

TSC 6800 Text Editing System

SL68-24



TECHNICAL SYSTEMS CONSULTANTS

TSC 6800 Text Editing System

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TEXT EDITING SYSTEM

INTRODUCTION

Contained in the following pages is a complete description and source listing of the TSC Text Editing System: This system is a content oriented text editor which is powerful, simple to use, and easy to learn. Particular attention should be paid to the section titled "Adapting to Your System".

As in all TSC software, a great effort has been put forth in testing to eliminate "bugs" in the code. This however is no guarantee of perfect code. If a suspected bug is spotted, please jot down the circumstances involved and send it to TSC. Errata sheets with all patches will be sent to owners if necessary.

GETTING THE SYSTEM STARTED

After all of the code has been entered, and all of the adaptations to your system have been made, start executing the program at location 200 hex. The system should respond with:

```
NEW FILE:
  1.00 =
```

The system is now ready to accept the text file input from the keyboard. If the editor is left and later it is desirable to reenter the editor to work on the previous text file, it is necessary to enter at location 203 hex, otherwise all workspace will be cleared. If a system containing MIKBUG[®] is used this "restart" address will automatically be used on a "G" command.

MINI-TUTORIAL

The purpose of this section is to briefly introduce the reader to the use of the TSC Text Editing System. We will, therefore, illustrate its use with a number of examples. In order to make it more obvious what things are typed by the user and what things are displayed by the editor, we will subscribe to the convention that things underlined are user-typed and things not underlined are displayed by the editor.

When the editor is initially entered, the response is as shown above. At this time we will create our file by simply typing all lines until finished, terminating each line with a "carriage return".

NEW FILE:

```

1.00 =THIS IS AN EXAMPLE OF THE FANTASTICALLY USEFUL
2.00 =TSC TEXT EDITING SYSTEM, A NUMBER OF
3.00 =EXAMPLES WILL BE SHOWN TO ALLOW EASY AND
4.00 =QUICK LEARNING OF ITS FEATURES.
5.00 =FOLLOWING ARE SOME NONSENSE LINES:
6.00 =ABCDEFGHIJKL
7.00 =AAAAAAAAA
8.00 =TESTING 1234
9.00 =THIS EDITOR IS FUN TO USE!
10.00 =EEEEEEEE
11.00 =
12.00 =THIS IS THE END OF THIS FILE,
13.00 =AT LEAST FOR NOW.
14.00 =#
13.00 =AT LEAST FOR NOW.

```

#

Notice it was necessary to type a pound sign (#) in column one to leave the buffered input mode. At this time, the system printed the last line and returned with the system prompt (a pound sign). The editor is now ready to accept commands.

Any time characters are being typed into the editor the following two characters have special meaning:

1. "control" H - Deletes the last character typed (backspace).
2. "control" X - Deletes entire current line being typed.

These are useful, when detected typing errors occur, for immediate correction.

Each line of text in the edit file is given or has a line number which is used by the editor to uniquely identify the line. Each line number is

of the form 'm.nn' where 'm' is an integer and 'n' represents any of the digits 0 through 9. To specify a line number, one has to specify only that portion of the line number to identify it uniquely. For example, 73, 73., 73.0, and 73.00 may be used to refer to line 73.00; 259.6 refers to line 259.60. The largest line number used with the editor is 9999.99. Let's denote a specification of a line of text by the symbol "<line>". We will be using this symbol throughout this document.

An editor command tells the editor what action is to be performed and usually what line or block of lines are to be affected (if any). For each editing facility supported by the editor, there is a directive which is used in commands to indicate the desired action. For example, the editor can delete lines of text from a file, insert lines of text into the file, print lines contained in the file, and so on. Corresponding to each capability there is a directive; hence, there is a Delete directive, an Insert directive, a Print directive, and so on. If we define the symbol <directive> to mean any editor directive, the basic form of an edit command is

<line><directive>

For example, the command to display (Print) line 12.00 is

```
#12_P
12.00 =THIS IS THE END OF THIS FILE,
#
```

where "12" is the <line> specification and "P" is the <directive> in this command. As can be seen in the example, this causes line number 12 to be printed on the terminal.

Now, let's learn how to use the Insert directive. In normal usage of the word "insert" we say something like, "Insert this card after this other card." To use the Insert directive, we specify the line after which we want to insert new lines followed by an I:

<line>I

After typing the directive followed by a carriage return, the editor will select an appropriate line number and prompt for input by displaying the line number followed by an equal sign. After each line of text is entered

and the carriage return is typed, the editor will prompt for the next line. To exit from the "Insert mode" one simply types a pound sign followed by an edit directive in response to a new line prompt.

Some examples of the use of Insert are

```
#8I
 8.10 =THIS IS AN INSERTED LINE.
 8.20 =SO IS THIS.
 8.30 =#11 I
11.10 =ANOTHER INSERTED LINE.
11.20 =#6 P
 6.00 =ABCDEFGHJKLM
```

It should be noted that the editor may renumber some lines following the inserted text. This occurs when enough lines are inserted such that the inserted line numbers overlap line numbers in the original text.

Next, let's learn how to use the Delete directive. With this directive we can delete one line or a block of lines with one directive. To delete only one line, we specify the <line> to be deleted followed by a D:

<line>D

When the carriage return is typed, the line disappears.

To delete more than one line we need to indicate not only the first line to delete but also the last line to be deleted. Let's call the last line the "target" line and denote its specification as "<target>". Although the editor supports fancier ways to specify the <target>, we'll just consider the two simplest: (1) <target> may be the number of lines to be deleted (counting both the first and last line of the block), or (2) <target> may be a pound sign followed immediately by the line number of the last line of the block to be deleted. Some example <target>s are: 3 (delete three lines), 26 (delete 26 lines), and #26 (delete lines through line 26.00).

The syntax to Delete a block of lines is

<line>D <target>

where <line> indicates the first line to delete and <target> indicates the scope of the delete.

To illustrate the use of the Delete directive, let's assume we have a file containing 53 lines with integer line numbers (i.e., 1, 2, 3, ..., 53).

With the directives

```
#15D
#24D #31
#52D 2
BOTTOM OF FILE REACHED
#
```

we now have a file with lines 1 through 14, 16 through 23, and 32 through 51. The first directive deleted line 15. The second directive deleted lines 24 through 31. The third directive deleted two lines starting with line 52. Since it deleted the last line of the file, the editor displayed the message "BOTTOM OF FILE REACHED."

Before we discuss any more directives, we need to expand the definitions of <line> and <target>.

As editing operations are performed, the editor keeps track of the "current line" which usually is the line most recently affected by a successful edit directive. Upon entering the editor, the "current line" is the first line of the file. If, for example, we have just inserted three lines between lines 12.00 and 13.00, the current line will be 12.30. One should note that after a line or a block of lines have been Deleted, the line immediately following the last one deleted is made the current line (if the last line of the file was deleted, the new last line of the file will be the current line).

In our discussions above, we have implied that one has to explicitly indicate a <line> for each directive by specifying the line number of the line of interest. However, if <line> is not specified in a directive, the "current line" is used. For example, if one enters the directive

```
#D 2
#
```

the editor will delete two lines starting with the current line. In our example, since we were at line 6.00, the "D2" operation deleted lines 6.00 and 7.00. As you will learn to appreciate, the "current line" default for line is extremely handy.

After performing all of the above operations, our file now looks like this:

```

1.00 =THIS IS AN EXAMPLE OF THE FANTASTICALLY USEFUL
2.00 =TSC TEXT EDITING SYSTEM. A NUMBER OF
3.00 =EXAMPLES WILL BE SHOWN TO ALLOW EASY AND
4.00 =QUICK LEARNING OF ITS FEATURES.
5.00 =FOLLOWING ARE SOME NONSENSE LINES:
8.00 =TESTING 1234
8.10 =THIS IS AN INSERTED LINE.
8.20 =SO IS THIS.
9.00 =THIS EDITOR IS FUN TO USE!
10.00 =BBBBBBBB
11.00 =
11.10 =ANOTHER INSERTED LINE.
12.00 =THIS IS THE END OF THIS FILE,
13.00 =AT LEAST FOR NOW.

```

We have seen that <line> may be specified by a line number or by default to the current line. There are also several other ways to specify <line>, or in other words, to move the pointer to a desired line prior to the execution of an edit directive. One may also specify <line> with a "+n" or "-n" (where n is an integer) meaning the next nth line in the file or the nth previous line in the file, respectively. Two other useful <line> designators are "↑" ("^" on some terminals) and "↓" (I on some terminals). The up arrow "↑" is used to designate the top or first line in the file. The down arrow "↓" is used to move to the last line or bottom of file. These various <line> specifiers are shown in the example below with the PRINT directive.

```

#^P      1.00 =THIS IS AN EXAMPLE OF THE FANTASTICALLY USEFUL
#+3 P    4.00 =QUICK LEARNING OF ITS FEATURES.
#! P     13.00 =AT LEAST FOR NOW.
#-2P     11.10 =ANOTHER INSERTED LINE.
#

```

There may be times while editing a file when we know part of the contents of a line of interest but don't know its line number nor its displacement from the current line. In such a case we can use the "content-oriented" feature of the editor to find it. The syntax to specify <line>

in this way is

```
/<string>/
```

where "/" is a character to delimit (enclose) the <string> which is a sequence of characters known to be in the line. When <line> is specified as "/<string>/", the editor will search for the current line through the file to find the next line containing the specified <string>. Some examples will help to clarify this: (1) /PRINT/ denotes the next line containing the character string "PRINT", and (2) /GO TO 35/ refers to the next line containing "GO TO 35". If the <string> is found in any subsequent line of the file, that line will be made the current line and the requested edit operation will be performed on it. If the <string> does not occur anywhere subsequent in the file, the editor will issue the message "NO SUCH LINE" and will not change the current line pointer. Note that the delimiter does not need to be a slash; it may be some other character such as a quote (') or a comma. For example, 'A/B' refers to the next line containing 'A/B'.

It is also possible to prefix the string designator with "-" (minus sign) to indicate a previous line containing that string. A few examples with our TEST FILE will show the use of "/<string>/" as a <line> designator.

```
#-/QUICK/P
    4.00 =QUICK LEARNING OF ITS FEATURES.
#;123; P
    8.00 =TESTING 1234
#+ 'END' P
   12.00 =THIS IS THE END OF THIS FILE,
#
```

To summarize, we have seen that <line> may be specified a number of ways, namely: (1) by default to the current line, (2) by typing a line number, (3) by "+n" denoting the nth subsequent line, (4) by "-n" referring to the nth previous line, (5) by /<string>/ denoting the next line in the file containing the indicated string of characters, (6) "-/<string>/" to denote the nearest previous line containing the specified character string, (7) "+" ("^^" on some terminals) to denote the first line of the file, and (8) "+" ("!" on some terminals) to denote the last line of the file.

Now let's turn our attention to expanding the definition of <target>. As you may recall, a <target> is used in some directives to indicate the

number of lines to be affected by the edit operation. We have already seen that a <target> may be specified by (1) an integer 'n' indicating the number of lines to be affected, as P3, meaning print 3 lines, and (2) a line number preceded by a pound sign (#) indicating the line number of the last line to be affected, as P #6, meaning print all lines to and including line #6. The <target> is simply a designator telling how many lines the edit directive should operate on. In addition to the two mentioned forms of <target>, we also have, (3) if no <target> is specified in a command whose syntax includes one, a <target> of 1 is assumed, thereby affecting only one line. As with <line>, one may specify <target> by (4) "/<string>/" which indicates the next line in the file containing the specified character string, (5) "^" to denote the top line in the file, and (6) "\$" to denote the bottom line in the file. A minus sign may be used to indicate that processing is to proceed backward through the file in the following two cases: (7) "-n" and (8) "-/<string>".

With an understanding of <line> and <target> we can now discuss some more directives. The Print directive is used to display a line or a group of lines. Its syntax is

```
<line>P <target>
```

where "<line>" and "<target>" may be specified in any of the ways discussed above. To print just one line one needs to specify only <line> followed by a carriage return; therefore, the following two directives perform the same thing:

```
<line>P
```

and

```
<line>
```

Going back to our test file, we can illustrate the various forms of <target> as used with the Print directive.

```
#2P
```

```
2.00 =TSC TEXT EDITING SYSTEM. A NUMBER OF
```

```
#-1
```

```
1.00 =THIS IS AN EXAMPLE OF THE FANTASTICALLY USEFUL
```

```

#P /EASY/
  1.00 =THIS IS AN EXAMPLE OF THE FANTASTICALLY USEFUL
  2.00 =TSC TEXT EDITING SYSTEM, A NUMBER OF
  3.00 =EXAMPLES WILL BE SHOWN TO ALLOW EASY AND
#I P -3
  13.00 =AT LEAST FOR NOW.
  12.00 =THIS IS THE END OF THIS FILE,
  11.10 =ANOTHER INSERTED LINE.
#- /BBB/ P - /123/
  10.00 =BBBBBBBB
  9.00 =THIS EDITOR IS FUN TO USE!
  8.20 =SO IS THIS.
  8.10 =THIS IS AN INSERTED LINE.
  8.00 =TESTING 1234
#12P!
  12.00 =THIS IS THE END OF THIS FILE,
  13.00 =AT LEAST FOR NOW.
#

```

The first directive displayed line 2.00 and made that line the current line. The second directive requested that the line immediately preceding the current line be displayed. The third directive displayed the block of lines from the current line down through the line containing the character string "EASY". The fourth directive printed 3 lines starting at the bottom of the file and ending at line 11.10, which became the current line. The fifth directive requested the previous line containing the character string "BBB" be found, and then starting with that line, display all lines going backwards through the file until a line containing the character string "123" has been displayed. This shows the extreme usefulness and power of the content-oriented characteristic of the editor. The last directive requested that all lines from line 12.00 to the end or bottom of file be displayed.

The next directive to discuss is Next which is used primarily to move the current line pointer. Although it may be used otherwise, usually it is used only with the default <line>. Its syntax is

N <target>

This directive finds the line indicated by target, displays it, and makes it the current line. A few examples will illustrate its use.

```

#CF
1.00 =THIS IS AN EXAMPLE OF THE FANTASTICALLY USEFUL
#N
2.00 =TSC TEXT EDITING SYSTEM, A NUMBER OF
#N 6
8.20 =SO IS THIS.
#N -2
8.00 =TESTING 1234
#

```

The following directive performs single-line replacements or inserts. Its syntax is

```
<line>=<text>
```

where "<line>" specifies the number of the line to be replaced or inserted and may, of course, default to the current line. "<text>" is the text to comprise the line. To illustrate this directive, let's continue our example series.

```

#REPLACE CURRENT LINE HERE
#5.25=THIS LINE CREATED WITH "EQUALS".
#

```

The first directive changed the contents of line 8.00, the current line. The second example inserted a line with the line number 5.25.

The next directive to be discussed is the Change directive. It is used to change occurrences of one character string into another. Its syntax is

```
<line>C /<string>1/<string>2/ <target> <occurrence>
```

where "/" is a delimiter character to separate the two character strings; "<string>₁" is the character string to be replaced; "<string>₂" is the string of characters to replace them; "<target>" specifies the range of the changes; and "<occurrence>" specifies which occurrence(s) of <string>₁ should be replaced in the line(s). If <occurrence> is 1 or is not specified, then only the first occurrence of <string>₁ in any line of the block will be changed--the second or subsequent occurrence of the string in such a line will not be affected. If 2 is specified for <occurrence>, then only the second occurrence of <string>₁ in any line of the block will be changed. To change all occurrences of the indicated string in the block, use an

asterisk (*) for <occurrence>. Let's illustrate the Change directive by continuing our example.

```
#4C /QUICK/FAST/
    4.00 =FAST LEARNING OF ITS FEATURES.
#8.1 C /THIS IS //
    8.10=AN INSERTED LINE.
#-5C ;A;$$ ;SOME; *
    3.00 =EX$MPLES WILL BE SHOWN TO $LLOW E$SY $ND
    4.00 =F$ST LE$RNING OF ITS FE$TURES.
    5.00 =FOLLOWING $RE SOME NONSENSE LINES:
#12 C /E/?/ -2 3
    12.00 =THIS IS THE END OF THIS FIL?,
    11.10 =ANOTHER INSERT?D LINE.
#
```

The first example replaced the string "QUICK" with the string "FAST" in line 4.00. The second example deleted the string "THIS IS" and a blank from line 8.10. The third example starts at the fifth previous line (line 3.00) and changes every occurrence of "A" to "\$" down through all lines until the line containing the character string "SOME" (line 5.00) is reached. The last example changes the third occurrence of "E" to "?" in line 12.00 and then in line 11.10.

The last directive to be discussed is used to exit from the editor. This can be done several different ways: STOP, S, or LOG. This will return you to your system monitor.

Now lets go back to our test file and illustrate some of the features and directives we have discussed.

```
#^P!
1.00 =THIS IS AN EXAMPLE OF THE FANTASTICALLY USEFUL
2.00 =TSC TEXT EDITING SYSTEM. A NUMBER OF
3.00 =EX$MPLES WILL BE SHOWN TO $LLOW E$SY $ND
4.00 =F$ST LE$RNING OF ITS FE$TURES.
5.00 =FOLLOWING $RE SOME NONSENSE LINES:
5.25 =THIS LINE CREATED WITH "EQUALS".
8.00 =REPLACE CURRENT LINE HERE
8.10 =AN INSERTED LINE.
8.20 =SO IS THIS.
```

```

    9.00 =THIS EDITOR IS FUN TO USE!
    10.00 =BBBBBBBB
    11.00 =
    11.10 =ANOTHER INSERT?D LINE.
    12.00 =THIS IS THE END OF THIS FIL?,
    13.00 =AT LEAST FOR NOW.
#2C/C /C 6800 /
    2.00 =TSC 6800 TEXT EDITING SYSTEM. A NUMBER OF
# /BBB/
    10.00 =BBBBBBBB
#-;THIS IS; C 'E'XX' ;
    1.00 =THIS IS AN XXXAMPLE OF THE FANTASTICALLY USEFUL
    2.00 =TSC 6800 TXXXT EDITING SYSTEM. A NUMBER OF
    3.00 =XXX$MPLES WILL BE SHOWN TO $LLOW E$SY $ND
    4.00 =F$ST LXX$RNING OF ITS FE$TURES.
    5.00 =FOLLOWING $RXX SOME NONSENSE LINES:
    5.25 =THIS LINXX CREATED WITH 'EQUALS'.
    8.00 =RXXPLACE CURRENT LINE HERE
    8.10 =AN INSXXRTED LINE.
    9.00 =THIS XXDITOR IS FUN TO USE!
    11.10 =ANOTHXXR INSERT?D LINE.
    12.00 =THIS IS THXX END OF THIS FIL?,
    13.00 =AT LXXAST FOR NOW.
#N -4
    10.00 =BBBBBBBB
#-1 I
    9.10 =TEST-TEST-TEST
    9.20 =1234567890
    9.30 =#D!
BOTTOM OF FILE REACHED
#^D!
BOTTOM OF FILE REACHED
#^P!
#S

```

The previous tutorial has been only a brief introduction to the TSC Text Editing System. The remainder of this manual contains a detailed description of each directive with examples, in the next section, followed by "How to Use Tape" and "Adapting to Your System". It is important to read and study the entire manual in order to fully understand and utilize all of the power and features of this editor. The source listing is the last section.

EDITOR DIRECTIVES

There are five groups of editor directives: environment directives, system directives, "current line" movers, edit directives, and tape directives. A complete description of all directives in each group is given below. In the following descriptions, quantities enclosed in square brackets ([...]) are optional, and may be omitted. Vertical lines (|) separate options.

Several of the editor directives use character strings as arguments. These arguments are either matched against strings in the text, or replace a string in the text. A string argument begins after a delimiter character and continues as a sequence of any legal characters until the delimiter is again encountered. The delimiters are not considered part of the string to be used in the matching or replacement operations. Although the delimiters in the following descriptions are frequently represented as slashes, "/", any legal non-blank, non-alphanumeric character may be used as the delimiter such as: * / () \$ = , . ≡ [] : ' etc. Note that the following characters may not be used to enclose strings unless they are preceded by either a plus (+) or minus (-) sign: '^' (denotes first line of file), '\$' (denotes last line of file), '-' (denotes target is above current line), and the character denoted by LINO (normally a pound sign) which is used to flag line numbers. The delimiter character is redefined in each new request by its appearance before a string. If two strings exist in one directive (as in the Change directive), the same delimiter character must be used for each string.

All of the editor directives use the <line> information preceeding the directive to position the pointer prior to any directive action. The <line> parameter may of course be null, meaning leave the pointer at its current position. All of the following are valid <line> designators:

- | | |
|---------------|--|
| 1. Any number | references a specific line number |
| 2. +n | denoting the <u>n</u> th subsequent line |
| 3. -n | denoting the <u>n</u> th previous line |
| 4. /<string>/ | referring to the next line in the file containing the indicated string of characters |

- | | |
|---|--|
| 5. <code>-/<string>/</code> | references a previous line containing the indicated string |
| 6. <code>↑</code> (^ on some terminals) | denotes the first line of the file |
| 7. <code>↓</code> (l on some terminals) | denotes the last line of the file |
| 8. <code>null</code> | stay at current line |

Many of the editor directives require `<target>` information. This tells the editor to operate on the "current" line and all other lines in the file up to the line referenced by the `<target>`. In cases where a `<target>` is required, leaving it null will make the `<target>` default to 1, meaning only the current line will be affected by the directive. All of the following are valid `<target>` designators:

- | | |
|--|--|
| 1. an integer <code>n</code> | indicates that <u><code>n</code></u> lines should be affected by the <code>edit</code> operation |
| 2. <code>#n</code> | denotes the line number of the last line to be affected |
| 3. <code>/<string>/</code> | denotes the next line in the file containing the specified character string |
| 4. <code>-/<string>/</code> | references a previous line containing the indicated string |
| 5. <code>↑</code> | denotes all lines up to the top of the file |
| 6. <code>↓</code> | references all lines down to the bottom or last line of the file |
| 7. <code>±<u><code>n</code></u></code> | indicates that <u><code>n</code></u> lines should be affected and in which direction from the current line |
| 8. <code>(null)</code> | defaults to 1 and only the current line is affected |

As we have seen, the form `<target>` is used to specify a range of lines to which the directive will apply. The directive will be applied to each line, starting with the line specified by `<line>` and continuing until the target is reached.

If a string `<target>` is specified, the directive will apply to successive lines of text until a line containing the string is reached. Processing proceeds downward in the file unless the target is preceded by a "-" (minus sign), indicating that processing is to occur upward (toward

the first line) in the file. Targets may also be preceded by a plus sign (indicating downward movement). If a line number target is specified, processing begins at <line> and proceeds toward the target line number. Some examples of <target>s are

```
2
+10
-3
/STRING/
+/STRING TARGET/
-/BACKWARD DISPLACEMENT TO A STRING/
+*ANY DELIMITER WILL WORK FOR STRING*
++EVEN PLUS SIGNS WILL WORK+
#23.000
```

Any "<string>/" descriptor may be postfixed with a column number immediately after the delimiter which indicates that the preceding string must begin in the column specified to be found. If the column specified is not in the range of the ZONE in effect, the request will be ignored. Some examples are

```
/IDENT/11
/PROGRAM/77
*LABEL*2
.COMMENT.30
```

Environment Directives

H[EADER] <columns>

MEANING:

A line of <columns> headings will be displayed. The heading is of the form "123456789012..." to indicate the column number. Columns for which tab stops are set will contain a minus character instead of the normal digit. If a column count is given, it becomes the default count such that if just "H" is typed afterwards, that number of columns will be printed.

EXAMPLES:

HEADER 72	Display column number headings for 72 columns.
H 30	Display column numbers for 30 columns.

NU[MBERS] [OFF|ON]

MEANING:

The line number flag is turned off or on. If the flag is off, then line numbers will never be printed. If neither "OFF" nor "ON" is specified, then the flag will be toggled from its current state.

EXAMPLES:

NUMBERS OFF	Turn line number printing off.
NU ON	Turn it back on.
NU	Toggle from 'on' to 'off' or from 'off' to 'on'.

REN[UMBER]

MEANING:

The "renumber" directive will renumber all of the lines in the current edit file. Lines in the renumbered file will start with line number "1.00" and will have an increment of "1.00". The line which was "current" before the command will still be the current line after the command (although its number will probably have been changed).

EXAMPLES:

RENUMBER	Renumber the lines in the current working file.
REN	

SET <name> = '<char>'

MEANING:

SET is used to define certain special characters or symbols. The <name>s which may be set are:

TAB - the tab character,
FILL - the tab fill character,

EOL - the end of line character which may be used to separate several commands on a single line.

LINO - the line number flag character which is used to indicate that a target is a specific line number.

The default values are: TAB and EOL are 'null'.

FILL is 'space'

LINO is '#'

EXAMPLES:

SET TAB = ':'	Set the tab character to semicolon.
SET TAB = ''	Disable tabbing by setting the tab character to null.
SET FILL = ' '	Set the tab fill character to a blank.
SET EOL = '\$'	Set the EOL character to \$.
SET LINO = '@'	Set the line number target escape

TAB [<columns>]

MEANING:

Used to set the tab stops. All previous tab stops are cleared. If no columns are specified then the only action is to clear all tab settings. Any TAB characters occurring beyond the last tab stop are left in the text. The maximum number of TAB stops allowed is 20.

EXAMPLES:

TAB 11, 18, 30	Set tab stops at columns 11, 18, and 30.
TAB 7 72	Set tab stops for a FORTRAN program.
TAB	Clear all tab stops.

V[ERIFY] [OFF|ON]

MEANING:

The verify flag is turned 'on' or 'off'. The verify flag is used by the directives 'CHANGE', and 'NEXT' (and several others) to display their results. If neither 'ON' nor 'OFF' is specified, then the flag will be toggled from its current state.

EXAMPLES:

VERIFY OFF	Turn verification off.
V ON	Turn it back on.

X

MEANING:

"X" is the cursor control command. Any time this command is entered, the editor will issue the 6 special character string previously set up. See "Adapting to your System" for details.

EXAMPLES:

X	Output cursor control string.
---	-------------------------------

Z[ONE] [C1, C2]

MEANING:

ZONE is used to restrict all sub-string searches (FIND, CHANGE, <target>s, etc.) to columns "C1" to "C2" inclusive. Any substrings beginning outside those columns will not be detected. If C1 and C2 are not specified, then the zones will be reset to their defaults (columns 1 and 136).

EXAMPLES:

ZONE 11, 29	Restrict searches to columns 11 through 29.
ZONE	Search columns 1 through 136.

System Directives

LOG

MEANING:

Exit the editor.

EXAMPLES:

LOG

S[TOP]

MEANING:

Same as "LOG".

EXAMPLES:

STOP
S

"Current Line" Movers

B[OTTOM]

MEANING:

Move to the last line in the file and make it the current line.

EXAMPLES:

BOTTOM

Make the last line of the file the current line.

B

F[IND] <target> [<occurrence>]

MEANING:

Move the current line pointer to the line specified by <target> and make it the current line. If the VERIFY flag (see VERIFY) is on, the line will be printed. If <occurrence> is specified (an unsigned integer or an asterisk), the directive will be repeated <occurrence> times. An asterisk means all occurrences of the <target> will be found until the bottom or the top of the file is reached. If the target is not reached, the current line pointer will not be moved.

EXAMPLES:

FIND /STRING/

Find the next line containing the string "STRING".

F /A VERY LONG STRING/
F/THREE LINES/ 3

Find the next three lines containing the string "THREE LINES".

F/ALL TILL BOTTOM OF FILE/ *

Find all following occurrences of the indicated string.

F-/PROGRAM/7 *

Find all previous lines which contain the characters "PROGRAM" beginning in column seven.

N[EXT] [<target> [<occurrence>]]

MEANING:

The line specified by the target is made the current line. If the VERIFY flag is on, the line will be printed. If <occurrence> is specified, it must be an unsigned integer. It indicates which next occurrence of a line containing the target is to be made the current line. If the target is not reached, the current line pointer will be positioned at the bottom of the file (top of the file for a negative <target>). If no target is specified, the next line will be made the current line.

EXAMPLES:

NEXT 5	Make the fifth following line the current line.
N	Make the next line the current line.
N-10	Make the tenth previous line current.
N/STRING TARGET/	Make the next line containing "STRING TARGET" to be the current line.
N/THIRD OCCURRENCE/ 3	Make the third line containing the indicated string the current line.

T[OP]

MEANING:

The first line of the file becomes the current line

Edit Directives

A[PPEND] /<string>/ [<target>]

MEANING:

Append the specified <strings> just beyond the last character of the current line (and to successive until the target is reached). If the string is postfixed with a column number, then append the string beginning at the specified column (rather than at the end of the line). Any characters previously in the line following the specified column will be lost.

EXAMPLES:

APPEND ./	Append a period to the end of the current line.
A *HELLO* 2	Append the word "HELLO" to the end of the current line and to the end of the next line.
A/SEQUENCE/73 *END*7	Append the word "SEQUENCE" starting in column 73 of the current line and successive lines until a line containing the characters "END" beginning in column seven is found.

C[HANGE] /<string>₁/<string>₂/ [<target> [<occurrence>]]

MEANING:

Replace the string specified by <string>₁ with the string specified by <string>₂. If no <target> is specified, only the current line

is affected. The slashes represent any nonblank delimiter character. <occurrence> is used to specify which occurrence of <string>₁ is to be replaced in each line. It is either an unsigned integer or an asterisk, "*" signifying that all occurrences of the substring <string>₁ are to be replaced with <string>₂. By default, only the first occurrence will be changed. Note that if <occurrence> is specified, and if changes are to occur to the current line only, then the target should be a 1 (one).

EXAMPLES:

CHANGE /THIS/THAT/	Replace the first occurrence of "THIS" in the current line with "THAT".
C/A/B/ 1*	Change all occurrences of "A" in the current line to "B".
C /FIRST/LAST/10	Change the first occurrence of "FIRST" to "LAST" in the current line and also in the nine following lines.
C /NEW/OLD/ /A TARGET/	Change the first occurrence of "NEW" to "OLD" in each line down through the line containing the string "A TARGET".
C ,A,, -10 *	Remove all "A"s in the current line and in the nine preceding lines.
C*HELLO*	Delete the character string "HELLO" from the current line.

CO[PY] [<destination-target> [<range-target>]]

MEANING:

The current line and successive lines until the <range-target> is reached are copied so that they follow the line specified by destination-target. The default destination-target is 1, thereby causing a copy of the current line to be placed after the next line. The default <range-target> is 1, thereby copying only one line. After the directive is executed, the current line pointer will be positioned at the new position of the last line copied. Some lines may be renumbered after a copy.

EXAMPLES:

CO #18	Put a copy of the current line after line 18.
COPY #3 4	Copy four lines beginning with the current line and place them after line 3.
CO /HELLO DOLLY/ +/END OF RANGE/	After the next line which contains the string "HELLO DOLLY" place a copy of each line starting with the current line through the line containing "END OF RANGE".

D[DELETE] [<target>]

MEANING:

The current line (and successive lines until the target is reached) is deleted. After the directive is executed, the current line will be the line following the last line deleted.

EXAMPLES:

DELETE 5	Delete five lines (the current line and the next four lines).
D	Delete the current line.
D /STRING/	Delete lines from the current line through the next line that contains the string "STRING".

EXP[AND] [<target>]

MEANING:

The current tab character is expanded within all lines, beginning with the current line (and down to and including the line specified by target). Since tabs are normally expanded as lines are inserted into the file, this directive is primarily of use when one has forgotten to define a tab character.

EXAMPLES:

EXPAND 100	Expand 100 lines starting with the current line.
EXP	Expand the current line.

I[INSERT]

MEANING:

The editor will enter the buffered input mode, prompting with line numbers (unless line numbers have been disabled, see the "NUMBERS"

directive) and insert the lines below the current line. Buffered input continues until a line beginning with the breakpoint character (pound sign) in column one is received. The characters following the breakpoint character are treated as an editor directive. The editor will try to choose an insertion increment sufficient to insert at least 10 lines, or, if that is not possible, the smallest increment possible. The current line pointer is positioned at the last line inserted. It should be noted that the editor may renumber text lines following the inserted text if the inserted line numbers overlap line numbers previously in the file.

EXAMPLES:

INSERT

Accept line input after the current line.

I

I[NSERT] <text>

MEANING:

The text (sequence of characters) which immediately follows the separator (or blank) after the directive name will be inserted as a separate line below the current line of the file. The line inserted becomes the current line. It should be noted that the editor may renumber text lines following the inserted text if the inserted line numbers overlap line numbers previously in the file.

EXAMPLES:

I THIS BELOW THE CURRENT LINE OF THE FILE

INSERT EVERYTHING AFTER THE FIRST BLANK

MO[VE] [<destination-target> [<range-target>]]

MEANING:

The current line (and successive lines until the <range-target> is reached) is moved so that it follows the line specified by <destination-target>. The default <destination-target> is 1, thereby moving the current line after the next line in the file.

The default <range-target> is 1, thereby moving only one line. After the directive is executed the current line pointer will be positioned at the new position of the last line moved. Some lines may be renumbered after a move.

EXAMPLES:

MOVE 3	Move the current line down three lines.
MO #1 /TARGET STRING/	Insert the current line and all lines down through the line containing "TARGET STRING" after line 1.
MO -/PROGRAM/ 5	Move five lines (including the current line) up within the file so that they follow a line containing the character "PROGRAM".
MO #10 -5	Move the current line and the four previous lines below line 10.

O[VERLAY] [<delimiter>]

MEANING:

The current line is printed, then a line of input is accepted from the terminal (the overlay line). The overlay line will be positioned directly beneath the line printed out. Each character of the overlay that is different from the <delimiter> character (default is a blank) will replace the corresponding character in the current line. The overlaid line will be printed if verify is "ON".

EXAMPLES:

```
OVERLAY
25.00 = THIP IS THE CORRENT LUNE.
OVERLAY      S      U      I
25.00 = THIS IS THE CURRENT LINE.
```

O[VERLAY] <d><text>

MEANING:

This directive is similar to the previous form of the OVERLAY directive with these differences: (1) The current line is not printed. (2) The remainder of the directive line is taken as the overlay text.

EXAMPLES:

```
OVERLAY---AT-----(------)-----
25.00 = THAT IS THE (CURRENT) LINE
```

P[RINT] [<target>]

MEANING:

Beginning with the current line, lines are printed until the line specified by target is reached. By default, only the current line will be printed.

EXAMPLES:

P	Print the current line.
PRINT 5	Print five lines starting with the current line.
P -10	Print the current line and the nine previous lines.
PRINT *STRING*	Print all lines down through the next line containing "STRING".
P -/STRING/	Print all lines up through the next previous line containing "STRING".

R[EPLACE] [<target>]

MEANING:

A "DELETE" from the current line through the <target> line is performed. The editor then enters the buffered input mode, putting the new lines into the area vacated. It is not necessary to enter the same number of lines as were deleted. The line numbers of the lines inserted will probably not be the same as those deleted. The current line pointer will be positioned at the last line inserted. By default, only the current line will be deleted.

EXAMPLES:

R	Replace the current line.
REPLACE 10	Replace ten lines starting with the current line.
R /TARGET STRING/	Replace all lines from the current line through the line containing "TARGET STRING".

≡<text>

MEANING:

The "=" directive replaces the current line with the text supplied.

The replacement text begins with the first character following the equals sign. The current line pointer is not moved.

EXAMPLES:

= THIS IS THE REPLACEMENT TEXT.

(null)

MEANING:

The null directive (i.e., just a carriage return) prints the current line.

Tape Directives

GAP

MEANING :

Issue a string of 40 null characters to the tape unit.

EXAMPLES:

GAP	Puts leader or gap on tape.
-----	-----------------------------

READ

MEANING :

This directive will read the next file present on the loaded tape. All lines read will be appended to the end of the current work file and the last line read will become the "current" line.

EXAMPLE :

READ Get the next file from the tape.

SAVE

MEANING:

Write the entire current file out to the tape unit. The file is written with no line numbers and is terminated with an ASCII "control Z" character.

EXAMPLE:

SAVE Puts the current file on tape.

W[RITE] [<target>]

MEANING:

All lines from the current line through the target line are written out to tape. The same format as SAVE is used.

EXAMPLES:

WRITE	Write the current line to tape.
W #20	Write all lines from the current line through line #20 out to the tape unit.

USING TAPE

The TSC Text Editing System contains four tape directives. These can be used with most types of tape devices including paper tape and Kansas City Standard cassette systems such as the SWTPC AC-30 tape system. When using SAVE or WRITE the text is sent out to the tape in the following form:

TEXT...(carriage return)...TEXT...(C.R.);"control Z".

The "control Z" is the end of file marker. Note that there are no line numbers put on the tape, and also no line feeds or null characters, so the file is not suitable for displaying on a terminal in this form.

When a tape is read back into the editor using the READ command, line numbers are automatically put back in. The tape will be read until a "control Z" is found.

The TSC Text Editing System provides delay after tape turn on for cassettes and also issues a control character for each "tape on" "tape off", "record on", and "record off". To set these characters to those needed by the tape system, see "Adapting to Your System".

The fourth tape directive is the GAP command. This is used to output 40 nulls to the tape. This can be used to put leader or trailer on the tape, or a gap between files.

ADAPTING TO YOUR SYSTEM

The TSC Text Editing System is assembled to run directly on a Motorola MIKBUG based 6800 system, such as the SWTPC 6800. It can, however, be converted with great ease to run on most other 6800 systems. The following information should be all that is necessary in most cases. Read through everything carefully before doing any conversion to be sure everything is understood. This section also contains information for MIKBUG machines to allow setting up the TAPE control characters and the cursor control characters for the X command. There is also information for setting memory end.

1. MEMORY END - The editor is assembled with memory end set at the end of an 8K system (\$1FFF). To change this for your system put the end of memory address in locations \$0212 and \$0213. The memory end should not be set below address \$17FF, the end of the first 6K block of memory.
2. INPUT CHARACTER ROUTINE - This routine is called by the editor and requires the following: The character input should be returned in the A accumulator, the B accumulator should remain unchanged, as well as the index (X) register. The editor is assembled referencing MIKBUG's input routine. To substitute the address of your input routine, enter it at location \$0207 and \$0208.
3. OUTPUT CHARACTER ROUTINE - This routine is called by the editor and performs the following: The character in the A accumulator is output to the terminal. The B accumulator and X registers remain unchanged. The editor is assembled referencing MIKBUG's output routine. To substitute the address of your output routine, enter it at location \$020A and \$020B. Both the input and output routines should be written as sub-routines, meaning the last instruction should be RTS.
4. FULL DUPLEX - If your terminal requires software echo of typed characters and your input routine does not provide this, change the JMP (7E) at location \$0206 to a JSR (BD).

5. INPUT CHARACTER FROM TAPE - If you use a tape system connected to a different I/O port than the terminals or use a different routine to handle tape operations, you can set the address of this routine at locations \$020D and \$020E. The character should be in A, while B and X should remain unchanged. The editor is assembled with MIKBUG's regular input routine.
6. OUTPUT CHARACTER TO TAPE - As explained above, if necessary to use a separate output routine for tape operations, set the address at locations \$0210 and \$0211. Character should be in A keeping B and X unchanged. The editor is assembled with the address of MIKBUG's regular output routine.
7. BACKSPACE CHARACTER - The backspace character ("control" H) is stored at location \$049D. It is presently a 08. Change as desired.
8. DELETE CHARACTER - The delete character is stored in location \$04AC. It is currently a \$18 ("control" X). This may be changed as desired.
9. BELL CHARACTER - When the input buffer is overflowed (more than 136 characters typed) the editor outputs a "bell" character (07). This is stored at location \$04C2 and may be changed as desired.
10. TAPE TURN ON DELAY - The editor is assembled to delay approximately 2 seconds after tape turn on before outputting data. This may be set as needed at location \$00B6. It is currently 06. Setting it to 00 is zero delay, with larger values being longer delays.
11. TAPE CONTROL CHARACTERS - The editor outputs four special characters to control tape operations. These characters are presently set to nulls (00). To set these to your systems requirements, change the following locations.

TAPE ON (PLAY)	-	\$00B7
TAPE OFF (PLAY)	-	\$00B8
TAPE ON (RECORD)	-	\$00B9
TAPE OFF (RECORD)	-	\$00BA
12. CURSOR CONTROL CHARACTERS - The editor outputs a string of six characters upon execution of the 'X' command. These can be set to special cursor

or other control characters. They are presently nulls (00). Set desired characters at location \$0982 through \$0987.

13. RETURN TO MONITOR ADDRESS - Upon execution of STOP, S, or LOG, the editor returns to the system monitor. The editor is assembled with the address of MIKBUG. Enter the address of your monitor at location \$098C and \$098D.

SYSTEM CHARACTERISTICS

1. The maximum line number is 9999.99. If more than 9,999 lines are entered, the line number counter will turn over (go back to 0), therefore, the editor should not be used with files of 10,000 lines or longer. (This is not really a limitation since 10,000 null lines (line number followed by a carriage return) uses up 40K of memory!)
2. The input buffer will hold 136 characters. If more than 136 characters are typed, they will be ignored and a "bell" character output to the terminal. To terminate the line it is necessary to type the backspace character and then a carriage return.
3. Setting the "tab" character and the "fill" character the same will defeat the TAB feature. There is no logical reason to do this.
4. Setting the "EOL" character will allow using multiple commands at a time. Insert and overlay cannot be followed by other commands. An example of EOL use (with EOL set to "\$") is:

```
↑D2$P10$T
```

This sequence will delete the first 2 lines of the file, then print the next 10 lines, and finally, return the pointer to the top of the file.

MORE EXAMPLES

NEW FILE:

```

1.00 =** THIS IS A TEST PROGRAM **
2.00 =
3.00 =;ORG;$0100
4.00 =START;LDX;##$FFF;SET COUNT
5.00 =#3
3.00 =;ORG;$0100
#SET TAB=';'
#TAB 9 16 26
#SET EOL='$'
#EXP !
#T $ P 5
1.00 =** THIS IS A TEST PROGRAM **
2.00 =
3.00 =          ORG      $0100
4.00 =START     LDX      ##$FFF      SET COUNT
#I
5.00 =;LDA A;##$40;SET SECOND COUNT
6.00 =LOOP;DEC A;;DEC THE COUNT
7.00 =;BNE;LOOP;LOOP TILL DONE
8.00 =;DEX;;DEC THE X REG
9.00 =;BNE;LOOP1;LOOP;TIL DONE
10.00 =;LDA A;#"@;SET UP CHAR
11.00 =;JSR;OUTCHR;OUTPUT IT
12.00 =DONE;BRA;DONE;LOOP FOREVER
13.00 =#T
#NU
#P
** THIS IS A TEST PROGRAM **

```

```

          ORG      $0100
START     LDX      ##$FFF      SET COUNT
          LDA A    ##$40      SET SECOND COUNT
LOOP      DEC A      DEC THE COUNT
          BNE      LOOP      LOOP TILL DONE
          DEX      DEC THE X REG
          BNE      LOOP1     LOOP;TIL DONE
          LDA A    #"@      SET UP CHAR
          JSR      OUTCHR     OUTPUT IT
DONE      BRA      DONE      LOOP FOREVER

```

#NU

#

```

12.00 =DONE      BRA      DONE      LOOP FOREVER

```

#-,\$FFF, C ;FF ;FFF

```

4.00 =START     LDX      ##$FFF      SET COUNT

```

#H 45 \$ P

12345678-012345-789012345-7890123456789012345

```

4.00 =START     LDX      ##$FFF      SET COUNT

```

```

#1 0
5.00 = LDA A ##40 SET SECOND COUNT
OVERLAY LOOP1
5.00 =LOOP1 LDA A ##40 SET SECOND COUNT
#C;LOOP1;LOOP2; !
5.00 =LOOP2 LDA A ##40 SET SECOND COUNT
9.00 = BNE LOOP2 LOOP;TIL DONE

#^ C ;LOOP ;LOOP1; !
6.00 =LOOP1 DEC A DEC THE COUNT
7.00 = BNE LOOP1 LOOPTILL DONE
12.00 =DONE BRA DONE LOOP1FOREVER
#C;1;
12.00 =DONE BRA DONE LOOP FOREVER
#7C;PT;P T
7.00 = BNE LOOP1 LOOP TILL DONE
#A, ! ,
7.00 = BNE LOOP1 LOOP TILL DONE !
#B
#I ;END
#
13.00 = END
#R

13.00 =
14.00 =;END
15.00 =
16.00 =* THATS ALL *
17.00 =#^P!
1.00 =** THIS IS A TEST PROGRAM **
2.00 =
3.00 = ORG $0100
4.00 =START LDX ##FFFF SET COUNT
5.00 =LOOP2 LDA A ##40 SET SECOND COUNT
6.00 =LOOP1 DEC A DEC THE COUNT
7.00 = BNE LOOP1 LOOP TILL DONE !
8.00 = DEX DEC THE X REG
9.00 = BNE LOOP2 LOOP;TIL DONE
10.00 = LDA A #'@ SET UP CHAR
11.00 = JSR OUTCHR OUTPUT IT
12.00 =DONE BRA DONE LOOP FOREVER
13.00 =
14.00 = END
15.00 =
16.00 =* THATS ALL *
#LOG
*
```

LOCN B1 B2 B3

```
*
*   COPYRIGHT 1977 (C) BY
*
*   TECHNICAL SYSTEMS CONSULTANTS
*   BOX 2574
*   W. LAFAYETTE, INDIANA 47906
*   (317) 742 7509
*
```

* EXTERNAL EQUATES

01FF	STACK	EQU	\$01FF
E0D0	MIKBUG	EQU	\$E0D0
0023	PROMPT	EQU	\$23
000D	CRGRET	EQU	\$D
0018	DELCOD	EQU	\$18
0008	BACKSP	EQU	\$8
0007	BELL	EQU	\$7

ORG \$40

* TEMPORARY STORAGE

0040	TEMP	RMB	2
0042	XSAVE	RMB	2
0044	BUFPNT	RMB	2
0046	BUFSAV	RMB	2
0048	CURPOS	RMB	2
004A	NEWPOS	RMB	2
004C	SRCHPT	RMB	2
004E	STRNGB	RMB	2
0050	STRNGE	RMB	2
0052	STRGB1	RMB	2
0054	STRGE1	RMB	2
0056	STRPNT	RMB	2
0058	SPCPT1	RMB	2
005A	SPCPT2	RMB	2
005C	LASTNO	RMB	2
005E	ZONE1	RMB	2
0060	ZONE2	RMB	2
0062	ZONBUF	RMB	2
0064	CHGPNT	RMB	2
0066	CHGEND	RMB	2
0068	OCRTMP	RMB	2
006A	NUMFLG	RMB	1
006B	VERFLG	RMB	1
006C	MSLFLG	RMB	1
006D	PSTZFL	RMB	1
006E	OCRCNT	RMB	2
0070	FNDFLG	RMB	1
0071	STRCN1	RMB	1
0072	OVRBEG	RMB	1
0073	OVREND	RMB	1
0074	NOCURL	RMB	1

LOCN	B1	B2	B3			
0075				LINFLG	RMB	1
0076				NXTFLG	RMB	1
0077				ALLFLG	RMB	1
0078				OCRFLG	RMB	1
0079				CHGONF	RMB	1
007A				APPCDL	RMB	1
007B				STRCNT	RMB	1
007C				INCAMT	RMB	1
007D				BMPFLG	RMB	1
007E				EQUFLG	RMB	1
007F				INLMFL	RMB	1
0080				MOVFLG	RMB	1
0081				REPFLG	RMB	1
0082				TMPCHR	RMB	1
0083				CHKFLG	RMB	1
0084				SNGLIN	RMB	1
0085				CHGFLG	RMB	1
0086				STRCN2	RMB	1
0087				FNONFL	RMB	1
0088				LSTFLG	RMB	1
0089				DECCNT	RMB	1
008A				FRNFLG	RMB	1
008B				CPYDRC	RMB	1
008C				DRCTN	RMB	1
008D				CHRCNT	RMB	2
008F				INZFLG	RMB	1
0090				NUMBER	RMB	3
0093				TRGLIN	RMB	2
0095				DELIM	RMB	1
0096				HEDCNT	RMB	1
0097				FILBEG	RMB	2
0099				FILEND	RMB	2
009B				TABPNT	RMB	2
009D				TABBUF	RMB	20
00B1	00			TABEND	FCB	0
00B2	00			TABCH	FCB	0
00B3	20			FILL	FCC	' '
00B4	23			LINO	FCC	'#'
00B5	00			EOL	FCB	0
00B6	06			DELAY	FCB	6
00B7	00			TONCH	FCB	0
00B8	00			TOFCH	FCB	0
00B9	00			RONCH	FCB	0
00BA	00			ROFCH	FCB	0
00BB				BUFFER	RMB	136

ORG \$0200

* PROGRAM STARTS HERE

0200 7E 03 55 START JMP INITLZ

```

LOCN B1 B2 B3
0203 7E 03 83  RESTRT  JMP      PEDIT

```

* EXTERNAL I-O ROUTINES

```

0206 7E E1 AC  INCH     JMP      $E1AC
0209 7E E1 D1  OUTCH    JMP      $E1D1
020C 7E E1 AC  TINCH    JMP      $E1AC  TAPE INPUT ROUTINE
020F 7E E1 D1  TOUCH    JMP      $E1D1  TAPE OUTPUT ROUTINE
0212 1F FF     MEMEND   FDB      $1FFF

```

* COMMAND TABLE

```

0214 41          TABLE  FCC      'APPEND'
0215 50
0216 50
0217 45
0218 4E
0219 44
021A 00          FCB      0
021B 12 DD       FDB      APPEND
021D 41          FCC      'A'

021E 00          FCB      0
021F 12 DD       FDB      APPEND
0221 42          FCC      'BOTTOM'
0222 4F
0223 54
0224 54
0225 4F
0226 4D
0227 00          FCB      0
0228 09 8E       FDB      BOTTOM
022A 42          FCC      'B'

022B 00          FCB      0
022C 09 8E       FDB      BOTTOM
022E 43          FCC      'CHANGE'
022F 48
0230 41
0231 4E
0232 47
0233 45
0234 00          FCB      0
0235 0D CB       FDB      CHANGE
0237 43          FCC      'COPY'
0238 4F
0239 50
023A 59
023B 00          FCB      0
023C 0F F3       FDB      COPY
023E 43          FCC      'CO'
023F 4F
0240 00          FCB      0
0241 0F F3       FDB      COPY

```

LOCN	B1	B2	B3		
0243	43			FCC	'C'
0244	00			FCB	0
0245	0D	CB		FDB	CHANGE
0247	44			FCC	'DELETE'
0248	45				
0249	4C				
024A	45				
024B	54				
024C	45				
024D	00			FCB	0
024E	0C	8A		FDB	DELETE
0250	44			FCC	'D'
0251	00			FCB	0
0252	0C	8A		FDB	DELETE
0254	45			FCC	'EXPAND'
0255	58				
0256	50				
0257	41				
0258	4E				
0259	44				
025A	00			FCB	0
025B	12	5C		FDB	EXPAND
025D	45			FCC	'EXP'
025E	58				
025F	50				
0260	00			FCB	0
0261	12	5C		FDB	EXPAND
0263	46			FCC	'FIND'
0264	49				
0265	4E				
0266	44				
0267	00			FCB	0
0268	09	CF		FDB	CFIND
026A	46			FCC	'F'
026B	00			FCB	0
026C	09	CF		FDB	CFIND
026E	47			FCC	'GAP'
026F	41				
0270	50				
0271	00			FCB	0
0272	14	13		FDB	GAP
0274	48			FCC	'HEADER'
0275	45				
0276	41				
0277	44				
0278	45				
0279	52				
027A	00			FCB	0
027B	11	1B		FDB	HEADER
027D	48			FCC	'H'
027E	00			FCB	0

LOCN	B1	B2	B3			
027F	11	1B		FDB	HEADER	
0281	49			FCC	'INSERT'	
0282	4E					
0283	53					
0284	45					
0285	52					
0286	54					
0287	00			FCB	0	
0288	0A	C8		FDB	INSERT	
028A	49			FCC	'I'	
028B	00			FCB	0	
028C	0A	C8		FDB	INSERT	
028E	4C			FCC	'LOG'	
028F	4F					
0290	47					
0291	00			FCB	0	
0292	09	89		FDB	EXIT	
0294	4D			FCC	'MOVE'	
0295	4F					
0296	56					
0297	45					
0298	00			FCB	0	
0299	0F	D4		FDB	MOVE	
029B	4D			FCC	'MO'	
029C	4F					
029D	00			FCB	0	
029E	0F	D4		FDB	MOVE	
02A0	4E			FCC	'NEXT'	
02A1	45					
02A2	58					
02A3	54					
02A4	00			FCB	0	
02A5	09	CC		FDB	NEXT	
02A7	4E			FCC	'NUMBERS'	
02A8	55					
02A9	4D					
02AA	42					
02AB	45					
02AC	52					
02AD	53					
02AE	00			FCB	0	
02AF	09	1D		FDB	NUMSET	
02B1	4E			FCC	'NU'	
02B2	55					
02B3	00			FCB	0	
02B4	09	1D		FDB	NUMSET	
02B6	4E			FCC	'N'	
02B7	00			FCB	0	
02B8	09	CC		FDB	NEXT	
02BA	4F			FCC	'OVERLAY'	
02BB	56					
02BC	45					
02BD	52					

LOCN	B1	B2	B3			
02BE	4C					
02BF	41					
02C0	59					
02C1	00			FCB	0	
02C2	0F	21		FDB	OVERLA	
02C4	4F			FCC	'0'	
02C5	00			FCB	0	
02C6	0F	21		FDB	OVERLA	
02C8	50			FCC	'PRINT'	
02C9	52					
02CA	49					
02CB	4E					
02CC	54					
02CD	00			FCB	0	
02CE	08	77		FDB	PRINT	
02D0	50			FCC	'P'	
02D1	00			FCB	0	
02D2	08	77		FDB	PRINT	
02D4	52			FCC	'READ'	
02D5	45					
02D6	41					
02D7	44					
02D8	00			FCB	0	
02D9	14	2A		FDB	READ	
02DB	52			FCC	'RENUMBER'	
02DC	45					
02DD	4E					
02DE	55					
02DF	4D					
02E0	42					
02E1	45					
02E2	52					
02E3	00			FCB	0	
02E4	06	A5		FDB	RENUMB	
02E6	52			FCC	'REN'	
02E7	45					
02E8	4E					
02E9	00			FCB	0	
02EA	06	A5		FDB	RENUMB	
02EC	52			FCC	'REPLACE'	
02ED	45					
02EE	50					
02EF	4C					
02F0	41					
02F1	43					
02F2	45					
02F3	00			FCB	0	
02F4	0C	87		FDB	REPLAC	
02F6	52			FCC	'R'	
02F7	00			FCB	0	
02F8	0C	87		FDB	REPLAC	
02FA	53			FCC	'SAVE'	

LOCN	B1	B2	B3			
02FB	41					
02FC	56					
02FD	45					
02FE	00			FCB	0	
02FF	13	9D		FDB	SAVE	
0301	53			FCC	'SET'	
0302	45					
0303	54					
0304	00			FCB	0	
0305	11	CC		FDB	SET	
0307	53			FCC	'STOP'	
0308	54					
0309	4F					
030A	50					
030B	00			FCB	0	
030C	09	89		FDB	EXIT	
030E	53			FCC	'S'	
030F	00			FCB	0	
0310	09	89		FDB	EXIT	
0312	54			FCC	'TAB'	
0313	41					
0314	42					
0315	00			FCB	0	
0316	10	D0		FDB	TAB	
0318	54			FCC	'TOP'	
0319	4F					
031A	50					
031B	00			FCB	0	
031C	09	9D		FDB	TOP	
031E	54			FCC	'T'	
031F	00			FCB	0	
0320	09	9D		FDB	TOP	
0322	56			FCC	'VERIFY'	
0323	45					
0324	52					
0325	49					
0326	46					
0327	59					
0328	00			FCB	0	
0329	09	63		FDB	VERSET	
032B	56			FCC	'V'	
032C	00			FCB	0	
032D	09	63		FDB	VERSET	
032F	57			FCC	'WRITE'	
0330	52					
0331	49					
0332	54					
0333	45					
0334	00			FCB	0	
0335	13	AD		FDB	WRITE	
0337	57			FCC	'W'	

LOCN	B1	B2	B3			
0338	00			FCB	0	
0339	13	AD		FDB	WRITE	
033B	58			FCC	'X'	
033C	00			FCB	0	
033D	09	78		FDB	XCNTRL	
033F	5A			FCC	'ZONE'	
0340	4F					
0341	4E					
0342	45					
0343	00			FCB	0	
0344	11	7E		FDB	SZONE	
0346	5A			FCC	'Z'	
0347	00			FCB	0	
0348	11	7E		FDB	SZONE	
034A	00			FCB	0	

* NEW FILE STRING

034B	4E			NWFSTR	FCC	'NEW FILE:'
034C	45					
034D	57					
034E	20					
034F	46					
0350	49					
0351	4C					
0352	45					
0353	3A					
0354	04			FCB	4	

* INITIALIZATION ROUTINE

0355	8E	01	FF	INITLZ	LDS	#STACK	
0358	CE	14	92		LIX	#BEGPNT	
035B	DF	97			STX	FILBEG	
035D	DF	99			STX	FILEND	SET END ALSO
035F	CE	02	03		LIX	#RESTRT	
0362	FF	A0	48		STX	#A048	SET RESTART ADDRESS
0365	CE	00	01		LIX	#1	SET ZONES
0368	DF	5E			STX	ZONE1	
036A	CE	01	36		LIX	#0136	
036D	DF	60			STX	ZONE2	
036F	86	46			LDA A	#70	SET UP HEADER
0371	97	96			STA A	HEDCNT	
0373	4F				CLR A		
0374	97	9D			STA A	TABBUF	FIX STORAGE
0376	4A				DEC A		
0377	97	8F			STA A	INZFLG	
0379	97	6A			STA A	NUMFLG	TURN ON NUMBERS
037B	97	6B			STA A	VERFLG	ALSO VERIFICATION
037D	CE	03	48		LIX	#NWFSTR	POINT TO STRING
0380	BD	04	83		JSR	PSTRNG	OUTPUT IT

LOCN B1 B2 B3

* RESTART ENTRY POINT

0383	DE	97	PEDIT	LDX	FILBEG	POINT TO BEGIN
0385	DF	48		STX	CURPOS	
0387	7F	00 6C		CLR	MSLFLG	

* MAIN EDIT LOOP

038A	8E	01 FF	EDIT	LDS	#STACK	SETUP STACK POINTER
038D	DF	40		STX	TEMP	SAVE POINTER
038F	DE	48		LDX	CURPOS	SET CURRENT POSITION
0391	DF	4A		STX	NEWPOS	SAVE IT
0393	CE	00 6D		LDX	#PSTZFL	
0396	4F			CLR A		CLEAR ACC.
0397	A7	00	EDIT1	STA A	0,X	CLEAR OUT LOCATION
0399	08			INX		BUMP POINTER
039A	8C	00 8E		CPX	#CHRCNT+1	
039D	26	F8		BNE	EDIT1	
039F	DE	40		LDX	TEMP	RESTORE POINTER
03A1	96	8F		LDA A	INZFLG	INITIALIZE?
03A3	27	06		BEQ	EDIT2	
03A5	7F	00 8F		CLR	INZFLG	
03A8	7E	0A EA		JMP	INSERT4	GO INSERT LINES
03AB	96	6C	EDIT2	LDA A	MSLFLG	MULTIPLE ST. PER LINE?
03AD	26	22		BNE	EDIT55	
03AF	97	8E		STA A	CHRCNT+1	
03B1	CE	00 BB		LDX	#BUFFER	SET POINTER
03B4	BD	04 4E		JSR	PCRLF	
03B7	86	23		LDA A	#PROMPT	SETUP PROMPT
03B9	BD	02 09		JSR	OUTCH	OUTPUT IT
03BC	BD	04 99	EDIT3	JSR	INCHAR	
03BF	27	C9		BEQ	EDIT	
03C1	A7	00	EDIT4	STA A	0,X	PUT CHAR IN BUFFER
03C3	81	0D		CMP A	#CRGRET	IS IT A C.R.
03C5	27	05		BEQ	EDIT5	
03C7	BD	04 BB		JSR	BUFLIM	IS BUFFER FULL?
03CA	20	F0		BRA	EDIT3	REPEAT
03CC	CE	00 BB	EDIT5	LDX	#BUFFER	RESTORE POINTER
03CF	DF	44		STX	BUFPNT	
03D1	7F	00 6C	EDIT55	CLR	MSLFLG	
03D4	BD	04 D2		JSR	FINDL	PROCESS LINE INFO
03D7	4F			CLR A		
03D8	97	75		STA A	LINFLG	CLEAR FLAS
03DA	97	8C		STA A	DRCTN	
03DC	DF	4A		STX	NEWPOS	SAVE POINTER
03DE	DE	44		LDX	BUFPNT	
03E0	BD	04 92		JSR	SKIPSP	SKIP SPACES
03E3	DF	44		STX	BUFPNT	SAVE POINTER
03E5	81	3D		CMP A	#'=	IS IT AN '='?
03E7	26	08		BNE	EDIT56	
03E9	08			INX		BUMP POINTER
03EA	DF	44		STX	BUFPNT	

LOCN B1 B2 B3				
03EC CE 0A A5		LDX	#EQUALS	
03EF 20 44		BRA	EDIT85	GO TO IT
03F1 BD 06 63	EDIT56	JSR	TSTEND	TEST END
03F4 26 05		BNE	EDIT58	
03F6 CE 08 77		LDX	#PRINT	POINT TO PRINT
03F9 20 3A		BRA	EDIT85	
03FB DF 40	EDIT58	STX	TEMP	
03FD CE 02 14		LDX	#TABLE	POINT TO TABLE
0400 DF 9B	EDIT6	STX	TABPNT	SAVE IT
0402 6D 00		TST	0,X	IS IT NULL?
0404 27 23		BEQ	EDIT8	
0406 A1 00		CMP A	0,X	CHECK CHARACTER
0408 26 0C		BNE	EDIT7	ARE THEY EQUAL?
040A DE 44		LDX	BUFPNT	RESTORE POINTER
040C 08		INX		BUMP IT
040D A6 00	EDIT65	LDA A	0,X	GET NEXT CHAR.
040F DF 44		STX	BUFPNT	SAVE POINTER
0411 DE 9B		LDX	TABPNT	
0413 08		INX		BUMP THE TABLE PNTR
0414 20 EA		BRA	EDIT6	
0416 08	EDIT7	INX		BUMP THE POINTER
0417 6D 00		TST	0,X	IS IT NULL?
0419 26 FB		BNE	EDIT7	
041B 08		INX		BUMP POINTER 3 TIMES
041C 08		INX		
041D 08		INX		
041E 6D 00		TST	0,X	END OF TABLE?
0420 27 1F		BEQ	ERROR	REPORT ERROR
0422 09		DEX		
0423 DF 9B		STX	TABPNT	SAVE THE POINTER
0425 DE 40		LDX	TEMP	
0427 20 E4		BRA	EDIT65	REPEAT
0429 08	EDIT8	INX		BUMP THE POINTER
042A EE 00		LDX	0,X	GET ADDRESS
042C 8C 0A CB		CPX	#INSERT	IS IT INSERT?
042F 26 04		BNE	EDIT85	
0431 96 7F		LDA A	INLMFL	
0433 26 0A		BNE	EDIT88	
0435 BD 08 21	EDIT85	JSR	TSTOVR	LIMITS?
0438 26 25		BNE	NOTFND	
043A 4F		CLR A		CLEAR FLAGS
043B 97 72		STA A	OVRBEG	
043D 97 73		STA A	OVBEND	
043F 6E 00	EDIT88	JMP	0,X	GO TO IT

* ERROR ROUTINE

0441 CE 04 4C	ERROR	LDX	#ERRSTR	POINT TO STRING
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* PRINT ERROR MESSAGE

0444 8D 3D	PREROR	BSR	PSTRNG	
0446 7F 00 6C		CLR	MSLFLG	CLEAR FLAG
0449 7E 03 BA		JMP	EDIT	RETURN

LOCN B1 B2 B3

044C 3F ERRSTR FCC '?'

044D 04 FCB 4

* PRINT CARRIAGE RETURN & LINE FEED

044E DF 42 PCRLF STX XSAVE SAVE POINTER
 0450 CE 04 58 LDX #CRLFST POINT TO STRING
 0453 8D 30 BSR PDATA1
 0455 DE 42 LDX XSAVE RESTORE STRING
 0457 39 RTS RETURN

0458 0D CRLFST FCB \$D,\$A,0,0,0,0,4
 0459 0A
 045A 00
 045B 00
 045C 00
 045D 00
 045E 04

* REPORT LINE NOT FOUND

045F CE 04 64 NOTFND LDX #NOFSTR POINT TO STRING
 0462 20 E0 BRA PREROR

0464 4E NOFSTR FCC 'NO SUCH LINE'
 0465 4F
 0466 20
 0467 53
 0468 55
 0469 43
 046A 48
 046B 20
 046C 4C
 046D 49
 046E 4E
 046F 45
 0470 04 FCB 4

* REPORT SYNTAX ERROR

0471 CE 04 76 SYNERR LDX #SYNSTR POINT TO STRING
 0474 20 CE BRA PREROR

0476 53 SYNSTR FCC 'SYNTAX ERROR'
 0477 59
 0478 4E
 0479 54
 047A 41
 047B 58
 047C 20

LOCN B1 B2 B3
 047D 45
 047E 52
 047F 52
 0480 4F
 0481 52
 0482 04

FCB 4

* PRINT STRING ROUTINE

0483	BD	C9	PSTRNG	BSR	PCRLF	OUT C.R. L.F.
0485	A6	00	PDATA1	LDA A	0,X	GET CHAR.
0487	B1	04		CMP A	#4	IS IT TERM?
0489	27	0D		BEQ	SKIPS2	
048B	BD	02 09		JSR	OUTCH	OUTPUT IT
048E	08			INX		BUMP POINTER
048F	20	F4		BRA	PDATA1	

* SKIP ALL SPACES

0491	08		SKIPSA	INX		
0492	A6	00	SKIPSP	LDA A	0,X	GET A CHAR.
0494	B1	20		CMP A	#'	IS IT A SPACE?
0496	27	F9		BEQ	SKIPSA	REPEAT
049B	39		SKIPS2	RTS		RETURN

* INPUT AND CHECK CHARACTER

0499	BD	02 06	INCHAR	JSR	INCH	GET CHAR
049C	B1	08	INCHR1	CMP A	#BACKSP	IS IT A BACKSPACE?
049E	26	0B		BNE	INCHR3	
04A0	8C	00 BB		CPX	#BUFFER	BUFFER BEGINNING?
04A3	27	15		BEQ	INCHR4	
04A5	09			DEX		DEC THE POINTER
04A6	7A	00 8E		DEC	CHRCNT+1	
04A9	20	EE		BRA	INCHAR	
04AB	B1	18	INCHR3	CMP A	#DELCOD	IS IT A DELETE?
04AD	27	0B		BEQ	INCHR4	
04AF	B1	1F		CMP A	#*1F	IS IT CONTROL?
04B1	22	04		BHI	INCH35	
04B3	B1	0D		CMP A	#CRGRET	IS IT A C.R.?
04B5	26	E2		BNE	INCHAR	
04B7	7C	00 8E	INCH35	INC	CHRCNT+1	INC CHAR. COUNT
04BA	39		INCHR4	RTS		RETURN

* CHECK FOR BUFFER OVERFLOW

04BB	08		BUFLIM	INX		BUMP THE POINTER
04BC	8C	01 43		CPX	#BUFFER+136	
04BF	26	F9		BNE	INCHR4	
04C1	86	07	OVER	LDA A	#BELL	LOAD UP BELL
04C3	BD	02 09		JSR	OUTCH	OUTPUT IT

LOCN B1 B2 B3			
04C6 BD 02 06	JSR	INCH	GET NEW CHAR.
04C9 81 08	CMP A	#BACKSP	IS IT BACKSPACE?
04CB 26 F4	BNE	OVER	
04CD 09	DEX		DEC THE POINTER
04CE 7A 00 8E	DEC	CHRCNT+1	
04D1 39	RTS		RETURN

* PROCESS LINE ROUTINE

04D2 BD BE	FINDL	BSR	SKIPSP	SKIP SPACES
04D4 81 3D		CMP A	#'=	IS IT '='?
04D6 27 0A		BEQ	FINDL0	
04D8 7C 00 75		INC	LINFLG	SET FLAG
04DB BD 07 3B		JSR	CLASS	CLASSIFY CHAR.
04DE C1 01		CMP B	#1	IS IT A LETTER
04E0 23 03		BLS	FINDL2	
04E2 DE 4A	FINDL0	LDX	NEWPOS	SET POINTER
04E4 39	FINDL1	RTS		RETURN
04E5 27 23	FINDL2	BEQ	FIND1	
04E7 20 14		BRA	FIND	

* TARGET ENTRY POINT

04E9 8D 03	FINDT	BSR	FINDT0	
04EB DF 93		STX	TRGLIN	SAVE TARGET POS.
04ED 39		RTS		RETURN
04EE 7F 00 8C	FINDT0	CLR	DRCTN	
04F1 BD 07 3B		JSR	SKPCLS	
04F4 C1 01		CMP B	#1	IS IT A LETTER?
04F6 23 03		BLS	FINDT2	
04F8 7E 04 71	FINDT1	JMP	SYNERR	REPORT SYNTAX ERROR
04FB 27 7D	FINDT2	BEQ	FIND62	
04FD 7F 00 8C	FIND	CLR	DRCTN	CLEAR DIRECTION
0500 91 B4		CMP A	LINO	IS IT LINE NUMBER
0502 26 2E		BNE	FIND2	
0504 08		INX		BUMP THE POINTER
0505 BD 04 92		JSR	SKIPSP	
0508 DF 44		STX	BUFPNT	
050A BD 07 55	FIND1	JSR	BCDCON	
050D DF 40		STX	TEMP	SAVE POINTER
050F DE 4A		LDX	NEWPOS	
0511 96 90		LDA A	NUMBER	GET NUMBER
0513 A1 00		CMP A	0,X	COMPARE IT
0515 26 0A		BNE	FIND14	
0517 96 91		LDA A	NUMBER+1	GET NEXT NUM.
0519 A1 01		CMP A	1,X	COMPARE
051B 26 04		BNE	FIND14	
051D 96 92		LDA A	NUMBER+2	
051F A1 02		CMP A	2,X	
0521 24 03	FIND14	RCC	FIND16	
0523 7A 00 8C		DEC	DRCTN	SET DIRECTION
0526 DE 40	FIND16	LDX	TEMP	RESTORE POINTER
0528 BD 07 AB		JSR	FINDNUM	FIND LINE NUMBER
052B 27 B7		BEQ	FINDL1	

LOCN B1 B2 B3				
052D D7 74		STA B	NOCURL	
052F 7E 07 F0		JMP	BAKONE	
0532 BD 06 63	FIND2	JSR	TSTEND	
0535 26 0A		BNE	FIND3	
0537 7D 00 76		TST	NXTFLG	CHECK FLAG
053A 27 A6		BEQ	FINDLO	
053C DE 4A		LDX	NEWPOS	SET POINTER
053E 7E 08 0F		JMP	UPONE	UP ONE LINE
0541 B1 21	FIND3	CMP A	#'!	IS IT A '!'?
0543 26 08		BNE	FIND4	
0545 08		INX		BUMP THE POINTER
0546 DF 44		STX	BUFPNT	
0548 DE 99		LDX	FILEND	SET POINTER
054A 7E 07 F0		JMP	BAKONE	BACKUP ONE LINE
054D B1 5E	FIND4	CMP A	#'0	IS IT A '0'?
054F 26 09		BNE	FIND5	
0551 7A 00 8C		DEC	DRCTN	SET DIRECTION
0554 08		INX		BUMP THE POINTER
0555 DF 44		STX	BUFPNT	
0557 DE 97		LDX	FILBEG	SET POINTER TO BEGIN
0559 39		RTS		RETURN
055A B1 2B	FIND5	CMP A	#'+	IS IT A '+'?
055C 27 07		BEQ	FIND6	
055E B1 2D		CMP A	#'-'	IS IT A '-'?
0560 26 47		BNE	FIND7	
0562 7A 00 8C		DEC	DRCTN	DEC DIRECTION
0565 08	FIND6	INX		BUMP THE POINTER
0566 BD 07 38		JSR	SKPCLS	SKIP SPACES
0569 C1 01		CMP B	#1	IS IT NUMBER?
056B 27 0D		BEQ	FIND62	
056D 23 3A		BLS	FIND7	
056F D6 75		LDA B	LINFLG	TEST FLAG
0571 27 85		BEQ	FINDT1	
0573 BD 07 A3		JSR	CLRNUM	
0576 DE 4A		LDX	NEWPOS	SET POINTER
0578 20 1A		BRA	FIND66	
057A BD 07 55	FIND62	JSR	BCDCON	CONVERT NUMBER
057D DE 4A		LDX	NEWPOS	SET POINTER
057F 7D 00 75		TST	LINFLG	CHECK FLAG
0582 26 08		BNE	FIND65	
0584 BD 08 38	FIND63	JSR	TSTNUM	IS IT ZERO?
0587 27 1F		BEQ	FIND67	
0589 BD 08 2A		JSR	DECNUM	DEC NUMBER
058C BD 08 38	FIND65	JSR	TSTNUM	TEST NUMBER
058F 27 17		BEQ	FIND67	
0591 BD 08 2A		JSR	DECNUM	
0594 BD 06 C3	FIND66	JSR	NXTLIN	GOTO NEXT LINE
0597 BD 08 21		JSR	TSTOVR	CHECK LIMITS
059A 27 F0		BEQ	FIND65	
059C 96 73		LDA A	QVREND	BEGINNING?
059E 26 08		BNE	FIND67	
05A0 BD 08 38		JSR	TSTNUM	
05A3 26 03		BNE	FIND67	
05A5 7C 00 7F		INC	INLMFL	
05A8 39	FIND67	RTS		RETURN

LOCN B1 B2 B3				
05A9 BD 4F	FIND7	BSR	SETDEL	SET DELIMITER
05AB BD 6D	FIN702	BSR	ZONE	SET ZONE
05AD DE 4A		LDX	NEWPOS	SET POINTER
05AF BD 06 C3		JSR	NXTLIN	GO TO NEXT
05B2 08	FIND71	INX		BUMP POINTER 3 TIMES
05B3 08		INX		
05B4 08		INX		
05B5 BD 06 5A	FIN711	JSR	FIXZON	CHECK FOR POSTZONE
05B8 BD 08 2A	FIND72	JSR	DECNUM	DEC COLUMN COUNT
05BB 27 22		BEQ	FIND75	
05BD C6 0D		LDA B	#CRGRET	
05BF E1 00		CMP B	0,X	TEST FOR C.R.
05C1 27 03		BEQ	FIND73	
05C3 08		INX		BUMP THE POINTER
05C4 20 F2		BRA	FIND72	REPEAT
05C6 96 85	FIND73	LDA A	CHGFLG	CHECK IF CHANGE
05C8 26 DE		BNE	FIND67	
05CA 08		INX		BUMP THE POINTER
05CB 9C 99		CPX	FILEND	END OF FILE ?
05CD 27 06		BEQ	*+08	
05CF 09		DEX		
05D0 96 85	FIND74	LDA A	CHGFLG	
05D2 26 D4		BNE	FIND67	
05D4 09		DEX		DEC THE POINTER
05D5 BD 06 C3		JSR	NXTLIN	
05D8 BD 08 21		JSR	TSTOVR	CHECK LIMITS
05DB 26 17		BNE	FIND77	
05DD 20 D3		BRA	FIND71	
05DF BD 06 5A	FIND75	JSR	FIXZON	FIX UP ZONE
05E2 BD 06 CD		JSR	STRING	PROCESS STRING
05E5 7D 00 70		TST	FNDFLG	FIND IT?
05E8 27 E6		BEQ	FIND74	
05EA 5F		CLR B		
05EB 96 85		LDA A	CHGFLG	
05ED 26 05		BNE	FIND77	
05EF BD 07 F6		JSR	BAKON2	
05F2 DF 93		STX	TRGLIN	SAVE TARGET POINTER
05F4 39	FIND77	RTS		RETURN
05F5 86 01	FIND78	LDA A	#1	SET FLAG
05F7 97 73		STA A	OUREND	
05F9 39		RTS		RETURN

* SET UP DELIMITERS

05FA 97 95	SETDEL	STA A	DELIM	SAVE DELIMITER
05FC 5F		CLR B		
05FD 08		INX		BUMP THE POINTER
05FE DF 4E		STX	STRNGB	SAVE BEGINNING
0600 A6 00	SETDE2	LDA A	0,X	GET A CHARACTER
0602 8D 5F		BSR	TSTEND	
0604 27 08		BEQ	SETDE4	
0606 91 95		CMP A	DELIM	IS IT A DELIMITER?
0608 27 04		BEQ	SETDE4	
060A 08		INX		BUMP THE POINTER

LOCN	B1	B2	B3			
060B	5C			INC B		BUMB COUNTER
060C	20	F2		BRA	SETDE2	REPEAT
060E	DF	50		SETDE4	STX	STRNGE
0610	D7	7B		STA B	STRCNT	SAVE END OF STRING
0612	8D	4F		BSR	TSTEND	
0614	27	01		BEQ	SETDE5	
0616	0B			INX		BUMP THE POINTER
0617	DF	44		SETDE5	STX	BUFPNT
0619	39			RTS		RETURN

* SET UP ZONE

061A	BD	07	3B	ZONE	JSR	CLASS	GO CLASSIFY CHAR.
061D	7F	00	6D		CLR	PSTZFL	CLEAR FLAG
0620	C1	01			CMP B	#1	IS IT A NUMBER
0622	26	17			BNE	ZONE3	
0624	BD	07	55		JSR	BCDCON	CONVERT NUMBER
0627	8D	1B			BSR	CMPZN1	CHECK ZONE1
0629	25	10			BCS	ZONE3	
062B	8D	22			BSR	CMPZN2	CHECK ZONE2
062D	22	0C			BHI	ZONE3	
062F	7C	00	6D		INC	PSTZFL	SET FLAG
0632	96	90			LDA A	NUMBER	PUT NUM IN ZONE BUF.
0634	97	62			STA A	ZONBUF	
0636	96	91			LDA A	NUMBER+1	
0638	97	63			STA A	ZONBUF+1	
063A	39				RTS		RETURN
063B	96	5E		ZONE3	LDA A	ZONE1	PUT ZONE1 IN BUF.
063D	97	62			STA A	ZONBUF	
063F	96	5F			LDA A	ZONE1+1	
0641	97	63			STA A	ZONBUF+1	
0643	39				RTS		RETURN

* COMPARE ZONE1 TO NUMBER

0644	D6	90		CMPZN1	LDA B	NUMBER	GET NUMBER
0646	D1	5E			CMP B	ZONE1	CHECK
0648	26	04			BNE	CMPZ14	
064A	D6	91			LDA B	NUMBER+1	
064C	D1	5F			CMP B	ZONE1+1	
064E	39			CMPZ14	RTS		RETURN

* COMPARE ZONE2 TO NUMBER

064F	D6	90		CMPZN2	LDA B	NUMBER	GET NUMBER
0651	D1	60			CMP B	ZONE2	CHECK
0653	26	04			BNE	CMPZ24	
0655	D6	91			LDA B	NUMBER+1	
0657	D1	61			CMP B	ZONE2+1	
0659	39			CMPZ24	RTS		RETURN

LOCN B1 B2 B3

* PUT CORRECT ZONE IN NUMBER

065A 96 62	FIXZON	LDA A	ZONBUF	GET ZONE
065C 97 90		STA A	NUMBER	PUT IN NUMBER
065E 96 63		LDA A	ZONBUF+1	
0660 97 91		STA A	NUMBER+1	
0662 39		RTS		RETURN

* TEST TERMINATOR (C.R. OR EOL)

0663 81 0D	TSTEND	CMF A	#CRGRET	IS IT C.R.?
0665 27 02		BEQ	TSTEN2	
0667 91 B5		CMF A	EOL	
0669 39	TSTEN2	RTS		RETURN

* BUMP NUMBER BY 1, .1, OR .01

066A 86 01	BMPNUM	LDA A	#1	
066C D6 7C		LDA B	INCAMT	CHECK AMOUNT
066E 27 0C		BEQ	INCNUM	
0670 2A 02		BPL	BMPNU4	
0672 86 10		LDA A	##10	SET BUMP
0674 9B 92	BMPNU4	ADD A	NUMBER+2	ADD IN
0676 19		DAA		ADJUST IT
0677 97 92		STA A	NUMBER+2	SAVE
0679 25 01		BCS	INCNUM	
067B 39		RTS		RETURN

* INCREMENT NUMBER BY ONE

067C 86 01	INCNUM	LDA A	#1	SET UP ONE
067E 5F		CLR B		
067F 9B 91		ADD A	NUMBER+1	ADD IN ONE
0681 19		DAA		ADJUST IT
0682 97 91		STA A	NUMBER+1	SAVE IT
0684 17		TBA		
0685 99 90		ADC A	NUMBER	
0687 19		DAA		ADJUST NUMBER
0688 97 90		STA A	NUMBER	
068A 39		RTS		RETURN

* PUT NUMBER AT X

068B 96 90	PUTNUM	LDA A	NUMBER	GET NUMBER
068D A7 00		STA A	0,X	SAVE IT
068F 96 91		LDA A	NUMBER+1	
0691 A7 01		STA A	1,X	
0693 96 92		LDA A	NUMBER+2	
0695 A7 02		STA A	2,X	
0697 39		RTS		RETURN

LOCN B1 B2 B3

* GET NUMBER FROM X

0698	A6	00	GETNUM	LDA A	0,X	GET NUMBER
069A	97	90		STA A	NUMBER	SAVE IT
069C	A6	01		LDA A	1,X	
069E	97	91		STA A	NUMBER+1	
06A0	A6	02		LDA A	2,X	
06A2	97	92		STA A	NUMBER+2	
06A4	39			RTS		RETURN

* RENUMBER FILE

06A5	BD	09	A4	RENUMB	JSR	TFORCR	
06A8	DE	97			LDX	FILBEG	SET POINTER
06AA	7F	00	7C	RENUM1	CLR	INCAMT	
06AD	BD	07	A3		JSR	CLRNUM	CLEAR NUMBER
06B0	BD	B8		RENUM2	BSR	BMPNUM	BUMP NUMBER
06B2	BD	D7			BSR	PUTNUM	SAVE IT
06B4	BD	08	0F		JSR	UPONE	
06B7	96	73			LDA A	OVREND	HIT LIMIT?
06B9	27	F5			BEQ	RENUM2	REPEAT
06BB	96	83			LDA A	CHKFLG	CHECK FLAG
06BD	27	01			BEQ	RENUM4	
06BF	39				RTS		RETURN
06C0	7E	08	A2	RENUM4	JMP	PRINT6	RETURN

* GO TO NEXT LINE

06C3	96	8C		NXTLIN	LDA A	DRCTN	CHECK DIRECTION
06C5	2B	03			BMI	NXTLI2	
06C7	7E	08	0F		JMP	UPONE	MOVE UP ONE
06CA	7E	07	F0	NXTLI2	JMP	BAKONE	MOVE BACK ONE

* PROCESS STRING ROUTINE

06CD	7F	00	70	STRING	CLR	FNDFLG	CLEAR FLAG
06D0	D6	7B			LDA B	STRCNT	
06D2	26	06			BNE	STRIN1	
06D4	7C	00	70		INC	FNDFLG	FOUND NULL STRING
06D7	DF	5C			STX	LASTNO	SAVE POINTER
06D9	39				RTS		RETURN
06DA	C6	0D		STRIN1	LDA B	#CRGRET	
06DC	DF	4C			STX	SRCHPT	SAVE POINTER
06DE	DF	5C			STX	LASTNO	SAVE POINTER
06E0	DE	4E			LDX	STRNGB	POINT TO BEGIN
06E2	DF	56		STRIN2	STX	STRPNT	SAVE POINTER
06E4	A6	00			LDA A	0,X	GET A CHARACTER
06E6	DE	4C			LDX	SRCHPT	RESTORE POINTER
06E8	E1	00		STRIN3	CMP B	0,X	C. RET. ?
06EA	27	1D			BEQ	STRIN4	
06EC	A1	00			CMP A	0,X	COMP. CHAR.

LOCN B1 B2 B3					
06EE 27 1D			BEQ	STRIN5	
06F0 7D 00 6D			TST	PSTZFL	POST ZONE?
06F3 26 14			BNE	STRIN4	
06F5 7D 00 70			TST	FNDFLG	FOUND?
06F8 26 22			BNE	STRIN6	
06FA 08			INX		BUMP THE POINTER
06FB DF 5C			STX	LASTNO	SAVE IT
06FD 36			PSH A		SAVE ACC.
06FE 37			PSH B		
06FF BD 06 7C			JSR	INCNUM	INC NUMBER
0702 BD 06 4F			JSR	CMPZN2	CHECK ZONE2
0705 33			PUL B		RESTORE ACC
0706 32			PUL A		
0707 23 DF			BLS	STRIN3	
0709 7F 00 70	STRIN4		CLR	FNDFLG	CLEAR FLAG
070C 39			RTS		RETURN
070D 08	STRIN5		INX		
070E DF 4C			STX	SRCHPT	SAVE IT
0710 7C 00 70			INC	FNDFLG	SET FLAG
0713 DE 56			LDX	STRPNT	POINT TO STRING
0715 08			INX		BUMP THE POINTER
0716 9C 50			CPX	STRNGE	END OF STRING?
0718 27 0F			BEQ	STRIN7	
071A 20 C6			BRA	STRIN2	
071C DE 5C	STRIN6		LDX	LASTNO	RESTORE POINTER
071E 08			INX		
071F BD 06 7C			JSR	INCNUM	BUMP NUMBER
0722 BD 06 4F			JSR	CMPZN2	CHECK ZONE
0725 23 A6			BLS	STRING	
0727 20 E0			BRA	STRIN4	
0729 D6 7B	STRIN7		LDA B	STRCNT	GET COUNT
072B 27 08	STRIN8		BEQ	STRIN9	
072D 37			PSH B		SAVE
072E BD 06 7C			JSR	INCNUM	FIX COL
0731 33			PUL B		
0732 5A			DEC B		DEC COUNT
0733 26 F6			BNE	STRIN8	
0735 DE 5C	STRIN9		LDX	LASTNO	
0737 39			RTS		RETURN

* SKIP AND CLASSIFY

0738 BD 04 92	SKPCLS	JSR	SKIPSP
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* CLASSIFY CHARACTER

073B DF 44	CLASS	STX	BUFPNT	SAVE POINTER
073D A6 00		LDA A	0,X	GET CHARACTER
073F 5F		CLR B		
0740 81 2F		CMP A	#\$2F	CHECK IF NUMBER
0742 23 10		BLS	CLASS4	
0744 81 39		CMP A	#\$'9	
0746 22 02		BHI	CLASS2	

LOCN	B1	B2	B3			
0748	5C			INC	B	SHOW NUMBER
0749	39			RTS		RETURN
074A	B1	40		CLASS2	CMP A	##40
074C	23	06			BLS	CLASS4
074E	B1	5A			CMP A	#'Z
0750	22	02			BHI	CLASS4
0752	C6	02			LDA B	#2
0754	39			CLASS4	RTS	SHOW LETTER
						RETURN

* CONVERT ASCII TO BCD

0755	8D	4C		BCDCON	BSR	CLRNUM	CLEAR NUMBER
0757	8D	E2		BCDC01	BSR	CLASS	CLASSIFY CHAR.
0759	C1	01			CMP B	#1	IS IT A NUMBER?
075B	27	07			BEQ	BCDC02	
075D	B1	2E			CMP A	#'.	IS IT A '.'?
075F	27	17			BEQ	BCDC05	
0761	DF	44		BCDC15	STX	BUFPNT	SAVE POINTER
0763	39				RTS		RETURN
0764	08			BCDC02	INX		BUMP THE POINTER
0765	84	0F			AND A	##0F	MASK ASCII
0767	C6	04			LDA B	#4	SET COUNTER
0769	78	00	91	BCDC04	ASL	NUMBER+1	
076C	79	00	90		ROL	NUMBER	SHIFT EVERYTHING LEFT
076F	5A				DEC B		DEC THE COUNTER
0770	26	F7			BNE	BCDC04	
0772	9B	91			ADD A	NUMBER+1	ADD IN NUMBER
0774	97	91			STA A	NUMBER+1	
0776	20	DF			BRA	BCDC01	
0778	C6	02		BCDC05	LDA B	#2	SET COUNTER
077A	D7	89			STA B	DECCNT	
077C	08			BCDC06	INX		BUMP THE POINTER
077D	8D	BC			BSR	CLASS	CLASSIFY CHAR.
077F	C1	01			CMP B	#1	IS IT NUMBER?
0781	27	04			BEQ	BCDC65	
0783	4F				CLR A		
0784	09				DEX		DEC THE POINTER
0785	20	02			BRA	BCDC67	
0787	84	0F		BCDC65	AND A	##0F	MASK ASCII
0789	C6	04		BCDC67	LDA B	#4	SET COUNTER
078B	78	00	92	BCDC07	ASL	NUMBER+2	
078E	5A				DEC B		
078F	26	FA			BNE	BCDC07	
0791	9B	92			ADD A	NUMBER+2	
0793	97	92			STA A	NUMBER+2	
0795	7A	00	89		DEC	DECCNT	DEC COUNTER
0798	26	E2			BNE	BCDC06	
079A	08			BCDC08	INX		BUMP THE POINTER
079B	8D	9E			BSR	CLASS	CLASSIFY CHAR.
079D	C1	01			CMP B	#1	IS IT NUMBER?
079F	27	F9			BEQ	BCDC08	
07A1	20	BE			BRA	BCDC15	

LOCN B1 B2 B3

* CLEAR NUMBER ROUTINE

07A3 4F	CLRNUM	CLR A	CLEAR ACC.
07A4 97 90		STA A NUMBER	
07A6 97 91		STA A NUMBER+1	CLEAR ALL OUT
07A8 97 92		STA A NUMBER+2	
07AA 39		RTS	RETURN

* FIND NUMBERED LINE

07AB D6 90	FNDNUM	LDA B NUMBER	GET DIGIT
07AD 96 91		LDA A NUMBER+1	
07AF DE 97		LDX FILBEG	SET POINTER TO BEGIN
07B1 9C 99	FNDNU1	CPX FILEND	END OF FILE?
07B3 26 05		BNE FNDNU4	
07B5 7C 00 73		INC OVREND	SET ERROR FLAG
07B8 5C	FNDNU2	INC B	
07B9 39		RTS	RETURN
07BA E1 00	FNDNU4	CMP B 0,X	COMPARE DIGIT
07BC 22 1C		BHI FNDNU5	
07BE 26 FB		BNE FNDNU2	
07C0 A1 01		CMP A 1,X	COMP NEXT DIGIT
07C2 22 16		BHI FNDNU5	
07C4 26 F2		BNE FNDNU2	
07C6 D6 92		LDA B NUMBER+2	NEXT DIGIT
07C8 E1 02		CMP B 2,X	CHECK DIGIT
07CA 22 0E		BHI FNDNU5	
07CC 26 EA		BNE FNDNU2	
07CE 7D 00 84		TST SNGLIN	
07D1 26 05		BNE FNDNU5	
07D3 7D 00 83		TST CHKFLG	
07D6 26 E0		BNE FNDNU2	
07D8 5F	FNDNU5	CLR B	
07D9 39		RTS	RETURN
07DA 7D 00 83	FNDNU5	TST CHKFLG	
07DD 26 F9		BNE FNDNU5	
07DF 8D 05		BSR FNDCRT	FIND C.R.
07E1 D6 90		LDA B NUMBER	RESTORE NUM
07E3 08		INX	BUMP THE POINTER
07E4 20 CB		BRA FNDNU1	REPEAT

* FIND THE NEXT CARRIAGE RETURN

07E6 36	FNDCRT	PSH A	SAVE ACC.
07E7 86 0D		LDA A #CRGRET	
07E9 08	FNDCR2	INX	BUMP THE POINTER
07EA A1 00		CMP A 0,X	CHECK FOR C.R.
07EC 26 FB		BNE FNDCR2	
07EE 32		PUL A	RESTORE ACC.
07EF 39		RTS	RETURN

* MOVE BACK ONE LINE

LOCN B1 B2 B3

07F0	9C	97	BAKONE	CPX	FILBEG	
07F2	27	17		BEQ	BAKON6	
07F4	C6	01		LDA B	#1	SET COUNTER
07F6	09		BAKON2	DEX		DEC THE POINTER
07F7	9C	97		CPX	FILBEG	BEGINNING?
07F9	27	0D		BEQ	BAKON5	
07FB	A6	00		LDA A	0,X	GET A CHAR.
07FD	B1	0D		CMP A	#CRGRET	IS IT C.R.?
07FF	26	F5		BNE	BAKON2	
0801	5A			DEC B		DEC THE COUNTER
0802	2A	F2		BPL	BAKON2	
0804	08			INX		BUMP THE POINTER
0805	C6	01		LDA B	#1	
0807	39		BAKON4	RTS		RETURN
0808	5D		BAKON5	TST B		
0809	27	FC		BEQ	BAKON4	
080B	7C	00 72	BAKON6	INC	OVRBEG	SET ERROR FLAG
080E	39			RTS		RETURN

* MOVE UP ONE LINE

080F	9C	99	UPONE	CPX	FILEND	END OF FILE?
0811	26	06		BNE	UPONE2	
0813	C6	01	UPONE1	LDA B	#1	SET ERROR FLAG
0815	D7	73		STA B	OVREND	
0817	20	D7		BRA	BAKONE	
0819	8D	CB	UPONE2	BSR	FND CRT	FIND NEXT C.R.
081B	08			INX		BUMP THE POINTER
081C	9C	99		CPX	FILEND	END?
081E	27	F3		BEQ	UPONE1	
0820	39			RTS		RETURN

* TEST FOR OVER END LIMITS

0821	7D	00 72	TSTOVR	TST	OVRBEG	BEGINNING?
0824	26	03		BNE	TSTOV2	
0826	7D	00 73		TST	OVREND	END?
0829	39		TSTOV2	RTS		RETURN

* DECREMENT NUMBER BY ONE

082A	86	99	DECNUM	LDA A	#\$99	
082C	16			TAB		SET UP \$9999
082D	9B	91		ADD A	NUMBER+1	ADD IN
082F	19			DAA		ADJUST IT
0830	97	91		STA A	NUMBER+1	SAVE
0832	17			TBA		
0833	99	90		ADC A	NUMBER	
0835	19			DAA		
0836	97	90		STA A	NUMBER	

LOCN B1 B2 B3

* TEST NUMBER FOR ZERO

0838	96	90	TSTNUM	LDA A	NUMBER	CHECK IF ZERO
083A	26	02		BNE	TSTNU2	
083C	96	91		LDA A	NUMBER+1	
083E	39		TSTNU2	RTS		RETURN

* VERIFY LINE ROUTINE

083F	DF	4A	VERLIN	STX	NEWPOS	SAVE POINTER
0841	BD	07 E6		JSR	FND CRT	
0844	DF	5A		STX	SPCPT2	SAVE POSITION
0846	4F			CLR A		
0847	97	8D		STA A	CHRCNT	
0849	09		VERLI1	DEX		DEC POINTER
084A	09			DEX		
084B	09			DEX		
084C	09		VERL12	DEX		DEC THE POINTER
084D	E6	00		LDA B	0,X	CHECK CHAR
084F	C1	0D		CMP B	#CRGRET	IS IT C.R.?
0851	27	09		BEQ	VERL15	
0853	E6	03		LDA B	3,X	CHECK
0855	C1	20		CMP B	#'	IS IT A SPACE?
0857	26	03		BNE	VERL15	
0859	4C			INC A		
085A	20	F0		BRA	VERL12	
085C	97	8E	VERL15	STA A	CHRCNT+1	SAVE COUNT
085E	08			INX		
085F	08			INX		
0860	08			INX		BUMP POINTER
0861	08			INX		
0862	DF	58		STX	SPCPT1	
0864	BD	0D 43		JSR	DELCHR	DELETE SPACES
0867	DE	4A		LDX	NEWPOS	
0869	96	6B		LDA A	VERFLG	CHECK FLAG
086B	27	05		BEQ	VERL12	
086D	BD	40		BSR	OUTLIN	OUTPUT LINE
086F	BD	07 F0		JSR	BAKONE	BACKUP ONE LINE
0872	DF	48	VERL12	STX	CURPOS	SAVE POINTER
0874	DF	4A		STX	NEWPOS	
0876	39			RTS		RETURN

* PRINT ROUTINE

0877	BD	2F	PRINT	BSR	TSTEMP	
0879	DE	44		LDX	BUFFNT	SET POINTER
087B	BD	04 E9		JSR	FINDT	FIND TARGET
087E	DE	4A	PRINT0	LDX	NEWPOS	SET POINTER
0880	7C	00 8A		INC	PRNFLG	SET FLAG
0883	DF	48		STX	CURPOS	SAVE IT
0885	9C	93	PRINT1	CPX	TRGLIN	TARGET LINE?
0887	26	03		BNE	PRIN12	

LOCN B1 B2 B3				
0889 7F 00 8A		CLR	PRNFLG	CLEAR FLAG
088C 8D 21	PRIN12	BSR	OUTLIN	
088E 96 8A		LDA A	PRNFLG	CHECK FLAG
0890 27 0B		BEQ	PRINT5	
0892 96 8C		LDA A	DRCTN	CHECK DIRECTION
0894 27 EF		BEQ	PRINT1	
0896 09		DEX		DEC POINTER TWICE
0897 09		DEX		
0898 BD 07 F0		JSR	BAKONE	MOVE BACK ONE
089B 20 E8		BRA	PRINT1	
089D BD 07 F0	PRINT5	JSR	BAKONE	MOVE BACK ONE
08A0 DF 48		STX	CURPOS	SAVE POINTER
08A2 BD 09 B5	PRINT6	JSR	TSTMSL	
08A5 7E 03 8A		JMP	EDIT	RETURN

* TEST IF FILE EMPTY

08AB DE 97	TSTEMP	LDX	FILBEG
08AA 9C 99		CPX	FILEND
08AC 27 F4		BEQ	PRINT6
08AE 39		RTS	

* OUTPUT ONE LINE

08AF BD 04 4E	OUTLIN	JSR	PCRLF	
08B2 96 6A		LDA A	NUMFLG	
08B4 26 06		BNE	OUTL15	
08B6 BD 15		BSR	OUTSPC	OUTPUT SPACE
08B8 08		INX		BUMP THE POINTER
08B9 08		INX		
08BA 20 03		BRA	OUTLI2	
08BC 8D 16	OUTL15	BSR	OUTBCD	OUTPUT LINE NO.
08BE 09		DEX		
08BF 08	OUTLI2	INX		
08C0 A6 00		LDA A	0,X	GET A CHAR.
08C2 81 0D		CMP A	#CRGRET	IS IT C.R.?
08C4 27 05		BEQ	OUTLI4	
08C6 BD 02 09		JSR	OUTCH	OUTPUT IT
08C9 20 F4		BRA	OUTLI2	REPEAT
08CB 08	OUTLI4	INX		BUMP THE POINTER
08CC 39		RTS		RETURN

* OUTPUT A SPACE

08CD 86 20	OUTSPC	LDA A	#'	LOAD UP SPACE
08CF BD 02 09		JSR	OUTCH	OUTPUT IT
08D2 0C		CLC		
08D3 39		RTS		RETURN

* OUTPUT A BCD NUMBER

LOCN	B1	B2	B3			
08D4	96	6A		OUTBCD	LDA A	NUMFLG
					BEQ	OUTB75
08D6	27	2E			BSR	OUTSPC
08D8	8D	F3			LDA B	#2
08DA	C6	02			CLC	
08DC	0C					
08DD	A6	00		OUTBC2	LDA A	0,X
08DF	85	F0			BIT A	#\$F0
08E1	25	02			BCS	OUTBC3
08E3	27	06			BEQ	OUTB35
08E5	BD	09	13	OUTBC3	JSR	OUTH1
08E8	0D				SEC	
08E9	20	02			BRA	OUTBC4
08EB	8D	E0		OUTB35	BSR	OUTSPC
08ED	A6	00		OUTBC4	LDA A	0,X
08EF	C5	FE			BIT B	#\$FE
08F1	27	06			BEQ	OUTBC6
08F3	85	0F			BIT A	#\$0F
08F5	25	02			BCS	OUTBC6
08F7	27	05			BEQ	OUTB65
08F9	8D	1C		OUTBC6	BSR	OUTHR
08FB	0D				SEC	
08FC	20	02			BRA	OUTBC7
08FE	8D	CD		OUTB65	BSR	OUTSPC
0900	08			OUTBC7	INX	
0901	5A				DEC B	
0902	27	07			BEQ	OUTBC8
0904	2A	D7			BPL	OUTBC2
0906	86	3D		OUTB75	LDA A	#'=
0908	7E	02	09	OUTB78	JMP	OUTCH
090B	86	2E		OUTBC8	LDA A	#',
090D	BD	02	09		JSR	OUTCH
0910	0D				SEC	
0911	20	CA			BRA	OUTBC2
						GO FINISH

* OUTPUT DIGITS ROUTINE

0913	44		OUTH1	LSR A		SHIFT LEFT FOUR TIMES
0914	44			LSR A		
0915	44			LSR A		
0916	44			LSR A		
0917	84	0F	OUTHR	AND A	#\$0F	MASK
0919	8B	30		ADD A	#\$30	MAKE ASCII
091B	20	EB		BRA	OUTB78	

* SET NUMBERS ON OR OFF

091D	8D	18	NUMSET	BSR	ONOFF	GET ON OFF
091F	27	07		BEQ	NUMSE2	
0921	2B	0A		BMI	NUMSE4	
0923	7F	00	6A	CLR	NUMFLG	CLEAR FLAG
0926	20	08		BRA	NUMSE6	
0928	43		NUMSE2	COM A		COM. FLAG
0929	97	6A		STA A	NUMFLG	SAVE IN FLAG

LOCN	B1	B2	B3				
092B	20	03			BRA	NUMSE6	
092D	73	00	6A	NUMSE4	COM	NUMFLG	COM FLAG
0930	DE	4A		NUMSE6	LDX	NEWPOS	
0932	DF	48			STX	CURPOS	SET POINTER
0934	7E	08	A2		JMP	PRINT6	

* CHECK FOR ON OR OFF

0937	DE	44		ONOFF	LDX	BUFPNT	SET POINTER
0939	BD	04	92		JSR	SKIPSP	SKIP SPACES
093C	DF	44			STX	BUFPNT	SAVE POINTER
093E	DF	40			STX	TEMP	
0940	CE	09	46		LDX	#ONOFFB	POINT TO TABLE
0943	7E	04	00		JMP	EDIT6	

* TABLE FOR ON OFF

0946	4F			ONOFFB	FCC	'ON'
0947	4E					
0948	00				FCB	0
0949	09	56			FDB	ON
094B	4F				FCC	'OFF'
094C	46					
094D	46					
094E	00				FCB	0
094F	09	58			FDB	OFF
0951	0D				FCB	CRGRET
0952	00				FCB	0
0953	09	5B			FDB	TOGGLE
0955	00				FCB	0

* ON OFF ROUTINES

0956	4F			ON	CLR A	
0957	39				RTS	RETURN
0958	86	01		OFF	LDA A #1	SET FLAG
095A	39				RTS	RETURN
095B	DE	44		TOGGLE	LDX	BUFPNT
095D	09				DEX	
095E	DF	44			STX	BUFPNT
0960	86	FF			LDA A ##FF	SET FLAG
0962	39				RTS	RETURN

* SET VERIFY FLAG

0963	8D	D2		VERSET	BSR	ONOFF	CHECK ON OFF
0965	27	07			BEQ	VERSE2	
0967	2B	0A			BMI	VERSE4	
0969	7F	00	6B		CLR	VERFLG	CLEAR FLAG
096C	20	08			BRA	VERSE6	
096E	43			VERSE2	COM A		

```

LOCN B1 B2 B3
096F 97 6B          STA A  VERFLG
0971 20 03          BRA    VERSE6
0973 73 00 6B  VERSE4 COM    VERFLG  COM. FLAG
0976 20 B8          VERSE6 BRA    NUMSE6

```

* CURSOR CONTROL COMMAND 'X'

```

0978 8D 2A          XCNTL  BSR    TFORCR
097A CE 09 82          LDX    #CNRSTR  POINT TO STRING
097D 8D 04 85          JSR    PDATA1  OUTPUT IT
0980 20 AE          BRA    NUMSE6

0982 00          CNRSTR  FCB    0,0,0,0,0,0
0983 00
0984 00
0985 00
0986 00
0987 00
0988 04          FCB    4          THIS 4 MUST REMAIN !!

```

* EXIT ROUTINE

```

0989 8D 19          EXIT    BSR    TFORCR
098B 7E E0 D0          JMP    MIKBUG  EXIT

```

* SET POINTER TO BOTTOM

```

098E 8D 14          BOTTOM  BSR    TFORCR
0990 8D 08 A8  BOTTO1  JSR    TSTEMP
0993 DE 99          LDX    FILEND
0995 8D 07 F0          JSR    BAKONE  MOVE BACK ONE
0998 DF 4B  BOTTO2  STX    CURPOS  SAVE-POINTER
099A 7E 08 A2          JMP    PRINT6

```

* SET POINTER TO TOP

```

099D 8D 05          TOP    BSR    TFORCR
099F 8D 08 A8          JSR    TSTEMP
09A2 20 F4          BRA    BOTTO2

```

* TEST OR C.R.

```

09A4 DE 44          TFORCR  LDX    BUFPNT  SET POINTER
09A6 8D 04 92          JSR    SKIPSP
09A9 81 0D          CMP  A  #CRGRET  IS IT C.R.?
09AB 27 04          BEQ    TFORC2
09AD 91 B5          CMP  A  EOL
09AF 26 01          BNE    TFORC3
09B1 39          TFORC2  RTS          RETURN
09B2 7E 04 71  TFORC3  JMP    SYNERR

```

LOCN B1 B2 B3

* TEST FOR MULTIPLE STATEMENTS PER LINE

09B5 DE 44	TSTMSL	LDX	BUFNT	GET POINTER
09B7 B6 0D		LDA A	#CRGRET	GET C.R.
09B9 D6 B5		LDA B	EOL	GET EOL CHAR.
09BB A1 00	TSTMS2	CMP A	0,X	CHECK CHARACTER
09BD 27 0C		BEQ	TSTMS5	
09BF E1 00		CMP B	0,X	
09C1 27 03		BEQ	TSTMS4	
09C3 08		INX		BUMP POINTER ONE
09C4 20 F5		BRA	TSTMS2	REPEAT
09C6 08	TSTMS4	INX		
09C7 DF 44		STX	BUFNT	SAVE BUFFER POINT
09C9 97 6C		STA A	MSLFLG	SET FLAG
09CB 39	TSTMS5	RTS		RETURN

* PROCCSS THE NEXT COMMAND

09CC 7C 00 76	NEXT	INC	NXTFLG
---------------	------	-----	--------

* FIND COMMAND

09CF BD 08 A8	CFIND	JSR	TSTEMP	
09D2 7C 00 75		INC	LINFLG	SET FLAG
09D5 8D 71		BSR	OCCURR	CHECK FOR OCCURRENCE
09D7 DE 93		LDX	TRGLIN	SET POINTER
09D9 BD 08 21		JSR	TSTOVR	CHECK LIMITS
09DC 27 2A		BEQ	CFIND2	
09DE D6 76		LDA B	NXTFLG	CHECK FLAG
09E0 26 43		BNE	CFIND5	
09E2 20 04		BRA	CFIN12	
09E4 96 77	CFIND1	LDA A	ALLFLG	CHECK IF ALL
09E6 26 40		BNE	CFIND6	
09E8 CE 0A 31	CFIN12	LDX	#CFNTST	POINT TO STRING
09EB BD 04 83		JSR	PSTRNG	OUTPUT IT
09EE DE 5E		LDX	ZONE1	CHECK ZONES
09F0 8C 00 01		CPX	**0001	
09F3 26 07		BNE	CFIN13	
09F5 DE 60		LDX	ZONE2	CHECK ZONE 2
09F7 8C 01 36		CPX	**0136	
09FA 27 06		BEQ	CFIN14	
09FC CE 0A 3B	CFIN13	LDX	#ZOKSTR	POINT TO STRING
09FF BD 04 85		JSR	PDATA1	OUTPUT IT
0A02 7F 00 6C	CFIN14	CLR	MSLFLG	
0A05 7E 03 8A	CFIN15	JMP	EDIT	RETURN
0A08 DE 93	CFIND2	LDX	TRGLIN	POINT TO TARGET
0A0A 9C 4A		CPX	NEWPOS	SAME ONE?
0A0C 27 1A		BEQ	CFIND6	
0A0E DF 4A		STX	NEWPOS	SAVE IT
0A10 D6 78	CFIND3	LDA B	OCRFLG	CHECK FLAG
0A12 27 11		BEQ	CFIND5	

LOCN	B1	B2	B3			
0A14	D6	76		LDA B	NXTFLG	CHECK FLAG
0A16	26	03		BNE	CFIND4	
0A18	BD	08	3F	JSR	VERLIN	VERIFY LINE
0A1B	BD	0A	B3	CFIND4	JSR	NXTOCR
0A1E	BD	08	21	JSR	TSTOVR	CHECK LIMITS
0A21	27	E5		BEQ	CFIND2	
0A23	20	06		BRA	CFIND9	
0A25	BD	08	3F	CFIND5	JSR	VERLIN
0A28	7E	08	A2	CFIND6	JMP	PRINT6
0A2B	D6	76		CFIND9	LDA B	NXTFLG
0A2D	26	F6		BNE	CFIND5	CHECK FLAG
0A2F	20	B3		BRA	CFIND1	

0A31	4E		CFNTST	FCC	'NOT FOUND'
0A32	4F				
0A33	54				
0A34	20				
0A35	46				
0A36	4F				
0A37	55				
0A38	4E				
0A39	44				
0A3A	04			FCB	4

0A3B	2E		ZOKSTR	FCC	'...ZONES OK?'
0A3C	2E				
0A3D	2E				
0A3E	5A				
0A3F	4F				
0A40	4E				
0A41	45				
0A42	53				
0A43	20				
0A44	4F				
0A45	4B				
0A46	3F				
0A47	04			FCB	4

* CHECK FOR OCCURRENCE

0A48	DE	44	OCCURR	LDX	BUFPNT	SET POINTER
0A4A	DF	46		STX	BUFSAV	SAVE IT
0A4C	7F	00	77	CLR	ALLFLG	
0A4F	7F	00	78	CLR	OCRFLG	
0A52	BD	04	E9	JSR	FINDT	FIND TARGET
0A55	DE	44		LDX	BUFPNT	RESTORE POINTER
0A57	BD	07	38	JSR	SKPCLS	
0A5A	C1	01		CMP B	#1	IS IT NUMBER?
0A5C	27	09		BEQ	OCCUR3	
0A5E	B1	2A		CMP A	#'*	IS IT A '*'?
0A60	26	17		BNE	OCCUR5	
0A62	7C	00	77	INC	ALLFLG	SET FOR ALL OCCUR.
0A65	20	0F		BRA	OCCUR4	

LOCN	B1	B2	B3			
0A67	BD	07	55	OCCUR3	JSR	BCDCON GET NUMBER
0A6A	BD	08	38		JSR	TSTNUM ZERO?
0A6D	27	0A			BEQ	OCCUR5
0A6F	BD	08	2A		JSR	DECNUM DEC NUMBER
0A72	27	05			BEQ	OCCUR5
0A74	BD	04			BSR	SAVOCR SAVE OCCURRENCE
0A76	7C	00	78	OCCUR4	INC	OCRFLG SET FLAG
0A79	39			OCCUR5	RTS	RETURN

* SAVE PRESENT OCCURRENCE COUNT

0A7A	96	90	SAVOCR	LDA A	NUMBER	GET NUMBER
0A7C	97	6E		STA A	OCRCNT	SAVE IT
0A7E	96	91		LDA A	NUMBER+1	
0A80	97	6F		STA A	OCRCNT+1	
0A82	39			RTS		RETURN

* PROCESS NEXT OCCURRENCE

0A83	96	77	NXTOCR	LDA A	ALLFLG	CHECK FOR ALL
0A85	26	0F		BNE	NXTOC1	
0A87	96	6E	NXTOC0	LDA A	OCRCNT	GET COUNT
0A89	97	90		STA A	NUMBER	PUT IN NUMBER
0A8B	96	6F		LDA A	OCRCNT+1	
0A8D	97	91		STA A	NUMBER+1	
0A8F	BD	08	2A	JSR	DECNUM	DEC THE COUNT
0A92	27	0B		BEQ	NXTOC2	
0A94	BD	E4		BSR	SAVOCR	SAVE COUNT
0A96	96	85	NXTOC1	LDA A	CHGFLG	
0A98	26	0A		BNE	NXTOC3	
0A9A	DE	46		LDX	BUFSAV	RESTORE POINTER
0A9C	7E	04	E9	JMP	FINDT	FIND TARGET AND RET
0A9F	7F	00	78	NXTOC2	CLR	OCRFLG CLEAR FLAG
0AA2	20	F2		BRA	NXTOC1	
0AA4	39		NXTOC3	RTS		RETURN

* EQUALS COMMAND

0AA5	BD	08	A8	EQUALS	JSR	TSTEMP	
0AA8	DE	44			LDX	BUFFNT	SET POINTER
0AAA	7F	00	7D		CLR	BMPFLG	
0AAD	7C	00	84		INC	SNGLIN	
0AB0	7C	00	7E		INC	EQUFLG	
0AB3	96	74			LDA A	NOCURL	CURRENT LINE?
0AB5	26	20			BNE	INSERT1	
0AB7	DE	4A			LDX	NEWPOS	
0AB9	DF	93			STX	TRGLIN	FIX TARGET
0ABB	BD	06	98		JSR	GETNUM	GET NUMBER
0ABE	7C	00	81		INC	REPFLG	SET FLAG
0AC1	96	8E			LDA A	CHRCNT+1	
0AC3	97	82			STA A	TMPCHR	
0AC5	7E	0C	BB		JMP	DELETO	

LOCN B1 B2 B3

* INSERT ROUTINE

0AC8 DE 44	INSERT	LDX	BUFPNT	SET POINTER
0ACA 7F 00 7D		CLR	BMPFLG	CLEAR FLAG
0ACD A6 00		LDA A	0,X	GET CHAR.
0ACF 81 0D		CMP A	#CRGRET	
0AD1 27 17		BEQ	INER4	
0AD3 7C 00 84		INC	SNGLIN	SET FLAG
0AD6 08		INX		BUMP THE POINTER
0AD7 DF 44	INER1	STX	BUFPNT	SAVE IT
0AD9 CE 00 BB		LDX	#BUFFER	
0ADC 96 8E		LDA A	CHRCNT+1	GET COUNT
0ADE 9C 44	INER2	CPX	BUFPNT	CHECK POINT
0AE0 27 04		BEQ	INER3	
0AE2 4A		DEC A		DEC THE COUNTER
0AE3 08		INX		BUMP THE POINTER
0AE4 20 F8		BRA	INER2	
0AE6 8B 03	INER3	ADD A	#3	FIX COUNT
0AEB 97 8E		STA A	CHRCNT+1	
0AEA DE 4A	INER4	LDX	NEWPOS	SET POINTER
0AEC DF 48		STX	CURPOS	SAVE POINTER
0AEE 96 7E		LDA A	EQUFLG	
0AF0 27 06		BEQ	INSE42	
0AF2 96 72		LDA A	OVRBEG	CHECK LIMIT
0AF4 27 14		BEQ	INSE43	
0AF6 20 25		BRA	INER5	
0AF8 BD 06 98	INSE42	JSR	GETNUM	
0AFB 96 7F		LDA A	INLMFL	CHECK FLAG
0AFD 27 0B		BEQ	INSE43	
0AFF 9C 99		CPX	FILEND	EMPTY?
0B01 27 07		BEQ	INSE43	
0B03 5F		CLR B		CLEAR ACC.
0B04 D7 90		STA B	NUMBER	SAVE IN NUMBER
0B06 D7 91		STA B	NUMBER+1	
0B08 20 13		BRA	INER5	
0B0A BD 08 0F	INSE43	JSR	UPONE	UP ONE LINE
0B0D E6 02		LDA B	2,X	GET DIGIT
0B0F 96 73		LDA A	OVREND	LIMIT?
0B11 27 0A		BEQ	INER5	
0B13 5F	INSE45	CLR B		
0B14 DE 99		LDX	FILEND	
0B16 9C 97		CPX	FILBEG	
0B18 26 03		BNE	INER5	
0B1A BD 07 A3		JSR	CLRNUM	CLEAR OUT NUMBER

* CALCULATE LINE NUMBER INCREMENT

0B1D DF 58	INER5	STX	SPCPT1	SAVE POINTER
0B1F 96 7E		LDA A	EQUFLG	
0B21 26 2C		BNE	INSE60	
0B23 96 73		LDA A	OVREND	LIMIT?
0B25 27 05		BEQ	INSE51	
0B27 7F 00 92		CLR	NUMBER+2	

LOCN	B1	B2	B3			
0B2A	20	1C			BRA	INSERT6
0B2C	96	7D		INSE51	LDA A	BMPFLG
0B2E	26	18			BNE	INSERT6
0B30	96	92			LDA A	NUMBER+2 GET NUMBER
0B32	D7	82			STA B	TMPCHR
0B34	9A	82			ORA A	TMPCHR
0B36	27	0D			BEQ	INSE55
0B38	96	7F			LDA A	INLMFL CHECK FLAG
0B3A	27	03			BEQ	INSE52
0B3C	7F	00	92		CLR	NUMBER+2
0B3F	86	01		INSE52	LDA A	#1
0B41	97	7C			STA A	INCAMT SET AMOUNT
0B43	20	03			BRA	INSERT6
0B45	7A	00	7C	INSE55	DEC	INCAMT
0B4B	BD	06	6A	INSERT6	JSR	BMPNUM BUMP NUMBER
0B4B	96	84			LDA A	SNGLIN CHECK IF SINGLE IN
0B4D	27	04			BEQ	INSE61

* ENTER BUFFERED INPUT MODE

0B4F	DE	44		INSE60	LDX	BUFPNT	
0B51	20	2D			BRA	INSE71	
0B53	7F	00	7F	INSE61	CLR	INLMFL	
0B56	BD	04	4E		JSR	PCRLF	
0B59	CE	00	90		LDX	#NUMBER	POINT TO NUMBER
0B5C	BD	08	D4		JSR	OUTBCD	OUTPUT IT
0B5F	7F	00	8D		CLR	CHRCNT	
0B62	86	03			LDA A	#3	SET COUNTER
0B64	97	8E			STA A	CHRCNT+1	
0B66	97	7D			STA A	BMPFLG	SET FLAG
0B68	CE	00	BB		LDX	#BUFFER	SET POINTER
0B6B	BD	04	99	INSE62	JSR	INCHAR	GET A CHARACTER
0B6E	27	E3			BEQ	INSE61	
0B70	81	0D			CMP A	#CRGRET	IS IT C.R.?
0B72	27	07			BEQ	INSERT7	
0B74	A7	00			STA A	0,X	
0B76	BD	04	BB		JSR	BUFLIM	CHECK LIMIT
0B79	20	F0			BRA	INSE62	REPEAT
0B7B	A7	00		INSERT7	STA A	0,X	
0B7D	CE	00	BB		LDX	#BUFFER	SET POINTER
0B80	DF	44		INSE71	STX	BUFPNT	SAVE IT
0B82	A6	00			LDA A	0,X	GET CHAR.
0B84	91	B4			CMP A	LINO	ESCAPE?
0B86	26	40			BNE	INSE72	
0B88	96	8E			LDA A	CHRCNT+1	
0B8A	80	03			SUB A	#3	FIX COUNT
0B8C	97	8E			STA A	CHRCNT+1	
0B8E	08				INX		BUMP THE POINTER

* CHECK IF RENUMBERING NECESSARY

0B8F	DF	40		INS710	STX	TEMP	SAVE POINTER
0B91	DE	4A			LDX	NEWPOS	
0B93	BD	08	0F		JSR	UPONE	UP ONE LINE
0B96	7D	00	73		TST	OVREND	LIMIT?

LOCN B1 B2 B3				
0B99 26 1A		BNE	INS711	
0B9B 7C 00 83		INC	CHKFLG	SET FLAG
0B9E D6 90		LDA B	NUMBER	GET NUMBER
0BA0 96 91		LDA A	NUMBER+1	
0BA2 BD 07 BA		JSR	FNDNU4	CHECK NUMBER
0BA5 26 0E		BNE	INS711	
0BA7 4F		CLR A		
0BAB 97 7C		STA A	INCAMT	SET INC AMOUNT
0BAA 97 92		STA A	NUMBER+2	
0BAC BD 06 B0		JSR	RENUM2	RENUMBER FILE
0BAF CE 0B F2		LIX	#RENSTR	POINT TO STRING
0BB2 BD 04 83		JSR	PSTRNG	OUTPUT IT
0BB5 DE 40	INS711	LIX	TEMP	RESTORE POINTER
0BB7 7D 00 84		TST	SNGLIN	
0BBA 27 06		BEG	INS712	
0BBC DE 4A		LIX	NEWPOS	FIX POINTER
0BBE DF 4B		STX	CURPOS	
0BC0 20 03		BRA	INS713	
0BC2 7C 00 6C	INS712	INC	MSLFLG	SET FLAG
0BC5 7E 03 8A	INS713	JMP	EDIT	

* ACTUAL LINE INSERT

0BC8 8D 3E	INSE72	BSR	MAKSPC	MAKE SOME SPACE
0BCA DE 40		LIX	TEMP	RESTORE POINTER
0BCC DF 4A		STX	NEWPOS	
0BCE BD 06 8B		JSR	PUTNUM	PUT NUMBER
0BD1 0B		INX		BUMP 3 TIMES
0BD2 0B		INX		
0BD3 0B		INX		
0BD4 DF 40		STX	TEMP	SAVE POINTER
0BD6 DE 44	INSE75	LIX	BUFPNT	
0BD8 A6 00		LDA A	0,X	GET CHAR.
0BDA 0B		INX		BUMP THE POINTER
0BDB DF 44		STX	BUFPNT	SAVE IT
0BDD DE 40		LIX	TEMP	
0BDF A7 00		STA A	0,X	PUT CHAR.
0BE1 0B		INX		BUMP
0BE2 DF 40		STX	TEMP	SAVE
0BE4 81 0D		CMP A	#CRGRET	
0BE6 26 EE		BNE	INSE75	REPEAT
0BE8 BD 12 85		JSR	EXPLIN	EXPAND TABS
0BEB 96 84		LDA A	SNGLIN	
0BED 26 A0		BNE	INS710	
0BEF 7E 0A EA		JMP	INSER4	

0BF2 53	RENSTR	FCC	'SOME LINES RENUMBERED'
0BF3 4F			
0BF4 4D			
0BF5 45			
0BF6 20			
0BF7 4C			
0BF8 49			
0BF9 4E			

LOCN B1 B2 B3
 OBFA 45
 OBFB 53
 OBFC 20
 OBFD 52
 OBFE 45
 OBFF 4E
 OC00 55
 OC01 4D
 OC02 42
 OC03 45
 OC04 52
 OC05 45
 OC06 44
 OC07 04

FCB 4

* MAKE ROOM FOR INSERT

OC08	7F	00	89	MAKSPC	CLR	DECCNT	CLEAR COUNT
OC0B	DE	58			LDX	SPCPT1	SET POINTER
OC0D	DF	40			STX	TEMP	SAVE
OC0F	9C	99			CPX	FILEND	END OF FILE?
OC11	26	03			BNE	MAKSP1	
OC13	7C	00	89		INC	DECCNT	
OC16	DE	99		MAKSP1	LDX	FILEND	SET POINTER
OC18	DF	58			STX	SPCPT1	SAVE
OC1A	D6	8D			LDA B	CHRCNT	
OC1C	96	8E			LDA A	CHRCNT+1	
OC1E	26	03			BNE	MAKS21	
OC20	5D			MAKS18	TST B		
OC21	27	37		MAKSP2	BEQ	MAKSP4	
OC23	BC	02	12	MAKS21	CPX	MEMEND	END OF MEMORY?
OC26	27	26			BEQ	MAKSP3	
OC28	08				INX		BUMP THE POINTER
OC29	7D	00	8C		TST	DRCTN	WHICH DIRECTION?
OC2C	26	04			BNE	MAKS22	
OC2E	DF	42			STX	XSAVE	SAVE POINTER
OC30	20	0C			BRA	MAK222	
OC32	7D	00	8B	MAKS22	TST	CPYDRC	
OC35	27	0E			BEQ	MAKS23	
OC37	DF	42			STX	XSAVE	SAVE THE POINTER
OC39	DE	4A			LDX	NEWPOS	GET POSITION
OC3B	08				INX		BUMP IT
OC3C	DF	4A			STX	NEWPOS	SAVE IT
OC3E	DE	93		MAK222	LDX	TRGLIN	GET TARGET
OC40	08				INX		BUMP IT
OC41	DF	93			STX	TRGLIN	
OC43	DE	42			LDX	XSAVE	RESTORE POINTER
OC45	4D			MAKS23	TST A		TEST THE ACC.
OC46	26	01			BNE	MAKS24	
OC48	5A				DEC B		DEC THE COUNTER
OC49	4A			MAKS24	DEC A		
OC4A	26	D7			BNE	MAKS21	
OC4C	20	D2			BRA	MAKS18	REPEAT
OC4E	CE	0C	77	MAKSP3	LDX	#NORMST	POINT TO STRING

LOCN	B1	B2	B3			
0C51	BD	04	83		JSR	PSTRNG OUTPUT IT
0C54	7F	00	6C		CLR	MSLFLG
0C57	7E	03	8A		JMP	EDIT RETURN
0C5A	DF	99		MAKSP4	STX	FILEND SAVE POINTER
0C5C	DF	5A			STX	SPCPT2 SAVE POINTER
0C5E	96	89			LDA A	DECCNT CHECK
0C60	26	14			BNE	MAKSP6
0C62	DF	5A		MAKSP5	STX	SPCPT2 SAVE POINTER
0C64	DE	58		MAKSP5	LDX	SPCPT1
0C66	9C	40			CPX	TEMP DONE?
0C68	27	0C			BEQ	MAKSP6
0C6A	09				DEX	DEC THE POINTER
0C6B	A6	00			LDA A	0,X GET CHAR.
0C6D	DF	58			STX	SPCPT1 SAVE POINTER
0C6F	DE	5A			LDX	SPCPT2
0C71	09				DEX	DEC THE POINTER
0C72	A7	00			STA A	0,X PUT THE CHAR.
0C74	20	EC			BRA	MAKSP5 REPEAT
0C76	39			MAKSP6	RTS	RETURN

0C77	4E			NORMST	FCC	'NOT ENOUGH ROOM'
0C78	4F					
0C79	54					
0C7A	20					
0C7B	45					
0C7C	4E					
0C7D	4F					
0C7E	55					
0C7F	47					
0C80	48					
0C81	20					
0C82	52					
0C83	4F					
0C84	4F					
0C85	4D					
0C86	04				FCB	4

* REPLACE LINES ROUTINE

0C87	7C	00	81	REPLAC	INC	REPFLG	SET FLAG
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* DELETE LINES ROUTINE

0C8A	DE	44		DELETE	LDX	BUFPNT	SET POINTER
0C8C	BD	04	E9		JSR	FINDT	FIND TARGET
0C8F	BD	08	21		JSR	TSTOVR	LIMITS?
0C92	27	27			BEQ	DELE0	
0C94	CE	0D	7F	DELE02	LDX	#NTRCHS	POINT TO STRING
0C97	BD	04	83		JSR	PSTRNG	OUTPUT IT
0C9A	CE	00	8B		LDX	#BUFFER	POINT TO BUFFER
0C9D	BD	04	99	DELE04	JSR	INCHAR	GET A CHARACTER
0CA0	27	F2			BEQ	DELE02	

LOCN B1 B2 B3			
OCA2 A7 00		STA A 0,X	SAVE IT
OCA4 08		INX	
OCA5 81 0D		CMP A #CRGRET	C.R.?
OCA7 26 F4		BNE DELE04	REPEAT
OCA9 CE 00 BB		LDX #BUFFER	
OCAC BD 04 92		JSR SKIPSP	SKIP SPACES
OCAF B1 59		CMP A #'Y	WAS IT 'Y'ES?
OCB1 27 08		BEQ DELE0	
OCB3 CE 0D A3		LDX #NLDSTR	POINT TO STRING
OCB6 BD 04 B3		JSR PSTRNG	
OCB9 20 60		BRA DELET5	RETURN
OCBB DE 4A	DELE0	LDX NEWPOS	SET POINTER
OCBD 96 8C		LDA A DRCTN	CHECK DIRECTION
OCBF 27 15		BEQ DELET1	
OCC1 BD 08 OF		JSR UPONE	MOVE UP ONE
OCC4 96 73		LDA A OVREND	LIMIT?
OCC6 27 02		BEQ DELE15	
OCC8 DE 99		LDX FILEND	
OCCA DF 5A	DELE15	STX SPCPT2	
OCCC DE 93		LDX TRGLIN	GET TARGET
OCCE DF 48		STX CURPOS	MAKE CURRENT
OCDO DF 58		STX SPCPT1	
OCD2 DE 5A		LDX SPCPT2	GET POINTER
OCD4 20 11		BRA DELE25	
OCD6 DF 58	DELET1	STX SPCPT1	SAVE
OCD8 DF 48		STX CURPOS	
OCDA DE 93		LDX TRGLIN	POINT TO TARGET
OCDC BD 08 OF		JSR UPONE	MOVE UP ONE
OCDF 96 73		LDA A OVREND	LIMIT?
OCE1 27 02		BEQ DELET2	
OCE3 DE 99		LDX FILEND	POINT TO END
OCE5 DF 5A	DELET2	STX SPCPT2	SAVE POINTER
OCE7 4F	DELE25	CLR A	
OCE8 5F		CLR B	
OCE9 9C 58	DELET3	CPX SPCPT1	
OCEB 27 07		BEQ DELET4	
OCED 4C		INC A	
OCEE 26 01		BNE DELE35	
OCF0 5C		INC B	BUMP THE COUNTER
OCF1 09	DELE35	DEX	
OCF2 20 F5		BRA DELET3	
OCF4 97 8E	DELET4	STA A CHRCNT+1	SAVE COUNT
OCF6 D7 8D		STA B CHRCNT	
OCF8 8D 49		BSR DELCHR	DELETE CHARACTERS
OCFA 96 81		LDA A REPFLG	REPLACE?
OCFC 27 1D		BEQ DELET5	
OCFE DE 48		LDX CURPOS	SET POINTER
OD00 BD 07 F0		JSR BAKONE	BACKUP ONE LINE
OD03 96 7E		LDA A EQUFLG	
OD05 26 2C		BNE DELET7	
OD07 96 72		LDA A OVRBEG	CHECK LIMIT
OD09 27 08		BEQ DELE45	
OD0B BD 07 A3		JSR CLRNUM	CLEAR NUMBER
OD0E DF 4A		STX NEWPOS	SAVE NEW POSITION
OD10 7E 0B 1D		JMP INSERS	

LOCN B1 B2 B3			
0D13 DF 4A	DELE45	STX	NEWPOS SAVE
0D15 7F 00 7D		CLR	BMPFLG
0D18 7E 0A EA		JMP	INSER4 GO TO INSERT
0D1B DE 48	DELET5	LDX	CURPOS CHECK POSITION
0D1D 9C 99		CPX	FILEND END?
0D1F 26 0D		BNE	DELET6
0D21 BD 07 F0		JSR	BAKONE MOVE IT BACK
0D24 DF 40		STX	TEMP SAVE POINTER
0D26 CE 0D B4		LDX	#BFRSTR POINT TO STRING
0D29 BD 04 B3		JSR	PSTRNG OUTPUT IT
0D2C DE 40		LDX	TEMP RESTORE
0D2E DF 48	DELET6	STX	CURPOS
0D30 7E 08 A2		JMP	PRINT6
0D33 DF 4A	DELET7	STX	NEWPOS SAVE POINTER
0D35 96 82		LDA A	TMPCHR GET CHAR COUNT
0D37 97 8E		STA A	CHRCNT+1
0D39 4F		CLR A	
0D3A 97 7D		STA A	BMPFLG CLEAR FLAG
0D3C 97 8D		STA A	CHRCNT
0D3E DE 44		LDX	BUFPNT SET POINTER
0D40 7E 0A D7		JMP	INSER1 GO INSERT IT

* DELETE CHARACTER BLOCK

0D43 DE 5A	DELCHR	LDX	SPCPT2	SET POINTER
0D45 9C 58		CPX	SPCPT1	EQUAL?
0D47 27 35		BEQ	DELCH5	
0D49 9C 99		CPX	FILEND	END OF FILE?
0D4B 27 0E		BEQ	DELCH2	
0D4D A6 00		LDA A	0,X	GET A CHAR.
0D4F 08		INX		BUMP THE POINTER
0D50 DF 5A		STX	SPCPT2	SAVE
0D52 DE 58		LDX	SPCPT1	
0D54 A7 00		STA A	0,X	PUT CHAR.
0D56 08		INX		
0D57 DF 58		STX	SPCPT1	SAVE POINTER
0D59 20 E8		BRA	DELCHR	REPEAT
0D5B D6 8D	DELCH2	LDA B	CHRCNT	GET COUNT
0D5D 96 8E		LDA A	CHRCNT+1	
0D5F 26 03		BNE	DELC31	
0D61 5D	DELC21	TST B		CHECK COUNT
0D62 27 18	DELCH3	BEQ	DELCH4	
0D64 09	DELC31	DEX		DEC THE POINTER
0D65 7D 00 8C		TST	DRCTN	WHICH DIRECTION?
0D68 26 09		BNE	DELC32	
0D6A DF 42		STX	XSAVE	
0D6C DE 93		LDX	TRGLIN	GET TARGET
0D6E 09		DEX		DEC IT
0D6F DF 93		STX	TRGLIN	PUT IT BACK
0D71 DE 42		LDX	XSAVE	RESTORE POINTER
0D73 4D	DELC32	TST A		TEST COUNT
0D74 26 01		BNE	DELC34	
0D76 5A		DEC B		DEC THE COUNTER
0D77 4A	DELC34	DEC A		

LOCN	B1	B2	B3				
0D78	26	EA		BNE	DELC31		
0D7A	20	E5		BRA	DELC21		
0D7C	DF	99		DELCH4	STX	FILEND	SET NEW END
0D7E	39			DELCH5	RTS		RETURN

0D7F	54		NTRCHS	FCC	'TARGET NOT REACHED!'
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0D80 41

0D81 52

0D82 47

0D83 45

0D84 54

0D85 20

0D86 4E

0D87 4F

0D88 54

0D89 20

0D8A 52

0D8B 45

0D8C 41

0D8D 43

0D8E 48

0D8F 45

0D90 44

0D91 21

0D92	0D		FCB	\$D,\$A,0,0,0,0
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0D93 0A

0D94 00

0D95 00

0D96 00

0D97 00

0D98	59		FCC	'YOU SURE? '
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0D99 4F

0D9A 55

0D9B 20

0D9C 53

0D9D 55

0D9E 52

0D9F 45

0DA0 3F

0DA1 20

0DA2	04		FCB	4
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0DA3	4E	NLDSTR	FCC	'NO LINES DELETED'
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0DA4 4F

0DA5 20

0DA6 4C

0DA7 49

0DA8 4E

0DA9 45

0DAA 53

0DAB 20

0DAC 44

0DAD 45

0DAE 4C

LOCN B1 B2 B3
 ODAF 45
 ODB0 54
 ODB1 45
 ODB2 44
 ODB3 04

FCB 4

ODB4 42 BFRSTR FCC 'BOTTOM OF FILE REACHED'
 ODB5 4F
 ODB6 54
 ODB7 54
 ODB8 4F
 ODB9 4D
 ODBA 20
 ODBB 4F
 ODBC 46
 ODBD 20
 ODBE 46
 ODBF 49
 ODC0 4C
 ODC1 45
 ODC2 20
 ODC3 52
 ODC4 45
 ODC5 41
 ODC6 43
 ODC7 48
 ODC8 45
 ODC9 44
 ODCA 04

FCB 4

* CHANGE COMMAND ROUTINE

ODCB BD 08 A8	CHANGE	JSR	TSTEMP	
ODCE DE 44		LDX	BUFPNT	POINT TO BUFFER
ODD0 BD 07 38		JSR	SKPCLS	
ODD3 BD 06 63		JSR	TSTEND	
ODD6 27 03		BEQ	CHAN12	ERROR
ODD8 5D	CHANG1	TST B		
ODD9 27 03		BEQ	CHAN15	ERROR
ODDB 7E 0F 04	CHAN12	JMP	CHANG9	
ODDE 7C 00 85	CHAN15	INC	CHGFLG	SET FLAG
ODE1 BD 05 FA		JSR	SETDEL	SET DELIMITERS
ODE4 5F		CLR B		CLEAR COUNT
ODE5 A6 00	CHANG2	LDA A	0,X	GET CHAR.
ODE7 BD 06 63		JSR	TSTEND	
ODEA 27 08		BEQ	CHANG3	
ODEC 91 95		CMP A	DELIM	IS IT DELIMITER?
ODEE 27 04		BEQ	CHANG3	
ODF0 08		INX		BUMP THE POINTER
ODF1 5C		INC B		BUMP THE COUNT
ODF2 20 F1		BRA	CHANG2	
ODF4 DF 66	CHANG3	STX	CHGEND	SAVE POINTER
ODF6 D7 86		STA B	STRCN2	SAVE COUNT
ODF8 BD 06 63		JSR	TSTEND	

LOCN	B1	B2	B3				
0DFB	27	01			BEQ	CHAN35	
0DFD	08				INX		BUMP POINTER
0DFE	DF	44		CHAN35	STX	BUFPNT	SAVE IT
0E00	DE	4A			LDX	NEWPOS	
0E02	08			CHAN37	INX		BUMP THREE TIMES
0E03	08				INX		
0E04	08				INX		
0E05	DF	64			STX	CHGPNT	SAVE POINTER
0E07	BD	0F	07		JSR	SVSTPT	SAVE STRING POINT
0E0A	7F	00	85		CLR	CHGFLG	
0E0D	BD	0A	48		JSR	OCCURR	GET TARG & OCCUR.
0E10	7C	00	85		INC	CHGFLG	
0E13	BD	0F	14		JSR	RSTSPT	RESTORE STRING
0E16	7F	00	6D		CLR	PSTZFL	
0E19	DE	6E			LDX	OCRCNT	GET COUNT
0E1B	DF	68			STX	OCRTMP	SAVE
0E1D	96	78			LDA A	OCRFLG	
0E1F	27	07			BEQ	CHANG4	
0E21	96	7B			LDA A	STRCNT	CHECK COUNT
0E23	26	03			BNE	CHANG4	
0E25	7E	0F	04		JMP	CHANG9	
0E28	DE	4A		CHANG4	LDX	NEWPOS	
0E2A	9C	93			CPX	TRGLIN	AT TARGET?
0E2C	26	03			BNE	CHANG5	
0E2E	7C	00	88		INC	LSTFLG	SET FLAG IF SO
0E31	BD	06	3B	CHANG5	JSR	ZONE3	SET ZONE
0E34	7F	00	79		CLR	CHGONF	CLEAR FLAG
0E37	DE	64			LDX	CHGPNT	
0E39	BD	06	5A		JSR	FIXZON	SET ZONE
0E3C	BD	05	B8		JSR	FIND72	
0E3F	20	10			BRA	CHA510	

* LOOP THROUGH OCCURRENCES

0E41	7F	00	79	CHAN50	CLR	CHGONF	
0E44	DE	64		CHAN51	LDX	CHGPNT	SET POINTER
0E46	BD	06	5A		JSR	FIXZON	
0E49	BD	06	4F		JSR	CMPZN2	CHECK ZONE
0E4C	22	7A			BHI	CHANG8	
0E4E	BD	05	DF		JSR	FIND75	
0E51	96	90		CHA510	LDA A	NUMBER	GET NUMBER
0E53	97	62			STA A	ZONBUF	PUT IN BUFFER
0E55	96	91			LDA A	NUMBER+1	
0E57	97	63			STA A	ZONBUF+1	
0E59	5D				TST B		
0E5A	26	6C			BNE	CHANG8	
0E5C	5C				INC B		BUMP COUNTER
0E5D	D7	87			STA B	FNONFL	SET FLAG
0E5F	96	78		CHAN52	LDA A	OCRFLG	ANY OCCUR.?
0E61	27	0E			BEQ	CHANG6	
0E63	96	77			LDA A	ALLFLG	CHANGE ALL?
0E65	26	0A			BNE	CHANG6	
0E67	BD	0A	87		JSR	NXTOCO	
0E6A	DE	5C		CHAN55	LDX	LASTNO	SET POINTER
0E6C	08				INX		BUMP IT

LOCN B1 B2 B3
 0E6D DF 64
 0E6F 20 D0

STX CHGPNT
 BRA CHAN50

* DELETE STRING ONE

0E71 7C 00 79	CHANG6	INC	CHGONF	SET FLAG
0E74 DE 68		LDX	OCRTPM	CHECK COUNT
0E76 27 04		BEQ	CHAN61	
0E7B 86 01		LDA A	#1	
0E7A 97 78		STA A	OCRFLG	
0E7C DF 6E	CHAN61	STX	OCRCNT	FIX COUNT
0E7E DE 5C		LDX	LASTNO	GET STR. LOCATION
0E80 DF 58		STX	SPCPT1	
0E82 D6 7B		LDA B	STRCNT	
0E84 27 10		BEQ	CHAN66	
0E86 7F 00 8D		CLR	CHRCNT	CLEAR COUNT
0E89 D7 8E		STA B	CHRCNT+1	
0E8B 27 04	CHAN62	BEQ	CHAN65	
0E8D 08		INX		BUMP POINTER
0E8E 5A		DEC B		DEC THE COUNTER
0E8F 20 FA		BRA	CHAN62	REPEAT
0E91 DF 5A	CHAN65	STX	SPCPT2	SAVE POINTER
0E93 BD 0D 43		JSR	DELCHR	GO DELETE

* INSERT STRING TWO

0E96 D6 86	CHAN66	LDA B	STRCN2	GET COUNT
0E98 27 23		BEQ	CHA675	
0E9A 7F 00 8D		CLR	CHRCNT	CLEAR OUT COUNT
0E9D D7 8E		STA B	CHRCNT+1	SET COUNTER
0E9F DE 5C		LDX	LASTNO	SET POINTER
0EA1 DF 58		STX	SPCPT1	
0EA3 BD 0C 08		JSR	MAKSPC	GO MAKE ROOM
0EA6 D6 8E		LDA B	CHRCNT+1	
0EA8 DE 50		LDX	STRNGE	POINT TO STRING END
0EAA 08	CHAN67	INX		BUMP IT
0EAB A6 00		LDA A	0,X	GET CHAR
0EAD DF 40		STX	TEMP	
0EAF DE 5C		LDX	LASTNO	
0EB1 A7 00		STA A	0,X	PUT CHARACTER
0EB3 08		INX		BUMP POINTER
0EB4 DF 5C		STX	LASTNO	SAVE
0EB6 DF 64		STX	CHGPNT	
0EB8 DE 40		LDX	TEMP	RESTORE
0EBA 5A		DEC B		DEC THE COUNTER
0EBB 26 ED		BNE	CHAN67	
0EBD 96 77	CHA675	LDA A	ALLFLG	DO ALL?
0EBF 27 1C		BEQ	CHAN81	
0EC1 DE 5C		LDX	LASTNO	
0EC3 DF 64		STX	CHGPNT	SAVE POINTER
0EC5 7E 0E 44		JMP	CHAN51	REPEAT

* CHANGE CLEANUP AND FINISH

0EC8 7F 00 78	CHANG8	CLR	OCRFLG	CLEAR FLAG
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LOCN B1 B2 B3				
0ECB DE 68		LDX	OCRTMP	GET COUNT
0ECD 27 04		BEQ	CHAN80	
0ECF 86 01		LDA A	#1	SET FLAG
0ED1 97 78		STA A	OCRFLG	
0ED3 DF 6E	CHAN80	STX	OCRCNT	SET OCCUR. COUNT
0ED5 96 87		LDA A	FNONFL	CHECK FLAG
0ED7 26 04		BNE	CHAN81	
0ED9 96 88		LDA A	LSTFLG	
0EDB 26 27		BNE	CHANG9	
0EDD DE 4A	CHAN81	LDX	NEWPOS	
0EDF 96 79		LDA A	CHGONF	
0EE1 27 03		BEQ	CHAN82	
0EE3 BD 08 3F		JSR	VERLIN	VERIFY CHANGE
0EE6 96 88	CHAN82	LDA A	LSTFLG	
0EE8 27 06		BEQ	CHAN84	
0EEA 7F 00 79		CLR	CHGONF	CLEAR FLAG
0EED 7E 08 A2		JMP	PRINT6	
0EF0 BD 06 C3	CHAN84	JSR	NXTLIN	FIND NEXT LINE
0EF3 DF 4A		STX	NEWPOS	SAVE POINTER
0EF5 9C 93		CPX	TRGLIN	TARGET LINE?
0EF7 26 03		BNE	CHAN86	
0EF9 7C 00 88		INC	LSTFLG	SET LAST FLAG
0EFC 08	CHAN86	INX		BUMP 3 TIMES
0EFD 08		INX		
0EFE 08		INX		
0EFF DF 64		STX	CHGPNT	SAVE POINTER
0F01 7E 0E 31		JMP	CHANG5	REPEAT
0F04 7E 04 41	CHANG9	JMP	ERROR	REPORT ERROR

* SAVE STRING POINTER INFO

0F07 DE 4E	SVSTPT	LDX	STRNGB	GET POINTER
0F09 DF 52		STX	STRGB1	SAVE IT
0F0B DE 50		LDX	STRNGE	
0F0D DF 54		STX	STRGE1	
0F0F 96 7B		LDA A	STRCNT	GET COUNT
0F11 97 71		STA A	STRCN1	SAVE IT
0F13 39		RTS		RETURN

* RESTORE STRING POINTER INFO

0F14 DE 52	RSTSPT	LDX	STRGB1	GET POINTER
0F16 DF 4E		STX	STRNGB	RESTORE
0F18 DE 54		LDX	STRGE1	
0F1A DF 50		STX	STRNGE	
0F1C 96 71		LDA A	STRCN1	GET COUNT
0F1E 97 7B		STA A	STRCNT	RESTORE IT
0F20 39		RTS		RETURN

* OVERLAY ROUTINE

0F21 BD 08 AB	OVERLA	JSR	TSTEMP	
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LOCN B1 B2 B3			
0F24 86 20		LDA A	##20 SETUP SPACE
0F26 97 95		STA A	DELIM AS DELIMITER
0F28 7F 00 8C		CLR	DRCTN
0F2B DE 44		LDX	BUFPNT SET POINTER TO BUFFER
0F2D A6 00		LDA A	0,X GET A CHAR.
0F2F 81 0D		CMP A	##CRGRET
0F31 27 12		BEQ	OVRLA1
0F33 BD 07 3B		JSR	CLASS
0F36 5D		TST B	
0F37 27 03		BEQ	OVRLA0
0F39 7E 04 71		JMP	SYNERR REPORT ERROR
0F3C 97 95	OVRLA0	STA A	DELIM SET DELIMITER
0F3E 08		INX	
0F3F A6 00		LDA A	0,X GET CHARACTER
0F41 81 0D		CMP A	##CRGRET
0F43 26 2C		BNE	OVRL35
0F45 DE 4A	OVRLA1	LDX	NEWPOS SET POINTER
0F47 BD 08 AF	OVRL11	JSR	OUTLIN OUTPUT CUR. LINE
0F4A 96 6A		LDA A	NUMFLG
0F4C 26 05		BNE	OVRL12
0F4E CE 0F D2		LDX	##OVRLST+8 POINT TO STRING
0F51 20 03		BRA	OVRL16
0F53 CE 0F CA	OVRL12	LDX	##OVRLST POINT TO STRING
0F56 BD 04 83	OVRL16	JSR	PSTRNG OUTPUT IT
0F59 CE 00 BB		LDX	##BUFFER POINT TO IN BUFFER
0F5C BD 04 99	OVRLA2	JSR	INCHAR GET A CHAR.
0F5F 27 E4		BEQ	OVRLA1
0F61 81 0D		CMP A	##CRGRET
0F63 27 07		BEQ	OVRLA3
0F65 A7 00		STA A	0,X
0F67 BD 04 BB		JSR	BUFLIM
0F6A 20 F0		BRA	OVRLA2
0F6C A7 00	OVRLA3	STA A	0,X
0F6E CE 00 BB		LDX	##BUFFER POINT TO BUFFER
0F71 DF 44	OVRL35	STX	BUFPNT
0F73 C6 0D		LDA B	##CRGRET
0F75 DE 4A		LDX	NEWPOS POINT TO POSITION
0F77 08		INX	
0F78 08		INX	
0F79 08		INX	
0F7A DF 40		STX	TEMP SAVE POINTER
0F7C DE 44	OVRLA4	LDX	BUFPNT
0F7E A6 00	OVRL41	LDA A	0,X GET A CHAR.
0F80 08		INX	BUMP POINTER
0F81 DF 44		STX	BUFPNT SAVE IT
0F83 81 0D		CMP A	##CRGRET
0F85 27 3B		BEQ	OVRLA7
0F87 DE 40		LDX	TEMP
0F89 7D 00 8C		TST	DRCTN
0F8C 26 08		BNE	OVRL43
0F8E E1 00		CMP B	0,X CHECK IT
0F90 27 0B		BEQ	OVRLA5
0F92 91 95		CMP A	DELIM IS IT DELIMITER?
0F94 27 02		BEQ	OVRL45
0F96 A7 00	OVRL43	STA A	0,X PUT CHARACTER

LOCN B1 B2 B3				
0F98 08	OVRL45	INX		BUMP POINTER
0F99 DF 40		STX	TEMP	
0F9B 20 DF		BRA	OVRLA4	
0F9D 96 8C	OVRLA5	LDA A	DRCTN	CHECK DIRECTION
0F9F 26 21		BNE	OVRLA7	
0FA1 4F		CLR A		
0FA2 97 8D		STA A	CHRCNT	CLEAR COUNT
0FA4 DE 44		LDX	BUFPNT	GET POINTER
0FA6 4C	OVRL55	INC A		
0FA7 E1 00		CMP B	0,X	CHECK CHAR.
0FA9 27 03		BEQ	OVRLA6	
0FAB 08		INX		BUMP THE POINTER
0FAC 20 F8		BRA	OVRL55	REPEAT
0FAE 97 8E	OVRLA6	STA A	CHRCNT+1	SAVE COUNT
0FB0 DE 40		LDX	TEMP	
0FB2 DF 58		STX	SPCPT1	SET POINTER
0FB4 86 01		LDA A	#1	
0FB6 97 8C		STA A	DRCTN	SET DIRECTION
0FB8 BD 0C 08		JSR	MAKSPC	MAKE ROOM
0FBB C6 0D		LDA B	#CRGRET	
0FBD DE 44		LDX	BUFPNT	GET POINTER
0FBE 09		DEX		
0FC0 20 BC		BRA	OVRL41	
0FC2 DE 4A	OVRLA7	LDX	NEWPOS	GET POSITION
0FC4 BD 08 3F		JSR	VERLIN	VERIFY LINE
0FC7 7E 03 8A	OVRLA8	JMP	EDIT	RETURN
0FCA 20	OVRLST	FCC	' OVERLAY '	
0FCB 4F				
0FCC 56				
0FCD 45				
0FCE 52				
0FCF 4C				
0FD0 41				
0FD1 59				
0FD2 20				
0FD3 04		FCB	4	

* MOVE COMMAND

0FD4 7C 00 80	MOVE	INC	MOVFLG	SET FLAG
0FD7 8D 1A		BSR	COPY	GO DO COPY
0FD9 96 8B		LDA A	CPYDRC	WHICH DIRECTION?
0FDB 97 8C		STA A	DRCTN	
0FDD DE 93		LDX	TRGLIN	GET TARGET
0FDF DF 5A		STX	SPCPT2	
0FE1 DE 4A		LDX	NEWPOS	GET POSITION
0FE3 DF 58		STX	SPCPT1	
0FE5 DE 48		LDX	CURPOS	GET CURRENT POS.
0FE7 DF 93		STX	TRGLIN	MAKE IT TARGET
0FE9 BD 0D 43		JSR	DELCHR	DELETE LINES
0FEC DE 93		LDX	TRGLIN	
0FEE DF 48		STX	CURPOS	FIX POSITION
0FF0 7E 08 A2		JMP	PRINT6	

LOCN B1 B2 B3

* COPY LINES COMMAND

OFF3 DE 44	COPY	LDX	BUFPNT	POINT TO BUFFER
OFF5 7C 00 76		INC	NXTFLG	SET FLAG
OFF8 7C 00 75		INC	LINFLG	SET FLAG
OFFB BD 04 E9		JSR	FINDT	FIND TARGET
OFFE 9C 99		CPX	FILEND	
1000 27 1A		BEQ	COPY0	
1002 7F 00 75		CLR	LINFLG	
1005 7F 00 76		CLR	NXTFLG	
1008 9C 97		CPX	FILBEG	BEGINNING?
100A 26 04		BNE	COPY02	
100C 9C 4A		CPX	NEWPOS	
100E 27 04		BEQ	COPY05	
1010 96 8C	COPY02	LDA A	DRCTN	FIX DIRECTION
1012 97 8B		STA A	CPYDRC	
1014 7F 00 8C	COPY05	CLR	DRCTN	
1017 BD 08 21		JSR	TSTOVR	LIMITS?
101A 27 03		BEQ	COPY1	
101C 7E 04 5F	COPY0	JMP	NOTFND	REPORT ERROR
101F BD 07 E6	COPY1	JSR	FNDCRT	FIND NEXT C.R.
1022 08		INX		BUMP POINTER ONE
1023 DF 58		STX	SPCPT1	
1025 DE 44		LDX	BUFPNT	
1027 BD 04 E9		JSR	FINDT	GO FIND TARGET
102A BD 08 21		JSR	TSTOVR	LIMITS?
102D 26 ED		BNE	COPY0	
102F 7D 00 8C		TST	DRCTN	DIRECTION?
1032 26 08		BNE	COPY15	
1034 DE 4A		LDX	NEWPOS	GET POINTER
1036 DF 40		STX	TEMP	
1038 DE 93		LDX	TRGLIN	
103A 20 06		BRA	COPY18	
103C DE 93	COPY15	LDX	TRGLIN	GET TARGET
103E DF 40		STX	TEMP	SAVE IT
1040 DE 4A		LDX	NEWPOS	
1042 BD 07 E6	COPY18	JSR	FNDCRT	GET NEXT C.R.
1045 08		INX		BUMP POINTER
1046 DF 93		STX	TRGLIN	SET TARGET
1048 DE 40		LDX	TEMP	
104A DF 4A		STX	NEWPOS	
104C 4F		CLR A		CLEAR ACCUMULATORS
104D 5F		CLR B		
104E 08	COPY2	INX		BUMP THE POINTER
104F 4C		INC A		BUMP COUNT
1050 26 01		BNE	COPY25	
1052 5C		INC B		
1053 9C 93	COPY25	CPX	TRGLIN	FINISHED?
1055 27 10		BEQ	COPY3	
1057 9C 58		CPX	SPCPT1	OVERLAP?
1059 26 F3		BNE	COPY2	
105B CE 10 B4		LDX	#OVL PST	POINT TO STRING
105E BD 04 B3		JSR	PSTRNG	OUTPUT IT

LOCN B1 B2 B3			
1061 7F 00 6C		CLR	MSLFLG
1064 7E 03 8A		JMP	EDIT
1067 97 8E	COPY3	STA A	CHRCNT+1
1069 D7 8D		STA B	CHRCNT
106B 86 01		LDA A	#1
106D 97 8C		STA A	DRCTN
106F BD 0C 08		JSR	MAKSPC
1072 DE 5A		LDX	SPCPT2
1074 DF 48		STX	CURPOS
1076 DE 58		LDX	SPCPT1
1078 DF 42		STX	XSAVE
107A DE 93		LDX	TRGLIN
107C DF 58		STX	SPCPT1
107E DE 4A		LDX	NEWPOS
1080 DF 40		STX	TEMP
1082 BD 0C 64		JSR	MAKSS5
1085 DE 42		LDX	XSAVE
1087 7F 00 72		CLR	OVRBEG
108A BD 07 F0		JSR	BAKONE
108D 96 72		LDA A	OVRBEG
108F 27 18		BEQ	COPY5
1091 BD 07 A3		JSR	CLRNUM
1094 7C 00 83	COPY4	INC	CHKFLG
1097 BD 06 B0		JSR	RENUM2
109A DE 48		LDX	CURPOS
109C BD 07 F0		JSR	BAKONE
109F DF 48		STX	CURPOS
10A1 96 80		LDA A	MOVFLG
10A3 27 01		BEQ	COPY45
10A5 39		RTS	
10A6 7E 08 A2	COPY45	JMP	PRINT6
10A9 BD 06 98	COPY5	JSR	GETNUM
10AC 4F		CLR A	
10AD 97 92		STA A	NUMBER+2
10AF BD 08 0F		JSR	UPONE
10B2 20 E0		BRA	COPY4
10B4 53	OVL PST	FCC	'SOURCE OVERLAPS DESTINATION'
10B5 4F			
10B6 55			
10B7 52			
10B8 43			
10B9 45			
10BA 20			
10BB 4F			
10BC 56			
10BD 45			
10BE 52			
10BF 4C			
10C0 41			
10C1 50			
10C2 53			
10C3 20			
10C4 44			
10C5 45			

LOCN B1 B2 B3
 10C6 53
 10C7 54
 10C8 49
 10C9 4E
 10CA 41
 10CB 54
 10CC 49
 10CD 4F
 10CE 4E
 10CF 04

FCB 4

* TAB SET COMMAND

10D0 CE 00 9D	TAB	LDX	#TABBUF	SET POINTER
10D3 DF 9B		STX	TABPNT	
10D5 DE 44	TAB2	LDX	BUFNT	POINT TO BUFFER
10D7 BD 04 92		JSR	SKIPSP	
10DA DF 44		STX	BUFNT	SAVE
10DC BD 06 63		JSR	TSTEND	
10DF 27 2F		BEQ	TAB6	
10E1 BD 07 3B		JSR	CLASS	CLASSIFY CHAR.
10E4 C1 01		CMF B	#1	IS IT A NUMBER?
10E6 27 07		BEQ	TAB4	
10E8 22 2E		BHI	TAB8	
10EA 08		INX		BUMP THE POINTER
10EB DF 44		STX	BUFNT	SAVE IT
10ED 20 E6		BRA	TAB2	
10EF BD 07 55	TAB4	JSR	BCDCON	GET COLUMN
10F2 DF 44		STX	BUFNT	
10F4 5F		CLR B		
10F5 BD 08 38		JSR	TSTNUM	IS IT ZERO?
10F8 27 16		BEQ	TAB6	
10FA 5C	TAB5	INC B		BUMP COUNT
10FB 37		PSH B		
10FC BD 08 2A		JSR	DECNUM	DEC THE COUNT
10FF 33		PUL B		
1100 26 F8		BNE	TAB5	
1102 DE 9B		LDX	TABPNT	POINT TO TABS
1104 E7 00		STA B	0,X	SAVE COUNT
1106 08		INX		
1107 DF 9B		STX	TABPNT	FIX TAB POINTER
1109 8C 00 B1		CPX	#TABEND	
110C 27 02		BEQ	TAB6	
110E 20 C5		BRA	TAB2	
1110 4F	TAB6	CLR A		
1111 DE 9B		LDX	TABPNT	
1113 A7 00		STA A	0,X	CLEAR TAB
1115 7E 09 30		JMP	NUMSE6	
1118 7E 04 71	TAB8	JMP	SYNERR	REPORT ERROR

* PRINT HEADER COMMAND

111B CE 00 9D HEADER LDX #TABBUF SET POINTER

LOCN B1 B2 B3				
111E DF 9B		STX	TABPNT	
1120 DE 44		LDX	BUFPNT	
1122 BD 04 92		JSR	SKIPSP	SKIP ALL SPACES
1125 BD 06 63		JSR	TSTEND	
1128 27 1C		BEQ	HEAD42	
112A BD 07 3B	HEADE2	JSR	CLASS	CLASSIFY CHAR.
112D C1 01		CMP B	#1	IS IT NUMBER?
112F 26 E7		BNE	TAB8	ERROR
1131 BD 07 55		JSR	BCDCON	GET NUMBER COUNT
1134 DF 44		STX	BUFPNT	
1136 BD 08 38		JSR	TSTNUM	IS IT ZERO?
1139 27 40		BEQ	HEADE7	
113B 5F		CLR B		
113C 5C	HEADE3	INC B		BUMP COUNTER
113D 37		PSH B		
113E BD 08 2A		JSR	DECNUM	DEC NUMBER
1141 33		PUL B		
1142 26 FB		BNE	HEADE3	
1144 D7 96	HEADE4	STA B	HEDCNT	SAVE COUNT
1146 BD 07 A3	HEAD42	JSR	CLRNUM	CLEAR NUMBER
1149 BD 04 4E		JSR	PCRLF	OUTPUT C.R. L.F.
114C 96 6A		LDA A	NUMFLG	LINE NUMBERS ON?
114E 27 08		BEQ	HEADE5	
1150 C6 08		LDA B	#8	SET COUNT
1152 BD 08 CD	HEAD45	JSR	OUTSPC	OUT SPACE
1155 5A		DEC B		
1156 26 FA		BNE	HEAD45	
1158 BD 08 CD	HEADE5	JSR	OUTSPC	
115B 5F		CLR B		CLEAR COUNT
115C 37	HEAD55	PSH B		
115D BD 06 7C		JSR	INCNUM	BUMP NUMBER
1160 33		PUL B		
1161 5C		INC B		BUMP COUNT
1162 DE 9B		LDX	TABPNT	GET TAB COL.
1164 E1 00		CMP B	0,X	THERE?
1166 26 0A		BNE	HEAD57	
1168 B6 2D		LDA A	#'-	SET UP '-'
116A BD 02 09		JSR	OUTCH	OUTPUT IT
116D 08		INX		BUMP POINTER
116E DF 9B		STX	TABPNT	
1170 20 05		BRA	HEAD58	
1172 96 91	HEAD57	LDA A	NUMBER+1	GET NUMBER
1174 BD 09 17		JSR	OUTHR	OUTPUT IT
1177 D1 96	HEAD58	CMP B	HEDCNT	
1179 26 E1		BNE	HEAD55	REPEAT TIL DONE
117B 7E 09 30	HEADE7	JMP	NUMSE6	

* SET UP ZONE COLUMN COMMAND

117E DE 44	SZONE	LDX	BUFPNT	POINT TO BUFFER
1180 BD 04 92		JSR	SKIPSP	
1183 BD 06 63		JSR	TSTEND	
1186 27 0A		BEQ	SZONE2	
1188 BD 07 3B		JSR	CLASS	CLASSIFY CHARACTER

LOCN	B1	B2	B3				
118B	C1	01			CMP B	#1	IS IT A NUMBER?
118D	27	0A			BEQ	SZONE3	
118F	22	38			BHI	SZONE8	
1191	08				INX		
1192	DF	44		SZONE2	STX	BUFPNT	SAVE POINTER
1194	CE	00	01		LDX	#\$0001	SET COLUMN 1
1197	20	07			BRA	SZONE4	
1199	BD	07	55	SZONE3	JSR	BCDCON	GET NUMBER
119C	DF	44			STX	BUFPNT	SAVE POINTER
119E	DE	90			LDX	NUMBER	
11A0	DF	5E		SZONE4	STX	ZONE1	FIX ZONE1
11A2	DE	44			LDX	BUFPNT	
11A4	BD	04	92	SZONE5	JSR	SKIPSP	SKIP ALL SPACES
11A7	BD	06	63		JSR	TSTEND	
11AA	27	0C			BEQ	SZONE6	
11AC	BD	07	3B		JSR	CLASS	GO CLASSIFY
11AF	C1	01			CMP B	#1	IS IT A NUMBER?
11B1	27	0A			BEQ	SZONE7	
11B3	22	14			BHI	SZONE8	ERROR
11B5	08				INX		BUMP POINTER
11B6	20	EC			BRA	SZONE5	
11B8	CE	01	36	SZONE6	LDX	#\$0136	SET COLUMN 136
11BB	20	07			BRA	SZON75	
11BD	BD	07	55	SZONE7	JSR	BCDCON	GET NUMBER
11C0	DF	44			STX	BUFPNT	SAVE POINTER
11C2	DE	90			LDX	NUMBER	
11C4	DF	60		SZON75	STX	ZONE2	SET ZONE2
11C6	7E	09	30		JMP	NUMSE6	
11C9	7E	04	41	SZONE8	JMP	ERROR	REPORT ERROR

* SET SPECIAL CHARATERS COMMAND

11CC	DE	44		SET	LDX	BUFPNT	SET POINTER
11CE	BD	04	92		JSR	SKIPSP	
11D1	DF	44			STX	BUFPNT	
11D3	DF	40			STX	TEMP	SAVE POINTER
11D5	CE	12	41		LDX	#CHRTBL	POINT TO TABLE
11D8	7E	04	00		JMP	EDIT6	GO FIND NAME

* SET SPECIALS HERE

* TAB

11DB	CE	00	B2	STAB	LDX	#TABCH	POINT TO TAB CHAR
11DE	20	0D			BRA	SETC	

* FILL

11E0	CE	00	B3	SFILL	LDX	#FILL	POINT TO FILL
11E3	20	08			BRA	SETC	

* EOL

11E5	CE	00	B5	SEOL	LDX	#EOL	POINT TO EOL CHAR
11E8	20	03			BRA	SETC	

* LIND

11EA	CE	00	B4	SLIND	LDX	#LIND	POINT TO IT
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LOCN B1 B2 B3

* SET THE CHARACTER

11ED	DF	40		SETC	STX	TEMP	SAVE POINTER
11EF	DE	44			LDX	BUFPNT	GO TO BUFFER
11F1	BD	04	92		JSR	SKIPSP	
11F4	B1	3D			CMP A	#'=	IS IT =
11F6	26	3F			BNE	SETC8	ERROR
11F8	BD	40			BSR	CHFRQU	
11FA	26	3B			BNE	SETC8	ERROR
11FC	BD	3C			BSR	CHFRQU	
11FE	26	04			BNE	SETC2	
1200	4F				CLR A		SET NULL CHAR.
1201	36				PSH A		
1202	20	0F			BRA	SETC4	
1204	BD	07	3B	SETC2	JSR	CLASS	GO CLASSIFY
1207	5D				TST B		
1208	26	2D			BNE	SETC8	ERROR?
120A	B1	0D			CMP A	#CRGRET	
120C	27	29			BEQ	SETC8	
120E	36				PSH A		SAVE CHAR
120F	BD	29			BSR	CHFRQU	
1211	26	24			BNE	SETC8	ERROR
1213	08			SETC4	INX		
1214	DF	44			STX	BUFPNT	SAVE POSITION
1216	BD	09	A4		JSR	TFORCR	TEST END
1219	32				PUL A		GET CHAR
121A	DE	40			LDX	TEMP	RESTORE POINTER
121C	8C	00	B3		CPX	#FILL	IS IT FILL CHAR?
121F	26	07			BNE	SETC5	
1221	4D				TST A		
1222	26	0E			BNE	SETC6	
1224	86	20			LDA A	#'	SETUP SPACE
1226	20	0A			BRA	SETC6	
1228	8C	00	B4	SETC5	CPX	#LIND	IS IT LIND?
122B	26	05			BNE	SETC6	
122D	4D				TST A		
122E	26	02			BNE	SETC6	
1230	86	23			LDA A	#'*	SET IT
1232	A7	00		SETC6	STA A	0,X	
1234	7E	09	30		JMP	NUMSE6	RETURN
1237	7E	04	71	SETC8	JMP	SYNERR	REPORT ERROR

* CHECK FOR QUOTE

123A	08			CHFRQU	INX		BUMP POINTER
123B	BD	04	92		JSR	SKIPSP	SKIP SPACES
123E	B1	27			CMP A	#''	
1240	39				RTS		

* SPECIAL CHARACTER TABLE

1241	54			CHRTBL	FCC	'TAB'	
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LOCN	B1	B2	B3			
1242	41					
1243	42					
1244	00			FCB	0	
1245	11	DB		FDB	STAB	
1247	46			FCC	'FILL'	
1248	49					
1249	4C					
124A	4C					
124B	00			FCB	0	
124C	11	E0		FDB	SFILL	
124E	45			FCC	'EOL'	
124F	4F					
1250	4C					
1251	00			FCB	0	
1252	11	E5		FDB	SEOL	
1254	4C			FCC	'LINO'	
1255	49					
1256	4E					
1257	4F					
1258	00			FCB	0	
1259	11	EA		FDB	SLINO	
125B	00			FCB	0	

* EXPAND TABS COMMAND

125C	BD	08	A8	EXPAND	JSR	TSTEMP	
125F	DE	44			LDX	BUFPNT	GET POINTER
1261	BD	04	E9		JSR	FINDT	FIND TARGET
1264	DE	4A			LDX	NEWPOS	SAVE IT
1266	86	01			LDA A	#1	
1268	97	8A			STA A	PRNFLG	SET FLAG
126A	DF	48		EXPAN1	STX	CURPOS	SET CURRENT
126C	9C	93			CPX	TRGLIN	LAST LINE?
126E	26	03			BNE	EXPAN2	
1270	7F	00	8A		CLR	PRNFLG	CLEAR FLAG
1273	8D	10		EXPAN2	BSR	EXPLIN	GO DO LINE
1275	96	8A			LDA A	PRNFLG	DONE?
1277	27	09			BEQ	EXPAN5	
1279	DE	4A			LDX	NEWPOS	GET POINTER
127B	BD	06	C3		JSR	NXTLIN	FIND NEXT LINE
127E	DF	4A			STX	NEWPOS	SAVE
1280	20	E8			BRA	EXPAN1	
1282	7E	08	A2	EXPAN5	JMP	PRINT6	

* EXPAND TABS IN ONE LINE

1285	96	B2		EXPLIN	LDA A	TABCH	
1287	91	B3			CMP A	FILL	CHECK IF FILL=TAB
1289	27	51			BEQ	EXPLI7	
128B	CE	00	9D		LDX	#TABBUF	POINT TO TABS
128E	DF	9B			STX	TABPNT	
1290	E6	00			LDA B	0,X	GET COLUMN
1292	27	4B			BEQ	EXPLI7	

LOCN	B1	B2	B3				
1294	5F			CLR B		CLEAR COUNT	
1295	D7	8D		STA B	CHRCNT		
1297	DE	4A		LDX	NEWPOS	POINT TO LINE	
1299	9C	99		CPX	FILEND		
129B	26	03		BNE	EXPLI1		
129D	7E	03	8A	JMP	EDIT		
12A0	08			EXPLI1	INX	BUMP 3 TIMES	
12A1	08			INX		PAST LINE NO.	
12A2	08			INX			
12A3	5C			EXPLI2	INC B	BUMP COUNTER	
12A4	A6	00		LDA A	0,X	CHECK FOR TAB	
12A6	81	0D		CMP A	#CRGRET		
12A8	27	32		BEQ	EXPLI7		
12AA	91	B2		CMP A	TABCH	IS IT TAB?	
12AC	27	03		BEQ	EXPLI3		
12AE	08			INX		BUMP THE POINTER	
12AF	20	F2		BRA	EXPLI2		
12B1	DF	40		EXPLI3	STX	TEMP	SAVE POSITION
12B3	DE	9B		LDX	TABPNT		
12B5	E1	00		EXPL35	CMP B	0,X	CHECK COLUMN
12B7	24	1E		BCC	EXPLI6		
12B9	86	FF		LDA A	##FF	SET COUNT	
12BB	4C			EXPLI4	INC A		
12BC	5C			INC B			
12BD	E1	00		CMP B	0,X	TAB COL. YET?	
12BF	26	FA		BNE	EXPLI4		
12C1	97	8E		STA A	CHRCNT+1	SAVE COUNT	
12C3	DE	40		LDX	TEMP		
12C5	DF	58		STX	SPCPT1	SET SPACE POINTER	
12C7	BD	0C	08	JSR	MAKSPC	GO MAKE ROOM	
12CA	D6	8E		LDA B	CHRCNT+1		
12CC	5C			INC B			
12CD	96	B3		LDA A	FILL	GET FILL CHARACTER	
12CF	A7	00		EXPLI5	STA A	0,X	PUT CHARACTER
12D1	08			INX			
12D2	5A			DEC B		DEC COUNT	
12D3	26	FA		BNE	EXPLI5		
12D5	20	AE		BRA	EXPLIN	REPEAT	
12D7	08			EXPLI6	INX	BUMP POINTER	
12D8	A6	00		LDA A	0,X		
12DA	26	D9		BNE	EXPL35		
12DC	39			EXPLI7	RTS	RETURN	

* APPEND COMMAND

12DD	BD	08	A8	APPEND	JSR	TSTEMP	
12E0	DE	44			LDX	BUFPNT	GET POINTER
12E2	BD	04	92		JSR	SKIPSP	
12E5	BD	06	63		JSR	TSTEND	ALL?
12E8	26	03			BNE	APPEN1	
12EA	7E	04	71	APPEN0	JMP	SYNERR	
12ED	BD	07	3B	APPEN1	JSR	CLASS	GO CLASSIFY
12F0	5D				TST B		
12F1	26	F7			BNE	APPEN0	

LOCN B1 B2 B3				
12F3 BD 05 FA		JSR	SETDEL	SET DELIMITERS
12F6 BD 07 3B		JSR	CLASS	CLASSIFY CHARACTER
12F9 C1 01		CMP B	#1	IS IT NUMBER?
12FB 26 13		BNE	APPEN3	
12FD BD 07 55		JSR	BCDCON	GET COLUMN NO.
1300 BD 08 3B		JSR	TSTNUM	IS IT ZERO?
1303 27 0B		BEQ	APPEN3	
1305 4F		CLR A		
1306 4C	APPEN2	INCA		BUMP COUNTER
1307 36		PSH A		
1308 BD 08 2A		JSR	DECNUM	DEC NUMBER
130B 32		PUL A		RESTORE COUNT
130C 26 FB		BNE	APPEN2	
130E 97 7A		STA A	APPCOL	SAVE COUNT
1310 BD 0F 07	APPEN3	JSR	SVSTPT	SAVE DEL INFO
1313 DE 44		LIX	BUFPNT	GET POINTER
1315 BD 04 E9		JSR	FINDT	FIND TARGET
1318 BD 0F 14		JSR	RSTSPT	RESTORE DEL INFO
131B 7F 00 8D		CLR	CHRCNT	
131E 7C 00 8A		INC	PRNFLG	SET FLAG
1321 DE 4A		LIX	NEWPOS	SET POINTER
1323 9C 93	APPE35	CPX	TRGLIN	AT TARGET?
1325 26 03		BNE	APPEN4	
1327 7F 00 8A		CLR	PRNFLG	CLEAR FLAG
132A 08	APPEN4	INX		BUMP 3 TIMES
132B 08		INX		
132C 08		INX		
132D 96 7A		LDA A	APPCOL	GET COL. NUMBER
132F 26 06		BNE	APPEN5	
1331 09		DEX		
1332 BD 07 E6		JSR	FNDCRT	GET TO C.R.
1335 20 37		BRA	APPEN7	
1337 16	APPEN5	TAB		
1338 5A	APPE53	DEC B		DEC COUNT
1339 27 1C		BEQ	APPE65	
133B A6 00		LDA A	0,X	CHECK CHARACTER
133D 81 0D		CMP A	#CRGRET	
133F 27 03		BEQ	APPEN6	
1341 08		INX		BUMP POINTER
1342 20 F4		BRA	APPE53	
1344 DF 58	APPEN6	STX	SPCPT1	SET POSITION
1346 D7 8E		STA B	CHRCNT+1	
1348 37		PSH B		
1349 BD 0C 0B		JSR	MAKSPC	GO MAKE MORE ROOM
134C 33		PUL B		
134D 86 20		LDA A	#'	SET UP SPACE
134F A7 00	APPE63	STA A	0,X	PUT IT
1351 08		INX		BUMP POINTER
1352 5A		DEC B		DEC THE COUNT
1353 26 FA		BNE	APPE63	
1355 20 17		BRA	APPEN7	
1357 DF 58	APPE65	STX	SPCPT1	SET POSITION
1359 DF 40		STX	TEMP	
135B A6 00	APPE66	LDA A	0,X	GET CHAR.
135D 81 0D		CMP A	#CRGRET	IS IT C.R.?

LOCN	B1	B2	B3				
135F	27	04		BEQ	APPE67		
1361	08			INX			
1362	5C			INC	B		
1363	20	F6		BRA	APPE66		
1365	D7	8E		APPE67	STA B	CHRCNT+1	
1367	DF	5A		STX	SPCPT2		
1369	BD	0D	43	JSR	DELCHR	DELETE REST OF LINE	
136C	DE	40		LDX	TEMP	GET POINTER	
136E	DF	58		APPEN7	STX	SPCPT1	
1370	96	7B		LDA A	STRCNT	GET COUNT	
1372	27	12		BEQ	APPE78		
1374	97	8E		APPE72	STA A	CHRCNT+1	
1376	BD	0C	08	JSR	MAKSPC	GO MAKE ROOM	
1379	DE	50		LDX	STRNGE	POINT TO STRING	
137B	DF	58		STX	SPCPT1		
137D	DE	4E		LDX	STRNG8		
137F	DF	40		STX	TEMP	SET END	
1381	BD	0C	64	JSR	MAKS55	PUT IN STRING	
1384	DE	5A		LDX	SPCPT2	GET POINTER	
1386	5F			APPE78	CLR B		
1387	BD	07	F6	JSR	BAKON2		
138A	BD	08	3F	JSR	VERLIN		
138D	96	8A		LDA A	PRNFLG	DONE?	
138F	27	07		BEQ	APPEN8		
1391	BD	06	C3	JSR	NXTLIN	FIND NEXT LINE	
1394	DF	4A		STX	NEWPOS		
1396	20	8B		BRA	APPE35	REPEAT	
1398	DF	48		APPEN8	STX	CURPOS	
139A	7E	08	A2	APPEN9	JMP	PRINT6	

* SAVE CURRENT FILE ON TAPE

139D	BD	09	A4	SAVE	JSR	TFORCR	
13A0	DE	97			LDX	FILBEG	SET POINTER
13A2	DF	58			STX	SPCPT1	
13A4	DE	99			LDX	FILEND	
13A6	DF	5A			STX	SPCPT2	SET END
13A8	BD	29			BSR	RECORD	GO RECORD IT
13AA	7E	09	30	SAVE4	JMP	NUMSE6	

* WRITE PART OF FILE TO TAPE

13AD	BD	08	A8	WRITE	JSR	TSTEMP	
13B0	DE	44			LDX	BUFFNT	SET POINTER
13B2	BD	04	E9		JSR	FINDT	FIND TARGET
13B5	96	8C			LDA A	DRCTN	CHECK DIRECTION
13B7	26	0C			BNE	WRITE2	
13B9	BD	07	E6		JSR	FND CRT	
13BC	08				INX		
13BD	DF	5A			STX	SPCPT2	SET POINTER
13BF	DE	4A			LDX	NEWPOS	
13C1	DF	58			STX	SPCPT1	SET BEGINNING
13C3	20	0A			BRA	WRITE4	

LOCN	B1	B2	B3			
13C5	DF	58		WRITE2	STX	SPCPT1
13C7	DE	4A			LDX	NEWPOS
13C9	BD	07	E6		JSR	FNDCRT
13CC	08				INX	
13CD	DF	5A			STX	SPCPT2
13CF	BD	02		WRITE4	BSR	RECORD
13D1	20	D7		WRITE5	BRA	SAVE4

SET END
GO RECORD IT

* RECORD RECORD

13D3	96	B9		RECORD	LDA A	RONCH	
13D5	BD	02	OF		JSR	TOUCH	
13D8	BD	28			BSR	TDELAY	GO DELAY
13DA	DE	58			LDX	SPCPT1	SET POINTER
13DC	9C	5A		RECOR2	CPX	SPCPT2	DONE?
13DE	27	15			BEQ	RECOR4	
13E0	08				INX		GET PAST NUMBERS
13E1	08				INX		
13E2	08				INX		
13E3	A6	00		RECO25	LDA A	0,X	GET A CHARACTER
13E5	81	0D			CMP A	#CRGRET	
13E7	27	06			BEQ	RECOR3	
13E9	BD	02	OF		JSR	TOUCH	OUTPUT IT
13EC	08				INX		BUMP THE POINTER
13ED	20	F4			BRA	RECO25	
13EF	BD	02	OF	RECOR3	JSR	TOUCH	OUTPUT IT
13F2	08				INX		
13F3	20	E7			BRA	RECOR2	
13F5	86	1A		RECOR4	LDA A	#1A	SET CONTROL Z
13F7	BD	02	OF		JSR	TOUCH	OUTPUT IT
13FA	CE	FF	FF	RECOR5	LDX	#FFFF	SET COUNT
13FD	09			RECOR6	DEX		
13FE	26	FD			BNE	RECOR6	
1400	96	BA		RECOR7	LDA A	ROFCH	
1402	BD	02	OF		JSR	TOUCH	

* DELAY FOR TAPE

1405	96	B6		TDELAY	LDA A	DELAY	GET FACTOR
1407	27	09		DELAY1	BEQ	DELAY4	
1409	CE	FF	FF		LDX	#FFFF	SET COUNT
140C	09			DELAY2	DEX		DEC COUNT
140D	26	FD			BNE	DELAY2	
140F	4A				DEC A		DONE?
1410	20	F5			BRA	DELAY1	
1412	39			DELAY4	RTS		RETURN

* PUT A GAP ON TAPE (40 NULLS)

1413	BD	09	A4	GAP	JSR	TFORCR
------	----	----	----	-----	-----	--------

LOCN	B1	B2	B3			
1416	96	B9		LDA	A	RONCH TURN ON TAPE
1418	BD	02	0F	JSR		TOUCH
141B	BD	E8		BSR		TDELAY GO DELAY
141D	C6	28		LDA	B	#40 SETUP COUNT
141F	4F			CLR	A	GAP2 SET NULL
1420	BD	02	0F	JSR		TOUCH OUTPUT IT
1423	5A			DEC	B	DEC COUNT
1424	26	F9		BNE		GAP2
1426	BD	D8		BSR		RECOR7
1428	20	A7		BRA		WRITES

* READ TAPE ROUTINE

142A	BD	09	A4	READ	JSR	TFORCR	
142D	96	B7		LDA	A	TONCH	
142F	BD	02	0F	JSR		TOUCH	
1432	BD	D1		BSR		TDELAY	GO DELAY
1434	BD	07	A3	JSR		CLRNUM	
1437	DE	99		LDX		FILEND	GET END
1439	DF	40		STX		TEMP	
143B	9C	97		CPX		FILBEG	EMPTY?
143D	27	08		BEQ		READ1	
143F	BD	07	F0	JSR		BAKONE	MOVE BACK ONE
1442	BD	06	98	JSR		GETNUM	GET NUMBER
1445	DE	99		LDX		FILEND	POINT TO END
1447	BD	35		READ1	BSR	RDCHKE	
1449	BD	33		BSR		RDCHKE	
144B	BD	31		BSR		RDCHKE	
144D	BD	02	0C	READ2	JSR	TINCH	GET CHAR FROM TAPE
1450	81	0D		CMP	A	#CRGRET	
1452	27	0C		BEQ		READ3	
1454	81	1A		CMP	A	##1A	IS IS CNTRL Z?
1456	27	0C		BEQ		READ4	
1458	81	1F		CMP	A	##1F	
145A	23	F1		BLS		READ2	
145C	BD	21		BSR		RDCHK2	
145E	20	ED		BRA		READ2	
1460	BD	1D		READ3	BSR	RDCHK2	
1462	20	E3		BRA		READ1	REPEAT
1464	5F			READ4	CLR	B	
1465	BD	07	F6	JSR		BAKON2	FIND LAST C.R.
1468	DF	99		READ5	STX	FILEND	SET NEW END
146A	7C	00	83	INC		CHKFLG	
146D	96	B8		LDA	A	TOFCH	
146F	BD	02	0F	JSR		TOUCH	
1472	9C	40		CPX		TEMP	
1474	27	05		BEQ		READ6	
1476	DE	40		LDX		TEMP	
1478	BD	06	B0	JSR		RENUM2	GO NUMBER NEW LINES
147B	7E	09	90	READ6	JMP	BOTTO1	

* READ AND CHECK END

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LOCN B1 B2 B3
147E 4F          RDCHKE CLR A          CLEAR BYTE
147F BC 02 12    RDCHK2 CPX          MEMEND END OF MEMORY?
1482 27 04          BEQ          RDCHK3
1484 A7 00          STA A 0,X          PUT CHAR
1486 08          INX          BUMP THE POINTER
1487 39          RTS          RETURN
1488 BD 02 0C    RDCHK3 JSR          TINCH GET CHAR FROM TAPE
148B B1 1A          CMP A $$1A        IS IT TERM?
148D 26 F9          BNE          RDCHK3
148F 20 D3          BRA          READ4

1491 0D          FCB          $0D        SET END !!

1492          BEGPNT EQU          *

          ORG          $A04B

A04B 02 00          FDB          START

          END

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SYMBOL TABLE:

ALLFLG 0077	APPCOL 007A	APPEND 12DD	APPEN0 12EA	APPEN1 12ED
APPEN2 1306	APPEN3 1310	APPEN4 132A	APPEN5 1337	APPEN6 1344
APPEN7 136E	APPEN8 1398	APPEN9 139A	APPE35 1323	APPE53 1338
APPE63 134F	APPE65 1357	APPE66 135B	APPE67 1365	APPE72 1374
APPE78 1386	BACKSP 0008	BAKONE 07F0	BAKON2 07F6	BAKON4 0807
BAKON5 0808	BAKON6 080B	BCDCON 0755	BCDC01 0757	BCDC02 0764
BCDC04 0769	BCDC05 0778	BCDC06 077C	BCDC07 078B	BCDC08 079A
BCDC15 0761	BCDC65 0787	BCDC67 0789	BEGPNT 1492	BELL 0007
BFRSTR 0DB4	BMPFLG 007D	BMPNUM 066A	BMPNU4 0674	BOTTOM 098E
BOTTO1 0990	BOTTO2 0998	BUFFER 00BB	BUFLIM 04BB	BUFNT 0044
BUFSAV 0046	CFIND 09CF	CFIND1 09E4	CFIND2 0A08	CFIND3 0A10
CFIND4 0A1B	CFIND5 0A25	CFIND6 0A28	CFIND9 0A2B	CFIN12 09E8
CFIN13 09FC	CFIN14 0A02	CFIN15 0A05	CFNTST 0A31	CHANGE 0DCB
CHANG1 0DD8	CHANG2 0DE5	CHANG3 0DF4	CHANG4 0E28	CHANG5 0E31
CHANG6 0E71	CHANG8 0EC8	CHANG9 0F04	CHAN12 0DD8	CHAN15 0DDE
CHAN35 0DFE	CHAN37 0E02	CHAN50 0E41	CHAN51 0E44	CHAN52 0E5F
CHAN55 0E6A	CHAN61 0E7C	CHAN62 0E8B	CHAN65 0E91	CHAN66 0E96
CHAN67 0EAA	CHAN80 0ED3	CHAN81 0EDD	CHAN82 0EE6	CHAN84 0EFO
CHAN86 0EFC	CHA510 0E51	CHA675 0EBD	CHFRQU 123A	CHGEN0 0066
CHGFLG 0085	CHGONF 0079	CHGPNT 0064	CHKFLG 0083	CHRCNT 008D
CHRTBL 1241	CLASS 073B	CLASS2 074A	CLASS4 0754	CLRNUM 07A3
CMPZN1 0644	CMPZN2 064F	CMPZ14 064E	CMPZ24 0659	CNRSTR 0982
COPY 0FF3	COPY0 101C	COPY02 1010	COPY05 1014	COPY1 101F
COPY15 103C	COPY18 1042	COPY2 104E	COPY25 1053	COPY3 1067
COPY4 1094	COPY45 10A6	COPY5 10A9	CPYDR0 008B	CRGRET 000D
CRLFST 0458	CURPOS 0048	DECCNT 0089	DECNUM 082A	DELAY 00B6

DELAY1	1407	DELAY2	140C	DELAY4	1412	DELCHR	0D43	DELCH2	0D5B
DELCH3	0D62	DELCH4	0D7C	DELCH5	0D7E	DELCOD	0018	DELC21	0D61
DELC31	0D64	DELC32	0D73	DELC34	0D77	DELETE	0C8A	DELETO	0CBB
DELET1	0CD6	DELET2	0CE5	DELET3	0CE9	DELET4	0CF4	DELET5	0D1B
DELET6	0D2E	DELET7	0D33	DELE02	0C94	DELE04	0C9D	DELE15	0CCA
DELE25	0CE7	DELE35	0CF1	DELE45	0D13	DELIM	0095	DRCTN	008C
EDIT	038A	EDIT1	0397	EDIT2	03AB	EDIT3	03BC	EDIT4	03C1
EDIT5	03CC	EDIT55	03D1	EDIT56	03F1	EDIT58	03FB	EDIT6	0400
EDIT65	040D	EDIT7	0416	EDIT8	0429	EDIT85	0435	EDIT88	043F
EOL	0085	EQUALS	0AA5	EQUFLG	007E	ERROR	0441	ERRSTR	044C
EXIT	0989	EXPAND	125C	EXPAN1	126A	EXPAN2	1273	EXPAN5	1282
EXPLIN	1285	EXPLI1	12A0	EXPLI2	12A3	EXPLI3	12B1	EXPLI4	12BB
EXPLI5	12CF	EXPLI6	12D7	EXPLI7	12DC	EXPL35	12B5	FILBEG	0097
FILEND	0099	FILL	00B3	FIND	04FD	FINDL	04D2	FINDL0	04E2
FINDL1	04E4	FINDL2	04E5	FINDT	04E9	FINDT0	04EE	FINDT1	04F8
FINDT2	04FB	FIND1	050A	FIND14	0521	FIND16	0526	FIND2	0532
FIND3	0541	FIND4	054D	FIND5	055A	FIND6	0565	FIND62	057A
FIND63	0584	FIND65	058C	FIND66	0594	FIND67	05A8	FIND7	05A9
FIND71	05B2	FIND72	05B8	FIND73	05C6	FIND74	05D0	FIND75	05DF
FIND77	05F4	FIND78	05F5	FIN702	05AB	FIN711	05B5	FIXZON	065A
FNDCRT	07E6	FNDCR2	07E9	FNDFLG	0070	FNDNUM	07AB	FNDNU1	07B1
FNDNU2	07B8	FNDNU4	07BA	FNDNU5	07DA	FNDN45	07D8	FNONFL	0087
GAP	1413	GAP2	141F	GETNUM	0698	HEADER	111B	HEADE2	112A
HEADE3	113C	HEADE4	1144	HEADE5	1158	HEADE7	117B	HEAD42	1146
HEAD45	1152	HEAD55	115C	HEAD57	1172	HEAD58	1177	HEDCNT	0096
INCAMT	007C	INCH	0206	INCHAR	0499	INCHR1	049C	INCHR3	04AB
INCHR4	04BA	INCH35	04B7	INCNUM	067C	INITLZ	0355	INLMFL	007F
INSERT	0AC8	INSER1	0AD7	INSER2	0ADE	INSER3	0AE6	INSER4	0AEA
INSER5	0B1D	INSER6	0B48	INSER7	0B7B	INSE42	0AF8	INSE43	0B0A
INSE45	0B13	INSE51	0B2C	INSE52	0B3F	INSE55	0B45	INSE60	0B4F
INSE61	0B53	INSE62	0B6B	INSE71	0B80	INSE72	0BC8	INSE75	0BD6
INS710	0B8F	INS711	0BB5	INS712	0BC2	INS713	0BC5	INZFLG	008F
LASTND	005C	LINFLG	0075	LINO	00B4	LSTFLG	0088	MAKSPC	0C08
MAKSP1	0C16	MAKSP2	0C21	MAKSP3	0C4E	MAKSP4	0C5A	MAKSP5	0C62
MAKSP6	0C76	MAKS18	0C20	MAKS21	0C23	MAKS22	0C32	MAKS23	0C45
MAKS24	0C49	MAKS55	0C64	MAK222	0C3E	MEMEND	0212	MIKBUG	E0D0
MOVE	0FD4	MOVFLG	0080	MSLFLG	006C	NEWPOS	004A	NEXT	09CC
NLDSTR	0DA3	NOCURL	0074	NOFSTR	0464	NORMST	0C77	NOTFND	045F
NTRCHS	0D7F	NUMBER	0090	NUMFLG	006A	NUMSET	091D	NUMSE2	0928
NUMSE4	092D	NUMSE6	0930	NWFSTR	034B	NXTFLG	0076	NXTLIN	06C3
NXTLI2	06CA	NXTOCR	0A83	NXTOC0	0A87	NXTOC1	0A96	NXTOC2	0A9F
NXTOC3	0AA4	OCCURR	0A48	OCCUR3	0A67	OCCUR4	0A76	OCCUR5	0A79
OCRCNT	006E	OCRFLG	0078	OCRTMP	0068	OFF	0958	ON	0956
ONOFF	0937	ONOFB	0946	OUTBCD	08D4	OUTBC2	08DD	OUTBC3	08E5
OUTBC4	08ED	OUTBC6	08F9	OUTBC7	0900	OUTBC8	090B	OUTB35	08EB
OUTB65	08FE	OUTB75	0906	OUTB78	0908	OUTCH	0209	OUTH1	0913
OUTHR	0917	OUTLIN	08AF	OUTLI2	08BF	OUTLI4	08CB	OUTL15	08BC
OUTSPC	08CD	OVER	04C1	OVERLA	0F21	OVLPS1	10B4	OVRBEG	0072
OVREND	0073	OVRLA0	0F3C	OVRLA1	0F45	OVRLA2	0F5C	OVRLA3	0F6C
OVRLA4	0F7C	OVRLA5	0F9D	OVRLA6	0FAE	OVRLA7	0FC2	OVRLA8	0FC7
OVRLST	0FCA	OVRL11	0F47	OVRL12	0F53	OVRL16	0F56	OVRL35	0F71
OVRL41	0F7E	OVRL43	0F96	OVRL45	0F98	OVRL55	0FA6	PCRLF	044E
PDATA1	0485	PEDIT	0383	PREROR	0444	PRINT	0877	PRINT0	087E
PRINT1	0885	PRINT5	089D	PRINT6	08A2	PRIN12	088C	PRNFLG	00BA
PROMPT	0023	PSTRNG	0483	PSTZFL	006D	PUTNUM	068B	RDCHKE	147E
RDCHK2	147F	RDCHK3	1488	READ	142A	READ1	1447	READ2	144D
READ3	1460	READ4	1464	READ5	1468	READ6	147B	RECORD	13D3
RECOR2	13DC	RECOR3	13EF	RECOR4	13F5	RECOR5	13FA	RECOR6	13FD
RECOR7	1400	RECO25	13E3	RENSTR	0BF2	RENUMB	06A5	RENUM1	06AA

RENUM2 06B0	RENUM4 06C0	REPFLG 00B1	REPLAC 0C87	RESTRT 0203
ROFCH 00BA	RONCH 00B9	RSTSPT 0F14	SAVE 139D	SAVE4 13AA
SAVOCR 0A7A	SEOL 11E5	SET 11CC	SETC 11ED	SETC2 1204
SETC4 1213	SETC5 1228	SETC6 1232	SETC8 1237	SETDEL 05FA
SETDE2 0600	SETDE4 060E	SETDE5 0617	SFILL 11E0	SKIPSA 0491
SKIPSP 0492	SKIPS2 0498	SKPCLS 0738	SLINO 11EA	SNGLIN 0084
SPCPT1 0058	SPCPT2 005A	SRCHFT 004C	STAB 11DB	STACK 01FF
START 0200	STRCNT 007B	STRCN1 0071	STRCN2 0086	STRGB1 0052
STRGE1 0054	STRING 06CD	STRIN1 06DA	STRIN2 06E2	STRIN3 06E8
STRIN4 0709	STRIN5 070D	STRIN6 071C	STRIN7 0729	STRIN8 072B
STRIN9 0735	STRNGB 004E	STRNGE 0050	STRPNT 0056	SUSTPT 0F07
SYNERR 0471	SYNSTR 0476	SZONE 117E	SZONE2 1192	SZONE3 1199
SZONE4 11A0	SZONE5 11A4	SZONE6 11B8	SZONE7 11BD	SZONE8 11C9
SZON75 11C4	TAB 10D0	TABBUF 009D	TABCH 00B2	TABEND 00B1
TABLE 0214	TABFNT 009B	TAB2 10D5	TAB4 10EF	TAB5 10FA
TAB6 1110	TAB8 1118	TDELAY 1405	TEMP 0040	TFORCR 09A4
TFORC2 09B1	TFORC3 09B2	TINCH 020C	TMPCHR 00B2	TOFCH 00B8
TOGGLE 095B	TONCH 00B7	TOP 099D	TOUCH 020F	TRGLIN 0093
TSTEMP 08AB	TSTEND 0663	TSTEN2 0669	TSTMSL 09B5	TSTMS2 09BB
TSTMS4 09C6	TSTMS5 09CB	TSTNUM 0838	TSTNU2 083E	TSTOVR 0821
TSTOV2 0829	UPONE 080F	UPONE1 0813	UPONE2 0819	VERFLG 006B
VERLIN 083F	VERLI1 0849	VERLI2 0872	VERL12 084C	VERL15 085C
VERSET 0963	VERSE2 096E	VERSE4 0973	VERSE6 0976	WRITE 13AD
WRITE2 13C5	WRITE4 13CF	WRITE5 13D1	XCNTRL 0978	XSAVE 0042
ZOKSTR 0A3B	ZONBUF 0062	ZONE 061A	ZONE1 005E	ZONE2 0060
ZONE3 063B				

OBJECT CODE:

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S1 0D 00B1 00 00 20 23 00 06 00 00 00 00 FB
S1 13 0200 7E 03 55 7E 03 83 7E E1 AC 7E E1 D1 7E E1 AC 7E 4C
S1 13 0210 E1 D1 1F FF 41 50 50 45 4E 44 00 12 DD 41 00 12 10
S1 13 0220 DD 42 4F 54 54 4F 4D 00 09 8E 42 00 09 8E 43 48 1D
S1 13 0230 41 4E 47 45 00 0D CB 43 4F 50 59 00 0F F3 43 4F FB
S1 13 0240 00 0F F3 43 00 0D CB 44 45 4C 45 54 45 00 0C 8A 44
S1 13 0250 44 00 0C 8A 45 58 50 41 4E 44 00 12 5C 45 58 50 A5
S1 13 0260 00 12 5C 46 49 4E 44 00 09 CF 46 00 09 CF 47 41 7D
S1 13 0270 50 00 14 13 48 45 41 44 45 52 00 11 1B 48 00 11 D5
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 S1 13 13A0 DE 97 DF 58 DE 99 DF 5A BD 29 7E 09 30 BD 08 A8 03
 S1 13 13B0 DE 44 BD 04 E9 96 8C 26 0C BD 07 E6 08 DF 5A DE 40
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 S1 13 13D0 02 20 D7 96 B9 BD 02 0F 8D 2B DE 58 9C 5A 27 15 D3
 S1 13 13E0 08 08 08 A6 00 81 0D 27 06 BD 02 0F 08 20 F4 BD D9
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 S1 13 1400 96 BA BD 02 0F 96 B6 27 09 CE FF FF 09 26 FD 4A FC
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 S1 13 1420 BD 02 0F 5A 26 F9 8D D8 20 A7 BD 09 A4 96 B7 BD D1
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 S1 13 1440 07 F0 BD 06 98 DE 99 BD 35 BD 33 8D 31 BD 02 0C C4
 S1 13 1450 81 0D 27 0C 81 1A 27 0C 81 1F 23 F1 8D 21 20 ED 8A
 S1 13 1460 8D 1D 20 E3 5F BD 07 F6 DF 99 7C 00 83 96 B8 BD 30
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 S1 05 1490 D3 0D 76
 S1 05 A048 02 00 10
 S9