```
CLEAR STORAGE 1     ,008015,022026,030037,044,049,053053N000000N00001026                                    1
CLEAR STORAGE 2     L068116,105106,110117B101/I9I#071029C029056B026/B001/0991,001/001117IO&                  2
BOOTSTRAP           ,008015,022029,036040,047054,061068,072/061039              ,0010011040                 3

                          AUTOCODER-PASS 5-PROCESS LABELS-INITL-VERSION 3            3751L               PAGE    1

 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

 101         000    JOB   AUTOCODER-PASS 5-PROCESS LABELS-INITL-VERSION 3
 102                CTL   63011
 103         *
 104         * EQUATES USED BY PROGRAM
 105         *
 106         INITAP EQU   %U0                                                  %U0
 107         SYSTPE EQU   %U1                                                  %U1
 108         SAVETP EQU   %U4                                                  %U4
 109         CINPUT EQU   %U5                                                  %U5
 110         COUTPT EQU   %U6                                                  %U6
 111         DOUTPT EQU   %U5                                                  %U5
 112         DINPUT EQU   %U6                                                  %U6
 113         TABLE  EQU   2409                                                 2409
 114         ADDLO  EQU   TABLE-006&X2                                         2403 X
 115         SYMHO  EQU   TABLE-005&X2                                         2404 X
 116         ADDHO  EQU   TABLE-009&X2                                         2400 X
 117         LBLREF EQU   TABLE-008&X2                                         2401 X
 118         SYMBOL EQU   TABLE&X2                                             2409 X
 119         CARD   EQU   0                                                    0000
 120         STAOP  EQU   CARD&001                                             0001
 121         STLABL EQU   CARD&002                                             0002
 122         STADDR EQU   CARD&003                                             0003
 123         STBOP  EQU   CARD&004                                             0004
 124         COUNT  EQU   CARD&007                                             0007
 125         LABEL  EQU   CARD&013                                             0013
 126         AOPER  EQU   CARD&022                                             0022
 127         AOPADJ EQU   CARD&026                                             0026
 128         AINDEX EQU   CARD&027                                             0027
 129         ORGADD EQU   CARD&032                                             0032
 130         CNVLAB EQU   CARD&056                                             0056
 131         LABADD EQU   CARD&061                                             0061
 132         SUPADD EQU   CARD&066                                             0066
 133         AOP    EQU   CARD&070                                             0070
 134         TYPE   EQU   CARD&075                                             0075
 135         AOPHO  EQU   CARD&017                                             0017
 136         LBLHO  EQU   CARD&008                                             0008
 137         HOADD  EQU   CARD&057                                             0057
 138         TPAREA EQU   3918                                                 3918
 139         INPUT  EQU   TPAREA-001&X3                                        3917 X
 140         LIMIT  EQU   TPAREA&13                                            3931
 141         XXXX   EQU   0                                                    0000
 142         GPMRK3 EQU   3998                                                 3998
 143         LIBRN  EQU   0                                                    0000
 144         *
 145         *
 146         * GET, PUT, REDUNDANCY &
 147         * CROSSOVER ROUTINES COMMON

                          AUTOCODER-PASS 5-PROCESS LABELS-INITL-VERSION 3            3751L               PAGE    2

 SEQ PG LIN  LABEL  OP    OPERANDS                                          SFX CT  LOCN  INSTRUCTION TYPE  CARD

 148         * TO BOTH PASSES
 149         *
 150         *
 151                ORG   ENDOFC&1                                                     1925
 152         *
 153         * GET & PUT
 154         *
 155         GET    C     BLKCT,KBLKNG                                        7  1925  C L30 L26            4
 156                BE    WRITE                                               5  1932  B X67 S              4
 157         NXTREC A     &80,BLKCT                                           7  1937  A L36 L30            4
 158                MCW   BLKCT,XR3                                           7  1944  M L30 099            4
 159         MOVEIN MCW   INPUT,CARD&80                                       7  1951  M IA7 080            4
 160                CHAIN 9                                                                      MACRO
 161                MCW                                                       1  1958  M                GEN  4
 162                MCW                                                       1  1959  M                GEN  4
 163                MCW                                                       1  1960  M                GEN  5
 164                MCW                                                       1  1961  M                GEN  5
 165                MCW                                                       1  1962  M                GEN  5
 166                MCW                                                       1  1963  M                GEN  5
 167                MCW                                                       1  1964  M                GEN  5
 168                MCW                                                       1  1965  M                GEN  5
 169                MCW                                                       1  1966  M                GEN  5
 170                S     XR3&001                                             4  1967  S 100                6
 171                S                                                         1  1971  S                    6
 172                S                                                         1  1972  S                    6
 173                B     ANAL                                                4  1973  B 114                6
 174         PUT    MCW   BLKCT,XR3                                           7  1977  M L30 099            6
 175                MCW   CARD&80,INPUT                                       7  1984  M 080 IA7            6
 176                CHAIN 9                                                                      MACRO
 177                MCW                                                       1  1991  M                GEN  6
 178                MCW                                                       1  1992  M                GEN  7
 179                MCW                                                       1  1993  M                GEN  7
 180                MCW                                                       1  1994  M                GEN  7
 181                MCW                                                       1  1995  M                GEN  7
 182                MCW                                                       1  1996  M                GEN  7
 183                MCW                                                       1  1997  M                GEN  7
 184                MCW                                                       1  1998  M                GEN  7
 185                MCW                                                       1  1999  M                GEN  8
 186                B     GET                                                 4  2000  B Z25                8
 187         *
 188         *TAPE REDUNDANCY ROUTINE
 189         *
 190         TPERR  SBR   XR1                                                 4  2004  H 089                8
 191                SBR   REDXT&3                                             4  2008  H !76                8
 192                MZ    &9,XR1                                              7  2012  Y L37 089            8
 193                MCW   4000-10&X1,TPINST&7                                 7  2019  M IZ0 !67            8
 194                MN    TPINST&3,BSP1&3                                     7  2026  D !63 !43            8
 195                MCW   TPINST&7,INST2&7                                    7  2033  M !67 J76            9
 196         BSP1   BSP   INITAP                                              5  2040  U %U0 B              9
 197                BCE   WRTRED,TPINST&7,W                                   8  2045  B J49 !67 W          9
```

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SEQ PG LIN  LABEL   OP    OPERANDS                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

198               MCW   &9,READCT#1                                7  2053  M L37 L38            9
199         TPINST RT   INITAP,XXXX                                8  2060  M %U0 000 R          9
200               BER   RDRERR                                     5  2068  B !77 L             10
201         REDXT  B    XXXX                                     4  2073  B 000               10
202         RDRERR MN   TPINST&3,BSP2&3                          7  2077  D !63 !87           10
203         BSP2   BSP  INITAP                                   5  2084  U %U0 B             10
204               S     &1,READCT                                7  2089  S L39 L38           10
205               BWZ   TPINST,READCT,B                          8  2096  V !60 L38 B         10
206               MN    TPINST&3,TPHALT&6                        7  2104  D !63 J17           11
207         TPHALT H    XXXX,590                                 7  2111  . 000 590           11
208               MCW   TPINST&7,*&8                             7  2118  M !67 J32           11
209               RT    INITAP,XXXX                              8  2125  M %U0 000 R          11
210               BSS   BSP1,E                                   5  2133  B !40 E             11
211         TPHLT3 H    XXXX,511                                 7  2138  . 000 511           12
212               B     REDXT                                    4  2145  B !73               12
213         WRTRED SKP  SYSTPE                                   5  2149  U %U1 E             12
214               BCE   SUBCTR,WRTCTR-1,5                        8  2154  B J86 L40 5         12
215               A     &1,WRTCTR#2                              7  2162  A L39 L41           12
216         INST2  WT   INITAP,XXXX                              8  2169  M %U0 000 W          12
217               BER   BSP1                                     5  2177  B !40 L             13
218               B     REDXT                                    4  2182  B !73               13
219         SUBCTR S    WRTCTR                                   4  2186  S L41               13
220               MN    TPINST&3,*&7                             7  2190  D !63 K03           13
221         TPHLT2 H    XXXX,560                                 7  2197  . 000 560           13
222               B     INST2                                    4  2204  B J69               13
223         *
224         * CHECK FOR SHORT RECORDS
225         *
226         CHKLGT SBR  XR1                                      4  2208  H 089               13
227               SBR   LGTXT&3                                  4  2212  H K46               14
228               MZ    &9,XR1                                   7  2216  Y L37 089           14
229         LGTCK  BCE  4000-12&X1,LIMIT,}                       8  2223  B IY8 I31 } GMARK   14
230               CHAIN 12                                                                   MACRO
231               BCE                                            1  2231  B                GEN     14
232               BCE                                            1  2232  B                GEN     14
233               BCE                                            1  2233  B                GEN     14
234               BCE                                            1  2234  B                GEN     14
235               BCE                                            1  2235  B                GEN     15
236               BCE                                            1  2236  B                GEN     15
237               BCE                                            1  2237  B                GEN     15
238               BCE                                            1  2238  B                GEN     15
239               BCE                                            1  2239  B                GEN     15
240               BCE                                            1  2240  B                GEN     15
241               BCE                                            1  2241  B                GEN     15
242               BCE                                            1  2242  B                GEN     16
243         LGTXT  B    XXXX                                     4  2243  B 000               16
244         *
245         * CROSSOVER, C TO D
246         *
247         RDPSSD RTW  SYSTPE,1                                 8  2247  L %U1 001 R          16
```



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SEQ PG LIN  LABEL   OP    OPERANDS                                SFX CT  LOCN  INSTRUCTION TYPE  CARD

248               NOP   XXXX                                     4  2255  N 000               16
249               BER   TPERR                                    5  2259  B !04 L             16
250               CW    ENDOFD                                   4  2264  ) Y68               16
251               B     PASSD                                    4  2268  B S90               16
252         *
253         * CROSSOVER, D TO C
254         *
255         RDPSSC RTW  COUTPT,1                                 8  2272  L %U6 001 R          17
256               NOP   XXXX                                     4  2280  N 000               17
257               BER   TPERR                                    5  2284  B !04 L             17
258               CW    ENDOFC                                   4  2289  ) Z24               17
259               B     CLRTAB                                   4  2293  B Y13               17
260         *
261         * COMMON CONSTANTS
262         *
263         CLRMAX DCW  @I97@                                    3  2299                      17
264         CLRMIN DSA  TABLE-010                                3  2302  L99                 17
265         FNCTN  DCW  @      @                                 6  2308                      18
266         TABMAX DCW  @V00@                                    3  2311                      18
267         MAXADD DCW  @   @                                    3  2314                      18
268         TABLSZ DCW  &0150                                    4  2318                      18
269         MAXSER DCW  @    @                                   4  2322                      18
270         SFXCTR DCW  @ @                                      1  2323                      18
271         KBLKNG DCW  @080@                                    3  2326                      18
272         BUMPOP DCW  @#@                                      1  2327                      19
273         HOLDA  DCW  &0000                                    4  2331                      19
274         BLKCT  EQU  HOLDA-1                                     2330
275         TPAD   DSA  TPAREA                                   3  2334  I18                 19
276               LTORG *                                             2335
                  DCW   &80                                      2  2336              LIT     19
                  DCW   &9                                       1  2337              LIT     19
            READCT DCW  #01                                      1  2338              AREA    19
                  DCW   &1                                       1  2339              LIT     19
            WRTCTR DCW  #02                                      2  2341              AREA    20
277         *
278         * PROTECTED CONSTANTS
279         *
280         FACTOR EQU  TABLE-021                                   2388
281         MACHSZ EQU  TABLE-020                                   2389
282         TOTLAB EQU  TABLE-016                                   2393
283         UNPRSW EQU  TABLE-015                                   2394
284         PROCSW EQU  TABLE-014                                   2395
285         SERCHS EQU  TABLE-010                                   2399
286         *
287         * INITIALIZE PASS C ONE TIME
288         *
289               ORG   TABLE-009                                       2400
290               RWD   SAVETP                                   5  2400  U %U4 R             21
291               RWD   CINPUT                                   5  2405  U %U5 R             21
292               RWD   COUTPT                                   5  2410  U %U6 R             21
```

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SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD
293                 CS    3999                                        4  2415  / I99              21
294                 SW    GRPMRK                                      4  2419  , Q66              21
295                 LCA   @00@,PROCSW                                 7  2423  L Q68 L95          21
296                 LCA   &0150,SERCHS                                7  2430  L Q72 L99          21
297                 LCA   @0015@,FACTOR                               7  2437  L Q76 L88          22
298                 RTW   SYSTPE,1                                    8  2444  L %U1 001 R        22
299                 NOP   XXXX                                        4  2452  N 000              22
300                 BER   TPERR                                       5  2456  B !04 L            22
301                 CW    ENDINT                                      4  2461  ) R01              22
302         *
303         * SET I/O GROUP MARK
304         *
305                 MCW   MACHSZ,KEEP1#001                            7  2465  M L89 Q77          22
306                 A     &3,KEEP1                                    7  2472  A Q78 Q77          23
307                 MN    KEEP1,*&004                                 7  2479  D Q77 M89          23
308                 MZ    ZONE2,*&007                                 7  2486  Y 109 M99          23
309         SETIO   LCA   GRPMRK,GPMRK3                               7  2493  L Q66 I98          23
310                 BWZ   SETBMP,SETIO&006,2                          8  2500  V P18 M99 2        23
311                 CS    4799                                        4  2508  / 79Z              24
312                 CS    4399                                        4  2512  / 39Z              24
313                 MCW   @#@,BUMP                                   7  2516  M Q79 W81          24
314                 BCE   SET8K,MACHSZ,4                             8  2523  B O20 L89 4        24
315         *
316         * 12K CONSTANTS
317         *
318                 MCW   BLKG12,KBLKNG                               7  2531  M Q52 L26          24
319                 MCW   TBSZ12,TABLSZ                               7  2538  M Q56 L18          24
320                 MCW   TBLM12,TABMAX                               7  2545  M Q59 L11          25
321                 MCW   TPAD12,TPAD                                 7  2552  M Q62 L34          25
322                 MCW   MDTP12,MDTP#003                            7  2559  M Q65 Q82          25
323                 A     &72,FACTOR                                  7  2566  A Q84 L88          25
324                 BCE   SETTP,MACHSZ,5                             8  2573  B O62 L89 5        25
325         *
326         * 16K CONSTANTS
327         *
328                 A     &400,TABLSZ                                 7  2581  A Q87 L18          26
329                 A     &40,FACTOR                                  7  2588  A Q89 L88          26
330                 MZ    ABBIT,TABMAX                                7  2595  Y 113 L11          26
331                 MZ    ABBIT,TPAD                                  7  2602  Y 113 L34          26
332                 MZ    ABBIT,MDTP                                  7  2609  Y 113 Q82          26
333                 B     SETTP                                       4  2616  B O62              26
334         *
335         * 8K CONSTANTS
336         *
337         SET8K   MCW   BLKG8K,KBLKNG                               7  2620  M Q36 L26          27
338                 MCW   TBSZ8K,TABLSZ                               7  2627  M Q40 L18          27
339                 MCW   TBLM8K,TABMAX                               7  2634  M Q43 L11          27
340                 MCW   TPAD8K,TPAD                                 7  2641  M Q46 L34          27
341                 MCW   MDTP8K,MDTP                                 7  2648  M Q49 Q82          27
342                 A     &36,FACTOR                                  7  2655  A Q91 L88          28
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SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD
343         SETTP   MZ    TPAD,CLRMAX                                 7  2662  Y L34 K99          28
344                 MCW   MDTP,MOVEIN&003                             7  2669  M Q82 Z54          28
345                 MCW   MDTP,PUT&013                                7  2676  M Q82 Z90          28
346                 MCW   TPAD,WRITE&006                              7  2683  M L34 X73          28
347                 MCW   TPAD,READ&010                              7  2690  M L34 X98          29
348                 MCW   TPAD,LIMAD#3                               7  2697  M L34 Q94          29
349                 MA    &13,LIMAD                 ??? &013 ???    7  2704  # Q96 Q94          29
350                 MCW   LIMAD,LGTCK&6                             7  2711  M Q94 K29          29
351         SETBMP  MCW   BUMP,BUMPOP                               7  2718  M W81 L27          29
352                 LCA   GRPMRK,ENDOFC                             7  2725  L Q66 Z24          30
353         *
354         * WRITE PASS C CHECKPOINT ON 6
355         *
356                 CS    80                                        4  2732  / 080              30
357                 SW    CARD&001,CARD&006                         7  2736  , 001 006          30
358                 SW    CARD&017,CARD&024                         7  2743  , 017 024          30
359                 SW    CARD&028,CARD&035                         7  2750  , 028 035          30
360                 SW    CARD&057,CARD&062                         7  2757  , 057 062          30
361                 SW    CARD&068,CARD&071                         7  2764  , 068 071          31
362                 WTW   COUTPT,1                                  8  2771  L %U6 001 W        31
363                 NOP   XXXX                                      4  2779  N 000              31
364                 BER   TPERR                                     5  2783  B !04 L            31
365                 CW    ENDOFC,GRPMRK                             7  2788  ) Z24 Q66          31
366                 C     TOTLAB,TABLSZ                             7  2795  C L93 L18          31
367                 MCW   TABLSZ,SERCHS                             7  2802  M L18 L99          32
368                 S     TOTLAB                                    4  2809  S L93              32
369                 BE    CLRTAB                                    5  2813  B Y13 S            32
370                 BH    CLRTAB                                    5  2818  B Y13 U            32
371                 MCW   &0009,SERCHS                             7  2823  M R00 L99          32
372                 B     CLRTAB                                    4  2830  B Y13              32
373         BLKG8K  DCW   @400@                                     3  2836                     32
374         TBSZ8K  DCW   &0510                                     4  2840                     33
375         TBLM8K  DSA   5100                                      3  2843  /0'                33
376         TPAD8K  DSA   7598                                      3  2846  E9Y                33
377         MDTP8K  DSA   7597&X3                                   3  2849  EIX                33
378         BLKG12  DCW   @800@                                     3  2852                     33
379         TBSZ12  DCW   &0870                                     4  2856                     33
380         TBLM12  DSA   8700                                      3  2859  70!                33
381         TPAD12  DSA   11198                                     3  2862  A9Q                34
382         MDTP12  DSA   11197&X3                                  3  2865  AIP                34
383         GRPMRK  DC    @}@                                       1  2866            GMARK   34
384                 LTORG *                                                 2867
                    DCW   @00@                                      2  2868            LIT     34
                    DCW   &0150                                     4  2872            LIT     34
                    DCW   @0015@                                    4  2876            LIT     34
            KEEP1   DCW   #01                                       1  2877            AREA    34
                    DCW   &3                                        1  2878            LIT     34
                    DCW   @#@                                       1  2879            LIT     35
            MDTP    DCW   #03                                       3  2882            AREA    35
                    DCW   &72                                       2  2884            LIT     35
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| SEQ | PG | LIN | LABEL | OP | OPERANDS | SFX | CT | LOCN | INSTRUCTION | TYPE | CARD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DCW | &400 | | 3 | 2887 | | LIT | 35 |
| | | | | DCW | &40 | | 2 | 2889 | | LIT | 35 |
| | | | | DCW | &36 | | 2 | 2891 | | LIT | 35 |
| | | | LIMAD | DCW | #03 | | 3 | 2894 | | AREA | 35 |
| | | | | DCW | &13 | | 2 | 2896 | | LIT | 36 |
| | | | | DCW | &0009 | | 4 | 2900 | | LIT | 36 |
| 385 | | | ENDINT | DCW | @}@ | | 1 | 2901 | | GMARK | 36 |
| 386 | | | | XFR | LIBRN | | | | B 000 | | 37 |



| SEQ | PG | LIN | LABEL | OP | OPERANDS | SFX | CT | LOCN | INSTRUCTION | TYPE | CARD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 387 | | | | JOB | AUTOCODER-PASS 5 MAIN LINE -VERSION 3 | | | | | | |
| 388 | | | * | | | | | | | | |
| 389 | | | * PASS C-LOAD SYMBOL TABLE& SET ADDRESSES | | | | | | | | |
| 390 | | | * | | | | | | | | |
| 391 | | | ZONE | EQU | 113 | | | 0113 | | | |
| 392 | | | 113 | DCW | @2SKB@ | | 4 | 0113 | | | 40 |
| 393 | | | ZONE2 | EQU | 109 | | | 0109 | | | |
| 394 | | | 109 | DCW | @2SKB@ | | 4 | 0109 | | | 41 |
| 395 | | | ABBIT | EQU | ZONE | | | 0113 | | | |
| 396 | | | BBIT | EQU | ZONE-001 | | | 0112 | | | |
| 397 | | | ABIT | EQU | ZONE-002 | | | 0111 | | | |
| 398 | | | NOBIT | EQU | ZONE-003 | | | 0110 | | | |
| 399 | | | XR1 | EQU | 89 | | | 0089 | | | |
| 400 | | | 89 | DCW | @000@ | | 3 | 0089 | | | 42 |
| 401 | | | XR2 | EQU | 94 | | | 0094 | | | |
| 402 | | | 94 | DCW | @000@ | | 3 | 0094 | | | 43 |
| 403 | | | XR3 | EQU | 99 | | | 0099 | | | |
| 404 | | | 99 | DCW | @000@ | | 3 | 0099 | | | 44 |
| 405 | | | | ORG | ZONE&001 | | | | 0114 | | |
| 406 | | | * | | | | | | | | |
| 407 | | | * DETERMINE RECORD TYPE | | | | | | | | |
| 408 | | | * | | | | | | | | |
| 409 | | | ANAL | BM | PUT,CARD&005 | | 8 | 0114 | V Z77 005 K | | 45 |
| 410 | | | | BCE | PUT,TYPE,% | | 8 | 0122 | B Z77 075 % | | 45 |
| 411 | | | | BCE | INSTR,TYPE, | | 8 | 0130 | B 219 075 | | 45 |
| 412 | | | | MN | TYPE,XR2 | | 7 | 0138 | D 075 094 | | 45 |
| 413 | | | | BCE | DA,XR2,0 | | 8 | 0145 | B 871 094 0 | | 45 |
| 414 | | | | MCW | @0@,INDFTR | | 7 | 0153 | M Y92 Y69 | | 46 |
| 415 | | | | MCW | @0@,DASW | | 7 | 0160 | M Y92 Y68 | | 46 |
| 416 | | | | A | XR2 | | 4 | 0167 | A 094 | | 46 |
| 417 | | | | A | XR2 | | 4 | 0171 | A 094 | | 46 |
| 418 | | | | B | *&001&X2 | | 4 | 0175 | B 1P9 | | 46 |
| 419 | | | | NOP | XXXX | | 4 | 0179 | N 000 | | 46 |
| 420 | | | | B | CONST | | 4 | 0183 | B 260 | | 46 |
| 421 | | | | B | CONST | | 4 | 0187 | B 260 | | 47 |
| 422 | | | | B | EXEND | | 4 | 0191 | B 973 | | 47 |
| 423 | | | | B | SFX | | 4 | 0195 | B 992 | | 47 |
| 424 | | | | B | PUT | | 4 | 0199 | B Z77 | | 47 |
| 425 | | | | B | ORG | | 4 | 0203 | B 376 | | 47 |
| 426 | | | | B | DS | | 4 | 0207 | B 295 | | 47 |
| 427 | | | | B | PUT | | 4 | 0211 | B Z77 | | 47 |
| 428 | | | | B | PUT | | 4 | 0215 | B Z77 | | 48 |
| 429 | | | * | | | | | | | | |
| 430 | | | * PROCESS INSTRUCTIONS | | | | | | | | |
| 431 | | | * | | | | | | | | |
| 432 | | | INSTR | MCW | @0@,INDFTR | | 7 | 0219 | M Y92 Y69 | | 48 |
| 433 | | | | B | PRCADD | | 4 | 0226 | B '03 | | 48 |
| 434 | | | | B | PROCLB | | 4 | 0230 | B /09 | | 48 |
| 435 | | | | BWZ | PUT,STADDR,2 | | 8 | 0234 | V Z77 003 2 | | 48 |
| 436 | | | | A | COUNT,NOWCTR | | 7 | 0242 | A 007 Y48 | | 48 |

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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

437                S     @1@,NOWCTR                                   7  0249  S Y93 Y48          49
438                B     PUT                                          4  0256  B Z77               49
439         *
440         * PROCESS CONSTANTS & DCW
441         *
442         CONST  BCE   PRCAST,AOPHO,*                               8  0260  B 283 017 *         49
443                MCW   @1@,ACTSW                                    7  0268  M Y93 Y67           49
444                B     PROCLB                                       4  0275  B /09               49
445                B     PUT                                          4  0279  B Z77               49
446         *
447         * CONSTANTDS WITH ASTERISK ADDRESS
448         *
449         PRCAST B     PRCADD                                       4  0283  B '03               49
450                B     PROCLB                                       4  0287  B /09               50
451                B     PUT                                          4  0291  B Z77               50
452         *
453         * PROCESS DS & EQUATES
454         *
455         DS     BCE   PROCTU,AOPHO,%                               8  0295  B 361 017 %         50
456                A     AINDEX,INDFTR                                7  0303  A 027 Y69           50
457                BCE   CONST,AOPHO,*                                8  0310  B 260 017 *         50
458                BWZ   CONST,AOPHO,2                                8  0318  V 260 017 2         50
459                BWZ   *&5,STAOP,2                                  8  0326  V 338 001 2         51
460                B     CONST                                        4  0334  B 260               51
461         *
462         * EQUATE
463         *
464                B     SETAOP                                       4  0338  B U35               51
465                MCW   DSAPUT,LABRTN&003                            7  0342  M Y72 S97           51
466                BWZ   UNPROC,STAOP,2                               8  0349  V /81 001 2         51
467                B     CONST                                        4  0357  B 260               51
468         *
469         * DS OF INPUT DEVICE
470         *
471         PROCTU MCW   AOPER-003,LABADD-001                         7  0361  M 019 060           52
472                MCW   @0@                                          4  0368  M Y92               52
473                B     CONST                                        4  0372  B 260               52
474         *
475         * PROCESS ORIGIN & LITERAL ORIGIN
476         *
477         ORG    BWZ   SETHGH,CARD&033,B                           8  0376  V 405 033 B         52
478                ZA    LABADD,ORGADD                                7  0384  ? 061 032           52
479                A     @1@,ORGADD                                   7  0391  A Y93 032           52
480                MZ    ABBIT,CARD&033                               7  0398  Y 113 033           53
481         SETHGH BCE   ORGSAV,MAXSW,1                               8  0405  B 432 Y60 1         53
482                C     NOWCTR,HGHCTR                                7  0413  C Y48 Y58           53
483                BH    ORGSAV                                       5  0420  B 432 U             53
484                ZA    NOWCTR,HGHCTR                                7  0425  ? Y48 Y58           53
485         *
486         * PROCESS SAVE COUNTER OF ORIGIN
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

487         *
488         ORGSAV BCE   AOPOR,LBLHO,                                8  0432  B 536 008           54
489                MCW   @0050@,XR1                                   7  0440  M Y96 089           54
490                MCW   &AOPOR,LABRTN&003                            7  0447  M Y99 S97           54
491                BWZ   *&005,STLABL,2                               8  0454  V 466 002 2         54
492                B     AOPOR                                        4  0462  B 536               54
493                BCE   STRSAV,SUPADD,                               8  0466  B 502 066           55
494         BTOLAB B     DOLABL                                       4  0474  B T58               55
495                B     SEARCH                                       4  0478  B W29               55
496                BCE   STORE,DBLSW,1                                8  0482  B S69 Y64 1         55
497                BCE   STORE,SPCSW,0                                8  0490  B S69 Y63 0         55
498                B     UNPROC                                       4  0498  B /81               55
499         STRSAV BCE   UNPROC,ADDRSW,1                              8  0502  B /81 Y59 1         56
500                BCE   UNPROC,LITRSW,1                              8  0510  B /81 Y61 1         56
501                MCW   NOWCTR,SUPADD                                7  0518  M Y48 066           56
502                A     @1@,SUPADD                                   7  0525  A Y93 066           56
503                B     BTOLAB                                       4  0532  B 474               56
504         *
505         * PROCESS A OPERAND OF ORIGIN
506         *
507         AOPOR  BWZ   *&005,STAOP,2                                8  0536  V 548 001 2         57
508                B     ACTUAL                                       4  0544  B 761               57
509                BCE   ASTRSK,AOPHO,*                               8  0548  B 708 017 *         57
510                MCW   @0@,LITRSW                                   7  0556  M Y92 Y61           57
511                S     NOWCTR                                       4  0563  S Y48               57
512                BCE   BLKAOP,AOPHO,                                8  0567  B 735 017           57
513         *
514         * SYMBOLIC ORIGIN
515         *
516                MCW   @0@,ORGSW                                    7  0575  M Y92 Y66           58
517                S     XR1&001                                      4  0582  S 090               58
518                B     SETAOP                                       4  0586  B U35               58
519                BCE   SETORG,ORGSW,1                               8  0590  B 609 Y66 1         58
520         SETSWS MCW   @11@,MAXSW                                   7  0598  M Z01 Y60           58
521                B     SCNTB&7                                      4  0605  B 813               58
522         SETORG MCW   LABADD,ORGCTR                                7  0609  M 061 Y53           59
523         RSTSWA MCW   @0@,ADDRSW                                   7  0616  M Y92 Y59           59
524                BCE   *&005,AOPADJ-002,X                           8  0623  B 635 024 X         59
525                B     AOPOUT                                       4  0631  B 669               59
526         *
527         * ADJUSTMENT OF X00
528         *
529                BCE   NXTCNT,AOPHO,*                               8  0635  B 655 017 *         59
530                C     ORGCTR,&00                                   7  0643  C Y53 Z03           60
531                BE    AOPOUT                                       5  0650  B 669 S             60
532         NXTCNT MCW   &00,ORGCTR                                   7  0655  M Z03 Y53           60
533                A     @1@,ORGCTR-002                               7  0662  A Y93 Y51           60
534         AOPOUT A     ORGCTR,ORGADD                                7  0669  A Y53 032           60
535                ZA    ORGCTR,LABADD                                7  0676  ? Y53 061           61
536                ZA    ORGADD,NOWCTR                                7  0683  ? 032 Y48           61
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD
537                S     @1@,NOWCTR                                 7  0690  S Y93 Y48          61
538                MZ    ABBIT,STAOP                                7  0697  Y 113 001          61
539                B     PUT                                        4  0704  B Z77              61
540         *
541         * ORIGIN ASTERISK
542         *
543         ASTRSK BCE   PUT,ADDRSW,1                               8  0708  B Z77 Y59 1        62
544                BCE   SETSWS,LITRSW,1                            8  0716  B 598 Y61 1        62
545                MCW   NOWCTR,ORGCTR                              7  0724  M Y48 Y53          62
546                B     RSTSWA                                     4  0731  B 616              62
547         *
548         * ORIGIN MAXIMUM
549         *
550         BLKAOP BCE   SETSWS,MAXSW,1                             8  0735  B 598 Y60 1        62
551                MCW   HGHCTR,ORGCTR                              7  0743  M Y58 Y53          63
552                A     @1@,ORGCTR                                 7  0750  A Y93 Y53          63
553                B     RSTSWA                                     4  0757  B 616              63
554         *
555         * ORIGIN ACTUAL OR PROCESSED
556         *
557         ACTUAL ZA    ORGADD,NOWCTR                              7  0761  ? 032 Y48          63
558                S     @1@,NOWCTR                                 7  0768  S Y93 Y48          63
559                BCE   TSTX00,AOPHO,*                             8  0775  B 821 017 *        64
560                MCW   @0@,LITRSW                                 7  0783  M Y92 Y61          64
561                BWZ   SCNTB,AOPHO,2                              8  0790  V 806 017 2        64
562                BWZ   SETORG,STAOP,K                             8  0798  V 609 001 K        64
563         SCNTB  MCW   @0@,ADDRSW                                 7  0806  M Y92 Y59          64
564                S     ORGCTR                                     4  0813  S Y53              65
565                B     PUT                                        4  0817  B Z77              65
566         TSTX00 BCE   PUT,AOPADJ-002,X                           8  0821  B Z77 024 X        65
567                BWZ   PUT,CARD&034,B                             8  0829  V Z77 034 B        65
568                A     ORGCTR,ORGADD                              7  0837  A Y53 032          65
569                BCE   PUT,ADDRSW,1                               8  0844  B Z77 Y59 1        65
570                BCE   PUT,LITRSW,1                               8  0852  B Z77 Y61 1        66
571                MZ    ABBIT,CARD&34                              7  0860  Y 113 034          66
572                B     ACTUAL                                     4  0867  B 761              66
573         *
574         * PROCESS DA STATEMENTS
575         *
576         DA     BCE   ORIGDA,TYPE,0                             8  0871  B 926 075 0        66
577                BCE   TSTRPT,ACTSW,1                            8  0879  B 910 Y67 1        66
578         BTOADD C     LABADD,SUPADD                              7  0887  C 061 066          67
579                BL    *&8                                        5  0894  B 906 T            67
580                MCW   @005@,XR3                                  7  0899  M Y96 099          67
581                B     PRCADD                                     4  0906  B '03              67
582         TSTRPT BCE   PUT,TYPE,'                                 8  0910  B Z77 075 '        67
583                B     PROCLB                                     4  0918  B /09              67
584                B     PUT                                        4  0922  B Z77              67
585         *
586         * DA HEADER
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD
587         *
588         ORIGDA MCW   @0@,INDFTR                                 7  0926  M Y92 Y69          68
589                A     AINDEX,INDFTR                              7  0933  A 027 Y69          68
590                MCW   @1@,DASW                                   7  0940  M Y93 Y68          68
591                MCW   @0@,ACTSW                                  7  0947  M Y92 Y67          68
592                BCE   BTOADD,AOPHO,*                             8  0954  B 887 017 *        68
593                MCW   @1@,ACTSW                                  7  0962  M Y93 Y67          69
594                B     TSTRPT                                     4  0969  B 910              69
595         *
596         * ??? MISSING FROM LISTING IN CE MANUAL ***
597         * ??? MISSING FROM LISTING IN CE MANUAL ***
598         EXEND  BWZ   PUT,TYPE,B                                 8  0973  V Z77 075 B        69
599                MCW   @B@,BRANCH                                 7  0981  M Z04 X84          69
600                B     WRITE                                      4  0988  B X67              69
601         *
602         * PROCESS SUFFIX
603         *
604         SFX    MCW   AOPHO,SFXCTR                              7  0992  M 017 L23          69
605                B     PUT                                        4  0999  B Z77              70
606         *
607         * PROCESS ADDRESSES
608         *
609         PRCADD SBR   ADDRTN&003                                 4  1003  H '89              70
610                MCW   @0@,ACTSW                                  7  1007  M Y92 Y67          70
611                BWZ   LITTST,STLABL,K                            8  1014  V '90 002 K        70
612         TSTADD BWZ   ADDRTN,STADDR,B                            8  1022  V '86 003 B        70
613                BCE   ADDRTN,ADDRSW,1                            8  1030  B '86 Y59 1        70
614                A     ORGCTR,LABADD                              7  1038  A Y53 061          71
615                A     ORGCTR,SUPADD                              7  1045  A Y53 066          71
616                C     NOWCTR,LABADD&X3                           7  1052  C Y48 0F1          71
617                BL    *&008                                      5  1059  B '71 T            71
618                ZA    LABADD&X3,NOWCTR                           7  1064  ? 0F1 Y48          71
619                BCE   ADDRTN,LITRSW,1                            8  1071  B '86 Y61 1        72
620                MZ    ABBIT,STADDR                               7  1079  Y 113 003          72
621         ADDRTN B     XXXX                                       4  1086  B 000              72
622         LITTST MCW   DSAPUT,LABRTN&003                          7  1090  M Y72 S97          72
623                BCE   LITRAL,TYPE,/                              8  1097  B T25 075 /        72
624                B     TSTADD                                     4  1105  B '22              72
625         *
626         * PROCESS LABEL
627         *
628         PROCLB SBR   LABRTN&003                                 4  1109  H S97              73
629                BWZ   *&005,STLABL,2                             8  1113  V /25 002 2        73
630                B     LABRTN                                     4  1121  B S94              73
631                BCE   MRKPRC,LBLHO,                              8  1125  B S80 008          73
632                BCE   BTOLBL,ACTSW,1                             8  1133  B /57 Y67 1        73
633                BCE   TSTDBL,LITRSW,1                            8  1141  B S07 Y61 1        74
634                BCE   TSTDBL,ADDRSW,1                            8  1149  B S07 Y59 1        74
635         BTOLBL B     DOLABL                                     4  1157  B T58              74
636                B     SEARCH                                     4  1161  B W29              74
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

637                BCE   DBLDEF,DBLSW,1                              8  1165  B S98 Y64 1         74
638                BCE   STORE,SPCSW,0                               8  1173  B S69 Y63 0         75
639         *
640         * UNPROCESSED LABEL
641         *
642         UNPROC MCW   @1@,UNPRSW                                 7  1181  M Y93 L94           75
643                A     @1@,TOTLAB                                 7  1188  A Y93 L93           75
644                BCE   SETSWL,TYPE,/                              8  1195  B S50 075 /         75
645                B     LABRTN                                     4  1203  B S94               75
646         *
647         * SEARCH TABLE FOR DBL DEF LITERAL
648         *
649         TSTDBL BCE   UNPROC,LBLHO,$                             8  1207  B /81 008 $         76
650                B     DOLABL                                     4  1215  B T58               76
651                B     SEARCH                                     4  1219  B W29               76
652                BCE   UNPROC,DBLSW,0                             8  1223  B /81 Y64 0         76
653                BCE   UNPROC,ADDHO,                              8  1231  B /81 M!0           76
654                MZ    BBIT,STLABL                                7  1239  Y 112 002           76
655                B     LABRTN                                     4  1246  B S94               77
656         *
657         * UNPROCESSED LABEL OF LITERAL
658         *
659         SETSWL BCE   LABRTN,LBLHO,$                             8  1250  B S94 008 $         77
660                MCW   @11@,LITRSW                                7  1258  M Z01 Y61           77
661                B     LABRTN                                     4  1265  B S94               77
662         *
663         * STORE LABEL IN TABLE
664         *
665         STORE  LCA   FNCTN,SYMBOL                               7  1269  L L08 M!9           77
666                LCA   HOLDAD                                     4  1276  L Z12               77
667         MRKPRC MZ    ABBIT,STLABL                               7  1280  Y 113 002           78
668                MCW   @1@,PROCSW                                 7  1287  M Y93 L95           78
669         LABRTN B     XXXX                                       4  1294  B 000               78
670         *
671         * DOUBLY DEFINED LABEL
672         *
673         DBLDEF BCE   STORE,ADDHO,                               8  1298  B S69 M!0           78
674                MZ    BBIT,STLABL                                7  1306  Y 112 002           78
675                BCE   LITRAL,TYPE,/                              8  1313  B T25 075 /         79
676                B     LABRTN                                     4  1321  B S94               79
677         *
678         * DOUBLE DEFINED LITERAL
679         *
680         LITRAL BWZ   LABRTN,STBOP,B                             8  1325  V S94 004 B         79
681                MCW   @%@,TYPE                                   7  1333  M Z05 075           79
682                S     COUNT,ORGCTR                               7  1340  S 007 Y53           79
683                S     COUNT,NOWCTR                               7  1347  S 007 Y48           80
684                B     LABRTN                                     4  1354  B S94               80
685         *
686         * SET UP LABEL & ADDRESS
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SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

687         * FOR TABLE SEARCH
688         *
689         DOLABL SBR   DOLABR&003                                 4  1358  H U34               80
690                MCW   LABEL,FNCTN                                7  1362  M 013 L08           80
691                MCW   CNVLAB,ARGUMT#3                            7  1369  M 056 Z08           80
692         SETFUN BCE   *&5,FNCTN,                                 8  1376  B T88 L08           80
693                B     *&8                                        4  1384  B T95               81
694                MCW   SFXCTR,FNCTN                               7  1388  M L23 L08           81
695                MCW   LABADD&X1,HOLDAD#004                       7  1395  M 0W1 Z12           81
696                BCE   DOINDX,HOADD&X1,0                          8  1402  B U17 0V7 0         81
697                MZ    ABIT,HOLDAD-003                            7  1410  Y 111 Z09           81
698         DOINDX MN    INDFTR,*&004                               7  1417  D Y69 U27           82
699                MZ    ZONE,HOLDAD-001                            7  1424  Y 113 Z11           82
700         DOLABR B     XXXX                                       4  1431  B 000               82
701         *
702         * PROCESS A OPERAND OF ORIGIN & EQUATE
703         *
704         SETAOP SBR   AOPRTN&003                                 4  1435  H U87               82
705                MCW   &BRSRH,DOLABR&003                          7  1439  M Z15 U34           82
706                MCW   AOPER,FNCTN                                7  1446  M 022 L08           82
707                MCW   AOP,ARGUMT                                 7  1453  M 070 Z08           83
708                B     SETFUN                                     4  1460  B T76               83
709         BRSRH  B     SEARCH                                     4  1464  B W29               83
710                BCE   ADDBNK,DBLSW,1                             8  1468  B V03 Y64 1         83
711                BCE   STRBNK,SPCSW,0                             8  1476  B U88 Y63 0         83
712         AOPRTN B     XXXX                                       4  1484  B 000               83
713         *
714         * LABEL NOT IN TABLE, STORE
715         * WITH BLANK ADDRESS
716         *
717         STRBNK LCA   FNCTN,SYMBOL                               7  1488  L L08 M!9           84
718                LCA   @    @                                     4  1495  L Z19               84
719                B     AOPRTN                                     4  1499  B U84               84
720         *
721         * RETRIEVE VALUE FROM TABLE
722         *
723         ADDBNK BCE   AOPRTN,ADDHO,                              8  1503  B U84 M!0           84
724                MCW   @1@,ORGSW                                  7  1511  M Y93 Y66           84
725                BWZ   *&5,LBLREF,2                               8  1518  V V30 M!1 2         84
726                B     *&8                                        4  1526  B V37               85
727                MZ    ABIT,LBLREF                                7  1530  Y 111 M!1           85
728                MCW   ADDLO,LABADD                               7  1537  M M!3 061           85
729                BCE   AOPROC,LABADD-3,%                          8  1544  B W18 058 %         85
730                BWZ   *&008,LABADD-003,2                         8  1552  V V67 058 2         85
731                MCW   @1@,HOADD                                  7  1560  M Y93 057           86
732                BCE   AOPRTN,TYPE,O                              8  1567  B U84 075 O         86
733         *
734         * ADD CHARACTER ADJUSTMENT FOR EQUATE
735         *
736                MZ    LABADD-001,SAVEZN#001                      7  1575  Y 060 Z20           86
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SEQ PG LIN  LABEL  OP    OPERANDS                                SFX CT  LOCN  INSTRUCTION TYPE  CARD
737                A     AOPADJ,LABADD                             7  1582  A 026 061           86
738                MZ    SAVEZN,LABADD-001                         7  1589  Y Z20 060           86
739                BCE   AOPROC,AINDEX,                            8  1596  B W18 027           87
740                MN    INDFTR,*&004                              7  1604  D Y69 W14           87
741                MZ    ZONE,LABADD-001                           7  1611  Y 113 060           87
742         AOPROC MZ    ABBIT,STAOP                               7  1618  Y 113 001           87
743                B     AOPRTN                                    4  1625  B U84               87
744         *
745         * TABLE SEARCH
746         *
747         SEARCH SBR   RETURN&003                                4  1629  H X66               87
748                MCW   DBLSW&001,DBLSW                           7  1633  M Y65 Y64           88
749                MCW   TABMAX,MAXADD                             7  1640  M L11 L14           88
750                MCW   ARGUMT,XR2                                7  1647  M Z08 094           88
751                MCW   SERCHS,MAXSER                            7  1654  M L99 L22           88
752         TBLSRH C     FNCTN,SYMBOL                              7  1661  C L08 M!9           88
753                BE    SETDBL                                    5  1668  B X45 S             89
754                BCE   RETURN,SYMHO,                             8  1673  B X63 M!4           89
755         BUMP   A     @010@,XR2                                 7  1681  A Z23 094           89
756                S     @1@,MAXSER                                7  1688  S Y93 L22           89
757                BM    SETSPC,MAXSER                             8  1695  V X56 L22 K         89
758                C     XR2,MAXADD                                7  1703  C 094 L14           90
759                BU    TBLSRH                                    5  1710  B W61 /             90
760                BCE   SETSPC,WRAPSW,1                           8  1715  B X56 Y62 1         90
761                MCW   @1@,WRAPSW                                7  1723  M Y93 Y62           90
762                MCW   ARGUMT,MAXADD                             7  1730  M Z08 L14           90
763                S     XR2&001                                   4  1737  S 095               90
764                B     TBLSRH                                    4  1741  B W61               91
765         *
766         * LABEL IN TABLE
767         *
768         SETDBL MCW   @1@,DBLSW                                 7  1745  M Y93 Y64           91
769                B     RETURN                                    4  1752  B X63               91
770         *
771         * SPACE AVAILABLE
772         *
773         SETSPC MCW   @1@,SPCSW                                 7  1756  M Y93 Y63           91
774         RETURN B     XXXX                                      4  1763  B 000               91
775         *
776         * INPUT/OUTPUT - PASS C
777         *
778         WRITE  WT    COUTPT,TPAREA                             8  1767  M %U6 I18 W         91
779                NOP   XXXX                                      4  1775  N 000               91
780                BER   TPERR                                     5  1779  B !04 L             92
781         BRANCH NOP   FINAL                                     4  1784  N Y73               92
782         READ   S     HOLDA                                     4  1788  S L31               92
783                RT    CINPUT,TPAREA                             8  1792  M %U5 I18 R         92
784                B     CHKLGT                                    4  1800  B K08               92
785                BER   TPERR                                     5  1804  B !04 L             92
786                B     NXTREC                                    4  1809  B Z37               92
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SEQ PG LIN  LABEL  OP    OPERANDS                                SFX CT  LOCN  INSTRUCTION TYPE  CARD
787         *
788         * CLEAR TABLE AREA
789         *
790         CLRTAB MCW   CLRMAX,CLEAR&003                          7  1813  M K99 Y23           93
791         CLEAR  CS    XXXX                                      4  1820  / 000               93
792                SBR   CLEAR&003                                 4  1824  H Y23               93
793                C     CLEAR&003,CLRMIN                          7  1828  C Y23 L02           93
794                BU    CLEAR                                     5  1835  B Y20 /             93
795                B     READ                                      4  1840  B X88               93
796         NOWCTR DCW   &00000                                    5  1848                      93
797         ORGCTR DCW   &00000                                    5  1853                      94
798         HGHCTR DCW   &00000                                    5  1858                      94
799         ADDRSW DCW   @0@                                       1  1859                      94
800         MAXSW  DC    @0@                                       1  1860                      94
801         LITRSW DC    @0@                                       1  1861                      94
802         WRAPSW DCW   @0@                                       1  1862                      94
803         SPCSW  DC    @0@                                       1  1863                      94
804         DBLSW  DC    @0@                                       1  1864                      94
805                DC    @0@                                       1  1865                      94
806         ORGSW  DCW   @0@                                       1  1866                      94
807         ACTSW  DCW   @0@                                       1  1867                      94
808         DASW   DCW   @0@                                       1  1868                      94
809         INDFTR DCW   @0@                                       1  1869                      95
810         DSAPUT DSA   PUT                                       3  1872  Z77                 95
811         *
812         * END OF PASS C, GET PASS D
813         *
814         FINAL  WTM   COUTPT                                    5  1873  U %U6 M             95
815                RWD   CINPUT                                    5  1878  U %U5 R             95
816                RWD   COUTPT                                    5  1883  U %U6 R             95
817                B     RDPSSD                                    4  1888  B K47               95
818                LTORG *                                                  1892
                   DCW   @0@                                       1  1892          LIT       95
                   DCW   @1@                                       1  1893          LIT       96
                   DCW   @005@                                     3  1896          LIT       96
                   DCW   &AOPOR                                    3  1899  536     ADCON     96
                   DCW   @11@                                      2  1901          LIT       96
                   DCW   &00                                       2  1903          LIT       96
                   DCW   @B@                                       1  1904          LIT       96
                   DCW   @%@                                       1  1905          LIT       96
            ARGUMT DCW   #03                                       3  1908          AREA      97
            HOLDAD DCW   #04                                       4  1912          AREA      97
                   DCW   &BRSRH                                    3  1915  U64     ADCON     97
                   DCW   @    @                                    4  1919          LIT       97
            SAVEZN DCW   #01                                       1  1920          AREA      97
                   DCW   @010@                                     3  1923          LIT       97
819         ENDOFC DCW   @)@                                       1  1924          GMARK     97
820                XFR   LIBRN                                             B 000               98
```

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SEQ PG LIN  LABEL  OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD

821               JOB   AUTOCODER-PASS 6-PROCESS OPERANDS  -VERSION 3
822         *
823         91    DCW   @00000@                                        5  0091                    101
824         96    DCW   @00000@                                        5  0096                    101
825         101   DCW   @00000@                                        5  0101                    101
826         109   DCW   @2SKB@                                         4  0109                    102
827         113   DCW   @2SKB@                                         4  0113                    102
828               ORG   ZONE&001                                                 0114
829         *
830         * DETERMINE RECORD TYPE
831         *
832               MCW   @0@,ASTRSW                                     7  0114  M U32 U18         102
833               BM    PUT,CARD&005                                   8  0121  V Z77 005 K       102
834               BCE   PUT,TYPE,%                                     8  0129  B Z77 075 %       102
835               MN    TYPE,TYPEA#001                                 7  0137  D 075 U33         102
836               BCE   PRINST,TYPEA,                                  8  0144  B 196 U33         103
837               BCE   PRDSA,TYPEA,2                                  8  0152  B 318 U33 2       103
838               BCE   PROEND,TYPEA,3                                 8  0160  B 446 U33 3       103
839               BCE   PROSFX,TYPEA,4                                 8  0168  B S79 U33 4       103
840               BCE   ORGEQU,TYPEA,6                                 8  0176  B 489 U33 6       104
841               BCE   ORGEQU,TYPEA,7                                 8  0184  B 489 U33 7       104
842               B     PUT                                            4  0192  B Z77             104
843         *
844         * PROCESS INSTRUCTIONS
845         *
846         PRINST BWZ  SETAST,STADDR,2                                8  0196  V 208 003 2       104
847               B     LOADDR                                         4  0204  B 215             104
848         SETAST MCW  @1@,ASTRSW                                     7  0208  M U34 U18         104
849         *
850         * SET ASTERISK ADDRESS
851         *
852         LOADDR ZA   LABADD,ASTADD#005                              7  0215  ? 061 U39         105
853               A     COUNT,ASTADD                                   7  0222  A 007 U39         105
854               S     @1@,ASTADD                                     7  0229  S U34 U39         105
855         *
856         * TEST FOR A OPERAND
857         *
858               BCE   PUT,COUNT,1                                    8  0236  B Z77 007 1       105
859               BCE   PUT,COUNT,2                                    8  0244  B Z77 007 2       105
860               BWZ   *&005,STAOP,2                                  8  0252  V 264 001 2       106
861               B     SEEBOP                                         4  0260  B 268             106
862               B     PROCOP                                         4  0264  B 578             106
863         *
864         * TEST FOR B OPERAND
865         *
866         SEEBOP BCE  PUT,COUNT,4                                    8  0268  B Z77 007 4       106
867               BCE   PUT,COUNT,5                                    8  0276  B Z77 007 5       106
868               BWZ   *&005,STBOP,2                                  8  0284  V 296 004 2       107
869               B     PUT                                            4  0292  B Z77             107
870               MCW   @003@,XR3                                      7  0296  M U42 099         107
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SEQ PG LIN  LABEL  OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD

871               MCW   @011@,XR1                                     7  0303  M U45 089         107
872               B     PROCOP                                         4  0310  B 578             107
873               B     PUT                                            4  0314  B Z77             107
874         *
875         * PROCESS DSA AND ADCON
876         *
877         PRDSA  BWZ  *&005,STADDR,2                                 8  0318  V 330 003 2       108
878               B     TSTPRC                                         4  0326  B 434             108
879               MCW   @1@,ASTRSW                                     7  0330  M U34 U18         108
880         SETDSA ZA   LABADD,ASTADD                                  7  0337  ? 061 U39         108
881               MCW   @003@,XR3                                      7  0344  M U42 099         108
882               MCW   @011@,XR1                                      7  0351  M U45 089         109
883               BWZ   *&005,STBOP,2                                  8  0358  V 370 004 2       109
884               B     PUT                                            4  0366  B Z77             109
885               B     PROCOP                                         4  0370  B 578             109
886               BWZ   PUT,STBOP,2                                    8  0374  V Z77 004 2       109
887               BCE   CMP16K,AINDEX,-        ??? OR ! ???          8  0382  B 409 027 -       109
888         COMPRS MCW  &PUT,OPRTN&3                                   7  0390  M U48 /78         110
889               BCE   PUT,AOP&1,%                                    8  0397  B Z77 071 %       110
890               B     CNVTO3                                         4  0405  B '94             110
891         *
892         * GET 16000 COMPLEMENT
893         *
894         CMP16K MCW  &16000,FNCTN-001                               7  0409  M U53 L07         110
895               S     HOLDAR,FNCTN-001                               7  0416  S U58 L07         110
896               ZA    FNCTN-001,HOLDAR#005                           7  0423  ? L07 U58         111
897               B     COMPRS                                         4  0430  B 390             111
898         TSTPRC BWZ  SETDSA,STBOP,2                                 8  0434  V 337 004 2       111
899               B     PUT                                            4  0442  B Z77             111
900         *
901         * PROCESS EX & END
902         *
903         PROEND S    ASTADD                                         4  0446  S U39             111
904               BWZ   *&005,STAOP,2                                  8  0450  V 462 001 2       111
905               B     *&005                                          4  0458  B 466             111
906               B     PROCOP                                         4  0462  B 578             112
907               BCE   ENDOPN,TYPE,3                                  8  0466  B 478 075 3       112
908               B     PUT                                            4  0474  B Z77             112
909         ENDOPN MCW  @B@,BRNCH2                                     7  0478  M U59 X84         112
910               B     PUT                                            4  0485  B Z77             112
911         *
912         * PROCESS ORIGIN & EQUATE
913         *
914         ORGEQU BWZ  *&005,STAOP,2                                  8  0489  V 501 001 2       112
915               B     ORGOUT                                         4  0497  B 574             112
916               BCE   ORGOUT,AOPHO,                                  8  0501  B 574 017         113
917               BWZ   ORGOUT,AOPHO,2                                 8  0509  V 574 017 2       113
918               BCE   ORGOUT,AOPHO,*                                 8  0517  B 574 017 *       113
919               BCE   ORGOUT,AOPHO,%                                 8  0525  B 574 017 %       113
920               B     PROCOP                                         4  0533  B 578             113
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SEQ PG LIN  LABEL   OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD
 921                BWZ   ORGOUT,STAOP,2                                8  0537  V 574 001 2        114
 922                MCW   @0@,ITERSW                                    7  0545  M U32 U28          114
 923                BCE   *&008,TYPEA,7                                 8  0552  B 567 U33 7        114
 924                MZ    BBIT,STAOP                                    7  0560  Y 112 001          114
 925                MCW   HOLDAR,LABADD                                 7  0567  M U58 061          114
 926         ORGOUT B     PUT                                           4  0574  B Z77              115
 927         *
 928         * PROCESS OPERAND SUB-ROUTINE
 929         *
 930         PROCOP SBR   OPRTN&003                                     4  0578  H /78              115
 931                BWZ   *&005,STAOP&X3,2                              8  0582  V 594 0?1 2        115
 932                B     OPRTN                                         4  0590  B /75              115
 933                BCE   SETZRO,AOPHO&X1,                              8  0594  B 942 0/7          115
 934                BCE   PERCNT,AOPHO&X1,%                             8  0602  B 950 0/7 %        115
 935                BWZ   FLOAT,AOPHO&X1,2                              8  0610  V S21 0/7 2        116
 936                BCE   PROAST,AOPHO&X1,*                            8  0618  B /90 0/7 *        116
 937         *
 938         * CONVERT SYMBOL TO TABLE ADDRESS
 939         *
 940         CNVSYM BCE   *&005,AOP-002&X3,                             8  0626  B 638 0F8          116
 941                B     SETSYM                                        4  0634  B 804              116
 942                MCW   AOPER&X1,W6AREA#006                           7  0638  M 0S2 U65          116
 943                BCE   *&5,W6AREA,                                   8  0645  B 657 U65          117
 944                B     *&8                                           4  0653  B 664              117
 945                MCW   SFXCTR,W6AREA                                 7  0657  M L23 U65          117
 946                ZA    &2,HOLD2#002                                  7  0664  ? U66 U68          117
 947                ZA    W6AREA-2,HOLD4#004                            7  0671  ? U63 U72          117
 948                A     W6AREA,HOLD4                                  7  0678  A U65 U72          118
 949                A     W6AREA,HOLD4-002                              7  0685  A U65 U70          118
 950                MZ    NOBIT,HOLD4                                   7  0692  Y 110 U72          118
 951                ZA    FACTOR,HOLD7                                  7  0699  ? L88 U26          118
 952         MPYLP  MN    HOLD7,HOLD1                                   7  0706  D U26 U27          118
 953                ZA                                                 1  0713  ?                  118
 954         MULT   BCE   NXTDGT,HOLD1,?         ??? ? OR & ???        8  0714  B 740 U27 ?        119
 955                A     HOLD4,HOLD7-002                               7  0722  A U72 U24          119
 956                S     &1,HOLD1                                      7  0729  S U73 U27          119
 957                B     MULT                                          4  0736  B 714              119
 958         NXTDGT S     &1,HOLD2                                      7  0740  S U73 U68          119
 959                BWZ   MPYLP,HOLD2,B                                 8  0747  V 706 U68 B        120
 960                MCW   @000@,AOP&X3                                  7  0755  M U76 0G0          120
 961                BAV   *&001                                         5  0762  B 767 Z            120
 962         LOOP1  A     &96,HOLD7-005                                 7  0767  A U78 U21          120
 963                BAV   LOOP1                                         5  0774  B 767 Z            120
 964                MZ    HOLD7-006,AOP&X3                              7  0779  Y U20 0G0          120
 965                MCW   HOLD7-003                                     4  0786  M U23              121
 966                MN    HOLD7-005,*&004                               7  0790  D U21 800          121
 967                MZ    ZONE2,AOP-002&X3                              7  0797  Y 109 0F8          121
 968         *
 969         * SYMBOLIC OPERAND
 970         *
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SEQ PG LIN  LABEL   OP    OPERANDS                                    SFX CT  LOCN  INSTRUCTION TYPE  CARD
 971         SETSYM MCW   AOPER&X1,FNCTN                                7  0804  M 0S2 L08          121
 972                BCE   *&005,FNCTN,                                  8  0811  B 823 L08          121
 973                B     *&008                                         4  0819  B 830              121
 974                MCW   SFXCTR,FNCTN                                  7  0823  M L23 L08          122
 975                MCW   TABMAX,MAXADD                                 7  0830  M L11 L14          122
 976                MCW   @0@,SWICH1                                    7  0837  M U32 U19          122
 977                MCW   AOP&X3,XR2                                    7  0844  M 0G0 094          122
 978                MCW   SERCHS,MAXSER                                 7  0851  M L99 L22          122
 979         *
 980         * TABLE SEARCH
 981         *
 982         SRHLOP C     FNCTN,SYMBOL                                  7  0858  C L08 M!9          123
 983                BE    RECALL                                        5  0865  B 980 S            123
 984                BCE   UNDEF,SYMHO,                                  8  0870  B 961 M!4          123
 985         BUMPER A     @0100,XR2                                     7  0878  A U81 094          123
 986                S     @1@,MAXSER                                    7  0885  S U34 L22          123
 987                BM    UNDEF,MAXSER                                  8  0892  V 961 L22 K        124
 988                C     XR2,MAXADD                                    7  0900  C 094 L14          124
 989                BU    SRHLOP                                        5  0907  B 858 /            124
 990                BCE   UNDEF,SWICH1,1                                8  0912  B 961 U19 1        124
 991                MCW   @1@,SWICH1                                    7  0920  M U34 U19          124
 992                MCW   AOP&X3,MAXADD                                 7  0927  M 0G0 L14          125
 993                S     XR2&001                                       4  0934  S 095              125
 994                B     SRHLOP                                        4  0938  B 858              125
 995         *
 996         * BLANK OPERAND
 997         *
 998         SETZRO S     HOLDAR                                        4  0942  S U58              125
 999                B     CHRADJ                                        4  0946  B '49              125
1000         *
1001         * PERCENT OPERAND
1002         *
1003         PERCNT MCW   AOPER-003&X1,AOP&X3                           7  0950  M 0/9 0G0          125
1004                B     MARK                                          4  0957  B /68              125
1005         *
1006         * UNDEFINED OPERAND
1007         *
1008         UNDEF  BCE   OPRTN,ITERSW,0                                8  0961  B /75 U28 0        126
1009                MCW   @###@,AOP&X3                                  7  0969  M U84 0G0          126
1010                B     OPRTN                                         4  0976  B /75              126
1011         *
1012         * RETRIEVE VALUE FROM TABLE
1013         *
1014         RECALL BCE   UNDEF,ADDHO,                                  8  0980  B 961 M!0          126
1015                BWZ   *&5,LBLREF,2                                  8  0988  V '00 M!1 2        126
1016                B     *&8                                           4  0996  B '07              126
1017                MZ    ABIT,LBLREF                                   7  1000  Y 111 M!1          127
1018                MCW   ADDLO,HOLDAR                                  7  1007  M M!3 U58          127
1019                MCW   @0@                                           4  1014  M U32              127
1020                BCE   IOADD,HOLDAR-003,%                            8  1018  B /79 U55 %        127
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 SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

1021                BWZ   *&008,HOLDAR-003,2                          8  1026  V '41 U55 2        127
1022                MCW   @1@,HOLDAR-4                                7  1034  M U34 U54          128
1023                BCE   TSTCNV,TYPEA,6                              8  1041  B '78 U33 6        128
1024          *
1025          * ADD CHARACTER ADJUSTMENT
1026          *
1027          CHRADJ MZ   HOLDAR-001,HOLDZN#001                       7  1049  Y U57 U85          128
1028                 BCE  TSTCNV,AOPADJ-002&X1,X                      8  1056  B '78 0S4 X        128
1029                 A    AOPADJ&X1,HOLDAR                            7  1064  A 0S6 U58          128
1030                 MZ   HOLDZN,HOLDAR-001                           7  1071  Y U85 U57          129
1031          TSTCNV BM   MARK,TYPE                                   8  1078  V /68 075 K        129
1032                 BCE  MARK,TYPEA,2                                8  1086  B /68 U33 2        129
1033          *
1034          * CONVERT FIVE DIGIT ADDRESS TO THREE DIGIT ADDR
1035          *
1036          CNVTO3 BAV  *&001                                       5  1094  B '99 Z            129
1037                 A    @96@,HOLDAR-003                             7  1099  A U87 U55          129
1038                 BAV  CNVTO3&005                                  5  1106  B '99 Z            130
1039                 MZ   HOLDAR-004,HOLDAR                           7  1111  Y U54 U58          130
1040                 MN   HOLDAR-003,*&004                            7  1118  D U55 /28          130
1041                 MZ   ZONE2,HOLDAR-002                            7  1125  Y 109 U56          130
1042                 MZ   HOLDZN,HOLDAR-001                           7  1132  Y U85 U57          130
1043                 BCE  STRADD,AINDEX&X1,                           8  1139  B /61 0S7          131
1044                 MN   AINDEX&X1,*&004                            7  1147  D 0S7 /57          131
1045                 MZ   ZONE,HOLDAR-001                            7  1154  Y 113 U57          131
1046          STRADD MCW  HOLDAR,AOP&X3                               7  1161  M U58 0G0          131
1047          *
1048          * MARK OPERAND PROCESSING
1049          *
1050          MARK   MZ   ABBIT,STAOP&X3                              7  1168  Y 113 0?1          131
1051          OPRTN  B    XXXX                                        4  1175  B 000              132
1052          *
1053          * I/O ADDRESS IN TABLE
1054          *
1055          IOADD  MCW  HOLDAR-001,AOP&X3                           7  1179  M U57 0G0          132
1056                 B    MARK                                        4  1186  B /68              132
1057          *
1058          * ASTERISK OPERAND
1059          *
1060          PROAST BCE  *&5,AOPER&X1,                               8  1190  B S02 0S2          132
1061                 B    CNVSYM                                      4  1198  B 626              132
1062                 BCE  OPRTN,ASTRSW,1                              8  1202  B /75 U18 1        132
1063                 MCW  ASTADD,HOLDAR                               7  1210  M U39 U58          133
1064                 B    CHRADJ                                      4  1217  B '49              133
1065          *
1066          * ACTUAL OPERAND - FLOAT TO 5 DIGITS
1067          *
1068          FLOAT  BCE  CNVSYM,AOPHO&X1,#                           8  1221  B 626 0/7 #        133
1069                 BCE  CNVSYM,AOPHO&X1,@                           8  1229  B 626 0/7 @        133
1070                 BWZ  *&005,AOPER-004&X1,2                        8  1237  V S49 0/8 2        133
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 SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

1071                B     CNVSYM                                     4  1245  B 626              133
1072                ZA    AOPER-001&X1,HOLDAR                        7  1249  ? 0S1 U58          134
1073          REFLOT BCE  *&005,HOLDAR,&         ??? OR ? ???        8  1256  B S68 U58 &        134
1074                B     CHRADJ                                     4  1264  B '49              134
1075                ZA    HOLDAR-001,HOLDAR                          7  1268  ? U57 U58          134
1076                B     REFLOT                                     4  1275  B S56              134
1077          *
1078          * PROCESS SUFFIX
1079          *
1080          PROSFX MCW  AOPHO,SFXCTR                               7  1279  M 017 L23          134
1081                 B    PUT                                        4  1286  B Z77              135
1082          *
1083          * INITIALIZE PASS D
1084          *
1085          PASSD  SW   GRPMK2-1                                   4  1290  , U30              135
1086                 RTW  DINPUT,BYPRD                               8  1294  L %U6 U29 R        135
1087                 CW   GRPMK2-1                                   4  1302  ) U30              135
1088                 CS   CARD&80                                    4  1306  / 080              135
1089                 SW   CARD&001,CARD&006                          7  1310  , 001 006          135
1090                 SW   CARD&017,CARD&024                          7  1317  , 017 024          135
1091                 SW   CARD&028,CARD&035                          7  1324  , 028 035          136
1092                 SW   CARD&057,CARD&062                          7  1331  , 057 062          136
1093                 SW   CARD&068,CARD&071                          7  1338  , 068 071          136
1094                 MCW  BUMPOP,BUMPER                              7  1345  M L27 878          136
1095                 MCW  @6@,TPHALT&4                               7  1352  M U88 J15          136
1096                 MCW  @6@,TPHLT2&4                               7  1359  M U88 K01          137
1097                 MCW  @6@,TPHLT3&4                               7  1366  M U88 J42          137
1098                 MCW  TPAD,WRITE2&006                            7  1373  M L34 X73          137
1099                 MCW  TPAD,READ2&010                             7  1380  M L34 X98          137
1100                 MCW  @ @,SFXCTR                                 7  1387  M U89 L23          137
1101          *
1102          * TEST LAST ITERATION
1103          *
1104                 BCE  LSTITR,PROCSW,0                            8  1394  B U07 L95 0        138
1105                 BCE                                             1  1402  B                  138
1106                 B    READ2                                      4  1403  B X88              138
1107          LSTITR MCW  @1@,ITERSW                                 7  1407  M U34 U28          138
1108                 B    READ2                                      4  1414  B X88              138
1109          ASTRSW DCW  0                                          1  1418                     138
1110          SWICH1 DCW  @0@                                        1  1419                     138
1111          HOLD7  DCW  @       @                                  7  1426                     139
1112          HOLD1  DCW  &0                                         1  1427                     139
1113          ITERSW DCW  @0@                                        1  1428                     139
1114          BYPRD  DCW  @ @                                        1  1429                     139
1115          GRPMK2 DCW  @} @                                       2  1431                     139
1116          SSOP   EQU  1900                                          1900
1117                 LTORG *                                              1432
                     DCW  @0@                                       1  1432          LIT    139
              TYPEA  DCW  #01                                       1  1433          AREA   139
                     DCW  @1@                                       1  1434          LIT    140
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 SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

            ASTADD DCW   #05                                          5  1439              AREA   140
                   DCW   @003@                                        3  1442              LIT    140
                   DCW   @011@                                        3  1445              LIT    140
                   DCW   &PUT                                         3  1448  Z77         ADCON  140
                   DCW   &16000                                       5  1453              LIT    140
            HOLDAR DCW   #05                                          5  1458              AREA   140
                   DCW   @B@                                          1  1459              LIT    141
            W6AREA DCW   #06                                          6  1465              AREA   141
                   DCW   &2                                           1  1466              LIT    141
            HOLD2  DCW   #02                                          2  1468              AREA   141
            HOLD4  DCW   #04                                          4  1472              AREA   141
                   DCW   &1                                           1  1473              LIT    141
                   DCW   @000@                                        3  1476              LIT    141
                   DCW   &96                                          2  1478              LIT    142
                   DCW   @010@                                        3  1481              LIT    142
                   DCW   @###@                                        3  1484              LIT    142
            HOLDZN DCW   #01                                          1  1485              AREA   142
                   DCW   @96@                                         2  1487              LIT    142
                   DCW   @6@                                          1  1488              LIT    142
                   DCW   @ @                                          1  1489              LIT    142
1118        *
1119        * INPUT/OUTPUT - PASS D
1120        *
1121               ORG   WRITE                                                 1767
1122        WRITE2 WT    DOUTPT,TPAREA                                 8  1767  M %U5 I18 W        143
1123               NOP   XXXX                                          4  1775  N 000              143
1124               BER   TPERR                                         5  1779  B !04 L            143
1125        BRNCH2 NOP   FINALD                                       4  1784  N Y13              143
1126        READ2  S     HOLDA                                        4  1788  S L31              143
1127               RT    DINPUT,TPAREA                               8  1792  M %U6 I18 R        143
1128               B     CHKLGT                                      4  1800  B K08              143
1129               BER   TPERR                                       5  1804  B !04 L            144
1130               B     NXTRECD                                     4  1809  B Z37              144
1131        *
1132        FINALD WTM   DOUTPT                                      5  1813  U %U5 M            144
1133               RWD   DINPUT                                      5  1818  U %U6 R            144
1134               RWD   DOUTPT                                      5  1823  U %U5 R            144
1135               RTW   SYSTPE,333                                  8  1828  L %U1 333 R        144
1136               NOP   XXXX                                        4  1836  N 000              144
1137               BER   TPERR                                       5  1840  B !04 L            145
1138               CW    ENDOVL                                      4  1845  ) S45              145
1139               MCW   BUMPOP,TSTLST                               7  1849  M L27 474          145
1140               MCW   BUMPOP,NOT                                  7  1856  M L27 726          145
1141               B     TSTREF                                      4  1863  B 333              145
1142               DCW   @ @                                         1  1867                     145
1143        ENDOFD DCW   @)@                                         1  1868              GMARK  145
1144               EX    LIBRN                                              B 000              146
```



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 SEQ PG LIN  LABEL  OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

1145               JOB   AUTOCODER-PASS 6 PRINT SYMBOL TABLE  -VERSION 3
1146        *
1147               ORG   333                                                   0333
1148        *
1149        * END OF PASS D
1150        *
1151        * PRINT LIST OF UNREFERENCED LABELS
1152        *
1153        TSTREF CS    0332                                          4  0333  / 332              149
1154               CS                                                 1  0337  /                  149
1155               S     XR3&1                                        4  0338  S 100              149
1156               S                                                  1  0342  S                  149
1157               S                                                  1  0343  S                  149
1158               SW    HEADSW#001                                   4  0344  , /80              149
1159        NXTLBL BCE   TSTLST,SYMHO,                                8  0348  B 474 M!4          149
1160               BCE   TSTLST,ADDHO,                                8  0356  B 474 M!0          150
1161               BCE   LOZNG,SYMHO,)                               8  0364  B 530 M!4 )        150
1162               C     SYMHO,@A@                                    7  0372  C M!4 /81          150
1163               BH    DOREF                                        5  0379  B 441 U            150
1164               C     SYMHO,@Z@                                    7  0384  C M!4 /82          150
1165               BL    DOREF                                        5  0391  B 441 T            151
1166               MN    SYMHO,XR3                                    7  0396  D M!4 099          151
1167               BWZ   SWTAB,SYMHO,B                                8  0403  V 433 M!4 B        151
1168               A     @010@,XR3                                    7  0411  A /85 099          151
1169               BM    SWTAB,SYMHO                                  8  0418  V 433 M!4 K        151
1170               A     @010@,XR3                                    7  0426  A /85 099          152
1171        SWTAB  SW    SORTAB&X3                                    4  0433  , /D8              152
1172               S     XR3&2                                        4  0437  S 101              152
1173        DOREF  BWZ   *&5,LBLREF,2                                 8  0441  V 453 M!1 2        152
1174               B     TSTLST                                       4  0449  B 474              152
1175               BW    NEWPGE,HEADSW                                8  0453  V 502 /80 1        152
1176        DONEXT CW    HEADSW                                       4  0461  ) /80              152
1177               B     PRINT                                        4  0465  B 538              153
1178               W                                                  1  0469  2                  153
1179               CS    216                                          4  0470  / 216              153
1180        TSTLST A     @010@,XR2                                    7  0474  A /85 094          153
1181               C     XR2,TABMAX                                   7  0481  C 094 L11          153
1182               BE    DUMP                                         5  0488  B 646 S            153
1183               BCV   NEWPGE                                       5  0493  B 502 @            153
1184               B     NXTLBL                                       4  0498  B 348              154
1185        NEWPGE CC    1                                            2  0502  F 1                154
1186               MCW   @UNREFERENCED LABELS@,219                    7  0504  M S04 219          154
1187               CC    T                                            2  0511  F T                154
1188               W                                                  1  0513  2                  154
1189               CS    0219                                         4  0514  / 219              154
1190               BW    DONEXT,HEADSW                                8  0518  V 461 /80 1        154
1191               B     NXTLBL                                       4  0526  B 348              155
1192        LOZNG  SW    LIST-1                                       4  0530  , /78              155
1193               B     DOREF                                        4  0534  B 441              155
1194        *
```

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 SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

1195         * PRINT SUBROUTINE FOR UNREFERENCED LABELS & SYMBOL TABBLE
1196         *
1197         PRINT   SBR   PRTXT&3                                     4  0538  H 634             155
1198                 MCW   SYMBOL,206&X1                               7  0542  M M!9 2'6         155
1199                 BCE   DOIO,ADDHO,%                                8  0549  B 635 M!0 %       155
1200                 MN    ADDLO,212&X1                                7  0557  D M!3 2/2         155
1201                 MN                                                1  0564  D                 156
1202                 MN                                                1  0565  D                 156
1203                 MN                                                1  0566  D                 156
1204                 BWZ   *&8,ADDHO,2                                 8  0567  V 582 M!0 2       156
1205                 MCW   @1@,208&X1                                  7  0575  M S05 2'8         156
1206                 BWZ   PRTXT,ADDLO-1,2                             8  0582  V 631 M!2 2       156
1207                 MN    @1@,215&X1                                  7  0590  D S05 2/5         156
1208                 MCW   @&X@                                        4  0597  M S07             157
1209                 BWZ   PRTXT,ADDLO-1,S                             8  0601  V 631 M!2 S       157
1210                 MN    @2@,215&X1                                  7  0609  D S08 2/5         157
1211                 BWZ   PRTXT,ADDLO-1,K                             8  0616  V 631 M!2 K       157
1212                 MN    @3@,215&X1                                  7  0624  D S09 2/5         157
1213         PRTXT   B     XXXX                                        4  0631  B 000             157
1214         DOIO    MCW   ADDLO,212&X1                                7  0635  M M!3 2/2         158
1215                 B     PRTXT                                       4  0642  B 631             158
1216         *
1217         * PRINT SYMBOL TABLE
1218         *
1219         DUMP    B     NXTPGE                                      4  0646  B 859             158
1220                 S     XR3&1                                       4  0650  S 100             158
1221                 S                                                 1  0654  S                 158
1222                 S                                                 1  0655  S                 158
1223         NXTCTR  SW    ENDSW#1                                     4  0656  , S10             158
1224                 BW    SCAN,SORTAB&1&X3                            8  0660  V 687 /D9 1       159
1225         BMPXR3  BCE   TSTEOJ,SORTAB&1&X3,@                        8  0668  B 888 /D9 @       159
1226                 A     &1,XR3                                      7  0676  A S11 099         159
1227                 B     NXTCTR                                      4  0683  B 656             159
1228         SCAN    BCE   BMPXR3,SORTAB&1&X3,!                       8  0687  B 668 /D9 !       159
1229                 BCE   BMPXR3,SORTAB&1&X3,'                       8  0695  B 668 /D9 '       160
1230                 BCE   BMPXR3,SORTAB&1&X3,/                       8  0703  B 668 /D9 /       160
1231                 MCW   SORTAB&1&X3,TSTLBL&7                        7  0711  M /D9 725         160
1232         TSTLBL  BCE   DOPNT,SYMHO,X                             8  0718  B 777 M!4 X       160
1233         NOT     A     @010@,XR2                                   7  0726  A /85 094         160
1234                 C     XR2,TABMAX                                  7  0733  C 094 L11         161
1235                 BU    TSTLBL                                      5  0740  B 718 /           161
1236                 S     XR2&1                                       4  0745  S 095             161
1237                 S                                                 1  0749  S                 161
1238                 A     &1,XR3                                      7  0750  A S11 099         161
1239                 CW    ENDSW                                       4  0757  ) S10             161
1240                 BW    PNTSYM,PNTSW                                8  0761  V 812 S18 1       161
1241                 SW    PNTSW                                       4  0769  , S18             162
1242                 B     TSTESW                                      4  0773  B 847             162
1243         DOPNT   BCE   NOT,ADDHO,                                  8  0777  B 726 M!0         162
1244                 B     PRINT                                       4  0785  B 538             162
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 SEQ PG LIN  LABEL   OP    OPERANDS                                  SFX CT  LOCN  INSTRUCTION TYPE  CARD

1245                 SW    PNTSW                                       4  0789  , S18             162
1246                 A     @016@,XR1                                   7  0793  A S14 089         162
1247                 C     XR1,@128@                                   7  0800  C 089 S17         162
1248                 BU    NOT                                         5  0807  B 726 /           163
1249         PNTSYM  W                                                 1  0812  2                 163
1250                 CW    PNTSW#1                                     4  0813  ) S18             163
1251                 CS    332                                         4  0817  / 332             163
1252                 CS                                                1  0821  /                 163
1253                 S     XR1&1                                       4  0822  S 090             163
1254                 BW    *&9,ENDSW                                   8  0826  V 842 S10 1       163
1255                 BCE   TSTEOJ,SORTAB&1&X3,@                        8  0834  B 888 /D9 @       164
1256                 BCV   NXTPGE                                      5  0842  B 859 @           164
1257         TSTESW  BW    NOT,ENDSW                                   8  0847  V 726 S10 1       164
1258                 B     NXTCTR                                      4  0855  B 656             164
1259         NXTPGE  SBR   PGXT&3                                      4  0859  H 887             164
1260                 CS    332                                         4  0863  / 332             164
1261                 CS                                                1  0867  /                 164
1262                 CC    1                                           2  0868  F 1               165
1263                 MCW   @SYMBOL TABLE@,212                          7  0870  M S30 212         165
1264                 W                                                 1  0877  2                 165
1265                 CC    K                                           2  0878  F K               165
1266                 CS    212                                         4  0880  / 212             165
1267         PGXT    B     XXXX                                        4  0884  B 000             165
1268         TSTEOJ  BW    *&3,HEADSW                                  8  0888  V 898 /80 1       165
1269                 CC    1                                           2  0896  F 1               166
1270                 CS    332                                         4  0898  / 332             166
1271                 CHAIN 3                                                                 MACRO
1272                 CS                                                1  0902  /           GEN   166
1273                 CS                                                1  0903  /           GEN   166
1274                 CS                                                1  0904  /           GEN   166
1275                 BCE   EOJOB,ITERSW,1                              8  0905  B 997 U28 1       166
1276         *
1277         * GET PASS C
1278         *
1279                 BSP   SYSTPE                                      5  0913  U %U1 B           166
1280                 BSP   SYSTPE                                      5  0918  U %U1 B           167
1281                 MCW   @5@,TPHALT&4                                7  0923  M S31 J15         167
1282                 MCW   @5@,TPHLT2&4                                7  0930  M S31 K01         167
1283                 MCW   @5@,TPHLT3&4                                7  0937  M S31 J42         167
1284                 MCW   @00@,PROCSW                                 7  0944  M S33 L95         167
1285                 MCW   @ @,SFXCTR                                  7  0951  M S34 L23         168
1286         *
1287         * SET NUMBER OF SEEKS FOR TABLE SEARCH
1288         *
1289                 C     TOTLAB,TABLSZ                               7  0958  C L93 L18         168
1290                 MCW   TABLSZ,SERCHS                               7  0965  M L18 L99         168
1291                 S     TOTLAB                                      4  0972  S L93             168
1292                 BE    RDPSSC                                      5  0976  B K72 S           168
1293                 BH    RDPSSC                                      5  0981  B K72 U           168
1294                 MCW   &0009,SERCHS                               7  0986  M S38 L99         169
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| SEQ | PG | LIN | LABEL | OP | OPERANDS | SFX | CT | LOCN | INSTRUCTION | TYPE | CARD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1295 | | | | B | RDPSSC | | 4 | 0993 | B K72 | | 169 |
| 1296 | | | * | | | | | | | | |
| 1297 | | | * LAST ITERATION, GET PASS C | | | | | | | | |
| 1298 | | | * | | | | | | | | |
| 1299 | | | EOJOB | CW | GRPMK2-1 | | 4 | 0997 | ) U30 | | 169 |
| 1300 | | | | CS | 3999 | | 4 | 1001 | / I99 | | 169 |
| 1301 | | | | BCE | READE,MACHSZ,3 | | 8 | 1005 | B '44 L89 3 | | 169 |
| 1302 | | | | CS | 4799 | | 4 | 1013 | / 79Z | | 169 |
| 1303 | | | | CHAIN | 7 | | | | | MACRO | |
| 1304 | | | | CS | | | 1 | 1017 | / | GEN | 169 |
| 1305 | | | | CS | | | 1 | 1018 | / | GEN | 170 |
| 1306 | | | | CS | | | 1 | 1019 | / | GEN | 170 |
| 1307 | | | | CS | | | 1 | 1020 | / | GEN | 170 |
| 1308 | | | | CS | | | 1 | 1021 | / | GEN | 170 |
| 1309 | | | | CS | | | 1 | 1022 | / | GEN | 170 |
| 1310 | | | | CS | | | 1 | 1023 | / | GEN | 170 |
| 1311 | | | CLR | CS | 3999 | | 4 | 1024 | / I99 | | 170 |
| 1312 | | | | SBR | CLR&3 | | 4 | 1028 | H '27 | | 171 |
| 1313 | | | | C | CLR&3,&SSOP-1 | | 7 | 1032 | C '27 S41 | | 171 |
| 1314 | | | | BU | CLR | | 5 | 1039 | B '24 / | | 171 |
| 1315 | | | READE | RTW | SYSTPE,SSOP | | 8 | 1044 | L %U1 Z00 R | | 171 |
| 1316 | | | | BER | SYSERR | | 5 | 1052 | B '68 L | | 171 |
| 1317 | | | GOTOE | MCW | @N@,SSOP | | 7 | 1057 | M S42 Z00 | | 171 |
| 1318 | | | | B | SSOP&1 | | 4 | 1064 | B Z01 | | 172 |
| 1319 | | | SYSERR | MCW | &9,RDCT#1 | | 7 | 1068 | M S43 S44 | | 172 |
| 1320 | | | | BSP | SYSTPE | | 5 | 1075 | U %U1 B | | 172 |
| 1321 | | | RETRY | RTW | SYSTPE,SSOP | | 8 | 1080 | L %U1 Z00 R | | 172 |
| 1322 | | | | BER | AGAIN | | 5 | 1088 | B '97 L | | 172 |
| 1323 | | | | B | GOTOE | | 4 | 1093 | B '57 | | 172 |
| 1324 | | | AGAIN | BSP | SYSTPE | | 5 | 1097 | U %U1 B | | 172 |
| 1325 | | | | S | @1@,RDCT | | 7 | 1102 | S S05 S44 | | 173 |
| 1326 | | | | BWZ | RETRY,RDCT,B | | 8 | 1109 | V '80 S44 B | | 173 |
| 1327 | | | | H | XXXX,691 | | 7 | 1117 | . 000 691 | | 173 |
| 1328 | | | | RTW | SYSTPE,SSOP | | 8 | 1124 | L %U1 Z00 R | | 173 |
| 1329 | | | | BSS | SYSERR,E | | 5 | 1132 | B '68 E | | 173 |
| 1330 | | | | H | XXXX,612 | | 7 | 1137 | . 000 612 | | 174 |
| 1331 | | | | B | GOTOE | | 4 | 1144 | B '57 | | 174 |
| 1332 | | | LIST | DCW | @ ABCDEFGHI!JKLMNOPQR'/STUVWXYZ)@@ | | 32 | 1179 | | | 175 |
| 1333 | | | SORTAB | EQU | LIST-31 | | | 1148 | | | |
| 1334 | | | | LTORG | * | | | | 1180 | | |
| | | | HEADSW | DCW | #01 | | 1 | 1180 | | AREA | 175 |
| | | | | DCW | @A@ | | 1 | 1181 | | LIT | 175 |
| | | | | DCW | @Z@ | | 1 | 1182 | | LIT | 175 |
| | | | | DCW | @010@ | | 3 | 1185 | | LIT | 175 |
| | | | | DCW | @UNREFERENCED LABELS@ | | 19 | 1204 | | LIT | 176 |
| | | | | DCW | @1@ | | 1 | 1205 | | LIT | 176 |
| | | | | DCW | @&X@ | | 2 | 1207 | | LIT | 176 |
| | | | | DCW | @2@ | | 1 | 1208 | | LIT | 176 |
| | | | | DCW | @3@ | | 1 | 1209 | | LIT | 176 |
| | | | ENDSW | DCW | #01 | | 1 | 1210 | | AREA | 176 |



| SEQ | PG | LIN | LABEL | OP | OPERANDS | SFX | CT | LOCN | INSTRUCTION | TYPE | CARD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DCW | &1 | | 1 | 1211 | | LIT | 176 |
| | | | | DCW | @016@ | | 3 | 1214 | | LIT | 177 |
| | | | | DCW | @128@ | | 3 | 1217 | | LIT | 177 |
| | | | PNTSW | DCW | #01 | | 1 | 1218 | | AREA | 177 |
| | | | | DCW | @SYMBOL TABLE@ | | 12 | 1230 | | LIT | 177 |
| | | | | DCW | @5@ | | 1 | 1231 | | LIT | 177 |
| | | | | DCW | @00@ | | 2 | 1233 | | LIT | 177 |
| | | | | DCW | @ @ | | 1 | 1234 | | LIT | 177 |
| | | | | DCW | &0009 | | 4 | 1238 | | LIT | 178 |
| | | | | DCW | &SSOP-1 | | 3 | 1241 | Y99 | ADCON | 178 |
| | | | | DCW | @N@ | | 1 | 1242 | | LIT | 178 |
| | | | | DCW | &9 | | 1 | 1243 | | LIT | 178 |
| | | | RDCT | DCW | #01 | | 1 | 1244 | | AREA | 178 |
| 1335 | | | ENDOVL | DCW | @}@ | | 1 | 1245 | | GMARK | 178 |
| 1336 | | | | EX | LIBRN | | | | B 000 | | 179 |
| 1337 | | | | END | LIBRN | | | | / 000 080 | | |

| SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS | SYMBOL | ADDRESS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ABBIT | 113 | ABIT | 111 | ACTSW | 1867 | ACTUAL | 761 | ADDBNK | 1503 | ADDHO | 2400+X2 | ADDLO | 2403+X2 |
| ADDRSW | 1859 | ADDRTN | 1086 | AGAIN | 1097 | AINDEX | 27 | ANAL | 114 | AOP | 70 | AOPADJ | 26 |
| AOPER | 22 | AOPHO | 17 | AOPOR | 536 | AOPOUT | 669 | AOPROC | 1618 | AOPRTN | 1484 | ARGUMT | 1908 |
| ASTADD | 1439 | ASTRSK | 708 | ASTRSW | 1418 | BBIT | 112 | BLKAOP | 735 | BLKCT | 2330 | BLKG12 | 2852 |
| BLKG8K | 2836 | BMPXR3 | 668 | BRANCH | 1784 | BRNCH2 | 1784 | BRSRH | 1464 | BSP1 | 2040 | BSP2 | 2084 |
| BTOADD | 887 | BTOLAB | 474 | BTOLBL | 1157 | BUMP | 1681 | BUMPER | 878 | BUMPOP | 2327 | BYPRD | 1429 |
| CARD | 0 | CHKLGT | 2208 | CHRADJ | 1049 | CINPUT | %U5 | CLEAR | 1820 | CLR | 1024 | CLRMAX | 2299 |
| CLRMIN | 2302 | CLRTAB | 1813 | CMP16K | 409 | CNVLAB | 56 | CNVSYM | 626 | CNVTO3 | 1094 | COMPRS | 390 |
| CONST | 260 | COUNT | 7 | COUTPT | %U6 | DA | 871 | DASW | 1868 | DBLDEF | 1298 | DBLSW | 1864 |
| DINPUT | %U6 | DOINDX | 1417 | DOIO | 635 | DOLABL | 1358 | DOLABR | 1431 | DONEXT | 461 | DOPNT | 777 |
| DOREF | 441 | DOUTPT | %U5 | DS | 295 | DSAPUT | 1872 | DUMP | 646 | ENDINT | 2901 | ENDOFC | 1924 |
| ENDOFD | 1868 | ENDOPN | 478 | ENDOVL | 1245 | ENDSW | 1210 | EOJOB | 997 | EXEND | 973 | FACTOR | 2388 |
| FINAL | 1873 | FINALD | 1813 | FLOAT | 1221 | FNCTN | 2308 | GET | 1925 | GOTOE | 1057 | GPMRK3 | 3998 |
| GRPMK2 | 1431 | GRPMRK | 2866 | HEADSW | 1180 | HGHCTR | 1858 | HOADD | 57 | HOLD1 | 1427 | HOLD2 | 1468 |
| HOLD4 | 1472 | HOLD7 | 1426 | HOLDA | 2331 | HOLDAD | 1912 | HOLDAR | 1458 | HOLDZN | 1485 | INDFTR | 1869 |
| INITAP | %U0 | INPUT | 3917+X3 | INST2 | 2169 | INSTR | 219 | IOADD | 1179 | ITERSW | 1428 | KBLKNG | 2326 |
| KEEP1 | 2877 | LABADD | 61 | LABEL | 13 | LABRTN | 1294 | LBLHO | 8 | LBLREF | 2401+X2 | LGTCK | 2223 |
| LGTXT | 2243 | LIBRN | 0 | LIMAD | 2894 | LIMIT | 3931 | LIST | 1179 | LITRAL | 1325 | LITRSW | 1861 |
| LITTST | 1090 | LOADDR | 215 | LOOP1 | 767 | LOZNG | 530 | LSTITR | 1407 | MACHSZ | 2389 | MARK | 1168 |
| MAXADD | 2314 | MAXSER | 2322 | MAXSW | 1860 | MDTP | 2882 | MDTP12 | 2865 | MDTP8K | 2849 | MOVEIN | 1951 |
| MPYLP | 706 | MRKPRC | 1280 | MULT | 714 | NEWPGE | 502 | NOBIT | 110 | NOT | 726 | NOWCTR | 1848 |
| NXTCNT | 655 | NXTCTR | 656 | NXTDGT | 740 | NXTLBL | 348 | NXTPGE | 859 | NXTREC | 1937 | OPRTN | 1175 |
| ORG | 376 | ORGADD | 32 | ORGCTR | 1853 | ORGEQU | 489 | ORGOUT | 574 | ORGSAV | 432 | ORGSW | 1866 |
| ORIGDA | 926 | PASSD | 1290 | PERCNT | 950 | PGXT | 884 | PNTSW | 1218 | PNTSYM | 812 | PRCADD | 1003 |
| PRCAST | 283 | PRDSA | 318 | PRINST | 196 | PRINT | 538 | PROAST | 1190 | PROCLB | 1109 | PROCOP | 578 |
| PROCSW | 2395 | PROCTU | 361 | PROEND | 446 | PROSFX | 1279 | PRTXT | 631 | PUT | 1977 | RDCT | 1244 |
| RDPSSC | 2272 | RDPSSD | 2247 | RDRERR | 2077 | READ | 1788 | READ2 | 1788 | READCT | 2338 | READE | 1044 |
| RECALL | 980 | REDXT | 2073 | REFLOT | 1256 | RETRY | 1080 | RETURN | 1763 | RSTSWA | 616 | SAVETP | %U4 |
| SAVEZN | 1920 | SCAN | 687 | SCNTB | 806 | SEARCH | 1629 | SEEBOP | 268 | SERCHS | 2399 | SET8K | 2620 |
| SETAOP | 1435 | SETAST | 208 | SETBMP | 2718 | SETDBL | 1745 | SETDSA | 337 | SETFUN | 1376 | SETHGH | 405 |
| SETIO | 2493 | SETORG | 609 | SETSPC | 1756 | SETSWL | 1250 | SETSWS | 598 | SETSYM | 804 | SETTP | 2662 |
| SETZRO | 942 | SFX | 992 | SFXCTR | 2323 | SORTAB | 1148 | SPCSW | 1863 | SRHLOP | 858 | SSOP | 1900 |
| STADDR | 3 | STAOP | 1 | STBOP | 4 | STLABL | 2 | STORE | 1269 | STRADD | 1161 | STRBNK | 1488 |
| STRSAV | 502 | SUBCTR | 2186 | SUPADD | 66 | SWICH1 | 1419 | SWTAB | 433 | SYMBOL | 2409+X2 | SYMHO | 2404+X2 |
| SYSERR | 1068 | SYSTPE | %U1 | TABLE | 2409 | TABLSZ | 2318 | TABMAX | 2311 | TBLM12 | 2859 | TBLM8K | 2843 |
| TBLSRH | 1661 | TBSZ12 | 2856 | TBSZ8K | 2840 | TOTLAB | 2393 | TPAD | 2334 | TPAD12 | 2862 | TPAD8K | 2846 |
| TPAREA | 3918 | TPERR | 2004 | TPHALT | 2111 | TPHLT2 | 2197 | TPHLT3 | 2138 | TPINST | 2060 | TSTADD | 1022 |
| TSTCNV | 1078 | TSTDBL | 1207 | TSTEOJ | 888 | TSTESW | 847 | TSTLBL | 718 | TSTLST | 474 | TSTPRC | 434 |
| TSTREF | 333 | TSTRPT | 910 | TSTX00 | 821 | TYPE | 75 | TYPEA | 1433 | UNDEF | 961 | UNPROC | 1181 |
| UNPRSW | 2394 | W6AREA | 1465 | WRAPSW | 1862 | WRITE | 1767 | WRITE2 | 1767 | WRTCTR | 2341 | WRTRED | 2149 |
| XR1 | 89 | XR2 | 94 | XR3 | 99 | XXXX | 0 | ZONE | 113 | ZONE2 | 109 | | |