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fig-FORTH FOR 68000

ASSEMBLY SOURCE LISTING

RELEASE 1.0

WITH COMPILER SECURITY

AND

VARIABLE LENGTH NAMES

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fig-FORTH 68000

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Acknowledgements:

FIG Installation Manual - Release 1
FIG 1802 Assembly Source Listing
68000 Assembly Language Programming by Kane,
Hawkins, and Leventhal

This listing printed: 12/20/82

68000 fig-FORTH

This version of FORTH implements the fig-FORTH model presented in the FORTH Interest Group's Installation Manual in code for the Motorola 68000 microprocessor. It is a 64 K version, using conventional two-byte addresses, which does not make use of the 32-bit addressing capabilities of the 68000. Primitive words are located at 2000-2500H, with the six-byte inner interpreter appended to each word. Constants and variables run from 2500-2700H. Most of the constants relate to hardware and it seemed desirable to locate these on the USER page. So a new primitive, (USERCONSTANT) was defined that requires no modification to FORTH source material, but gets constants from the USER page. The rest of the kernal runs from 2700-3000H. The conditional compiler, math words, output words, and VLIST run from 3000-3400H. Disc I/O and boot-up code runs from 3400-3700H. FORTH is entered by a jump to COLD at 364E, or the warmstart at 368A.

The original model assumed 128-byte buffer blocks. Modifications were made in +BUF to handle automatically 1024, 512, and 256-byte buffers as well. " 84 " was replaced by " B/BUF 4 + ". Similarly, the null word, X, was modified to handle 1, 2, 4, as well as the original 8 buffers/screen. " 7 " was replaced by " B/SCR 1 - ". B/BUF and B/SCR, now userconstants on the USER page need only be chosen to give 1024 bytes/screen.

CREATE originally assumed that unchecked dictionary growth would run into the computation stack. To enable the latter to be located arbitrarily, a USER variable, DICTLIMIT, has been introduced. CREATE now checks to be sure the dictionary is not exceeding DICTLIMIT, rather than encountering the computation stack. To ensure that LFA's fall on even addresses, as required by the 68000, CREATE has also been modified to insert 00 fill bytes ahead of NFA's when necessary.

The original CMOVE always moved the byte lowest in memory first (untrue to its definition), producing unadvertised results for short moves up. The original FILL took advantage of this. The present 68000 version of CMOVE is bidirectional and faithful to the definition. FILL then is necessarily rewritten, now as a code word.

A new code word, C=, has been added that functions like = except that only the low bytes are compared. This is used in EXPECT a couple of times to replace =. EXPECT has also been modified to get its backspace-keyin and backspace-output ASCII codes from the USER page, where they are called BKSPKEY and BKSPEMIT.

+ORIGIN accesses the same bootup parameters, exactly as shown on SCR# 79 and 97 of the Installation Manual. However, the bootups are now located in COLD, rather than in front of FORTH.

224 words are listed in the glossary of the Installation Manual. Modification of 4 of these: CMOVE, FILL, EXPECT, AND CREATE has been mentioned above. 15 other glossary words have been omitted in this implementation: (ABORT), ;CODE, DLIST, I, MON, MOVE, TASK, TRIAD, DR1, BLOCK-READ, BLOCK-WRITE, NEXT, POP, PUSH, and PUT. 18 words, not appearing in the glossary, are added: ORIGIN, CURRENT, C/L, C=, !CODE, (VAR), (CONST), (USER), (USERCONSTANT), (NEST), BKSPKEY, BKSPEMIT, DICTLIMIT, EMITSUB, KEYSUB, ?TERMSUB, CRSUB, and R/WSUB.

NOTES ON THE FORM OF THE ASSEMBLY

Address registers are numbered 0-7 in the 68000, as are the data registers. In the assembly listing these are referred to as 0 AR, 1 AR ..., 7 AR , 0 DR , 1 DR ..., 7 DR -- reflecting the reverse Polish flavor of the 68000 assembler, itself written in FORTH. Five address registers are dedicated pointers. 3 AR is CS, the computation stack pointer, which grows toward low memory and is always left pointing at the high order (but lower memory) byte of the top 2-byte stack cell. 4 AR is IP, the instruction pointer which is incremented when used, to point to the next cell. 5 AR is WP, the word pointer, loaded as usual via IP and incremented when used. 6 AR is US, the USER page pointer with which offset addresses are used to locate USER variables and userconstants. 7 AR is RS, the return stack, which operates like CS. Any code routines that use 3 AR - 7 AR must save and restore them.

Written especially for assembling FORTH, the assembler is not Motorola's, and several features need explanation. Assembler symbols for indirect addressing " [", with predecrement " -[", or postincrement " [+ ", should be obvious. And " &[" shows indirect addressing with offset, as in " 2E US &[".

Labels are marked by " > " signs and most often point to parameter fields. Since high level words are lists of CFA's, this assembler uses " $LAY " to subtract 2 from a labelled address before assembling it. This assembler uses plain " LAY " to assemble an address or number without subtracting 2. A labelled address is converted by " *+ " into the relative address required for 68000 code branches.

The tilde, " ~ ", found on most lines of the assembly listing causes the line to be printed, and for code words also initializes variables used in verifying that the proper number of arguments are associated with each assembly mneumonic. When a source and a destination are both specified for an assembly mneumonic, they are presented in that order, separated by a carat, " ^ ".

RUNNING 68000 fig-FORTH

1. Load the 68000 code into a 68000 system from 2000-370B. This version is not relocatable. Contact Ken Mantei (see title page) if an assembly that runs at a different address is needed.

2. Write 68000 code subroutines for EMIT, KEY, ?TERMINAL, CR, and R/W and put the addresses of these subroutines at bytes 40-49 on the USER page by filling them into the appropriate locations in COLD, 36B8-36C1. Data register 0 (0 DR) is used to pass ASCII bytes in EMIT and KEY, and the flag in ?TERMINAL. Remember to save and restore address registers 3-7 if they are used. FORTH will look on the USER page for the addresses of these subroutines, and COLD will have put them there.

3. Fit U0, S0, R0, TIB, BKSPKEY, BKSPEMIT, DICTLIMIT, FIRST, LIMIT, USE, PREV, B/BUF, and B/SCR to fit your hardware. Do this by changing the addresses in COLD as needed. If desired, on the first attempt to bring this system up, WARNING can be left 0. But it must be reset to 1 in order for the disc words to function.

4. Run by jumping to coldstart at 364E (or later, warmstart at 368A).

```
72 2   LAYCODEHEADER LIT                                          2000|83 4C 49 D4
72 2   LAYCODEHEADER LIT                                          2004|0000  2008
72 3    > $LIT       ^ IP [+ ^ CS -[ .W .MOVE                     2008|371C
72 4                 NEXT                                       200A|3A5C  305D  4ED0
72 5   LAYCODEHEADER EXECUTE                                      2010|87 45 58 45 43 55 54 C5
72 5   LAYCODEHEADER EXECUTE                                      2018|2000  201C
72 6    > $EXECUTE   ^ CS [+ ^ WP AR .W .MOVE                     201C|3A5B
72 7                 ^ WP [+ ^ 0 AR .W .MOVE                    201E|305D
72 8                 ^ 0 [ .JMP                                 2020|4ED0
72 9   LAYCODEHEADER BRANCH                                      2022|0 86 42 52 41 4E 43 C8
72 9   LAYCODEHEADER BRANCH                                      202A|2010  202E
72 10   > $BRANCH    ^ IP [ ^ 0 DR .W .MOVE                     202E|3014
72 11                ^ 0 DR ^ IP AR .W .ADD                     2030|D8C0
72 12                  NEXT                                     2032|3A5C  305D  4ED0
73 0   LAYCODEHEADER 0BRANCH                                     2038|87 30 42 52 41 4E 43 C8
73 0   LAYCODEHEADER 0BRANCH                                     2040|2023  2044
73 1    > $0BRANCH   ^ CS [+ .W .TST                            2044|4A5B
73 2                 ^ .EQ. $BRANCH %+ .BCC                     2046|67E6
73 3                 ^ 2 IMM ^ IP AR .W .ADDQ                   2048|544C
73 4                 NEXT                                       204A|3A5C  305D  4ED0
73 5   LAYCODEHEADER (LOOP)                                     2050|0 86 28 4C 4F 4F 50 A9
73 5   LAYCODEHEADER (LOOP)                                     2058|2038  205C
73 6    > $(LOOP)    ^ 1 IMM ^ RS [ .W .ADDQ ( INCRE CURR COUNT ) 205C|5257
73 7    > $(LOOP)2   ^ 2 RS &[ ^ 0 DR .W .MOVE ( LIMIT=CURRENT? ) 205E|302F  0002
73 8                 ^ RS [ ^ 0 DR .W .CMP ( IS BETTER WAY? )   2062|B057
73 9                 ^ .HI. $(LOOP)3 %+ .BCC  ( BR IF LIM>CURR ) 2064|6206
73 10                ^ 2 IMM ^ IP AR .W .ADDQ ( CLEAN UP & LEAVE ) 2066|544C
73 11                ^ 4 IMM ^ RS AR .W .ADDQ                   2068|584F
73 12                ^ $(LOOP)4 %+ .BRA                         206A|6004
73 13   > $(LOOP)3   ^ IP [ ^ 0 DR .W .MOVE                     206C|3014
73 14                ^ 0 DR ^ IP AR .W .ADD                     206E|D8C0
73 15   > $(LOOP)4     NEXT            -->                      2070|3A5C  305D  4ED0
74 1   LAYCODEHEADER (+LOOP)                                    2076|87 2B 2B 4C 4F 4F 50 A9
74 1   LAYCODEHEADER (+LOOP)                                    207E|2051  2082
74 2    > $(+LOOP)   ^ CS [+ ^ 0 DR .W .MOVE                    2082|301B
74 3                 ^ 0 DR ^ RS [ .W .ADD                      2084|D157
74 4                 ^ $(LOOP)2 %+ .BRA                         2086|60D6
74 6   LAYCODEHEADER (DO)                                       2088|0 84 2B 44 4F A9
74 6   LAYCODEHEADER (DO)                                       208E|2076  2092
74 7    > $(DO)      ^ CS [+ ^ RS -[ .L .MOVE                   2092|2F1B
74 8                   NEXT                                     2094|3A5C  305D  4ED0
74 10  LAYCODEHEADER DIGIT                                      209A|85 44 49 47 49 D4
74 10  LAYCODEHEADER DIGIT                                      20A0|2089  20A4
74 11   > $DIGIT     ^ CS [+ ^ 1 DR .W .MOVE ( LOAD BASE INTO DR1 ) 20A4|321B
74 12                ^ CS [ ^ 0 DR .W .MOVE  ( LOAD ASCII INTO DR0 ) 20A6|3013
74 13                ^ 30 IMM ^ 0 DR .W .SUB                    20A8|0440  0030
74 14                ^ .CS. $BADDIGIT %+ .BCC                   20AC|651C
74 15                ^ 9 IMM ^ 0 DR .W .CMP       -->           20AE|0C40  0009
75 0                 ^ .LE. $BASECK %+ .BCC                     20B2|6F0A
75 1                 ^ 11 IMM ^ 0 DR .W .CMP                    20B4|0C40  0011
75 2                 ^ .LT. $BADDIGIT %+ .BCC                   20B8|6D10
75 3                 ^ 7 IMM ^ 0 DR .W .SUB                     20BA|0440  0007
75 4   > $BASECK    ^ 1 DR ^ 0 DR .W .CMP                      20BE|B041
75 5                 ^ .GE. $BADDIGIT %+ .BCC                   20C0|6C08
75 6                 ^ 0 DR ^ CS [ .W .MOVE ( RETURN BINARY ON STK ) 20C2|3680
75 7                 ^ 1 IMM ^ CS -[ .W .MOVE ( & GOODDIGIT FLAG ) 20C4|373C  0001
75 8                 ^ $DIGIT1 %+ .BRA                          20C8|6004
75 9   > $BADDIGIT  ^ 0 IMM ^ CS [ .W .MOVE                     20CA|36BC  0000
75 10  > $DIGIT1     NEXT                                       20CE|3A5C  305D  4ED0
```

```
75 11  LAYCODEHEADER (FIND)                                          20D4|0 86 28 46 49 4E 44 A9
75 11  LAYCODEHEADER (FIND)                                          20DC|209A  20E0
75 12   > $(FIND)    ^ 1 IMM ^ 0 DR  .MOVEQ  ( SHIFT COUNT )        20E0|7001
75 13              ^ 7 IMM ^ 5 DR  .MOVEQ  ( BIT POINTER )         20E2|7A07
75 14              ^ CS [+ ^ 1 AR .W .MOVE  ( LOAD TRIAL NFA )     20E4|325B
75 15              ^ CS [ ^ 0 AR .W .MOVE  ( FIXED TEST PTR ) -->  20E6|3053
76 0    > $(FIND)1  ^ 0 AR ^ 2 AR .W .MOVE ( MAKE WORK COPY TEXT PTR ) 20E8|3448
76 1               ^ 1 [+ ^ 1 DR .B .MOVE ( READ NFA LENGTHBYTE )  20EA|1219
76 2               ^ 1 DR ^ 4 DR .B .MOVE ( MAKE COPY OF NFALEN )  20EC|1801
76 3               ^ 4 DR ^ 3 DR .W .MOVE ( MAKE ANOTHER COPY )    20EE|3604
76 4               ^ 1F IMM ^ 3 DR .W .AND ( MASK TO GET COUNT )   20F0|0243  001F
76 5               ^ 1 AR ^ 3 DR .W .ADD ( ADD COUNT TO NFA+1 )    20F4|D649
76 6               ^ 1 IMM ^ 3 DR .W .ADDQ ( AND FIND NEXT EVEN ... ) 20F6|5243
76 7               ^ FFFE IMM ^ 3 DR .W .AND ( ADDRESS = LFA. )    20F8|0243  FFFE
76 8               ^ 2 [+ ^ 6 DR .B .MOVE                          20FC|1C1A
76 9               ^ 6 DR ^ 4 DR .B .EOR ( COMPARE LENGTH BYTES .. ) 20FE|B804
76 10              ^ 3F IMM ^ 4 DR .B .AND ( 6 LOWEST BITS. )      2100|0204  003F
76 11              ^ .NE. $(FIND)3 *+ .BCC  ( BRANCH IF LENGTHS DIFF ) 2104|661E
76 12   > $(FIND)2  ^ 2 [+ ^ 2 DR .B .MOVE ( GET ASCII TEXT CHAR )  2106|141A
76 13              ^ 5 DR ^ 2 DR .BCLR  ( IGNORE BIT 7 )           2108|0B82
76 14              ^ 1 [+ ^ 6 DR .B .MOVE                          210A|1C19
76 15              ^ 6 DR ^ 2 DR .B .EOR ( COMPARE NFA CHAR )  -->  210C|B802
77 0               ^ 0 DR ^ 2 DR .B .ASL ( SHIFT OUT BIT 7 ... )   210E|E122
77 1               ^ .NE. $(FIND)3 *+ .BCC ( AND BRANCH IF NO MATCH ) 2110|6612
77 2               ^ .CC. $(FIND)2 *+ .BCC ( OR LOOP TILL LAST CHAR. ) 2112|64F2
77 3               ^ 4 IMM ^ 3 DR .W .ADDQ ( CALC PFA OF FOUND WORD ) 2114|5843
77 4               ^ 3 DR ^ CS [ .W .MOVE ( & LEAVE ON STACK. )    2116|3683
77 5               ^ FF IMM ^ 1 DR .W .AND                         2118|0241  00FF
77 6               ^ 1 DR ^ CS -[ .W .MOVE ( LEAVE LENGTHBYTE ON STK ) 211C|3701
77 7               ^ 1 IMM ^ CS -[ .W .MOVE ( LEAVE FOUND NFA FLAG. ) 211E|373C  0001
77 8               ^ $(FIND)4 *+ .BRA  ( BRANCH TO EXIT. )         2122|600C
77 9    > $(FIND)3  ^ 3 DR ^ 2 AR .W .MOVE ( PUT LFA INTO ADDRESS REG ) 2124|3443
77 10              ^ 2 [ ^ 1 AR .W .MOVE ( LOAD LINKED NFA )       2126|3252
77 11              ^ 1 AR ^ 6 DR .W .MOVE ( SO CAN SEE IF ZEROS )  2128|3C09
77 12              ^ .NE. $(FIND)1 *+ .BCC ( TILL EXHAUST DICT. )  212A|66BC
77 13              ^ 0 IMM ^ CS [ .W .MOVE ( LEAVE FAIL FLAG )     212C|36BC  0000
77 14   > $(FIND)4  NEXT                                           2130|3A5C  305D  4ED0
78 0   LAYCODEHEADER ENCLOSE                                       2136|87 45 4E 43 4C 4F 53 C5
78 0   LAYCODEHEADER ENCLOSE                                       213E|20D5  2142
78 1    > $ENCLOSE   ^ CS [+ ^ 0 DR .W .MOVE  ( DELIMITER )        2142|3018
78 2               ^ CS [ ^ 0 AR .W .MOVE     ( TEXTADDRESS )    2144|3053
78 3               ^ 1 DR  .L .CLR                                 2146|4281
78 4               ^ $ENCLOSE2 *+ .BRA                             2148|6002
78 5    > $ENCLOSE1  ^ 1 IMM ^ 1 DR .W .ADDQ                       214A|5241
78 6    > $ENCLOSE2  ^ 0 0 1 &DC ^ 0 DR .B .CMP                    214C|B030  1000
78 7               ^ .EQ. $ENCLOSE1 *+ .BCC ( LOOP TILL NONDELIMIT ) 2150|67F8
78 8               ^ 1 DR ^ CS -[ .W .MOVE  ( SAVE N1 )            2152|3701
78 9    > $ENCLOSE3  ^ 0  0 1 &DC ^ 0 DR .B .CMP                    2154|B030  1000
78 10              ^ .EQ. $ENCLOSE6 *+ .BCC                        2158|671A
78 11              ^ 0 IMM ^ 0 0 1 &DC .B .CMP                     215A|0C30  0000  1000
78 12              ^ .EQ. $ENCLOSE4 *+ .BCC  ( ASCII 00 )          2160|6704
78 13              ^ 1 IMM ^ 1 DR .W .ADDQ                         2162|5241
78 14              ^ $ENCLOSE3 *+ .BRA                             2164|60EE
79 0    > $ENCLOSE4  ^ CS [ ^ 1 DR .W .CMP  ( JUST 00 ? )          2166|B253
79 1               ^ .NE. $ENCLOSE5 *+ .BCC  ( BRANCH IF NOT )     2168|6606
79 2               ^ 1 IMM ^ 1 DR .W .ADDQ ( ENCLOSE 00 )          216A|5241
79 3               ^ 1 DR ^ CS -[ .W .MOVE  ( SAVE N2 )            216C|3701
79 4               ^ $ENCLOSE8 *+ .BRA                             216E|6008
79 5    > $ENCLOSE5  ^ 1 DR ^ CS -[ .W .MOVE  ( SAVE N2 )          2170|3701
79 6               ^ $ENCLOSE8 *+ .BRA                             2172|6004
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79 7    > $ENCLOSE6  ^ 1 DR ^ CS -[ ,W ,MOVE  ( SAVE N2 )          2174|3701
79 8                 ^ 1 IMM ^ 1 DR ,W ,ADDQ ( SKIP DELIMITER )   2176|5241
79 9    > $ENCLOSE8  ^ 1 DR ^ CS -[ ,W ,MOVE ( SAVE N3 )          2178|3701
79 10                NEXT                                        217A|3A5C  305D  4ED0
80 0   LAYCODEHEADER CMOVE                                       2180|85 43 4D 4F 56 C5
80 0   LAYCODEHEADER CMOVE                                       2186|2136  218A
80 1    > $CMOVE     ^ 0 0 IMML ^ 0 AR ,L ,MOVE                  218A|207C  0000  0000
80 2                 ^ 0 AR ^ 1 AR ,L ,MOVE                      2190|2248
80 3                 ^ CS [+ ^ 0 DR ,W ,MOVE                     2192|301B
80 4                 ^ CS [+ ^ 1 AR ,W ,MOVE                     2194|325B
80 5                 ^ CS [+ ^ 0 AR ,W ,MOVE                     2196|305B
80 6                 ^ 0 AR ^ 1 AR ,W ,CMP                       2198|B2C8
80 7                 ^ ,GT, $MOVBKWD %+ ,BCC                     219A|6E0A
80 8                 ^ $MOVFWD1 %+ ,BRA                          219C|6002
80 9    > $MOVFWD    ^ 0 [+ ^ 1 [+ ,B ,MOVE                      219E|12D8
80 10   > $MOVFWD1   ^ ,F, 0 $MOVFWD %+ ,DBCC                    21A0|51C8  FFFC
80 11                ^ $CMOVE5 %+ ,BRA                           21A4|600C
80 12   > $MOVBKWD   ^ 0 DR ^ 0 AR ,W ,ADD                      21A6|D0C0
80 13                ^ 0 DR ^ 1 AR ,W ,ADD                       21A8|D2C0
80 14                ^ $MOVBKWD2 %+ ,BRA                         21AA|6002
81 0    > $MOVBKWD1  ^ 0 -[ ^ 1 -[ ,B ,MOVE                      21AC|1320
81 1    > $MOVBKWD2  ^ ,F, 0 $MOVBKWD1 %+ ,DBCC                  21AE|51C8  FFFC
81 2    > $CMOVE5    NEXT                                        21B2|3A5C  305D  4ED0
81 4   LAYCODEHEADER U%                                          21B8|0 82 55 AA
81 4   LAYCODEHEADER U%                                          21BC|2180  21C0
81 5    > $U%        ^ CS [+ ^ 0 DR ,W ,MOVE                     21C0|301B
81 6                 ^ CS [+ ^ 0 DR ,MULU                        21C2|C0DB
81 7                 ^ 0 DR ^ CS -[ ,L ,MOVE                     21C4|2700
81 8                 NEXT                                        21C6|3A5C  305D  4ED0
81 9   LAYCODEHEADER U/                                          21CC|0 82 55 AF
81 9   LAYCODEHEADER U/                                          21D0|21B9  21D4
81 10   > $U/        ^ CS [+ ^ 1 DR ,W ,MOVE                     21D4|321B
81 11                ^ CS [ ^ 0 DR ,L ,MOVE                      21D6|2013
81 12                ^ 1 DR ^ 0 DR ,DIVU                         21D8|80C1
81 13                ^ 0 DR ,SWAP                                21DA|4840
81 14                ^ 0 DR ^ CS [ ,L ,MOVE                      21DC|2680
81 15                NEXT   -->                                  21DE|3A5C  305D  4ED0
82 0   LAYCODEHEADER AND                                         21E4|83 41 4E C4
82 0   LAYCODEHEADER AND                                         21E8|21CD  21EC
82 1    > $AND       ^ CS [+ ^ 0 DR ,W ,MOVE                     21EC|301B
82 2                 ^ 0 DR ^ CS [ ,W ,AND                       21EE|C153
82 3                 NEXT                                        21F0|3A5C  305D  4ED0
82 5   LAYCODEHEADER OR                                          21F6|0 82 4F D2
82 5   LAYCODEHEADER OR                                          21FA|21E4  21FE
82 6    > $OR        ^ CS [+ ^ 0 DR ,W ,MOVE                     21FE|301B
82 7                 ^ 0 DR ^ CS [ ,W ,OR                        2200|8153
82 8                 NEXT                                        2202|3A5C  305D  4ED0
82 10  LAYCODEHEADER XOR                                         2208|83 58 4F D2
82 10  LAYCODEHEADER XOR                                         220C|21F7  2210
82 11   > $XOR       ^ CS [+ ^ 0 DR ,W ,MOVE                     2210|301B
82 12                ^ 0 DR ^ CS [ ,W ,EOR                       2212|B153
82 13                NEXT                                        2214|3A5C  305D  4ED0
83 0   LAYCODEHEADER SP@                                         221A|83 53 50 C0
83 0   LAYCODEHEADER SP@                                         221E|2208  2222
83 1    > $SP@       ^ CS AR ^ 0 DR ,W ,MOVE                     2222|300B
83 2                 ^ 0 DR ^ CS -[ ,W ,MOVE                     2224|3700
83 3                 NEXT                                        2226|3A5C  305D  4ED0
83 5   LAYCODEHEADER SP!                                         222C|83 53 50 A1
83 5   LAYCODEHEADER SP!                                         2230|221A  2234
83 6    > $SP!       ^ 6 US &[ ^ CS AR ,W ,MOVE                  2234|366E  0006
83 7                 NEXT                                        2238|3A5C  305D  4ED0
```

```
83 9   LAYCODEHEADER RP!                                                  223E|83 52 50 A1
83 9   LAYCODEHEADER RP!                                                  2242|222C  2246
83 10   > $RP!       ^ 8 US &[ ^ RS AR .W .MOVE                           2246|3E6E  0008
83 11                NEXT                                                 224A|3A5C  305D  4ED0
83 13  LAYCODEHEADER ;S  ( UNNEST )                                       2250|0 82 3B D3
83 13  LAYCODEHEADER ;S  ( UNNEST )                                       2254|223E  2258
83 14   > $;S        ^ RS [+ ^ IP AR .W .MOVE                             2258|385F
83 15                NEXT                    -->                          225A|3A5C  305D  4ED0
84 0   LAYCODEHEADER LEAVE                                                2260|85 4C 45 41 56 C5
84 0   LAYCODEHEADER LEAVE                                                2266|2251  226A
84 1    > $LEAVE     ^ RS [ ^ 2 RS &[ .W .MOVE                            226A|3F57  0002
84 2                 NEXT                                                 226E|3A5C  305D  4ED0
84 4   LAYCODEHEADER >R                                                   2274|0 82 3E D2
84 4   LAYCODEHEADER >R                                                   2278|2260  227C
84 5    > $>R        ^ CS [+ ^ RS -[ .W .MOVE                             227C|3F1B
84 6                 NEXT                                                 227E|3A5C  305D  4ED0
84 8   LAYCODEHEADER R>                                                   2284|0 82 52 BE
84 8   LAYCODEHEADER R>                                                   2288|2275  228C
84 9    > $R>        ^ RS [+ ^ CS -[ .W .MOVE                             228C|371F
84 10                NEXT                                                 228E|3A5C  305D  4ED0
84 12  LAYCODEHEADER R                                                    2294|81 D2
84 12  LAYCODEHEADER R                                                    2296|2285  229A
84 13   > $R         ^ RS [ ^ CS -[ .W .MOVE                              229A|3717
84 14                NEXT                                                 229C|3A5C  305D  4ED0
85 0   LAYCODEHEADER 0=                                                   22A2|0 82 30 BD
85 0   LAYCODEHEADER 0=                                                   22A6|2294  22AA
85 1    > $0=        ^ CS [ .W .TST                                       22AA|4A53
85 2                 ^ .EQ. 1 CS &[ .SCC                                  22AC|57EB  0001
85 3                 ^ 1 IMM ^ CS [ .W .AND                               22B0|0253  0001
85 4                 NEXT                                                 22B4|3A5C  305D  4ED0
85 6   LAYCODEHEADER 0<                                                   22BA|0 82 30 BC
85 6   LAYCODEHEADER 0<                                                   22BE|22A3  22C2
85 7    > $0<        ^ CS [ .W .TST                                       22C2|4A53
85 8                 ^ .MI. 1 CS &[ .SCC                                  22C4|5BEB  0001
85 9                 ^ 1 IMM ^ CS [ .W .AND                               22C8|0253  0001
85 10                NEXT                                                 22CC|3A5C  305D  4ED0
85 12  LAYCODEHEADER +                                                    22D2|81 AB
85 12  LAYCODEHEADER +                                                    22D4|22BB  22D8
85 13   > $+         ^ CS [+ ^ 0 DR .W .MOVE                              22D8|301B
85 14                ^ 0 DR ^ CS [ .W .ADD                                22DA|D153
85 15                NEXT                    -->                          22DC|3A5C  305D  4ED0
86 0   LAYCODEHEADER MINUS                                                22E2|85 4D 49 4E 55 D3
86 0   LAYCODEHEADER MINUS                                                22E8|22D2  22EC
86 1    > $MINUS     ^ CS [ .W .NEG                                       22EC|4453
86 2                 NEXT                                                 22EE|3A5C  305D  4ED0
86 4   LAYCODEHEADER D+                                                   22F4|0 82 44 AB
86 4   LAYCODEHEADER D+                                                   22F8|22E2  22FC
86 5    > $D+        ^ CS [+ ^ 0 DR .L .MOVE ( HI 16 BITS LOWER IN )      22FC|201B
86 6                 ^ 0 DR ^ CS [ .L .ADD   ( MEMORY SINCE STACK  )      22FE|D193
86 7                 NEXT                    ( GROWS DOWN. )              2300|3A5C  305D  4ED0
86 9   LAYCODEHEADER DMINUS                                                2306|0 86 44 4D 49 4E 55 D3
86 9   LAYCODEHEADER DMINUS                                                230E|22F5  2312
86 10   > $DMINUS    ^ CS [ .L .NEG                                       2312|4493
86 11                NEXT                                                 2314|3A5C  305D  4ED0
87 0   LAYCODEHEADER OVER                                                 231A|0 84 4F 56 45 D2
87 0   LAYCODEHEADER OVER                                                 2320|2307  2324
87 1    > $OVER      ^ 2 CS &[ ^ 0 DR .W .MOVE                            2324|302B  0002
87 2                 ^ 0 DR ^ CS -[ .W .MOVE                              2328|3700
87 3                 NEXT                                                 232A|3A5C  305D  4ED0
```

```
87 5   LAYCODEHEADER DROP                                    2330|0 84 44 52 4F D0
87 5   LAYCODEHEADER DROP                                    2336|231B  233A
87 6    > $DROP      ^ 2 IMM ^ CS AR ,W ,ADDQ                233A|544B
87 7                 NEXT                                    233C|3A5C  305D  4ED0
87 9   LAYCODEHEADER SWAP                                    2342|0 84 53 57 41 D0
87 9   LAYCODEHEADER SWAP                                    2348|2331  234C
87 10   > $SWAP     ^ CS [+ ^ 0 DR ,W ,MOVE                 234C|301B
87 11               ^ CS [ ^ 1 DR ,W ,MOVE                  234E|3213
87 12               ^ 0 DR ^ CS [ ,W ,MOVE                  2350|3680
87 13               ^ 1 DR ^ CS -[ ,W ,MOVE                 2352|3701
87 14               NEXT                                    2354|3A5C  305D  4ED0
88 0   LAYCODEHEADER DUP                                     235A|83 44 55 D0
88 0   LAYCODEHEADER DUP                                     235E|2343  2362
88 1    > $DUP      ^ CS [ ^ 0 DR ,W ,MOVE                  2362|3013
88 2                ^ 0 DR ^ CS -[ ,W ,MOVE                 2364|3700
88 3                NEXT                                    2366|3A5C  305D  4ED0
88 5   LAYCODEHEADER +!                                     236C|0 82 2B A1
88 5   LAYCODEHEADER +!                                     2370|235A  2374
88 6    > $+!       ^ CS [+ ^ 0 AR ,W ,MOVE                 2374|305B
88 7                ^ CS [+ ^ 0 DR ,W ,MOVE                 2376|301B
88 8                ^ 0 DR ^ 0 [ ,W ,ADD                    2378|D150
88 9                NEXT                                    237A|3A5C  305D  4ED0
88 11  LAYCODEHEADER TOGGLE                                  2380|0 86 54 4F 47 47 4C C5
88 11  LAYCODEHEADER TOGGLE                                  2388|236D  238C
88 12   > $TOGGLE   ^ CS [+ ^ 0 DR ,W ,MOVE                 238C|301B
88 13               ^ CS [+ ^ 0 AR ,W ,MOVE                 238E|305B
88 14               ^ 0 DR ^ 0 [ ,B ,EOR                    2390|B110
88 15               NEXT                 -->                2392|3A5C  305D  4ED0
89 0   LAYCODEHEADER @                                       2398|81 C0
89 0   LAYCODEHEADER @                                       239A|2381  239E
89 1    > $@        ^ CS [ ^ 0 AR ,W ,MOVE                  239E|3053
89 2                ^ 0 [ ^ CS [ ,W ,MOVE                   23A0|3690
89 3                NEXT                                    23A2|3A5C  305D  4ED0
89 5   LAYCODEHEADER C@                                      23A8|0 82 43 C0
89 5   LAYCODEHEADER C@                                      23AC|2398  23B0
89 6    > $C@       ^ CS [+ ^ 0 AR ,W ,MOVE                 23B0|305B
89 7                ^ 0 [ ^ CS -[ ,B ,MOVE                  23B2|1710
89 8                ^ 0 IMM ^ CS -[ ,B ,MOVE                23B4|173C  0000
89 9                NEXT                                    23B8|3A5C  305D  4ED0
89 11  LAYCODEHEADER !                                       23BE|81 A1
89 11  LAYCODEHEADER !                                       23C0|23A9  23C4
89 12   > $!        ^ CS [+ ^ 0 AR ,W ,MOVE                 23C4|305B
89 13               ^ CS [+ ^ 0 [+ ,B ,MOVE                 23C6|10DB
89 14               ^ CS [+ ^ 0 [ ,B ,MOVE                  23C8|109B
89 15               NEXT      -->                           23CA|3A5C  305D  4ED0
90 0   LAYCODEHEADER FILL                                    23D0|0 84 46 49 4C CC
90 0   LAYCODEHEADER FILL                                    23D6|23BE  23DA
90 1    > $FILL     ^ CS [+ ^ 0 DR ,W ,MOVE ( FILLBYTE )    23DA|301B
90 2                ^ CS [+ ^ 1 DR ,W ,MOVE ( QUANTITY )    23DC|321B
90 3                ^ CS [+ ^ 0 AR ,W ,MOVE ( POINTER )     23DE|305B
90 4                ^ $FILL3 #+ ,BRA                        23E0|6002
90 5    > $FILL2    ^ 0 DR ^ 0 [+ ,B ,MOVE                  23E2|10C0
90 6    > $FILL3    ^ ,F, 1 $FILL2 #+ ,DBCC                 23E4|51C9  FFFC
90 7                NEXT                                    23E8|3A5C  305D  4ED0
91 0   LAYCODEHEADER C!                                      23EE|0 82 43 A1
91 0   LAYCODEHEADER C!                                      23F2|23D1  23F6
91 1    > $C!       ^ CS [+ ^ 0 AR ,W ,MOVE                 23F6|305B
91 2                ^ 1 IMM ^ CS AR ,W ,ADDQ                23F8|524B
91 3                ^ CS [+ ^ 0 [ ,B ,MOVE                  23FA|109B
91 4                NEXT                                    23FC|3A5C  305D  4ED0
```

```
91 5   LAY:HEADER C=                                                    2402|0 82 43 B0
91 5   LAY:HEADER C=                                                    2406|23EF  2506
91 6    > $C=        ^ $-  $LAY   $LIT  $LAY   00FF  LAY               240A|275A  2006  00FF
91 7                 ^ $AND  $LAY   $0=  $LAY   $;                     2410|21EA  22A8  2256
91 8   LAYCODEHEADER S->D                                               2416|0 84 53 2D 3E C4
91 8   LAYCODEHEADER S->D                                               241C|2403  2420
91 9    > $S->D      ^ CS [ ,W ,TST                                     2420|4A53
91 10                ^ ,MI, $S->D1 %+ ,BCC ( branch if neg )           2422|6B06
91 11                ^ 0 IMM ^ CS -[ ,W ,MOVE                          2424|373C  0000
91 12                ^ $S->D2 %+ ,BRA                                  2428|6004
91 13   > $S->D1     ^ -1 IMM ^ CS -[ ,W ,MOVE                         242A|373C  FFFF
91 14   > $S->D2     NEXT                                              242E|3A5C  305D  4ED0
92 0   LAYCODEHEADER EMIT                                              2434|0 84 45 4D 49 D4
92 0   LAYCODEHEADER EMIT                                              243A|2417  243E
92 1    > $EMIT      ^ CS [+ ^ 0 DR ,W ,MOVE ( SEND BYTE IN DR0 )      243E|301B
92 2                 ^ 1 IMM ^ 1A US &[ ,W ,ADDQ  ( INC OUT )          2440|526E  001A
92 3                 ^ 40 US &[ ^ 0 AR ,W ,MOVE ( EMITCODE ADDRESS )   2444|306E  0040
92 4                 ^ 0 [ ,JSR                                        2448|4E90
92 5                 NEXT                                              244A|3A5C  305D  4ED0
92 6   LAYCODEHEADER KEY                                               2450|83 4B 45 D9
92 6   LAYCODEHEADER KEY                                               2454|2435  2458
92 7    > $KEY       ^ 42 US &[ ^ 0 AR ,W ,MOVE ( KEYCODE ADDRESS )    2458|306E  0042
92 8                 ^ 0 [ ,JSR                                        245C|4E90
92 9                  ^ 0 DR ^ CS -[ ,W ,MOVE ( GET BYTE FROM DR0 )    245E|3700
92 10                NEXT                                              2460|3A5C  305D  4ED0
92 11  LAYCODEHEADER ?TERMINAL                                         2466|89 3F 54 45 52 4D 49 4E 41 CC
92 11  LAYCODEHEADER ?TERMINAL                                         2470|2450  2474
92 12   > $?TERMINAL ^ 44 US &[ ^ 0 AR ,W ,MOVE ( ?TERMCODE ADDRESS )  2474|306E  0044
92 13                ^ 0 [ ,JSR                                        2478|4E90
92 14                ^ 0 DR ^ CS -[ ,W ,MOVE ( GET FLAG FROM DR0 )     247A|3700
92 15                NEXT   -->                                        247C|3A5C  305D  4ED0
93 0   LAYCODEHEADER CR                                                2482|0 82 43 D2
93 0   LAYCODEHEADER CR                                                2486|2466  248A
93 1    > $CR        ^ 0 IMM ^ 1A US &[ ,W ,MOVE  ( ZERO OUT )         248A|3D7C  0000  001A
93 2                 ^ 46 US &[ ^ 0 AR ,W ,MOVE ( CRCODE ADDRESS )     2490|306E  0046
93 3                 ^ 0 [ ,JSR                                        2494|4E90
93 4                 NEXT                                              2496|3A5C  305D  4ED0
93 6   LAYCODEHEADER (VAR)                                             249C|85 28 56 41 52 A9
93 6   LAYCODEHEADER (VAR)                                             24A2|2483  24A6
93 7    > $(VAR)     ^ WP AR ^ CS -[ ,W ,MOVE                           24A6|370D
93 8                 NEXT                                              24A8|3A5C  305D  4ED0
93 9   LAYCODEHEADER (CONST)                                           24AE|87 28 43 4F 4E 53 54 A9
93 9   LAYCODEHEADER (CONST)                                           24B6|249C  24BA
93 10   > $(CONST)   ^ WP [ ^ CS -[ ,W ,MOVE                           24BA|3715
93 11                NEXT          -->                                 24BC|3A5C  305D  4ED0
94 0   LAYCODEHEADER (USER)                                            24C2|0 86 28 55 53 45 52 A9
94 0   LAYCODEHEADER (USER)                                            24CA|24AE  24CE
94 1    > $(USER)    ^ WP [ ^ 0 DR ,W ,MOVE                            24CE|3015
94 2                 ^ 6 AR ^ 0 DR ,W ,ADD                             24D0|D04E
94 3                 ^ 0 DR ^ CS -[ ,W ,MOVE                           24D2|3700
94 4                 NEXT                                              24D4|3A5C  305D  4ED0
94 5   LAYCODEHEADER (USERCONSTANT)                                     24DA|0 8E 28 55 53 45 52 43 4F 4E 53
                                                                                54 41 4E 54 A9
94 5   LAYCODEHEADER (USERCONSTANT)                                     24EA|24C3  24EE
94 6    > $(USERCONSTANT)   ^ WP [ ^ 0 AR ,W ,MOVE                     24EE|3055
94 7                 ^ 6 AR ^ 0 AR ,W ,ADD                             24F0|D0CE
94 8                 ^ 0 [ ^ CS -[ ,W ,MOVE                            24F2|3710
94 9                 NEXT                                              24F4|3A5C  305D  4ED0
94 10  LAYCODEHEADER (NEST)                                            24FA|0 86 28 4E 45 53 54 A9
94 10  LAYCODEHEADER (NEST)                                            2502|24DB  2506
94 11   > $(NEST)    ^ IP AR ^ RS -[ ,W ,MOVE                          2506|3F0C
94 12                ^ WP AR ^ IP AR ,W ,MOVE                          2508|384D
94 13                NEXT                                              250A|3A5C  305D  4ED0
```

```
95 0   LAYCONSTANT 0          > $0          0000 LAY          2510|81 B0
95 0   LAYCONSTANT 0          > $0          0000 LAY          2512|24FB  24BA  0000
95 1   LAYCONSTANT 1          > $1          0001 LAY          2518|81 B1
95 1   LAYCONSTANT 1          > $1          0001 LAY          251A|2510  24BA  0001
95 2   LAYCONSTANT 2          > $2          0002 LAY          2520|81 B2
95 2   LAYCONSTANT 2          > $2          0002 LAY          2522|2518  24BA  0002
95 3   LAYCONSTANT 3          > $3          0003 LAY          2528|81 B3
95 3   LAYCONSTANT 3          > $3          0003 LAY          252A|2520  24BA  0003
95 4   LAYCONSTANT BL         > $BL         0020 LAY          2530|0 82 42 CC
95 4   LAYCONSTANT BL         > $BL         0020 LAY          2534|2528  24BA  0020
95 5   LAYUSER BKSPKEY        > $BKSPKEY     0002 LAY         253A|87 42 4B 53 50 4B 45 D9
95 5   LAYUSER BKSPKEY        > $BKSPKEY     0002 LAY         2542|2531  24CE  0002
95 6   LAYUSER S0             > $S0         0006 LAY          2548|0 82 53 B0
95 6   LAYUSER S0             > $S0         0006 LAY          254C|253A  24CE  0006
95 7   LAYUSER R0             > $R0         0008 LAY          2552|0 82 52 B0
95 7   LAYUSER R0             > $R0         0008 LAY          2556|2549  24CE  0008
95 8   LAYUSER TIB            > $TIB        000A LAY          255C|83 54 49 C2
95 8   LAYUSER TIB            > $TIB        000A LAY          2560|2553  24CE  000A
 95 9   LAYUSER WIDTH          > $WIDTH      000C LAY           2566|85 57 49 44 54 C8
95 9   LAYUSER WIDTH          > $WIDTH      000C LAY          256C|255C  24CE  000C
95 10  LAYUSER WARNING        > $WARNING    000E LAY          2572|87 57 41 52 4E 49 4E C7
95 10  LAYUSER WARNING        > $WARNING    000E LAY          257A|2566  24CE  000E
95 11  LAYUSER FENCE          > $FENCE      0010 LAY          2580|85 46 45 4E 43 C5
95 11  LAYUSER FENCE          > $FENCE      0010 LAY          2586|2572  24CE  0010
96 0   LAYUSER DP             > $DP         0012 LAY          258C|0 82 44 D0
 96 0   LAYUSER DP             > $DP         0012 LAY          2590|2580  24CE  0012
96 1   LAYUSER VOC-LINK       > $VOC-LINK   0014 LAY          2596|0 88 56 4F 43 2D 4C 49 4E CB
96 1   LAYUSER VOC-LINK       > $VOC-LINK   0014 LAY          25A0|258D  24CE  0014
96 2   LAYUSER BLK            > $BLK        0016 LAY          25A6|83 42 4C CB
 96 2   LAYUSER BLK            > $BLK        0016 LAY          25AA|2597  24CE  0016
96 3   LAYUSER IN             > $IN         0018 LAY          25B0|0 82 49 CE
96 3   LAYUSER IN             > $IN         0018 LAY          25B4|25A6  24CE  0018
96 4   LAYUSER OUT            > $OUT        001A LAY          25BA|83 4F 55 D4
96 4   LAYUSER OUT            > $OUT        001A LAY          25BE|25B1  24CE  001A
96 5   LAYUSER SCR            > $SCR        001C LAY          25C4|83 53 43 D2
96 5   LAYUSER SCR            > $SCR        001C LAY          25C8|25BA  24CE  001C
96 6   LAYUSER OFFSET         > $OFFSET     001E LAY          25CE|0 86 4F 46 46 53 45 D4
96 6   LAYUSER OFFSET         > $OFFSET     001E LAY          25D6|25C4  24CE  001E
96 7   LAYUSER CONTEXT        > $CONTEXT    0020 LAY          25DC|87 43 4F 4E 54 45 58 D4
96 7   LAYUSER CONTEXT        > $CONTEXT    0020 LAY          25E4|25CF  24CE  0020
96 8   LAYUSER CURRENT        > $CURRENT    0022 LAY          25EA|87 43 55 52 52 45 4E D4
96 8   LAYUSER CURRENT        > $CURRENT    0022 LAY          25F2|25DC  24CE  0022
96 9   LAYUSER STATE          > $STATE      0024 LAY          25F8|85 53 54 41 54 C5
96 9   LAYUSER STATE          > $STATE      0024 LAY          25FE|25EA  24CE  0024
96 10  LAYUSER BASE           > $BASE       0026 LAY          2604|0 84 42 41 53 C5
96 10  LAYUSER BASE           > $BASE       0026 LAY          260A|25F8  24CE  0026
96 11  LAYUSER DPL            > $DPL        0028 LAY          2610|83 44 50 CC
96 11  LAYUSER DPL            > $DPL        0028 LAY          2614|2605  24CE  0028
96 12  LAYUSER FLD            > $FLD        002A LAY          261A|83 46 4C C4
96 12  LAYUSER FLD            > $FLD        002A LAY          261E|2610  24CE  002A
96 13  LAYUSER CSP            > $CSP        002C LAY          2624|83 43 53 D0
96 13  LAYUSER CSP            > $CSP        002C LAY          2628|261A  24CE  002C
96 14  LAYUSER R#             > $R#         002E LAY          262E|0 82 52 A3
96 14  LAYUSER R#             > $R#         002E LAY          2632|2624  24CE  002E
96 15  LAYUSER HLD            > $HLD        0030 LAY    -->   2638|83 48 4C C4
96 15  LAYUSER HLD            > $HLD        0030 LAY    -->   263C|262F  24CE  0030
97 0   LAYUSERCONSTANT FIRST  > $FIRST      0034 LAY          2642|85 46 49 52 53 D4
97 0   LAYUSERCONSTANT FIRST  > $FIRST      0034 LAY          2648|2638  24EE  0034
97 1   LAYUSERCONSTANT LIMIT  > $LIMIT      0036 LAY          264E|85 4C 49 4D 49 D4
97 1   LAYUSERCONSTANT LIMIT  > $LIMIT      0036 LAY          2654|2642  24EE  0036
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97 2   LAYUSER USE              > $USE          0038 LAY                 265A|83 55 53 C5
97 2   LAYUSER USE              > $USE          0038 LAY                 265E|264E  24CE  0038
97 3   LAYUSER PREV             > $PREV         003A LAY                 2664|0 84 50 52 45 D6
97 3   LAYUSER PREV             > $PREV         003A LAY                 266A|265A  24CE  003A
97 4   LAYUSER DICTLIMIT        > $DICTLIMIT    003C LAY                 2670|89 44 49 43 54 4C 49 4D 49 D4
97 4   LAYUSER DICTLIMIT        > $DICTLIMIT    003C LAY                 267A|2665  24CE  003C
97 5   LAYUSER BKSPEMIT         > $BKSPEMIT     003E LAY                 2680|0 88 42 4B 53 50 45 4D 49 D4
97 5   LAYUSER BKSPEMIT         > $BKSPEMIT     003E LAY                 268A|2670  24CE  003E
97 6   LAYUSER EMITSUB          > $EMITSUB      0040 LAY                 2690|87 45 4D 49 54 53 55 C2
97 6   LAYUSER EMITSUB          > $EMITSUB      0040 LAY                 2698|2681  24CE  0040
97 7   LAYUSER KEYSUB           > $KEYSUB       0042 LAY                 269E|0 86 4B 45 59 53 55 C2
97 7   LAYUSER KEYSUB           > $KEYSUB       0042 LAY                 26A6|2690  24CE  0042
97 8   LAYUSER ?TERMSUB         > $?TERMSUB     0044 LAY                 26AC|0 88 3F 54 45 52 4D 53 55 C2
97 8   LAYUSER ?TERMSUB         > $?TERMSUB     0044 LAY                 26B6|269F  24CE  0044
97 9   LAYUSER CRSUB            > $CRSUB        0046 LAY                 26BC|85 43 52 53 55 C2
97 9   LAYUSER CRSUB            > $CRSUB        0046 LAY                 26C2|26AD  24CE  0046
97 10  LAYUSER R/WSUB           > $R/WSUB       0048 LAY                 26C8|0 86 52 2F 57 53 55 C2
97 10  LAYUSER R/WSUB           > $R/WSUB       0048 LAY                 26D0|26BC  24CE  0048
97 11  LAYUSERCONSTANT B/BUF    > $B/BUF        004A LAY                 26D6|85 42 2F 42 55 C6
97 11  LAYUSERCONSTANT B/BUF    > $B/BUF        004A LAY                 26DC|26C9  24EE  004A
97 12  LAYUSERCONSTANT B/SCR    > $B/SCR        004C LAY                 26E2|85 42 2F 53 43 D2
97 12  LAYUSERCONSTANT B/SCR    > $B/SCR        004C LAY                 26E8|26D6  24EE  004C
97 13  LAYUSERCONSTANT C/L      > $C/L          004E LAY                 26EE|83 43 2F CC
97 13  LAYUSERCONSTANT C/L      > $C/L          004E LAY                 26F2|26E2  24EE  004E
98 0   LAY:HEADER 1+                                                    26F8|0 82 31 AB
98 0   LAY:HEADER 1+                                                    26FC|26EE  2506
98 1    > $1+   ^ $1 $LAY    $+ $LAY  $;                                2700|251C  22D6  2256
98 3   LAY:HEADER 2+                                                    2706|0 82 32 AB
98 3   LAY:HEADER 2+                                                    270A|26F9  2506
98 4    > $2+   ^ $2 $LAY    $+ $LAY  $;                                270E|2524  22D6  2256
98 6   LAY:HEADER HERE                                                  2714|0 84 48 45 52 C5
98 6   LAY:HEADER HERE                                                  271A|2707  2506
98 7    > $HERE   ^ $DP $LAY   $@ $LAY  $;                             271E|2592  239C  2256
98 9   LAY:HEADER ALLOT                                                 2724|85 41 4C 4C 4F D4
98 9   LAY:HEADER ALLOT                                                 272A|2715  2506
98 10   > $ALLOT   ^ $DP $LAY   $+! $LAY   $;                          272E|2592  2372  2256
98 12  LAY:HEADER ,                                                     2734|81 AC
98 12  LAY:HEADER ,                                                     2736|2724  2506
98 13   > $,   ^ $HERE  $LAY    $! $LAY   $2 $LAY   $ALLOT  $LAY  $;    273A|271C  23C2  2524  272C  2256
99 0   LAY:HEADER C,                                                    2744|0 82 43 AC
99 0   LAY:HEADER C,                                                    2748|2734  2506
99 1    > $C,   ^ $HERE  $LAY    $C! $LAY    $1  $LAY                   274C|271C  23F4  251C
99 2          ^ $ALLOT  $LAY    $;                                     2752|272C  2256
99 4   LAY:HEADER -                                                    2756|81 AD
99 4   LAY:HEADER -                                                    2758|2745  2506
99 5    > $-    ^ $MINUS  $LAY    $+ $LAY    $;                        275C|22EA  22D6  2256
99 7   LAY:HEADER =                                                    2762|81 BD
99 7   LAY:HEADER =                                                    2764|2756  2506
99 8    > $=    ^ $-  $LAY    $0=  $LAY    $;                         2768|275A  22A8  2256
99 10  LAY:HEADER <                                                    276E|81 BC
99 10  LAY:HEADER <                                                    2770|2762  2506
99 11   > $<    ^ $-  $LAY    $0<  $LAY    $;                         2774|275A  22C0  2256
99 13  LAY:HEADER > DUMMY ( AN ARTIFACT OF THIS ASSEMBLER )            277A|81 BE
99 13  LAY:HEADER > DUMMY ( AN ARTIFACT OF THIS ASSEMBLER )            277C|276E  2506
99 14   > $>  ^ $SWAP  $LAY    $< $LAY    $;                          2780|234A  2772  2256
100 0  LAY:HEADER ROT                                                  2786|83 52 4F D4
100 0  LAY:HEADER ROT                                                  278A|277A  2506
100 1   > $ROT    ^ $>R  $LAY    $SWAP  $LAY    $R>  $LAY              278E|227A  234A  228A
100 2           ^ $SWAP  $LAY    $;                                    2794|234A  2256
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100 4  LAY:HEADER SPACE                                                    2798|85 53 50 41 43 C5
100 4  LAY:HEADER SPACE                                                    279E|2786  2506
100 5   > $SPACE    ^ $BL  $LAY    $EMIT  $LAY    $;                       27A2|2536  243C  2256
100 7  LAY:HEADER -DUP                                                     27A8|0 84 2D 44 55 D0
100 7  LAY:HEADER -DUP                                                     27AE|2798  2506
100 8   > $-DUP    ^ $DUP $LAY    $OBRANCH  $LAY    4 LAY                 27B2|2360  2042  0004
100 9             ^ $DUP $LAY    $;                                       27B8|2360  2256
100 11 LAY:HEADER TRAVERSE                                                 27BC|0 88 54 52 41 56 45 52 53 C5
100 11 LAY:HEADER TRAVERSE                                                 27C6|27A9  2506
100 12  > $TRAVERSE    ^ $SWAP  $LAY    $OVER  $LAY    $+  $LAY           27CA|234A  2322  22D6
100 13                  ^ $LIT  $LAY    7F LAY    $OVER  $LAY             27D0|2006  007F  2322
100 14            ^ $C@  $LAY    $<  $LAY    $OBRANCH  $LAY  -10 LAY      27D6|23AE  2772  2042  FFF0
100 15            ^ $SWAP  $LAY    $DROP  $LAY    $;         -->           27DE|234A  2338  2256
101 0  LAY:HEADER LATEST                                                   27E4|0 86 4C 41 54 45 53 D4
101 0  LAY:HEADER LATEST                                                   27EC|27BD  2506
101 1   > $LATEST    ^ $CURRENT  $LAY    $@  $LAY    $@  $LAY    $;       27F0|25F4  239C  239C  2256
101 3  LAY:HEADER LFA                                                      27F8|83 4C 46 C1
101 3  LAY:HEADER LFA                                                      27FC|27E5  2506
101 4   > $LFA      ^ $LIT  $LAY    4 LAY    $-  $LAY    $;                2800|2006  0004  275A  2256
 101 6  LAY:HEADER CFA                                                     2808|83 43 46 C1
101 6  LAY:HEADER CFA                                                      280C|27F8  2506
101 7   > $CFA      ^ $2  $LAY     $-  $LAY    $;                         2810|2524  275A  2256
101 9  LAY:HEADER NFA                                                      2816|83 4E 46 C1
101 9  LAY:HEADER NFA                                                      281A|2808  2506
 101 10  > $NFA    ^ $LIT  $LAY    5 LAY    $-  $LAY                       281E|2006  0005  275A
101 11            ^ $LIT  $LAY    -1 LAY    $TRAVERSE  $LAY    $;        2824|2006  FFFF  27C8  2256
101 13 LAY:HEADER PFA                                                      282C|83 50 46 C1
101 13 LAY:HEADER PFA                                                      2830|2816  2506
101 14  > $PFA    ^ $1  $LAY    $TRAVERSE  $LAY    $LIT  $LAY    5 LAY   2834|251C  27C8  2006  0005
101 15            ^ $+  $LAY    $;                    -->                  283C|22D6  2256
102 0  LAY:HEADER !CSP                                                     2840|0 84 21 43 53 D0
102 0  LAY:HEADER !CSP                                                     2846|282C  2506
102 1   > $!CSP    ^ $SP@  $LAY    $CSP  $LAY    $!  $LAY  $;            284A|2220  262A  23C2  2256
102 3  LAY:HEADER ?ERROR                                                   2852|0 86 3F 45 52 52 4F D2
102 3  LAY:HEADER ?ERROR                                                   285A|2841  2506
102 4   > $?ERROR    ^ $SWAP  $LAY    $OBRANCH  $LAY    8 LAY            285E|234A  2042  0008
102 5               ^ $ERROR  $LAY    $BRANCH  $LAY    4 LAY             2864|2C4E  202C  0004
102 6               ^ $DROP  $LAY    $;                                  286A|2338  2256
102 8  LAY:HEADER ?COMP                                                    286E|85 3F 43 4F 4D D0
102 8  LAY:HEADER ?COMP                                                    2874|2853  2506
102 9   > $?COMP    ^ $STATE  $LAY    $@  $LAY    $0=  $LAY               2878|2600  239C  22A8
102 10              ^ $LIT  $LAY    11 LAY    $?ERROR  $LAY    $;        287E|2006  0011  285C  2256
102 12 LAY:HEADER ?EXEC                                                    2886|85 3F 45 58 45 C3
102 12 LAY:HEADER ?EXEC                                                    288C|286E  2506
102 13  > $?EXEC    ^ $STATE  $LAY    $@  $LAY                            2890|2600  239C
102 14              ^ $LIT  $LAY    12 LAY    $?ERROR  $LAY    $;        2894|2006  0012  285C  2256
103 0  LAY:HEADER ?PAIRS                                                   289C|0 86 3F 50 41 49 52 D3
103 0  LAY:HEADER ?PAIRS                                                   28A4|2886  2506
103 1   > $?PAIRS    ^ $-  $LAY    $LIT  $LAY    13 LAY                   28A8|275A  2006  0013
103 2               ^ $?ERROR  $LAY    $;                                28AE|285C  2256
103 4  LAY:HEADER ?CSP                                                     28B2|0 84 3F 43 53 D0
103 4  LAY:HEADER ?CSP                                                     28B8|289D  2506
103 5   > $?CSP    ^ $SP@  $LAY    $CSP  $LAY    $@  $LAY                28BC|2220  262A  239C
103 6             ^ $-  $LAY    $LIT  $LAY  14 LAY                       28C2|275A  2006  0014
103 7             ^ $?ERROR  $LAY    $;                                  28C8|285C  2256
103 9  LAY:HEADER ?LOADING                                                 28CC|0 88 3F 4C 4F 41 44 49 4E C7
103 9  LAY:HEADER ?LOADING                                                 28D6|28B3  2506
103 10  > $?LOADING    ^ $BLK  $LAY    $@  $LAY    $0=  $LAY              28DA|25AC  239C  22A8
103 11                  ^ $LIT  $LAY    16 LAY    $?ERROR  $LAY    $;    28E0|2006  0016  285C  2256
```

```
103 12 LAY:HEADER COMPILE                                    28E8|87 43 4F 4D 50 49 4C C5
103 12 LAY:HEADER COMPILE                                    28F0|28CD  2506
103 13  > $COMPILE    ^ $?COMP  $LAY    $R>  $LAY    $DUP  $LAY   28F4|2876  228A  2360
  103 14               ^ $2+  $LAY    $>R  $LAY    $@  $LAY      28FA|270C  227A  239C
103 15                ^ $,  $LAY    $;        -->                2900|273B  2256
104 0  LAY:HEADER [  IMMED                                   2904|81 DB
104 0  LAY:HEADER [  IMMED                                   2906|28E8  2506
104 1   > $[    ^ $0  $LAY    $STATE  $LAY    $!  $LAY    $;   290A|2514  2600  23C2  2256
104 3  LAY:HEADER ]                                          2912|81 DD
104 3  LAY:HEADER ]                                          2914|2904  2506
104 4   > $]    ^ $LIT  $LAY    C0 LAY    $STATE  $LAY        2918|2006  00C0  2600
104 5          ^ $!  $LAY  $;                                291E|23C2  2256
104 7  LAY:HEADER SMUDGE                                     2922|0 86 53 4D 55 44 47 C5
104 7  LAY:HEADER SMUDGE                                     292A|2912  2506
104 8   > $SMUDGE    ^ $LATEST  $LAY  $LIT  $LAY  20 LAY     292E|27EE  2006  0020
104 9               ^ $TOGGLE  $LAY  $;                      2934|238A  2256
104 11 LAY:HEADER HEX                                        2938|83 48 45 D8
104 11 LAY:HEADER HEX                                        293C|2923  2506
104 12  > $HEX    ^ $LIT  $LAY  10 LAY  $BASE  $LAY          2940|2006  0010  260C
104 13           ^ $!  $LAY  $;                              2946|23C2  2256
105 0  LAY:HEADER DECIMAL                                    294A|87 44 45 43 49 4D 41 CC
105 0  LAY:HEADER DECIMAL                                    2952|2938  2506
105 1   > $DECIMAL    ^ $LIT  $LAY  0A LAY  $BASE  $LAY      2956|2006  000A  260C
105 2                ^ $!  $LAY  $;                          295C|23C2  2256
105 4  LAY:HEADER (;CODE)                                    2960|87 28 3B 43 4F 44 45 A9
105 4  LAY:HEADER (;CODE)                                    2968|294A  2506
105 5   > $(;CODE)    ^ $R>  $LAY    $LATEST  $LAY    $PFA  $LAY   296C|228A  27EE  2832
105 6                ^ $CFA  $LAY    $!  $LAY    $;           2972|280E  23C2  2256
105 8  LAY:HEADER COUNT                                      2978|85 43 4F 55 4E D4
105 8  LAY:HEADER COUNT                                      297E|2960  2506
105 9   > $COUNT    ^ $DUP  $LAY    $1+  $LAY  $SWAP  $LAY   2982|2360  26FE  234A
105 10             ^ $C@  $LAY  $;                           2988|23AE  2256
105 12 LAY:HEADER TYPE                                       298C|0 84 54 59 50 C5
105 12 LAY:HEADER TYPE                                       2992|2978  2506
 105 13  > $TYPE    ^ $-DUP  $LAY    $0BRANCH  $LAY    18 LAY  2996|27B0  2042  0018
105 14            ^ $OVER  $LAY    $+  $LAY    $SWAP  $LAY   299C|2322  22D6  234A
105 15            ^ $(DO)  $LAY    $R  $LAY    $C@  $LAY      -->  29A2|2090  2298  23AE
106 0            ^ $EMIT  $LAY    $(LOOP)  $LAY  -8 LAY      29A8|243C  205A  FFF8
106 1             ^ $BRANCH  $LAY    4 LAY    $DROP  $LAY    29AE|202C  0004  2338
106 2             ^ $;                                       29B4|2256
106 3  LAY:HEADER -TRAILING                                  29B6|89 2D 54 52 41 49 4C 49 4E C7
106 3  LAY:HEADER -TRAILING                                  29C0|298D  2506
106 4   > $-TRAILING    ^ $DUP  $LAY    $0  $LAY    $(DO)  $LAY  29C4|2360  2514  2090
106 5             ^ $OVER $LAY    $OVER  $LAY    $+  $LAY      29CA|2322  2322  22D6
106 6             ^ $1  $LAY    $-  $LAY    $C@  $LAY         29D0|251C  275A  23AE
106 7             ^ $BL  $LAY    $-  $LAY    $0BRANCH  $LAY  8 LAY  29D6|2536  275A  2042  0008
106 8             ^ $LEAVE  $LAY    $BRANCH  $LAY    6 LAY   29DE|2268  202C  0006
106 9             ^ $1  $LAY    $-  $LAY                     29E4|251C  275A
106 10            ^ $(LOOP)  $LAY   -20 LAY    $;           29E8|205A  FFE0  2256
106 11 LAY:HEADER (.")                                       29EE|0 84 28 2E 22 A9
106 11 LAY:HEADER (.")                                       29F4|29B6  2506
106 12  > $(.")    ^ $R  $LAY   $COUNT  $LAY   $DUP  $LAY   29F8|2298  2980  2360
106 13            ^ $2+  $LAY   $LIT  $LAY   FFFE  LAY     29FE|270C  2006  FFFE
106 14            ^ $AND  $LAY   $R>  $LAY   $+  $LAY       2A04|21EA  228A  22D6
106 15            ^ $>R  $LAY   $TYPE  $LAY   $;  -->       2A0A|227A  2994  2256
```

```
107 0  LAY:HEADER EXPECT                                                    2A10|0 86 45 58 50 45 43 D4
107 0  LAY:HEADER EXPECT                                                    2A18|29EF  2506
107 1   > $EXPECT    ^ $OVER  $LAY   $+  $LAY   $OVER  $LAY                 2A1C|2322  22D6  2322
107 2              ^ $(DO)  $LAY   $KEY  $LAY   $DUP  $LAY                 2A22|2090  2456  2360
107 3              ^ $EKSPKEY  $LAY   $@  $LAY   $C=  $LAY                 2A28|2544  239C  2408
107 4              ^ $OBRANCH  $LAY  20 LAY   $DROP  $LAY                   2A2E|2042  0020  2338
107 5              ^ $EKSPEMIT  $LAY  $@  $LAY                             2A34|268C  239C
107 6              ^ $OVER  $LAY   $R  $LAY   $=  $LAY                     2A38|2322  2298  2766
107 7              ^ $DUP  $LAY   $R>  $LAY   $2  $LAY                     2A3E|2360  228A  2524
107 8              ^ $-  $LAY   $+  $LAY   $>R  $LAY                       2A44|275A  22D6  227A
107 9              ^ $-  $LAY   $BRANCH  $LAY   28 LAY                     2A4A|275A  202C  0028
107 10             ^ $DUP  $LAY   $LIT  $LAY  0D  LAY                      2A50|2360  2006  000D
107 11             ^ $C=  $LAY   $0BRANCH  $LAY   0E LAY                   2A56|2408  2042  000E
107 12             ^ $LEAVE  $LAY   $DROP  $LAY  $BL  $LAY                 2A5C|2268  2338  2536
107 13             ^ $0  $LAY  $BRANCH  $LAY   04  LAY                     2A62|2514  202C  0004
107 14             ^ $DUP  $LAY   $R  $LAY   $C!  $LAY                     2A68|2360  2298  23F4
107 15             ^ $0  $LAY   $R  $LAY   $1+  $LAY  -->                 2A6E|2514  2298  26FE
108 0              ^ $C!  $LAY   $EMIT  $LAY   $(LOOP)  $LAY               2A74|23F4  243C  205A
108 1              ^ FFAA LAY  $DROP  $LAY   $;                             2A7A|FFAA  2338  2256
108 2  LAY:HEADER QUERY                                                     2A80|85 51 55 45 52 D9
108 2  LAY:HEADER QUERY                                                     2A86|2A11  2506
108 3   > $QUERY    ^ $TIB  $LAY   $@  $LAY   $LIT  $LAY                    2A8A|2562  239C  2006
108 4              ^ 50  LAY   $EXPECT  $LAY  $0  $LAY                     2A90|0050  2A1A  2514
108 5              ^ $IN  $LAY   $!  $LAY  $;                               2A96|25B6  23C2  2256
108 6  LAY:HEADER X                                                         2A9C|~~01 D8~~ C1 80
108 6  LAY:HEADER X                                                         2A9E|2A80  2506
 108 7   > $X        ^ C180 68HERE @ 6 - !  ( FIX UP NULL DUMMY WORD )      2AA2|
108 8              ^ $BLK  $LAY   $@  $LAY   $0BRANCH  $LAY                 2AA2|25AC  239C  2042
108 9              ^ 2A  LAY   $1  $LAY  $BLK  $LAY                         2AA8|002A  251C  25AC
108 10             ^ $+!  $LAY   $0  $LAY   $IN  $LAY                       2AAE|2372  2514  25B6
108 11             ^ $!  $LAY   $BLK  $LAY   $@  $LAY                       2AB4|23C2  25AC  239C
108 12             ^ $B/SCR  $LAY  $1  $LAY  $-  $LAY  $AND  $LAY          2ABA|26EA  251C  275A  21EA
108 13             ^ $0=  $LAY   $0BRANCH  $LAY   8 LAY                     2AC2|22A8  2042  0008
108 14             ^ $?EXEC  $LAY   $R>  $LAY   $DROP  $LAY                2AC8|288E  228A  2338
108 15             ^ $BRANCH  $LAY  6 LAY   $R>  $LAY  -->                 2ACE|202C  0006  228A
109 0              ^ $DROP  $LAY  $;                                        2AD4|2338  2256
109 1  LAY:HEADER ERASE                                                     2AD8|85 45 52 41 53 C5
109 1  LAY:HEADER ERASE                                                     2ADE|2A9C  2506
109 2   > $ERASE    ^ $0  $LAY   $FILL  $LAY  $;                             2AE2|2514  23D8  2256
109 3  LAY:HEADER BLANKS                                                    2AE8|0 86 42 4C 41 4E 4B D3
109 3  LAY:HEADER BLANKS                                                    2AF0|2AD8  2506
109 4   > $BLANKS   ^ $BL  $LAY   $FILL  $LAY   $;                          2AF4|2536  23D8  2256
109 5  LAY:HEADER HOLD                                                      2AFA|0 84 48 4F 4C C4
109 5  LAY:HEADER HOLD                                                      2B00|2AE9  2506
109 6   > $HOLD     ^ $LIT  $LAY   -1 LAY   $HLD  $LAY                      2B04|2006  FFFF  263E
109 7              ^ $+!  $LAY   $HLD  $LAY   $@  $LAY                      2B0A|2372  263E  239C
109 8              ^ $C!  $LAY   $;                                         2B10|23F4  2256
109 9  LAY:HEADER PAD                                                       2B14|83 50 41 C4
109 9  LAY:HEADER PAD                                                       2B18|2AFB  2506
109 10  > $PAD      ^ $HERE  $LAY   $LIT  $LAY   44 LAY  -->               2B1C|271C  2006  0044
110 0              ^ $+  $LAY   $;                                          2B22|22D6  2256
```

```
110 1  LAY:HEADER WORD                                    2B26|0 84 57 4F 52 C4
110 1  LAY:HEADER WORD                                    2B2C|2B14  2506
110 2   > $WORD     ^ $BLK  $LAY   $@ $LAY   $0BRANCH $LAY  2B30|25AC  239C  2042
110 3              ^ 0C LAY   $BLK  $LAY   $@  $LAY        2B36|000C  25AC  239C
110 4              ^ $BLOCK  $LAY                          2B3C|34B6
110 5              ^ $BRANCH  $LAY   06 LAY  $TIB  $LAY   2B3E|202C  0006  2562
110 6              ^ $@  $LAY   $IN  $LAY   $@  $LAY       2B44|239C  25B6  239C
110 7              ^ $+  $LAY   $SWAP  $LAY   $ENCLOSE  $LAY  2B4A|22D6  234A  2140
110 8              ^ $HERE  $LAY  $LIT  $LAY  22 LAY       2B50|271C  2006  0022
110 9              ^ $BLANKS  $LAY  $IN  $LAY   $+!  $LAY  2B56|2AF2  25B6  2372
110 10             ^ $OVER  $LAY   $-  $LAY   $>R  $LAY    2B5C|2322  275A  227A
110 11             ^ $R  $LAY   $HERE  $LAY   $C!  $LAY    2B62|2298  271C  23F4
110 12             ^ $+  $LAY   $HERE  $LAY   $1+  $LAY    2B68|22D6  271C  26FE
110 13             ^ $R>   $LAY   $CMOVE  $LAY   $;        2B6E|228A  2188  2256
110 14 LAY:HEADER (NUMBER)                                2B74|0 88 28 4E 55 4D 42 45 52 A9
110 14 LAY:HEADER (NUMBER)                                2B7E|2B27  2506
110 15  > $(NUMBER) ^ $1+ $LAY   $DUP $LAY   $>R  $LAY  --> 2B82|26FE  2360  227A
111 0              ^ $C@  $LAY   $BASE  $LAY   $@  $LAY    2B88|23AE  260C  239C
111 1              ^ $DIGIT  $LAY   $0BRANCH  $LAY   2C  LAY  2B8E|20A2  2042  002C
111 2              ^ $SWAP  $LAY   $BASE  $LAY   $@  $LAY  2B94|234A  260C  239C
111 3              ^ $U*  $LAY   $DROP  $LAY   $ROT  $LAY  2B9A|21BE  2338  278C
111 4              ^ $BASE  $LAY   $@  $LAY   $U*  $LAY    2BA0|260C  239C  21BE
111 5              ^ $D+  $LAY   $DPL  $LAY   $@  $LAY     2BA6|22FA  2616  239C
111 6              ^ $1+  $LAY   $0BRANCH  $LAY   8 LAY   2BAC|26FE  2042  0008
111 7              ^ $1  $LAY   $DPL  $LAY   $+!  $LAY     2BB2|251C  2616  2372
111 8              ^ $R>  $LAY   $BRANCH  $LAY   -3A  LAY  2BB8|228A  202C  FFC6
111 9              ^ $R>  $LAY   $;                        2BBE|228A  2256
111 10 LAY:HEADER NUMBER                                  2BC2|0 86 4E 55 4D 42 45 D2
111 10 LAY:HEADER NUMBER                                  2BCA|2B75  2506
111 11  > $NUMBER   ^ $0  $LAY   $0  $LAY   $ROT  $LAY    2BCE|2514  2514  278C
111 12             ^ $DUP  $LAY   $1+  $LAY   $C@  $LAY   2BD4|2360  26FE  23AE
111 13             ^ $LIT  $LAY   2D  LAY   $=  $LAY      2BDA|2006  002D  2766
111 14             ^ $DUP  $LAY   $>R  $LAY   $+  $LAY    2BE0|2360  227A  22D6
111 15             ^ $LIT  $LAY   -1 LAY   $DPL  $LAY  --> 2BE6|2006  FFFF  2616
112 0              ^ $!  $LAY   $(NUMBER)  $LAY   $DUP  $LAY  2BEC|23C2  2B80  2360
112 1              ^ $C@  $LAY   $BL  $LAY   $-  $LAY      2BF2|23AE  2536  275A
112 2              ^ $0BRANCH  $LAY   16 LAY   $DUP  $LAY  2BF8|2042  0016  2360
112 3              ^ $C@  $LAY   $LIT  $LAY   2E LAY       2BFE|23AE  2006  002E
112 4              ^ $-  $LAY   $0  $LAY   $?ERROR  $LAY   2C04|275A  2514  285C
112 5              ^ $0  $LAY   $BRANCH  $LAY   -24 LAY    2C0A|2514  202C  FFDC
112 6              ^ $DROP  $LAY   $R>  $LAY   $0BRANCH  $LAY  2C10|2338  228A  2042
112 7              ^ 4 LAY  $DMINUS  $LAY   $;             2C16|0004  2310  2256
112 8  LAY:HEADER -FIND                                   2C1C|85 2D 46 49 4E C4
112 8  LAY:HEADER -FIND                                   2C22|2BC3  2506
112 9   > $-FIND    ^ $BL  $LAY   $WORD  $LAY   $HERE  $LAY  2C26|2536  2B2E  271C
112 10             ^ $CONTEXT  $LAY   $@  $LAY   $@  $LAY  2C2C|25E6  239C  239C
112 11             ^ $(FIND)  $LAY   $DUP  $LAY   $0=  $LAY  2C32|20DE  2360  22A8
112 12             ^ $0BRANCH  $LAY   A LAY   $DROP  $LAY  2C38|2042  000A  2338
112 13             ^ $HERE  $LAY   $LATEST  $LAY   $(FIND)  $LAY  2C3E|271C  27EE  20DE
112 14             ^ $;                                    2C44|2256
112 15 LAY:HEADER ERROR   -->                             2C46|85 45 52 52 4F D2
112 15 LAY:HEADER ERROR   -->                             2C4C|2C1C  2506
113 0   > $ERROR    ^ $WARNING  $LAY   $@  $LAY   $0<  $LAY  2C50|257C  239C  22C0
113 1              ^ $0BRANCH  $LAY   4 LAY   $ABORT  $LAY  2C56|2042  0004  2F58
113 2              ^ $HERE  $LAY   $COUNT  $LAY   $TYPE  $LAY  2C5C|271C  2980  2994
113 3              ^ $(.")  $LAY   0320 LAY  203F  LAY     2C62|29F6  0320  203F
113 4              ^ $MESSAGE  $LAY                        2C68|354E
113 5              ^ $SP!  $LAY   $IN  $LAY   $@  $LAY     2C6A|2232  25B6  239C
113 6              ^ $BLK  $LAY   $@  $LAY   $QUIT  $LAY   2C70|25AC  239C  2F26
113 7              ^ $;                                    2C76|2256
```

```
113 8  LAY:HEADER MIN                                                  2C78|83 4D 49 CE
113 8  LAY:HEADER MIN                                                  2C7C|2C46  2506
113 9   > $MIN      ^ $OVER  $LAY   $OVER  $LAY   $> $LAY              2C80|2322  2322  277E
113 10             ^ $0BRANCH  $LAY  4 LAY   $SWAP  $LAY             2C86|2042  0004  234A
113 11             ^ $DROP  $LAY   $;                                 2C8C|2338  2256
113 12 LAY:HEADER ID.                                                  2C90|83 49 44 AE
113 12 LAY:HEADER ID.                                                  2C94|2C78  2506
113 13  > $ID.      ^ $PAD  $LAY   $LIT  $LAY   20 LAY                 2C98|2B1A  2006  0020
113 14             ^ $LIT  $LAY   5F  LAY   $FILL  $LAY              2C9E|2006  005F  23D8
113 15             ^ $DUP  $LAY   $PFA  $LAY   $LFA  $LAY  -->       2CA4|2360  2B32  27FE
114 0              ^ $OVER  $LAY   $-  $LAY   $PAD  $LAY             2CAA|2322  275A  2B1A
114 1              ^ $SWAP  $LAY   $CMOVE  $LAY   $PAD  $LAY        2CB0|234A  2188  2B1A
114 2              ^ $COUNT  $LAY   $LIT  $LAY   1F  LAY             2CB6|2980  2006  001F
114 3              ^ $AND  $LAY   $TYPE  $LAY   $SPACE  $LAY        2CBC|21EA  2994  27A0
114 4              ^ $;                                               2CC2|2256
114 5  LAY:HEADER CREATE                                               2CC4|0 86 43 52 45 41 54 C5
114 5  LAY:HEADER CREATE                                               2CCC|2C90  2506
114 6   > $CREATE   ^ $DICTLIMIT  $LAY   $@  $LAY   $HERE  $LAY       2CD0|267C  239C  271C
114 7              ^ $LIT  $LAY   30  LAY   $+  $LAY   $<  $LAY      2CD6|2006  0030  22D6  2772
114 8              ^ $2  $LAY   $?ERROR  $LAY   $-FIND  $LAY        2CDE|2524  285C  2C24
114 9              ^ $0BRANCH  $LAY   10  LAY                       2CE4|2042  0010
114 10             ^ $DROP  $LAY   $NFA   $LAY   $ID.  $LAY         2CE8|2338  2B1C  2C96
114 11             ^ $LIT  $LAY   4  LAY   $MESSAGE  $LAY           2CEE|2006  0004  354E
114 12             ^ $SPACE $LAY $HERE $LAY  $DUP $LAY  $C@  $LAY   2CF4|27A0  271C  2360  23AE
114 13             ^ $XOR  $LAY   $1  $LAY   $AND  $LAY   $0=  $LAY 2CFC|220E  251C  21EA  22A8
114 14             ^ $0BRANCH  $LAY  1C  LAY   $HERE  $LAY          2D04|2042  001C  271C
114 15             ^ $DUP  $LAY   $DUP  $LAY   $1+  $LAY  -->       2D0A|2360  2360  26FE
115 0              ^ $OVER  $LAY   $C@  $LAY   $1+  $LAY            2D10|2322  23AE  26FE
115 1              ^ $CMOVE  $LAY   $0  $LAY   $SWAP  $LAY         2D16|2188  2514  234A
115 2              ^ $C!  $LAY   $1  $LAY   $ALLOT  $LAY           2D1C|23F4  251C  272C
115 3              ^ $HERE  $LAY   $DUP  $LAY                       2D22|271C  2360
115 4              ^ $C@  $LAY   $WIDTH  $LAY   $@  $LAY           2D26|23AE  256E  239C
115 5              ^ $MIN  $LAY   $1+   $LAY   $ALLOT  $LAY       2D2C|2C7E  26FE  272C
115 6              ^ $DUP  $LAY   $LIT  $LAY   A0  LAY             2D32|2360  2006  00A0
115 7              ^ $TOGGLE  $LAY   $HERE  $LAY   $1  $LAY       2D38|238A  271C  251C
115 8              ^ $-  $LAY   $LIT  $LAY   80 LAY                 2D3E|275A  2006  0080
115 9              ^ $TOGGLE  $LAY   $LATEST  $LAY   $,  $LAY     2D44|238A  27EE  2738
115 10             ^ $CURRENT  $LAY   $@  $LAY   $!   $LAY        2D4A|25F4  239C  23C2
115 11             ^ $HERE  $LAY   $2+   $LAY   $,  $LAY           2D50|271C  270C  2738
115 12             ^ $;                                             2D56|2256
116 0  LAY:HEADER  ;  IMMED                                            2D58|C1 BA
116 0  LAY:HEADER  ;  IMMED                                            2D5A|2CC5  2506
116 1   > $;       ^ $?EXEC  $LAY   $!CSP  $LAY   $CURRENT  $LAY     2D5E|288E  2B48  25F4
116 2              ^ $@  $LAY   $CONTEXT  $LAY   $!  $LAY           2D64|239C  25E6  23C2
116 3              ^ $CREATE  $LAY   $]  $LAY   $LIT  $LAY         2D6A|2CCE  2916  2006
116 4              ^ -2  LAY   $DP  $LAY   $+!  $LAY               2D70|FFFE  2592  2372
116 5              ^ $COMPILE  $LAY   $(NEST)  LAY  $;             2D76|28F2  2506  2256
116 6  LAY:HEADER !CODE                                                2D7C|85 21 43 4F 44 C5
116 6  LAY:HEADER !CODE                                                2D82|2D58  2506
116 7   > $!CODE    ^ $CREATE  $LAY   $SMUDGE  $LAY   $LATEST  $LAY  2D86|2CCE  292C  27EE
116 8              ^ $PFA  $LAY   $CFA  $LAY   $!  $LAY              2D8C|2832  280E  23C2
116 9              ^ $,  $LAY   $;  -->                             2D92|2738  2256
117 0  LAY:HEADER CONSTANT                                             2D96|0 88 43 4F 4E 53 54 41 4E D4
117 0  LAY:HEADER CONSTANT                                             2DA0|2D7C  2506
117 1   > $CONSTANT ^ $LIT  $LAY   $(CONST)  LAY   $!CODE  $LAY      2DA4|2006  24BA  2D84
117 2              ^ $;                                             2DAA|2256
117 3  LAY:HEADER VARIABLE                                             2DAC|0 88 56 41 52 49 41 42 4C C5
117 3  LAY:HEADER VARIABLE                                             2DB6|2D97  2506
117 4   > $VARIABLE ^ $LIT  $LAY   $(VAR)  LAY  $!CODE  $LAY        2DBA|2006  24A6  2D84
117 5              ^ $;                                             2DC0|2256
```

```
117 6  LAY:HEADER USER                                                  2DC2|0 84 55 53 45 D2
117 6  LAY:HEADER USER                                                  2DC8|2DAD  2506
117 7   > $USER     ^ $LIT  $LAY   $(USER)  LAY   $!CODE  $LAY         2DCC|2006  24CE  2D84
117 8              ^ $;                                                 2DD2|2256
117 9  LAY:HEADER <BUILDS                                              2DD4|87 3C 42 55 49 4C 44 D3
117 9  LAY:HEADER <BUILDS                                              2DDC|2DC3  2506
117 10  > $<BUILDS  ^ $0  $LAY   $CONSTANT  $LAY  $;                   2DE0|2514  2DA2  2256
117 11 LAY:HEADER DOES>                                                2DE6|85 44 4F 45 53 BE
117 11 LAY:HEADER DOES>                                                2DEC|2DD4  2506
117 12  > $DOES>    ^ $R>  $LAY   $LATEST  $LAY   $PFA  $LAY          2DF0|228A  27EE  2832
117 13             ^ $!  $LAY   $(;CODE)  $LAY                         2DF6|23C2  296A
117 14  > $DOESCODE ^ IP AR ^ RS -[ .W .MOVE                           2DFA|3F0C
117 15             ^ WP [+ ^ IP AR .W .MOVE   -->                      2DFC|385D
118 0              ^ WP AR ^ CS -[ .W .MOVE                            2DFE|370D
118 1                NEXT                                              2E00|3A5C  305D  4ED0
118 2  LAY:HEADER LITERAL  IMMED                                       2E06|C7 4C 49 54 45 52 41 CC
118 2  LAY:HEADER LITERAL  IMMED                                       2E0E|2DE6  2506
118 3   > $LITERAL  ^ $STATE  $LAY   $@  $LAY   $0BRANCH  $LAY        2E12|2600  239C  2042
118 4              ^ 8 LAY   $COMPILE  $LAY   $LIT  $LAY              2E18|0008  28F2  2006
118 5              ^ $,  $LAY   $;                                     2E1E|2738  2256
118 6  LAY:HEADER DLITERAL  IMMED                                      2E22|0 C8 44 4C 49 54 45 52 41 CC
118 6  LAY:HEADER DLITERAL  IMMED                                      2E2C|2E06  2506
118 7   > $DLITERAL ^ $STATE  $LAY   $@  $LAY   $0BRANCH  $LAY        2E30|2600  239C  2042
118 8              ^ 8 LAY   $SWAP  $LAY   $LITERAL  $LAY            2E36|0008  234A  2E10
118 9              ^ $LITERAL  $LAY   $;                               2E3C|2E10  2256
118 10 LAY:HEADER ?STACK                                               2E40|0 86 3F 53 54 41 43 CB
118 10 LAY:HEADER ?STACK                                               2E48|2E23  2506
118 11  > $?STACK   ^ $S0  $LAY   $@  $LAY   $DUP  $LAY               2E4C|254E  239C  2360
118 12             ^ $SP@  $LAY   $<  $LAY   $1  $LAY                 2E52|2220  2772  251C
118 13             ^ $?ERROR  $LAY   $LIT  $LAY   100  LAY           2E58|285C  2006  0100
118 14             ^ $+  $LAY   $SP@  $LAY   $<  $LAY                 2E5E|22D6  2220  2772
118 15             ^ $LIT  $LAY   7 LAY   $?ERROR  $LAY  -->         2E64|2006  0007  285C
119 0              ^ $;                                                2E6A|2256
119 1  LAY:HEADER INTERPRET                                            2E6C|89 49 4E 54 45 52 50 52 45 D4
119 1  LAY:HEADER INTERPRET                                            2E76|2E41  2506
119 2   > $INTERPRET ^ $-FIND  $LAY   $0BRANCH  $LAY   1E LAY         2E7A|2C24  2042  001E
119 3              ^ $STATE  $LAY   $@  $LAY   $<  $LAY                2E80|2600  239C  2772
119 4              ^ $0BRANCH  $LAY   A LAY   $CFA  $LAY              2E86|2042  000A  280E
119 5              ^ $,  $LAY   $BRANCH  $LAY   6 LAY                 2E8C|2738  202C  0006
119 6              ^ $CFA  $LAY   $EXECUTE  $LAY   $?STACK  $LAY     2E92|280E  201A  2E4A
119 7              ^ $BRANCH  $LAY   1C  LAY   $HERE  $LAY           2E98|202C  001C  271C
119 8              ^ $NUMBER  $LAY   $DPL  $LAY   $@  $LAY           2E9E|2BCC  2616  239C
119 9              ^ $1+  $LAY   $0BRANCH  $LAY   8 LAY              2EA4|26FE  2042  0008
119 10             ^ $DLITERAL  $LAY   $BRANCH  $LAY   6 LAY        2EAA|2E2E  202C  0006
119 11             ^ $DROP  $LAY   $LITERAL  $LAY   $?STACK  $LAY   2EB0|2338  2E10  2E4A
119 12             ^ $BRANCH  $LAY  -3E LAY   $;                     2EB6|202C  FFC2  2256
119 13 LAY:HEADER VOCABULARY                                           2EBC|0 8A 56 4F 43 41 42 55 4C 41 52 D9
119 13 LAY:HEADER VOCABULARY                                           2EC8|2E6C  2506
119 14  > $VOCABULARY ^ $<BUILDS  $LAY   $LIT  $LAY   81A0  LAY       2ECC|2DDE  2006  81A0
119 15             ^ $,  $LAY   $CURRENT  $LAY   $@  $LAY  -->       2ED2|2738  25F4  239C
120 0              ^ $CFA  $LAY   $,  $LAY   $HERE  $LAY             2ED8|280E  2738  271C
120 1              ^ $VOC-LINK  $LAY   $@  $LAY   $,  $LAY           2EDE|25A2  239C  2738
120 2              ^ $VOC-LINK  $LAY   $!  $LAY   $DOES>  $LAY       2EE4|25A2  23C2  2DEE
120 3   > $VOCMID    ^ $2+  $LAY   $CONTEXT  $LAY   $!  $LAY         2EEA|270C  25E6  23C2
120 4              ^ $;                                               2EF0|2256
120 5  LAYCODEHEADER FORTH  IMMED                                      2EF2|C5 46 4F 52 54 C8
120 5  LAYCODEHEADER FORTH  IMMED                                      2EF8|2EBD
120 6   > $FORTH   ^ -2  68HERE  +!  $DOESCODE   LAY  $VOCMID   LAY   2EFA|2DFA  2EEA
120 7             ^ 81A0 LAY   0 ( COLD REFILLS THIS ) LAY   0  LAY   2EFE|81A0  0000  0000
```

```
120 8  LAY:HEADER DEFINITIONS
120 8  LAY:HEADER DEFINITIONS
120 9   > $DEFINITIONS ^ $CONTEXT  $LAY   $@  $LAY   $CURRENT  $LAY
120 10                 ^ $!  $LAY   $;
120 11 LAY:HEADER QUIT
120 11 LAY:HEADER QUIT
120 12  > $QUIT       ^ $0  $LAY   $BLK  $LAY   $!  $LAY
120 13                ^ $[  $LAY   $RP!  $LAY   $CR  $LAY
120 14                ^ $QUERY  $LAY   $INTERPRET  $LAY   $STATE  $LAY
120 15                ^ $@  $LAY   $0=  $LAY   $0BRANCH  $LAY  -->
121 0                 ^ A LAY   $(,")  $LAY   0520  LAY   2020  LAY
121 1                 ^ 4F4B  LAY   $BRANCH  $LAY   -1C  LAY
121 2                 ^ $;
121 3  LAY:HEADER ABORT
121 3  LAY:HEADER ABORT
121 4   > $ABORT     ^ $SP!  $LAY   $DECIMAL  $LAY   $CR  $LAY
121 5                 ^ $(,")  $LAY   1536 LAY   3830  LAY
121 6                 ^ 3030  LAY   2066  LAY   6967  LAY
121 7                 ^ 2D46  LAY   4F52  LAY   5448  LAY
121 8                 ^ 2056  LAY   332E  LAY   3320  LAY
121 9                 ^ ( 68000 fig-FORTH V3.3)
121 10                ^ $FORTH  $LAY   $DEFINITIONS $LAY    $DR0  $LAY
121 11                ^ $QUIT  $LAY   $;
122 0  LAY:HEADER ;  IMMED
122 0  LAY:HEADER ;  IMMED
122 1                 ^ $?CSP  $LAY   $COMPILE  $LAY   $;S  $LAY
122 2                 ^ $SMUDGE  $LAY   $[  $LAY   $;
122 5  LAY:HEADER ."  IMMED
122 5  LAY:HEADER ."  IMMED
122 6   > $."        ^ $LIT  $LAY  22 LAY   $STATE  $LAY
122 7                 ^ $@  $LAY   $0BRANCH  $LAY   1A LAY
122 8                 ^ $COMPILE  $LAY   $(,")  $LAY   $WORD  $LAY
122 9                 ^ $HERE  $LAY   $C@  $LAY   $2+  $LAY
122 10                ^ $LIT  $LAY    FFFE LAY   $AND  $LAY
122 11                ^ $ALLOT  $LAY   $BRANCH  $LAY   0A LAY
122 12                ^ $WORD  $LAY   $HERE  $LAY   $COUNT  $LAY
122 13                ^ $TYPE  $LAY   $;
122 14 LAY:HEADER (  IMMED
122 14 LAY:HEADER (  IMMED
122 15  > $(         ^ $LIT  $LAY   29 LAY   $WORD  $LAY  $;  -->
123 0  LAY:HEADER  IMMEDIATE
123 0  LAY:HEADER  IMMEDIATE
123 1   > $IMMEDIATE ^ $LATEST  $LAY  $LIT  $LAY  40 LAY
123 2                 ^ $TOGGLE  $LAY  $;
123 3  LAY:HEADER  [COMPILE]  IMMED
123 3  LAY:HEADER  [COMPILE]  IMMED
123 4   > $[COMPILE] ^ $-FIND  $LAY   $0=  $LAY   $0  $LAY
123 5                 ^ $?ERROR  $LAY   $DROP  $LAY   $CFA  $LAY
123 6                 ^ $,  $LAY   $;
123 7  LAY:HEADER  '  IMMED
123 7  LAY:HEADER  '  IMMED
123 8   > $'         ^ $-FIND  $LAY   $0=  $LAY   $0  $LAY
123 9                 ^ $?ERROR  $LAY   $DROP  $LAY   $LITERAL  $LAY
123 10                ^ $;
```

```
2F04|8B 44 45 46 49 4E 49 54 49 4F 4E D3
2F10|2EF2  2506
2F14|25E6  239C  25F4
2F1A|23C2  2256
2F1E|0 84 51 55 49 D4
2F24|2F04  2506
2F28|2514  25AC  23C2
2F2E|2908  2244  2488
2F34|2A88  2E78  2600
2F3A|239C  22A8  2042
2F40|000A  29F6  0520  2020
2F48|4F4B  202C  FFE4
2F4E|2256
2F50|85 41 42 4F 52 D4
2F56|2F1F  2506
2F5A|2232  2954  2488
2F60|29F6  1536  3830
2F66|3030  2066  6967
2F6C|2D46  4F52  5448
2F72|2056  332E  3320
2F78|
2F78|2EFA  2F12  3702
2F7E|2F26  2256
2F82|C1 BB
2F84|2F50  2506
2F88|28BA  28F2  2256
2F8E|292C  2908  2256
2F94|0 C2 2E A2
2F98|2F82  2506
2F9C|2006  0022  2600
2FA2|239C  2042  001A
2FA8|28F2  29F6  2B2E
2FAE|271C  23AE  270C
2FB4|2006  FFFE  21EA
2FBA|272C  202C  000A
2FC0|2B2E  271C  2980
2FC6|2994  2256
2FCA|C1 AB
2FCC|2F95  2506
2FD0|2006  0029  2B2E  2256
2FD8|89 49 4D 4D 45 44 49 41 54 C5
2FE2|2FCA  2506
2FE6|27EE  2006  0040
2FEC|238A  2256
2FF0|C9 5B 43 4F 4D 50 49 4C 45 DD
2FFA|2FD8  2506
2FFE|2C24  22A8  2514
3004|285C  2338  280E
300A|2738  2256
300E|C1 A7
3010|2FF0  2506
3014|2C24  22A8  2514
301A|285C  2338  2E10
3020|2256
```

Note: Change "V3.3" to "V1.0" by changing 33 byte at 2F74 to 31 and 33 byte at 2F76 to 30.

```
123 11 LAY:HEADER  FORGET                                                    3022|0 86 46 4F 52 47 45 D4
123 11 LAY:HEADER  FORGET                                                    302A|300E  2506
123 12  > $FORGET   ^ $CURRENT  $LAY  $@  $LAY   $CONTEXT  $LAY             302E|25F4  239C  25E6
123 13              ^ $@  $LAY   $-  $LAY   $LIT  $LAY  18 LAY              3034|239C  275A  2006  0018
123 14              ^ $?ERROR  $LAY  $'  $LAY   $DUP  $LAY                  303C|285C  3012  2360
123 15              ^ $FENCE  $LAY   $@  $LAY   $<  $LAY  -->               3042|2588  239C  2772
124 0               ^ $LIT  $LAY  15  LAY   $?ERROR  $LAY                   3048|2006  0015  285C
124 1               ^ $DUP  $LAY   $NFA  $LAY   $DP  $LAY                   304E|2360  2B1C  2592
124 2               ^ $!  $LAY   $LFA  $LAY   $@  $LAY                      3054|23C2  27FE  239C
124 3               ^ $CURRENT  $LAY  $@  $LAY  $!  $LAY  $;                305A|25F4  239C  23C2  2256
124 4  LAY:HEADER  BACK                                                      3062|0 84 42 41 43 CB
124 4  LAY:HEADER  BACK                                                      3068|3023  2506
124 5   > $BACK     ^ $HERE  $LAY  $-  $LAY  $,  $LAY  $;                   306C|271C  275A  2738  2256
124 6  LAY:HEADER  BEGIN  IMMED                                              3074|C5 42 45 47 49 CE
124 6  LAY:HEADER  BEGIN  IMMED                                              307A|3063  2506
124 7               ^ $?COMP  $LAY   $HERE  $LAY  $1  $LAY  $;              307E|2876  271C  251C  2256
124 8  LAY:HEADER  ENDIF  IMMED                                              3086|C5 45 4E 44 49 C6
124 8  LAY:HEADER  ENDIF  IMMED                                              308C|3074  2506
124 9   > $ENDIF    ^ $?COMP  $LAY  $2  $LAY                                 3090|2876  2524
124 10              ^ $?PAIRS  $LAY   $HERE  $LAY   $OVER  $LAY             3094|28A6  271C  2322
124 11              ^ $-  $LAY   $SWAP  $LAY   $!  $LAY   $;               309A|275A  234A  23C2  2256
124 12 LAY:HEADER  THEN  IMMED                                               30A2|0 C4 54 48 45 CE
124 12 LAY:HEADER  THEN  IMMED                                               30A8|3086  2506
124 13              ^ $ENDIF  $LAY  $;                                       30AC|308E  2256
124 14 LAY:HEADER  DO  IMMED                                                 30B0|0 C2 44 CF
124 14 LAY:HEADER  DO  IMMED                                                 30B4|30A3  2506
124 15              ^ $COMPILE  $LAY  $(DO)  $LAY  $HERE  $LAY -->           30B8|2BF2  2090  271C
125 0               ^ $3  $LAY    $;                                         30BE|252C  2256
125 1  LAY:HEADER  LOOP   IMMED                                              30C2|0 C4 4C 4F 4F D0
125 1  LAY:HEADER  LOOP   IMMED                                              30C8|30B1  2506
125 2               ^ $3  $LAY  $?PAIRS  $LAY                                30CC|252C  28A6
125 3               ^ $COMPILE  $LAY   $(LOOP)  $LAY   $BACK  $LAY          30D0|28F2  205A  306A
125 4               ^ $;                                                     30D6|2256
125 5  LAY:HEADER  +LOOP  IMMED                                              30D8|C5 2B 4C 4F 4F D0
125 5  LAY:HEADER  +LOOP  IMMED                                              30DE|30C3  2506
125 6               ^ $3  $LAY  $?PAIRS  $LAY                                30E2|252C  28A6
125 7               ^ $COMPILE  $LAY   $(+LOOP)  $LAY  $BACK  $LAY           30E6|28F2  2080  306A
125 8               ^ $;                                                     30EC|2256
125 9  LAY:HEADER  UNTIL  IMMED                                              30EE|C5 55 4E 54 49 CC
125 9  LAY:HEADER  UNTIL  IMMED                                              30F4|30D8  2506
125 10  > $UNTIL   ^ $1  $LAY  $?PAIRS  $LAY                                 30F8|251C  28A6
125 11              ^ $COMPILE  $LAY  $0BRANCH  $LAY  $BACK  $LAY            30FC|28F2  2042  306A
125 12              ^ $;                                                     3102|2256
125 13 LAY:HEADER  END  IMMED                                                3104|C3 45 4E C4
125 13 LAY:HEADER  END  IMMED                                                3108|30EE  2506
125 14              ^ $UNTIL  $LAY  $;                                       310C|30F6  2256
126 0  LAY:HEADER  AGAIN  IMMED                                              3110|C5 41 47 41 49 CE
126 0  LAY:HEADER  AGAIN  IMMED                                              3116|3104  2506
126 1   > $AGAIN    ^ $1  $LAY   $?PAIRS  $LAY   $COMPILE  $LAY             311A|251C  28A6  28F2
126 2               ^ $BRANCH  $LAY   $BACK  $LAY  $;                        3120|202C  306A  2256
126 3  LAY:HEADER  REPEAT  IMMED                                             3126|0 C6 52 45 50 45 41 D4
126 3  LAY:HEADER  REPEAT  IMMED                                             312E|3110  2506
126 4               ^ $>R  $LAY   $>R  $LAY   $AGAIN  $LAY                  3132|227A  227A  3118
126 5               ^ $R>  $LAY   $R>  $LAY   $2  $LAY                      3138|228A  228A  2524
126 6               ^ $-  $LAY   $ENDIF  $LAY  $;                           313E|275A  308E  2256
126 7  LAY:HEADER  IF  IMMED                                                 3144|0 C2 49 C6
126 7  LAY:HEADER  IF  IMMED                                                 3148|3127  2506
126 8   > $IF      ^ $COMPILE  $LAY   $0BRANCH  $LAY   $HERE  $LAY          314C|28F2  2042  271C
126 9               ^ $0  $LAY  $,  $LAY   $2  $LAY   $;                    3152|2514  2738  2524  2256
```

```
126 10 LAY:HEADER  ELSE  IMMED                                    315A|0C4 45 4C 53 C5
126 10 LAY:HEADER  ELSE  IMMED                                    3160|3145  2506
126 11             ^ $2  $LAY  $?PAIRS  $LAY   $COMPILE  $LAY    3164|2524  28A6  28F2
126 12             ^ $BRANCH  $LAY   $HERE  $LAY   $0  $LAY      316A|202C  271C  2514
126 13             ^ $,  $LAY   $SWAP  $LAY   $2  $LAY          3170|273B  234A  2524
126 14             ^ $ENDIF  $LAY   $2  $LAY   $;               3176|308E  2524  2256
127 0  LAY:HEADER  WHILE  IMMED                                   317C|C5 57 48 49 4C C5
127 0  LAY:HEADER  WHILE  IMMED                                   3182|315B  2506
127 1              ^ $IF  $LAY   $2+  $LAY   $;                   3186|314A  270C  2256
127 2  LAY:HEADER  +-                                            318C|0 82 2B AD
127 2  LAY:HEADER  +-                                            3190|317C  2506
127 3   > $+-      ^ $0<  $LAY   $0BRANCH  $LAY   4 LAY          3194|22C0  2042  0004
127 4              ^ $MINUS  $LAY   $;                            319A|22EA  2256
127 5  LAY:HEADER  D+-                                           319E|83 44 2B AD
127 5  LAY:HEADER  D+-                                           31A2|318D  2506
127 6   > $D+-     ^ $0<  $LAY   $0BRANCH  $LAY   4 LAY          31A6|22C0  2042  0004
127 7              ^ $DMINUS  $LAY   $;                           31AC|2310  2256
127 8  LAY:HEADER  ABS                                           31B0|83 41 42 D3
127 8  LAY:HEADER  ABS                                           31B4|319E  2506
127 9   > $ABS     ^ $DUP  $LAY   $+-  $LAY   $;                 31B8|2360  3192  2256
127 10 LAY:HEADER  DABS                                          31BE|0 84 44 41 42 D3
127 10 LAY:HEADER  DABS                                          31C4|31B0  2506
127 11  > $DABS    ^ $DUP $LAY   $D+-  $LAY   $;                 31C8|2360  31A4  2256
127 12 LAY:HEADER  MAX                                           31CE|83 4D 41 D8
127 12 LAY:HEADER  MAX                                           31D2|31BF  2506
127 13  > $MAX     ^ $OVER  $LAY   $OVER  $LAY   $<  $LAY        31D6|2322  2322  2772
127 14             ^ $0BRANCH  $LAY  4 LAY   $SWAP  $LAY       31DC|2042  0004  234A
127 15             ^ $DROP  $LAY   $;    -->                    31E2|2338  2256
128 0  LAY:HEADER  M*                                            31E6|0 82 4D AA
128 0  LAY:HEADER  M*                                            31EA|31CE  2506
128 1   > $M*      ^ $OVER  $LAY   $OVER  $LAY   $XOR  $LAY      31EE|2322  2322  220E
128 2              ^ $>R  $LAY   $ABS  $LAY   $SWAP  $LAY       31F4|227A  31B6  234A
128 3              ^ $ABS  $LAY   $U*  $LAY   $R>  $LAY         31FA|31B6  21BE  228A
128 4              ^ $D+-  $LAY   $;                             3200|31A4  2256
128 5  LAY:HEADER  M/                                            3204|0 82 4D AF
128 5  LAY:HEADER  M/                                            3208|31E7  2506
128 6   > $M/      ^ $OVER  $LAY   $>R  $LAY   $>R  $LAY         320C|2322  227A  227A
128 7              ^ $DABS  $LAY   $R  $LAY   $ABS  $LAY        3212|31C6  229B  31B6
128 8              ^ $U/  $LAY   $R>  $LAY   $R  $LAY           3218|21D2  228A  2298
128 9              ^ $XOR  $LAY   $+-  $LAY   $SWAP  $LAY      321E|220E  3192  234A
128 10             ^ $R>  $LAY   $+-  $LAY   $SWAP  $LAY  $;   3224|228A  3192  234A  2256
128 11 LAY:HEADER *                                              322C|81 AA
128 11 LAY:HEADER *                                              322E|3205  2506
128 12  > $*       ^ $U*  $LAY   $DROP  $LAY   $;                3232|21BE  2338  2256
128 13 LAY:HEADER  /MOD                                          3238|0 84 2F 4D 4F C4
128 13 LAY:HEADER  /MOD                                          323E|322C  2506
128 14  > $/MOD    ^ $>R  $LAY   $S->D  $LAY   $R>  $LAY         3242|227A  241E  228A
128 15             ^ $M/  $LAY   $;    -->                      3248|320A  2256
129 0  LAY:HEADER  /                                             324C|81 AF
129 0  LAY:HEADER  /                                             324E|3239  2506
129 1   > $/       ^ $/MOD  $LAY   $SWAP  $LAY   $DROP  $LAY  $; 3252|3240  234A  2338  2256
129 2  LAY:HEADER  MOD                                           325A|83 4D 4F C4
129 2  LAY:HEADER  MOD                                           325E|324C  2506
129 3   > $MOD     ^ $/MOD  $LAY   $DROP  $LAY   $;              3262|3240  2338  2256
129 4  LAY:HEADER  */MOD                                        3268|85 2A 2F 4D 4F C4
129 4  LAY:HEADER  */MOD                                        326E|325A  2506
129 5   > $*/MOD   ^ $>R  $LAY   $M*  $LAY   $R>  $LAY         3272|227A  31EC  228A
129 6              ^ $M/  $LAY   $;                             3278|320A  2256
```

```
129 7  LAY:HEADER  */                                                    327C|0 82 2A AF
129 7  LAY:HEADER  */                                                    3280|3268  2506
129 8   > $*/       ^ $*/MOD  $LAY   $SWAP  $LAY   $DROP  $LAY  $;     3284|3270  234A  2338  2256
129 9  LAY:HEADER  M/MOD                                                 328C|85 4D 2F 4D 4F C4
129 9  LAY:HEADER  M/MOD                                                 3292|327D  2506
129 10  > $M/MOD    ^ $>R  $LAY   $0  $LAY   $R  $LAY                   3296|227A  2514  2298
129 11             ^ $U/  $LAY   $R>  $LAY   $SWAP  $LAY               329C|21D2  228A  234A
129 12             ^ $>R  $LAY   $U/  $LAY   $R>  $LAY   $;           32A2|227A  21D2  228A  2256
130 0  LAY:HEADER  SPACES                                                32AA|0 86 53 50 41 43 45 D3
130 0  LAY:HEADER  SPACES                                                32B2|328C  2506
130 1   > $SPACES   ^ $0  $LAY   $MAX  $LAY   $-DUP  $LAY               32B6|2514  31D4  27B0
130 2              ^ $0BRANCH  $LAY   C LAY   $0  $LAY                  32BC|2042  000C  2514
130 3              ^ $(DO)  $LAY   $SPACE  $LAY   $(LOOP)  $LAY        32C2|2090  27A0  205A
130 4              ^ -4  LAY  $;                                         32C8|FFFC  2256
130 5  LAY:HEADER  <#                                                    32CC|0 82 3C A3
130 5  LAY:HEADER  <#                                                    32D0|32AB  2506
130 6   > $<#       ^ $PAD  $LAY   $HLD  $LAY   $!  $LAY   $;          32D4|2B1A  263E  23C2  2256
130 7  LAY:HEADER  #>                                                    32DC|0 82 23 BE
130 7  LAY:HEADER  #>                                                    32E0|32CD  2506
130 8   > $#>       ^ $DROP  $LAY   $DROP  $LAY   $HLD  $LAY           32E4|2338  2338  263E
130 9              ^ $@  $LAY   $PAD  $LAY   $OVER  $LAY               32EA|239C  2B1A  2322
130 10             ^ $-  $LAY   $;                                       32F0|275A  2256
130 11 LAY:HEADER  SIGN                                                  32F4|0 84 53 49 47 CE
130 11 LAY:HEADER  SIGN                                                  32FA|32DD  2506
130 12  > $SIGN     ^ $ROT  $LAY   $0<  $LAY   $0BRANCH  $LAY           32FE|278C  22C0  2042
130 13             ^ 8 LAY   $LIT  $LAY   2D  LAY                       3304|0008  2006  002D
130 14             ^ $HOLD  $LAY   $;                                    330A|2B02  2256
131 0  LAY:HEADER  #                                                     330E|81 A3
131 0  LAY:HEADER  #                                                     3310|32F5  2506
131 1   > $#        ^ $BASE  $LAY   $@  $LAY   $M/MOD  $LAY             3314|260C  239C  3294
131 2              ^ $ROT  $LAY   $LIT  $LAY   9 LAY                    331A|278C  2006  0009
131 3              ^ $OVER  $LAY   $<  $LAY   $0BRANCH  $LAY           3320|2322  2772  2042
131 4              ^ 8 LAY   $LIT  $LAY  7 LAY   $+  $LAY             3326|0008  2006  0007  22D6
131 5              ^ $LIT  $LAY  30 LAY   $+  $LAY                     332E|2006  0030  22D6
131 6              ^ $HOLD  $LAY   $;                                    3334|2B02  2256
131 7  LAY:HEADER  #S                                                    3338|0 82 23 D3
131 7  LAY:HEADER  #S                                                    333C|330E  2506
131 8   > $#S       ^ $#  $LAY   $OVER  $LAY   $OVER  $LAY             3340|3312  2322  2322
131 9              ^ $OR  $LAY   $0=  $LAY   $0BRANCH  $LAY           3346|21FC  22A8  2042
131 10             ^ -C  LAY   $;                                        334C|FFF4  2256
131 11 LAY:HEADER  D.R                                                   3350|83 44 2E D2
131 11 LAY:HEADER  D.R                                                   3354|3339  2506
131 12  > $D.R      ^ $>R  $LAY   $SWAP  $LAY   $OVER  $LAY             3358|227A  234A  2322
131 13             ^ $DABS  $LAY   $<#  $LAY   $#S  $LAY               335E|31C6  32D2  333E
131 14             ^ $SIGN  $LAY   $#>  $LAY   $R>  $LAY               3364|32FC  32E2  228A
131 15             ^ $OVER  $LAY   $-  $LAY   $SPACES  $LAY -->        336A|2322  275A  32B4
132 0              ^ $TYPE  $LAY   $;                                    3370|2994  2256
132 1  LAY:HEADER  D.                                                    3374|0 82 44 AE
132 1  LAY:HEADER  D.                                                    3378|3350  2506
132 2   > $D.       ^ $0  $LAY   $D.R  $LAY   $SPACE  $LAY  $;         337C|2514  3356  27A0  2256
132 3  LAY:HEADER  .R                                                    3384|0 82 2E D2
132 3  LAY:HEADER  .R                                                    3388|3375  2506
132 4   > $.R       ^ $>R   $LAY   $S->D  $LAY   $R>  $LAY             338C|227A  241E  228A
132 5              ^ $D.R  $LAY   $;                                     3392|3356  2256
132 6  LAY:HEADER  .                                                     3396|81 AE
132 6  LAY:HEADER  .                                                     3398|3385  2506
132 7   > $.        ^ $S->D  $LAY   $D.  $LAY   $;                      339C|241E  337A  2256
132 8  LAY:HEADER  ?                                                     33A2|81 BF
132 8  LAY:HEADER  ?                                                     33A4|3396  2506
132 9   > $?        ^ $@  $LAY   $.  $LAY   $;                          33A8|239C  339A  2256
```

```
133 0  LAY:HEADER  VLIST                                                  33AE|85 56 4C 49 53 D4
133 0  LAY:HEADER  VLIST                                                  33B4|33A2  2506
133 1       ^ $LIT  $LAY   80 LAY   $OUT  $LAY   $!  $LAY                 33B8|2006  0080  25C0  23C2
133 2       ^ $CONTEXT  $LAY   $@  $LAY  $@  $LAY   $OUT  $LAY           33C0|25E6  239C  239C  25C0
133 3       ^ $@  $LAY   $C/L  $LAY   $>  $LAY   $0BRANCH  $LAY          33C8|239C  26F4  277E  2042
133 4       ^ C LAY   $CR  $LAY   $LIT  $LAY   E LAY                     33D0|000C  2488  2006  000E
133 5       ^ $OUT  $LAY   $!  $LAY   $DUP  $LAY   $ID.  $LAY           33D8|25C0  23C2  2360  2C96
133 6       ^ $SPACE  $LAY   $SPACE  $LAY   $PFA  $LAY  $LFA  $LAY      33E0|27A0  27A0  2832  27FE
133 7       ^ $@  $LAY   $DUP  $LAY   $0=  $LAY   $?TERMINAL  $LAY      33E8|239C  2360  22A8  2472
133 8       ^ $OR  $LAY   $0BRANCH  $LAY   -2E LAY   $DROP  $LAY        33F0|21FC  2042  FFD2  2338
133 9       ^  $;                                                         33F8|2256
134 0  LAY:HEADER  +BUF                                                   33FA|0 84 2B 42 55 C6
134 0  LAY:HEADER  +BUF                                                   3400|33AE  2506
134 1   > $+BUF     ^ $B/BUF  $LAY   $LIT  $LAY   4 LAY                   3404|26DE  2006  0004
134 2               ^ $+  $LAY   $+  $LAY   $DUP  $LAY                   340A|22D6  22D6  2360
134 3               ^ $LIMIT   $LAY   $=  $LAY   $0BRANCH  $LAY          3410|2656  2766  2042
134 4               ^ 6 LAY   $DROP  $LAY   $FIRST  $LAY                 3416|0006  2338  264A
134 5               ^ $DUP  $LAY   $PREV  $LAY   $@  $LAY                341C|2360  266C  239C
134 6               ^ $-  $LAY  $;                                        3422|275A  2256
134 7  LAY:HEADER  UPDATE                                                 3426|0 86 55 50 44 41 54 C5
134 7  LAY:HEADER  UPDATE                                                 342E|33FB  2506
134 8   > $UPDATE   ^ $PREV  $LAY   $@  $LAY   $@  $LAY                   3432|266C  239C  239C
134 9               ^ $LIT  $LAY   8000 LAY   $OR  $LAY                  3438|2006  8000  21FC
134 10              ^ $PREV  $LAY    $@  $LAY   $!  $LAY   $;             343E|266C  239C  23C2  2256
134 11 LAY:HEADER  EMPTY-BUFFERS                                          3446|8D 45 4D 50 54 59 2D 42 55 46 46
134 11 LAY:HEADER  EMPTY-BUFFERS                                          3454|3427  2506              45 52 D3
134 12  > $EMPTY-BUFFERS ^ $FIRST  $LAY  $LIMIT  $LAY  $OVER  $LAY       3458|264A  2656  2322
134 13            ^ $-  $LAY   $ERASE  $LAY   $;                         345E|275A  2AE0  2256
135 0  LAY:HEADER  BUFFER                                                 3464|0 86 42 55 46 46 45 D2
135 0  LAY:HEADER  BUFFER                                                 346C|3446  2506
135 1   > $BUFFER   ^ $USE  $LAY   $@  $LAY   $DUP  $LAY                 3470|2660  239C  2360
135 2               ^ $>R  $LAY   $+BUF  $LAY   $0BRANCH  $LAY           3476|227A  3402  2042
135 3               ^ -4 LAY   $USE  $LAY   $!  $LAY                     347C|FFFC  2660  23C2
135 4               ^ $R  $LAY   $@  $LAY   $0<  $LAY                    3482|2298  239C  22C0
135 5               ^ $0BRANCH  $LAY   14 LAY   $R  $LAY                3488|2042  0014  2298
135 6               ^ $2+  $LAY   $R  $LAY   $@  $LAY                   348E|270C  2298  239C
135 7               ^ $LIT  $LAY   7FFF  LAY   $AND  $LAY               3494|2006  7FFF  21EA
135 8               ^ $0  $LAY   $R/W  $LAY   $R  $LAY                  349A|2514  36CE  2298
135 9               ^ $!  $LAY   $R  $LAY   $PREV  $LAY                 34A0|23C2  2298  266C
135 10              ^ $!  $LAY   $R>  $LAY   $2+  $LAY   $;             34A6|23C2  228A  270C  2256
135 11 LAY:HEADER  BLOCK                                                  34AE|85 42 4C 4F 43 CB
135 11 LAY:HEADER  BLOCK                                                  34B4|3465  2506
135 12  > $BLOCK    ^ $OFFSET  $LAY   $@  $LAY   $+  $LAY                34B8|25D8  239C  22D6
135 13              ^ $>R  $LAY   $PREV  $LAY   $@  $LAY                 34BE|227A  266C  239C
135 14              ^ $DUP  $LAY   $@  $LAY   $R  $LAY                   34C4|2360  239C  2298
135 15              ^ $-  $LAY   $DUP  $LAY   $+  $LAY   -->             34CA|275A  2360  22D6
136 0               ^ $0BRANCH  $LAY   34  LAY   $+BUF  $LAY            34D0|2042  0034  3402
136 1               ^ $0=  $LAY   $0BRANCH  $LAY   14 LAY               34D6|22A8  2042  0014
136 2               ^ $DROP  $LAY   $R  $LAY   $BUFFER  $LAY            34DC|2338  2298  346E
136 3               ^ $DUP  $LAY   $R  $LAY   $1  $LAY                   34E2|2360  2298  251C
136 4               ^ $R/W  $LAY   $2  $LAY   $-  $LAY                   34E8|36CE  2524  275A
136 5               ^ $DUP  $LAY   $@  $LAY   $R  $LAY                   34EE|2360  239C  2298
136 6               ^ $-  $LAY   $DUP  $LAY   $+  $LAY                   34F4|275A  2360  22D6
136 7               ^ $0=  $LAY   $0BRANCH   $LAY   -2A  LAY            34FA|22A8  2042  FFD6
136 8               ^ $DUP  $LAY   $PREV  $LAY   $!  $LAY               3500|2360  266C  23C2
136 9               ^ $R>  $LAY   $DROP  $LAY   $2+  $LAY   $;          3506|228A  2338  270C  2256
```

```
136 10 LAY:HEADER  (LINE)                                                    350E|0 86 2B 4C 49 4E 45 A9
136 10 LAY:HEADER  (LINE)                                                    3516|34AE  2506
136 11  > $(LINE)   ^ $>R  $LAY   $C/L  $LAY   $B/BUF  $LAY                 351A|2Z7A  26F4  26DE
136 12              ^ $*/MOD  $LAY   $R>  $LAY   $B/SCR  $LAY              3520|3270  228A  26EA
136 13              ^ $*  $LAY   $+  $LAY   $BLOCK  $LAY                   3526|3230  22D6  34B6
136 14              ^ $+  $LAY   $C/L  $LAY   $;                             352C|22D6  26F4  2256
137 0  LAY:HEADER  .LINE                                                     3532|85 2E 4C 49 4E C5
137 0  LAY:HEADER  .LINE                                                     3538|350F  2506
137 1   > $.LINE    ^ $(LINE)  $LAY   $-TRAILING  $LAY   $TYPE  $LAY       353C|3518  29C2  2994
137 2              ^ $;                                                      3542|2256
137 3  LAY:HEADER  MESSAGE                                                   3544|87 4D 45 53 53 41 47 C5
137 3  LAY:HEADER  MESSAGE                                                   354C|3532  2506
137 4   > $MESSAGE  ^ $WARNING  $LAY   $@  $LAY   $0BRANCH  $LAY           3550|257C  239C  2042
137 5              ^ 1C LAY   $-DUP  $LAY   $0BRANCH  $LAY                 3556|001C  27B0  2042
137 6              ^ 12 LAY   $LIT  $LAY   4 LAY                           355C|0012  2006  0004
137 7              ^ $OFFSET  $LAY   $@  $LAY   $B/SCR  $LAY              3562|25D8  239C  26EA
137 8              ^ $/  $LAY   $-  $LAY   $.LINE  $LAY                    3568|3250  275A  353A
137 9              ^ $BRANCH  $LAY  C LAY   $(.")  $LAY                    356E|202C  000C  29F6
137 10             ^ 054D LAY   5347 LAY   2023  LAY  ( MSG # )           3574|054D  5347  2023
137 11             ^ $.  $LAY   $;                                          357A|339A  2256
137 12 LAY:HEADER  LOAD                                                      357E|0 84 4C 4F 41 C4
137 12 LAY:HEADER  LOAD                                                      3584|3544  2506
137 13  > $LOAD     ^ $BLK  $LAY  $@  $LAY   $>R  $LAY                      3588|25AC  239C  227A
137 14              ^ $IN  $LAY   $@  $LAY   $>R  $LAY                      358E|25B6  239C  227A
137 15              ^ $0  $LAY   $IN  $LAY   $!  $LAY  -->                 3594|2514  25B6  23C2
138 0               ^ $B/SCR  $LAY   $*  $LAY   $BLK  $LAY                 359A|26EA  3230  25AC
138 1               ^ $!  $LAY   $INTERPRET  $LAY   $R>  $LAY              35A0|23C2  2E78  228A
138 2               ^ $IN  $LAY   $!  $LAY   $R>  $LAY                     35A6|25B6  23C2  228A
138 3               ^ $BLK  $LAY   $!  $LAY   $;                            35AC|25AC  23C2  2256
138 4  LAY:HEADER  -->   IMMED                                               35B2|83 2D 2D BE
138 4  LAY:HEADER  -->   IMMED                                               35B6|357F  2506
138 5   > $-->      ^ $?LOADING  $LAY   $0  $LAY   $IN  $LAY                35BA|28D8  2514  25B6
138 6              ^ $!  $LAY   $B/SCR  $LAY   $BLK  $LAY                  35C0|23C2  26EA  25AC
138 7              ^ $@  $LAY   $OVER  $LAY   $MOD  $LAY                   35C6|239C  2322  3260
138 8              ^ $-  $LAY   $BLK  $LAY   $+!  $LAY   $;                35CC|275A  25AC  2372  2256
138 9  LAY:HEADER  LIST                                                      35D4|0 84 4C 49 53 D4
138 9  LAY:HEADER  LIST                                                      35DA|35B2  2506
138 10  > $LIST    ^ $DECIMAL  $LAY   $CR  $LAY   $DUP  $LAY               35DE|2954  2488  2360
138 11             ^ $SCR  $LAY   $!  $LAY   $(.")  $LAY                   35E4|25CA  23C2  29F6
138 12             ^ 0553  LAY   4352  LAY   2023  LAY  ( SCR # )          35EA|0553  4352  2023
138 13             ^ $.  $LAY   $LIT  $LAY  10  LAY                        35F0|339A  2006  0010
138 14             ^ $0  $LAY   $(DO)  $LAY   $CR  $LAY                    35F6|2514  2090  2488
138 15             ^ $R  $LAY   $3  $LAY      -->                          35FC|2298  252C
139 0               ^ $.R   $LAY   $SPACE  $LAY   $R  $LAY                 3600|338A  27A0  2298
139 1               ^ $SCR  $LAY   $@  $LAY   $.LINE  $LAY                 3606|25CA  239C  353A
139 2               ^ $(LOOP)  $LAY   -14  LAY   $CR  $LAY  $;             360C|205A  FFEC  2488  2256
139 3  LAY:HEADER  INDEX                                                     3614|85 49 4E 44 45 D8
139 3  LAY:HEADER  INDEX                                                     361A|35D5  2506
139 4   > $INDEX    ^ $CR  $LAY   $1+  $LAY   $SWAP  $LAY                  361E|2488  26FE  234A
139 5              ^ $(DO)  $LAY   $CR  $LAY   $R  $LAY                    3624|2090  2488  2298
139 6              ^ $3  $LAY   $.R  $LAY                                   362A|252C  338A
139 7              ^ $SPACE  $LAY   $0  $LAY   $R  $LAY                    362E|27A0  2514  2298
139 8              ^ $.LINE  $LAY $?TERMINAL $LAY  $0BRANCH  $LAY          3634|353A  2472  2042
139 9              ^ 4 LAY   $LEAVE  $LAY   $(LOOP)  $LAY                  363A|0004  2268  205A
139 10             ^ -1A  LAY   $;                                          3640|FFE6  2256
```

```
140 0  LAYCODEHEADER  COLD                                                  3644|0 84 43 4F 4C C4
140 0  LAYCODEHEADER  COLD                                                  364A|3614  364E
140 1   > $COLDSTART ^ $COLDUSER IMM ^ 0 AR ,W ,MOVE ( BOOTLIST )          364E|307C  3696
140 2                ^ 0 [ ^ $FORTH 4 + ABSO ,W ,MOVE ( TOPNFA SET )      3652|31D0  2F00
140 3                ^ 4 0 &[ ^ US AR ,W ,MOVE ( SET USER PTR REG )       3656|3C68  0004
140 4                ^ US AR ^ 1 AR ,W ,MOVE ( WORKCOPY OF USER PTR )     365A|324E
140 5                ^ 0A IMM ^ 0 DR ,W ,MOVE ( MOVE ELEVEN BOOTUPS )     365C|303C  000A
140 6   > $FILLUSER ^ 0 [+ ^ 1 [+ ,W ,MOVE ( ONE AT A TIME )               3660|32D8
140 7                ^ ,F, 0 $FILLUSER %+ ,DBCC  ( UNTIL DONE, )          3662|51C8  FFFC
140 8                ^ 1E IMM ^ 1 AR ,W ,ADD  ( POINT TO BYTE US + 34 )   3666|D2FC  001E
140 9                ^ D IMM ^ 0 DR ,W ,MOVE ( MOVE 14 MORE BOOTUPS )     366A|303C  000D
140 10  > $FILLMORE ^ 0 [+ ^ 1 [+ ,W ,MOVE ( ONE AT A TIME )               366E|32D8
140 11               ^ ,F, 0 $FILLMORE %+ ,DBCC  ( UNTIL DONE, )          3670|51C8  FFFC
140 12               ^ 36 US &[ ^ 0 DR ,W ,MOVE ( GET LIMIT )             3674|302E  0036
140 13               ^ 34 US &[ ^ 0 AR ,W ,MOVE ( GET FIRST )             3678|306E  0034
140 14               ^ 0 AR ^ 0 DR ,W ,SUB ( CALC BUFF AREA BYTES )       367C|9048
141 0                ^ 1 IMM ^ 0 DR ,W ,SUBQ ( LOOP PREDECREMENT )        367E|5340
141 1   > $MTBUFFS   ^ 0 IMM ^ 0 [+ ,B ,MOVE ( FILL AREA WITH 00 )        3680|10FC  0000
141 2                ^ ,F, 0 $MTBUFFS %+ ,DBCC ( UNTIL DONE )             3684|51C8  FFFA
141 3                ^ $GOFORTH %+ ,BRA                                   3688|6004
141 4   > $WARMSTART ^ $COLDUSER 4 + ABSO ^ US AR ,W ,MOVE ( SET US )      368A|3C78  369A
141 5   > $GOFORTH   ^ $ABORT IMM ^ IP AR ,W ,MOVE ( SET IP REG )         368E|387C  2F5A
141 6                ^ $RP! ABSO ,JMP ( JUMP TO RP! CODE )                3692|4EF8  2246
141 7   > $COLDUSER ^ ( INITIAL TOP FORTH NFA CHANGES AS SYS EXPANDS )     3696|36FC
141 9                ^ 007F LAY ( BKSPKEY DEPENDS ON KEYBOARD )           3698|007F
141 10               ^ 1A00 LAY ( USER PAGE CAN BE MOVED )                369A|1A00
141 11               ^ 19FE LAY ( COMPUTATION STACK CAN BE MOVED )        369C|19FE
141 12               ^ 1BFE LAY ( RETURN STACK CAN BE MOVED )             369E|1BFE
141 13               ^ 1820 LAY ( TIB CAN BE MOVED )                      36A0|1820
141 14               ^ 001F LAY ( WIDTH NOT LIKELY TO BE CHANGED )        36A2|001F
142 0                ^ 0001 LAY ( WARNING after DISC IS IMPLEMENTED )     36A4|0001
142 1                ^ ( COLD FENCE IS USUALLY 1ST FREE BYTE )            36A6|370C
142 3                ^ ( DP IS USUALLY ALSO 1ST FREE BYTE )               36A8|370C
142 5                ^ ( VOC-LINK SHOULD NOT BE CHANGED )                 36AA|2F02
142 7                ^ 1000 LAY ( FIRST CAN BE MOVED -DISC BUFF STUFF )   36AC|1000
142 8                ^ 1820 LAY ( LIMIT CAN BE MOVED -DISC BUFF STUFF )   36AE|1820
142 9                ^ 1000 LAY ( USE CAN BE MOVED - DISC BUFF STUFF )    36B0|1000
142 10               ^ 1000 LAY ( PREV CAN BE MOVED - DISC BUFF STUFF )   36B2|1000
142 11               ^ 4800 LAY ( DICTLIMIT CAN BE MOVED )                36B4|4800
142 12               ^ 0008 LAY ( BKSPEMIT COULD NEED CHANGE FOR I/O )    36B6|0008
142 13               ^ 1C00 LAY ( ADDRESS OF EMIT CODE SUBROUTINE )       36B8|1C00
142 14               ^ 1D18 LAY ( ADDRESS OF KEY CODE SUBROUTINE )        36BA|1D18
143 0                ^ 1D26 LAY ( ADDRESS OF ?TERMINAL CODE SUBROUTINE )  36BC|1D26
143 1                ^ 1D3A LAY ( ADDRESS OF CR CODE SUBROUTINE )         36BE|1D3A
143 2                ^ 1E00 LAY ( ADDRESS OF R/W CODE SUBROUTINE )        36C0|1E00
143 3                ^ 0100 LAY ( BYTES/BUFFER = B/BUF )                  36C2|0100
143 4                ^ 0004 LAY ( BUFFERS/SCREEN = B/SCR )                36C4|0004
143 5                ^ 0040 LAY ( #CHAR/LINE = C/L )                      36C6|0040
143 6  LAYCODEHEADER  R/W                                                  36C8|83 52 2F D7
143 6  LAYCODEHEADER  R/W                                                  36CC|3645  36D0
143 7   > $R/W      ^ 48 US &[ ^ 0 AR ,W ,MOVE ( R/WSUB ADDRESS )          36D0|306E  0048
143 8              ^ 0 [ ,JSR                                             36D4|4E90
143 9              NEXT                                                   36D6|3A5C  305D  4ED0
143 10 LAYCONSTANT ORIGIN     > $ORIGIN   $COLDUSER C - LAY                36DC|0 86 4F 52 49 47 49 CE
143 10 LAYCONSTANT ORIGIN     > $ORIGIN   $COLDUSER C - LAY                36E4|36C8  24BA  368A
143 11 LAY:HEADER  +ORIGIN                                                 36EA|87 2B 4F 52 49 47 49 CE
143 11 LAY:HEADER  +ORIGIN                                                 36F2|36DD  2506
143 12  > $+ORIGIN  ^ $ORIGIN  $LAY   $+  $LAY   $;                        36F6|36E6  22D6  2256
143 13 LAY:HEADER  DR0                                                     36FC|83 44 52 B0
143 13 LAY:HEADER  DR0                                                     3700|36EA  2506
143 14  > $DR0      ^ $0  $LAY   $OFFSET  $LAY   $!  $LAY  $;             3704|2514  25D8  23C2  2256
```

```
2000 | 83 4C 49 D4  00 00 20 08  37 1C 3A 5C  30 5D 4E D0
2010 | 87 45 58 45  43 55 54 C5  20 00 20 1C  3A 5B 30 5D
2020 | 4E D0 00 86  42 52 41 4E  43 C8 20 10  20 2E 30 14
2030 | D8 C0 3A 5C  30 5D 4E D0  87 30 42 52  41 4E 43 C8
2040 | 20 23 20 44  4A 5B 67 E6  54 4C 3A 5C  30 5D 4E D0
2050 | 00 86 28 4C  4F 4F 50 A9  20 38 20 5C  52 57 30 2F
2060 | 00 02 B0 57  62 06 54 4C  58 4F 60 04  30 14 D8 C0
2070 | 3A 5C 30 5D  4E D0 87 28  2B 4C 4F 4F  50 A9 20 51
2080 | 20 82 30 1B  D1 57 60 D6  00 84 28 44  4F A9 20 76
2090 | 20 92 2F 1B  3A 5C 30 5D  4E D0 85 44  49 47 49 D4
20A0 | 20 89 20 A4  32 1B 30 13  04 40 00 30  65 1C 0C 40
20B0 | 00 09 6F 0A  0C 40 00 11  6D 10 04 40  00 07 B0 41
20C0 | 6C 08 36 80  37 3C 00 01  60 04 36 BC  00 00 3A 5C
20D0 | 30 5D 4E D0  00 86 28 46  49 4E 44 A9  20 9A 20 E0
20E0 | 70 01 7A 07  32 5B 30 53  34 48 12 19  18 01 36 04
20F0 | 02 43 00 1F  D6 49 52 43  02 43 FF FE  1C 1A BD 04
2100 | 02 04 00 3F  66 1E 14 1A  0B 82 1C 19  BD 02 E1 22
2110 | 66 12 64 F2  58 43 36 83  02 41 00 FF  37 01 37 3C
2120 | 00 01 60 0C  34 43 32 52  3C 09 66 BC  36 BC 00 00
2130 | 3A 5C 30 5D  4E D0 87 45  4E 43 4C 4F  53 C5 20 D5
2140 | 21 42 30 1B  30 53 42 81  60 02 52 41  B0 30 10 00
2150 | 67 F8 37 01  B0 30 10 00  67 1A 0C 30  00 00 10 00
2160 | 67 04 52 41  60 EE B2 53  66 06 52 41  37 01 60 08
2170 | 37 01 60 04  37 01 52 41  37 01 3A 5C  30 5D 4E D0
2180 | 85 43 4D 4F  56 C5 21 36  21 8A 20 7C  00 00 00 00
2190 | 22 48 30 1B  32 5B 30 5B  B2 C8 6E 0A  60 02 12 D8
21A0 | 51 C8 FF FC  60 0C D0 C0  D2 C0 60 02  13 20 51 C8
21B0 | FF FC 3A 5C  30 5D 4E D0  00 82 55 AA  21 80 21 C0
21C0 | 30 1B C0 DB  27 00 3A 5C  30 5D 4E D0  00 82 55 AF
21D0 | 21 B9 21 D4  32 1B 20 13  80 C1 48 40  26 80 3A 5C
21E0 | 30 5D 4E D0  83 41 4E C4  21 CD 21 EC  30 1B C1 53
21F0 | 3A 5C 30 5D  4E D0 00 82  4F D2 21 E4  21 FE 30 1B
2200 | 81 53 3A 5C  30 5D 4E D0  83 58 4F D2  21 F7 22 10
2210 | 30 1B B1 53  3A 5C 30 5D  4E D0 83 53  50 C0 22 08
2220 | 22 22 30 0B  37 00 3A 5C  30 5D 4E D0  83 53 50 A1
2230 | 22 1A 22 34  36 6E 00 06  3A 5C 30 5D  4E D0 83 52
2240 | 50 A1 22 2C  22 46 3E 6E  00 08 3A 5C  30 5D 4E D0
2250 | 00 82 3B D3  22 3E 22 58  38 5F 3A 5C  30 5D 4E D0
2260 | 85 4C 45 41  56 C5 22 51  22 6A 3F 57  00 02 3A 5C
2270 | 30 5D 4E D0  00 82 3E D2  22 60 22 7C  3F 1B 3A 5C
2280 | 30 5D 4E D0  00 82 52 BE  22 75 22 8C  37 1F 3A 5C
2290 | 30 5D 4E D0  81 D2 22 85  22 9A 37 17  3A 5C 30 5D
22A0 | 4E D0 00 82  30 BD 22 94  22 AA 4A 53  57 EB 00 01
22B0 | 02 53 00 01  3A 5C 30 5D  4E D0 00 82  30 BC 22 A3
22C0 | 22 C2 4A 53  5B EB 00 01  02 53 00 01  3A 5C 30 5D
22D0 | 4E D0 81 AB  22 BB 22 D8  30 1B D1 53  3A 5C 30 5D
22E0 | 4E D0 85 4D  49 4E 55 D3  22 D2 22 EC  44 53 3A 5C
22F0 | 30 5D 4E D0  00 82 44 AB  22 E2 22 FC  20 1B D1 93
2300 | 3A 5C 30 5D  4E D0 00 86  44 4D 49 4E  55 D3 22 F5
2310 | 23 12 44 93  3A 5C 30 5D  4E D0 00 84  4F 56 45 D2
2320 | 23 07 23 24  30 2B 00 02  37 00 3A 5C  30 5D 4E D0
2330 | 00 84 44 52  4F D0 23 1B  23 3A 54 4B  3A 5C 30 5D
2340 | 4E D0 00 84  53 57 41 D0  23 31 23 4C  30 1B 32 13
2350 | 36 80 37 01  3A 5C 30 5D  4E D0 83 44  55 D0 23 43
2360 | 23 62 30 13  37 00 3A 5C  30 5D 4E D0  00 82 2B A1
2370 | 23 5A 23 74  30 5B 30 1B  D1 50 3A 5C  30 5D 4E D0
2380 | 00 86 54 4F  47 47 4C C5  23 6D 23 8C  30 1B 30 5B
2390 | B1 10 3A 5C  30 5D 4E D0  81 C0 23 81  23 9E 30 53
23A0 | 36 90 3A 5C  30 5D 4E D0  00 82 43 C0  23 98 23 B0
23B0 | 30 5B 17 10  17 3C 00 00  3A 5C 30 5D  4E D0 81 A1
23C0 | 23 A9 23 C4  30 5B 10 DB  10 9B 3A 5C  30 5D 4E D0
23D0 | 00 84 46 49  4C CC 23 BE  23 DA 30 1B  32 1B 30 5B
23E0 | 60 02 10 C0  51 C9 FF FC  3A 5C 30 5D  4E D0 00 82
23F0 | 43 A1 23 D1  23 F6 30 5B  52 4B 10 9B  3A 5C 30 5D
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OK

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2400 | 4E D0 00 82  43 BD 23 EF  25 06 27 5A  20 06 00 FF
2410 | 21 EA 22 A8  22 56 00 84  53 2D 3E C4  24 03 24 20
2420 | 4A 53 6B 06  37 3C 00 00  60 04 37 3C  FF FF 3A 5C
2430 | 30 5D 4E D0  00 84 45 4D  49 D4 24 17  24 3E 30 1B
2440 | 52 6E 00 1A  30 6E 00 40  4E 90 3A 5C  30 5D 4E D0
2450 | 83 4B 45 D9  24 35 24 58  30 6E 00 42  4E 90 37 00
2460 | 3A 5C 30 5D  4E D0 89 3F  54 45 52 4D  49 4E 41 CC
2470 | 24 50 24 74  30 6E 00 44  4E 90 37 00  3A 5C 30 5D
2480 | 4E D0 00 82  43 D2 24 66  24 8A 3D 7C  00 00 00 1A
2490 | 30 6E 00 46  4E 90 3A 5C  30 5D 4E D0  85 28 56 41
24A0 | 52 A9 24 83  24 A6 37 0D  3A 5C 30 5D  4E D0 87 28
24B0 | 43 4F 4E 53  54 A9 24 9C  24 BA 37 15  3A 5C 30 5D
24C0 | 4E D0 00 86  28 55 53 45  52 A9 24 AE  24 CE 30 15
24D0 | D0 4E 37 00  3A 5C 30 5D  4E D0 00 8E  28 55 53 45
24E0 | 52 43 4F 4E  53 54 41 4E  54 A9 24 C3  24 EE 30 55
24F0 | D0 CE 37 10  3A 5C 30 5D  4E D0 00 86  28 4E 45 53
2500 | 54 A9 24 DB  25 06 3F 0C  38 4D 3A 5C  30 5D 4E D0
2510 | 81 B0 24 FB  24 BA 00 00  81 B1 25 10  24 BA 00 01
2520 | 81 B2 25 18  24 BA 00 02  81 B3 25 20  24 BA 00 03
2530 | 00 82 42 CC  25 28 24 BA  00 20 87 42  4B 53 50 4B
2540 | 45 D9 25 31  24 CE 00 02  00 82 53 B0  25 3A 24 CE
2550 | 00 06 00 82  52 B0 25 49  24 CE 00 08  83 54 49 C2
2560 | 25 53 24 CE  00 0A 85 57  49 44 54 C8  25 5C 24 CE
2570 | 00 0C 87 57  41 52 4E 49  4E C7 25 66  24 CE 00 0E
2580 | 85 46 45 4E  43 C5 25 72  24 CE 00 10  00 82 44 D0
2590 | 25 80 24 CE  00 12 00 88  56 4F 43 2D  4C 49 4E CB
25A0 | 25 8D 24 CE  00 14 83 42  4C CB 25 97  24 CE 00 16
25B0 | 00 82 49 CE  25 A6 24 CE  00 18 83 4F  55 D4 25 B1
25C0 | 24 CE 00 1A  83 53 43 D2  25 BA 24 CE  00 1C 00 86
25D0 | 4F 46 46 53  45 D4 25 C4  24 CE 00 1E  87 43 4F 4E
25E0 | 54 45 58 D4  25 CF 24 CE  00 20 87 43  55 52 52 45
25F0 | 4E D4 25 DC  24 CE 00 22  85 53 54 41  54 C5 25 EA
2600 | 24 CE 00 24  00 84 42 41  53 C5 25 F8  24 CE 00 26
2610 | 83 44 50 CC  26 05 24 CE  00 28 83 46  4C C4 26 10
2620 | 24 CE 00 2A  83 43 53 D0  26 1A 24 CE  00 2C 00 82
2630 | 52 A3 26 24  24 CE 00 2E  83 48 4C C4  26 2F 24 CE
2640 | 00 30 85 46  49 52 53 D4  26 38 24 EE  00 34 85 4C
2650 | 49 4D 49 D4  26 42 24 EE  00 36 83 55  53 C5 26 4E
2660 | 24 CE 00 38  00 84 50 52  45 D6 26 5A  24 CE 00 3A
2670 | 89 44 49 43  54 4C 49 4D  49 D4 26 65  24 CE 00 3C
2680 | 00 88 42 4B  53 50 45 4D  49 D4 26 70  24 CE 00 3E
2690 | 87 45 4D 49  54 53 55 C2  26 81 24 CE  00 40 00 86
26A0 | 4B 45 59 53  55 C2 26 90  24 CE 00 42  00 88 3F 54
26B0 | 45 52 4D 53  55 C2 26 9F  24 CE 00 44  85 43 52 53
26C0 | 55 C2 26 AD  24 CE 00 46  00 86 52 2F  57 53 55 C2
26D0 | 26 BC 24 CE  00 48 85 42  2F 42 55 C6  26 C9 24 EE
26E0 | 00 4A 85 42  2F 53 43 D2  26 D6 24 EE  00 4C 83 13
26F0 | 2F CC 26 E2  24 EE 00 4E  00 32 31 AB  26 EE 25 06
2700 | 25 1C 27 D6  22 56 00 82  32 AB 26 F9  25 06 25 24
2710 | 22 D6 22 56  00 84 48 45  52 C5 27 07  25 06 25 92
2720 | 23 9C 22 56  85 41 4C 4C  4F D4 27 15  25 06 25 92
2730 | 23 72 22 56  81 AC 27 24  25 06 27 1C  23 C2 25 24
2740 | 27 2C 22 56  00 82 43 AC  27 34 25 06  27 1C 23 F4
2750 | 25 1C 27 2C  22 56 81 AD  27 45 25 06  22 EA 22 D6
2760 | 22 56 81 BD  27 56 25 06  27 5A 22 A8  22 56 81 BC
2770 | 27 62 25 06  27 5A 22 C0  22 56 81 BE  27 6E 25 06
2780 | 23 4A 27 72  22 56 83 52  4F D4 27 7A  25 06 22 7A
2790 | 23 4A 22 8A  23 4A 22 56  85 53 50 41  43 C5 27 86
27A0 | 25 06 25 36  24 3C 22 56  00 84 2D 44  55 D0 27 98
27B0 | 25 06 23 60  20 42 00 04  23 60 22 56  00 88 54 52
27C0 | 41 56 45 52  53 C5 27 A9  25 06 23 4A  23 22 22 D6
27D0 | 20 06 00 7F  23 22 23 AE  27 72 20 42  FF F0 23 4A
27E0 | 23 38 22 56  00 86 4C 41  54 45 53 D4  27 BD 25 06
27F0 | 25 F4 23 9C  23 9C 22 56  83 4C 46 C1  27 E5 25 06
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OK

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2800 | 20 06 00 04  27 5A 22 56  83 43 46 C1  27 F8 25 06
2810 | 25 24 27 5A  22 56 83 4E  46 C1 28 08  25 06 20 06
2820 | 00 05 27 5A  20 06 FF FF  27 C8 22 56  83 50 46 C1
2830 | 28 16 25 06  25 1C 27 C8  20 06 00 05  22 D6 22 56
2840 | 00 84 21 43  53 D0 28 2C  25 06 22 20  26 2A 23 C2
2850 | 22 56 00 86  3F 45 52 52  4F D2 28 41  25 06 23 4A
2860 | 20 42 00 08  2C 4E 20 2C  00 04 23 38  22 56 85 3F
2870 | 43 4F 4D D0  28 53 25 06  26 00 23 9C  22 A8 20 06
2880 | 00 11 28 5C  22 56 85 3F  45 58 45 C3  28 6E 25 06
2890 | 26 00 23 9C  20 06 00 12  28 5C 22 56  00 86 3F 50
28A0 | 41 49 52 D3  28 86 25 06  27 5A 20 06  00 13 28 5C
28B0 | 22 56 00 84  3F 43 53 D0  28 9D 25 06  22 20 26 2A
28C0 | 23 9C 27 5A  20 06 00 14  28 5C 22 56  00 88 3F 4C
28D0 | 4F 41 44 49  4E C7 28 B3  25 06 25 AC  23 9C 22 A8
28E0 | 20 06 00 16  28 5C 22 56  87 43 4F 4D  50 49 4C C5
28F0 | 28 CD 25 06  28 76 22 8A  23 60 27 0C  22 7A 23 9C
2900 | 27 38 22 56  C1 DB 28 E8  25 06 25 14  26 00 23 C2
2910 | 22 56 81 DD  29 04 25 06  20 06 00 C0  26 00 23 C2
2920 | 22 56 00 86  53 4D 55 44  47 C5 29 12  25 06 27 EE
2930 | 20 06 00 20  23 8A 22 56  83 48 45 D8  29 23 25 06
2940 | 20 06 00 10  26 0C 23 C2  22 56 87 44  45 43 49 4D
2950 | 41 CC 29 38  25 06 20 06  00 0A 26 0C  23 C2 22 56
2960 | 87 28 3B 43  4F 44 45 A9  29 4A 25 06  22 8A 27 EE
2970 | 28 32 28 0E  23 C2 22 56  85 43 4F 55  4E D4 29 60
2980 | 25 06 23 60  26 FE 23 4A  23 AE 22 56  00 84 54 59
2990 | 50 C5 29 78  25 06 27 B0  20 42 00 18  23 22 22 D6
29A0 | 23 4A 20 90  22 98 23 AE  24 3C 20 5A  FF F8 20 2C
29B0 | 00 04 23 38  22 56 89 2D  54 52 41 49  4C 49 4E C7
29C0 | 29 8D 25 06  23 60 25 14  20 90 23 22  23 22 22 D6
29D0 | 25 1C 27 5A  23 AE 25 36  27 5A 20 42  00 08 22 68
29E0 | 20 2C 00 06  25 1C 27 5A  20 5A FF E0  22 56 00 84
29F0 | 28 2E 22 A9  29 B6 25 06  22 98 29 80  23 60 27 0C
2A00 | 20 06 FF FE  21 EA 22 8A  22 D6 22 7A  29 94 22 56
2A10 | 00 86 45 58  50 45 43 D4  29 EF 25 06  23 22 22 D6
2A20 | 23 22 20 90  24 56 23 60  25 44 23 9C  24 08 20 42
2A30 | 00 20 23 38  26 8C 23 9C  23 22 22 98  27 66 23 60
2A40 | 22 8A 25 24  27 5A 22 D6  22 7A 27 5A  20 2C 00 28
2A50 | 23 60 20 06  00 0D 24 08  20 42 00 0E  22 68 23 38
2A60 | 25 36 25 14  20 2C 00 04  23 60 22 98  23 F4 25 14
2A70 | 22 98 26 FE  23 F4 24 3C  20 5A FF AA  23 38 22 56
2A80 | 85 51 55 45  52 D9 2A 11  25 06 25 62  23 9C 20 06
2A90 | 00 50 2A 1A  25 14 25 B6  23 C2 22 56  C1 80 2A 80
2AA0 | 25 06 25 AC  23 9C 20 42  00 2A 25 1C  25 AC 23 72
2AB0 | 25 14 25 B6  23 C2 25 AC  23 9C 26 EA  25 1C 27 5A
2AC0 | 21 EA 22 A8  20 42 00 08  28 8E 22 8A  23 38 20 2C
2AD0 | 00 06 22 8A  23 38 22 56  85 45 52 41  53 C5 2A 9C
2AE0 | 25 06 25 14  23 D8 22 56  00 86 42 4C  41 4E 4B D3
2AF0 | 2A D8 25 06  25 36 23 D8  22 56 00 84  48 4F 4C C4
2B00 | 2A E9 25 06  20 06 FF FF  26 3E 23 72  26 3E 23 9C
2B10 | 23 F4 22 56  83 50 41 C4  2A FB 25 06  27 1C 20 06
2B20 | 00 44 22 D6  22 56 00 84  57 4F 52 C4  2B 14 25 06
2B30 | 25 AC 23 9C  20 42 00 0C  25 AC 23 9C  34 B6 20 2C
2B40 | 00 06 25 62  23 9C 25 B6  23 9C 22 D6  23 4A 21 40
2B50 | 27 1C 20 06  00 22 2A F2  25 B6 23 72  23 22 27 5A
2B60 | 22 7A 22 98  27 1C 23 F4  22 D6 27 1C  26 FE 22 8A
2B70 | 21 88 22 56  00 88 28 4E  55 4D 42 45  52 A9 2B 27
2B80 | 25 06 26 FE  23 60 22 7A  23 AE 26 0C  23 9C 20 A2
2B90 | 20 42 00 2C  23 4A 26 0C  23 9C 21 BE  23 38 27 8C
2BA0 | 26 0C 23 9C  21 BE 22 FA  26 16 23 9C  26 FE 20 42
2BB0 | 00 08 25 1C  26 16 23 72  22 8A 20 2C  FF C6 22 8A
2BC0 | 22 56 00 86  4E 55 4D 42  45 D2 2B 75  25 06 25 14
2BD0 | 25 14 27 8C  23 60 26 FE  23 AE 20 06  00 2D 27 66
2BE0 | 23 60 22 7A  22 D6 20 06  FF FF 26 16  23 C2 2B 80
2BF0 | 23 60 23 AE  25 36 27 5A  20 42 00 16  23 60 23 AE
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OK

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2C00 | 20 06 00 2E  27 5A 25 14  28 5C 25 14  20 2C FF DC
2C10 | 23 38 22 8A  20 42 00 04  23 10 22 56  85 2D 46 49
2C20 | 4E C4 2B C3  25 06 25 36  2B 2E 27 1C  25 E6 23 9C
2C30 | 23 9C 20 DE  23 60 22 A8  20 42 00 0A  23 38 27 1C
2C40 | 27 EE 20 DE  22 56 85 45  52 52 4F D2  2C 1C 25 06
2C50 | 25 7C 23 9C  22 C0 20 42  00 04 2F 58  27 1C 29 80
2C60 | 29 94 29 F6  03 20 20 3F  35 4E 22 32  25 B6 23 9C
2C70 | 25 AC 23 9C  2F 26 22 56  83 4D 49 CE  2C 46 25 06
2C80 | 23 22 23 22  27 7E 20 42  00 04 23 4A  23 38 22 56
2C90 | 83 49 44 AE  2C 78 25 06  2B 1A 20 06  00 20 20 06
2CA0 | 00 5F 23 D8  23 60 28 32  27 FE 23 22  27 5A 2B 1A
2CB0 | 23 4A 21 88  2B 1A 29 80  20 06 00 1F  21 EA 29 94
2CC0 | 27 A0 22 56  00 86 43 52  45 41 54 C5  2C 90 25 06
2CD0 | 26 7C 23 9C  27 1C 20 06  00 30 22 D6  27 72 25 24
2CE0 | 28 5C 2C 24  20 42 00 10  23 38 28 1C  2C 96 20 06
2CF0 | 00 04 35 4E  27 A0 27 1C  23 60 23 AE  22 0E 25 1C
2D00 | 21 EA 22 A8  20 42 00 1C  27 1C 23 60  23 60 26 FE
2D10 | 23 22 23 AE  26 FE 21 88  25 14 23 4A  23 F4 25 1C
2D20 | 27 2C 27 1C  23 60 23 AE  25 6E 23 9C  2C 7E 26 FE
2D30 | 27 2C 23 60  20 06 00 A0  23 8A 27 1C  25 1C 27 5A
2D40 | 20 06 00 80  23 8A 27 EE  27 38 25 F4  23 9C 23 C2
2D50 | 27 1C 27 0C  27 38 22 56  C1 BA 2C C5  25 06 28 8E
2D60 | 28 48 25 F4  23 9C 25 E6  23 C2 2C CE  29 16 20 06
2D70 | FF FE 25 92  23 72 28 F2  25 06 22 56  85 21 43 4F
2D80 | 44 C5 2D 58  25 06 2C CE  29 2C 27 EE  28 32 28 0E
2D90 | 23 C2 27 38  22 56 00 88  43 4F 4E 53  54 41 4E D4
2DA0 | 2D 7C 25 06  20 06 24 BA  2D 84 22 56  00 88 56 41
2DB0 | 52 49 41 42  4C C5 2D 97  25 06 20 06  24 A6 2D 84
2DC0 | 22 56 00 84  55 53 45 D2  2D AD 25 06  20 06 24 CE
2DD0 | 2D 84 22 56  87 3C 42 55  49 4C 44 D3  2D C3 25 06
2DE0 | 25 14 2D A2  22 56 85 44  4F 45 53 BE  2D D4 25 06
2DF0 | 22 8A 27 EE  28 32 23 C2  29 6A 3F 0C  38 5D 37 0D
2E00 | 3A 5C 30 5D  4E D0 C7 4C  49 54 45 52  41 CC 2D E6
2E10 | 25 06 26 00  23 9C 20 42  00 08 28 F2  20 06 27 38
2E20 | 22 56 00 C8  44 4C 49 54  45 52 41 CC  2E 06 25 06
2E30 | 26 00 23 9C  20 42 00 08  23 4A 2E 10  2E 10 22 56
2E40 | 00 86 3F 53  54 41 43 CB  2E 23 25 06  25 4E 23 9C
2E50 | 23 60 22 20  27 72 25 1C  28 5C 20 06  01 00 22 D6
2E60 | 22 20 27 72  20 06 00 07  28 5C 22 56  89 49 4E 54
2E70 | 45 52 50 52  45 D4 2E 41  25 06 2C 24  20 42 00 1E
2E80 | 26 00 23 9C  27 72 20 42  00 0A 28 0E  27 38 20 2C
2E90 | 00 06 28 0E  20 1A 2E 4A  20 2C 00 1C  27 1C 2B CC
2EA0 | 26 16 23 9C  26 FE 20 42  00 08 2E 2E  20 2C 00 06
2EB0 | 23 38 2E 10  2E 4A 20 2C  FF C2 22 56  00 8A 56 4F
2EC0 | 43 41 42 55  4C 41 52 D9  2E 6C 25 06  2D DE 20 06
2ED0 | 81 A0 27 38  25 F4 23 9C  28 0E 27 38  27 1C 25 A2
2EE0 | 23 9C 27 38  25 A2 23 C2  2D EE 27 0C  25 E6 23 C2
2EF0 | 22 56 C5 46  4F 52 54 C8  2E BD 2D FA  2E EA 81 A0
2F00 | 00 00 00 00  8B 44 45 46  49 4E 49 54  49 4F 4E D3
2F10 | 2E F2 25 06  25 E6 23 9C  25 F4 23 C2  22 56 00 84
2F20 | 51 55 49 D4  2F 04 25 06  25 14 25 AC  23 C2 29 08
2F30 | 22 44 24 88  2A 88 2E 78  26 00 23 9C  22 A8 20 42
2F40 | 00 0A 29 F6  05 20 20 20  4F 4B 20 2C  FF E4 22 56
2F50 | 85 41 42 4F  52 D4 2F 1F  25 06 22 32  29 54 24 88
2F60 | 29 F6 15 36  38 30 30 30  20 66 69 67  2D 46 4F 52
2F70 | 54 48 20 56  33 2E 33 20  2E FA 2F 12  37 02 2F 26
2F80 | 22 56 C1 BB  2F 50 25 06  28 BA 28 F2  22 56 29 2C
2F90 | 29 08 22 56  00 C2 2E A2  2F 82 25 06  20 06 00 22
2FA0 | 26 00 23 9C  20 42 00 1A  28 F2 29 F6  2B 2E 27 1C
2FB0 | 23 AE 27 0C  20 06 FF FE  21 EA 27 2C  20 2C 00 0A
2FC0 | 2B 2E 27 1C  29 80 29 94  22 56 C1 A8  2F 95 25 06
2FD0 | 20 06 00 29  2B 2E 22 56  89 49 4D 4D  45 44 49 41
2FE0 | 54 C5 2F CA  25 06 27 EE  20 06 00 40  23 8A 22 56
2FF0 | C9 5B 43 4F  4D 50 49 4C  45 DD 2F D8  25 06 2C 24
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OK

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3000 | 22 A8 25 14  28 5C 23 38  28 0E 27 38  22 56 C1 A7
3010 | 2F F0 25 06  2C 24 22 A8  25 14 28 5C  23 38 2E 10
3020 | 22 56 00 86  46 4F 52 47  45 D4 30 0E  25 06 25 F4
3030 | 23 9C 25 E6  23 9C 27 5A  20 06 00 18  28 5C 30 12
3040 | 23 60 25 88  23 9C 27 72  20 06 00 15  28 5C 23 60
3050 | 28 1C 25 92  23 C2 27 FE  23 9C 25 F4  23 9C 23 C2
3060 | 22 56 00 84  42 41 43 CB  30 23 25 06  27 1C 27 5A
3070 | 27 38 22 56  C5 42 45 47  49 CE 30 63  25 06 28 76
3080 | 27 1C 25 1C  22 56 C5 45  4E 44 49 C6  30 74 25 06
3090 | 28 76 25 24  28 A6 27 1C  23 22 27 5A  23 4A 23 C2
30A0 | 22 56 00 C4  54 48 45 CE  30 86 25 06  30 8E 22 56
30B0 | 00 C2 44 CF  30 A3 25 06  28 F2 20 90  27 1C 25 2C
30C0 | 22 56 00 C4  4C 4F 4F D0  30 B1 25 06  25 2C 28 A6
30D0 | 28 F2 20 5A  30 6A 22 56  C5 2B 4C 4F  4F D0 30 C3
30E0 | 25 06 25 2C  28 A6 28 F2  20 80 30 6A  22 56 C5 55
30F0 | 4E 54 49 CC  30 D8 25 06  25 1C 28 A6  28 F2 20 42
3100 | 30 6A 22 56  C3 45 4E C4  30 EE 25 06  30 F6 22 56
3110 | C5 41 47 41  49 CE 31 04  25 06 25 1C  28 A6 28 F2
3120 | 20 2C 30 6A  22 56 00 C6  52 45 50 45  41 D4 31 10
3130 | 25 06 22 7A  22 7A 31 18  22 8A 22 8A  25 24 27 5A
3140 | 30 8E 22 56  00 C2 49 C6  31 27 25 06  28 F2 20 42
3150 | 27 1C 25 14  27 38 25 24  22 56 00 C4  45 4C 53 C5
3160 | 31 45 25 06  25 24 28 A6  28 F2 20 2C  27 1C 25 14
3170 | 27 38 23 4A  25 24 30 8E  25 24 22 56  C5 57 48 49
3180 | 4C C5 31 5B  25 06 31 4A  27 0C 22 56  00 82 2B AD
3190 | 31 7C 25 06  22 C0 20 42  00 04 22 EA  22 56 83 44
31A0 | 2B AD 31 8D  25 06 22 C0  20 42 00 04  23 10 22 56
31B0 | 83 41 42 D3  31 9E 25 06  23 60 31 92  22 56 00 84
31C0 | 44 41 42 D3  31 B0 25 06  23 60 31 A4  22 56 83 4D
31D0 | 41 D8 31 BF  25 06 23 22  23 22 27 72  20 42 00 04
31E0 | 23 4A 23 38  22 56 00 82  4D AA 31 CE  25 06 23 22
31F0 | 23 22 22 0E  22 7A 31 B6  23 4A 31 B6  21 BE 22 8A
3200 | 31 A4 22 56  00 82 4D AF  31 E7 25 06  23 22 22 7A
3210 | 22 7A 31 C6  22 98 31 B6  21 D2 22 8A  22 98 22 0E
3220 | 31 92 23 4A  22 8A 31 92  23 4A 22 56  81 AA 32 05
3230 | 25 06 21 BE  23 38 22 56  00 84 2F 4D  4F C4 32 2C
3240 | 25 06 22 7A  24 1E 22 8A  32 0A 22 56  81 AF 32 39
3250 | 25 06 32 40  23 4A 23 38  22 56 83 4D  4F C4 32 4C
3260 | 25 06 32 40  23 38 22 56  85 2A 2F 4D  4F C4 32 5A
3270 | 25 06 22 7A  31 EC 22 8A  32 0A 22 56  00 82 2A AF
3280 | 32 68 25 06  32 70 23 4A  23 38 22 56  85 4D 2F 4D
3290 | 4F C4 32 7D  25 06 22 7A  25 14 22 98  21 D2 22 8A
32A0 | 23 4A 22 7A  21 D2 22 8A  22 56 00 86  53 50 41 43
32B0 | 45 D3 32 8C  25 06 25 14  31 D4 27 B0  20 42 00 0C
32C0 | 25 14 20 90  27 A0 20 5A  FF FC 22 56  00 82 3C A3
32D0 | 32 AB 25 06  2B 1A 26 3E  23 C2 22 56  00 82 23 BE
32E0 | 32 CD 25 06  23 38 23 38  26 3E 23 9C  2B 1A 23 22
32F0 | 27 5A 22 56  00 84 53 49  47 CE 32 DD  25 06 27 8C
3300 | 22 C0 20 42  00 08 20 06  00 2D 2B 02  22 56 81 A3
3310 | 32 F5 25 06  26 0C 23 9C  32 94 27 8C  20 06 00 09
3320 | 23 22 27 72  20 42 00 08  20 06 00 07  22 D6 20 06
3330 | 00 30 22 D6  2B 02 22 56  00 82 23 D3  33 0E 25 06
3340 | 33 12 23 22  23 22 21 FC  22 A8 20 42  FF F4 22 56
3350 | 83 44 2E D2  33 39 25 06  22 7A 23 4A  23 22 31 C6
3360 | 32 D2 33 3E  32 FC 32 E2  22 8A 23 22  27 5A 32 B4
3370 | 29 94 22 56  00 82 44 AE  33 50 25 06  25 14 33 56
3380 | 27 A0 22 56  00 82 2E D2  33 75 25 06  22 7A 24 1E
3390 | 22 8A 33 56  22 56 81 AE  33 85 25 06  24 1E 33 7A
33A0 | 22 56 81 BF  33 96 25 06  23 9C 33 9A  22 56 85 56
33B0 | 4C 49 53 D4  33 A2 25 06  20 06 00 80  25 C0 23 C2
33C0 | 25 E6 23 9C  23 9C 25 C0  23 9C 26 F4  27 7E 20 42
33D0 | 00 0C 24 88  20 06 00 0E  25 C0 23 C2  23 60 2C 96
33E0 | 27 A0 27 A0  28 32 27 FE  23 9C 23 60  22 A8 24 72
33F0 | 21 FC 20 42  FF D2 23 38  22 56 00 84  2B 42 55 C6
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OK

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3400 | 33 AE 25 06  26 DE 20 06  00 04 22 D6  22 D6 23 60
3410 | 26 56 27 66  20 42 00 06  23 38 26 4A  23 60 26 6C
3420 | 23 9C 27 5A  22 56 00 86  55 50 44 41  54 C5 33 FB
3430 | 25 06 26 6C  23 9C 23 9C  20 06 80 00  21 FC 26 6C
3440 | 23 9C 23 C2  22 56 8D 45  4D 50 54 59  2D 42 55 46
3450 | 46 45 52 D3  34 27 25 06  26 4A 26 56  23 22 27 5A
3460 | 2A E0 22 56  00 86 42 55  46 46 45 D2  34 46 25 06
3470 | 26 60 23 9C  23 60 22 7A  34 02 20 42  FF FC 26 60
3480 | 23 C2 22 98  23 9C 22 C0  20 42 00 14  22 98 27 0C
3490 | 22 98 23 9C  20 06 7F FF  21 EA 25 14  36 CE 22 98
34A0 | 23 C2 22 98  26 6C 23 C2  22 8A 27 0C  22 56 85 42
34B0 | 4C 4F 43 CB  34 65 25 06  25 D8 23 9C  22 D6 22 7A
34C0 | 26 6C 23 9C  23 60 23 9C  22 98 27 5A  23 60 22 D6
34D0 | 20 42 00 34  34 02 22 A8  20 42 00 14  23 38 22 98
34E0 | 34 6E 23 60  22 98 25 1C  36 CE 25 24  27 5A 23 60
34F0 | 23 9C 22 98  27 5A 23 60  22 D6 22 A8  20 42 FF D6
3500 | 23 60 26 6C  23 C2 22 8A  23 38 27 0C  22 56 00 86
3510 | 28 4C 49 4E  45 A9 34 AE  25 06 22 7A  26 F4 26 DE
3520 | 32 70 22 8A  26 EA 32 30  22 D6 34 B6  22 D6 26 F4
3530 | 22 56 85 2E  4C 49 4E C5  35 0F 25 06  35 18 29 C2
3540 | 29 94 22 56  87 4D 45 53  53 41 47 C5  35 32 25 06
3550 | 25 7C 23 9C  20 42 00 1C  27 B0 20 42  00 12 20 06
3560 | 00 04 25 D8  23 9C 26 EA  32 50 27 5A  35 3A 20 2C
3570 | 00 0C 29 F6  05 4D 53 47  20 23 33 9A  22 56 00 84
3580 | 4C 4F 41 C4  35 44 25 06  25 AC 23 9C  22 7A 25 B6
3590 | 23 9C 22 7A  25 14 25 B6  23 C2 26 EA  32 30 25 AC
35A0 | 23 C2 2E 78  22 8A 25 B6  23 C2 22 8A  25 AC 23 C2
35B0 | 22 56 C3 2D  2D BE 35 7F  25 06 28 D8  25 14 25 B6
35C0 | 23 C2 26 EA  25 AC 23 9C  23 22 32 60  27 5A 25 AC
35D0 | 23 72 22 56  00 84 4C 49  53 D4 35 B2  25 06 29 54
35E0 | 24 88 23 60  25 CA 23 C2  29 F6 05 53  43 52 20 23
35F0 | 33 9A 20 06  00 10 25 14  20 90 24 88  22 98 25 2C
3600 | 33 8A 27 A0  22 98 25 CA  23 9C 35 3A  20 5A FF EC
3610 | 24 88 22 56  85 49 4E 44  45 D8 35 D5  25 06 24 88
3620 | 26 FE 23 4A  20 90 24 88  22 98 25 2C  33 8A 27 A0
3630 | 25 14 22 98  35 3A 24 72  20 42 00 04  22 68 20 5A
3640 | FF E6 22 56  00 84 43 4F  4C C4 36 14  36 4E 30 7C
3650 | 36 96 31 D0  2F 00 3C 68  00 04 32 4E  30 3C 00 0A
3660 | 32 D8 51 C8  FF FC D2 FC  00 1E 30 3C  00 0D 32 D8
3670 | 51 C8 FF FC  30 2E 00 36  30 6E 00 34  90 48 53 40
3680 | 10 FC 00 00  51 C8 FF FA  60 04 3C 78  36 9A 38 7C
3690 | 2F 5A 4E F8  22 46 36 FC  00 7F 1A 00  19 FE 1B FE
36A0 | 18 20 00 1F  00 01 37 0C  37 0C 2F 02  10 00 18 20
36B0 | 10 00 10 00  48 00 00 08  1C 00 1D 18  1D 26 1D 3A
36C0 | 1E 00 01 00  00 04 00 40  83 52 2F D7  36 45 36 D0
36D0 | 30 6E 00 48  4E 90 3A 5C  30 5D 4E D0  00 86 4F 52
36E0 | 49 47 49 CE  36 C8 24 BA  36 8A 87 2B  4F 52 49 47
36F0 | 49 CE 36 DD  25 06 36 E6  22 D6 22 56  83 44 52 B0
3700 | 36 EA 25 06  25 14 25 D8  23 C2 22 56  00 00 00 00
3710 | 00 00 00 00  00 00 00 00  00 00 00 00  00 00 00 00
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3730 | 00 00 00 00  00 00 00 00  00 00 00 00  00 00 00 00
3740 | 00 00 00 00  00 00 00 00  00 00 00 00  00 00 00 00
3750 | 00 00 00 00  00 00 00 00  00 00 00 00  00 00 00 00
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