THIS WILL OCCUR PRIMARILY AS A RESULT         BSI15700
1571                    *    OF CONSTANT CONVERSIONS.                                      BSI15710
1572                    *                                                                  BSI15720
1573                    *                                                                  BSI15730
1574                    *                                                                  BSI15740
1575 01504   0 000000   ILIN DAC   **                                                      BSI15750
1576 01505   000201          IAB                    PREFIX CHARACTER TO B                BSI15760
1578 01506   -0 02 01504     LDA*   ILIN            GET ADDRESS OF                       BSI15780
1579 01507   0404 77         LGR    1               41ST WORD OF THE                     BSI15790
1583 01510   0 06 00440      ADD    C50             PROVIDED BUFFER                      BSI15830
1584 01511   0 04 01514      STA    *+3             X                                    BSI15840
1585 01512   000201          IAB                    RETRIEVE THE PREFIX CHARACTER        BSI15850
1586 01513   0 10 00000      JST    IPUT            INPUT LINE                           BSI15860
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1587 01514   0 000000        DAC   **              X                                  BSI15870
1588                 *                                                              BSI15880
1589                 *     HERE FOR LEXICAL SCAN OF NEW LINE                        BSI15890
1590                 *                                                              BSI15900
1591 01515  -0 02 01504      LDA*  ILIN            SET POINTER TO ACTUAL START OF BUFFER BSI15910
1595 01516   0 04 00040      STA   DBP             X                                  BSI15950
1596 01517   0 10 03125 IL32 JST   GNBC            GET NEXT NON-BLANK CHARACTER       BSI15960
1597 01520   0 11 00407      CAS   C242            IS IT START OF TEXT STRING ¢       BSI15970
1598 01521   100000         SKP                   NO                                 BSI15980
1599 01522   0 01 01542      JMP   IL05            YES...GO PACK IT WITHOUT COMPRESSION BSI15990
1600 01523   0 11 00416      CAS   C256            IS IT A DECIMAL POINT ¢            BSI16000
1601 01524   100000         SKP                   NO                                 BSI16010
1602 01525   0 01 01553      JMP   IL06            YES...GO CONVERT A NUMBER          BSI16020
1603 01526   0 10 03164      JST   NUMC            IS IT A DIGIT (0-9) ¢              BSI16030
1604 01527   100000         SKP                   NO                                 BSI16040
1605 01530   0 01 01553      JMP   IL06            YES...GO CONVERT A NUMBER          BSI16050
1606 01531   0 10 03155      JST   ALFA            IS IT A ALPHABETIC CHARACTER       BSI16060
1607 01532   100000         SKP                   NO                                 BSI16070
1608 01533   0 01 01732      JMP   IL07            YES...GO SEE IF IT'S A RESERVED WORD BSI16080
1609 01534   0 10 03133 IL22 JST   SCHR            PUT THE CHARACTER IN THE BUFFER    BSI16090
1610 01535   0 05 00401      ERA   C215            TEST FOR END OF LINE               BSI16100
1611 01536   100040         SZE                   X                                  BSI16110
1612 01537   0 01 01517      JMP   IL32            NO...GO PROCESS NEXT CHARACTER     BSI16120
1613 01540   0 12 01504      IRS   ILIN            YES...INCREMENT RETURN ADDRESS     BSI16130
1614 01541  -0 01 01504      JMP*  ILIN            AND EXIT                           BSI16140
1615                 *                                                              BSI16150
1616                 *     HERE TO PACK LITERAL TEXT STRING                         BSI16160
1617                 *                                                              BSI16170
1618 01542   0 10 03133 IL05 JST   SCHR            PLACE THE CHARACTER IN THE BUFFER  BSI16180
1619 01543   0 10 03047      JST   GCHR            GET THE NEXT CHARACTER             BSI16190
1620 01544   0 11 00401      CAS   C215            C/R ILLEGAL WITHIN A STRING        BSI16200
1621 01545   100000         SKP                   OK                                 BSI16210
1622 01546   0 01 02005      JMP   IL08            ERROR...UNCLOSED TEXT STRING       BSI16220
1623 01547   0 11 00407      CAS   C242            TEST FOR END OF STRING             BSI16230
1624 01550   0 01 01542      JMP   IL05            NO...CONTINUE PACKING              BSI16240
1625 01551   0 01 01534      JMP   IL22            YES...REVERT TO NORMAL MODE        BSI16250
1626 01552   0 01 01542      JMP   IL05            NO....CONTINUE PACKING             BSI16260
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1627                        *                                                          BsI16270
1628                        *     HERE TO CONVERT CONSTANTS                            BsI16280
1629                        *                                                          BsI16290
1630 01553   0 02 00075 IL06 LDA   LCHR          IT LAST CHARACTER WAS ALPHABETIC,    BsI16300
1631 01554   0 10 03155      JST   ALFA          THEN THE CURRENT DIGIT               BsI16310
1632 01555   0 01 01560      JMP   *+3           IS PART OF A VARIABLE NAME           BsI16320
1633 01556   0 02 00074      LDA   CHAR          GO STORE PART OF A NAME              BsI16330
1634 01557   0 01 01534      JMP   IL22          X                                    BsI16340
1635                        *                                                          BsI16350
1636 01560   0 10 03065      JST   UCHR          BACK UP OVER FIRST CHAR OF NUMBER    BsI16360
1637 01561   140040          CRA                 CLEAR DECIMAL POINT DETECTED FLAG    BsI16370
1638 01562   0 04 00056      STA   ILT1          X                                    BsI16380
1639 01563   0 04 00057      STA   ILT2          CLEAR DECIMAL POINT POSITION COUNTER BsI16390
1640 01564   0 04 00041      STA   CVAL          CLEAR NUMERIC ACCUMULATOR            BsI16400
1641 01565   0 04 00042      STA   CVAL+1        X                                    BsI16410
1642 01566   0 10 03125 IL10 JST   GNBC          GET NEXT NON-BLANK CHARACTER         BsI16420
1643 01567   0 10 03164      JST   NUMC          TEST FOR NUMERIC                     BsI16430
1644 01570   0 01 01607      JMP   IL11          NO....GO CHECK FOR SPECIAL CHARACTER BsI16440
1645 01571   0 07 00420      SUB   C260          CONVERT DIGIT TO BINARY              BsI16450
1646 01572   0 10 00000      JST   FINT          FLOAT IT                             BsI16460
1647 01573   0 10 00000      JST   H$22          SAVE NEW DIGIT                       BsI16470
1648 01574   0 000043        DAC   LVAL          X                                    BsI16480
1649 01575   0 10 03203      JST   LCVL          GET PREVIOUS ACCUMULATION            BsI16490
1650 01576   0 10 00000      JST   M$22          MULTIPLY BY POSITIONAL BIAS          BsI16500
1651 01577   0 000446        DAC   F10           (BASE 10)                            BsI16510
1652 01600   0 10 00000      JST   A$22          ADD IN NEW DIGIT                     BsI16520
1653 01601   0 000043        DAC   LVAL          X                                    BsI16530
1654 01602   0 10 03207      JST   SCVL          SAVE THE NEW RESULT                  BsI16540
1655 01603   0 02 00056      LDA   ILT1          UPDATE DECIMAL POINT LOCATION COUNTER BsI16550
1656 01604   0 06 00057      ADD   ILT2          X                                    BsI16560
1657 01605   0 04 00057      STA   ILT2                                               BsI16570
1658 01606   0 01 01566      JMP   IL10          GO PROCESS NEXT CHARACTER            BsI16580
1659                        *                                                          BsI16590
1660 01607   0 11 00416 IL11 CAS   C256          TEST FOR DECIMAL POINT               BsI16600
1661 01610   100000          SKP                 NO                                   BsI16610
1662 01611   0 01 01646      JMP   IL12          YES...GO RECORD ITS LOCATION         BsI16620
1663 01612   0 05 00430      ERA   C305          TEST FOR 'E' (START OF EXPONENT)     BsI16630
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1664 01613   100040          SZE                    X                                          BsI16640
1665 01614   0 01 01661       JMP   IL13             NO...GO CLOSE UP                           BsI16650
1666                  *                                                                        BsI16660
1667                  *    HERE TO PROCESS EXPONENT                                            BsI16670
1668                  *                                                                        BsI16680
1669 01615   0 04 00060       STA   ILT3             CLEAR EXPONENT SIGN FLAG                   BsI16690
1670 01616   0 13 00056 IL15  IMA   ILT1             CLEAR EXPONENT VALUE, GET DECIMAL POINT FLABsI16700
1671 01617   101040          SNZ                    IF NO DEC PNT, THEN EXPONENT NOT ALLOWED   BsI16710
1672 01620   0 01 01661       JMP   IL13             THIS 'E' MUST BE PART OF SOMETHING ELSE    BsI16720
1673 01621   0 10 03125 IL31  JST   GNBC             SEE IF EXPLICIT EXPONENT SIGN              BsI16730
1674 01622   0 11 00413       CAS   C253             A '+' ?                                    BsI16740
1675 01623   100000          SKP                    NO                                         BsI16750
1676 01624   0 01 01631       JMP   IL39             YES ... IGNORE IT                          BsI16760
1677 01625   0 11 00415       CAS   C255             A '-' ?                                    BsI16770
1678 01626   100000          SKP                    NO                                         BsI16780
1679 01627   0 01 01643       JMP   IL14             YES ... SET FLAG FOR LATER USE             BsI16790
1680 01630   0 10 03065       JST   UCHR             NO SIGN ... CHAR IS PART OF SOMETHING ELSE BsI16800
1681 01631   0 10 03125 IL39  JST   GNBC             GET CHARACTER                              BsI16810
1682 01632   0 10 03164       JST   NUMC             IS IT NUMERIC DIGIT ¢                      BsI16820
1683 01633   0 01 01654       JMP   IL16             NO....WE'VE HIT THE END OF THE EXPONENT    BsI16830
1684 01634   0 07 00420       SUB   C260             YES...CONVERT TO INTEGER                    BsI16840
1685 01635   0 13 00056       IMA   ILT1             SWAP WITH PREVIOUS ACCUMULATION            BsI16850
1686 01636   0 10 00000       JST   M$11             UPDATE PREVIOUS SUMMATION                  BsI16860
1687 01637   0 000374         DAC   C12              X                                          BsI16870
1688 01640   0 06 00056       ADD   ILT1             INSERT NEW DIGIT                           BsI16880
1689 01641   0 04 00056       STA   ILT1             SAVE NEW ACCUMULATION                      BsI16890
1690 01642   0 01 01631       JMP   IL39             CONTINUE SCAN                              BsI16900
1691                  *                                                                        BsI16910
1692 01643   0 02 00462 IL14  LDA   M1               SET NEGITIVE EXPONENT FLAG                 BsI16920
1693 01644   0 04 00060       STA   ILT3             X                                          BsI16930
1694 01645   0 01 01631       JMP   IL39             NOW GET EXPONENT VALUE                     BsI16940
1695                  *                                                                        BsI16950
1696 01646   0 02 00462 IL12  LDA   M1               SET DECIMAL POINT DETECTED FLAG            BsI16960
1697 01647   0 13 00056       IMA   ILT1             X                                          BsI16970
1698 01650   101040          SNZ                    WAS IT ALREADY SET ¢                       BsI16980
1699 01651   0 01 01566       JMP   IL10             NO....OK                                   BsI16990
1700 01652   0 10 05243       JST   ERR              YES...REPORT ERROR                         BsI17000
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1701 01653   142320          BCI   1,DP              TOO MANY DECIMAL POINTS                BSI17010
1702                 *                                                                     BSI17020
1703                 *     HERE TO CLOSE OUT EXPONENT PROCESSING                           BSI17030
1704                 *                                                                     BSI17040
1705 01654   0 02 00056 IL16 LDA   ILT1              GET EXPONENT VALUE                     BSI17050
1706 01655   0 12 00060       IRS   IL13              TEST FOR NEGITIVE EXPONENT             BSI17060
1707 01656   100000          SKP                     NO                                     BSI17070
1708 01657   140407          TCA                     YES...NEGATE THE EXPONENT              BSI17080
1709 01660   100000          SKP                     GO FINISH UP                           BSI17090
1710                 *                                                                     BSI17100
1711                 *     HERE TO CLOSE OUT CONSTANT CONVERSION                           BSI17110
1712                 *                                                                     BSI17120
1713 01661   140040     IL13 CRA                     ZERO EXPONENT BY DEFAULT               BSI17130
1714 01662   0 06 00057      ADD   ILT2              PUT IN DECIMAL POINT DISPLACEMENT      BSI17140
1715 01663   0 11 00467      CAS   M21               CAN ERRONEOUS UNDERFLOW RESULT ?       BSI17150
1716 01664   0 01 01675      JMP   IL24              NO                                     BSI17160
1717 01665   0 01 01675      JMP   IL24              NO                                     BSI17170
1718 01666   0 04 00056      STA   ILT1              YES ... DO THE REDUCTION IN TWO STEPS  BSI17180
1719 01667   0 10 03203      JST   LCVL              CVAL = CVAL*10**(-17)                  BSI17190
1720 01670   0 10 00000      JST   M$22              X                                      BSI17200
1721 01671   0 000450        DAC   F10R              X                                      BSI17210
1722 01672   0 10 03207      JST   SCVL              X                                      BSI17220
1723 01673   0 02 00056      LDA   ILT1              ADJUST EXPONENT TO COVER ADJUSTMENT    BSI17230
1724 01674   0 07 00467      SUB   M21               X                                      BSI17240
1725 01675   0 10 00000 IL24 JST   FINT              FLOAT FINAL EXPONENT                   BSI17250
1726 01676   0 10 00000      JST   H$22              SAVE THE TRUE EXPONENT                 BSI17260
1727 01677   0 000043        DAC   LVAL              X                                      BSI17270
1728 01700   0 10 00000      JST   L$22              RAISE 10 TO THE PROPER POWER           BSI17280
1729 01701   0 000446        DAC   F10               X                                      BSI17290
1730 01702   0 10 00000      JST   E$22              X                                      BSI17300
1731 01703   0 000043        DAC   LVAL              X                                      BSI17310
1732 01704   0 10 00000      JST   M$22              GET TRUE VALUE OF THE CONSTANT         BSI17320
1733 01705   0 000041        DAC   CVAL              X                                      BSI17330
1734 01706   0 10 00000      JST   IINT              IS THE NUMBER AN INTEGER ?             BSI17340
1735 01707   0 01 01727      JMP   IL17              YES...GO STORE IT                      BSI17350
1736                 *                                                                     BSI17360
1737 01710   0 04 00041      STA   CVAL              NO...STORE REAL NUMBER                 BSI17370
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1738 01711   0 02 00456       LDA   RELF          PLACE REAL CONSTANT FLAG IN BUFFER      BSI17380
1739 01712   0 10 03133       JST   SCHR                                                  BSI17390
1740 01713   0 02 00041       LDA   CVAL          GET FIRST WORD OF CONSTANT              BSI17400
1741 01714   141340           ICA                 POSITION FIRST BYTE                     BSI17410
1742 01715   0 10 03133       JST   SCHR          STORE IT                                BSI17420
1743 01716   141340           ICA                 POSITION 2ND BYTE                       BSI17430
1744 01717   0 10 03133 IL18  JST   SCHR          STORE IT                                BSI17440
1745 01720   000201           IAB                 GET NEXT WORD OF VALUE                  BSI17450
1746 01721   141340           ICA                 POSITION FIRST BYTE                     BSI17460
1747 01722   0 10 03133       JST   SCHR          STORE IT                                BSI17470
1748 01723   141340           ICA                 POSITON SECOND BYTE                     BSI17480
1749 01724   0 10 03133       JST   SCHR          STORE IT                                BSI17490
1750 01725   0 10 03065       JST   UCHR          BACK UP OVER UNPROCESSED CHARACTER      BSI17500
1751 01726   0 01 01517       JMP   IL32          GO CONTINUE SCAN                        BSI17510
1752                 *                                                                   BSI17520
1753 01727   000201      IL17 IAB                 SAVE INTEGER VALUE IN B                 BSI17530
1754 01730   0 02 00455       LDA   INTF          PUT INTEGER CONSTANT FLAG IN TEXT       BSI17540
1755 01731   0 01 01717       JMP   IL18          GO PUT VALUE IN TEXT                    BSI17550
1756                 *                                                                   BSI17560
1757                 *                                                                   BSI17570
1758                 *     HERE TO CHECK FOR RESERVED IDENTIFIER                         BSI17580
1759                 *                                                                   BSI17590
1760 01732   0 10 03065 IL07  JST   UCHR          BACK UP OVER LEADING CHARACTER          BSI17600
1761 01733   0 02 00461       LDA   LSBP          SET POINTER TO START OF                 BSI17610
1765 01734   0 04 00060       STA   IL13          RESERVED IDENTIFIER LIST                BSI17650
1766 01735   0 02 00037       LDA   SBP           SAVE POINTER TO CURRENT POSITION IN     BSI17660
1767 01736   0 04 00056       STA   IL11          THE SOURCE STREAM                       BSI17670
1768 01737   0 35 00471       LDX   M53           SET COUNTER TO - NO. OF ENTRIES IN LIST BSI17680
1769 01740   0 02 00037 IL20  LDA   SBP           SWAP SOURCE POINTER WITH RESERVED       BSI17690
1770 01741   0 13 00060       IMA   IL13          NAME LIST POINTER                       BSI17700
1771 01742   0 04 00037       STA   SBP           X                                       BSI17710
1772 01743   0 10 03047       JST   GCHR          GET NEXT CHAR FROM RESERVED NAME LIST   BSI17720
1773 01744   0 13 00037       IMA   SBP           SWAP BACK THE POINTERS LEAVING          BSI17730
1774 01745   0 13 00060       IMA   IL13          THE CHAR IN A                           BSI17740
1775 01746   0 13 00037       IMA   SBP           X                                       BSI17750
1776 01747   101040           SNZ                 HAS A NAME BEEN RECOGNIZED C            BSI17760
1777 01750   0 01 01772       JMP   IL21          YES%%%%                                 BSI17770
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1778 01751   0 04 00057       STA   IL12              SAVE TARGET CHAR WHILE GETTING SOURCE CHAR BSI17780
1779 01752   0 10 03125       JST   GNBC              GET THE NEXT SOURCE CHAR (WE IGNORE SPACES)BSI17790
1780 01753   0 05 00057       ERA   IL12              COMPARE WITH TARGET                        BSI17800
1781 01754   101040           SNZ                     DO THEY MATCH ¢                            BSI17810
1782 01755   0 01 01740       JMP   IL20              YES...CONTINUE CHECK                       BSI17820
1783                    *                                                                       BSI17830
1784                    *     RUNOUT NON-MATCHING LIST ENTRY                                    BSI17840
1785                    *                                                                       BSI17850
1786 01756   0 02 00060       LDA   IL13              SET BYTE POINTER TO NEXT                   BSI17860
1787 01757   0 04 00037       STA   SBP               BYTE IN NON-MATCHING NAME                  BSI17870
1788 01760   0 10 03047       JST   GCHR              GET NEXT CHARACTER OF IT                   BSI17880
1789 01761   100040           SZE                     END OF THE NAME ¢                          BSI17890
1790 01762   0 01 01760       JMP   *-2               NO...KEEP TRYING                           BSI17900
1791 01763   0 02 00056       LDA   IL11              RESTORE POINTER TO START OF NAME           BSI17910
1792 01764   0 13 00037       IMA   SBP               IN SOURCE STREAM                           BSI17920
1793 01765   0 04 00060       STA   IL13              SAVE POINTER TO NEXT NAME IN TARGET LIST   BSI17930
1794 01766   0 12 00000       IRS   0                 BUMP COUNT OF IDENTIFIERS SKIPPED          BSI17940
1795 01767   0 01 01740       JMP   IL20              STILL MORE TO CHECK                        BSI17950
1796 01770   0 10 03047       JST   GCHR              NOT A RESERVED NAME...STORE               BSI17960
1797 01771   0 01 01534       JMP   IL22              THE CHARACTER LITERALLY                    BSI17970
1798                    *                                                                       BSI17980
1799                    *     HERE WHEN RESERVED NAME IS RECOGNIZED                             BSI17990
1800                    *                                                                       BSI18000
1801 01772   0 02 00000 IL21  LDA   0                 GET LIST POSITION OF                       BSI18010
1802 01773   0 06 00441       ADD   C54               THE IDENTIFIER                             BSI18020
1803 01774   0 11 00375       CAS   REMF              IS IT START OF A REMARK ¢                  BSI18030
1804 01775   0 01 01534       JMP   IL22              NO...GO STORE THE IDENTIFIER CODE          BSI18040
1805 01776   100000           SKP                     YES...NO COMPRESSION UNTIL NEXT : OR C/R   BSI18050
1806 01777   0 01 01534       JMP   IL22              NO....GO STORE THE IDENTIFIER CODE         BSI18060
1807                    *                                                                       BSI18070
1808                    *     HERE TO RUN THROUGH A REMARK STATEMENT                            BSI18080
1809                    *                                                                       BSI18090
1810 02000   0 10 03133       JST   SCHR              STORE CHARACTER OF THE REMARK              BSI18100
1811 02001   0 10 03047       JST   GCHR              GET THE NEXT CHARACTER                     BSI18110
1812 02002   0 10 03173       JST   DLCK              END OF REMARK ¢                            BSI18120
1813 02003   0 01 02000       JMP   *-3               NO...CONTINUE SCAN                         BSI18130
1814 02004   0 01 01534       JMP   IL22              YES...REVERT TO NORMAL COMPRESSION         BSI18140
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1815                        *                                                    BSI18150
1816 02005   0 10 05243 IL08 JST   ERR            UNCLOSED TEXT STRING         BSI18160
1817 02006   152330          BCI   1,1X           X                            BSI18170
1818                        *                                                    BSI18180
1819                        *                                                    BSI18190
1820                        *                                                    BSI18200
1821                          EJCT                                               BSI18210
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1822                    *          RESERVED IDENTIFIER LIST                                    BSI18220
1823                    *                                                                      BSI18230
1824                    *                                                                      BSI18240
1825                    *          THE FOLLOWING LIST CONTAINS ALL RESERVED                    BSI18250
1826                    *     IDENTIFIERS PERMITTED IN BASIC-16.  WHEN THESE                   BSI18260
1827                    *     IDENTIFIERS ARE DETECTED IN THE SOURCE STREAM,                   BSI18270
1828                    *     THEY ARE REPLACED BY A SINGLE BYTE THAT CONTAINS                 BSI18280
1829                    *     THE POSITION IN THE TABLE OF THE PARTICULAR IDENTIFIER.          BSI18290
1830                    *     THE FOLLOWING TABLE GIVES THE SEQUENCE OF THE IDENTIFIERS        BSI18300
1831                    *     IN THE LIST:                                                     BSI18310
1832                    *                                                                      BSI18320
1833                    *          01. LET      12. RETURN   23. SIN      34. FN              BSI18330
1834                    *          02. READ     13. CALL     24. COS      35. TAB(            BSI18340
1835                    *          03. INPUT    14. REM      25. TAN      36. JOB             BSI18350
1836                    *          04. RESTORE  15. STOP     26. ATN      37. CLEAR           BSI18360
1837                    *          05. PRINT    16. END      27. EXP      38. RUN             BSI18370
1838                    *          06. GOTO     17. DATA     28. ABS      39. LIST            BSI18380
1839                    *          07. IF       18. DIM      29. LOG      40. CONTINUE        BSI18390
1840                    *          08. ON       19. DEF      30. SQR      41. QUIT            BSI18400
1841                    *          09. FOR      20. TO       31. INT      42. LOAD            BSI18410
1842                    *          10. NEXT     21. STEP     32. RND      43. PUNCH           BSI18420
1843                    *          11. GOSUB    22. THEN     33. SGN                          BSI18430
1844                    *                                                                      BSI18440
1845                    *                                                                      BSI18450
1846 02007  146305     IDNT HEX   CCC5          LE                                           BSI18460
1847 02010  152000          HEX   D400          T¢                                           BSI18470
1848 02011  151305          HEX   D2C5          RE                                           BSI18480
1849 02012  140704          HEX   C1C4          AD                                           BSI18490
1850 02013  000311          HEX   00C9          ¢I                                           BSI18500
1851 02014  147320          HEX   CED0          NP                                           BSI18510
1852 02015  152724          HEX   D5D4          UT                                           BSI18520
1853 02016  000322          HEX   00D2          ¢R                                           BSI18530
1854 02017  142723          HEX   C5D3          ES                                           BSI18540
1855 02020  152317          HEX   D4CF          TO                                           BSI18550
1856 02021  151305          HEX   D2C5          RE                                           BSI18560
1857 02022  000320          HEX   00D0          ¢P                                           BSI18570
1858 02023  151311          HEX   D2C9          RI                                           BSI18580
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1859 02024  147324          HEX   CED4          NT                    BSI18590
1860 02025  000307          HEX   00C7          ¢G                    BSI18600
1861 02026  147724          HEX   CFD4          OT                    BSI18610
1862 02027  147400          HEX   CF00          O¢                    BSI18620
1863 02030  144706          HEX   C9C6          IF                    BSI18630
1864 02031  000317          HEX   00CF          ¢O                    BSI18640
1865 02032  147000          HEX   CE00          N¢                    BSI18650
1866 02033  143317          HEX   C6CF          FO                    BSI18660
1867 02034  151000          HEX   D200          R¢                    BSI18670
1868 02035  147305          HEX   CEC5          NE                    BSI18680
1869 02036  154324          HEX   D8D4          XT                    BSI18690
1870 02037  000307          HEX   00C7          ¢G                    BSI18700
1871 02040  147723          HEX   CFD3          OS                    BSI18710
1872 02041  152702          HEX   D5C2          UB                    BSI18720
1873 02042  000322          HEX   00D2          ¢R                    BSI18730
1874 02043  142724          HEX   C5D4          ET                    BSI18740
1875 02044  152722          HEX   D5D2          UR                    BSI18750
1876 02045  147000          HEX   CE00          N¢                    BSI18760
1877 02046  141701          HEX   C3C1          CA                    BSI18770
1878 02047  146314          HEX   CCCC          LL                    BSI18780
1879 02050  000322          HEX   00D2          ¢R                    BSI18790
1880 02051  142715          HEX   C5CD          EM                    BSI18800
1881 02052  000323          HEX   00D3          ¢S                    BSI18810
1882 02053  152317          HEX   D4CF          TO                    BSI18820
1883 02054  150000          HEX   D000          P¢                    BSI18830
1884 02055  142716          HEX   C5CE          EN                    BSI18840
1885 02056  142000          HEX   C400          D¢                    BSI18850
1886 02057  142301          HEX   C4C1          DA                    BSI18860
1887 02060  152301          HEX   D4C1          TA                    BSI18870
1888 02061  000304          HEX   00C4          ¢D                    BSI18880
1889 02062  144715          HEX   C9CD          IM                    BSI18890
1890 02063  000304          HEX   00C4          ¢D                    BSI18900
1891 02064  142706          HEX   C5C6          EF                    BSI18910
1892 02065  000324          HEX   00D4          ¢T                    BSI18920
1893 02066  147400          HEX   CF00          O¢                    BSI18930
1894 02067  151724          HEX   D3D4          ST                    BSI18940
1895 02070  142720          HEX   C5D0          EP                    BSI18950
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1896 02071   000324          HEX   00D4          CT                    BSI18960
1897 02072   144305          HEX   C8C5          HE                    BSI18970
1898 02073   147000          HEX   CE00          NC                    BSI18980
1899 02074   151711          HEX   D3C9          SI                    BSI18990
1900 02075   147000          HEX   CE00          NC                    BSI19000
1901 02076   141717          HEX   C3CF          CO                    BSI19010
1902 02077   151400          HEX   D300          SC                    BSI19020
1903 02100   152301          HEX   D4C1          TA                    BSI19030
1904 02101   147000          HEX   CE00          NC                    BSI19040
1905 02102   140724          HEX   C1D4          AT                    BSI19050
1906 02103   147000          HEX   CE00          NC                    BSI19060
1907 02104   142730          HEX   C5D8          EX                    BSI19070
1908 02105   150000          HEX   D000          PC                    BSI19080
1909 02106   140702          HEX   C1C2          AB                    BSI19090
1910 02107   151400          HEX   D300          SC                    BSI19100
1911 02110   146317          HEX   CCCF          LO                    BSI19110
1912 02111   143400          HEX   C700          GC                    BSI19120
1913 02112   151721          HEX   D3D1          SQ                    BSI19130
1914 02113   151000          HEX   D200          RC                    BSI19140
1915 02114   144716          HEX   C9CE          IN                    BSI19150
1916 02115   152000          HEX   D400          TC                    BSI19160
1917 02116   151316          HEX   D2CE          RN                    BSI19170
1918 02117   142000          HEX   C400          DC                    BSI19180
1919 02120   151707          HEX   D3C7          SG                    BSI19190
1920 02121   147000          HEX   CE00          NC                    BSI19200
1921 02122   143316          HEX   C6CE          FN                    BSI19210
1922 02123   000324          HEX   00D4          CT                    BSI19220
1923 02124   140702          HEX   C1C2          AB                    BSI19230
1924 02125   124000          HEX   A800          (C                    BSI19240
1925 02126   145317          HEX   CACF          JO                    BSI19250
1926 02127   141000          HEX   C200          BC                    BSI19260
1927 02130   141714          HEX   C3CC          CL                    BSI19270
1928 02131   142701          HEX   C5C1          EA                    BSI19280
1929 02132   151000          HEX   D200          RC                    BSI19290
1930 02133   151325          HEX   D2D5          RU                    BSI19300
1931 02134   147000          HEX   CE00          NC                    BSI19310
1932 02135   146311          HEX   CCC9          LI                    BSI19320
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1933 02136 151724          HEX   D3D4          ST                    BSI19330
1934 02137 000303          HEX   00C3          CC                    BSI19340
1935 02140 147716          HEX   CFCE          ON                    BSI19350
1936 02141 152311          HEX   D4C9          TI                    BSI19360
1937 02142 147325          HEX   CED5          NU                    BSI19370
1938 02143 142400          HEX   C500          E                     BSI19380
1939 02144 150725          HEX   D1D5          QU                    BSI19390
1940 02145 144724          HEX   C9D4          IT                    BSI19400
1941 02146 000314          HEX   00CC          CL                    BSI19410
1942 02147 147701          HEX   CFC1          OA                    BSI19420
1943 02150 142000          HEX   C400          D                     BSI19430
1944 02151 150325          HEX   D0D5          PU                    BSI19440
1945 02152 147303          HEX   CEC3          NC                    BSI19450
1946 02153 144000          HEX   C800          H                     BSI19460
1947                  *                                              BSI19470
1948                  *                                              BSI19480
1949                        EJCT                                     BSI19490
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1950                    *          FLOATING POINT OUTPUT EDITOR                                    BSI19500
1951                    *                                                                          BSI19510
1952                    *                                                                          BSI19520
1953                    *     CALLING SEQUENCE:                                                    BSI19530
1954                    *                                                                          BSI19540
1955                    *          LDA    CHAR          SURPRESSION CHARACTER...SEE BELOW         BSI19550
1956                    *          JST    PCVL                                                    BSI19560
1957                    *          ......RETURN                                                   BSI19570
1958                    *                                                                          BSI19580
1959                    *          THE FLOATING POINT VALUE CONTAINED IN THE ACCUMULATOR           BSI19590
1960                    *     CVAL IS PRINTED IN THE FOLLOWING FORMAT:                             BSI19600
1961                    *                                                                          BSI19610
1962                    *          1)  IF CVAL = 0 OR .1<=ABS(CVAL)<10000                          BSI19620
1963                    *                                                                          BSI19630
1964                    *                   SXXXX.XXXXXX                                           BSI19640
1965                    *                                                                          BSI19650
1966                    *          2)  IF NOT IN ABOVE RANGE                                       BSI19660
1967                    *                                                                          BSI19670
1968                    *                   S.XXXXXXESYY                                           BSI19680
1969                    *                                                                          BSI19690
1970                    *     LEADING AND TRAILING ZEROS ARE REPLACED WITH SPACES.  THE            BSI19700
1971                    *     SIGN IS FLOATED RIGHT TO THE LEFT OF THE FIRST SIGNIFICANT           BSI19710
1972                    *     DIGIT OR THE DECIMAL POINT, WHICHEVER OCCURS FIRST.  IF IN           BSI19720
1973                    *     FORMAT 1 AND THE FRACTIONAL PART IS ZERO, THE DECIMAL                BSI19730
1974                    *     POINT WILL BE REPLACED WITH                                          BSI19740
1975                    *     A SPACE.  IF IN FORMAT 2, THE EXPONENT FIELD WILL BE                 BSI19750
1976                    *     FLOATED LEFT TO THE RIGHT OF THE LAST NONZERO DIGIT.  THE            BSI19760
1977                    *     SIGN WILL BE PRINTED AS ' ' IS CVAL > 0, OR '-' IF CVAL < 0.         BSI19770
1978                    *     WHEN PRINTING, EACH CHARACTER TO BE OUTPUT WILL BE COMPARED          BSI19780
1979                    *     WITH THE INITIAL A REGISTER CONTENTS.  IF THEY MATCH, THE            BSI19790
1980                    *     CHARACTER WILL NOT BE PRINTED.  THIS WILL NORMALLY BE USED           BSI19800
1981                    *     TO SURPRESS SPACES FOR A PACKED LISTING.                             BSI19810
1982                    *                                                                          BSI19820
1983                    *                                                                          BSI19830
1984                    *                                                                          BSI19840
1985 02154   0 000000   PCVL DAC    **                                                           BSI19850
1986 02155   0 04 00341      STA    INHC              SAVE THE SURPRESSION CHARACTER               BSI19860
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1987 02156   0 35 00467     LDX   M21          FILL THE WORK                                  BSI19870
1988 02157   0 02 00420     LDA   C260         AREA WITH ASCII                                BSI19880
1989 02160   1 04 00252     STA   WORK+'21,1   ZEROS ('261)                                   BSI19890
1990 02161   0 12 00000     IRS   0            X                                              BSI19900
1991 02162   0 01 02160     JMP   *-2          X                                              BSI19910
1992 02163   0 04 00340     STA   ECTR         INITIALIZE CNTR FOR EXP CONVERSION             BSI19920
1993 02164   140040         CRA                CLEAR EXPONENT STORAGE IN                      BSI19930
1994 02165   0 04 00337     STA   EXP          CASE CVAL=0                                    BSI19940
1995 02166   0 10 03203     JST   LCVL         GET VALUE TO BE PRINTED                        BSI19950
1996 02167   0 04 00336     STA   SIGN         SAVE ORIGINAL SIGN                             BSI19960
1997 02170   100400         SPL                GET ABSOULUTE VALUE OF IT                      BSI19970
1998 02171   0 10 00000     JST   N$22          X                                              BSI19980
1999 02172   101040         SNZ                IF VALUE IS ZERO,                              BSI19990
2000 02173   0 01 02253     JMP   ED01         DO NOT GO THROUGH BREAKDOWN LOOP               BSI20000
2001 02174   0 10 03207     JST   SCVL         SAVE THE VALUE                                 BSI20010
2002 02175   0 02 00472     LDA   M6           SET UP LOOP TO EXTRACT                         BSI20020
2003 02176   0 04 00076     STA   TMP1         SIX DIGITS                                     BSI20030
2004 02177   0 02 00513     LDA   WKD7         POINTER TO 7TH WORD OF WORK AREA               BSI20040
2005 02200   0 04 00077     STA   TMP2         SIX ASCII DIGITS TO WORK(6-11.                 BSI20050
2006 02201   0 10 00000     JST   LOGF         GET LOG BASE 10 OF VALUE                       BSI20060
2007 02202   0 000041       DAC   CVAL         FOR EXPONENT                                   BSI20070
2008 02203   0 10 00000     JST   D$22          X                                              BSI20080
2009 02204   0 000457       DAC   LE10         =LN(10)                                        BSI20090
2010 02205   0 10 00000     JST   IFLT         INTERGERIZE BASE 10 EXPONENT                   BSI20100
2011 02206   000000         OCT   0            OVERFLOW IS IMPOSSIBLE                         BSI20110
2012 02207   141206         AOA                ADJUST IT SO THINGS COME OUT RIGHT             BSI20120
2013 02210   0 04 00337     STA   EXP          AND SAVE IT.                                   BSI20130
2014 02211   0 07 00371     SUB   C1           RESTORE TO UNADJUSTED VALUE                    BSI20140
2015 02212   0 10 00000     JST   FINT         FLOAT IT                                       BSI20150
2016 02213   0 10 00000     JST   H$22          USE IT TO REDUCE CVAL                          BSI20160
2017 02214   0 000043       DAC   LVAL         TO RANGE OF 1 TO 10 BY                         BSI20170
2018 02215   0 10 00000     JST   L$22          CVAL=CVAL/10.**A, WHERE                        BSI20180
2019 02216   0 000446       DAC   F10          A IS INT(ALOG10(CVAL))                         BSI20190
2020 02217   0 10 00000     JST   E$22          X                                              BSI20200
2021 02220   0 000043       DAC   LVAL         X                                              BSI20210
2022 02221   0 10 00000     JST   H$22          X                                              BSI20220
2023 02222   0 000043       DAC   LVAL         X                                              BSI20230
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2024 02223   0 10 03203       JST   LCVL      X                                                    BSI20240
2025 02224   0 10 00000       JST   D$22      X                                                    BSI20250
2026 02225   0 000043         DAC   LVAL      X                                                    BSI20260
2027 02226   0 10 00000       JST   A$22      ADD IN .000005 TO ROUND UP                           BSI20270
2028 02227   0 000474         DAC   ROND      X                                                    BSI20280
2029 02230   0 10 03207 ED02  JST   SCVL      SAVE WORKING VALUE                                   BSI20290
2030 02231   0 10 00000       JST   IFLT      EXTRACT INTEGER PART                                 BSI20300
2031 02232   000000           OCT   0         OVERFLOW IS IMPOSSIBLE                               BSI20310
2032 02233   0 04 00100       STA   TMP3      SAVE FOR LATER REFERENCE                             BSI20320
2033 02234   0 11 00373       CAS   C11       SEE IF WE ROUNDED FROM 9.999... TO 10                BSI20330
2034 02235   0 01 02420       JMP   ED10      YES...SPECIAL ACTION REQUIRED                        BSI20340
2035 02236   101000           NOP             NO PROBLEM                                           BSI20350
2036 02237   0 06 00420 ED11  ADD   C260      CONVERT TO ASCII                                     BSI20360
2037 02240  -0 04 00077       STA*  TMP2      PLACE DIGIT IN WORK AREA                             BSI20370
2038 02241   0 02 00100       LDA   TMP3      RETRIEVE CURRENT DIGIT                               BSI20380
2039 02242   0 10 00000       JST   FINT      FLOAT IT                                             BSI20390
2040 02243   0 10 00000       JST   S$22      EXTRACT IT FROM CVAL                                 BSI20400
2041 02244   0 000041         DAC   CVAL      X                                                    BSI20410
2042 02245   0 10 00000       JST   N$22      X                                                    BSI20420
2043 02246   0 10 00000       JST   M$22      POSITION NEXT DIGIT                                  BSI20430
2044 02247   0 000446         DAC   F10       X                                                    BSI20440
2045 02250   0 12 00077       IRS   TMP2      BUMP POINTER TO WORK AREA                            BSI20450
2046 02251   0 12 00076       IRS   TMP1      BUMP ITERATION COUNTER                               BSI20460
2047 02252   0 01 02230       JMP   ED02      CONTINUE EXTRACTION                                  BSI20470
2048                  *                                                                           BSI20480
2049 02253   0 10 02425 ED01  JST   FRNG      SEE IF IT WILL FIT IN F FORMAT                       BSI20490
2050 02254   0 01 02266       JMP   ED03      NO                                                   BSI20500
2051 02255   140407           TCA             GET NO. OF PLACES TO SHIFT THE DIGIT FIELD           BSI20510
2052 02256   0 06 00513       ADD   WKD7      THIS GIVES DESTINATION ADDRESS                       BSI20520
2053 02257   0 04 00076       STA   TMP1      SAVE IT                                              BSI20530
2054 02260   0 35 00465       LDX   M12       MOVE 10 DIGITS LEFT EXP POSITIONS                    BSI20540
2055 02261   1 02 00251       LDA   WORK+*20,1  SHIFT A DIGIT                                      BSI20550
2056 02262  -0 04 00076       STA*  TMP1      X                                                    BSI20560
2057 02263   0 12 00076       IRS   TMP1      BUMP THE DESTINATION POINTER                         BSI20570
2058 02264   0 12 00000       IRS   0         BUMP THE SOURCE POINTER                              BSI20580
2059 02265   0 01 02261       JMP   *-4       GO MOVE NEXT DIGIT                                   BSI20590
2060 02266   0 35 00470 ED03  LDX   M5        MAKE ROOM FOR THE DECIMAL POINT                      BSI20600
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2061 02267   1 02 00237       LDA   WORK+6,1      BY MOVING WORK(1-5) TO                BSI20610
2062 02270   1 04 00236       STA   WORK+5,1      WORK(0-4)                             BSI20620
2063 02271   0 12 00000       IRS   0             BUMP THE COUNTER                      BSI20630
2064 02272   0 01 02267       JMP   *-3           MORE TO MOVE                          BSI20640
2065 02273   0 02 00416       LDA   C256          INSERT THE DECIMAL POINT              BSI20650
2066 02274   0 04 00236       STA   WORK+5        X                                     BSI20660
2067 02275   0 35 00470       LDX   M5            ZERO SURPRESS FROM LEFT               BSI20670
2068 02276   1 02 00236 ED05  LDA   WORK+5,1      PICK UP DIGIT FROM ARRAY              BSI20680
2069 02277   0 05 00420       ERA   C260          TEST FOR '0'                          BSI20690
2070 02300   100040           SZE                 X                                     BSI20700
2071 02301   0 01 02306       JMP   ED04          FOUND 1ST NON '0' CHAR                BSI20710
2072 02302   0 02 00405       LDA   C240          REPLACE LEADING ZERO                  BSI20720
2073 02303   1 04 00236       STA   WORK+5,1      WITH A SPACE                          BSI20730
2074 02304   0 12 00000       IRS   0             SEE IF WE'RE DONE                     BSI20740
2075 02305   0 01 02276       JMP   ED05          NO...CONTINUE SCAN                    BSI20750
2076 02306   0 02 00336 ED04  LDA   SIGN          INSET SIGN IN THE ARRAY               BSI20760
2077 02307   0 10 02435       JST   SGN           X                                     BSI20770
2078 02310   1 04 00235       STA   WORK+4,1      X                                     BSI20780
2079 02311   0 35 00377       LDX   C20           START TRAILING ZERO SURPRESSION       BSI20790
2080 02312   1 02 00231 ED07  LDA   WORK,1        PICK UP DIGIT FROM HIGH END OF ARRAY  BSI20800
2081 02313   0 05 00420       ERA   C260          TEST FOR '0'                          BSI20810
2082 02314   100040           SZE                 X                                     BSI20820
2083 02315   0 01 02324       JMP   ED06          FOUND LAST NONZERO CHAR               BSI20830
2084 02316   0 02 00405       LDA   C240          REPLACE TRAILING ZERO WITH A          BSI20840
2085 02317   1 04 00231       STA   WORK,1        SPACE                                 BSI20850
2086 02320   0 02 00000       LDA   0             STEP BACK ONE CHARACTER               BSI20860
2087 02321   0 07 00371       SUB   C1            X                                     BSI20870
2088 02322   0 04 00000       STA   0             X                                     BSI20880
2089 02323   0 01 02312       JMP   ED07          GO LOOK AT NEXT CHARACTER             BSI20890
2090 02324   1 02 00231 ED06  LDA   WORK,1        SEE IF EVERYTHING PAST                BSI20900
2091 02325   0 05 00416       ERA   C256          THE DECIMAL POINT HAS                 BSI20910
2092 02326   100040           SZE                 BEEN SURPRESSED                       BSI20920
2093 02327   0 01 02332       JMP   *+3           NO                                    BSI20930
2094 02330   0 02 00405       LDA   C240          YES...SURPRESS THE DECIMAL            BSI20940
2095 02331   1 04 00231       STA   WORK,1        POINT ALSO                            BSI20950
2096 02332   1 02 00230       LDA   WORK-1,1      TEST FOR ALL BLANK BUFFER (VALUE ZERO) BSI20960
2097 02333   0 11 00405       CAS   C240          X                                     BSI20970
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2098 02334  100000          SKP                NO                                  BSI20980
2099 02335  0 02 00420       LDA   C260        YES...LEAVE ONE ZERO                BSI20990
2100 02336  1 04 00230       STA   WORK-1,1    REPLACE THE CHARACTER               BSI21000
2101 02337  0 10 02425       JST   FRNG        IS 'E' PROCESSING REQUIRED ¢        BSI21010
2102 02340  100000          SKP                YES                                 BSI21020
2103 02341  0 01 02367       JMP   ED08        NO...SKIP THIS                      BSI21030
2104 02342  0 10 02435       JST   SGN         GET SIGN OF EXPONENT                BSI21040
2105 02343  1 04 00233       STA   WORK+2,1    X                                   BSI21050
2106 02344  0 02 00430       LDA   C305        PUT IN 'E'                          BSI21060
2107 02345  1 04 00232       STA   WORK+1,1    X                                   BSI21070
2108 02346  0 02 00337       LDA   EXP         CONVERT EXPONENT TO ASCII           BSI21080
2109 02347  100400          SPL                MAKE SURE IT'S PLUS FIRST           BSI21090
2110 02350  140407          TCA                X                                   BSI21100
2111 02351  0 07 00374       SUB   C12         DIVIDE BY 10                        BSI21110
2112 02352  100400          SPL                X                                   BSI21120
2113 02353  0 01 02356       JMP   *+3          X                                   BSI21130
2114 02354  0 12 00340       IRS   ECTR        X                                   BSI21140
2115 02355  0 01 02351       JMP   *-4          X                                   BSI21150
2116 02356  0 06 00422       ADD   C272        REMAINDER IS 2ND DIGIT              BSI21160
2117 02357  1 04 00235       STA   WORK+4,1    OF EXPONENT                         BSI21170
2118 02360  0 02 00340       LDA   ECTR        PUT IN FIRST DIGIT                  BSI21180
2119 02361  1 04 00234       STA   WORK+3,1    X                                   BSI21190
2120 02362  0 02 00000       LDA   0           MAKE INDEX POINT TO                 BSI21200
2121 02363  0 06 00435       ADD   C4          END OF EXPONENT                     BSI21210
2122 02364  0 04 00000       STA   0           X                                   BSI21220
2123 02365  0 02 00435       LDA   C4          START PRINTING AT 5TH CHAR OF WORK  BSI21230
2124 02366  100000          SKP                BUFFER                              BSI21240
2125 02367  140040    ED08  CRA                1ST CHAR OF WORK FOR F FORMAT       BSI21250
2126 02370  0 06 00512       ADD   WRKD        GET POINTER TO 1ST PRINTING CHAR    BSI21260
2127 02371  0 12 00000       IRS   0           X POINTS TO LAST CHAR TO PRINT      BSI21270
2128 02372  0 04 00337 ED09  STA   EXP         SAVE POINTER TO FIRST CHARACTER     BSI21280
2129 02373  0 02 00000       LDA   0           CALCULATE ADDRESS OF LAST CHARACTER BSI21290
2130 02374  0 06 00512       ADD   WRKD        X                                   BSI21300
2131 02375  0 04 00340       STA   ECTR        SAVE IT                             BSI21310
2132 02376  0 07 00337       SUB   EXP         CALCULATE NUMBER OF CHARACTERS IN STRING BSI21320
2133 02377  141206          AOA                X                                   BSI21330
2134 02400  0 06 00045       ADD   CPOS        CHECK FOR LINE FIT                  BSI21340
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2135 02401   0 11 00473       CAS   MCOL     X                                                    BSI21350
2136 02402   0 10 00000       JST   LFCR     NO...ADVANCE ASR TO NEXT LINE                        BSI21360
2137 02403   101000           NOP            IT WILL FIT                                          BSI21370
2138 02404  -0 02 00337 ED12 LDA*  EXP      GET NEXT CHARACTER TO BE PRINTED                     BSI21380
2139 02405   0 11 00341       CAS   INHC     SEE IF IT'S SURPRESSED                               BSI21390
2140 02406   100000           SKP            NO                                                   BSI21400
2141 02407   100000           SKP            YES                                                  BSI21410
2142 02410   0 10 00000       JST   OTA1     NO...PRINT IT                                        BSI21420
2143 02411   0 02 00337       LDA   EXP      ADVANCE THE CHARACTER POINTER                        BSI21430
2144 02412   141206           AOA            X                                                    BSI21440
2145 02413   0 04 00337       STA   EXP      SAVE ADDRESS OF NEXT CHARACTER                       BSI21450
2146 02414   0 11 00340       CAS   ECTR     TEST FOR COMPLETION                                  BSI21460
2147 02415  -0 01 02154       JMP*  PCVL     YES...EXIT                                           BSI21470
2148 02416   0 01 02404       JMP   ED12     NO....LOOP BACK                                      BSI21480
2149 02417   0 01 02404       JMP   ED12     NO....LOOP BACK                                      BSI21490
2150                    *                                                                        BSI21500
2151 02420   0 02 00421 ED10 LDA   C261     INSERT '10' IN WORK ARRAY                            BSI21510
2152 02421  -0 04 00077       STA*  TMP2     X                                                    BSI21520
2153 02422   0 12 00337       IRS   EXP      BUMP EXPONENT TO ACCOUNT FOR EXTRA DIGIT             BSI21530
2154 02423   101000           NOP            NOP IN CASE EXP GOES TO ZERO                         BSI21540
2155 02424   0 01 02253       JMP   ED01     EXTRACTION COMPLETE, NOW FORMAT THE RESULT           BSI21550
2156                    *                                                                        BSI21560
2157                    *                                                                        BSI21570
2158 02425   0 000000   FRNG DAC   **       TEST FOR F FORMAT                                    BSI21580
2159 02426   0 02 00337       LDA   EXP      GET EXPONENT                                         BSI21590
2160 02427   0 11 00462       CAS   M1       EXPONENTS IN RANGE 0-4                               BSI21600
2161 02430   0 11 00437       CAS   C5       ARE PRINTED IN F FORMAT                              BSI21610
2162 02431  -0 01 02425       JMP*  FRNG     E FORMAT                                             BSI21620
2163 02432  -0 01 02425       JMP*  FRNG     E FORMAT                                             BSI21630
2164 02433   0 12 02425       IRS   FRNG     F FORMAT                                             BSI21640
2165 02434  -0 01 02425       JMP*  FRNG     X                                                    BSI21650
2166                    *                                                                        BSI21660
2167                    *                                                                        BSI21670
2168 02435   0 000000   SGN  DAC   **       GET SIGN CHARACTER                                   BSI21680
2169 02436   140320           CSA            SET C IF NO. IS MINUS                                BSI21690
2170 02437   0 02 00405       LDA   C240     SPACE FOR PLUS                                       BSI21700
2171 02440   100001           SRC            TEST SIGN                                            BSI21710
```

```
2172 02441   0 02 00415      LDA   C255          '-' FOR NEGITIVE                BsI21720
2173 02442  -0 01 02435      JMP*  SGN           RETURN                          BsI21730
2174                    *                                                       BsI21740
2175                    *                                                       BsI21750
2176                    *                                                       BsI21760
2177                    *                                                       BsI21770
2178                         EJCT                                               BsI21780
```

```
*          EXPRESSION ANALYZER                                              BSI21790
*                                                                           BSI21800
*                                                                           BSI21810
*    CALLING SEQUENCE:                                                      BSI21820
*                                                                           BSI21830
*          LDA    PTRG         A CONTAINS PRECEDENCE TRIGGER...SEE BELOW    BSI21840
*          JST    EXPA                                                      BSI21850
*          ......RETURN        RESULT IN CVAL                               BSI21860
*                                                                           BSI21870
*          THIS ROUTINE WILL EVALUATE THE EXPRESSION IN THE                 BSI21880
*    SOURCE STREAM UNTIL AN OPERATOR OF THE SAME                            BSI21890
*    OR LOWER PRECEDENCE LEVEL AS INDICATED BY THE                          BSI21900
*    INITIAL A REGISTER CONTENTS IS ENCOUNTERED.                            BSI21910
*    THE FOLLOWING ARE THE DEFINED PRECEDENCE LEVELS:                       BSI21920
*          0 - DELIMITERS            <EXPRESSION>                           BSI21930
*          1 - +,-                   <MULTIPLY FACTOR>                      BSI21940
*          2 - *,/                   <INVOLUTION FACTOR>                    BSI21950
*          3 - ¢                     <TERM>                                 BSI21960
*    TO EVALUATE A COMPLETE EXPRESSION, THE INITIAL                         BSI21970
*    A REGISTER VALUE WOULD BE 0.  THE OTHER POSSIBLE                       BSI21980
*    VALUES ARE USED PRIMARILY IN RECURSIVE CALLS TO                        BSI21990
*    THIS ROUTINE MADE WITHIN IT.  THE RESLUT OF THE                        BSI22000
*    EXPRESSION IS LEFT IN THE FLOATING POINT ACCUMULTOR,                   BSI22010
*    CVAL.  THE PREVIOUS CONTENTS OF CVAL ARE LEFT                          BSI22020
*    IN LVAL AND THE A + B REGISTERS ON RETURN.                             BSI22030
*                                                                           BSI22040
*                                                                           BSI22050
*    EXPRESSION SYNTAX:                                                     BSI22060
*                                                                           BSI22070
*          <EXPRESSION>:=<MULTIPLY FACTOR>¢<SIGN><EXPRESSION>¢              BSI22080
*                        <EXPRESSION>@+¢-%<INVOLUTION FACTOR>               BSI22090
*                                                                           BSI22100
*          <MULTIPLY FACTOR>:=<INVOLUTION FACTOR>¢<MULTIPLY FACTOR>         BSI22110
*                             @*¢/%<INVOLUTION FACTOR>                      BSI22120
*                                                                           BSI22130
*          <INVOLUTION FACTOR>:=<TERM>¢<INVOLUTION FACTOR>@¢%<TERM>         BSI22140
*                                                                           BSI22150
```

```
2216                    *          <TERM>:=<NUMBER>¢<VARIABLE>¢<FUNCTION TERM>¢(<EXPRESSION>)    BSI22160
2217                    *                                                                         BSI22170
2218                    *          <FUNCTION TERM>:=<FUNCTION NAME>(<EXPRESSION>)                 BSI22180
2219                    *                                                                         BSI22190
2220                    *          <FUNCTION NAME>:=SIN¢COS¢TAN¢ATN¢EXP¢ABS¢LOG¢SQR¢INT¢RND¢      BSI22200
2221                    *                          SGN¢FN<ALPHABETIC CHARACTER>                   BSI22210
2222                    *                                                                         BSI22220
2223                    *          <VARIABLE>:=<SIMPLE VARIABLE>¢<SUBSCRIPTED VARIABLE>           BSI22230
2224                    *                                                                         BSI22240
2225                    *                                                                         BSI22250
2226                    *                                                                         BSI22260
2227                    *                                                                         BSI22270
2228 02443  0 000000  EXPA DAC  **                                                                BSI22280
2229 02444  0 13 00055      IMA  LOP          SET NEW OPERATOR PRECEDENCE TRIGGER                  BSI22290
2230 02445  0 10 03022      JST  PUSH         PUT OLD VALUE ON STACK                               BSI22300
2231 02446  0 02 02443      LDA  EXPA         SAVE RETURN ADDRESS IN CASE                          BSI22310
2232 02447  0 10 03022      JST  PUSH         WE'RE RE-ENTERED                                     BSI22320
2233 02450  0 02 00041      LDA  CVAL         PUT THE VALUE OF THE                                 BSI22330
2234 02451  0 10 03022      JST  PUSH         TERM ON                                              BSI22340
2235 02452  0 02 00042      LDA  CVAL+1       THE STACK                                            BSI22350
2236 02453  0 10 03022      JST  PUSH         X                                                    BSI22360
2237 02454  0 35 00466      LDX  M2           SET TRIGGER FOR UNARY MINUS PROCESSING               BSI22370
2238 02455  0 10 03047 EX06 JST  GCHR         LOOK AT NEXT SOURCE CHARACTER                        BSI22380
2239 02456  0 11 00413      CAS  C253         TEST FOR UNARY PLUS                                  BSI22390
2240 02457  100000         SKP               NO                                                   BSI22400
2241 02460  0 01 02455      JMP  EX06         YES ... IGNORE IT                                    BSI22410
2242 02461  0 11 00415      CAS  C255         IS IT '-' ?                                          BSI22420
2243 02462  100000         SKP               NO                                                   BSI22430
2244 02463  0 01 02477      JMP  EX01         YES...AT THIS POINT, IT MUST BE UNARY                BSI22440
2245 02464  0 12 00000      IRS  0            HAS A UNARY MINUS BEEN DETECTED ?                    BSI22450
2246 02465  0 01 02512      JMP  EX04         NO...GO CONTINUE ITEM DISCRIMINATION                 BSI22460
2247 02466  0 02 00055      LDA  LOP          UNARY MINUS ONLY LEGAL WHEN                          BSI22470
2248 02467  100040         SZE               LOP IS EQUAL TO ZERO                                 BSI22480
2249 02470  0 10 05243 EX07 JST  ERR          ERROR...ILLEGAL UNARY MINUS                          BSI22490
2250 02471  152715         BCI  1,UM         (THIS WILL EXECUTE AS AN ERA)                        BSI22500
2251 02472  0 10 00000      JST  L$22         FORCE A '-1.0*' INTO SOURCE                          BSI22510
2252 02473  0 000452       DAC  FM1          X                                                    BSI22520
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2253 02474   0 10 03207        JST   SCVL    X                                    BSI22530
2254 02475   0 10 03065        JST   UCHR    PROCESS CURRENT CHARACTER LATER      BSI22540
2255 02476   0 01 02642        JMP   EX05    GO WORK ON '*' THAT WE FORCED        BSI22550
2256                  *                                                           BSI22560
2257 02477   0 12 00000 EX01   IRS   0       BUMP THE MINUS COUNT                 BSI22570
2258 02500   0 01 02455        JMP   EX06    OK...THIS IS THE FIRST               BSI22580
2259 02501   0 01 02470        JMP   EX07    TWO IN A ROW...ERROR                 BSI22590
2260                  *                                                           BSI22600
2261 02502   0 10 03077 EX02   JST   GCPK    FORM THE INTEGER                     BSI22610
2262 02503   0 10 00000        JST   FINT    FLOAT IT                             BSI22620
2263 02504   0 01 02546        JMP   EX22    GO SAVE VALUE AND WORK ON OPERATOR   BSI22630
2264                  *                                                           BSI22640
2265 02505   0 10 03077 EX03   JST   GCPK    HIGH WORD OF REAL TO A               BSI22650
2266 02506   000201            IAB           SAVE IT IN B                         BSI22660
2267 02507   0 10 03077        JST   GCPK    GET LOW ORDER WORD                   BSI22670
2268 02510   000201            IAB           PUT IT IN NORMAL FORM                BSI22680
2269 02511   0 01 02546        JMP   EX22    GO SAVE VALUE AND WORK ON OPERATOR   BSI22690
2270                  *                                                           BSI22700
2271 02512   0 11 00455 EX04   CAS   INIF    TEST FOR INTEGER CONSTANT            BSI22710
2272 02513   100000            SKP           NO                                   BSI22720
2273 02514   0 01 02502        JMP   EX02    YES...GO FORM IT                     BSI22730
2274 02515   0 11 00456        CAS   RELF    TEST FOR FLOATING POINT CONSTANT     BSI22740
2275 02516   100000            SKP           NO                                   BSI22750
2276 02517   0 01 02505        JMP   EX03    YES...GO FORM IT                     BSI22760
2277 02520   0 11 00410        CAS   C250    TEST FOR PARENTHETICAL TERM          BSI22770
2278 02521   100000            SKP           NO                                   BSI22780
2279 02522   0 01 02603        JMP   EX10    YES...GO EVALUATE IT                 BSI22790
2280 02523   0 11 00510        CAS   SYSL    TEST FOR SYSTEM FUNCTION             BSI22800
2281 02524   0 11 00511        CAS   SYSH    ( SUCH AS SIN, COS, ECT.)            BSI22810
2282 02525   0 01 02530        JMP   *+3     NO                                   BSI22820
2283 02526   100000            SKP           NO                                   BSI22830
2284 02527   0 01 02610        JMP   EX11    YES...GO PROCESS IT                  BSI22840
2285 02530   0 11 00507        CAS   DEFF    TEST FOR CALL TO DEFINED FUNCTION    BSI22850
2286 02531   100000            SKP           NO                                   BSI22860
2287 02532   0 01 02671        JMP   EX30    YES...GO EVALUATE IT                 BSI22870
2288 02533   0 10 03065        JST   UCHR    IT MUST BE A VARIABLE                BSI22880
2289 02534   0 10 04632        JST   PVN     PROCESS THE VARIABLE NAME            BSI22890
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2290 02535   0 01 02542       JMP   EX13              GO LOCATE SUBSCRIPTED VARIABLE                BSI22900
2291 02536   0 10 04721       JST   LSV               LOOK UP NAME IN SIMPLE VARIABLE TABLE         BSI22910
2292 02537   0 10 05243 EX15  JST   ERR               ERROR...USED BEFORE ASSIGNED                  BSI22920
2293 02540   152726           BCI   1,UV              (THIS EXECUTES AS AN ERA)                     BSI22930
2294 02541   0 01 02544       JMP   EX14              HAVE ADDRESS OF VALUE IN X...GO GET IT        BSI22940
2295 02542   0 10 05135 EX13  JST   LDV               PROCESS SUBSCRIPT AND GET ADDR OF VALUE       BSI22950
2296 02543   0 01 02537       JMP   EX15              ERROR...USED BEFORE ASSIGNED                  BSI22960
2297 02544   0 10 00000 EX14  JST   L$22              GET VALUE OF VARIABLE                         BSI22970
2298 02545  -0 000000         DAC*  0                 X CONTAINS THE ADDRESS                        BSI22980
2299 02546   0 10 03207 EX22  JST   SCVL              LEAVE VALUE IN CVAL                           BSI22990
2300                 *                                                                             BSI23000
2301                 *     HERE TO LOOK FOR AN OPERATOR                                            BSI23010
2302                 *                                                                             BSI23020
2303 02547   0 10 03047 EX09  JST   GCHR              GET NEXT CHAR (IT MUST BE AN OPERATOR)        BSI23030
2304 02550   0 11 00413       CAS   C253              TEST FOR '+'                                  BSI23040
2305 02551   100000           SKP                     NO                                            BSI23050
2306 02552   0 01 02625       JMP   EX16              YES...GO PROCESS ADDITION OP                  BSI23060
2307 02553   0 11 00415       CAS   C255              TEST FOR '-'                                  BSI23070
2308 02554   100000           SKP                     NO                                            BSI23080
2309 02555   0 01 02634       JMP   EX17              YES...GO PROCESS SUBTRACTION OP               BSI23090
2310 02556   0 11 00412       CAS   C252              TEST FOR '*'                                  BSI23100
2311 02557   100000           SKP                     NO                                            BSI23110
2312 02560   0 01 02642       JMP   EX05              YES...GO PROCESS MULTIPLICATION OP            BSI23120
2313 02561   0 11 00417       CAS   C257              TEST FOR '/'                                  BSI23130
2314 02562   100000           SKP                     NO                                            BSI23140
2315 02563   0 01 02650       JMP   EX19              YES...GO PROCESS DIVISION OP                  BSI23150
2316 02564   0 11 00433       CAS   C336              TEST FOR '↑'                                  BSI23160
2317 02565   000000           OCT   0                 NEVER CAN EXECUTE THIS WORD                   BSI23170
2318 02566   0 01 02656       JMP   EX20              YES...GO PROCESS EXPONENTIATION OP            BSI23180
2319                 *                                                                             BSI23190
2320                 *          BY PROCESS OF ELIMINATION, CURRENT CHARACTER                        BSI23200
2321                 *     MUST BE A TERMINAL DELIMITER (OR USER SYNTAX ERROR, IN                  BSI23210
2322                 *     WHICH CASE THE LAST ZERO LEVEL CALLER WILL DETECT IT).                  BSI23220
2323                 *                                                                             BSI23230
2324 02567   0 10 03065       JST   UCHR              BACK UP 1 CHAR FOR EASE ELSEWHERE             BSI23240
2325                 *                                                                             BSI23250
2326                 *     EXIT PROCESSING                                                         BSI23260
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2327                        *                                                          BSI23270
2328 02570   0 10 03031 EX21 JST   POP          LEAVE VALUE THAT WAS PUT ON STACK     BSI23280
2329 02571   0 04 00044      STA   LVAL+1       ON ENTRY IN LVAL                      BSI23290
2330 02572   0 10 03031      JST   POP          X                                     BSI23300
2331 02573   0 04 00043      STA   LVAL         X                                     BSI23310
2332 02574   0 10 03031      JST   POP          GET RETURN ADDRESS                    BSI23320
2333 02575   0 04 02443      STA   EXPA         X                                     BSI23330
2334 02576   0 10 03031      JST   POP          GET PRECEDENCE TRIGGER FOR OPERATOR   BSI23340
2335 02577   0 04 00055      STA   LOP          PRECEEDING CURRENT ONE                BSI23350
2336 02600   0 10 00000      JST   L$22         LEAVE LVAL IN A + B                   BSI23360
2337 02601   0 000043        DAC   LVAL         X                                     BSI23370
2338 02602  -0 01 02443      JMP*  EXPA         AND EXIT                              BSI23380
2339                        *                                                          BSI23390
2340                        *    EVALUATE PARENTHETICAL TERM                           BSI23400
2341                        *                                                          BSI23410
2342 02603   140040     EX10 CRA               EVALUATE EXPRESSION WITHIN            BSI23420
2343 02604   0 10 02443      JST   EXPA         THE PARENTHESIS                       BSI23430
2344 02605   0 02 00411      LDA   C251         MAKE SURE DELIMITER IS ')'            BSI23440
2345 02606   0 10 03104      JST   GCCK         X                                     BSI23450
2346 02607   0 01 02547      JMP   EX09         NOW WORK ON OPERATOR THAT FOLLOWS     BSI23460
2347                        *                                                          BSI23470
2348                        *    HERE FOR PROCESSING SYSTEM FUNCTION                   BSI23480
2349                        *                                                          BSI23490
2350 02610   0 10 03022 EX11 JST   PUSH         CHAR IS FUNCTION IDENTIFIER           BSI23500
2351 02611   0 02 00410      LDA   C250         MAKE SURE '(' AFETER FUNCTION NAME    BSI23510
2352 02612   0 10 03104      JST   GCCK         X                                     BSI23520
2353 02613   140040          CRA                EVALUATE THE ARGUMENT                 BSI23530
2354 02614   0 10 02443      JST   EXPA         X                                     BSI23540
2355 02615   0 02 00411      LDA   C251         MAKE SURE IT ENDS WITH A ')'          BSI23550
2356 02616   0 10 03104      JST   GCCK         X                                     BSI23560
2357 02617   0 10 03031      JST   POP          FETCH THE FUNCTION IDENTIFIER         BSI23570
2358 02620   0 07 00510      SUB   SYSL         REDUCE IT FOR TABLE ACCESSING         BSI23580
2359 02621   0 04 00000      STA   0            X                                     BSI23590
2360 02622  -1 10 00530      JST*  SFNL,1       EVALAUTE THE FUNCTION                 BSI23600
2361 02623   0 000041        DAC   CVAL         ARGUMENT WAS LEFT IN CVAL             BSI23610
2362 02624   0 01 02546      JMP   EX22         GO SAVE CVAL AND CONTINUE             BSI23620
2363                        *                                                          BSI23630
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2364                    *     HERE FOR ADDITION OPERATOR                                    BSI23640
2365                    *                                                                   BSI23650
2366 02625   0 02 00371 EX16  LDA   C1              + IS AT PRECEDENCE LEVEL 1            BSI23660
2367 02626   0 10 02664       JST   EXPC            TEST FOR PRECEEDING HIGHER OP         BSI23670
2368 02627   0 10 02443       JST   EXPA            EVALUATE UNTIL = OR < PRTY. OP        BSI23680
2369 02630   0 10 00000       JST   A$22            CVAL=LVAL+CVAL                        BSI23690
2370 02631   0 000041         DAC   CVAL            X                                     BSI23700
2371 02632   0 10 03207 EX24  JST   SCVL            SAVE THE RESULT                       BSI23710
2372 02633   0 01 02547       JMP   EX09            CONTINUE                              BSI23720
2373                    *                                                                   BSI23730
2374                    *     HERE FOR SUBTRACTION OPERATOR                                 BSI23740
2375                    *                                                                   BSI23750
2376 02634   0 02 00371 EX17  LDA   C1              - IS AT PRECEDENCE LEVEL 1            BSI23760
2377 02635   0 10 02664       JST   EXPC            TEST FOR PRECEEDING HIGHER OP         BSI23770
2378 02636   0 10 02443       JST   EXPA            EVALUATE UNTIL = OR < PRTY. OP        BSI23780
2379 02637   0 10 00000       JST   S$22            CVAL=LVAL-CVAL                        BSI23790
2380 02640   0 000041         DAC   CVAL            X                                     BSI23800
2381 02641   0 01 02632       JMP   EX24            GO SAVE RESULT AND CONTINUE           BSI23810
2382                    *                                                                   BSI23820
2383                    *     HERE FOR MULTIPLICATION OPERATOR                              BSI23830
2384                    *                                                                   BSI23840
2385 02642   0 02 00376 EX05  LDA   C2              * IS AT PRECEDENCE LEVEL 2            BSI23850
2386 02643   0 10 02664       JST   EXPC            TEST FOR PRECEEDING HIGHER OP         BSI23860
2387 02644   0 10 02443       JST   EXPA            EVALUATE UNTIL = OT < PRTY. OP        BSI23870
2388 02645   0 10 00000       JST   M$22            CVAL=LVAL*CVAL                        BSI23880
2389 02646   0 000041         DAC   CVAL            X                                     BSI23890
2390 02647   0 01 02632       JMP   EX24            GO SAVE RESULT AND CONTINUE           BSI23900
2391                    *                                                                   BSI23910
2392                    *     HERE FOR DIVISION OPERATOR                                    BSI23920
2393                    *                                                                   BSI23930
2394 02650   0 02 00376 EX19  LDA   C2              / IS AT PRECEDENCE LEVEL 2            BSI23940
2395 02651   0 10 02664       JST   EXPC            TEST FOR PRECEEDING HIGHER OP         BSI23950
2396 02652   0 10 02443       JST   EXPA            EVALAUATE UNTIL = OT < PRTY. OP       BSI23960
2397 02653   0 10 00000       JST   D$22            CVAL=LVAL/CVAL                        BSI23970
2398 02654   0 000041         DAC   CVAL            X                                     BSI23980
2399 02655   0 01 02632       JMP   EX24            SAVE RESULT AND CONTINUE              BSI23990
2400                    *                                                                   BSI24000
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2401                    *     HERE FOR EXPONENTIATION OPERATOR                                  BSI24010
2402                    *                                                                       BSI24020
2403 02656   0 02 00426 EX20  LDA   C3              ¢ IS AT PRECEDENCE LEVEL 3                 BSI24030
2404 02657   0 10 02664       JST   EXPC            TEST FOR PRECEEDING ¢                      BSI24040
2405 02660   0 10 02443       JST   EXPA            EVALAUTE UNTIL = OR < PRIY. OP             BSI24050
2406 02661   0 10 00000       JST   E$22            CVAL=LVAL**CVAL                            BSI24060
2407 02662   0 000041         DAC   CVAL            X                                          BSI24070
2408 02663   0 01 02632       JMP   EX24            SAVE THE RESULT AND CONTINUE               BSI24080
2409                    *                                                                       BSI24090
2410                    *     PRECEDENCE COMPARISON ROUTINE                                     BSI24100
2411                    *                                                                       BSI24110
2412                    *          IF THE PRECEDENCE OF THE PRECEEDING                          BSI24120
2413                    *     OPERATOR IS < THAT OF THE CURRENT OPERATOR,                       BSI24130
2414                    *     RETURN IS MADE FOLLOWING THE CALL.  IF NOT,                       BSI24140
2415                    *     CONTROL IS TRANSFERED TO THE NORMAL EXPA                          BSI24150
2416                    *     EXIT SEQUENCE.                                                    BSI24160
2417                    *                                                                       BSI24170
2418 02664   0 000000   EXPC  DAC   **                                                          BSI24180
2419 02665   0 11 00055       CAS   LOP             COMPARE THE PRECEDENCE LEVELS              BSI24190
2420 02666  -0 01 02664       JMP*  EXPC            CURRENT OP IS GREATER                      BSI24200
2421 02667   0 01 02567       JMP   EX21-1          LAST OP WAS THE SAME                       BSI24210
2422 02670   0 01 02567       JMP   EX21-1          LAST OP WAS HIGHER                         BSI24220
2423                    *                                                                       BSI24230
2424                    *                                                                       BSI24240
2425                    *     PROCESS CALL TO PROGRAMMER DEFINED FUNCTION                       BSI24250
2426                    *                                                                       BSI24260
2427                    *                                                                       BSI24270
2428 02671   0 10 04606 EX30  JST   SDFI            LOOK UP FUNCTION NAME IN TABLE             BSI24280
2429 02672   0 10 05243       JST   ERR             ERROR...FUNCTION HAS NOT BEEN DEFINED      BSI24290
2430 02673   152706           BCI   1,UF            (THIS EXECUTES AS AN ERA)                  BSI24300
2431 02674   0 02 00410       LDA   C250            '(' MUST FOLLOW FUNCTION NAME              BSI24310
2432 02675   0 10 03104       JST   GCCK            X                                          BSI24320
2433 02676   0 02 00000       LDA   0               SAVE TABLE POINTER IN CASE                 BSI24330
2434 02677   0 10 03022       JST   PUSH            THERE IS A PDF IN ARGUMENT                 BSI24340
2435 02700   140040           CRA                   EVALUATE THE FUNCTION ARGUMENT             BSI24350
2436 02701   0 10 02443       JST   EXPA            X                                          BSI24360
2437 02702   0 02 00411       LDA   C251            MAKE SURE IT'S FOLLOWED BY ')'             BSI24370
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2438 02703   0 10 03104      JST   GCCK       X                                          BSI24380
2439 02704   0 10 03031      JST   POP        FETCH THE TABLE POINTER                    BSI24390
2440 02705   0 04 00000      STA   0          X                                          BSI24400
2441 02706   1 02 00001      LDA   1,1        GET DUMMY ARGUMENT NAME                    BSI24410
2442 02707   0 13 00052      IMA   DEFN       SWAP WITH CURRENT DUMMY NAME               BSI24420
2443 02710   0 10 03022      JST   PUSH       LEAVE PREVIOUS NAME ON STACK               BSI24430
2444 02711   0 02 00041      LDA   CVAL       CVAL IS NEW DUMMY VARIABLE VALUE,          BSI24440
2445 02712   0 13 00053      IMA   DEFV       OLD VALUE GOES ON STACK                    BSI24450
2446 02713   0 10 03022      JST   PUSH       X                                          BSI24460
2447 02714   0 02 00042      LDA   CVAL+1     X                                          BSI24470
2448 02715   0 13 00054      IMA   DEFV+1     X                                          BSI24480
2449 02716   0 10 03022      JST   PUSH       X                                          BSI24490
2450 02717   1 02 00002      LDA   2,1        GET POINTER TO FUNCTION EXPRESSION         BSI24500
2451 02720   0 13 00037      IMA   SBP        SWAP WITH CURRENT EXPRESSION POINTER       BSI24510
2452 02721   0 10 03022      JST   PUSH       LEAVE OLD POINTER ON STACK                 BSI24520
2453 02722   140040          CRA              EVALUATE THE FUNCTION                      BSI24530
2454 02723   0 10 02443      JST   EXPA       X                                          BSI24540
2455 02724   0 10 03116      JST   GDLM       IT MUST END IN : OR C/R                    BSI24550
2456 02725   0 10 03031      JST   POP        RESTORE POINTER TO ORIGINAL EXPR           BSI24560
2457 02726   0 04 00037      STA   SBP        X                                          BSI24570
2458 02727   0 10 03031      JST   POP        RESTORE PREVIOUS DUMMY                     BSI24580
2459 02730   0 04 00054      STA   DEFV+1     VARIABLE VALUE                             BSI24590
2460 02731   0 10 03031      JST   POP        X                                          BSI24600
2461 02732   0 04 00053      STA   DEFV       X                                          BSI24610
2462 02733   0 10 03031      JST   POP        RESTORE PREVIOUS DUMMY                     BSI24620
2463 02734   0 04 00052      STA   DEFN       VARIABLE NAME                              BSI24630
2464 02735   0 01 02547      JMP   EX09       NOW CONTINUE WITH ORIGINAL EXPRESSION      BSI24640
2465                    *                                                               BSI24650
2466                    *                                                               BSI24660
2467                    *                                                               BSI24670
2468                         EJCT                                                       BSI24680
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2469                    *          PRINT LINE NUMBER                                                    BSI24690
2470                    *                                                                               BSI24700
2471                    *                                                                               BSI24710
2472                    *     CALLING SEQUENCE:                                                         BSI24720
2473                    *                                                                               BSI24730
2474                    *          JST    PLN                                                           BSI24740
2475                    *          ......RETURN                                                         BSI24750
2476                    *                                                                               BSI24760
2477                    *          THE LINE NUMBER OF THE CURRENT STATEMENT                             BSI24770
2478                    *     (OR ZERO IF EXECUTING AN IMMEADIATE MODE STMT)                            BSI24780
2479                    *     IS PRINTED WITH BLANK SURPRESSION.                                        BSI24790
2480                    *                                                                               BSI24800
2481                    *                                                                               BSI24810
2482                    *                                                                               BSI24820
2483 02736   0 000000   PLN  DAC    **                                                                  BSI24830
2484 02737   0 02 00034      LDA    SIP          GET SI POINTER TO CURRENT STMT                         BSI24840
2485 02740   100040          SZE                 ZERO IF IN IMMEADIATE MODE                             BSI24850
2486 02741  -0 02 00034      LDA*   SIP          NOT IMMEADIATE MODE...GET LINE NO. FROM SI             BSI24860
2487 02742   0 10 00000      JSI    FINT         FLOAT IT FOR THE OUTPUT EDITOR                         BSI24870
2488 02743   0 10 03207      JST    SCVL         IT PRINTS THE FLT PNT NO. IN CVAL                      BSI24880
2489 02744   0 02 00405      LDA    C240         SURPRESS BLANKS                                        BSI24890
2490 02745   0 10 02154      JST    PCVL         PRINT THE NUMBER                                       BSI24900
2491 02746  -0 01 02736      JMP*   PLN          AND RETURN                                             BSI24910
2492                    *                                                                               BSI24920
2493                    *                                                                               BSI24930
2494                    *                                                                               BSI24940
2495                         EJCT                                                                       BSI24950
```

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2496                    *          INPUT/OUTPUT ROUTINES                                          BSI24960
2497                    *                                                                         BSI24970
2498                    *                                                                         BSI24980
2499                    *    TYPE - OUTPUT MESSAGE                                                BSI24990
2500                    *                                                                         BSI25000
2501                    *                                                                         BSI25010
2502                    *    CALLING SEQUENCE:                                                    BSI25020
2503                    *                                                                         BSI25030
2504                    *          JST    TYPE                                                    BSI25040
2505                    *          DAC    MESG          ADDRESS OF MESSAGE                        BSI25050
2506                    *          ......RETURN         A REGISTER ZERO                           BSI25060
2507                    *                                                                         BSI25070
2508                    *          THIS ROUTINE WILL OUTPUT THE MESSAGE UNTIL A BYTE              BSI25080
2509                    *    CONTAINING ZERO IS ENCOUNTERED.                                      BSI25090
2510                    *                                                                         BSI25100
2511                    *                                                                         BSI25110
2512 02747   0 000000   TYPE DAC    **                                                           BSI25120
2513 02750  -0 02 02747       LDA*   TYPE          FETCH MESSAGE POINTER                         BSI25130
2514 02751   0414 77          LGL    1             MAKE IT A BYTE POINTER                        BSI25140
2515 02752   0 13 00037       IMA    SBP           SWAP WITH CURRENT SOURCE BYTE POINTER         BSI25150
2516 02753   0 04 00000       STA    0             LEAVE SBP IN A SAFE PLACE                     BSI25160
2517 02754   0 12 02747       IRS    TYPE          SET PROPER RETURN ADDRESS                     BSI25170
2518 02755   0 10 03047 TYP1  JST    GCHR          GET NEXT CHARACTER OF MESSAGE                 BSI25180
2519 02756   101040           SNZ                  END OF MESSAGE ?                              BSI25190
2520 02757   0 01 02762       JMP    TYP2          YES...GO RESTORE SBP AND EXIT                 BSI25200
2521 02760   0 10 00000       JST    OTA1          OUTPUT THE CHARACTER                          BSI25210
2522 02761   0 01 02755       JMP    TYP1          CONTINUE                                      BSI25220
2523                    *                                                                         BSI25230
2524 02762   0 15 00037 TYP2  STX    SBP           RESTORE SBP                                   BSI25240
2525 02763  -0 01 02747       JMP*   TYPE          AND EXIT                                      BSI25250
2526                    *                                                                         BSI25260
2527                    *                                                                         BSI25270
2528                    *    SPAC - OUTPUT SPACE CHARACTER                                        BSI25280
2529                    *                                                                         BSI25290
2530                    *                                                                         BSI25300
2531                    *    CALLING SEQUENCE:                                                    BSI25310
2532                    *                                                                         BSI25320
```

```
2533                    *           JST   SPAC                                  BSI25330
2534                    *           ......RETURN                               BSI25340
2535                    *                                                       BSI25350
2536                    *                                                       BSI25360
2537 02764    0 000000  SPAC DAC    **                                         BSI25370
2538 02765    0 02 00405      LDA    C240          GET SPACE CODE               BSI25380
2539 02766    0 10 00000      JST    OTA1          OUTPUT IT                    BSI25390
2540 02767   -0 01 02764      JMP*   SPAC          RETURN                       BSI25400
2541                    *                                                       BSI25410
2542                    *                                                       BSI25420
2543                    *                                                       BSI25430
2544                         EJCT                                               BSI25440
```

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2545                    *          TABLE POINTER INITIALIZATION ROUTINE                                  BSI25450
2546                    *                                                                                BSI25460
2547                    *                                                                                BSI25470
2548                    *    CALLING SEQUENCE:                                                           BSI25480
2549                    *                                                                                BSI25490
2550                    *          JST   CLRT                                                            BSI25500
2551                    *          ......RETURN                                                          BSI25510
2552                    *                                                                                BSI25520
2553                    *          THE FOLLOWING OPERATIONS ARE PERFORMED BY                             BSI25530
2554                    *    THIS ROUTINE:                                                               BSI25540
2555                    *                                                                                BSI25550
2556                    *          1)  THE DEFINED FUNCTION INDEX, THE FOR-NEXT STACK,                   BSI25560
2557                    *    THE SIMPLE VARIABLE TABLE, THE DIMENSIONED VARIABLE TABLE,                  BSI25570
2558                    *    AND THE RETURN STACK ARE CLEARED.                                           BSI25580
2559                    *                                                                                BSI25590
2560                    *          2)  THE 'CONTINUE' POINTER IS RESET                                   BSI25600
2561                    *                                                                                BSI25610
2562                    *          3)  THE READ STATEMENT DATA POINTER IS INITIALIZED.                   BSI25620
2563                    *                                                                                BSI25630
2564                    *          4)  THE AMOUT OF FREE SPACE IS CALCULATED.                            BSI25640
2565                    *                                                                                BSI25650
2566                    *                                                                                BSI25660
2567                    *                                                                                BSI25670
2568 02770   0 000000   CLRT DAC   **                                                                    BSI25680
2569 02771   0 35 00463      LDX   M10              CLEAR DFI, FN, SV,                                    BSI25690
2570 02772   140040          CRA                    AND DV TABLES.                                        BSI25700
2571 02773   1 04 00032      STA   DFB+'10,1        X                                                     BSI25710
2572 02774   0 12 00000      IRS   0                X                                                     BSI25720
2573 02775   0 01 02773      JMP   *-2              X                                                     BSI25730
2574 02776   0 04 00101      STA   CON1             CLEAR 'CONTINUE' POINTER                              BSI25740
2575 02777   0 07 00032      SUB   SIB              CALUCLATE NO. OF WORDS                                BSI25750
2576 03000   0 06 00021      ADD   PTH              OF USER SPACE ARE AVAILABLE                           BSI25760
2577 03001   0 06 00376      ADD   C2               ALLOW A SLIGHT MARGIN                                 BSI25770
2578 03002   101400          SMI                    ANY WORDS AVAILABLE ?                                 BSI25780
2579 03003   0 01 03027      JMP   MEMO             .....NO..... REPORT MEMORY OVERFLOW                   BSI25790
2580 03004   0 04 00047      STA   FSC              SET THE COUNTER                                       BSI25800
2581 03005   0 02 00476      LDA   RTB              INITIALIZE THE RETURN STACK                           BSI25810
```

```
2582 03006    0 04 00036      STA   RTP          X                                    BSI25820
2583 03007    0 10 04202      JST   REST         GO INITIALIZE DATA STMT POINTERS     BSI25830
2584 03010   -0 01 02770      JMP*  CLRT         RETURN                               BSI25840
2585                    *                                                           BSI25850
2586                    *                                                           BSI25860
2587                    *                                                           BSI25870
2588                          EJCT                                                  BSI25880
```

```
2589                    *          INITIALIZE PUSH DOWN STACK                                    BSI25890
2590                    *                                                                        BSI25900
2591                    *                                                                        BSI25910
2592                    *     CALLING SEQUENCE:                                                  BSI25920
2593                    *                                                                        BSI25930
2594                    *          JST    IPDS                                                   BSI25940
2595                    *          ......RETURN                                                  BSI25950
2596                    *                                                                        BSI25960
2597                    *          THE PUSH DOWN STACK POINTER, PDSP, IS SET TO THE              BSI25970
2598                    *     FIRST FREE WORD ABOVE THE TABLES THAT EXTEND FROM THE TOP          BSI25980
2599                    *     OF THE COMPILER.                                                   BSI25990
2600                    *                                                                        BSI26000
2601                    *                                                                        BSI26010
2602                    *                                                                        BSI26020
2603 03011   0 000000   IPDS DAC    **                                                          BSI26030
2604 03012   0 02 00025      LDA    FNT          USE FOR-NEXT TABLE TOP                         BSI26040
2605 03013   101040          SNZ                 UNLESS IT IS EMPTY, IN WHICH CASE              BSI26050
2606 03014   0 02 00023      LDA    DFT          USE DEFINED FUNCTION TABLE TOP                 BSI26060
2607 03015   101040          SNZ                 UNLESS IT IS EMPTY, IN WHICH CASE              BSI26070
2608 03016   0 02 00021      LDA    PTH          USE PROGRAM TEXT TOP.                          BSI26080
2609 03017   141206          AOA                 +1 TO GET ADDRESS OF FREE WORD                 BSI26090
2610 03020   0 04 00035      STA    PDLP         SET THE POINTER                                BSI26100
2611 03021  -0 01 03011      JMP*   IPDS         AND RETURN                                     BSI26110
2612                    *                                                                        BSI26120
2613                    *                                                                        BSI26130
2614                    *                                                                        BSI26140
2615                         EJCT                                                                BSI26150
```

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2616                    *          PUSH DOWN STACK HANDLING ROUTINES                                  BsI26160
2617                    *                                                                             BsI26170
2618                    *                                                                             BsI26180
2619                    *     PUSH - ADD ENTRY TO STACK                                               BsI26190
2620                    *                                                                             BsI26200
2621                    *                                                                             BsI26210
2622                    *     CALLING SEQUENCE:                                                       BsI26220
2623                    *                                                                             BsI26230
2624                    *          LDA    WORD          A CONTAINS WORD TO BE ADDED TO STACK          BsI26240
2625                    *          JST    PUSH                                                        BsI26250
2626                    *          ......RETURN         UNLESS STACK OVERFLOW                       BsI26260
2627                    *                                                                             BsI26270
2628                    *                                                                             BsI26280
2629 03022   0 000000   PUSH DAC    **                                                               BsI26290
2630 03023  -0 04 00035      STA*   PDLP                PLACE ENTRY IN THE STACK                    BsI26300
2631 03024   0 12 00035      IRS    PDLP                UPDATE THE STACK POINTER                    BsI26310
2632 03025   0 12 00047      IRS    FSC                 UPDATE THE FREE STORAGE COUNT               BsI26320
2633 03026  -0 01 03022      JMP*   PUSH                NO OVERFLOW...RETURN                        BsI26330
2634 03027   0 10 05243 MEMO JST    ERR                 REPORT MEMORY OVERFLOW                      BsI26340
2635 03030   146717         BCI    1,MO                X                                           BsI26350
2636                    *                                                                             BsI26360
2637                    *                                                                             BsI26370
2638                    *     POP  - REMOVE ENTRY FROM THE PUSH DOWN STACK                            BsI26380
2639                    *                                                                             BsI26390
2640                    *                                                                             BsI26400
2641                    *     CALLING SEQUENCE85                                                      BsI26410
2642                    *                                                                             BsI26420
2643                    *          JST    POP                                                         BsI26430
2644                    *          ......RETURN         TOP STACK ENTRY IN A                        BsI26440
2645                    *                                                                             BsI26450
2646                    *                                                                             BsI26460
2647 03031   0 000000   POP  DAC    **                                                               BsI26470
2648 03032   0 02 00035      LDA    PDLP                DECREMENT THE STACK POINTER                 BsI26480
2649 03033   0 07 00371      SUB    C1                  X                                           BsI26490
2650 03034   0 04 00035      STA    PDLP                X                                           BsI26500
2651 03035   0 02 00462      LDA    M1                  UPDATE THE FREE STORAGE COUNT               BsI26510
2652 03036   0 10 03041      JST    UFSC                X                                           BsI26520
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2653 03037  -0 02 00035      LDA*  PDLP          REMOVE TOP ENTRY FROM THE STACK      BsI26530
2654 03040  -0 01 03031      JMP*  POP           AND RETURN                           BsI26540
2655                     *                                                           BsI26550
2656                     *                                                           BsI26560
2657                     *                                                           BsI26570
2658                          EJCT                                                   BsI26580
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```
2659                    *          UPDATE FREE STORAGE COUNT                                    BSI26590
2660                    *                                                                       BSI26600
2661                    *                                                                       BSI26610
2662                    *    CALLING SEQUENCE:                                                  BSI26620
2663                    *                                                                       BSI26630
2664                    *          LDA    NWRD          A CONTAINS NO. OF WORDS REQUIRED       BSI26640
2665                    *          JST    UFSC                                                 BSI26650
2666                    *          ......RETURN         IF REQUIRED NO. OF WORDS ARE AVAILABLE  BSI26660
2667                    *                                                                       BSI26670
2668                    *          THIS ROUTINE MAY BE USED TO REMOVE WORDS FROM THE            BSI26680
2669                    *    FREE STORAGE AREA (IF A IS +) OR TO RELEASE WORDS TO               BSI26690
2670                    *    THE FREE STORAGE AREA (IF A IS -).                                 BSI26700
2671                    *                                                                       BSI26710
2672                    *                                                                       BSI26720
2673 03041    0 000000  UFSC DAC    **                                                         BSI26730
2674 03042    0 06 00047     ADD    FSC            UPDATE THE FREE STORAGE COUNT               BSI26740
2675 03043    101400         SMI                   TEST FOR MEMORY OVERFLOW                    BSI26750
2676 03044    0 01 03027     JMP    MEMO           YES...GO TELL THE USER                      BSI26760
2677 03045    0 04 00047     STA    FSC            NO....SAVE THE UPDATED COUNT                BSI26770
2678 03046   -0 01 03041     JMP*   UFSC           AND RETURN                                  BSI26780
2679                    *                                                                       BSI26790
2680                    *                                                                       BSI26800
2681                    *                                                                       BSI26810
2682                         EJCT                                                               BSI26820
```

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2683                    *          CHARACTER HANDLING ROUTINES                                  BSI26830
2684                    *                                                                       BSI26840
2685                    *                                                                       BSI26850
2686                    *    GCHR - GET NEXT SOURCE CHARACTER                                   BSI26860
2687                    *                                                                       BSI26870
2688                    *                                                                       BSI26880
2689                    *    CALLING SEQUENCE:                                                  BSI26890
2690                    *                                                                       BSI26900
2691                    *          JST   GCHR                                                   BSI26910
2692                    *          ......RETURN                                                 BSI26920
2693                    *                                                                       BSI26930
2694                    *          THE NEXT SOURCE CHARACTER IS LEFT IN                         BSI26940
2695                    *    THE A REGISTER AND CHAR, AND THE SOURCE                            BSI26950
2696                    *    BYTE POINTER, SBP, IS INCREMENTED.                                 BSI26960
2697                    *                                                                       BSI26970
2698                    *                                                                       BSI26980
2699 03047   0 000000   GCHR DAC   **                                                          BSI26990
2700 03050   0 10 03054      JST   XCHR          GET CHARACTER POINTED TO BY SBP              BSI27000
2701 03051   0 04 00074      STA   CHAR          LEAVE IT IN CHAR                             BSI27010
2702 03052   0 12 00037      IRS   SBP           BUMP THE SOUCE BYTE POINTER                  BSI27020
2703 03053  -0 01 03047      JMP*  GCHR          AND RETURN                                   BSI27030
2704                    *                                                                       BSI27040
2705                    *                                                                       BSI27050
2706                    *    XCHR - EXAMINE NEXT SOURCE CHARACTER                               BSI27060
2707                    *                                                                       BSI27070
2708                    *                                                                       BSI27080
2709                    *    CALLING SEQUENCE:                                                  BSI27090
2710                    *                                                                       BSI27100
2711                    *          JST   XCHR                                                   BSI27110
2712                    *          ......RETURN                                                 BSI27120
2713                    *                                                                       BSI27130
2714                    *          THE CHARACTER POINTED TO BY SBP IS RETURNED                  BSI27140
2715                    *    IN THE A REGISTER, SBP AND CHAR ARE NOT ALTERED.                   BSI27150
2716                    *                                                                       BSI27160
2717                    *                                                                       BSI27170
2718 03054   0 000000   XCHR DAC   **                                                          BSI27180
2719 03055   0 02 00037      LDA   SBP           GET THE BYTE POINTER                         BSI27190
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2720 03056   0404 17          LGR   1                 /2 TO GET WORD NO., BYTE INDICATOR IN C    BSI27200
2721 03057   0 04 00076       STA   TMP1              X                                          BSI27210
2722 03060  -0 02 00076       LDA*  TMP1              PICK UP WORD CONTAINING BYTE WE WANT       BSI27220
2723 03061   101001           SSC                     SKIP IF LOW ORDER BYTE IS REQUESTED        BSI27230
2724 03062   141340           ICA                     HIGH ORDER BYTE...POSITION IT              BSI27240
2725 03063   141050           CAL                     ISOLATE THE BYTE                           BSI27250
2726 03064  -0 01 03054       JMP*  XCHR              RETURN                                     BSI27260
2727                     *                                                                       BSI27270
2728                     *                                                                       BSI27280
2729                     *     UCHR - BACK UP ONE CHARACTER                                      BSI27290
2730                     *                                                                       BSI27300
2731                     *                                                                       BSI27310
2732                     *     CALLING SEQUENCE:                                                 BSI27320
2733                     *                                                                       BSI27330
2734                     *           JST   UCHR                                                  BSI27340
2735                     *           ......RETURN                                               BSI27350
2736                     *                                                                       BSI27360
2737                     *           THE SOURCE BYTE POINTER, SBP, IS DECREMENTED                BSI27370
2738                     *     BY ONE.                                                           BSI27380
2739                     *                                                                       BSI27390
2740                     *                                                                       BSI27400
2741 03065   0 000000    UCHR DAC   **                                                          BSI27410
2742 03066   0 13 00037       IMA   SBP               DECREMENT THE SOURCE BYTE                  BSI27420
2743 03067   0 07 00371       SUB   C1                POINTER BY ONE                             BSI27430
2744 03070   0 13 00037       IMA   SBP               AND REPLACE IT                             BSI27440
2745 03071  -0 01 03065       JMP*  UCHR              RETURN                                     BSI27450
2746                     *                                                                       BSI27460
2747                     *                                                                       BSI27470
2748                     *     GCHX - EXCLUSIVE OR NEXT CHARACTER TO A                           BSI27480
2749                     *                                                                       BSI27490
2750                     *                                                                       BSI27500
2751                     *     CALLING SEQUENCE:                                                 BSI27510
2752                     *                                                                       BSI27520
2753                     *           JST   GCHX                                                  BSI27530
2754                     *           ......RETURN                                               BSI27540
2755                     *                                                                       BSI27550
2756                     *           THE NEXT CHARACTER IS XOR'ED TO A AND                       BSI27560
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2757                    *     THE RESULT IS LEFT IN A.  SBP IS INCREMENTED                BSI27570
2758                    *     AND THE CHARACTER IS LEFT IN CHAR.                          BSI27580
2759                    *                                                                 BSI27590
2760                    *                                                                 BSI27600
2761 03072   0 000000   GCHX  DAC   **                                                    BSI27610
2762 03073   0 04 00077       STA   TMP2          SAVE A WHILE GETTING CHARACTER         BSI27620
2763 03074   0 10 03047       JST   GCHR          GET THE NEXT SOURCE CHARACTER          BSI27630
2764 03075   0 05 00077       ERA   TMP2          XOR PREVIOUS A TO IT                   BSI27640
2765 03076  -0 01 03072       JMP*  GCHX          RETURN                                 BSI27650
2766                    *                                                                 BSI27660
2767                    *                                                                 BSI27670
2768                    *     GCPK - PACK NEXT TWO SOURCE CHARACTERS                      BSI27680
2769                    *                                                                 BSI27690
2770                    *                                                                 BSI27700
2771                    *     CALLING SEQUENCE:                                           BSI27710
2772                    *                                                                 BSI27720
2773                    *           JST   GCPK                                            BSI27730
2774                    *           ......RETURN                                          BSI27740
2775                    *                                                                 BSI27750
2776                    *           THE NEXT TWO CHARACTERS ARE FETCHED AND               BSI27760
2777                    *     LEFT IN A (FIRST CHARACTER IN A(1-8), SECOND                BSI27770
2778                    *     CHARACTER IN A(9-16)).                                      BSI27780
2779                    *                                                                 BSI27790
2780                    *                                                                 BSI27800
2781 03077   0 000000   GCPK  DAC   **                                                    BSI27810
2782 03100   0 10 03047       JST   GCHR          GET THE FIRST CHARACTER                BSI27820
2783 03101   141240           ICR                 PUT IT A(1-8)                          BSI27830
2784 03102   0 10 03072       JST   GCHX          PUT NEXT CHARACTER IN A(9-16)          BSI27840
2785 03103  -0 01 03077       JMP*  GCPK          RETURN                                 BSI27850
2786                    *                                                                 BSI27860
2787                    *                                                                 BSI27870
2788                    *     GCCK - GET CHARACTER AND CHECK                              BSI27880
2789                    *                                                                 BSI27890
2790                    *                                                                 BSI27900
2791                    *     CALLING SEQUENCE:                                           BSI27910
2792                    *                                                                 BSI27920
2793                    *           LDA   CHAR          A CONTAINS CHARACTER EXPECTED     BSI27930
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2794                    *          JST   GCCK                                          BSI27940
2795                    *          ......RETURN      IF CHAR FOUND (A ZERO)            BSI27950
2796                    *                                                              BSI27960
2797                    *          THE NEXT CHARACTER IS FETCHED, AND IF IT            BSI27970
2798                    *     DOES NOT MATCH THE CONTENTS OF A, A 'MX' ERROR           BSI27980
2799                    *     IS REPORTED, WHERE X IS THE CHARACTER IN A ON ENTRY.     BSI27990
2800                    *                                                              BSI28000
2801                    *                                                              BSI28010
2802 03104   0 000000   GCCK DAC   **                                                  BSI28020
2803 03105   0 05 03115      ERA   GCC1          FORM ERROR DIAGNOSTIC                 BSI28030
2804 03106   0 04 03114      STA   GCC2          SAVE IT IN CASE IT'S NEEDED           BSI28040
2805 03107   0 05 03115      ERA   GCC1          RESTORE A                             BSI28050
2806 03110   0 10 03072      JST   GCHX          XOR NEXT CHARACTER WITH IT            BSI28060
2807 03111   101040          SNZ                 A ZERO IF THEY MATCH                  BSI28070
2808 03112  -0 01 03104      JMP*  GCCK          MATCH***...RETURN                     BSI28080
2809 03113   0 10 05243      JST   ERR           DIFFERENT...REPORT ERROR              BSI28090
2810 03114   146730     GCC2 BCI   1,MX          X                                     BSI28100
2811                    *                                                              BSI28110
2812 03115   146400     GCC1 HEX   CD00          ASCII M IN BITS 1-8, ZERO IN BITS 9-16 BSI28120
2813                    *                                                              BSI28130
2814                    *                                                              BSI28140
2815                    *     GDLM - GET TERMINAL DELIMITER                            BSI28150
2816                    *                                                              BSI28160
2817                    *                                                              BSI28170
2818                    *     CALLING SEQUENCE:                                        BSI28180
2819                    *                                                              BSI28190
2820                    *          JST   GDLM                                          BSI28200
2821                    *          ......RETURN      IF NEXT CHARACTER IS : OR C/R      BSI28210
2822                    *                                                              BSI28220
2823                    *          THE NEXT CHARACTER IS FETCHED AND IF IT IS          BSI28230
2824                    *     EITHER A : OR C/R, RETURN IS MADE WITH THE               BSI28240
2825                    *     DELIMITER CODE IN A.  IF IT IS NOT A : OR C/R,           BSI28250
2826                    *     A 'DL' ERROR IS REPORTED.                                BSI28260
2827                    *                                                              BSI28270
2828                    *                                                              BSI28280
2829 03116   0 000000   GDLM DAC   **                                                  BSI28290
2830 03117   0 10 03047      JST   GCHR          GET THE NEXT CHARACTER                BSI28300
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2831 03120   0 10 03173      JST   DLCK              TEST FOR : OR C/R                BSI28310
2832 03121   100000          SKP                     NO....ERROR                      BSI28320
2833 03122  -0 01 03116      JMP*  GDLM              YES...RETURN                     BSI28330
2834 03123   0 10 05243      JST   ERR               REPORT THE ERROR                 BSI28340
2835 03124   142314          BCI   1,DL              X                                BSI28350
2836                    *                                                            BSI28360
2837                    *                                                            BSI28370
2838                    *     GNBC - GET NEXT NON-BLANK CHARACTER                    BSI28380
2839                    *                                                            BSI28390
2840                    *                                                            BSI28400
2841                    *     CALLING SEQUENCE:                                      BSI28410
2842                    *                                                            BSI28420
2843                    *           JST   GNBC                                       BSI28430
2844                    *           ......RETURN      CHARACTER IN A AND CHAR        BSI28440
2845                    *                                                            BSI28450
2846                    *           THE NEXT NON BLANK CHARACTER (<> '240) IS        BSI28460
2847                    *     FETCHED AND LEFT IN A AND CHAR.                        BSI28470
2848                    *                                                            BSI28480
2849                    *                                                            BSI28490
2850                    *                                                            BSI28500
2851 03125   0 000000   GNBC  DAC   **                                               BSI28510
2852 03126   0 10 03047       JST   GCHR              GET THE NEXT CHARACTER         BSI28520
2853 03127   0 11 00405       CAS   C240              TEST FOR BLANK                 BSI28530
2854 03130  -0 01 03125       JMP*  GNBC              NO...RETURN                    BSI28540
2855 03131   0 01 03126       JMP   *-3               YES...TRY NEXT CHARACTER       BSI28550
2856 03132  -0 01 03125       JMP*  GNBC              NO...RETURN                    BSI28560
2857                    *                                                            BSI28570
2858                    *                                                            BSI28580
2859                    *                                                            BSI28590
2860                    *     SCHR - STORE CHARACTER                                 BSI28600
2861                    *                                                            BSI28610
2862                    *                                                            BSI28620
2863                    *     CALLING SEQUENCE:                                      BSI28630
2864                    *                                                            BSI28640
2865                    *           LDA   CHAR        A CONTAINS CHARACTER TO BE STORED BSI28650
2866                    *           JST   SCHR                                       BSI28660
2867                    *           ......RETURN      A UNCHANGED                    BSI28670
```

```
2868                        *                                                                   BSI28680
2869                        *          THE CHARACTER IN A IS TRUNCATED TO 8 BITS AND LEFT       BSI28690
2870                        *     IN THE LOCATION LCHR.  IT IS THEN INSERTED IN THE BYTE        BSI28700
2871                        *     POINTED TO BY DBP WITHOUT DESTROYING THE OTHER BYTE IN        BSI28710
2872                        *     THE TARGET WORD.   DBP IS INCREMENTED FOLLOWING THE           BSI28720
2873                        *     INSETION.  THE INITIAL A REGISTER CONTENTS ARE RETURNED       BSI28730
2874                        *     UNCHANGED.                                                    BSI28740
2875                        *                                                                   BSI28750
2876                        *                                                                   BSI28760
2877 03133   0 000000   SCHR DAC   **                                                          BSI28770
2878 03134   0 04 00077      STA   TMP2        SAVE INITIAL A CONTENTS                        BSI28780
2879 03135   141050          CAL               TRUNCATE TO 8 BITS                             BSI28790
2880 03136   0 04 00075      STA   LCHR        SAVE FOR LATER REFERENCE                       BSI28800
2881 03137   0 02 00040      LDA   DBP         GET POINTER TO TARGET BYTE                     BSI28810
2882 03140   0404 77         LGR   1           WORD NO. IN A, BYTE INDICATOR IN C              BSI28820
2883 03141   0 04 00076      STA   TMP1        SAVE TARGET WORD POINTER                       BSI28830
2884 03142  -0 02 00076      LDA*  TMP1        GET CURRENT CONTENTS OF TARGET WORD            BSI28840
2885 03143   101001          SSC               PUT TARGET BYTE IN A(9-16)                     BSI28850
2886 03144   141340          ICA               X                                              BSI28860
2887 03145   141044          CAR               CLEAR POSITION FOR NEW BYTE                    BSI28870
2888 03146   0 05 00075      ERA   LCHR        INSERT THE NEW CHARACETR                       BSI28880
2889 03147   101001          SSC               REPOSITION THE BYTES IF NECESSARY              BSI28890
2890 03150   141340          ICA               X                                              BSI28900
2891 03151  -0 04 00076      STA*  TMP1        RESTORE THE BYTE PAIR                          BSI28910
2892 03152   0 12 00040      IRS   DBP         INCREMENT THE DESTINATION BYTE POINTER         BSI28920
2893 03153   0 02 00077      LDA   TMP2        RESTORE A                                      BSI28930
2894 03154  -0 01 03133      JMP*  SCHR        AND EXIT                                       BSI28940
2895                        *                                                                   BSI28950
2896                        *                                                                   BSI28960
2897                             EJCT                                                           BSI28970
```

```
2898                    *           CHARACTER CHECK ROUTINES                                    BSI28980
2899                    *                                                                       BSI28990
2900                    *                                                                       BSI29000
2901                    *     ALFA - ALPHABETIC CHARACTER TEST ROUTINE                          BSI29010
2902                    *                                                                       BSI29020
2903                    *                                                                       BSI29030
2904                    *     CALLING SEQUENCE:                                                 BSI29040
2905                    *                                                                       BSI29050
2906                    *           LDA    CHAR          A CONTAINS CHARACTER TO BE TESTED     BSI29060
2907                    *           JST    ALFA                                                BSI29070
2908                    *           ......RETURN         IF NOT ALPHABETIC CHARACTER           BSI29080
2909                    *           ......RETURN         IF ALPHABETIC CHARACTER               BSI29090
2910                    *                                                                       BSI29100
2911                    *                                                                       BSI29110
2912 03155   0 000000   ALFA DAC    **                                                        BSI29120
2913 03156   0 11 00427       CAS    C300               LOW ALPHABETCI RANGE - 1              BSI29130
2914 03157   0 11 00432       CAS    C333               HIGH ALPHABETIC TANGE + 1             BSI29140
2915 03160  -0 01 03155       JMP*   ALFA               RETURN 1 ... NOT ALPHABETIC           BSI29150
2916 03161  -0 01 03155       JMP*   ALFA               RETURN 1 ... NOT ALPHABETIC           BSI29160
2917 03162   0 12 03155       IRS    ALFA               ALPHABETIC ... TAKE SECOND RETURN     BSI29170
2918 03163  -0 01 03155       JMP*   ALFA               X                                     BSI29180
2919                    *                                                                       BSI29190
2920                    *                                                                       BSI29200
2921                    *     NUMC - NUMERIC CHARACTER TEST ROUTINE                             BSI29210
2922                    *                                                                       BSI29220
2923                    *                                                                       BSI29230
2924                    *     CALLING SEQUENCE:                                                 BSI29240
2925                    *                                                                       BSI29250
2926                    *           LDA    CHAR          A CONTAINS CHARACTER TO BE TESTED     BSI29260
2927                    *           JST    NUMC                                                BSI29270
2928                    *           ......RETURN         IF NOT NUMERIC CHARACTER              BSI29280
2929                    *           ......REOURN         IF NUMERIC CHARACTER                  BSI29290
2930                    *                                                                       BSI29300
2931                    *                                                                       BSI29310
2932 03164   0 000000   NUMC DAC    **                                                        BSI29320
2933 03165   0 11 00417       CAS    C257               LOW NUMERIC RANGE - 1                 BSI29330
2934 03166   0 11 00422       CAS    C272               HIGH NUMERIC RANGE + 1                BSI29340
```

```
2935 03167  -0 01 03164      JMP*  NUMC          RETURN 1 ... NOT NUMERIC                    BSI29350
2936 03170  -0 01 03164      JMP*  NUMC          RETURN 1 ... NOT NUMERIC                    BSI29360
2937 03171   0 12 03164      IRS   NUMC          NUMERIC ... TAKE SECOND RETURN              BSI29370
2938 03172  -0 01 03164      JMP*  NUMC          X                                           BSI29380
2939                      *                                                                  BSI29390
2940                      *                                                                  BSI29400
2941                      *    DLCK - TERMINAL DELIMITER TEST ROUTINE                        BSI29410
2942                      *                                                                  BSI29420
2943                      *                                                                  BSI29430
2944                      *    CALLING SEQUENCE:                                             BSI29440
2945                      *                                                                  BSI29450
2946                      *         LDA   CHAR       A CONTAINS CHARACTER TO BE TESTED       BSI29460
2947                      *         JST   DLCK                                               BSI29470
2948                      *         ......RETURN     IF NOT TERMINAL DELIMITER (: OR C/R)     BSI29480
2949                      *         ......RETURN     IF TERMINAL DELIMITER (: OR C/R)         BSI29490
2950                      *                                                                  BSI29500
2951                      *                                                                  BSI29510
2952 03173   0 000000   DLCK DAC   **                                                       BSI29520
2953 03174   0 11 00422      CAS   C272          TEST FOR COLON                              BSI29530
2954 03175  -0 01 03173      JMP*  DLCK          NO....TAKE FIRST RETURN                     BSI29540
2955 03176   0 12 03173      IRS   DLCK          YES...INCREMENT TO TAKE SECOND RETURN       BSI29550
2956 03177   0 11 00401      CAS   C215          TEST FOR CARRIAGE RETURN                    BSI29560
2957 03200  -0 01 03173      JMP*  DLCK          NO....RETURN                                BSI29570
2958 03201   0 12 03173      IRS   DLCK          YES...INCREMENT FOR SECOND RETURN           BSI29580
2959 03202  -0 01 03173      JMP*  DLCK          RETURN                                      BSI29590
2960                      *                                                                  BSI29600
2961                      *                                                                  BSI29610
2962                           EJCT                                                          BSI29620
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2963                    *          FLOATING POINT ACCUMULATOR LOAD AND STORE ROUTINES          BSI29630
2964                    *                                                                      BSI29640
2965                    *                                                                      BSI29650
2966                    *    LCVL - LOAD A+B FROM FLOATING POINT ACCUMULATOR                    BSI29660
2967                    *                                                                      BSI29670
2968                    *                                                                      BSI29680
2969                    *    CALLING SEQUENCE:                                                 BSI29690
2970                    *                                                                      BSI29700
2971                    *          JST   LCVL                                                  BSI29710
2972                    *          ......RETURN      CONTENTS OF CVAL IN A+B                   BSI29720
2973                    *                                                                      BSI29730
2974                    *                                                                      BSI29740
2975 03203   0 000000   LCVL DAC   **                                                         BSI29750
2976 03204   0 10 00000      JST   L$22              LOAD A+B FROM CVAL                        BSI29760
2977 03205   0 000041        DAC   CVAL              X                                         BSI29770
2978 03206  -0 01 03203      JMP*  LCVL              RETURN                                    BSI29780
2979                    *                                                                      BSI29790
2980                    *                                                                      BSI29800
2981                    *    SCVL - STORE A+B IN FLOATING POINT ACCUMULATOR                    BSI29810
2982                    *                                                                      BSI29820
2983                    *                                                                      BSI29830
2984                    *    CALLING SEQUENCE:                                                 BSI29840
2985                    *                                                                      BSI29850
2986                    *          JST   SCVL                                                  BSI29860
2987                    *          ......RETURN      CVAL SET TO CONTENTS OF A+B               BSI29870
2988                    *                                                                      BSI29880
2989                    *                                                                      BSI29890
2990 03207   0 000000   SCVL DAC   **                                                         BSI29900
2991 03210   0 10 00000      JST   H$22              STORE A+B IN CVAL                         BSI29910
2992 03211   0 000041        DAC   CVAL              X                                         BSI29920
2993 03212  -0 01 03207      JMP*  SCVL              RETURN                                    BSI29930
2994                    *                                                                      BSI29940
2995                    *                                                                      BSI29950
2996                    *                                                                      BSI29960
2997                         EJCT  NOT MUCH TO THESE ROUTINES, IS THERE ?                      BSI29970
```

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2998                    *          EXECUTE NEXT SOURCE STATEMENT                                    BSI29980
2999                    *                                                                           BSI29990
3000                    *                                                                           BSI30000
3001                    *          THIS ROUTINE WILL DETERMINE THE TYPE OF THE                      BSI30010
3002                    *     STATEMENT POINTED TO BY SBP AND BRANCH TO THE PROPER                  BSI30020
3003                    *     STATEMENT PROCESSER.  THE POINTER SIP IS ASSUMED TO                   BSI30030
3004                    *     BE SET TO POINT TO THE STATEMENT INDEX ENTRY FOR THE                  BSI30040
3005                    *     STATEMENT BEING PROCESSED, UNLESS IT IS AN IMMEADIATE                 BSI30050
3006                    *     MODE STATEMENT, IN WHICH CASE SIP SHOULD BE ZERO.                     BSI30060
3007                    *     BEFORE THE STATEMENT IS EXECUTED, A CHECK FOR PROGRAM                 BSI30070
3008                    *     BREAK IS MADE.  IF THE BREAK FLAG, BRKF, IS SET,                      BSI30080
3009                    *     THE MESSAGE 'XXXX BREAK' IS PRINTED, WHERE XXXX IS THE                BSI30090
3010                    *     CURRENT LINE NUMBER, AND THE POINTERS TO THE STATEMENT                BSI30100
3011                    *     ARE SAVED FOR USE BY A FUTURE CONTINUE COMMAND.                       BSI30110
3012                    *                                                                           BSI30120
3013                    *                                                                           BSI30130
3014                    *                                                                           BSI30140
3015 03213  140040      ESMT CRA                    INITIALIZE THE DUMMY VARIABLE NAME CELL         BSI30150
3016 03214  0 04 00052       STA   DEFN            X                                               BSI30160
3017 03215  0 10 00000       JST   BRKC            CHECK FOR PROGRAM BREAK                         BSI30170
3018 03216  0 13 00103       IMA   BRKF            GET THE BREAK FLAG, ALSO CLEAR IT               BSI30180
3019 03217  100040           SZE                   X                                               BSI30190
3020 03220  0 01 03255       JMP   ES01            GO PROCESS PROGRAM BREAK                        BSI30200
3021 03221  0 10 03011       JST   IPDS            INITIALIZE THE PUSH DOWN STACK                  BSI30210
3022 03222  0 10 03047       JST   GCHR            LOOK AT 1ST CHAR OF STMT TO GET STMT TYPE       BSI30220
3023 03223  0 11 00404       CAS   C23             TEST FOR IMPLIED 'LET' STATEMENT                BSI30230
3024 03224  0 01 03253       JMP   ES02            YES...GO PROCESS IT                             BSI30240
3025 03225  101000           NOP                   NO                                              BSI30250
3026 03226  0 04 00000       STA   0               SET STATEMENT BRANCH LIST POINTER               BSI30260
3027 03227  -1 01 03227      JMP*  *,1             BRANCH TO THE PROPER STATEMENT PROCESSOR        BSI30270
3028                    *                                                                           BSI30280
3029 03230  0 003274        DAC   ASNM            LET STATEMENT                                   BSI30290
3030 03231  0 004072        DAC   READ            READ STATEMENT                                  BSI30300
3031 03232  0 004066        DAC   INPT            INPUT STATEMENT                                 BSI30310
3032 03233  0 004177        DAC   RSTR            RESTORE STATEMENT                               BSI30320
3033 03234  0 004211        DAC   PRNT            PRINT STATEMENT                                 BSI30330
3034 03235  0 003324        DAC   GOTO            GOTO STATEMENT                                  BSI30340
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3035 03236    0 003365        DAC   IF      IF STATEMENT                                    BSI30350
3036 03237    0 003340        DAC   ON      ON STATEMENT                                    BSI30360
3037 03240    0 003472        DAC   FOR     FOR STATEMENT                                   BSI30370
3038 03241    0 003622        DAC   NEXT    NEXT STATEMENT                                  BSI30380
3039 03242    0 003720        DAC   GOSB    GOSUB STATEMENT                                 BSI30390
3040 03243    0 003737        DAC   RTRN    RETURN STATEMENT                                BSI30400
3041 03244    0 003752        DAC   CALL    CALL STATEMENT                                  BSI30410
3042 03245    0 004425        DAC   REM     REM STATEMENT                                   BSI30420
3043 03246    0 004427        DAC   EXIT    STOP STATEMENT                                  BSI30430
3044 03247    0 004427        DAC   EXIT    END STATEMENT                                   BSI30440
3045 03250    0 004425        DAC   REM     DATA STATEMENT                                  BSI30450
3046 03251    0 004425        DAC   REM     DIM STATEMENT                                   BSI30460
3047 03252    0 004325        DAC   DEF     DEF STATEMENT                                   BSI30470
3048                  *                                                                     BSI30480
3049 03253    0 10 03065 ES02 JST   UCHR    BACK UP OVER THE FIRST CHAR OF THE STMT         BSI30490
3050 03254    0 01 03274       JMP   ASNM    GO PROCESS ASSIGNMENT STATEMENT                 BSI30500
3051                  *                                                                     BSI30510
3052                  *     HERE IF PROGRAM BREAK                                           BSI30520
3053                  *                                                                     BSI30530
3054 03255    0 02 00034 ES01 LDA   SIP     DO NOT RECORD BREAK INFO IF IN COMMAND MODE    BSI30540
3055 03256    101040          SNZ           X                                               BSI30550
3056 03257    0 01 01000      JMP   CMOD    RETURN TO PROCESS NEXT SYSTEM COMMAND           BSI30560
3057 03260    0 04 00101      STA   CON1    SAVE POINTERS TO INTERRUPT POINT                BSI30570
3058 03261    0 02 00037      LDA   SBP     X                                               BSI30580
3059 03262    0 04 00102      STA   CON2    X                                               BSI30590
3060 03263    0 10 00000      JST   LFCR    PRINT 'XXXX BREAK'                              BSI30600
3061 03264    0 10 02736      JST   PLN     X                                               BSI30610
3062 03265    0 10 02747      JST   TYPE    X                                               BSI30620
3063 03266    0 003270        DAC   BKMS                                                  BSI30630
3064 03267    0 01 01000      JMP   CMOD    RETURN TO COMMAND MODE                          BSI30640
3065                  *                                                                     BSI30650
3066                  *                                                                     BSI30660
3067 03270    120302     BKMS BCI   3, BREAK  BREAK MESSAGE                                BSI30670
     03271    151305
     03272    140713
3068 03273    000000          OCT   0       MESSAGE TERMINATOR                            BSI30680
3069                  *                                                                     BSI30690
```

```
3070                *                                                    BsI30700
3071                *                                                    BsI30710
3072                     EJCT                                            BsI30720
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3073                    *          ASSIGNMENT STATEMENT PROCESSOR                                    BSI30730
3074                    *                                                                            BSI30740
3075                    *                                                                            BSI30750
3076                    *    STATEMENT SYNTAX:                                                       BSI30760
3077                    *                                                                            BSI30770
3078                    *          <ASSIGNMENT STATEMENT>:=@LET<VARIABLE>=<EXPRESSION>¢              BSI30780
3079                    *                                    <VARIABLE>=<EXPRESSION>↑@:¢C/R↑         BSI30790
3080                    *                                                                            BSI30800
3081                    *                                                                            BSI30810
3082                    *                                                                            BSI30820
3083 03274  140040     ASNM CRA                  PUT EOL MARK ON THE STACK                          BSI30830
3084 03275  0 10 03022       JST   PUSH          X                                                  BSI30840
3085 03276  0 10 04632 ASN2  JST   PVN           INPUT/CLASSIFY VARIABLE NAME                       BSI30850
3086 03277  0 10 04751       JST   ADV           LOCATE/ASSIGN DIMENSIONED VARIABLE                 BSI30860
3087 03300  0 10 04671       JST   ASV           LOCATE/ASSIGN SIMPLE VARIABLE                      BSI30870
3088 03301  0 02 00000       LDA   0             PUT VARIABLE ADDRESS ON THE STACK                  BSI30880
3089 03302  0 10 03022       JST   PUSH          X                                                  BSI30890
3090 03303  0 10 03047       JST   GCHR          HAS ASSIGNMENT LIST BEEN PROCESSED ?               BSI30900
3091 03304  0 11 00414       CAS   C254          (COMMA MEANS NO)                                   BSI30910
3092 03305  100000           SKP                 X                                                  BSI30920
3093 03306  0 01 03276       JMP   ASN2          NO ... GO PROCESS NEXT NAME                        BSI30930
3094 03307  0 10 03065       JST   UCHR          NOT COMMA, SO IT MUST BE '=' OR ELSE               BSI30940
3095 03310  0 02 00424       LDA   C275          X                                                  BSI30950
3096 03311  0 10 03104       JST   GCCK          X                                                  BSI30960
3097 03312  0 10 02443       JST   EXPA          EVALUATE THE EXPRESSION                            BSI30970
3098 03313  0 10 03116       JST   GDLM          MAKE SURE IT END WITH A C/R OR :                   BSI30980
3099 03314  0 10 03031 ASN3  JST   POP           GET VARIABLE ADDRESS FROM THE STACK                BSI30990
3100 03315  101040           SNZ                 IS IT END OF STACK MARKER ?                        BSI31000
3101 03316  0 01 04574       JMP   SEX           .....YES..... PROCEED TO NEXT STATEMENT            BSI31010
3102 03317  0 04 03322       STA   ASN1          SET ADDRESS IN STORE CALLING SEQUENCE              BSI31020
3103 03320  0 10 03203       JST   LCVL          GET VALUE OF THE EXPRESSION                        BSI31030
3104 03321  0 10 00000       JST   H$22          ASSIGN THE VALUE TO LIST VARIABLE                  BSI31040
3105 03322  0 000000   ASN1  DAC   **            X                                                  BSI31050
3106 03323  0 01 03314       JMP   ASN3          GO TRY FOR ANOTHER LIST ELEMENT                    BSI31060
3107                    *                                                                            BSI31070
3108                    *                                                                            BSI31080
3109                    *                                                                            BSI31090
```

3110 EJCT BSI31100

```
3111                    *          GOTO STATEMENT PROCESSOR                                          BSI31110
3112                    *                                                                            BSI31120
3113                    *                                                                            BSI31130
3114                    *    STATEMENT SYNTAX:                                                       BSI31140
3115                    *                                                                            BSI31150
3116                    *          <GOTO STATEMENT>::=GOTO<LINE NUMBER>@:¢C/R¢                       BSI31160
3117                    *                                                                            BSI31170
3118                    *                                                                            BSI31180
3119                    *                                                                            BSI31190
3120 03324  0 10 04556 GOTO JST   ISN          GET THE STATEMENT NUMBER                            BSI31200
3121 03325  0 10 03116      JST   GDLM         MAKE SURE NEXT CHARACTER IS : OR C/R                BSI31210
3122 03326  0 35 00034 GOT2 LDX   SIP          PROTECT SI PNTR DURING STMT SEARCH                  BSI31220
3123 03327  0 10 04475      JST   SISR         LOOK UP THE NUMBER IN THE STATEMENT INDEX           BSI31230
3124 03330  0 01 03335      JMP   GOT3         ERROR ... UNDEFINED STATEMENT NUMBER                BSI31240
3125 03331  0 02 00051      LDA   SEQI         SEE IF STMT SEQUENCING IS INHIBITED                 BSI31250
3126 03332  101040          SNZ               X                                                   BSI31260
3127 03333  0 01 03213      JMP   ESMT         NO...GO EXECUTED THE REQUESTED STATEMENT            BSI31270
3128 03334  0 01 01000      JMP   CMOD         YES...IGNORE AND RETURN TO COMMAND MODE             BSI31280
3129                    *                                                                            BSI31290
3130 03335  0 15 00034 GOT3 STX   SIP          RESTORE SI PNTR TO CURRENT LINE                     BSI31300
3131 03336  0 10 05243      JST   ERR          REPORT UNDEFINED STATEMENT NO. ERROR                BSI31310
3132 03337  152723          BCI   1,US         X                                                   BSI31320
3133                    *                                                                            BSI31330
3134                    *                                                                            BSI31340
3135                    *                                                                            BSI31350
3136                         EJCT                                                                    BSI31360
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3137                    *          ON STATEMENT PROCESSOR                                    BSI31370
3138                    *                                                                    BSI31380
3139                    *                                                                    BSI31390
3140                    *     STATEMENT SYNTAX:                                              BSI31400
3141                    *                                                                    BSI31410
3142                    *          <ON STATEMENT>:=ON<EXPRESSION>GOTO<LINE NUMBER>           BSI31420
3143                    *                         @,<LINE NUMBER>%(0,*)@:¢C/R%               BSI31430
3144                    *                                                                    BSI31440
3145                    *                                                                    BSI31450
3146                    *          AN 'ON' ERROR MESSAGE WILL BE ISSUED                      BSI31460
3147                    *     ON THE FOLLOWING CONDITIONS:                                   BSI31470
3148                    *                                                                    BSI31480
3149                    *          1)  'GOTO' MISSING                                        BSI31490
3150                    *          2)  EXPRESSION ZERO OR MINUS                              BSI31500
3151                    *                                                                    BSI31510
3152                    *                                                                    BSI31520
3153 03340  140040      ON    CRA                  EVALUATE THE EXPRESSION                   BSI31530
3154 03341  0 10 02443       JST   EXPA             X                                         BSI31540
3155 03342  0 10 03047       JST   GCHR             TEST FOR 'GOTO'                           BSI31550
3156 03343  0 05 00454       ERA   GTC              ('GOTO' IS COMPRESSED TO 1 BYTE)          BSI31560
3157 03344  100040           SZE                    X                                         BSI31570
3158 03345  0 10 05243 ON1   JST   ERR              'ON' STATEMENT ERROR                      BSI31580
3159 03346  147716           BCI   1,ON             (THIS WILL EXECUTE AS AN ANA)             BSI31590
3160 03347  0 10 03203       JST   LCVL             TRUNCATE EXPRESSION TO AN INTEGER         BSI31600
3161 03350  0 10 00000       JST   IFLT             X                                         BSI31610
3162 03351  0 01 03345       JMP   ON1              ERROR...NUMBER TOO LARGE                  BSI31620
3163 03352  140407     ON3   TCA                    TEST FOR VALUE < 1                        BSI31630
3164 03353  101400           SMI                    X                                         BSI31640
3165 03354  0 01 03345       JMP   ON1              ERROR ... EXPRESSION <= 0                 BSI31650
3166 03355  0 04 00000       STA   0                SAVE VALUE FOR STEPPING THROUGH LIST       BSI31660
3167 03356  0 10 04556 ON2   JST   ISN              GET NEXT STMT NO. FROM THE LIST           BSI31670
3168 03357  0 12 00000       IRS   0                IS THIS THE ONE WE WANT ¢                  BSI31680
3169 03360  100000           SKP                    NO                                        BSI31690
3170 03361  0 01 03326       JMP   GOI2             YES...NOW PROCESS LIKE A GOTO             BSI31700
3171 03362  0 02 00414       LDA   C254             TEST FOR COMMA SEPERATING THE             BSI31710
3172 03363  0 10 03104       JST   GCCK             STATEMENT NUMBERS                         BSI31720
3173 03364  0 01 03356       JMP   ON2              CONTINUE SCAN                             BSI31730
```

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3174                *                                                    BSI31740
3175                *                                                    BSI31750
3176                *                                                    BSI31760
3177                     EJCT                                            BSI31770
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3178                    *          IF STATEMENT PROCESSOR                                          BSI31780
3179                    *                                                                          BSI31790
3180                    *                                                                          BSI31800
3181                    *    STATEMENT SYNTAX:                                                     BSI31810
3182                    *                                                                          BSI31820
3183                    *          <IF STATEMENT>:=<LOGICAL IF STATEMENT>¢                         BSI31830
3184                    *                          <ARITHMETIC IF STATEMENT>                       BSI31840
3185                    *                                                                          BSI31850
3186                    *          <LOGICAL IF STATEMENT>:=IF<EXPRESSION><RELATIONAL OPERATOR>     BSI31860
3187                    *                                  <EXPRESSION>@THEN<STATEMENT BODY>       BSI31870
3188                    *                                  @:<STATEMENT BODY>%¢THEN<LINE NUMBER>   BSI31880
3189                    *                                  ¢GOTO<LINE NUMBER>%                     BSI31890
3190                    *                                                                          BSI31900
3191                    *          <RELATIONAL OPERATOR>:=>¢>=¢=¢=<¢<¢<>                           BSI31910
3192                    *                                                                          BSI31920
3193                    *          <ARITHMETIC IF STATEMENT>:=IF<EXPRESSION>,<LINE NUMBER>,        BSI31930
3194                    *                                     <LINE NUMBER>,<LINE NUMBER>@:¢C/R%    BSI31940
3195                    *                                                                          BSI31950
3196                    *                                                                          BSI31960
3197 03365  140040     IF   CRA                    CLEAR TEMP. REGISTERS USED IN                  BSI31970
3198 03366  0 04 00312      STA  IFT1              PROCESSING RELATIONAL OPS                      BSI31980
3199 03367  0 04 00313      STA  IFT2              X                                              BSI31990
3200 03370  0 10 02443      JST  EXPA              EVALUATE FIRST EXPRESSION                      BSI32000
3201 03371  0 10 03054      JST  XCHR              TEST FOR ARITHMETIC IF                         BSI32010
3202 03372  0 05 00414      ERA  C254              BY LOOKING FOR COMMA FOLLOWING                 BSI32020
3203 03373  101040          SNZ                    FIRST EXPRESSION                               BSI32030
3204 03374  0 01 03463      JMP  IF01              GO PROCESS ARITHMETIC IF                       BSI32040
3205                    *                                                                          BSI32050
3206                    *    HERE FOR LOGICAL IF                                                   BSI32060
3207                    *                                                                          BSI32070
3208 03375  0 10 03047 IF02 JST  GCHR              TEST NEXT CHARACTER FOR RELATIONAL OP.         BSI32080
3209 03376  0 11 00423      CAS  C273              < ('274), = ('275), AND > ('276) ARE           BSI32090
3210 03377  0 11 00425      CAS  C277              LEGAL REL. OPS.                                BSI32100
3211 03400  0 01 03416      JMP  IF03              NOT RELATIONAL OP                              BSI32110
3212 03401  0 01 03416      JMP  IF03              DITTO                                          BSI32120
3213 03402  0 07 00423      SUB  C273              TRANSPOSE CODE TO 1 FOR <, 2 FOR =,            BSI32130
3214 03403  0 11 00376      CAS  C2                OR 4 FOR >                                     BSI32140
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3215 03404   0 02 00435        LDA   C4          X                                    BSI32150
3216 03405   101000             NOP               X                                    BSI32160
3217 03406   0 13 00312        IMA   IFT1        CODE TO FIRST REL. OP. ACCUM.        BSI32170
3218 03407   101040             SNZ               WAS THIS THE FIRST REL. OP. ¢        BSI32180
3219 03410   0 01 03375        JMP   IF02        YES...GO CHECK FOR ANOTHER           BSI32190
3220 03411   0 13 00313        IMA   IFT2        MOVE 1ST REL. OP. CODE TO 2ND ACCUM. BSI32200
3221 03412   101040             SNZ               WAS THIS THE 2ND REL. OP. ¢          BSI32210
3222 03413   0 01 03375        JMP   IF02        YES...MAKE SURE ANOTHER DOES NOT FOLLOW BSI32220
3223 03414   0 10 05243 IF04   JST   ERR         IF STATEMENT CONDITION ERROR         BSI32230
3224 03415   144703            BCI   1,IC        X                                    BSI32240
3225               *                                                                  BSI32250
3226 03416   0 10 03065 IF03   JST   UCHR        MOVE BACK TO 1ST NON REL. OP. CHAR.  BSI32260
3227 03417   0 02 00312        LDA   IFT1        COMBINE THE REL. OP. CODES           BSI32270
3228 03420   0 05 00313        ERA   IFT2        X                                    BSI32280
3229 03421   101040             SNZ               TEST FOR NO CONDITION SELECTED OR    BSI32290
3230 03422   0 01 03414        JMP   IF04        THE SAME CONDITION SELECTED TWICE    BSI32300
3231 03423   0 04 00312        STA   IFT1        SAVE THE CONDITION CODE              BSI32310
3232 03424   140040             CRA               EVALUATE THE SECOND EXPRESSION       BSI32320
3233 03425   0 10 02443        JST   EXPA        X                                    BSI32330
3234 03426   0 10 00000        JST   S$22        COMPARE THE TWO EXPRESSIONS          BSI32340
3235 03427   0 000041          DAC   CVAL        X                                    BSI32350
3236 03430   0 10 03207        JST   SCVL        REDUCE TO -1 IF 1ST EXPR IS >,       BSI32360
3237 03431   0 10 00000        JST   SGNF        -2 IF 2ST EXPR EQUALS 2ND EXPR, OR   BSI32370
3238 03432   0 000041          DAC   CVAL        -3 IF 2ND EXPR IS >                  BSI32380
3239 03433   0 10 00000        JST   IFLT        X                                    BSI32390
3240 03434   000000            OCT   0           NEVER CAN EXECUTE THIS WORD          BSI32400
3241 03435   0 07 00376        SUB   C2          X                                    BSI32410
3242 03436   0 04 00000        STA   0           X                                    BSI32420
3243 03437   0 02 00312        LDA   IFT1        MOVE REL. OP. CODE BIT FOR THE RESULT BSI32430
3244 03440   0414 64           LGL   12          TO A(1)                              BSI32440
3245 03441   0414 77           LGL   1           X                                    BSI32450
3246 03442   0 12 00000        IRS   0           X                                    BSI32460
3247 03443   0 01 03441        JMP   *-2         X                                    BSI32470
3248 03444   101400             SMI               WAS THE RESULT CONDITION SELECTED ¢  BSI32480
3249 03445   0 01 04600        JMP   ASQ         NO....ADVANCE TO NEXT LINE           BSI32490
3250 03446   0 10 03047        JST   GCHR        YES...TEST FOR 'GOTO'                BSI32500
3251 03447   0 11 00454        CAS   GTC         X                                    BSI32510
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3252 03450   100000          SKP                    NO                                          BsI32520
3253 03451   0 01 03324      JMP   GOTO             YES...PROCESS GOTO STATEMENT                BsI32530
3254 03452   0 05 00504      ERA   THNC             NO....THIS CHARACTER MUST BE 'THEN'         BsI32540
3255 03453   100040          SZE                    X                                           BsI32550
3256 03454   0 10 05243      JST   ERR              NO...REPORT SYNTAX ERROR                    BsI32560
3257 03455   152310          BCI   1,TH             COULD NOT FIND 'THEN'                       BsI32570
3258 03456   0 10 03054      JST   XCHR             SEE WHETHER LINE NO. OF STATEMENT           BsI32580
3259 03457   0 11 00455      CAS   INTF             FOLLOWS                                     BsI32590
3260 03460   0 01 03213      JMP   ESMT             STATEMENT...GO PROCESS IT                   BsI32600
3261 03461   0 01 03324      JMP   GOTO             LINE NUMEBR...EXECUTE 'GOTO'                BsI32610
3262 03462   0 01 03213      JMP   ESMT             STATEMENT...GO PROCESS IT                   BsI32620
3263                 *                                                                         BsI32630
3264                 *     HERE FOR ARITHMETIC IF STATEMENT                                    BsI32640
3265                 *                                                                         BsI32650
3266 03463   0 10 03047 IF01 JST   GCHR             STEP PAST THE COMMA                         BsI32660
3267 03464   0 10 00000      JST   SGNF             SET A = -1 IF EXPT < 0, 0 IF                BsI32670
3268 03465   0 000041        DAC   CVAL             EXPR = 0, +1 IF EXPR > 0                    BsI32680
3269 03466   0 10 00000      JST   IFLT             X                                           BsI32690
3270 03467   000000          OCT   0                NEVER CAN EXECUTE THIS WORD                 BsI32700
3271 03470   0 06 00376      ADD   C2               MAKE THIS LOOK LIKE AN 'ON' STATEMENT       BsI32710
3272 03471   0 01 03352      JMP   ON3              AND GO PROCESS IT                           BsI32720
3273                 *                                                                         BsI32730
3274                 *                                                                         BsI32740
3275                 *                                                                         BsI32750
3276                       EJCT                                                                BsI32760
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3277                    *          FOR STATEMENT PROCESSOR                                    BSI32770
3278                    *                                                                     BSI32780
3279                    *                                                                     BSI32790
3280                    *     STATEMENT SYNTAX:                                               BSI32800
3281                    *                                                                     BSI32810
3282                    *          <FOR STATEMENT>:=<SIMPLE VARIABLE>=<EXPRESSION>            BSI32820
3283                    *                          @!0¢,%<EXPRESSION>@@STEP¢,%                BSI32830
3284                    *                          <EXPRESSION>%(0,1)                         BSI32840
3285                    *                                                                     BSI32850
3286                    *                                                                     BSI32860
3287 03472   0 02 00373 FOR  LDA   C11          MAKE SURE NINE WORDS ARE                   BSI32870
3288 03473   0 10 03041      JST   UFSC         AVAILABLE FOR STACK ENTRY                  BSI32880
3289 03474   0 02 00024      LDA   FNB          IS FOR STACK INITIALIZATION                BSI32890
3290 03475   100040          SZE                REQUIRED?                                  BSI32900
3291 03476   0 01 03505      JMP   FR01         NO...GO APPEND ENTRY                       BSI32910
3292 03477   0 02 00023      LDA   DFT          START FOR STACK ABOVE LOW                  BSI32920
3293 03500   101040          SNZ                CORE TABLES                                BSI32930
3294 03501   0 02 00021      LDA   PTH          X                                          BSI32940
3295 03502   141206          AOA                X                                          BSI32950
3296 03503   0 04 00024      STA   FNB          X                                          BSI32960
3297 03504   0 01 03507      JMP   FR06         X                                          BSI32970
3298 03505   0 02 00025 FR01 LDA   FNT          GET PREVIOUS STACK TOP                     BSI32980
3299 03506   141206          AOA                GET FIRST WORD FOR NEW ENTRY               BSI32990
3300 03507   0 04 03616 FR06 STA   FRT1         SAVE IT                                    BSI33000
3301 03510   0 06 00372      ADD   C10          GET NEW STACK TOP                          BSI33010
3302 03511   0 04 00025      STA   FNT          SAVE IT                                    BSI33020
3303 03512   0 10 03011      JST   IPDS         SET UP THE PDS ABOVE NEW ENTRY             BSI33030
3304 03513   0 10 04632      JST   PVN          PROCESS INDEX VARIABLE NAME                BSI33040
3305 03514   0 01 03612      JMP   FR07         CANNOT HAVE SUBSCRIPTED VARIABLE AS INDEX  BSI33050
3306 03515   0 10 04671      JST   ASV          LOCATE/ASSIGN THE VARIABLE                 BSI33060
3307 03516   0 15 03530      STX   FRT2         SAVE THE POINTER                           BSI33070
3308 03517   0 02 00000      LDA   0            GET ITS DISPLACEMENT FROM SVT              BSI33080
3309 03520   0 07 00027      SUB   SVT          X                                          BSI33090
3310 03521  -0 04 03616      STA*  FRT1         PUT IT IN FIRST WORD OF FN ENTRY           BSI33100
3311 03522   0 12 03616      IRS   FRT1         X                                          BSI33110
3312 03523   0 02 00424      LDA   C275         MAKE SURE '=' IS NEXT                      BSI33120
3313 03524   0 10 03104      JST   GCCK         X                                          BSI33130
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3314 03525   0 10 02443       JST   EXPA      EVALUATE THE FIRST EXPRESSION                BSI33140
3315 03526   0 10 03203       JST   LCVL      RESULT TO A                                  BSI33150
3316 03527   0 10 00000       JST   H$22      ASSIGN THE VALUE TO THE VARIABLE             BSI33160
3317 03530   0 000000    FRT2 DAC   **        X                                            BSI33170
3318 03531   0 10 03047       JST   GCHR      NEXT CHARACTER MUST BE                       BSI33180
3319 03532   0 11 00414       CAS   C254      ',' OR 'TO'                                  BSI33190
3320 03533   100000           SKP             X                                            BSI33200
3321 03534   0 01 03542       JMP   FR02      IT'S A COMMA                                 BSI33210
3322 03535   0 11 00505       CAS   TOC       NOT COMMA, MAYBE 'TO'                        BSI33220
3323 03536   100000           SKP             NO                                           BSI33230
3324 03537   0 01 03542       JMP   FR02      IT'S 'TO'                                    BSI33240
3325 03540   0 10 05243       JST   ERR       ERROR...FOR DELIMITER                        BSI33250
3326 03541   143304           BCI   1,FD                                                   BSI33260
3327                    *                                                                 BSI33270
3328 03542   140040     FR02  CRA             EVALUATE THE SECOND EXPRESSION               BSI33280
3329 03543   0 10 02443       JST   EXPA      X                                            BSI33290
3330 03544   0 10 00000       JST   S$22      COMPARE SECOND WITH FIRST                    BSI33300
3331 03545   0 000041         DAC   CVAL      X                                            BSI33310
3332 03546   100400           SPL             X                                            BSI33320
3333 03547   0 01 03556       JMP   FR03      FIRST IS SMALLER, OK                         BSI33330
3334 03550   0 02 00041       LDA   CVAL      SWAP THE VALUES                              BSI33340
3335 03551   0 13 00043       IMA   LVAL      X                                            BSI33350
3336 03552   0 04 00041       STA   CVAL      X                                            BSI33360
3337 03553   0 02 00042       LDA   CVAL+1    X                                            BSI33370
3338 03554   0 13 00044       IMA   LVAL+1    X                                            BSI33380
3339 03555   0 04 00042       STA   CVAL+1    X                                            BSI33390
3340 03556   0 10 00000  FR03  JST   L$22      PUT LOW VALUE EXPRESSION IN 2ND AND 3RD      BSI33400
3341 03557   0 000043         DAC   LVAL      WORDS OF ENTRY                               BSI33410
3342 03560   0 10 03614       JST   FRST      X                                            BSI33420
3343 03561   0 10 03203       JST   LCVL      PUT HIGH VALUE EXPRESSION IN 4TH AND 5TH     BSI33430
3344 03562   0 10 03614       JST   FRST      WORDS OF ENTRY                               BSI33440
3345 03563   0 10 03047       JST   GCHR      SEE IF A THIRD EXPRESSION IS COMING          BSI33450
3346 03564   0 11 00414       CAS   C254      TEST FOR ','                                 BSI33460
3347 03565   100000           SKP             NO                                           BSI33470
3348 03566   0 01 03576       JMP   FR04      YES                                          BSI33480
3349 03567   0 11 00502       CAS   STPC      MAYBE 'STEP'                                 BSI33490
3350 03570   100000           SKP             NO                                           BSI33500
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3351 03571   0 01 03576       JMP   FR04              YES                                                  BSI33510
3352 03572   0 10 03065       JST   UCHR              LOOK AT CURRENT CHARACTER LATER                      BSI33520
3353 03573   0 10 00000       JST   L$22              SET STEP =1 BY DEFAULT                               BSI33530
3354 03574   0 000444         DAC   F1                X                                                    BSI33540
3355 03575   0 01 03601       JMP   FR05              X                                                    BSI33550
3356 03576   140040     FR04  CRA                     EVALUATE THE THIRD EXPRESSION                        BSI33560
3357 03577   0 10 02443       JST   EXPA              X                                                    BSI33570
3358 03600   0 10 03203       JST   LCVL              GET THE RESULT                                       BSI33580
3359 03601   0 10 03614 FR05  JST   FRST              STEP VALUE TO WORDS 6 + 7 OF ENTRY                   BSI33590
3360 03602   0 10 03116       JST   GDLM              DELIMITER MUST BE NEXT (: OR C/R)                    BSI33600
3361 03603   0 07 00401       SUB   C215              IF C/R, THEN LAST WORD OF ENTRY IS                    BSI33610
3362 03604   100040           SZE                     ZERO, ELSE IT IS CURRENT SBP                         BSI33620
3363 03605   0 02 00037       LDA   SBP               X                                                    BSI33630
3364 03606   000201           IAB                     X                                                    BSI33640
3365 03607   0 02 00034       LDA   SIP               8TH WORD OF ENTRY IS POINTER TO THIS LINE            BSI33650
3366 03610   0 10 03614       JST   FRST              SET 8TH AND 9TH WORDS                                BSI33660
3367 03611   0 01 04574       JMP   SEX               GO PROCESS NEXT STATEMENT                            BSI33670
3368                    *                                                                                  BSI33680
3369                    *                                                                                  BSI33690
3370 03612   0 10 05243 FR07  JST   ERR               REPORT INDEX VARIABLE ERROR                          BSI33700
3371 03613   144726           BCI   1,IV              X                                                    BSI33710
3372                    *                                                                                  BSI33720
3373                    *                                                                                  BSI33730
3374                    *     FRST: STORE WORD PAIR                                                        BSI33740
3375                    *                                                                                  BSI33750
3376                    *           THE WORD PAIR IN A + B ARE STORED IN THE                               BSI33760
3377                    *     TABLE STARTING AT THE ADDRESS IN FRT1. FRT1 IS THEN                          BSI33770
3378                    *     INCREMENTED BY TWO.                                                          BSI33780
3379                    *                                                                                  BSI33790
3380                    *                                                                                  BSI33800
3381 03614   0 000000   FRST  DAC   **                                                                     BSI33810
3382 03615   0 10 00000       JST   H$22              STORE THE WORD PAIR                                  BSI33820
3383 03616   0 000000   FRT1  DAC   **                X                                                    BSI33830
3384 03617   0 12 03616       IRS   FRT1              BUMP THE TABLE POINTER                               BSI33840
3385 03620   0 12 03616       IRS   FRT1              X                                                    BSI33850
3386 03621  -0 01 03614       JMP*  FRST              RETURN                                               BSI33860
3387                    *                                                                                  BSI33870
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3388                *                                                    BSI33880
3389                *                                                    BSI33890
3390                     EJCT                                            BSI33900
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3391                    *          NEXT STATEMENT PROCESSOR                                          BSI33910
3392                    *                                                                            BSI33920
3393                    *                                                                            BSI33930
3394                    *     STATEMENT SYNTAX:                                                      BSI33940
3395                    *                                                                            BSI33950
3396                    *          <NEXT STATEMENT>::=NEXT<SIMPLE VARIABLE>@:¢CR¢                    BSI33960
3397                    *                                                                            BSI33970
3398                    *                                                                            BSI33980
3399 03622   0 10 04632 NEXT JST   PVN          PROCESS INDEX VARIABLE NAME                         BSI33990
3400 03623   0 01 03612      JMP   FR07         SUBSCRIPTED VARIABLE IS ILLEGAL INDEX               BSI34000
3401 03624   0 10 04721      JST   LSV          FIND NAME IN TABLE                                  BSI34010
3402 03625   0 01 03700      JMP   NX01         ERROR ... UNDEFINED VARIABLE MEANS                  BSI34020
3403                    *                       THAT THIS IS AN UNMATCHED 'NEXT'                    BSI34030
3404 03626   0 10 03116      JST   GDLM         CHECK FOR : OR C/R                                  BSI34040
3405 03627   0 02 00025 NX04 LDA   FNT          IS THE TABLE EMPTY ?                                BSI34050
3406 03630   101040          SNZ                                                                    BSI34060
3407 03631   0 01 03700      JMP   NX01         YES....NO 'FOR' FOR NEXT                            BSI34070
3408 03632   0 07 00372      SUB   C10          GET ADDRESS OF FIRST WORD OF TOP ENTRY               BSI34080
3409 03633   0 13 00000      IMA   0            SWAP WITH INDEX VARIABLE ADDRESS                    BSI34090
3410 03634   0 04 03643      STA   NXT1         SET LINKAGE TO VARIABLE IN A COUPLE                 BSI34100
3411 03635   0 04 03647      STA   NXT2         OF LOAD AND STORE CALLING SEQUENCES                 BSI34110
3412 03636   0 07 00027      SUB   SVT          GET THIS VARIABLES DISP. FROM SVT                   BSI34120
3413 03637  -0 07 00000      SUB*  0            DOES THIS 'NEXT' MATCH THE                          BSI34130
3414 03640   100040          SZE                LAST 'FOR'?                                         BSI34140
3415 03641   0 01 03675      JMP   NX03         ....NO.... GO ABORT MOST RECENT FOR                 BSI34150
3416                    *                       AND TRY THE NEXT LOWER LEVEL                        BSI34160
3417 03642   0 10 00000      JST   L$22         GET CURRENT VALUE OF INDEX VARIABLE                 BSI34170
3418 03643   0 000000   NXT1 DAC   **           X                                                   BSI34180
3419 03644   0 10 00000      JST   A$22         ADD THE INCREMENT                                   BSI34190
3420 03645   1 000005        DAC   5,1          X                                                   BSI34200
3421 03646   0 10 00000      JST   H$22         SAVE THE NEW INDEX VARIABLE VALUE                   BSI34210
3422 03647   0 000000   NXT2 DAC   **           X                                                   BSI34220
3423 03650   0 10 03207      JST   SCVL         IN CVAL ALSO FOR LATER REFERENCE                    BSI34230
3424 03651   0 10 00000      JST   S$22         IS IT GREATER THAN LOW                              BSI34240
3425 03652   1 000001        DAC   1,1          RANGE VALUE?                                        BSI34250
3426 03653   100400          SPL                X                                                   BSI34260
3427 03654   0 01 03673      JMP   NX02         NO....GO TERMINATE THE LOOP                         BSI34270
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3428 03655   0 10 00000       JST   L$22          IS IT LESS THAN HIGH                          BSI34280
3429 03656   1 000003        NX05 DAC   3,1         RANGE VALUE?                                  BSI34290
3430 03657   0 10 00000       JST   S$22          X                                             BSI34300
3431 03660   0 000041        NX02 DAC   CVAL        X                                             BSI34310
3432 03661   100400          NX01 SPL               X                                             BSI34320
3433 03662   0 01 03673       JMP   NX02          NO....GO TERMINATE LOOP                       BSI34330
3434 03663   0 10 00000       JST   L$22          GET POINTERS TO BEGINNING OF RANGE            BSI34340
3435 03664   1 000007        NX03 DAC   7,1         X                                             BSI34350
3436 03665   0 04 00034       STA   SIP           SET STATEMENT INDEX POINTER                   BSI34360
3437 03666   000201          NX04 IAB               SET SOURCE BYTE POINTER                       BSI34370
3438 03667   0 04 00037       STA   SBP           X                                             BSI34380
3439 03670   101040          NX06 SNZ               IS THE 'FOR' THE LAST START ON ITS LINE?      BSI34390
3440 03671   0 01 04600       JMP   ASQ           YES.. GO PROCESS AT LINE FOLLOWING THE FOR     BSI34400
3441 03672   0 01 03213       JMP   ESMT          NO..GO EXECUTE NEXT STMT ON SAME LINE         BSI34410
3442                         *                                                                  BSI34420
3443 03673   0 10 03702 NX02  JST   DFSE          DELETE USED UP FOR STACK ENTRY                BSI34430
3444 03674   0 01 04574       JMP   SEX           PROCEED TO THE NEXT STATEMENT                 BSI34440
3445                         *                                                                  BSI34450
3446                         *                                                                  BSI34460
3447 03675   0 10 03702 NX03  JST   DFSE          ABORT HIGHEST 'FOR'                           BSI34470
3448 03676   0 35 03643       LDX   NXT1          RESTORE X TO AVOID TROUBLE                    BSI34480
3449 03677   0 01 03627       JMP   NX04          GO TEST THIS FOR LEVEL FOR A MATCH            BSI34490
3450                         *                                                                  BSI34500
3451                         *                                                                  BSI34510
3452 03700   0 10 05243 NX01  JST   ERR           REPORT 'NEXT' ERROR                           BSI34520
3453 03701   147330          NX06 BCI   1,NX          X                                         BSI34530
3454                         *                                                                  BSI34540
3455                         *                                                                  BSI34550
3456                         *     DFSE - DELETE HIGHEST FOR STACK ENTRY                        BSI34560
3457                         *                                                                  BSI34570
3458                         *                                                                  BSI34580
3459 03702   0 000000    DFSE DAC   **                                                         BSI34590
3460 03703   0 02 03711       LDA   M11           RETURN 9 WORDS TO FREE STORAGE                BSI34600
3461 03704   0 10 03041       JST   UFSC          X                                             BSI34610
3462 03705   0 02 00025       LDA   FN1           DECREMENT FOR STACK HIGH POINTER              BSI34620
3463 03706   0 07 00373       SUB   C11           X                                             BSI34630
3464 03707   0 11 00024       CAS   FNB           IS THE STACK NOW EMPTY ?                      BSI34640
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3465 03710   0 01 03713        JMP    *+3          ........NO........                BSI34650
3466 03711   177761      M11   OCT    -11          NEVER CAN EXECUTE THIS WORD       BSI34660
3467 03712   140040            CRA                 YES ... POINTERS MUST BE CLEARED  BSI34670
3468 03713   0 04 00025        STA    FNT          SET STACK HIGH POINTER            BSI34680
3469 03714   101040            SNZ                 IF STACK NOW EMPTY, CLEAR STACK   BSI34690
3470 03715   0 04 00024        STA    FNB          LOW POINTER                       BSI34700
3471 03716   0 10 03011        JST    IPDS         RE-INITIALIZE THE PUSH DOWN STACK BSI34710
3472 03717  -0 01 03702        JMP*   DFSE         RETURN FROM WHENCE WE CAME        BSI34720
3473                     *                                                          BSI34730
3474                     *                                                          BSI34740
3475                     *                                                          BSI34750
3476                           EJCT                                                 BSI34760
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3477                    *          GOSUB STATEMENT PROCESSOR                                    BSI34770
3478                    *                                                                       BSI34780
3479                    *                                                                       BSI34790
3480                    *    STATEMENT SYNTAX:                                                  BSI34800
3481                    *                                                                       BSI34810
3482                    *          <GOSUB STATEMENT>:=GOSUB<LINE NUMBER>@:¢C/R¢                 BSI34820
3483                    *                                                                       BSI34830
3484                    *                                                                       BSI34840
3485                    *                                                                       BSI34850
3486 03720   0 02 00036 GOSB LDA   RTP          SEE IF RETURN STACK IS FULL                    BSI34860
3487 03721   0 11 00477      CAS   RTM          X                                              BSI34870
3488 03722   0 10 05243      JST   ERR          YES...>8 OUTSTANDING GOSUBS                    BSI34880
3489 03723   143723          BCI   1,GS         X                                              BSI34890
3490 03724   0 10 04556      JST   ISN          GET STMT NUMBER AND LEAVE IT IN SNUM           BSI34900
3491 03725   0 02 00034      LDA   SIP          FIRST WORD OF ENTRY IS                         BSI34910
3492 03726  -0 04 00036      STA*  RTP          POINTER TO THIS STATEMENT                      BSI34920
3493 03727   0 10 03116      JST   GDLM         MAKE SURE : OR C/R IS NEXT                     BSI34930
3494 03730   0 05 00401      ERA   C215         TEST FOR CARRIAGE RETURN                       BSI34940
3495 03731   100040          SZE                IF IT IS, SECOND WORD OF ENTRY = 0             BSI34950
3496 03732   0 02 00037      LDA   SBP          OTHERWISE SBP TO NEXT STMT ON THIS LINE        BSI34960
3497 03733   0 12 00036      IRS   RTP          X                                              BSI34970
3498 03734  -0 04 00036      STA*  RTP                                                         BSI34980
3499 03735   0 12 00036      IRS   RTP          X                                              BSI34990
3500 03736   0 01 03326      JMP   GOT2         NOW HANDLE LIKE A 'GOTO'                       BSI35000
3501                    *                                                                       BSI35010
3502                    *                                                                       BSI35020
3503                    *                                                                       BSI35030
3504                         EJCT                                                               BSI35040
```

```
3505                    *          RETURN STATEMENT PROCESSOR                                    BSI35050
3506                    *                                                                        BSI35060
3507                    *                                                                        BSI35070
3508                    *     STATEMENT SYNTAX:                                                  BSI35080
3509                    *                                                                        BSI35090
3510                    *          <RETURN STATEMENT>:=RETURN@:CC/R%                             BSI35100
3511                    *                                                                        BSI35110
3512                    *                                                                        BSI35120
3513                    *                                                                        BSI35130
3514 03737   0 10 03116 RTRN JST   GDLM          MAKE SURE : OR C/R IS NEXT                    BSI35140
3515 03740   0 02 00036      LDA   RTP           GET RETURN STACK POINTER                       BSI35150
3516 03741   0 11 00476      CAS   RTB           CHECK FOR EMPTY STACK                         BSI35160
3517 03742   0 01 03745      JMP   *+3           TABLE NOT EMPTY                               BSI35170
3518 03743   0 10 05243      JST   ERR           ERROR...RETURN WITHOUT A GOSUB                BSI35180
3519 03744   151324          BCI   1,RT          X                                             BSI35190
3520 03745   0 07 00376      SUB   C2            DELETE LAST ENTRY                             BSI35200
3521 03746   0 04 00036      STA   RTP           SAVE UPDATED POINTER                          BSI35210
3522 03747   0 10 00000      JST   L$22          FETCH SIP AND SBP TO LAST                     BSI35220
3523 03750  -0 000036        DAC*  RTP           GOSUB STATEMENT                               BSI35230
3524 03751   0 01 03665      JMP   NX05          GO EXECUTE PROGRAM TRANSFER SEQUENCE          BSI35240
3525                    *                                                                        BSI35250
3526                    *                                                                        BSI35260
3527                    *                                                                        BSI35270
3528                         EJCT                                                                BSI35280
```

```
3529                    *          CALL STATEMENT PROCESSOR                                    BSI35290
3530                    *                                                                      BSI35300
3531                    *                                                                      BSI35310
3532                    *    STATEMENT SYNTAX:                                                 BSI35320
3533                    *                                                                      BSI35330
3534                    *         <CALL STATEMENT>:=CALL(<SUBROUTINE IDENTIFIER<@,             BSI35340
3535                    *                               <SUBROUTINE PARAMETER>%(0,*))          BSI35350
3536                    *                                                                      BSI35360
3537                    *         <SUBROUTINE IDENTIFIER>:=<EXPRESSION>                        BSI35370
3538                    *                                                                      BSI35380
3539                    *         <SUBROUTINE PARAMETER>:=<VARIABLE NAME>¢<EXPRESSION>         BSI35390
3540                    *                                                                      BSI35400
3541                    *                                                                      BSI35410
3542                    *                                                                      BSI35420
3543 03752  0 02 00410 CALL LDA   C250          GET LEFT PAREN                               BSI35430
3544 03753  0 10 03104      JST   GCCK          X                                            BSI35440
3545 03754  0 04 00312      STA   CLT1          CLEAR ARGUMENT COUNTER                       BSI35450
3546 03755  0 04 00313      STA   CLT2          CLEAR <EXPRESSION> COUNTER                   BSI35460
3547 03756  0 10 02443      JST   EXPA          EVALUATE SUBROUTINE IDENTIFIER               BSI35470
3548 03757  0 10 03203      JST   LCVL          CONVERT RESULT TO INTEGER                    BSI35480
3549 03760  0 10 00000      JST   IFLT          X                                            BSI35490
3550 03761  0 01 04064      JMP   CL01          ERROR ... IDENTIFIER OUT OF RANGE            BSI35500
3551 03762  0 11 00370      CAS   C0            PERFORM EXCLUSIVE RANGE CHECK                BSI35510
3552 03763  0 11 00442      CAS   CMAX          X                                            BSI35520
3553 03764  0 01 04064      JMP   CL01          .....ERROR..... OUT OF RANGE                 BSI35530
3554 03765  0 01 04064      JMP   CL01          .....ERROR..... OUT OF RANGE                 BSI35540
3555 03766  0 06 00515      ADD   CJST          FORM SUBROUTINE CALL                         BSI35550
3556 03767  0 04 00230      STA   IBUF          PUT IT AT START OF CALLING SEQUENCE          BSI35560
3557 03770  0 10 03047 CL05 JST   GCHR          CHECK EXPRESSION DELIMITER                   BSI35570
3558 03771  0 11 00414      CAS   C254          COMMA ?                                      BSI35580
3559 03772  100000         SKP                 NO                                           BSI35590
3560 03773  0 01 04025      JMP   CL02          ......YES......  MORE ARGUMENTS FOLLOW       BSI35600
3561 03774  0 10 03065      JST   UCHR          NOT COMMA, MUST BE RIGHT PAREN               BSI35610
3562 03775  0 02 00411      LDA   C251          X                                            BSI35620
3563 03776  0 10 03104      JST   GCCK          X                                            BSI35630
3564 03777  0 10 03116      JST   GDLM          C/R OR : MUST FOLLOW RIGHT PAREN             BSI35640
3565 04000  0 02 00312      LDA   CLT1          GET ARGUMENT COUNT                           BSI35650
```

```
3566 04001   0 04 00000        STA   0          IN X TO GET AT END OF PARAMETER LIST        BSI35660
3567 04002   0 07 00376        SUB   C2         MORE THAN ONE ARGUMENT ?                    BSI35670
3568 04003   100400           SPL               X                                          BSI35680
3569 04004   0 01 04010        JMP   *+4        ...NO... LIST TERMINATOR NOT NEEDED         BSI35690
3570 04005   140040           CRA               INSERT ZERO WORD AT END OF PARAMETER LIST   BSI35700
3571 04006   1 04 00231        STA   WORK,1      FOR FORTRAN COMPATIBILITY                   BSI35710
3572 04007   0 12 00000        IRS   0          ACCOUNT FOR WORD JUST INSERTED              BSI35720
3573 04010   0 02 00530        LDA   CJMP       INSERT RETURN JUMP AT                       BSI35730
3574 04011   1 04 00231        STA   WORK,1      OF CALLING SEQUENCE                         BSI35740
3575 04012   0 01 00230        JMP   IBUF       GO CALL THE SUBROUTINE                      BSI35750
3576                  *                                                                     BSI35760
3577                  *    HERE WHEN SUBROUTINE RETURNS                                     BSI35770
3578                  *                                                                     BSI35780
3579 04013   0 02 00313 CL06  LDA   CL12       ANY JUNK ON THE PUSH DOWN STACK ?           BSI35790
3580 04014   101040           SNZ               X                                          BSI35800
3581 04015   0 01 04574        JMP   SEX        ...NO... PROCEED TO THE NEXT STATEMENT      BSI35810
3582 04016   140407           TCA               ESTABLISH COUNTER TO CLEAR THE STACK        BSI35820
3583 04017   0 04 00000        STA   0          X                                          BSI35830
3584 04020   0 10 03031        JST   POP        REMOVE A REAL NUMBER FROM THE STACK         BSI35840
3585 04021   0 10 03031        JST   POP        X                                          BSI35850
3586 04022   0 12 00000        IRS   0          BUMPT THE COUNTER                           BSI35860
3587 04023   0 01 04020        JMP   *-3        MORE TO GO                                  BSI35870
3588 04024   0 01 04574        JMP   SEX        PROCEED TO THE NEXT STATEMENT               BSI35880
3589                  *                                                                     BSI35890
3590 04025   0 10 03054 CL02  JST   XCHR       SEE IF ISOLATED VARIABLE NAME               BSI35900
3591 04026   0 10 03155        JST   ALFA       X                                          BSI35910
3592 04027   0 01 04046        JMP   CL03       NO ... IT MUST BE AN EXPRESSION             BSI35920
3593 04030   0 02 00037        LDA   SBP        MARK START OF NAME                          BSI35930
3594 04031   0 04 00314        STA   CL13       X                                          BSI35940
3595 04032   0 10 04632        JST   PVN        ISOLATE/CLASSIFY VARIABLE NAME              BSI35950
3596 04033   0 10 04751        JST   ADV        LOCATE/ASSIGN DIMENSIONED VARIABLE          BSI35960
3597 04034   0 10 04671        JST   ASV        LOCATE/ASSIGN SIMPLE VARIABLE               BSI35970
3598 04035   0 10 03054        JST   XCHR       SEE IF VARIABLE NAME IS PART OF A           BSI35980
3599 04036   0 11 00414        CAS   C254       BIGGER EXPRESSION                           BSI35990
3600 04037   100000           SKP               POSSIBLE                                   BSI36000
3601 04040   0 01 04056        JMP   CL04       NO ... WE HAVE ISOLATED A PARAMETER         BSI36010
3602 04041   0 05 00411        ERA   C251       TRY FOR ')'                                 BSI36020
```

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04042  101040              SNZ                 X                                        BSI36030
04043  0 01 04056          JMP   CL04          VARIABLE NAME STANDS ALONE               BSI36040
04044  0 02 00314          LDA   CLT3          IT'S PART OF AN EXPRESSION ....          BSI36050
04045  0 04 00037          STA   SBP           ....RESET TO START OF NAME               BSI36060
04046  140040       CL03   CRA                 EVALUATE EXPRESSION                      BSI36070
04047  0 10 02443          JST   EXPA          X                                        BSI36080
04050  0 35 00035          LDX   PDLP          SET PARAMETER ADDRESS IN X               BSI36090
04051  0 10 03203          JST   LCVL          PUT PARAMETER VALUE ON THE STACK         BSI36100
04052  0 10 03022          JST   PUSH          X                                        BSI36110
04053  000201              IAB                 X                                        BSI36120
04054  0 10 03022          JST   PUSH          X                                        BSI36130
04055  0 12 00313          IRS   CLT2          BUMP <EXPRESSION> COUNT                  BSI36140
04056  0 02 00000   CL04   LDA   0             GET PARAMETER ADDRESS                    BSI36150
04057  0 35 00312          LDX   CLT1          X POINTS TO NEXT WORD IN CALLING SEQ)    BSI36160
04060  1 04 00231          STA   WORK,1        SET PARAMETER ADDRESS IN CALLING SEQ.    BSI36170
04061  0 12 00312          IRS   CLT1          BUMP PARAMETER COUNT                     BSI36180
04062  0 01 03770          JMP   CL05          GO TEST DELIMITER                        BSI36190
                    *                                                                   BSI36200
04063  0 000000            DAC   **            UNDEFINED SUBROUTINE ENTRY               BSI36210
04064  0 10 05243   CL01   JST   ERR           REPORT SUBROUTINE SELECTION ERROR        BSI36220
04065  151723              BCI   1,SS          X                                        BSI36230
                    *                                                                   BSI36240
                    *                                                                   BSI36250
                    *                                                                   BSI36260
                    *                                                                   BSI36270
                           EJCT                                                         BSI36280
```

```
3629                    *          READ AND INPUT STATEMENT PROCESSORS                          BSI36290
3630                    *                                                                       BSI36300
3631                    *                                                                       BSI36310
3632                    *    STATEMENT SYNTAX:                                                  BSI36320
3633                    *                                                                       BSI36330
3634                    *          <READ STATEMENT>:=READ<READ LIST>@:¢C/R%                     BSI36340
3635                    *                                                                       BSI36350
3636                    *          <INPUT STATEMENT>:=INPUT<READ LIST>@:¢C/R%                   BSI36360
3637                    *                                                                       BSI36370
3638                    *          <READ LIST>:=<VARIABLE>@,<VARIABLE>%(0,*)                    BSI36380
3639                    *                                                                       BSI36390
3640                    *                                                                       BSI36400
3641                    *                                                                       BSI36410
3642 04066  140040     INPT CRA                    CLEAR DATA AVAILIBILITY POINTER             BSI36420
3643 04067  0 04 04137       STA   ISBP            X                                           BSI36430
3644 04070  0 02 04136       LDA   IDAC            SET LINKAGE TO INPT DATA AND TO DATA FETCH   BSI36440
3645 04071  100000           SKP                   X                                           BSI36450
3646 04072  0 02 04151 READ  LDA   RDAC            SET LINKAGE TO READ DATA AND DATA FETCH     BSI36460
3647 04073  0 04 00046       STA   RDT1            SAVE PARAMETER LINKAGE                      BSI36470
3648 04074  0 10 04632 RD02  JST   PVN             PROCESS LIST VARIABLE NAME                  BSI36480
3649 04075  0 10 04751       JST   ADV             LOCATE/ASSIGN SUBSCRIPTED VARIABEL          BSI36490
3650 04076  0 10 04671       JST   ASV             LOCATE/ASSIGN SIMPLE VARIABLE               BSI36500
3651 04077  0 15 04121       STX   RDT2            SAVE THE VARIABLE POINTER                   BSI36510
3652 04100  0 35 00046       LDX   RDT1            RDT1 POINTS TO DATA SBP                     BSI36520
3653 04101 -0 02 00000       LDA*  0               IS DATA AVAILABLE ?                         BSI36530
3654 04102  101040           SNZ                   X                                           BSI36540
3656 04103  1 01 00001       JMP   1,1             NO ... GO GET SOME MORE                     BSI36560
3660 04104  0 02 00037 RD04  LDA   SBP             SWAP STMT POINTER WITH                      BSI36600
3661 04105 -0 13 00046       IMA*  RDT1            DATA POINTER                                BSI36610
3662 04106  0 04 00037       STA   SBP             X                                           BSI36620
3663 04107  140040           CRA                   EVALUATE THE NEXT DATA ITEM                 BSI36630
3664 04110  0 10 02443       JST   EXPA            X                                           BSI36640
3665 04111  0 10 03047       JST   GCHR            TEST FOR END OF DATA LIST                   BSI36650
3666 04112  0 10 03173       JST   DLCK            X                                           BSI36660
3667 04113  0 01 04131       JMP   RD01            NO....GO INSURE THAT SEPERATOR IS A COMMA   BSI36670
3668 04114  140040           CRA                   YES...CLEAR DATA AVAILIBILITY INDICATOR     BSI36680
3669 04115 -0 13 00046 RD03  IMA*  RDT1            X                                           BSI36690
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3670 04116   0 04 00037        STA   SBP              AND RESTORE STATEMENT POINTER                BSI36700
3671 04117   0 10 03203        JST   LCVL             GET VALUE OF DATA ITEM                       BSI36710
3672 04120   0 10 00000        JST   H$22             ASSIGN IT TO READ LIST ITEM                  BSI36720
3673 04121   0 000000    RDT2 DAC   **               X                                            BSI36730
3674 04122   0 10 03047        JST   GCHR             AT END OF STATEMENT ?                        BSI36740
3675 04123   0 11 00414        CAS   C254             X                                            BSI36750
3676 04124   100000            SKP                    X                                            BSI36760
3677 04125   0 01 04074        JMP   RD02             NO....GO PROCESS NEXT LIST ITEM              BSI36770
3678 04126   0 10 03065        JST   UCHR             YES...MAKE SURE DELIMITER IS : OR C/R        BSI36780
3679 04127   0 10 03116        JST   GDLM             X                                            BSI36790
3680 04130   0 01 04574        JMP   SEX              GO PROCESS NEXT STATEMENT                    BSI36800
3681                      *                                                                       BSI36810
3682 04131   0 10 03065 RD01 JST   UCHR             IF NOT DELIMITER, IT MUST BE A COMMA         BSI36820
3683 04132   0 02 00414        LDA   C254             X                                            BSI36830
3684 04133   0 10 03104        JST   GCCK             X                                            BSI36840
3685 04134   0 02 00037        LDA   SBP              UPDATE DATA POINTER                          BSI36850
3686 04135   0 01 04115        JMP   RD03             X                                            BSI36860
3687                      *                                                                       BSI36870
3688 04136   0 004137    IDAC DAC   *+1              LINKAGE TO INPUT DATA PARAMETERS             BSI36880
3689 04137   000000      ISBP OCT   0                POINTER TO INPUT DATA                        BSI36890
3690                      *                                                                       BSI36900
3691                      *     HERE TO READ DATA LIST FROM ASR                                   BSI36910
3692                      *                                                                       BSI36920
3693 04140   0 02 00037        LDA   SBP              SAVE CURRENT STATEMENT BYTE POINTER DURING   BSI36930
3694 04141   0 04 04137        STA   ISBP             THE DATA FETCH                               BSI36940
3695 04142   0 02 00406        LDA   C241             PERFIX LINE WITH '%'                         BSI36950
3696 04143   0 10 01504        JST   ILIN             INPUT LINE FROM ASR                          BSI36960
3698 04144   0 000460    INT1 DAC   IBUF+IBUF        READ INTO DATA INPUT BUFFER                  BSI36980
3702 04145   0 02 04144        LDA   INT1             CALCULATE SBP OF DATA LINE                   BSI37020
3706 04146   0 13 04137        IMA   ISBP             SWAP WITH CURRENT STMT BYTE POINTER          BSI37060
3707 04147   0 04 00037        STA   SBP              RESTORE CURRENT STATEMENT POINTER            BSI37070
3708 04150   0 01 04104        JMP   RD04             RETURN TO INPUT PROCESSING                   BSI37080
3709                      *                                                                       BSI37090
3710                      *     HERE FOR READ STATEMENT DATA FETCH                                BSI37100
3711                      *                                                                       BSI37110
3712 04151   0 004153    RDAC DAC   *+2              LINKAGE TO READ PARAMETERS                   BSI37120
3713 04152   0 000000    RSIP DAC   **               POINTER TO CURRENT DATA STATEMENT            BSI37130
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3714 04153    0 000000    RSBP DAC   **              POINTER TO CURRENT DATA ITEM                BSI37140
3715                      *                                                                       BSI37150
3716 04154    0 10 04167       JSI   RD06            SET STMT PNTRS FOR DATA STMT SEARCH         BSI37160
3717 04155    0 02 00443       LDA   DTAC            FIND THE NEXT DATA STATEMENT                BSI37170
3718 04156    0 10 04457       JSI   SSR             X                                           BSI37180
3719 04157    0 01 04162       JMP   RD07            RAN OUT OF DATA                             BSI37190
3720 04160    0 10 04167       JSI   RD06            SWAP BACK THE POINTERS                      BSI37200
3721 04161    0 01 04104       JMP   RD04            CONTINUE WITH READ STATEMENT                BSI37210
3722                      *                                                                       BSI37220
3723 04162    0 10 04167 RD07  JSI   RD06            RESTORE THE POINTERS                        BSI37230
3724 04163    140040           CRA                   RESET DATA AVAILABILITY POINTER             BSI37240
3725 04164    0 04 04153       STA   RSBP            X                                           BSI37250
3726 04165    0 10 05243       JSI   ERR             REPORT THE ERROR                            BSI37260
3727 04166    142301           BCI   1,DA            X                                           BSI37270
3728                      *                                                                       BSI37280
3729                      *     HERE TO SWAP DATA POINTERS                                        BSI37290
3730                      *                                                                       BSI37300
3731 04167    0 000000    RD06 DAC   **                                                          BSI37310
3732 04170    0 02 04152       LDA   RSIP            SWAP SIP WITH RSIP                          BSI37320
3733 04171    0 13 00034       IMA   SIP             X                                           BSI37330
3734 04172    0 04 04152       STA   RSIP            X                                           BSI37340
3735 04173    0 02 04153       LDA   RSBP            SWAP SBP WITH RSBP                          BSI37350
3736 04174    0 13 00037       IMA   SBP             X                                           BSI37360
3737 04175    0 04 04153       STA   RSBP            X                                           BSI37370
3738 04176   -0 01 04167       JMP*  RD06            RETURN                                      BSI37380
3745                      *                                                                       BSI37450
3746                      *                                                                       BSI37460
3747                      *                                                                       BSI37470
3748                           EJCT                                                               BSI37480
```

```
3749                    *          RESTORE STATEMENT PROCESSOR                                    BSI37490
3750                    *                                                                         BSI37500
3751                    *                                                                         BSI37510
3752                    *     STATEMENT SYNTAX:                                                   BSI37520
3753                    *                                                                         BSI37530
3754                    *          <RESTORE STATEMENT>::=RESTORE@:CC/R%                           BSI37540
3755                    *                                                                         BSI37550
3756                    *                                                                         BSI37560
3757                    *                                                                         BSI37570
3758 04177   0 10 03116 RSTR JST   GDLM            MAKE SURE : OR C/R IS NEXT                     BSI37580
3759 04200   0 10 04202      JST   REST            INITIALIZE DATA STMT POINTERS                  BSI37590
3760 04201   0 01 04574      JMP   SEX             GO PROCESS NEXT STATEMENT                      BSI37600
3761                    *                                                                         BSI37610
3762                    *                                                                         BSI37620
3763                    *     REST - RESET DATA STATEMENT POINTERS                                BSI37630
3764                    *                                                                         BSI37640
3765                    *                                                                         BSI37650
3766 04202   0 000000   REST DAC   **                                                             BSI37660
3767 04203   0 02 00032      LDA   SIB             SET DATA STMT POINTER TO JUST BELOW START       BSI37670
3768 04204   0 07 00376      SUB   C2              OF STMT INDEX, SO THAT THE FIRST DATA          BSI37680
3769 04205   0 04 04152      STA   RSIP            STMT WILL BE FOUND DURING THE NEXT READ        BSI37690
3770 04206   140040          CRA                   SET RSBP TO INDICATE THAT A SEARCH             BSI37700
3771 04207   0 04 04153      STA   RSBP            FOR A DATA STMT WILL HAVE TO BE PERFORMED      BSI37710
3772 04210  -0 01 04202      JMP*  REST            RETURN                                         BSI37720
3773                    *                                                                         BSI37730
3774                    *                                                                         BSI37740
3775                    *                                                                         BSI37750
3776                         EJCT                                                                 BSI37760
```

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3777                    *          PRINT STATEMENT PROCESSOR                                    BSI37770
3778                    *                                                                       BSI37780
3779                    *                                                                       BSI37790
3780                    *     STATEMENT SYNTAX:                                                 BSI37800
3781                    *                                                                       BSI37810
3782                    *          <PRINT STATEMENT>:=PRINT@<PRINT LIST>%(0,1)                  BSI37820
3783                    *                                                                       BSI37830
3784                    *          <PRINT LIST>:=<PRINT ITEM>@@,¢;%<PRINT ITEM>%(0,*)@,¢;%(0,1) BSI37840
3785                    *                                                                       BSI37850
3786                    *          <PRINT ITEM>:=<EXPRESSION>¢<MESSAGE>¢<MESSAGE><EXPRESSION>¢  BSI37860
3787                    *                        TAB(<EXPRESSION>)                              BSI37870
3788                    *                                                                       BSI37880
3789                    *          <MESSAGE>:="@<ALPHABETIC CHARACTER>¢<DIGIT>¢                 BSI37890
3790                    *                     <SPECIAL CHARACTER>%(1,*)"                        BSI37900
3791                    *                                                                       BSI37910
3792                    *                                                                       BSI37920
3793                    *                                                                       BSI37930
3794 04211  0 10 03047 PRNT JST  GCHR          TEST FOR EMPTY PRINT LIST                       BSI37940
3795 04212  0 10 03173      JST  DLCK          (: OR C/R IMMEADIATLY FOLLOWING 'PRINT')        BSI37950
3796 04213  0 01 04222      JMP  PR11          NOT EMPTY                                       BSI37960
3797 04214  0 10 00000 PR04 JST  LFCR          ADVANCE TO NEXT LINE ON ASR                     BSI37970
3798 04215  0 01 04574      JMP  SEX           GO PROCESS NEXT STATEMENT                       BSI37980
3799                    *                                                                       BSI37990
3800 04216  0 10 03047 PR01 JST  GCHR          GET 1ST CHARACTER OF PRINT ITEM                 BSI38000
3801 04217  0 10 03173      JST  DLCK          WAS THERE A DANNGLING COMMA OR ;                BSI38010
3802 04220  100000           SKP              NO                                              BSI38020
3803 04221  0 01 04574      JMP  SEX           YES...EXIT WITHOUT LINE ADVANCE                 BSI38030
3804 04222  0 11 00407 PR11 CAS  C242          TEST FOR QUOTED TEXT STRING                     BSI38040
3805 04223  100000           SKP              NO                                              BSI38050
3806 04224  0 01 04303      JMP  PR02          YES...GO PRINT THE STRING                       BSI38060
3807 04225  0 05 00503      ERA  TABC          TEST FOR TAB OPERATION                          BSI38070
3808 04226  101040           SNZ              X                                               BSI38080
3809 04227  0 01 04254      JMP  PR03          YES...GO PROCESS TAB                            BSI38090
3810                    *                                                                       BSI38100
3811                    *     HERE TO PRINT VALUE OF AN EXPRESSION                              BSI38110
3812                    *                                                                       BSI38120
3813 04230  0 10 03065      JST  UCHR          STEP BACK OVER LEADING CHAR OF EXPR             BSI38130
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3814 04231   140040            CRA                      EVALUATE THE EXPRESSION                    BSI38140
3815 04232   0 10 02443        JST   EXPA               X                                          BSI38150
3816 04233   140040            CRA                      NO CHARACTER SURPRESSION FOR THIS          BSI38160
3817 04234   0 10 02154        JST   PCVL               PRINT THE RESULT                           BSI38170
3818                 *                                                                            BSI38180
3819                 *    HERE TO WORK ON PRINT ITEM DELIMITER                                    BSI38190
3820                 *                                                                            BSI38200
3821 04235   0 10 03047 PR10   JST   GCHR               FETCH THE DELIMITING CHARACTER             BSI38210
3822 04236   0 10 03173        JST   DLCK               IS IT TERMINAL (: OR C/R) ?                BSI38220
3823 04237   100000            SKP                      NO                                         BSI38230
3824 04240   0 01 04214        JMP   PR04               YES...ADVANCE TO NEXT LINE AND EXIT        BSI38240
3825 04241   0 11 00423        CAS   C273               IS IT A SEMI-COLON ?                       BSI38250
3826 04242   100000            SKP                      NO                                         BSI38260
3827 04243   0 01 04216        JMP   PR01               YES...NO SPECIAL SPACEING REQUIRED         BSI38270
3828 04244   0 05 00414        ERA   C254               IT MUST BE COMMA,                          BSI38280
3829 04245   100040            SZE                      OR ELSE AN ERROR                           BSI38290
3830 04246   0 01 04323        JMP   PR05               GO REPORT FIELD DELIMITER ERROR            BSI38300
3831 04247   0 06 00375        ADD   C16                FIND NEXT TAB POSITION                     BSI38310
3832 04250   0 11 00045        CAS   CPOS               IS COLUMN IN A > CURRENT CARRIAGE POSITION BSI38320
3833 04251   0 01 04266        JMP   PR06               YES...GO ADVANCE TO POSITION IN A          BSI38330
3834 04252   0 01 04216        JMP   PR01               NO TAB REQUIRED...PROCESS NEXT LIST ITEM   BSI38340
3835 04253   0 01 04247        JMP   *-4                NO...TRY NEXT TAB POSITION                 BSI38350
3836                 *                                                                            BSI38360
3837                 *    HERE TO HANDLE 'TAB' FUNCTION                                           BSI38370
3838                 *                                                                            BSI38380
3839 04254   0 10 02443 PR03   JST   EXPA               EVALUATE THE EXPRESSION                    BSI38390
3840 04255   0 02 00411        LDA   C251               MAKE SURE IT ENDS WITH A                   BSI38400
3841 04256   0 10 03104        JST   GCCK               RIGHT PAREN                                BSI38410
3842 04257   0 10 03047        JST   GCHR               IF NEXT CHARACTER IS : OR C/R, THEN NO POINBSI38420
3843 04260   0 10 03173        JST   DLCK               IN DOING A 'TAB', AS HE                    BSI38430
3844 04261   100000            SKP                      WILL GET A C/R ANYWAY                      BSI38440
3845 04262   0 01 04214        JMP   PR04               X                                          BSI38450
3846 04263   0 10 03203        JST   LCVL               GET RESULT OF THE EXPRESSION               BSI38460
3847 04264   0 10 00000        JST   IFLT               CONVERT TO INTEGER                         BSI38470
3848 04265   0 01 04301        JMP   PR07               TOO BIG...GO TO NEXT LINE                  BSI38480
3849 04266   0 11 00473 PR06   CAS   MCOL               IS IT TAB TO BEYOND END OF LINE ?          BSI38490
3850 04267   0 01 04301        JMP   PR07               YES...ADVANCE TO NEXT LINE                 BSI38500
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3851 04270   101000          NOP                    NO                                          BSI38510
3852 04271   0 04 00312      STA   PR11             SAVE TARGET COLUMN NUMBER                   BSI38520
3853 04272   0 11 00045 PR09 CAS   CPOS             COMPARE WITH CURRENT POSITION               BSI38530
3854 04273   0 01 04276      JMP   *+3              NOT THERE YET                               BSI38540
3855 04274   0 01 04216      JMP   PR01             AT PROPER COLUMN                            BSI38550
3856 04275   0 01 04216      JMP   PR01             PAST IT...SO WHAT                           BSI38560
3857 04276   0 10 02764      JST   SPAC             MOVE OVER A SPACE                           BSI38570
3858 04277   0 02 00312      LDA   PR11             RETRIEVE TARGET COLUMN NUMBER               BSI38580
3859 04300   0 01 04272      JMP   PR09             GO TEST FOR COMPLETION                      BSI38590
3860                 *                                                                         BSI38600
3861 04301   0 10 00000 PR07 JST   LFCR             ADVANCE TO NEXT LINE                        BSI38610
3862 04302   0 01 04216      JMP   PR01             GO LOOK AT NEXT ITEM                        BSI38620
3863                 *                                                                         BSI38630
3864                 *    HERE TO OUTPUT TEXT STRING                                           BSI38640
3865                 *                                                                         BSI38650
3866 04303   0 10 03047 PR02 JST   GCHR             GET THE NEXT CHARACTER OF THE STRING        BSI38660
3867 04304   0 11 00407      CAS   C242             END OF STRING ?                             BSI38670
3868 04305   100000          SKP                    NO                                          BSI38680
3869 04306   0 01 04311      JMP   PR08             YES...GO CLOSE UP                           BSI38690
3870 04307   0 10 00000      JST   OTA1             OUTPUT THE CHARACTER                        BSI38700
3871 04310   0 01 04303      JMP   PR02             CONTINUE                                    BSI38710
3872                 *                                                                         BSI38720
3873 04311   0 10 03047 PR08 JST   GCHR             LOOK AT CHARACTER FOLLOWING '"'             BSI38730
3874 04312   0 11 00414      CAS   C254             IF COMMA OR SEMI COLON,                     BSI38740
3875 04313   100000          SKP                    PERFORM STANDARD INTERITEM PROCESSING       BSI38750
3876 04314   0 01 04236      JMP   PR10+1           IT'S A COMMA                                BSI38760
3877 04315   0 11 00423      CAS   C273             MAYBE A SEMI COLON                          BSI38770
3878 04316   100000          SKP                    NO                                          BSI38780
3879 04317   0 01 04236      JMP   PR10+1           YES                                         BSI38790
3880 04320   0 10 03173      JST   DLCK             IS IT A TERMINAL DELIMITER ?                BSI38800
3881 04321   0 01 04222      JMP   PR11             NO....IT MUST BE START OF NEXT ITEM         BSI38810
3882 04322   0 01 04214      JMP   PR04             YES...ADVANCE ASR LINE AND EXIT             BSI38820
3883                 *                                                                         BSI38830
3884                 *                                                                         BSI38840
3885 04323   0 10 05243 PR05 JST   ERR              REPORT ITEM DELIMITER ERROR                 BSI38850
3886 04324   150304          BCI   1,PD             X                                           BSI38860
3887                 *                                                                         BSI38870
```

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3888                *                                                    BSI38880
3889                *                                                    BSI38890
3890                     EJCT                                            BSI38900
```

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3891                    *          DEF STATEMENT PROCESSOR                                          BSI38910
3892                    *                                                                           BSI38920
3893                    *                                                                           BSI38930
3894                    *     STATEMENT SYNTAX:                                                     BSI38940
3895                    *                                                                           BSI38950
3896                    *          <DEF STATEMENT>:=DEFFN<ALPHABETIC CHARACTER>                     BSI38960
3897                    *                          (<SIMPLE VARIABLE>)=<EXPRESSION>@:¢C/R%          BSI38970
3898                    *                                                                           BSI38980
3899                    *                                                                           BSI38990
3900 04325  0 02 00034 DEF  LDA  SIP          ARE WE IN COMMAND MODE ?                             BSI39000
3901 04326  101040          SNZ              X                                                    BSI39010
3902 04327  0 01 04425      JMP  REM          ••••••YES••••••   IGNORE THE DEFINITION               BSI39020
3903 04330  0 10 03047      JST  GCHR         TEST FOR 'FN'                                        BSI39030
3904 04331  0 05 00507      ERA  DEFF         X                                                    BSI39040
3905 04332  100040          SZE              X                                                    BSI39050
3906 04333  0 01 04421      JMP  DF01         NOT HTERE...REPORT ERROR                             BSI39060
3907 04334  0 10 04606      JST  SDFI         IS NAME ALREADY IN FUNCTION INDEX ?                  BSI39070
3908 04335  100000          SKP              NO....AN ENTRY MUST BE APPENDED                      BSI39080
3909 04336  0 01 04377      JMP  DF02         YES...REDEFINE THE FUNCTION                          BSI39090
3910 04337  0 02 00426      LDA  C3           MAKE SURE THERE IS ROOM                              BSI39100
3911 04340  0 10 03041      JST  UFSC         FOR ANOTHER ENTRY                                    BSI39110
3912 04341  0 02 00025      LDA  FNT          DOES FOR-NEXT TABLE HAVE TO BE MOVED ?               BSI39120
3913 04342  101040          SNZ              X                                                    BSI39130
3914 04343  0 01 04364      JMP  DF03         NO                                                   BSI39140
3918 04344  0 04 00000      STA  0            SET X TO ADDRESS OF FIRST WORD TO BE MOVED           BSI39180
3919 04345  0 06 00426      ADD  C3           UPDATE THE FOR-NEXT TABLE HIGH POINTER               BSI39190
3923 04346  0 04 00025      STA  FNT          X                                                    BSI39230
3924 04347  0 07 00024      SUB  FNB          GET NO. OF WORDS TO BE MOVED                         BSI39240
3925 04350  0 07 00376      SUB  C2           X                                                    BSI39250
3926 04351  140407          TCA              X                                                    BSI39260
3927 04352  0 04 00076      STA  TMP1         X                                                    BSI39270
3928 04353  1 02 00000 DF04 LDA  0,1          MOVE A WORD UP 3 LOCATIONS                           BSI39280
3929 04354  1 04 00003      STA  3,1          X                                                    BSI39290
3930 04355  0 02 00000      LDA  0            DECREMENT THE RABLE POINTER                          BSI39300
3931 04356  0 07 00371      SUB  C1           X                                                    BSI39310
3932 04357  0 04 00000      STA  0            X                                                    BSI39320
3933 04360  0 12 00076      IRS  TMP1         BUMP THE WORD COUNTER                                BSI39330
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3934 04361   0 01 04353       JMP   DF04    MORE TO BE MOVED                                    BSI39340
3935 04362   0 12 00000       IRS   0       GET ADDRESS OF LOWEST WORD IN FOR TABLE              BSI39350
3937 04363   0 15 00024       STX   FNB     UPDATE TABLE BASE POINTER                           BSI39370
3943 04364   0 02 00022 DF03  LDA   DFB     IS FUNCTION INDEX EMPTY ?                           BSI39430
3944 04365   100040           SZE           X                                                   BSI39440
3945 04366   0 01 04416       JMP   DF05    NO...GO APPEND ENTRY                                BSI39450
3946 04367   0 02 00021       LDA   PTH     START FUNCTION INDEX ON IOP                         BSI39460
3947 04370   141206           AOA           OF PROGRAM TEXT STORAGE                             BSI39470
3948 04371   0 04 00022       STA   DFB     X                                                   BSI39480
3949 04372   0 06 00376       ADD   C2      GET TABLE HIGN ADDRESS                              BSI39490
3950 04373   0 04 00023 DF06  STA   DFT     SET FUNCTION TABLE HIGH                             BSI39500
3951 04374   0 07 00376       SUB   C2      GET ADDRESS OF FIRST WORD OF THIS ENTRY             BSI39510
3955 04375   0 04 00000       STA   0       AND LEAVE IT IN THE INDEX FOR TABLE ACCESSI         BSI39550
3956 04376   0 10 03011       JST   IPDS    REINITIALIZE THE PUSH DOWN STACK                    BSI39560
3957 04377   0 02 00074 DF02  LDA   CHAR    PUT FUNCTION NAME IN FIRST WORD OF ENTRY            BSI39570
3958 04400   1 04 00000       STA   0,1     X                                                   BSI39580
3959 04401   0 02 00410       LDA   C250    MAKE SURE '(' FOLLOWS                               BSI39590
3960 04402   0 10 03104       JST   GCCK    X                                                   BSI39600
3961 04403   0 10 04632       JST   PVN     FORM THE DUMMY VARIABLE NAME                        BSI39610
3962 04404   0 01 04423       JMP   DF07    SUBSCRIPTED VARIABLES CANNOT BE DUMMY NAMESBSI39620
3963 04405   0 02 00107       LDA   VARN    PLACE NAME IN SECOND WORD OF TBALE ENTRY            BSI39630
3964 04406   1 04 00001       STA   1,1     X                                                   BSI39640
3965 04407   0 02 00411       LDA   C251    MAKE SURE ')' IS NEXT                               BSI39650
3966 04410   0 10 03104       JST   GCCK    X                                                   BSI39660
3967 04411   0 02 00424       LDA   C275    '=' MUST OCCUR NEXT                                 BSI39670
3968 04412   0 10 03104       JST   GCCK    X                                                   BSI39680
3969 04413   0 02 00037       LDA   SBP     PLACE EXPRESSION POINTER IN                         BSI39690
3970 04414   1 04 00002       STA   2,1     THIRD WORD OF ENTRY                                 BSI39700
3971 04415   0 01 04425       JMP   REM     GO PROCESS NEXT STATEMENT                           BSI39710
3972                  *                                                                        BSI39720
3973 04416   0 02 00023 DF05  LDA   DFT     APPEND ENTRY TO FUNCTION INDEX                      BSI39730
3974 04417   0 06 00426       ADD   C3      X                                                   BSI39740
3975 04420   0 01 04373       JMP   DF06    X                                                   BSI39750
3976                  *                                                                        BSI39760
3977 04421   0 10 05243 DF01  JST   ERR     REPORT MISSING 'FN'                                 BSI39770
3978 04422   143316           BCI   1,FN                                                       BSI39780
3979                  *                                                                        BSI39790
```

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3980                    *                                                       BSI39800
3981  04423   0 10 05243 DF07 JST    ERR             REPORT DUMMY NAME ERROR  BSI39810
3982  04424   142326          BCI    1,DV            X                        BSI39820
3983                    *                                                       BSI39830
3984                    *                                                       BSI39840
3985                    *                                                       BSI39850
3986                          EJCT                                              BSI39860
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3987                    *           REMARK STATEMENT PROCESSOR                                  BSI39870
3988                    *                                                                       BSI39880
3989                    *                                                                       BSI39890
3990                    *     STATEMENT SYNTAX:                                                 BSI39900
3991                    *           <REM STATEMENT>:=REM@<ALPHABETIC CHARACTER>¢<DIGIT>¢        BSI39910
3992                    *                            <SPECIAL CHARACTER>%(0,*)@:¢C/R%           BSI39920
3993                    *                                                                       BSI39930
3994                    *                                                                       BSI39940
3995                    *                                                                       BSI39950
3996 04425   0 10 04540 REM  JST   SES              SCAN UNTIL : OR C/R                        BSI39960
3997 04426   0 01 04574      JMP   SEX              GO PROCESS NEXT STATEMENT                  BSI39970
3998                    *                                                                       BSI39980
3999                    *                                                                       BSI39990
4000                    *                                                                       BSI40000
4001                         EJCT                                                               BSI40010
```

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4002                    *          STOP AND END STATEMENT PROCESSORS                                  BSI40020
4003                    *                                                                             BSI40030
4004                    *                                                                             BSI40040
4005                    *    STATEMENT SYNTAX:                                                        BSI40050
4006                    *                                                                             BSI40060
4007                    *          <STOP STATEMENT>:=STOP@:CC/R%                                      BSI40070
4008                    *          <END STATEMENT>:=END@:CC/R%                                        BSI40080
4009                    *                                                                             BSI40090
4010                    *                                                                             BSI40100
4011                    *                                                                             BSI40110
4012 04427  0 10 03116 EXIT JST   GDLM              GET TERMINAL DELIMITER                            BSI40120
4013 04430  0 10 00000 EXT1 JST   LFCR              ADVANCE ASR LINE                                  BSI40130
4014 04431  0 10 02736      JST   PLN               PRINT LINE NUMBER                                 BSI40140
4015 04432  0 10 02747      JST   TYPE              PRINT 'EXIT'                                      BSI40150
4016 04433  0 004435       DAC   EXT2              MESSAGE POINTER                                   BSI40160
4017 04434  0 01 01000      JMP   CMOD              RETURN TO COMMAND MODE                            BSI40170
4018                    *                                                                             BSI40180
4019 04435  120305     EXT2 BCI   2, EX1                                                             BSI40190
     04436  154311
4020 04437  152000           VFD   8,'324,8,'000    'T', MESSAGE TERMINATOR                           BSI40200
4021                    *                                                                             BSI40210
4022                    *                                                                             BSI40220
4023                    *                                                                             BSI40230
4024                         EJCT                                                                     BSI40240
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4025                    *          ADVANCE TO NEXT SOURCE LINE                                    BSI40250
4026                    *                                                                         BSI40260
4027                    *                                                                         BSI40270
4028                    *     CALLING SEQUENCE:                                                   BSI40280
4029                    *                                                                         BSI40290
4030                    *          JST   ADVS                                                     BSI40300
4031                    *          ......RETURN       IF BEYOND END OF SOURCE PROGRAM             BSI40310
4032                    *          ......RETURN       IF NOT PAST END OF PROGRAM                  BSI40320
4033                    *                                                                         BSI40330
4034                    *          THIS ROUTINE WILL UPDATE THE STATEMENT INDEX                   BSI40340
4035                    *     POINTER (SIP), AND SET THE SOURCE BYTE POINTER (SBP)                BSI40350
4036                    *     TO POINT TO THE FIRST BYTE IN THE NEW LINE.                         BSI40360
4037                    *                                                                         BSI40370
4038                    *                                                                         BSI40380
4039 04440   0 000000   ADVS DAC   **                                                            BSI40390
4040 04441   0 02 00034      LDA   SIP          UPDATE THE STATEMENT INDEX POINTER              BSI40400
4041 04442   0 06 00376      ADD   C2           (2 WORDS PER ENTRY)                             BSI40410
4042 04443   0 04 00034      STA   SIP          X                                               BSI40420
4043 04444   0 11 00033      CAS   SIT          TEST AGAINST TABLE TOP                          BSI40430
4044 04445   0 01 04454      JMP   AV01         TAKE OUT OF SOURCE RETURN                       BSI40440
4045 04446   000000          OCT   0            NEVER CAN EXECUTE THIS WORD                     BSI40450
4049 04447   0 04 00000      STA   0            SET INDEX FOR ACCESSING THE TABLE               BSI40490
4050 04450   1 02 00001      LDA   1,1          SET SBP FROM SECOND WORD OF ENTRY               BSI40500
4051 04451   0 04 00037      STA   SBP          X                                               BSI40510
4052 04452   0 12 04440      IRS   ADVS         BUMP THE RETURN POINTER                         BSI40520
4053 04453  -0 01 04440      JMP*  ADVS         AND EXIT                                        BSI40530
4054                    *                                                                       BSI40540
4055 04454   140040     AV01 CRA                CLEAR SIP ON THE WAY OUT TO MAKE                BSI40550
4056 04455   0 04 00034      STA   SIP          THE MESSAGE '0 EXIT' WORK                       BSI40560
4057 04456  -0 01 04440      JMP*  ADVS         AND LEAVE MOST HASTILY                          BSI40570
4058                    *                                                                       BSI40580
4059                    *                                                                       BSI40590
4060                    *                                                                       BSI40600
4061                         EJCT                                                               BSI40610
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4062                    *          STATEMENT SEARCH ROUTINE                                          BSI40620
4063                    *                                                                            BSI40630
4064                    *                                                                            BSI40640
4065                    *    CALLING SEQUENCE:                                                       BSI40650
4066                    *                                                                            BSI40660
4067                    *          LDA   CODE          A CONTAINS 8 BIT STATEMENT IDENTIFIER         BSI40670
4068                    *          JST   SSR                                                         BSI40680
4069                    *          ......RETURN        IF STMT NOT FOUND                             BSI40690
4070                    *          ......RETURN        IF STMT FOUND                                 BSI40700
4071                    *                                                                            BSI40710
4072                    *          THE STATEMENT IDENTIFIER IS THE NUMBER CORESPONDING TO            BSI40720
4073                    *    THE STATEMENTS NAME IS THE RESERVED IDENTIFIER LIST.  THE               BSI40730
4074                    *    SEARCH IS STARTED AT THE LINE FOLLOWING THE LINE POINTED TO BY          BSI40740
4075                    *    THE STATEMENT INDEX POINTER, SIP.                                       BSI40750
4076                    *                                                                            BSI40760
4077                    *                                                                            BSI40770
4078 04457   0 000000   SSR  DAC   **                                                               BSI40780
4079 04460   0 04 00100      STA   TMP3          SAVE THE TARGET                                     BSI40790
4080 04461   0 10 04440 SSR1 JST   ADVS          ADVANCE TO NEXT STATEMENT                           BSI40800
4081 04462  -0 01 04457      JMP*  SSR           PAST END OF PROGRAM...RETURN 1                      BSI40810
4082 04463   0 10 03047 SSR2 JST   GCHR          GET STMT IDENTIFIER                                 BSI40820
4083 04464   0 05 00100      ERA   TMP3          COMPARE WITH SEARCH TARGET                          BSI40830
4084 04465   101040          SNZ                 SKIP IF NOT A MATCH                                 BSI40840
4085 04466   0 01 04473      JMP   SSR3          FOUND STMT OF TYPE WE'RE LOOKING FOR ***            BSI40850
4086 04467   0 10 04540      JST   SES           SCAN FOR END OF CURRENT STATEMENT                   BSI40860
4087 04470   0 11 00401      CAS   C215          TEST FOR END OF PHYSICAL LINE                       BSI40870
4088 04471   0 01 04463      JMP   SSR2          NO....TEST NEXT STMT ON THIS LINE                   BSI40880
4089 04472   0 01 04461      JMP   SSR1          YES...GO LOOK AT NEXT LINE                          BSI40890
4090 04473   0 12 04457 SSR3 IRS   SSR           BUMP RETURN POINTER TO RETURN 2                     BSI40900
4091 04474  -0 01 04457      JMP*  SSR           AND EXIT                                            BSI40910
4092                    *                                                                            BSI40920
4093                    *                                                                            BSI40930
4094                    *                                                                            BSI40940
4095                         EJCT                                                                    BSI40950
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4096                    *          STATEMENT INDEX SEARCH ROUTINE                                  BSI40960
4097                    *                                                                          BSI40970
4098                    *                                                                          BSI40980
4099                    *    CALLING SEQUENCE:                                                     BSI40990
4100                    *                                                                          BSI41000
4101                    *          JST   SISR                                                      BSI41010
4102                    *          ......RETURN       IF ENTRY NOT FOUND                           BSI41020
4103                    *          ......RETURN       IF FOUND                                     BSI41030
4104                    *                                                                          BSI41040
4105                    *          THIS ROUTINE WILL SEARCH THE STATEMENT INDEX                    BSI41050
4106                    *    FOR AN ENTRY WHOSE VALUE IS THE SAME AS SNUM.  IF                     BSI41060
4107                    *    A MATCH IS FOUND, SIP AND SBP ARE SET, AND THE SECOND                 BSI41070
4108                    *    RETURN IS TAKEN.                                                      BSI41080
4109                    *                                                                          BSI41090
4110                    *                                                                          BSI41100
4111                    *                                                                          BSI41110
4112 04475   0 000000   SISR DAC   **                                                             BSI41120
4113 04476   0 02 00033      LDA   SIT          SET TMP1 = END OF TABLE + 1                        BSI41130
4114 04477   141206          AOA                X                                                  BSI41140
4115 04500   0 04 00076      STA   TMP1         X                                                  BSI41150
4116 04501   0 02 00032      LDA   SIB          GET TABLE LOW ADDRESS                              BSI41160
4117 04502   0 11 00033      CAS   SIT          SEE IF TABLE IS EMPTY                              BSI41170
4118 04503  -0 01 04475      JMP*  SISR         EXIT...NO MATCH IN AN EMPTY TABLE                  BSI41180
4119 04504   000000          OCT   0            NEVER CAN EXECUTE THIS WORD                        BSI41190
4120 04505   0 04 00077      STA   TMP2         TMP2 = LOW ADDRESS OF TABLE                        BSI41200
4121 04506   140040          CRA                ZERO OUT SIP TO ADVOID CHANCE                      BSI41210
4122 04507   0 04 00034      STA   SIP          OF A FALSE EXIT                                    BSI41220
4123 04510   0 02 00076 SIS3 LDA   TMP1         NEXT ENTRY TO CHECK                                BSI41230
4124 04511   0 07 00077      SUB   TMP2         IS (TMP1-TMP2)/4*2+TMP2                            BSI41240
4125 04512   0404 76         LGR   2            X                                                  BSI41250
4126 04513   0414 77         LGL   1            X                                                  BSI41260
4127 04514   0 06 00077      ADD   TMP2         X                                                  BSI41270
4128 04515   0 13 00034      IMA   SIP          NEW ADDRESS IN SIP, LAST ADDR IN A                 BSI41280
4129 04516   0 11 00034      CAS   SIP          IF SAME ENTRY IS CHECKED TWICE, THEN               BSI41290
4130 04517   100000          SKP                TARGET IS NOT IN TABLE                             BSI41300
4131 04520  -0 01 04475      JMP*  SISR         TAKE NOT FOUND RETURN                              BSI41310
4132 04521  -0 02 00034      LDA*  SIP          GET VALUE OF THIS ENTRY                            BSI41320
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4133 04522    0 11 00050       CAS   SNUM      COMPARE WITH TARGET                    BSI41330
4134 04523    0 01 04530       JMP   SIS1      TOO HIGH                               BSI41340
4135 04524    0 01 04533       JMP   SIS2      FOUND IT ***                           BSI41350
4136                   *                                                             BSI41360
4137 04525    0 02 00034       LDA   SIP       TOO LOW...TRY REGION BETWEEN           BSI41370
4138 04526    0 04 00077       STA   TMP2      SIP AND TMP1 NEXT                      BSI41380
4139 04527    0 01 04510       JMP   SIS3      X                                      BSI41390
4140                   *                                                             BSI41400
4141 04530    0 02 00034 SIS1  LDA   SIP       TOO HIGH...TRY REGION BETWEEN          BSI41410
4142 04531    0 04 00076       STA   TMP1      TMP2 AND SIP NEXT                      BSI41420
4143 04532    0 01 04510       JMP   SIS3      X                                      BSI41430
4144                   *                                                             BSI41440
4146 04533    0 35 00034 SIS2  LDX   SIP       FOUND ENTRY ... PULL SOURCE BYTE       BSI41460
4152 04534    1 02 00001       LDA   1,1       POINTER FROM THE ENTRY                 BSI41520
4153 04535    0 04 00037       STA   SBP       X                                      BSI41530
4154 04536    0 12 04475       IRS   SISR      BUMP THE RETURN ADDRESS                BSI41540
4155 04537   -0 01 04475       JMP*  SISR      AND EXIT                               BSI41550
4156                   *                                                             BSI41560
4157                   *                                                             BSI41570
4158                   *                                                             BSI41580
4159                       EJCT                                                      BSI41590
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4160                    *           SCAN FOR END OF STATEMENT                                   BSI41600
4161                    *                                                                       BSI41610
4162                    *     CALLING SEQUENCE:                                                 BSI41620
4163                    *                                                                       BSI41630
4164                    *                                                                       BSI41640
4165                    *           JST   SES                                                   BSI41650
4166                    *           ......RETURN      A CONTAINS STMT DELIMITER (: OR C/R)       BSI41660
4167                    *                                                                       BSI41670
4168                    *           THIS ROUTINE WILL READ THROUGH THE CURRENT                  BSI41680
4169                    *     SOURCE LINE UNTIL EITHER A : OR C/R IS DETECTED.                  BSI41690
4170                    *                                                                       BSI41700
4171                    *                                                                       BSI41710
4172 04540   0 000000   SES   DAC   **                                                          BSI41720
4173 04541   0 10 03047       JST   GCHR              GET NEXT CHARACTER OF STMT                BSI41730
4174 04542   0 10 03173       JST   DLCK              TEST FOR : OR C/R                         BSI41740
4175 04543   100000           SKP                     NO                                        BSI41750
4176 04544  -0 01 04540       JMP*  SES               YES...EXIT                                BSI41760
4177 04545   0 11 00455       CAS   INTF              TEST FOR INTEGER CONSTANT                 BSI41770
4178 04546   100000           SKP                     NO                                        BSI41780
4179 04547   0 01 04554       JMP   SES1              YES...GO SKIP 2 CHARACTERS                BSI41790
4180 04550   0 05 00456       ERA   RELF              TEST FOR REAL CONSTANT                    BSI41800
4181 04551   100040           SZE                     X                                         BSI41810
4182 04552   0 01 04541       JMP   SES+1             NO...GO BACK TO LOOK AT NEXT CHARACTER    BSI41820
4183 04553   0 10 03077       JST   GCPK              SKIP TWO CHARACTERS                       BSI41830
4184 04554   0 10 03077 SES1  JST   GCPK              DITTO                                     BSI41840
4185 04555   0 01 04541       JMP   SES+1             GO LOOK AT THE NEXT CHARACTER             BSI41850
4186                    *                                                                       BSI41860
4187                    *                                                                       BSI41870
4188                    *                                                                       BSI41880
4189                         EJCT                                                               BSI41890
```

```
4190                    *           INPUT STATEMENT NUMBER                                          BSI41900
4191                    *                                                                           BSI41910
4192                    *                                                                           BSI41920
4193                    *     CALLING SEQUENCE:                                                     BSI41930
4194                    *                                                                           BSI41940
4195                    *           JST    ISN                                                      BSI41950
4196                    *           ......RETURN       STMT NO. IN A AND SNUM                       BSI41960
4197                    *                                                                           BSI41970
4198                    *           THIS ROUTINE CHECKS TO INSURE THAT A STATEMENT                  BSI41980
4199                    *     NUMBER IS NEXT IN THE SOURCE TEXT, AND IF SO FORMS                    BSI41990
4200                    *     THE SINGLE WORD BINARY REPRESENTATION AND LEAVES                      BSI42000
4201                    *     IT IN A AND SNUM.  IF NOT, A 'SN' ERROR IS REPORTED                   BSI42010
4202                    *     TO THE USER.                                                          BSI42020
4203                    *                                                                           BSI42030
4204                    *                                                                           BSI42040
4205 04556   0 000000   ISN  DAC   **                                                              BSI42050
4206 04557   0 10 03047      JST   GCHR          TEST NEXT CHARACTER FOR INTEGER FLAG              BSI42060
4207 04560   0 05 00455      ERA   INTF          (STMT NUMBERS ALWAYS LOOK LIKE INTEGERS)          BSI42070
4208 04561   100040          SZE                 SKIP IF IT IS                                     BSI42080
4209 04562   0 01 04572      JMP   ISN1          NOT STMT NO. ... SOMETHING IS WRONG               BSI42090
4210 04563   0 10 03077      JST   GCPK          PACK THE INTEGER                                  BSI42100
4211 04564   0 04 00050      STA   SNUM          LEAVE IT IN SNUM                                  BSI42110
4212 04565   100040          SZE                 ZERO IS NOT A LEAGL STMT NO.                      BSI42120
4213 04566   0 11 00501      CAS   SNMX          MAKE SURE NUMBER IS NOT TOO BIG                   BSI42130
4214 04567   0 01 04572      JMP   ISN1          TOO BAD ... NUMBER = 0 OR > 9999                  BSI42140
4215 04570  -0 01 04556      JMP*  ISN           ...OK... RETURN                                   BSI42150
4216 04571  -0 01 04556      JMP*  ISN           ...OK... RETURN                                   BSI42160
4217 04572   0 10 05243 ISN1 JST   ERR           REPORT STATEMENT NUMBER ERROR                     BSI42170
4218 04573   151716          BCI   1,SN          X                                                 BSI42180
4219                    *                                                                           BSI42190
4220                    *                                                                           BSI42200
4221                    *                                                                           BSI42210
4222                         EJCT                                                                   BSI42220
```

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4223                    *          COMMON STATEMENT EXIT                                        BSI42230
4224                    *                                                                       BSI42240
4225                    *                                                                       BSI42250
4226                    *                                                                       BSI42260
4227 04574   0 10 03065 SEX  JST   UCHR          REFETCH LAST CHARACTER TO BE SAFE             BSI42270
4228 04575   0 10 03047      JST   GCHR          SEE IF AT END OF LINE                         BSI42280
4229 04576   0 11 00401      CAS   C215          X                                             BSI42290
4230 04577   0 01 03213      JMP   ESMT          NO....GO EXECUTE NEXT STMT ON THIS LINE       BSI42300
4231 04600   0 02 00034 ASQ  LDA   SIP           SEE IF WE ARE IN COMMAND MODE                 BSI42310
4232 04601   101040          SNZ                 X                                             BSI42320
4233 04602   0 01 01000      JMP   CMOD          YES...GET NEXT COMMAND FROM CONSOLE           BSI42330
4234 04603   0 10 04440      JST   ADVS          ADVANCE POINTERS TO NEXT LINE                 BSI42340
4235 04604   0 01 04430      JMP   EXT1          RAN OUT OF PROGRAM                            BSI42350
4236 04605   0 01 03213      JMP   ESMT          GO EXECUTE FIRST STMT ON NEW LINE             BSI42360
4237                    *                                                                       BSI42370
4238                    *                                                                       BSI42380
4239                         EJCT                                                               BSI42390
```

```
                        *          SEARCH DEFINED FUNCTION INDEX                                    BSI42400
                        *                                                                           BSI42410
                        *                                                                           BSI42420
                        *          CALLING SEQUENCE:                                                BSI42430
                        *                                                                           BSI42440
                        *          JST   SDFI                                                       BSI42450
                        *          ......RETURN      IF FUNCTION NOT FOUND                          BSI42460
                        *          ......RETURN      IF FUNCTION FOUND, X POINTS TO                 BSI42470
                        *                            FIRST WORD OF FUNCTION INDEX ENTRY             BSI42480
                        *                                                                           BSI42490
                        *          THE NEXT CHARACTER IS FETCHED AND USED AS                        BSI42500
                        *     THE FUNCTION NAME ( IT IS CHECKED TO INSURE                           BSI42510
                        *     THAT IT IS ALPHABETIC).                                               BSI42520
                        *                                                                           BSI42530
                        *                                                                           BSI42540
                        *                                                                           BSI42550
04606   0 000000    SDFI DAC   **                                                                   BSI42560
04607   0 10 03047       JST   GCHR          GET THE FUNCTION NAME                                  BSI42570
04610   0 10 03155       JST   ALFA          IS IT ALPHABETIC ?                                     BSI42580
04611   0 01 04421       JMP   DF01          NO ... REPORT FUNCTION NAME ERROR                      BSI42590
04612   0 02 00022       LDA   DFB           GET FUNCTION INDEX BASE POINTER                        BSI42600
04613   101040           SNZ                 IS THE TABLE EMPTY ?                                   BSI42610
04614  -0 01 04606       JMP*  SDFI          YES ... TAKE NOT FOUND RETURN                          BSI42620
04615   0 11 00023  SD01 CAS   DFT           ARE WE PAST TOP OF THE INDEX ?                         BSI42630
04616  -0 01 04606       JMP*  SDFI          YES ... TAKE NOT FOUND RETURN                          BSI42640
04617   000000            OCT   0           NEVER CAN EXECUTE THIS WORD                            BSI42650
04620   0 04 00000        STA   0           X POINTS TO FIRST WORD OF CURRENT ENTRY                 BSI42690
04621   1 02 00000        LDA   0,1         TEST ENTRY NAME AGAINST                                BSI42700
04622   0 05 00074        ERA   CHAR        SEARCH TARGET                                          BSI42710
04623   100040            SZE               DO THAY MATCH ?                                        BSI42720
04624   0 01 04627        JMP   SD02        NO....GO ADVANCE TO NEXT ENTRY                         BSI42730
04625   0 12 04606        IRS   SDFI        YES...TAKE NAME FOUND RETURN                           BSI42740
04626  -0 01 04606       JMP*  SDFI          X                                                      BSI42750
                        *                                                                           BSI42760
04627   0 02 00000  SD02 LDA   0           UPDATE INDEX POINTER TO FIRST                          BSI42770
04630   0 06 00426       ADD   C3          WORD OF NEXT ENTRY                                     BSI42810
04631   0 01 04615       JMP   SD01        CONTINUE SEARCH                                        BSI42820
```

```
4283                *                                                    BSI42830
4284                *                                                    BSI42840
4285                *                                                    BSI42850
4286                     EJCT                                            BSI42860
```

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4287                    *          VARIABLE NAME ISOLATION ROUTINE                                  BSI42870
4288                    *                                                                           BSI42880
4289                    *                                                                           BSI42890
4290                    *    CALLING SEQUENCE:                                                      BSI42900
4291                    *                                                                           BSI42910
4292                    *          JST   PVN                                                        BSI42920
4293                    *          ......RETURN       IF SUBSCRIPTED VARIABLE                       BSI42930
4294                    *          ......RETURN       IF SIMPLE VARIABLE                            BSI42940
4295                    *                                                                           BSI42950
4296                    *          THE VARIABLE NAME IS ISOLATED AND LEFT                           BSI42960
4297                    *    IN THE LOCATION VARN.                                                  BSI42970
4298                    *                                                                           BSI42980
4299                    *                                                                           BSI42990
4300                    *                                                                           BSI43000
4301 04632   0 000000   PVN  DAC   **                                                              BSI43010
4302 04633   0 10 03047      JST   GCHR         GET FIRST CHARACTER OF VARIABLE NAME              BSI43020
4303 04634   0 04 00107      STA   VARN         SAVE FOR NOW                                      BSI43030
4304 04635   0 10 03155      JST   ALFA         FIRST CHARACTER MUST BE ALPHABETIC                BSI43040
4305 04636   0 01 04655      JMP   PV01         ITS NOT...REPORT IDENTIFIER ERROR                 BSI43050
4306 04637   0 10 03047      JST   GCHR         NEXT CHARACTER MAY BE PART OF NAME                BSI43060
4307 04640   0 11 00410      CAS   C250         TEST FOR START OF SUBSCRIPT                       BSI43070
4308 04641   100000          SKP                NO                                                BSI43080
4309 04642  -0 01 04632      JMP*  PVN          YES...TAKE FIRST RETURN                           BSI43090
4310 04643   0 12 04632      IRS   PVN          BUMP FOR SIMPLE VARIABLE RETURN                   BSI43100
4311 04644   0 10 03164      JST   NUMC         CURRENT CHAR MUST BE DIGIT IF PART OF NAME        BSI43110
4312 04645   0 01 04652      JMP   PV02         NO....MAYBE WE HAVE GONE TOO FAR                  BSI43120
4313 04646   141340          ICA                PUT SECOND DIGIT OF NAME IN A(1-8)                BSI43130
4314 04647   0 05 00107      ERA   VARN         PUT FIRST CHARACTER IN A(9-16)                    BSI43140
4315 04650   0 04 00107      STA   VARN         SAVE THE COMPLETED NAME                           BSI43150
4316 04651  -0 01 04632      JMP*  PVN          AND RETURN                                        BSI43160
4317 04652   0 10 03155 PV02 JST   ALFA         TWO ALPHABETIC CHARS IN A ROW IS ILLEGAL          BSI43170
4318 04653   0 01 04667      JMP   PV03         NO...GO STEP BACK OVER CURRENT CHARACTER           BSI43180
4319 04654   0 01 04660      JMP   *+4          YES H.. REPORT ID ERROR                           BSI43190
4320                    *                                                                           BSI43200
4321 04655   0 11 00403 PV01 CAS   C223         IS THE CHARACTER NORMAL?                          BSI43210
4322 04656   0 01 04662      JMP   PV04         YES ... OUTPUT 'X?' CLASS ERROR                   BSI43220
4323 04657   000000          OCT   0            NEVER CAN EXECUTE THIS WORD                       BSI43230
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4324 04660   0 10 05243       JST   ERR          REPORT IDENTIFIER ERROR                          BSI43240
4325 04661   144704          BCI   1,ID         X                                                BSI43250
4326                        *                                                                    BSI43260
4327 04662   141240      PV04 ICR                BAD CHARACTER TO A(1-8)                          BSI43270
4328 04663   0 05 00425      ERA   C277         '?' TO A(9-16)                                   BSI43280
4329 04664   0 04 04666      STA   *+2          PUT DIAGNOSTIC IN ERR CALLING SEQUENCE           BSI43290
4330 04665   0 10 05243      JST   ERR          REPORT THE ERROR                                 BSI43300
4331 04666   154277          BCI   1,X?         X                                                BSI43310
4332                        *                                                                    BSI43320
4333 04667   0 10 03065  PV03 JST   UCHR         STEP BACK OVER CHARACTER NOT PART OF NAME        BSI43330
4334 04670  -0 01 04632      JMP*  PVN          TAKE SIMPLE VARIABLE RETURN                      BSI43340
4335                        *                                                                    BSI43350
4336                        *                                                                    BSI43360
4337                        *                                                                    BSI43370
4338                        *                                                                    BSI43380
4339                            EJCT                                                             BSI43390
```

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4340                    *          LOCATE/ASSIGN SIMPLE VARIABLE                                BSI43400
4341                    *                                                                       BSI43410
4342                    *                                                                       BSI43420
4343                    *     CALLING SEQUENCE:                                                 BSI43430
4344                    *                                                                       BSI43440
4345                    *          JST    ASV                                                   BSI43450
4346                    *          ......RETURN       X POINTS TO WORD PAIR FOR VALUE          BSI43460
4347                    *                             OF THE VARIABLE                          BSI43470
4348                    *                                                                       BSI43480
4349                    *     REQUIRED SETUP:                                                   BSI43490
4350                    *                                                                       BSI43500
4351                    *          THE VARIABLE NAME MUST HAVE PREVIOUSLY BEEN                  BSI43510
4352                    *     ISOLATED AND LEFT IN THE LOCATION VARN.                           BSI43520
4353                    *                                                                       BSI43530
4354                    *                                                                       BSI43540
4355                    *                                                                       BSI43550
4356 04671   0 000000   ASV  DAC   **                                                          BSI43560
4357 04672   0 10 04721      JST   LSV          IS NAME ALREADY IN THE TABLE ?                BSI43570
4358 04673   100000          SKP                NO....WE MUST ADD IT                         BSI43580
4359 04674  -0 01 04671      JMP*  ASV          YES...RETURN                                 BSI43590
4360 04675   0 02 00426      LDA   C3           MAKE SURE THERE IS ROOM FOR                  BSI43600
4361 04676   0 10 03041      JST   UFSC         ANOTHER ENTRY                                BSI43610
4362 04677   0 02 00027      LDA   SVT          IS THE TABLE EMPTY ?                         BSI43620
4363 04700   100040          SZE                X                                            BSI43630
4364 04701   0 01 04711      JMP   AS01         NO ... GO APPEND ENTRY                       BSI43640
4365 04702   0 02 00030      LDA   DVB          GET HIGHEST UNUSED CORE LOCATION             BSI43650
4366 04703   101040          SNZ                X                                            BSI43660
4367 04704   0 02 00032      LDA   SIB          X                                            BSI43670
4368 04705   0 07 00371      SUB   C1           X                                            BSI43680
4369 04706   0 04 00027      STA   SVT          SET TABLE TOP                                BSI43690
4370 04707   141206          AOA                ADJUST SO THE TABLE                          BSI43700
4371 04710   100000          SKP                BASE COMES OUT RIGHT                         BSI43710
4372 04711   0 02 00026 AS01 LDA   SVB          GET PREVIOUS TABLE BASE                      BSI43720
4373 04712   0 07 00426      SUB   C3           APPEND THREE WORDS                           BSI43730
4374 04713   0 04 00026      STA   SVB          SET NEW BASE                                 BSI43740
4375 04714   0 04 00000      STA   0            X POINTS TO WORD FOR VARIABLE NAME           BSI43750
4376 04715   0 02 00107      LDA   VARN         PUT VARIABLE NAME                            BSI43760
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4377 04716  -0 04 00000      STA*  0          IN FIRST WORD OF ENTRY                          BSI43770
4378 04717   0 12 00000      IRS   0          S POINTS TO FIRST WORD OF VARIABLE VALUE        BSI43780
4379 04720  -0 01 04671      JMP*  ASV        RETURN                                          BSI43790
4380                    *                                                                    BSI43800
4381                    *                                                                    BSI43810
4382                    *                                                                    BSI43820
4383                         EJCT                                                            BSI43830
```

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4384                    *          LOCATE SIMPLE VARIABLE                                          BSI43840
4385                    *                                                                          BSI43850
4386                    *                                                                          BSI43860
4387                    *     CALLING SEQUENCE:                                                    BSI43870
4388                    *                                                                          BSI43880
4389                    *          JST   LSV                                                       BSI43890
4390                    *          ......RETURN       IF NAME NOT FOUND                            BSI43900
4391                    *          ......RETURN       IF NAME FOUND                                BSI43910
4392                    *                                                                          BSI43920
4393                    *     REQUIRED SETUP:                                                      BSI43930
4394                    *                                                                          BSI43940
4395                    *          THE VARIABLE NAME MUST HAVE PREVIOUSLY                          BSI43950
4396                    *     BEEN ISOLATED AND LEFT IN THE LOCATION VARN.                         BSI43960
4397                    *                                                                          BSI43970
4398                    *                                                                          BSI43980
4399                    *     RETURN STATUS:                                                       BSI43990
4400                    *                                                                          BSI44000
4401                    *          IF THE NAME IS FOUND, THE INDEX IS                              BSI44010
4402                    *     LEFT POINTING TO THE FIRST WORD OF THE                               BSI44020
4403                    *     WORD PAIR CONTAINING THE VALUE OF THE                                BSI44030
4404                    *     VARIABLE.                                                            BSI44040
4405                    *                                                                          BSI44050
4406                    *                                                                          BSI44060
4407 04721   0 000000   LSV  DAC   **                                                             BSI44070
4408 04722   0 02 00107      LDA   VARN        TEST FOR REFERENCE TO THE DUMMY                    BSI44080
4409 04723   0 11 00052      CAS   DEFN        VARIABLE IN A PROGRAMMER DEFINED FUNCTION          BSI44090
4410 04724   100000          SKP               NO                                                 BSI44100
4411 04725   0 01 04747      JMP   LS01        YES...ITS VALUE IS IN A SPECIAL PLACE              BSI44110
4412 04726   0 02 00026      LDA   SVB         START TABLE SEARCH                                 BSI44120
4413 04727   101040          SNZ               IS THE TABLE EMPTY ?                               BSI44130
4414 04730  -0 01 04721      JMP*  LSV         YES...TAKE THE NOT FOUND RETURN                    BSI44140
4415 04731   0 11 00027 LS04 CAS   SVT         ARE WE PAST END OF TABLE ?                         BSI44150
4416 04732  -0 01 04721      JMP*  LSV         YES ... TAKE NOT FOUND RETURN                      BSI44160
4417 04733   000000          OCT   0           NEVER CAN EXECUTE THIS WORD                        BSI44170
4418 04734   0 04 00000      STA   0           X POINTS TO 1ST WORD OF CURRENT ENTRY               BSI44180
4419 04735  -0 02 00000      LDA*  0           COMPARE NAME OF CURRENT ENTRY WITH                  BSI44190
4420 04736   0 05 00107      ERA   VARN        THE SEARCH TARGET                                  BSI44200
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4421 04737   100040          SZE                DO THEY MATCH ?                    BSI44210
4422 04740   0 01 04744      JMP    LS02        NO....GO CHECK NEXT ENTRY          BSI44220
4423 04741   0 12 00000      IRS    0           YES...X POINTS TO VARIABLE VALUE   BSI44230
4424 04742   0 12 04721 LS03 IRS    LSV         TAKE NAME FOUND RETURN             BSI44240
4425 04743  -0 01 04721      JMP*   LSV         X                                  BSI44250
4426                        *                                                     BSI44260
4427 04744   0 02 00000 LS02 LDA    0           NOT THIS ENTRY,                    BSI44270
4428 04745   0 06 00426      ADD    C3          TRY THE NEXT                       BSI44280
4429 04746   0 01 04731      JMP    LS04        X                                  BSI44290
4430                        *                                                     BSI44300
4431 04747   0 35 00514 LS01 LDX    DFVD        X POINTS TO DUMMY VARIABLE VALUE   BSI44310
4432 04750   0 01 04742      JMP    LS03        TAKE NAME FOUND RETURN             BSI44320
4433                        *                                                     BSI44330
4434                        *                                                     BSI44340
4435                        *                                                     BSI44350
4436                             EJCT                                             BSI44360
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4437                    *          LOCATE/ASSIGN DIMENSIONED VARIABLE                                  BSI44370
4438                    *                                                                              BSI44380
4439                    *                                                                              BSI44390
4440                    *     CALLING SEQUENCE:                                                        BSI44400
4441                    *                                                                              BSI44410
4442                    *          JSI   ADV                                                           BSI44420
4443                    *          ..........                                                          BSI44430
4444                    *          ......RETURN      SEE BELOW FOR RETURN INFORMATION                  BSI44440
4445                    *                                                                              BSI44450
4446                    *          THIS ROUTINE FIRST CHECKS TO SEE IF THE NAME                        BSI44460
4447                    *     IS ALREADY IN THE TABLE.  IF IT IS, RETURN IS MADE                       BSI44470
4448                    *     WITH THE ADDRESS OF THE ELEMENT IN THE INDEX REGISTER.                   BSI44480
4449                    *     IF NOT, AN ENTRY IS ADDED TO THE DIMENSIONED VARIABLE                    BSI44490
4450                    *     TABLE.  IF THE DIM STMT FLAG IS SET (=0), THEN                           BSI44500
4451                    *     THE VALUE OF THE SUBSCRIPTS AS THEY APPEAR IN THE SOURCE ARE             BSI44510
4452                    *     USED AS THE DIMENSIONS.  IF THE DIM STMT FLAG IS                         BSI44520
4453                    *     RESET (='12), THEN A VALUE OF 10 IS USED FOR                             BSI44530
4454                    *     EACH DIMENSION.  AFTER THE ENTRY HAS BEEN ADDED,                         BSI44540
4455                    *     THE DIM STMT FLAG IS CHECKED.  IF IT IS SET, RETURN IS                   BSI44550
4456                    *     MADE IMMEADIATLY.  IF NOT, THE NAME IS REPROCESSED                       BSI44560
4457                    *     AND THE LOCATION OF THE SELECTED ARRAY ITEM IS LEFT                      BSI44570
4458                    *     IN THE INDEX REGISTER.                                                   BSI44580
4459                    *                                                                              BSI44590
4460                    *                                                                              BSI44600
4461                    *                                                                              BSI44610
4462 04751   0 000000   ADV  DAC   **                                                                  BSI44620
4463 04752   0 12 04751      IRS   ADV          STEP OVER UNUSED WORD IN CALLING SEQ.                  BSI44630
4464 04753   0 10 05135 AD07 JST   LDV          IS NAME ALREADY IN TABLE ¢                             BSI44640
4465 04754   100000          SKP                NO....IT MUST BE ADDED                                 BSI44650
4466 04755  -0 01 04751      JMP*  ADV          YES...RETURN, ENTRY ADDRESS IN X                       BSI44660
4467 04756   0 02 00107      LDA   VARN         SAVE THE NAME OF THE VARIABLE                          BSI44670
4468 04757   0 04 00063      STA   AD13         X                                                      BSI44680
4469 04760   140040          CRA                CLEAR THE DIMENSION COUNTER                            BSI44690
4470 04761   0 04 00064      STA   AD14         X                                                      BSI44700
4471 04762   141206          AOA                INITIALIZE THE ARRAY SIZE COUNTER                      BSI44710
4472 04763   0 04 00066      STA   AD16         X                                                      BSI44720
4473 04764   0 15 00065      STX   AD15         SAVE X AS IT MAY HAVE THREAD TO LAST ENTRY              BSI44730
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4474 04765  0 02 00037       LDA  SBP    SAVE BYTE POINTER TO START OF SUBSCRIPT     BSI44740
4475 04766  0 04 00070       STA  ADT8   IN CASE IT HAS TO BE REPROCESSED           BSI44750
4476 04767  140040      AD01 CRA         EVALUATE SUBSCRIPT EXPRESSION              BSI44760
4477 04770  0 10 02443       JSI  EXPA   X                                          BSI44770
4478 04771  0 10 03203       JST  LCVL   GET THE RESULT                             BSI44780
4479 04772  0 10 00000       JSI  IFLT   CONVERT TO INTEGER                         BSI44790
4480 04773  0 01 05133       JMP  AD08   ERROR...SUBSCRIPT SIZE                    BSI44800
4481 04774  000201           IAB         SAVE RESULT                                BSI44810
4482 04775  0 02 00104       LDA  DIMF   IS THIS A DIMENSION STMT ¢                 BSI44820
4483 04776  0 11 00370       CAS  C0     X                                          BSI44830
4484 04777  100000           SKP         NO...USE DEFAULT VALUE OF 10               BSI44840
4485 05000  000201           IAB         YES...USE EXPRESSION VALUE                 BSI44850
4486 05001  100400           SPL         IS IT A LEGAL SIZE ¢                       BSI44860
4487 05002  0 01 05133       JMP  AD08   NO...REPORT ERROR                          BSI44870
4488 05003  141206           AOA         SET TO LIMIT + 1                           BSI44880
4489 05004  0 10 03022       JST  PUSH   LEAVE IT ON THE STACK                      BSI44890
4490 05005  0 10 00000       JST  M$11   UPDATE THE ARRAY SIZE COUNTER              BSI44900
4491 05006  0 000066         DAC  ADT6   X                                          BSI44910
4492 05007  0 04 00066       STA  ADT6   X                                          BSI44920
4493 05010  0 12 00064       IRS  ADT4   UPDATE DIMENSION COUNT                     BSI44930
4494 05011  000201           IAB         TEST FOR GROSS SIZE ERROR                  BSI44940
4495 05012  100040           SZE         X                                          BSI44950
4496 05013  0 01 03027       JMP  MEMO   NO MACHINE WE SELL CAN HOLD THIS SIZE ARRAYBSI44960
4497 05014  0 10 03047       JST  GCHR   TEST FOR END OF SUBSCRIPT LIST            BSI44970
4498 05015  0 11 00414       CAS  C254   X                                          BSI44980
4499 05016  100000           SKP         X                                          BSI44990
4500 05017  0 01 04767       JMP  AD01   NO...GO PROCESS NEXT SUBSCRIPT             BSI45000
4501 05020  0 05 00411       ERA  C251   NOT COMMA, MUST BE ')'                    BSI45010
4502 05021  100040           SZE         X                                          BSI45020
4503 05022  0 01 05133       JMP  AD08   IT'S NOT...REPORT ERROR                    BSI45030
4504 05023  0 02 00066       LDA  ADT6   CALCULATE SIZE OF TABLE ENTRY              BSI45040
4505 05024  0414 77          LGL  1      2 WORDS PER ARRAY ELEMENT                  BSI45050
4506 05025  0 06 00064       ADD  ADT4   1 WORD PER DIMENSION                      BSI45060
4507 05026  0 06 00426       ADD  C3     3 WORDS FOR GENERAL OVERHEAD               BSI45070
4508 05027  0 04 00067       STA  ADT7   SAVE FOR LATER REFERENCE                   BSI45080
4509 05030  0 10 03041       JST  UFSC   MAKE SURE THERE IS ENOUGH FREE SPACE       BSI45090
4510 05031  0 02 00026       LDA  SVB    IS SIMPLE VARIABLE TABLE EMPTY ¢           BSI45100
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05032   101040              SNZ           X                                       BSI45110
05033   0 01 05053          JMP    AD02   YES...NO TABLE MOVE NEEDED              BSI45120
05034   0 04 00061          STA    ADT1   ADDRESS OF FIRST WORD TO BE MOVED       BSI45130
05035   0 07 00067          SUB    ADT7   GET NEW TABLE BASE                      BSI45140
05036   0 04 00026          STA    SVB    SET SIMPLE VARIABLE BASE POINTER        BSI45150
05037   0 04 00062          STA    ADT2   SET DESTINATION POINTER FOR MOVE        BSI45160
05040  -0 02 00061   AD03   LDA*   ADT1   MOVE ONE WORD                           BSI45170
05041  -0 04 00062          STA*   ADT2   X                                       BSI45180
05042   0 12 00061          IRS    ADT1   BUMP THE SOURCE AND DESTINATION POINTERS BSI45190
05043   0 12 00062          IRS    ADT2   X                                       BSI45200
05044   0 02 00027          LDA    SVT    TEST FOR MOVE COMPLETE                  BSI45210
05045   0 07 00061          SUB    ADT1   X                                       BSI45220
05046   101400              SMI           X                                       BSI45230
05047   0 01 05040          JMP    AD03   NO...GO MOVE ANOTHER WORD               BSI45240
05050   0 02 00062          LDA    ADT2   UPDATE SIMPLE VARIABLE TABLE            BSI45250
05051   0 07 00371          SUB    C1     TOP POINTER                             BSI45260
05052   0 04 00027          STA    SVT    X                                       BSI45270
05053   0 02 00031   AD02   LDA    DVT    IS THIS FIRST ENTRY IN DIMENSIONED      BSI45280
05054   100040              SZE           VARIABLE TABLE ¢                        BSI45290
05055   0 01 05126          JMP    AD04   NO....LINK IN LAST ENTRY MUST BE THREADED BSI45300
05056   0 02 00032          LDA    SIB    START DIMENSIONED VARIABLE TABLE        BSI45310
05057   0 07 00371          SUB    C1     JUST BELOW THE BASE OF THE              BSI45320
05060   0 04 00031          STA    DVT    STATEMENT INDEX                         BSI45330
05061   0 07 00067   AD05   SUB    ADT7   GET NEW TABLE BASE ADDRESS              BSI45340
05062   141206              AOA           X                                       BSI45350
05063   0 04 00030          STA    DVB    X                                       BSI45360
05064   0 04 00000          STA    0      X                                       BSI45400
05065   0 02 00066          LDA    ADT6   CALCULATE - NO. OF WORDS OF ELEMENT STORAGEBSI45410
05066   0414 77             LGL    1      X                                       BSI45420
05067   140407              TCA           X                                       BSI45430
05070   0 04 00061          STA    ADT1   X                                       BSI45440
05071   140040              CRA           SET ENTIRE ARRAY TO ZERO                BSI45450
05072   1 04 00000          STA    0,1    X                                       BSI45460
05073   0 12 00000          IRS    0      X                                       BSI45470
05074   0 12 00061          IRS    ADT1   X                                       BSI45480
05075   0 01 05072          JMP    *-3    X                                       BSI45490
05076   0 02 00064          LDA    ADT4   SETUP TO MOVE DIMENSION LIMITS FROM     BSI45500
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4551 05077   140407          ICA                THE STACK TO THE ENTRY                          BSI45510
4552 05100   0 04 00061      STA    ADT1        X                                               BSI45520
4553 05101   0 10 03031      JST    POP         REMOVE DIMENSION LIMIT FROM THE STACK           BSI45530
4554 05102   1 04 00000      STA    0,1         PUT IT IN TABLE ENTRY                           BSI45540
4555 05103   0 12 00000      IRS    0           BUMP TABLE ENTRY POINTER                        BSI45550
4556 05104   0 12 00061      IRS    ADT1        BUMP DIMENSION COUNT                            BSI45560
4557 05105   0 01 05101      JMP    *-4         GO MOVE ANOTHER LIMIT                           BSI45570
4558 05106   0 02 00030      LDA    DVB         PUT IN ADDRESS OF FIRST WORD OF ARRAY           BSI45580
4559 05107   1 04 00000      STA    0,1         STORAGE FOR THIS VARIABLE                       BSI45590
4560 05110   140040          CRA                CLEAR ETNRY THREAD                              BSI45600
4561 05111   1 04 00001      STA    1,1         X                                               BSI45610
4562 05112   0 02 00064      LDA    ADT4        FIRST WORD OF ENTRY CONTAINS                    BSI45620
4563 05113   0400 70         LRL    8           NAME IN BITS 1 TO 8 AND NUMBER                  BSI45630
4564 05114   0 02 00063      LDA    ADT3        OF DIMENSIONS IN BITS 9-16                      BSI45640
4565 05115   0 04 00107      STA    VARN        X                                               BSI45650
4566 05116   0410 70         LLL    8           X                                               BSI45660
4567 05117   1 04 00002      STA    2,1         X                                               BSI45670
4568 05120   0 02 00104      LDA    DIMF        IS THIS A DIMENSION STATEMENT ¢                 BSI45680
4569 05121   101040          SNZ                X                                               BSI45690
4570 05122   -0 01 04751     JMP*   ADV         YES...DO NOT NEED TO LOCATE A SPECIFIC ITEM     BSI45700
4571 05123   0 02 00070      LDA    ADT8        RESTORE BYTE POINTER TO START OF SUBSCRIPT       BSI45710
4572 05124   0 04 00037      STA    SBP         X                                               BSI45720
4573 05125   0 01 04753      JMP    AD07        GO LOCATE SPECIFIC ARRAY ITEM                   BSI45730
4574                 *                                                                         BSI45740
4575 05126   0 35 00065 AD04 LDX    ADT5        SET THREAD IN LAST ENTRY TO                     BSI45750
4576 05127   0 02 00030      LDA    DVB         POINT TO THIS ENTRY                             BSI45760
4577 05130   0 07 00371      SUB    C1          X                                               BSI45770
4579 05131   1 04 77777      STA    -1,1        X                                               BSI45790
4583 05132   0 01 05061      JMP    AD05        GO SETUP THIS ENTRY                             BSI45830
4584                 *                                                                         BSI45840
4585 05133   0 10 05243 AD08 JST    ERR         REPORT SUBSCRIPT ERROR                          BSI45850
4586 05134   140723          BCI    1,AS                                                        BSI45860
4587                 *                                                                         BSI45870
4588                 *                                                                         BSI45880
4589                 *                                                                         BSI45890
4590                      EJCT                                                                 BSI45900
```

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4591                    *          LOCATE DIMENSIONED VARIABLE                                          BSI45910
4592                    *                                                                               BSI45920
4593                    *                                                                               BSI45930
4594                    *     CALLING SEQUENCE:                                                         BSI45940
4595                    *                                                                               BSI45950
4596                    *          JST   LDV                                                            BSI45960
4597                    *          ......RETURN       IF NAME NOT IN TABLE                              BSI45970
4598                    *          ......RETURN       IF NAME FOUND, X POINTS TO ARRAY ELEMENT          BSI45980
4599                    *                                                                               BSI45990
4600                    *     REQUIRED SETUP:                                                           BSI46000
4601                    *                                                                               BSI46010
4602                    *          THE VARIABLE NAME MUST HAVE PREVIOUSLY                               BSI46020
4603                    *     BEEN ISOLATED AND LEFT IN THE LOCATION VARN.                              BSI46030
4604                    *                                                                               BSI46040
4605                    *          IF THE NAME IS IN THE TABLE, THE SUBSCRIPT                           BSI46050
4606                    *     WILL BE EVALUATED AND THE INDEX REGISTER WILL BE SET                      BSI46060
4607                    *     TO THE ADDRESS OF THE SELECTED ARRAY ELEMENT.                             BSI46070
4608                    *                                                                               BSI46080
4609                    *                                                                               BSI46090
4610                    *                                                                               BSI46100
4611 05135   0 000000   LDV  DAC   **                                                                   BSI46110
4612 05136   0 02 00031      LDA   DVT          PICK UP THREAD TO FIRST ENTRY                          BSI46120
4613 05137   101040     LD02 SNZ              AT END OF TABLE C                                       BSI46130
4614 05140  -0 01 05135      JMP*  LDV          YES...TAKE NOT FOUND RETURN                            BSI46140
4618 05141   0 04 00000      STA   0            X POINTS TO TOP WORD OF ENTRY                          BSI46180
4619 05142   1 02 00000      LDA   0,1          GET WORD CONTAINING NAME                               BSI46190
4620 05143   0400 10         LRL   8            NO. OF DIMS TO B, NAME IN A                            BSI46200
4621 05144   0 05 00107      ERA   VARN         COMPARE WITH TARGET                                    BSI46210
4622 05145   101040          SNZ                X                                                      BSI46220
4623 05146   0 01 05151      JMP   LD01         FOUND ENTRY %%%                                        BSI46230
4625 05147   1 02 77777      LDA   -1,1         PICK UP LINK TO NEXT ENTRY                             BSI46250
4629 05150   0 01 05137      JMP   LD02         GO CHECK IT                                            BSI46290
4630                    *                                                                               BSI46300
4631 05151   0 12 05135 LD01 IRS   LDV          BUMP RETURN ADDRESS TO FOUND RETURN                    BSI46310
4632 05152   0 02 05135      LDA   LDV          PUT RETURN ADDRESS ON THE STACK                        BSI46320
4633 05153   0 10 03022      JST   PUSH         X                                                      BSI46330
4634 05154   0 02 00071      LDA   DPTR         PUT EXISTING VALUES OF THE TEMP                        BSI46340
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4635 05155    0 10 03022        JST   PUSH     STORAGE LOCATIONS THAT THIS ROUTINE USES   BSI46350
4636 05156    0 02 00072        LDA   DCT1     ON THE STACK, AS THIS IS A RE-ENTRANT      BSI46360
4637 05157    0 10 03022        JST   PUSH     ROUTINE                                   BSI46370
4638 05160    0 02 00073        LDA   DCT2     X                                         BSI46380
4639 05161    0 10 03022        JST   PUSH     X                                         BSI46390
4640 05162    140040            CRA            NO. OF DIMENSIONS TO A                    BSI46400
4641 05163    0410 70           LLL   8        X                                         BSI46410
4642 05164    140407            TCA            NEGATE FOR COUNTING                       BSI46420
4643 05165    0 04 00072        STA   DCT1     SAVE FOR TWO LOOPS THROUGH ENTRY          BSI46430
4644 05166    0 04 00073        STA   DCT2     X                                         BSI46440
4645 05167    0 02 00000        LDA   0        SET TABLE POINTER TO LIMIT OF             BSI46450
4646 05170    0 07 00426        SUB   C3       DIMENSION 1                               BSI46460
4650 05171    0 04 00071        STA   DPTR     X                                         BSI46500
4651 05172    0 01 05175        JMP   LD03     GO EVALUATE THE SUBSCRIPTS                BSI46510
4652 05173    0 02 00414  LD04  LDA   C254     MAKE SURE ',' SEPERATES                   BSI46520
4653 05174    0 10 03104        JST   GCCK     THE SUBSCRIPT EXPRESSIONS                 BSI46530
4654 05175    140040      LD03  CRA            EVALUATE THE NEXT SUBSCRIPT EXPRESSION    BSI46540
4655 05176    0 10 02443        JST   EXPA     X                                         BSI46550
4656 05177    0 10 03203        JST   LCVL     RESULT TO A+B                             BSI46560
4657 05200    0 10 00000        JST   IFLT     MAKE IT AN INTEGER                        BSI46570
4658 05201    0 01 05133        JMP   AD08     ERROR...TOO LARGE                         BSI46580
4659 05202    0 11 00462        CAS   M1       MAKE SURE VALUE IS BETWEEN                BSI46590
4660 05203   -0 11 00071        CAS*  DPTR     ZERO AND LIMIT FOR THIS DIMENSION         BSI46600
4661 05204    0 01 05133        JMP   AD08     ERROR...OUT OF RANGE                      BSI46610
4662 05205    0 01 05133        JMP   AD08     ERROR...OUT OF RANGE                      BSI46620
4663 05206    0 10 03022        JST   PUSH     LEAVE THE SUBSCRIPT ON THE STACK          BSI46630
4664 05207    0 02 00071        LDA   DPTR     DECREMENT THE TABLE POINTER               BSI46640
4665 05210    0 07 00371        SUB   C1       X                                         BSI46650
4666 05211    0 04 00071        STA   DPTR     X                                         BSI46660
4667 05212    0 12 00072        IRS   DCT1     BUMP DIMENSION COUNT                      BSI46670
4668 05213    0 01 05173        JMP   LD04     GO PROCESS NEXT SUBSCRIPT                 BSI46680
4669 05214    0 02 00411        LDA   C251     MAKE SURE ')' ENDS SUBSCRIPT LIST         BSI46690
4670 05215    0 10 03104        JST   GCCK     X                                         BSI46700
4671 05216    0 12 00071        IRS   DPTR     BUMP TABLE POINTER TO LIMIT OF LAST DIM.  BSI46710
4672 05217    0 10 00000  LD06  JST   M$11     PREVIOUS ACCUM. * LIMIT OF CURRENT DIM.   BSI46720
4673 05220   -0 000071          DAC*  DPTR     X                                         BSI46730
4674 05221    0 12 00071        IRS   DPTR     UPDATE ENTRY POINTER                      BSI46740
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4675 05222    0 04 00072      STA   DCT1    SAVE PARTIAL RESULT                          BSI46750
4676 05223    0 10 03031      JST   POP     GET SUBSCRIPT VALUE FOR THIS POSITION        BSI46760
4677 05224    0 06 00072      ADD   DCT1    X                                            BSI46770
4678 05225    0 12 00073      IRS   DCT2    HAVE ALL THE SUBSCRIPTS BEEN PROCESSED       BSI46780
4679 05226    0 01 05217      JMP   LD06    NO...GO ENTER NEXT ONE                       BSI46790
4680 05227    0414 77         LGL   1       *2 AS TWO WORDS PER ELEMENT                  BSI46800
4681 05230   -0 06 00071      ADD*  DPTR    ADD TO BASE OF ARRAY STORAGE                 BSI46810
4682 05231    0 04 00000      STA   0       LEAVE ELEMENT PNTR IN X FOR CALLER           BSI46820
4683 05232    0 10 03031      JST   POP     RESTORE THE TEMP. LOCATIONS                  BSI46830
4684 05233    0 04 00073      STA   DCT2    X                                            BSI46840
4685 05234    0 10 03031      JST   POP     X                                            BSI46850
4686 05235    0 04 00072      STA   DCT1    X                                            BSI46860
4687 05236    0 10 03031      JST   POP     X                                            BSI46870
4688 05237    0 04 00071      STA   DPTR    X                                            BSI46880
4689 05240    0 10 03031      JST   POP     RETRIEVE THE RETURN ADDRESS                  BSI46890
4690 05241    0 04 05135      STA   LDV     X                                            BSI46900
4691 05242   -0 01 05135      JMP*  LDV     AND EXIT                                     BSI46910
4692                   *                                                                BSI46920
4693                   *                                                                BSI46930
4694                         EJCT                                                       BSI46940
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4695                    *          ERROR REPORTING ROUTINE                                          BSI46950
4696                    *                                                                           BSI46960
4697                    *                                                                           BSI46970
4698                    *    CALLING SEQUENCE:                                                      BSI46980
4699                    *                                                                           BSI46990
4700                    *          JST   ERR                                                        BSI47000
4701                    *          BCI   1,XX          XX IS ERROR CODE                             BSI47010
4702                    *                                                                           BSI47020
4703                    *          AFTER THE MESSAGE IS PRINTED, CONTROL                            BSI47030
4704                    *    IS RETURNED TO COMMAND MODE.                                           BSI47040
4705                    *                                                                           BSI47050
4706                    *                                                                           BSI47060
4707 05243   0 000000   ERR  DAC   **                                                              BSI47070
4708 05244   0 12 00105      IRS   LODF          ON ERROR, TURN OFF PROGRAM LOAD MODE             BSI47080
4709 05245   0 10 00000      JST   LFCR          ADVANCE TO NEXT LINE ON ASR                      BSI47090
4710 05246  -0 02 05243      LDA*  ERR           PUT ERROR CODE IN MESSAGE STRING                 BSI47100
4711 05247   0 04 05257      STA   EMST          X                                                BSI47110
4712 05250   0 10 02747      JST   TYPE          PRINT THE MESSAGE                                BSI47120
4713 05251   0 005254       DAC   EMSG          X                                                BSI47130
4714 05252   0 10 02736      JST   PLN           PRINT THE CURRENT LINE NUMBER                    BSI47140
4715 05253   0 01 01000      JMP   CMOD          RETURN TO COMMAND MODE                           BSI47150
4716                    *                                                                           BSI47160
4717 05254   142722     EMSG BCI   3,ERROR                                                        BSI47170
     05255   151317
     05256   151240
4718 05257   154330     EMST BCI   1,XX          ERROR CODE GOES HERE                             BSI47180
4719 05260   120314          BCI   3, LINE                                                        BSI47190
     05261   144716
     05262   142640
4720 05263   000000          OCT   0             MESSAGE TERMINATOR                               BSI47200
4721                    *                                                                           BSI47210
4722                    *                                                                           BSI47220
4723                    *                                                                           BSI47230
4724                         EJCT                                                                   BSI47240
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4726          001000      EADD SET   CMOD                STARTING ADDRESS OF BASIC                BSI47260
4730                            END   EADD                BASICALLY, THIS IS THE END               BSI47300
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A$22	000000E	ABSF	000000E	AD01	004767A	AD02	005053A
AD03	005040A	AD04	005126A	AD05	005061A	AD07	004753A
AD08	005133A	ADT1	000061A	ADT2	000062A	ADT3	000063A
ADT4	000064A	ADT5	000065A	ADT6	000066A	ADT7	000067A
ADT8	000070A	ADV	004751A	ADVS	004440A	ALFA	003155A
AS01	004711A	ASN1	003322A	ASN2	003276A	ASN3	003314A
ASNM	003274A	ASQ	004600A	ASV	004671A	AIND	000534A
ATNF	000000E	AINQ	000230A	AV01	004454A	AYOH	000321A
AYON	000233A	BKMS	003270A	BRKC	000000E	BRKF	000103A
C0	000370A	C1	000371A	C10	000372A	C11	000373A
C12	000374A	C16	000375A	C2	000376A	C20	000377A
C212	000400A	C215	000401A	C221	000402A	C223	000403A
C23	000404A	C240	000405A	C241	000406A	C242	000407A
C250	000410A	C251	000411A	C252	000412A	C253	000413A
C254	000414A	C255	000415A	C256	000416A	C257	000417A
C260	000420A	C261	000421A	C272	000422A	C273	000423A
C275	000424A	C277	000425A	C3	000426A	C300	000427A
C305	000430A	C307	000431A	C333	000432A	C336	000433A
C337	000434A	C4	000435A	C43	000436A	C5	000437A
C50	000440A	C54	000441A	CALL	003752A	CHAR	000074A
CJMP	000530A	CJST	000515A	CL01	004064A	CL02	004025A
CL03	004046A	CL04	004056A	CL05	003770A	CL06	004013A
CLER	001052A	CLRT	002770A	CLST	000516A	CLT1	000312A
CLT2	000313A	CLT3	000314A	CMAX	000442A	CMOD	001000A
CON1	000101A	CON2	000102A	CONT	001121A	COSD	000532A
COSF	000000E	CPOS	000045A	CSRH	000000E	CVAL	000041A
D$22	000000E	DBP	000040A	DCT1	000072A	DCT2	000073A
DEF	004325A	DEFF	000507A	DEFN	000052A	DEFV	000053A
DELT	000544A	DF01	004421A	DF02	004377A	DF03	004364A
DF04	004353A	DF05	004416A	DF06	004373A	DF07	004423A
DFB	000022A	DFQ	000261A	DFSE	003702A	DFT	000023A
DFVD	000514A	DIMC	000506A	DIMF	000104A	DLCK	003173A
DPTR	000071A	DIAC	000443A	DVB	000030A	DVT	000031A
E$22	000000E	EADD	001000A	ECTR	000340A	ED01	002253A

ED02	002230A	ED03	002266A	ED04	002306A	ED05	002276A
ED06	002324A	ED07	002312A	ED08	002367A	ED09	002372A
ED10	002420A	ED11	002237A	ED12	002404A	EMSG	005254A
EMST	005257A	ERR	005243A	ES01	003255A	ES02	003253A
ESMT	003213A	ETAPE	000000E	EX01	002477A	EX02	002502A
EX03	002505A	EX04	002512A	EX05	002642A	EX06	002455A
EX07	002470A	EX09	002547A	EX10	002603A	EX11	002610A
EX13	002542A	EX14	002544A	EX15	002537A	EX16	002625A
EX17	002634A	EX19	002650A	EX20	002656A	EX21	002570A
EX22	002546A	EX24	002632A	EX30	002671A	EXIT	004427A
EXP	000337A	EXPA	002443A	EXPC	002664A	EXPF	000000E
EXT1	004430A	EXT2	004435A	F1	000444A	F10	000446A
F10R	000450A	FINT	000000E	FM1	000452A	FNB	000024A
FNC	000507A	FNT	000025A	FOR	003472A	FR01	003505A
FR02	003542A	FR03	003556A	FR04	003576A	FR05	003601A
FR06	003507A	FR07	003612A	FRNG	002425A	FRST	003614A
FRT1	003616A	FRT2	003530A	FSC	000047A	GCC1	003115A
GCC2	003114A	GCCK	003104A	GCHR	003047A	GCHX	003072A
GCPK	003077A	GDLM	003116A	GNBC	003125A	GOSB	003720A
GOT2	003326A	GOT3	003335A	GOTO	003324A	GTC	000454A
H$22	000000E	HERE	000370A	HMAM	000305A	IBUF	000230A
IDAC	004136A	IDMS	000166A	IDNT	002007A	IF	003365A
IF01	003463A	IF02	003375A	IF03	003416A	IF04	003414A
IFLT	000000E	IFT1	000312A	IFT2	000313A	IL05	001542A
IL06	001553A	IL07	001732A	IL08	002005A	IL10	001566A
IL11	001607A	IL12	001646A	IL13	001661A	IL14	001643A
IL15	001616A	IL16	001654A	IL17	001727A	IL18	001717A
IL20	001740A	IL21	001772A	IL22	001534A	IL24	001675A
IL31	001621A	IL32	001517A	IL39	001631A	ILIN	001504A
ILT1	000056A	ILT2	000057A	ILT3	000060A	INA1	000000E
INHC	000341A	INIT	000000E	INPT	004066A	INT1	004144A
INTF	000455A	IPDS	003011A	IPUT	000000E	ISBP	004137A
ISN	004556A	ISN1	004572A	ISSM	000346A	ITAPE	000000E
JOB	001045A	L$22	000000E	LCHR	000075A	LCVL	003203A
LD01	005151A	LD02	005137A	LD03	005175A	LD04	005173A
LD06	005217A	LDV	005135A	LE10	000457A	LFCR	000000E
LIST	001137A	LOAD	001132A	LODF	000105A	LOGF	000000E

LOP	000055A	LS01	004747A	LS02	004744A	LS03	004742A
LS04	004731A	LSBP	000461A	LSTF	000106A	LSV	004721A
LT01	001171A	LT02	001305A	LT03	001213A	LT04	001257A
LT05	001262A	LT06	001274A	LT07	001253A	LT08	001240A
LT09	001236A	LT10	001266A	LT11	001170A	LT12	001212A
LT13	001161A	LT14	001302A	LTT1	000034A	LTT2	000312A
LTT3	000313A	LTT4	000314A	LTT5	000315A	LVAL	000043A
M$11	000000E	M$22	000000E	M1	000462A	M10	000463A
M100	000464A	M11	003711A	M12	000465A	M2	000466A
M21	000467A	M3	000470A	M53	000471A	M6	000472A
MCOL	000473A	MEMO	003027A	N$22	000000E	NEXT	003622A
NUMC	003164A	NX01	003700A	NX02	003673A	NX03	003675A
NX04	003627A	NX05	003665A	NXT1	003643A	NXT2	003647A
ON	003340A	ON1	003345A	ON2	003356A	ON3	003352A
OP16	000000A	OTA1	000000E	PCVL	002154A	PDLP	000035A
PLN	002736A	PNCH	001135A	POP	003031A	PR01	004216A
PR02	004303A	PR03	004254A	PR04	004214A	PR05	004323A
PR06	004266A	PR07	004301A	PR08	004311A	PR09	004272A
PR10	004235A	PR11	004222A	PRNT	004211A	PRT1	000312A
PTB	000020A	PTH	000021A	PUSH	003022A	PV01	004655A
PV02	004652A	PV03	004667A	PV04	004662A	PVN	004632A
QUIT	001130A	RD01	004131A	RD02	004074A	RD03	004115A
RD04	004104A	RD06	004167A	RD07	004162A	RDAC	004151A
RDT1	000046A	RDT2	004121A	READ	004072A	RELF	000456A
REM	004425A	REMF	000375A	REST	004202A	RN01	001063A
RN02	001100A	RN03	001066A	RN04	001117A	RNDF	000000E
ROND	000474A	RSBP	004153A	RSIP	004152A	RSTK	000350A
RSTR	004177A	RTB	000476A	RTM	000477A	RTP	000036A
RTRN	003737A	RUN	001054A	S$22	000000E	SBP	000037A
SBUF	000110A	SCHR	003133A	SCTQ	000245A	SCVL	003207A
SD01	004615A	SD02	004627A	SDFI	004606A	SEQI	000051A
SES	004540A	SES1	004554A	SEX	004574A	SFNL	000530A
SGN	002435A	SGNF	000000E	SIB	000032A	SIGN	000336A
SIND	000531A	SINF	000000E	SIP	000034A	SIS1	004530A
SIS2	004533A	SIS3	004510A	SISR	004475A	SIT	000033A
SMAX	000500A	SNMX	000501A	SNUM	000050A	SPAC	002764A
SQRD	000540A	SQRF	000000E	SQRQ	000256A	SSBP	001007A

SSR	004457A	SSR1	004461A	SSR2	004463A	SSR3	004473A
ST01	001450A	ST02	001322A	ST03	001352A	ST04	001341A
ST05	001375A	ST06	001360A	ST07	001421A	ST08	001403A
ST09	001416A	ST10	001443A	ST11	001436A	ST12	001471A
ST13	001453A	ST14	001502A	STMT	001313A	STPC	000502A
STT1	000312A	STT2	000313A	STT3	000314A	STT4	000315A
STT5	000316A	STT6	000317A	STT7	000320A	SVB	000026A
SVT	000027A	SYSH	000511A	SYSL	000510A	SZHG	000550A
TABC	000503A	TAND	000533A	TANF	000000E	THNC	000504A
TINT	000000E	TMP1	000076A	TMP2	000077A	TMP3	000100A
TMPH	000370A	TMPL	000312A	TOC	000505A	TYP1	002755A
TYP2	002762A	TYPE	002747A	UCHR	003065A	UFSC	003041A
USPM	000204A	VARN	000107A	WKD7	000513A	WORK	000231A
WRKD	000512A	XCHR	003054A				

0000 WARNING OR ERROR FLAGS
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