```
                        CARD 1 OF CORE DUMP ROUTINE                                                 PAGE    1

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

101                JOB   CARD 1 OF CORE DUMP ROUTINE
102         * SET WORD MARKS FOR THE SECOND CARD
103                ORG   1                                                      0001
104                SW    A1,A2                                           7  0001  , 008 015            1
105         A1     SW    A3,A4                                           7  0008  , 023 030            1
106         A2     NOP   0,0,0                                           8  0015  N 000 000 0          1
107         A3     SW    A5,A6                                           7  0023  , 038 042            1
108         A4     NOP   0,0,0                                           8  0030  N 000 000 0          1
109         A5     SW    A7                                              4  0038  , 049                1
110         A6     SW    A8,A9                                           7  0042  , 053 057            1
111         A7     SW    A10                                             4  0049  , 059                1
112         A8     SW    A11                                             4  0053  , 063                1
113         A9        N0                                                 2  0057  N 0                  1
114         A10    SW    A12                                             4  0059  , 067                1
115         A11    SW    A13                                             4  0063  , 071                1
116         A12    R     BLOOP            READ THE NEXT CARD             4  0067  1 001                1
117         A13    DCW   #1                                              1  0071                       1
```



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                        CARD 2 OF CORE DUMP ROUTINE                                                 PAGE    1

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

118                JOB   CARD 2 OF CORE DUMP ROUTINE
119         * REPLACE GROUP MARKS IN 81-399 BY ).
120                ORG   1                                                      0001
121         BLOOP  MCW   BADDR,BTESTG+6   SET TEST ADDRESS                7  0001  M 055 021            1
122                MCW   BADDR,BREPLG+6   SET REPLACEMENT ADDR            7  0008  M 055 048            1
123         BTESTG BCE   BREPLG,*,"       GROUP MARK?                     8  0015  B 042 022 "          1
124         BBUMP  A     BINCR,BADDR      UPDATE TEST ADDRESS             7  0023  A 067 055            1
125                BCE   BDONE,BADDR-2,4  DONE WITH SCAN?                 8  0030  B 057 053 4          1
126                B     BLOOP            AROUND AGAIN                    4  0038  B 001                1
127         BREPLG MCW   BLOZ,*           REPLACE GROUP MARK              7  0042  M 071 048            1
128                B     BBUMP            UPDATE TEST ADDRESS             4  0049  B 023                1
129         BADDR  DCW   @081@                                            3  0055                       1
130                DC    @ @                                             1  0056                       1
131         BDONE  CC    K                SKIP TWO LINES                 2  0057  F K                  1
132                CS    *-3              NEED NEW WORD MARKS            4  0059  / 059                1
133                SW    CSTART           READY FOR A NEW CARD           4  0063  , 001                1
134         BINCR  R     CSTART           READ A NEW CARD                4  0067  1 001                1
135         BLOZ   DCW   @)@              LOZENGE ON THE  A  CHAIN        1  0071                       1
```

```
                        CARD 3 OF CORE DUMP ROUTINE                                                PAGE    1

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

136                JOB   CARD 3 OF CORE DUMP ROUTINE
137         * SET WORD MARKS FOR THE NEXT CARD, PRINT THE PRINT
138         * AREA, THEN PRINT THE WORD MARKS.
139                ORG   1                                                        0001
140         CSTART SW    C1,C2                                      7  0001  , 008 012            1
141         C1     SW    C3                                         4  0008  , 016                1
142         C2     SW    C4                                         4  0012  , 023                1
143         C3     SW    C5,C6                                      7  0016  , 030 034            1
144         C4     SW    C7,C8                                      7  0023  , 041 048            1
145         C5     SW    C9                                         4  0030  , 049                1
146         C6     SW    C10,C11                                    7  0034  , 056 063            1
147         C7     SW    DLOAD,C14                                  7  0041  , 022 072            1
148         C8     SW                                               1  0048  ,                    1
149         C9     SW    C15,C16                                    7  0049  , 074 076            1
150         C10    SW    C17,C12                                    7  0056  , 080 067            1
151         C11    CW    C4                                         4  0063  ) 023                1
152         C12    SW    DLOAD2                                     4  0067  , 029                1
153         C13    W                                                1  0071  2                    1
154         C14       2)                                            2  0072  2 )                  1
155         C15       N0                                            2  0074  N 0                  1
156         C16    R     DSTART                                     4  0076  1 012                1
157         C17    NOP                                              1  0080  N                    1
```



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                        CARD 4 OF CORE DUMP ROUTINE                                                PAGE    1

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

158                JOB   CARD 4 OF CORE DUMP ROUTINE
159         * CLEAR 300-332 TO MAKE SURE 330 ISN'T A ZERO.  FILL
160         * IN THE DOTS AND NUMBERS 210-330, PRINT THEM.
161                ORG   1                                                        0001
162                DCW   @.......@                                  7  0007                       1
163         DNUM   DCW   @210@                                      3  0010                       1
164                DC    #1                                         1  0011                       1
165         DSTART CS    332              ENSURE 330 IS NOT @0@     4  0012  / 332               1
166                   N0 0                                          5  0016  N 000 0             1
167                NOP                                              1  0021  N                    1
168         DLOAD  LCA   DNUM,210         LOAD NUM TO PRINT         7  0022  L 010 210            1
169         DLOAD2 LCA                    LOAD DOTS                 1  0029  L                    1
170                CW    C8                                         4  0030  ) 048                1
171                A     DREAD+1,DNUM     ADD 10 T0 NUM             7  0034  A 077 010            1
172                BCE   DDONE,330,0      DONE?                     8  0041  B 067 330 0          1
173                A     DREAD+1,DLOAD+6  ADD 10 TO LOAD PLACE      7  0049  A 077 028            1
174                LCA   2,332            LAST TWO DOTS TO PRINT    7  0056  L 002 332            1
175                B     DLOAD            AROUND AGAIN              4  0063  B 022                1
176         DDONE  CW    DLOAD2                                     4  0067  ) 029                1
177                W                                                1  0071  2                    1
178                   N0                                            2  0072  N 0                  1
179                CC    J                SKIP ONE LINE             2  0074  F J                  1
180         DREAD  R     ESTART           READ THE NEXT CARD        4  0076  1 012                1
181                DCW   #1                                         1  0080                       1
```

```
                        CARD 5 OF CORE DUMP ROUTINE                                                PAGE    1

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

182                JOB   CARD 5 OF CORE DUMP ROUTINE
183         * CLEAR 300-332. REMEMBER WHETHER 101 HAD A WORD MARK.
184         * SET ONE SO WE CAN LOAD FROM 101 UPWARD.  LOAD 101-200
185         * AND ITS WORD MARKS TO 201-300.  CLEAR (OR DON'T
186         * CLEAR) THE WORD MARK IN 201.  PRINT.  PRINT WORD MARKS.
187                ORG   1                                                        0001
188         EHAVWM MCW   ENOP,ECW          CHANGE CW TO NOP                  7  0001  M 080 067            1
189                B     ELOOP                                                4  0008  B 034              1
190         ESTART SW    E1                                                   4  0012  , 017              1
191                NOP                                                        1  0016  N                   1
192         E1     CS    332                                                  4  0017  / 332              1
193                NOP                                                        1  0021  N                   1
194                BW    EHAVWM,101       WM IN 101?                        8  0022  V 001 101 1          1
195                SW    101              NO, SET ONE                       4  0030  , 101              1
196         ELOOP  LCA   101,201          LOAD TO PRINT AREA                7  0034  L 101 201            1
197                BCE   ECW,ELOOP+4,3    STORING AT 300 YET?               8  0041  B 067 038 3          1
198                A     EREAD,ELOOP+3    UPDATE FROM ADDRESS               7  0049  A 076 037            1
199                A     EREAD,ELOOP+6    UPDATE TO ADDRESS                 7  0056  A 076 040            1
200                B     ELOOP            NO                                4  0063  B 034              1
201         ECW    CW    201              OR MAYBE NOT                      4  0067  ) 201              1
202                W                                                        1  0071  2                   1
203                   2)                  PRINT THE WORD MARKS              2  0072  2 )                 1
204                   N0                                                   2  0074  N 0                 1
205         EREAD  R     FSTART           READ THE NEXT CARD                4  0076  1 012              1
206         ENOP   NOP                                                      1  0080  N                   1
```



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                        CARD 6 OF CORE DUMP ROUTINE                                                PAGE    1

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

207                JOB   CARD 6 OF CORE DUMP ROUTINE
208         * CLEAR 300 TO MAKE SURE IT ISN'T ZERO.  FILL IN THE
209         * DOTS AND NUMBERS 110-200.  PRINT THEM.
210                ORG   1                                                        0001
211                DCW   @.......@                                          7  0007                      1
212         FNUM   DCW   @110@                                              3  0010                      1
213                DC    #1                                                 1  0011                      1
214         FSTART CS    300              ENSURE 300 ISN'T 0                4  0012  / 300              1
215                NOP                                                      1  0016  N                   1
216                SW    FLOAD2                                             4  0017  , 029              1
217                NOP                                                      1  0021  N                   1
218         FLOAD  LCA   FNUM,210         LOAD NUM TO PRINT                 7  0022  L 010 210            1
219         FLOAD2 LCA                    LOAD THE DOTS                     1  0029  L                   1
220                NOP   0                                                  4  0030  N 000              1
221                A     FREAD+1,FNUM     ADD 10 TO NUM                     7  0034  A 077 010            1
222                BCE   FDONE,300,0      DONE?                             8  0041  B 067 300 0          1
223                A     FREAD+1,FLOAD+6  ADD 10 TO LOAD PLACE              7  0049  A 077 028            1
224                NOP   0,0                                                7  0056  N 000 000            1
225                B     FLOAD            AROUND AGAIN                      4  0063  B 022              1
226         FDONE  CW    FLOAD2                                             4  0067  ) 029              1
227                W                                                        1  0071  2                   1
228                   N0                                                    2  0072  N 0                 1
229                CC    J                SKIP ONE LINE                     2  0074  F J                 1
230         FREAD  R     GSTART           READ THE NEXT CARD                4  0076  1 017              1
231                NOP                                                      1  0080  N                   1
```

CARD 7 OF CORE DUMP ROUTINE PAGE 1

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

232                 JOB   CARD 7 OF CORE DUMP ROUTINE
233         * CLEAR 300.  REMEMBER WHETHER 81 HAD A WORD MARK.  SET
234         * ONE.  LOAD 81-99 AND ITS WORD MARKS TO 281-299.
235         * CLEAR (OR DON'T CLEAR) THE WORD MARK IN 281.  PRINT.
236         * PRINT WORD MARKS.
237                 ORG   1                                                      0001
238         GHAVWM  MCW   GNOP,GCW          CHANGE CW TO NOP           7  0001  M 080 067            1
239                 B     GLOOP                                        4  0008  B 034                1
240                 DCW   #4                                           4  0015                       1
241                 DCW   #1                                           1  0016                       1
242         GSTART  CS    300                                          4  0017  / 300                1
243                 CS                                                 1  0021  /                    1
244                 BW    GHAVWM,81         WM IN 81?                  8  0022  V 001 081 1          1
245                 SW    81                NO, SET ONE                4  0030  , 081                1
246         GLOOP   LCA   81,201            LOAD TO PRINT AREA         7  0034  L 081 201            1
247                 BCE   GCW,GLOOP+4,3     STORING AT 300 YET?        8  0041  B 067 038 3          1
248                 A     GREAD,GLOOP+3     UPDATE FROM ADDRESS        7  0049  A 076 037            1
249                 A     GREAD,GLOOP+6     UPDATE TO ADDRESS          7  0056  A 076 040            1
250                 B     GLOOP             NO                         4  0063  B 034                1
251         GCW     CW    281               OR MAYBE NOT               4  0067  ) 281                1
252                 W                                                  1  0071  2                    1
253                    2)                   PRINT THE WORD MARKS       2  0072  2 )                  1
254                    N0                                              2  0074  N 0                  1
255         GREAD   R     HSTART            READ THE NEXT CARD         4  0076  1 030                1
256         GNOP    NOP                                                1  0080  N                    1
```


CARD 8 OF CORE DUMP ROUTINE PAGE 1

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

257                 JOB   CARD 8 OF CORE DUMP ROUTINE
258         * LOAD INDEX REGISTER IDENTIFICATION TO 281-300.
259                 ORG   1                                                      0001
260         HDOTS   DCW   @......*@                                    7  0007                       1
261         HINDX1  DCW   @1*..@                                       4  0011                       1
262                 DCW   @*2*.@                                       4  0015                       1
263         H1      DCW   @.@                                          1  0016                       1
264         HINDX   DCW   @*3*.@                                       4  0020                       1
265                 DC    #1                                           1  0021                       1
266         H2      DCW   #1                                           1  0022                       1
267         H3      DC    #7                                           7  0029                       1
268         HSTART  SW    H4                                           4  0030  , 048                1
269                 CW    HDOTS+1,HINDX+1                              7  0034  ) 008 021            1
270                 CW    H2,H1+1                                      7  0041  ) 022 017            1
271         H4      CW                                                 1  0048  )                    1
272                 LCA   HINDX,300         MOVE XR ID TO 300          7  0049  L 020 300            1
273                 SW    H1,H2+1                                      7  0056  , 016 023            1
274                 R     ISTART            READ THE NEXT CARD         4  0063  1 049                1
275                 DCW   #4                                           4  0070                       1
276                 DCW   #1                                           1  0071                       1
277                 DCW   #2                                           2  0073                       1
278                 DCW   #2                                           2  0075                       1
279                 DCW   #4                                           4  0079                       1
280                 DCW   #1                                           1  0080                       1
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                        CARD 9 OF CORE DUMP ROUTINE                                                PAGE    1

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

281                JOB   CARD 9 OF CORE DUMP ROUTINE
282         * LOAD SENSE SWITCH IDENTIFIERS TO 201-234.
283                ORG   1                                                          0001
284         ISSTXT DCW   @SENSE SWS   ON@                                  14  0014                      1
285                DC    #1                                                1  0015                      1
286                DCW   #7                                                7  0022                      1
287                DCW   #7                                                7  0029                      1
288         IOFF   DCW   @OFF@                                             3  0032                      1
289                DC    #1                                                1  0033                      1
290                DCW   #7                                                7  0040                      1
291                DCW   #7                                                7  0047                      1
292                DCW   #1                                                1  0048                      1
293         ISTART LCA   ISSTXT,214       LOAD SS ON TEXT TO 214            7  0049  L 014 214           1
294                LCA   IOFF,234         LOAD SS OFF                       7  0056  L 032 234           1
295                CW    C15                                               4  0063  ) 074               1
296                CW    C12                                               4  0067  ) 067               1
297                NOP                                                     1  0071  N                     1
298                SW    JSTART                                            4  0072  , 011               1
299                R     JSTART          READ THE NEXT CARD                4  0076  1 011               1
300                DCW   #1                                                1  0080                      1
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                        CARD 10 OF CORE DUMP ROUTINE                                               PAGE    1

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

301                JOB   CARD 10 OF CORE DUMP ROUTINE
302         * PUT LIST OF ON AND OFF SENSE SWITCHES IN 236... (ON)
303         * OR 216... (OFF).
304                ORG   1                                                          0001
305         JTWO   DCW   2                                                  1  0001                      1
306                DC    #9                                                9  0010                      1
307         JSTART BSS   JON,B            SWITCH ON?                        5  0011  B 034 B             1
308         JOFF   M     JB,236           NO, MOVE SS ID TO OFF             7  0016  @ 080 236           1
309                A     JTWO,JOFF+6      INCR OFF ID SPOT                  7  0023  A 001 022           1
310                B     JBOTH                                              4  0030  B 049               1
311         JON    M     JB,216           YES, MOVE SS ID TO ON             7  0034  @ 080 216           1
312                A     JTWO,JON+6                                         7  0041  A 001 040           1
313                NOP                                                     1  0048  N                     1
314         JBOTH  A     JREAD,JSTART+4   INCR SWITCH TEST                 7  0049  A 076 015           1
315                A     JREAD,JB         INCR SS ID                        7  0056  A 076 080           1
316                BCE   JREAD,JB,H       DONE?                             8  0063  B 076 080 H         1
317                NOP                                                     1  0071  N                     1
318                B     JSTART           AROUND AGAIN                      4  0072  B 011               1
319         JREAD  R     KSTART           READ THE NEXT CARD                4  0076  1 034               1
320         JB     DCW   @B@              SS ID TO PRINT                    1  0080                      1
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                        CARD 11 OF CORE DUMP ROUTINE                                                PAGE    1

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

321                 JOB   CARD 11 OF CORE DUMP ROUTINE
322         * SAVE  COMPARISON INDICATORS IN 100..125.
323                 ORG   1                                                       0001
324         KUNEQ   DCW   @   UNEQUAL@                                  10  0010                      1
325         KEQUAL  DCW   @EQUAL@                                        5  0015                      1
326         KHIGH   DCW   @ HIGH@                                        5  0020                      1
327                 DC    #2                                             2  0022                      1
328         KLOW    DCW   @LOW@                                          3  0025                      1
329                 DC    #4                                             4  0029                      1
330                 DCW   #4                                             4  0033                      1
331         KSTART  LCA   KUNEQ,110        SAVE  UNEQUAL                 7  0034  L 010 110           1
332                 LCA   KEQUAL,115       SAVE  EQUAL                  7  0041  L 015 115           1
333                 NOP                                                  1  0048  N                   1
334                 LCA   KHIGH,120        SAVE  HIGH                   7  0049  L 020 120           1
335                 LCA   KLOW,125         SAVE  LOW                    7  0056  L 025 125           1
336                 NOP   0,0,0                                          8  0063  N 000 000 0         1
337                 NOP                                                  1  0071  N                   1
338                 NOP   0                                              4  0072  N 000               1
339                 R     LSTART                                         4  0076  1 011               1
340                 DCW   #1                                             1  0080                      1
```



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                        CARD 12 OF CORE DUMP ROUTINE                                                PAGE    1

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

341                 JOB   CARD 12 OF CORE DUMP ROUTINE
342         * MOVE  APPROPRIATE COMPARISON INDICATORS TO 247..265.
343                 ORG   1                                                       0001
344         LINC    DCW   5003             INC FOR TWO ADDRS              4  0004                      1
345                 DC    #6                                             6  0010                      1
346         LSTART  BU    LINDON           INDICATOR ON?                 5  0011  B 041 /             1
347                 NOP   0,0                                            7  0016  N 000 000           1
348                 NOP   0,0                                            7  0023  N 000 000           1
349                 B     LINDOF           NO                            4  0030  B 049               1
350                 DCW   #7                                             7  0040                      1
351         LINDON  MCW   110,256          MOVE INDICATOR TO PR          7  0041  M 110 256           1
352                 NOP                                                  1  0048  N                   1
353         LINDOF  A     LREAD,LSTART+4   INCR INDICATOR TEST           7  0049  A 076 015           1
354                 A     LINC,LINDON+6    INCR BOTH ADDRS               7  0056  A 004 047           1
355                 BCE   LREAD,LSTART+4,V  DONE?                        8  0063  B 076 015 V         1
356                 NOP                                                  1  0071  N                   1
357                 B     LSTART           AROUND AGAIN                  4  0072  B 011               1
358         LREAD   R     MSTART           READ THE NEXT CARD            4  0076  1 011               1
359                 DCW   #1                                             1  0080                      1
```

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                        CARD 13 OF CORE DUMP ROUTINE                                                PAGE    1

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

360                JOB   CARD 13 OF CORE DUMP ROUTINE
361         * CONSTRUCT OVERFLOW OFF (OR ON) INDICATOR.
362         * MOVE IT TO 268..277.
363                ORG   1                                                          0001
364         MOVFF  DCW   @OVFLO OFF@                                          9  0009                      1
365                DC    #1                                                   1  0010                      1
366         MSTART BAV   MOVFL            OVERFLOW?                          5  0011  B 041 Z              1
367         MOVON  DCW   @N @             NOP, AND  N  FOR MSG               2  0017                      1
368                DC    @00000@         REST OF THE NOP INSTR              5  0022                      1
369                NOP   0,0                                                7  0023  N 000 000            1
370                B     MOVFON                                             4  0030  B 049               1
371                DCW   #7                                                 7  0040                      1
372         MOVFL  MCW   MOVON,MOVFF      CHANGE  OFF  TO  ON                7  0041  M 017 009            1
373                NOP                                                      1  0048  N                    1
374         MOVFON MCW   MOVFF,277        MOVE MSG TO PRINT AREA             7  0049  M 009 277            1
375                NOP   0,0                                                7  0056  N 000 000            1
376                NOP   0,0,0                                              8  0063  N 000 000 0          1
377                NOP                                                      1  0071  N                    1
378                NOP   0                                                  4  0072  N 000                 1
379                R     NSTART                                             4  0076  1 033                 1
380                DCW   #1                                                 1  0080                      1
```



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                        CARD 14 OF CORE DUMP ROUTINE                                                PAGE    1

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

381                JOB   CARD 14 OF CORE DUMP ROUTINE
382         * MOVE CLEAR ROUTINES FOR 200-299 AND 0-80 TO
383         * 101-116.  PRINT INDICATORS. CLEAR 200-299 AND 0-80.
384         * SET WORD MARK IN 1, READ A CARD AND BRANCH TO 1.
385                ORG   1                                                          0001
386                DCW   @/299080,0@     CLEAR STORAGE ROUTINE              9  0009                      1
387                DCW   @01100@         SEE SOURCE CODE BELOW              5  0014                      1
388         NCLEAR DCW   @1@                                                 1  0015                      1
389                DC    #6                                                 6  0021                      1
390                DCW   #7                                                 7  0028                      1
391                DCW   #4                                                 4  0032                      1
392         NSTART SW    N1,N2                                              7  0033  , 066 073            1
393                CW    JSTART,NCLEAR                                      7  0040  ) 011 015            1
394                CW                                                       1  0047  )                    1
395                LCA   NCLEAR,NCLEND-1                                    7  0048  L 015 116            1
396                SW    NCLEND,NCL3                                        7  0055  , 117 113            1
397                SW    NCL2                                               4  0062  , 109               1
398         N1     SW    NCL1                                               4  0066  , 105               1
399                W                                                        1  0070  2                    1
400                CC    L               SKIP THREE LINES                   2  0071  F L                  1
401         N2     CC    K               SKIP TWO LINES                     2  0073  F K                  1
402                B     NCLBEG                                             4  0075  B 101               1
403                DCW   #1                                                 1  0079                      1
404         * ROUTINE TO CLEAR 200-299 AND 0-80, THEN SET A WORD
405         * MARK AT 1, READ A CARD AND BRANCH TO 1.  THE TEXT OF
406         * THIS ROUTINE IS PUNCHED IN CC 1-16 OF CARD N.
407                ORG   101                                                        0101
408         NCLBEG CS    299                                                4  0101  / 299               1
409         NCL1   CS    80                                                 4  0105  / 080               1
410         NCL2   SW    1                                                  4  0109  , 001               1
411         NCL3   R     OSTART                                             4  0113  1 001               1
412         NCLEND DCW   #1                                                 1  0117                      1
```

MOVE DATA AND WORD MARKS TO PRINT AREA PAGE 1

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

413                 JOB   MOVE DATA AND WORD MARKS TO PRINT AREA
414         * ROUTINE TO MOVE DATA AND WORD MARKS TO PRINT AREA.
415         * CONVERT GROUP MARKS TO ).
416         * READ A CARD WHEN DONE.
417                 ORG   78                                                    0078
418         DWSTRT  BU    WSTART                                       5  0078  B 001 /              1
419         DW1     B     SWITCH                                       4  0083  B 168                1
420         X1      DCW   @X00@                                        3  0089                       1
421         DFF     DCW   @FF@                                         2  0091                       1
422         X2      DCW   333                                          3  0094                       1
423         DW3     DCW   01                                           2  0096                       1
424         X3      DC    033                                          3  0099                       1
425         DWPRNT  W                                                  1  0100  2                    1
426         DW5     CS    332                                          4  0101  / 332                1
427                 CS                                                 1  0105  /                    1
428         DWLOOP  SW    212+X3           ASSUME DATA HAS WM          4  0106  , 2A2                1
429         DW7     MCW   0+X2,212+X3      MOVE THE DATA               7  0110  M 0!0 2A2            1
430         DW8     BW    GOTWM,0+X2       DID IT HAVE WM?             8  0117  V 129 0!0 1          1
431         LOZ     CW    212+X3           NO, CLEAR ASSUMED WM        4  0125  ) 2A2                1
432         GOTWM   BCE   GOTGM,0+X3,"     GROUP MARK?                 8  0129  B 141 0?0 "          1
433         DW9     B     NOGM             NO                          4  0137  B 148                1
434         GOTGM   MCW   LOZ,212+X3       REPL GROUP MARK WITH )      7  0141  M 125 2A2            1
435         NOGM    A     DWREAD,X3        BUMP X3                     7  0148  A 176 099            1
436                 A                      BUMP X2 -- MA FOR BIG CORE  1  0155  A                    1
437         DW12    BCE   DWLOOP,X3-2,0     AROUND AGAIN               8  0156  B 106 097 0          1
438                 CW    DWSTRT           CHANGED LATER TO W 060      4  0164  ) 078                1
439         SWITCH  NOP   080              CHANGED TO N OR /           4  0168  N 080                1
440         DW14    SW    PSTART                                       4  0172  , 001                1
441         DWREAD  R     PSTART           READ THE NEXT CARD          4  0176  1 001                1
442         DWDOTS  DCW   @........@                                   8  0187                       1
443         DWLOW   DCW   49               LOW ORDER TWO DIGITS        2  0189                       1
444         DWBEGN  DCW   00333            BEGIN OF LINE               5  0194                       1
445         DWAREA  DC    @-AREA @                                     6  0200                       1
```


CARD 15 OF CORE DUMP ROUTINE PAGE 1

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

446                 JOB   CARD 15 OF CORE DUMP ROUTINE
447         * SET WORD MARKS, MOVE SOME CODE TO 164-200.
448                 ORG   1                                                     0001
449         OSTART  SW    O1,O2                                        7  0001  , 008 015            1
450         O1      SW    O3,O4                                        7  0008  , 022 023            1
451         O2      SW    O5,O6                                        7  0015  , 027 031            1
452         O3      NOP                                                1  0022  N                    1
453         O4      SW    O7                                           4  0023  , 038                1
454         O5      SW    O8                                           4  0027  , 042                1
455         O6      LCA   O9,DWAREA                                    7  0031  L 078 200            1
456         O7      R     PSTART                                       4  0038  1 001                1
457         O8      DCW   @)@              CW JUST BEFORE SWITCH       1  0042                       1
458         O9      DC    @078N080,0011001........4900333-AREA @      36  0078                       1
```

```
                        CARD 16 OF CORE DUMP ROUTINE                                                PAGE     1

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

459                 JOB   CARD 16 OF CORE DUMP ROUTINE
460         * MOVE  SOME  CODE TO 125-163, SET SOME WORD MARKS.
461                 ORG   1                                                        0001
462         PSTART  LCA   P1,DW12+7                                          7  0001  L 080 163            1
463                 SW    DWBEGN-4,DWLOW-1                                   7  0008  , 190 188            1
464                 SW    DW12,DW12                                          7  0015  , 156 156            1
465                 SW                                                       1  0022  ,                    1
466                 SW    DWDOTS-7                                           4  0023  , 180                1
467                 SW    DWREAD                                             4  0027  , 176                1
468                 SW    DW14,SWITCH                                        7  0031  , 172 168            1
469                 R     QSTART                                             4  0038  1 001                1
470                 DCW   @)2A2B1410-0"B148M1252A2A176099A@                 31  0072                       1
471         P1      DC    @B1060970@                                         8  0080                       1
```



```
                        CARD 17 OF CORE DUMP ROUTINE                                                PAGE     1

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

472                 JOB   CARD 17 OF CORE DUMP ROUTINE
473         * MOVE  SOME  CODE TO 87-124, SET SOME WORD MARKS.
474                 ORG   1                                                        0001
475         QSTART  LCA   Q1,DW8+7                                           7  0001  L 079 124            1
476                 SW    NOGM,GOTGM                                         7  0008  , 148 141            1
477                 SW    DW5,DWLOOP                                         7  0015  , 101 106            1
478                 SW                                                       1  0022  ,                    1
479                 SW    DW9                                                4  0023  , 137                1
480                 SW    GOTWM                                              4  0027  , 129                1
481                 SW    DW8,DW7                                            7  0031  , 117 110            1
482                 R     SSTART                                             4  0038  1 001                1
483                 DCW   @X00FF333010332/332/,2A2M0-02A2@                  30  0071                       1
484         Q1      DC    @V1290-01@                                         8  0079                       1
```

CARD 18 OF CORE DUMP ROUTINE PAGE 1

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

485                JOB   CARD 18 OF CORE DUMP ROUTINE
486         * SET SOME WORD MARKS, MOVE SOME CODE TO 78-86
487         * (ACTUALLY PART OF AN INSTRUCTION)
488                ORG   1                                                      0001
489         RSTART SW    R1,SDONE                                   7  0001  , 045 049            1
490                SW    S1,SLOW-6                                  7  0008  , 056 060            1
491                LCA   R5,DW1+3                                   7  0015  L 068 086            1
492                NOP                                              1  0022  N                    1
493                CW    O8                                         4  0023  ) 042                 1
494                CW    O5                                         4  0027  ) 027                 1
495                SW    X2+1,X2-2                                  7  0031  , 095 092            1
496                SW    X1+1,DW1                                   7  0038  , 090 083            1
497         R1     R     SSTART                                     4  0045  1 001                 1
498                DCW   #11                                       11  0059                        1
499         R5     DCW   @   1/B168@                                9  0068                        1
```


CARD 19 OF CORE DUMP ROUTINE PAGE 1

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

500                JOB   CARD 19 OF CORE DUMP ROUTINE
501         * MOVE "00333-AREA " WITH ZERO SUPPRESSION TO
502         * 201-211.  UPDATE "XXXXX-AREA " TO 00400.  PUT
503         * .....39 - ........99 IN PRINT AREA.  GO TO PRINT IT
504         * AND TO SET UP TO PRINT 333-399 AREA.
505                ORG   1                                                      0001
506         SSTART MCS   DWAREA,211                                 7  0001  Z 200 211            1
507                MCW   SADDR,DWBEGN     REPLACE 333 WITH 400      7  0008  M 071 194            1
508         SLOOP  LCA   DWLOW,261        FIRST DOTS OFFSET 49      7  0015  L 189 261            1
509                LCA                    MOVE THE DOTS             1  0022  L                    1
510                BCE   SDONE,DWLOW-1,9  DONE FILLING DOTS?        8  0023  B 049 188 9          1
511                A     DWREAD,DWLOW-1   BUMP DOTS ADDR BY 10      7  0031  A 176 188            1
512                A     DWREAD,SLOOP+5   BUMP DOTS POINT BY 10     7  0038  A 176 020            1
513                B     SLOOP            AROUND AGAIN              4  0045  B 015                1
514         SDONE  LCA   SLOW,251         PUT ......39 IN PRINT     7  0049  L 066 251            1
515         S1     B     DWPRNT           GO PRINT IT               4  0056  B 100                1
516         SLOW   DCW   @.....39@                                  7  0066                        1
517         SADDR  DC    00400                                      5  0071                        1
```

TEST FOR A BLANK X00-X99 AREA PAGE 1

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION TYPE	CARD
518				JOB	TEST FOR A BLANK X00-X99 AREA					
519			* RESET ....XX TO ....09. SET STARTING							
520			* POSITION FOR DOTS TO 221. CHECK FOR A BLANK LINE							
521			* WITHOUT WORD MARKS.							
522				ORG	333				0333	
523			TBSTRT	MN	DW14+1,DWLOW-1 ZERO TO X9		7	0333	D 173 188	1
524			TB1	MN	WLOOP-1,WLOOP+4 322 BACK TO 222		7	0340	D 014 019	1
525			TB2	MCW	X2,X1		7	0347	M 094 089	1
526			TB3	SW	323		4	0354	, 323	1
527			TBLOOP	C	9+X1,332 BLANK AREA?		7	0358	C 0'9 332	1
528				BU	DWPRNT NO, PRINT		5	0365	B 100 /	1
529			TB4	BW	DWPRNT,0+X1 WORDMARK? NO, PRINT		8	0370	V 100 0'0 1	1
530			TB5	BCE	WRET,X1-1,9 DONE?		8	0378	B 049 088 9	1
531			TB6	A	X3-2,X1 BUMP X1 BY 10 -- MA FOR BIG CORE		7	0386	A 097 089	1
532			TB7	B	TBLOOP AROUND AGAIN		4	0393	B 358	1
533			MSIZ	DCW	@014@ MEMORY SIZE / 100		3	0399		1

CARD 20 OF CORE DUMP ROUTINE PAGE 1

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION TYPE	CARD
534				JOB	CARD 20 OF CORE DUMP ROUTINE					
535			* MOVE SOME CODE TO 333-364. SET SOME WORD MARKS.							
536				ORG	1				0001	
537			TSTART	CW	S1,SLOW-6		7	0001	) 056 060	1
538				LCA	T2,TBLOOP+6		7	0008	L 080 364	1
539				SW	TB1,TB2		7	0015	, 340 347	1
540				NOP			1	0022	N	1
541				NOP	0,0,0		8	0023	N 000 000 0	1
542			T1	SW	TB3,TBLOOP		7	0031	, 354 358	1
543				CW	T1,T1		7	0038	) 031 031	1
544				R	USTART		4	0045	1 001	1
545			T2	DCW	@D173188D014019M094089,323C0'9332@		32	0080		1

```
                        CARD 21 OF CORE DUMP ROUTINE                                                PAGE    1

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

546                JOB   CARD 21 OF CORE DUMP ROUTINE
547         * MOVE SOME CODE TO 365-396.  SET SOME WORD MARKS.
548                ORG   1                                                          0001
549         USTART LCA   U2,TB7+3                                            7  0001  L 080 396            1
550                SW    U1,V1                                               7  0008  , 030 023            1
551                SW    TB4,TB5                                             7  0015  , 370 378            1
552                NOP                                                       1  0022  N                     1
553                SW    TB6,TB7                                             7  0023  , 386 393            1
554         U1     NOP   0,0,0                                               8  0030  N 000 000 0          1
555                SW    DWSTRT,DWSTRT                                       7  0038  , 078 078            1
556                R     VSTART                                              4  0045  1 001                1
557                DCW   @B@              B OF  BU DWPRNT                    1  0049                       1
558         U2     DC    @100/V1000'01B0490889A097089B358@                  31  0080                       1
```



```
                        CARD 22 OF CORE DUMP ROUTINE                                                PAGE    1

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

559                JOB   CARD 22 OF CORE DUMP ROUTINE
560         * SET SOME WORD MARKS.  CHANGE SWITCH TO 2060N
561         * CHANGE FIRST ........X9 TO ........09.
562         * MOVE THE CORE SIZE TO 396-399.
563                ORG   1                                                          0001
564         VSTART SW    XRET,W4                                             7  0001  , 060 062            1
565                SW    W5,WTEST                                            7  0008  , 064 071            1
566                M     VSWICH,SWITCH+3  CHANGE SWITCH TO 2060              7  0015  @ 053 171            1
567                M                                                         1  0022  @                     1
568         V1     MN    DWREAD+1,DWLOW-1  X9 TO ........09                  7  0023  D 177 188            1
569                NOP   0,0,0                                               8  0030  N 000 000 0          1
570                LCA   VCORE,MSIZ       SAVE CORE SIZE                     7  0038  L 058 399            1
571                R     WSTART           READ THE NEXT CARD                 4  0045  1 001                1
572                W     XRET             NEW FOR SWITCH                     4  0049  2 060                1
573         VSWICH NOP                                                       1  0053  N                     1
574                DC    @  @                                               2  0055                       1
575         VCORE  DCW   014              CORE SIZE / 100                    3  0058                       1
576                DC    00               TENS DIGIT OF CORE                 2  0060                       1
577                DCW   @  CORE SIZE@    JUST A COMMENT                    11  0071                       1
```

```
                        CARD 23 OF CORE DUMP ROUTINE                                                PAGE    1

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

578                JOB   CARD 23 OF CORE DUMP ROUTINE
579         * MOVE "XXXXX-AREA " WITH ZERO SUPRESSION TO 201-211.
580         * UPDATE XXXXX BY 100.
581         * PUT ........09 - ........99 TO 212-311.
582         * GO PUT DATA AND WORD MARKS IN THE PRINT AREA AND
583         * PRINT THE DATA.  PRINT THE WORD MARKS ON RETURN.
584                ORG   1                                                          0001
585         WSTART MCS   DWAREA,211                                    7  0001  Z 200 211            1
586                A     DWREAD,DWBEGN-2  BUMP ADDR BY 100             7  0008  A 176 192            1
587         WLOOP  LCA   DWLOW,221        ........X9 TO PRINT         7  0015  L 189 221            1
588                LCA                                                1  0022  L                    1
589                A     DWREAD,WLOOP+5   BUMP ........X9 POSN        7  0023  A 176 020            1
590                BCE   TBSTRT,DWLOW-1,9  DONE WITH ........X9?       8  0030  B 333 188 9          1
591                A     DWREAD,DWLOW-1   BUMP X IN ........X9        7  0038  A 176 188            1
592                B     WLOOP            AROUND AGAIN               4  0045  B 015                1
593         WRET   A     DWREAD+2,X2      BUMP CORE START BY 100 - MA IF BIG  7  0049  A 178 094       1
594                B     WTEST                                       4  0056  B 071                1
595         XRET      2)                  PRINT THE WORD MARKS       2  0060  2 )                  1
596         W4     CC    J                SKIP ONE LINE              2  0062  F J                  1
597         W5     MN    DW14+1,X3-2      ZERO TO HIGH DIGIT         7  0064  D 173 097            1
598         WTEST  C     MSIZ,DWBEGN-2    DONE?                      7  0071  C 399 192            1
599                BU    WSTART           DOESN'T FIT, BUT OK        5  0078  B 001 /              1
600         *                               (REST IS ON CARD R)
```



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                        CARD 24 OF CORE DUMP ROUTINE                                                PAGE    1

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

601                JOB   CARD 24 OF CORE DUMP ROUTINE
602         * PRINT WHETHER SENSE SWITCH A IS ON.
603                ORG   1                                                          0001
604         YSTART SW    Y1,Y3                                         7  0001  , 031 054            1
605                CW    XRET,WTEST                                    7  0008  ) 060 071            1
606                SW    Y2,YHALT                                      7  0015  , 036 064            1
607                SW                                                  1  0022  ,                    1
608                CW    W4,DWSTRT                                     7  0023  ) 062 078            1
609                NOP                                                 1  0030  N                    1
610         Y1     CS    332                                           4  0031  / 332                1
611                CS                                                  1  0035  /                    1
612         Y2        N0                                               2  0036  N 0                  1
613                LCA   YSWA,213                                      7  0038  L 080 213            1
614                SW    YHALT+4                                       4  0045  , 068                1
615                BSS   YPRINT,A         SS A ON?                     5  0049  B 063 A              1
616         Y3        N0                                               2  0054  N 0                  1
617                MCW   DFF,214          CHANGE MSG TO  OFF           7  0056  M 091 214            1
618         YPRINT W                                                    1  0063  2                    1
619         YHALT  H     YHALT            ALL DONE                     4  0064  . 064                1
620         YSWA   DCW   @SENSE SW A ON@                              13  0080                       1
```

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                        ALTERNATIVE CARD 12 OF CORE DUMP ROUTINE                                PAGE    1

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

621                JOB   ALTERNATIVE CARD 12 OF CORE DUMP ROUTINE
622         * CLEAR ROUTINE THAT GETS MOVED TO 81-92
623                ORG   81                                                          0081
624                CS    80                                                  4  0081  / 080               1
625         SETWM2 SW    1                                                   4  0085  , 001               1
626         READX2 R     1                                                   4  0089  1 001               1
627         *
628         * FIRST CARD OF TWO-CARD ALTERNATIVE SEQUENCE FOR CARDS 12-14
629         * MOVE APPROPRIATE COMPARISON INDICATORS TO 247..265.  MOVE
630         * R 001  TO 92.
631                ORG   1                                                           0001
632                SFX   L                                                 L
633         INC    DCW   5003             INC FOR TWO ADDRS                 L   4  0004                      1
634                DC    #6                                                L   6  0010                      1
635         START  BU    INDON            INDICATOR ON?                     L   5  0011  B 041 /             1
636                LCA   MREAD+3,READX2+3  SOME INDICATOR WILL BE OFF       L   7  0016  L 033 092           1
637                B     INDOF                                             L   4  0023  B 049               1
638                DC    #3               B WITH BLANK D NEEDS NO WM        L   3  0029                      1
639         MREAD  R     001              GETS MOVED TO 89-92               L   4  0030  1 001               1
640                DCW   #7                                                L   7  0040                      1
641         INDON  MCW   110,256          MOVE INDICATOR TO PR              L   7  0041  M 110 256           1
642                NOP                                                     L   1  0048  N                   1
643         INDOF  A     READ,START+4    INCR INDICATOR TEST               L   7  0049  A 076 015           1
644                A     INC,INDON+6     INCR BOTH ADDRS                   L   7  0056  A 004 047           1
645                BCE   READ,START+4,V  DONE?                             L   8  0063  B 076 015 V         1
646                NOP                                                     L   1  0071  N                   1
647                B     START            AROUND AGAIN                      L   4  0072  B 011               1
648         READ   R     STARTM           READ THE NEXT CARD                L   4  0076  1 011               1
649                DCW   #1                                                L   1  0080                      1
```



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                        ALTERNATIVE CARD 13 OF CORE DUMP ROUTINE                                PAGE    1

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

650                JOB   ALTERNATIVE CARD 13 OF CORE DUMP ROUTINE           L
651         * SECOND CARD OF TWO-CARD ALTERNATIVE SEQUENCE FOR CARDS 12-14
652         * CONSTRUCT OVERFLOW OFF (OR ON) INDICATOR.  MOVE IT TO 268..277.
653         * MOVE CS 80, SW 1 TO 81-88.  SET WORD MARKS FOR IT.
654         * PRINT INDICATORS. CLEAR 200-299 AND 0-80.  SET WORD MARK IN 1,
655         * READ A CARD AND BRANCH TO 1.
656                SFX   M                                                 M
657                ORG   1                                                 M           0001
658         OVMSG  DCW   @OVFLO ON @                                       M   9  0009                      1
659                DC    #1                                                M   1  0010                      1
660         START  BAV   OVON             OVERFLOW ON?                     M   5  0011  B 023 Z             1
661                MCW   OVFF,OVMSG       NO, CHANGE ON TO OFF             M   7  0016  M 057 009           1
662         OVON   MCW   OVMSG,277        MOVE MESSAGE TO PRINT AREA       M   7  0023  M 009 277           1
663                SW    OVCC             NEED A WM                        M   4  0030  , 074               1
664                LCA   OVCLR,SETWM2+3   MOVE PART OF CLEAR ROUTINE       M   7  0034  L 070 088           1
665                SW    SETWM2,READX2+4  IT NEEDS A WM                    M   7  0041  , 085 093           1
666                NOP                                                     M   1  0048  N                   1
667                B     OVFIN                                             M   4  0049  B 071               1
668                DCW   #3               BRANCH WITH BLANK D NEEDS NO WM  M   3  0055                      1
669         OVFF   DCW   @FF@                                              M   2  0057                      1
670                DC    #5                                                M   5  0062                      1
671                CS    80               GETS MOVED TO 81-84              M   4  0063  / 080               1
672         OVCLR  DC    @,001@           GETS MOVED TO 85-88              M   4  0070                      1
673         OVFIN  W                                                       M   1  0071  2                   1
674                CC    L                SKIP 3 LINES                     M   2  0072  F L                 1
675         OVCC   CC    K                SKIP 2 LINES                     M   2  0074  F K                 1
676                CS    299                                               M   4  0076  / 299               1
677                NOP                                                     M   1  0080  N                   1
678                END                                                     M          / 333 080
```

ALTERNATIVE CARD 13 OF CORE DUMP ROUTINE PAGE 1

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
A1	8	A10	59	A11	63	A12	67	A13	71	A2	15	A3	23
A4	30	A5	38	A6	42	A7	49	A8	53	A9	57	BADDR	55
BBUMP	23	BDONE	57	BINCR	67	BLOOP	1	BLOZ	71	BREPLG	42	BTESTG	15
C1	8	C10	56	C11	63	C12	67	C13	71	C14	72	C15	74
C16	76	C17	80	C2	12	C3	16	C4	23	C5	30	C6	34
C7	41	C8	48	C9	49	CSTART	1	DDONE	67	DFF	91	DLOAD	22
DLOAD2	29	DNUM	10	DREAD	76	DSTART	12	DW1	83	DW12	156	DW14	172
DW3	96	DW5	101	DW7	110	DW8	117	DW9	137	DWAREA	200	DWBEGN	194
DWDOTS	187	DWLOOP	106	DWLOW	189	DWPRNT	100	DWREAD	176	DWSTRT	78	E1	17
ECW	67	EHAVWM	1	ELOOP	34	ENOP	80	EREAD	76	ESTART	12	FDONE	67
FLOAD	22	FLOAD2	29	FNUM	10	FREAD	76	FSTART	12	GCW	67	GHAVWM	1
GLOOP	34	GNOP	80	GOTGM	141	GOTWM	129	GREAD	76	GSTART	17	H1	16
H2	22	H3	29	H4	48	HDOTS	7	HINDX	20	HINDX1	11	HSTART	30
INCL	4	INDOFL	49	INDONL	41	IOFF	32	ISSTXT	14	ISTART	49	JB	80
JBOTH	49	JOFF	16	JON	34	JREAD	76	JSTART	11	JTWO	1	KEQUAL	15
KHIGH	20	KLOW	25	KSTART	34	KUNEQ	10	LINC	4	LINDOF	49	LINDON	41
LOZ	125	LREAD	76	LSTART	11	MOVFF	9	MOVFL	41	MOVFON	49	MOVON	17
MREADL	30	MSIZ	399	MSTART	11	N1	66	N2	73	NCL1	105	NCL2	109
NCL3	113	NCLBEG	101	NCLEAR	15	NCLEND	117	NOGM	148	NSTART	33	O1	8
O2	15	O3	22	O4	23	O5	27	O6	31	O7	38	O8	42
O9	78	OSTART	1	OVCCM	74	OVCLRM	70	OVFFM	57	OVFINM	71	OVMSGM	9
OVONM	23	P1	80	PSTART	1	Q1	79	QSTART	1	R1	45	R5	68
READL	76	READX2	89	RSTART	1	S1	56	SADDR	71	SDONE	49	SETWM2	85
SLOOP	15	SLOW	66	SSTART	1	STARTL	11	STARTM	11	SWITCH	168	T1	31
T2	80	TB1	340	TB2	347	TB3	354	TB4	370	TB5	378	TB6	386
TB7	393	TBLOOP	358	TBSTRT	333	TSTART	1	U1	30	U2	80	USTART	1
V1	23	VCORE	58	VSTART	1	VSWICH	53	W4	62	W5	64	WLOOP	15
WRET	49	WSTART	1	WTEST	71	X1	89	X2	94	X3	99	XRET	60
Y1	31	Y2	36	Y3	54	YHALT	64	YPRINT	63	YSTART	1	YSWA	80