APPENDIX C - CHANGING INPUT SCREEN PARAMETERS

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C.1 Introduction

The ASEAM3.0 input screens on which you enter data are configured by screen input data files. These files determine both the appearance of the screens (i.e. wording of the questions), and the input parameters for each input question (i.e. default values, error checking procedures, help messages, etc.). Because these files are external to ASEAM3.0, you can edit the files, thereby changing any of the parameters mentioned above and hence the input screens themselves, without having to recompile the program.

This section describes the various codes used in the input screen files and how to change the appearance of the screens and the input parameters.

C.2 Modifying Input Screens

To modify the input screens, you will need to know the filenames of the screen(s) you want to change (see section C.3) and the input screen file format (see section C.4). The filenames of each input screen can be found printed above the input screens in Chapters 5 through 11, or in Appendix B.

You can make changes to these files using any text editor or word processor which can write out a standard ASCII file. To modify an input screen, follow these steps:

1. Make sure you have an original copy of the input screen file to be changed. It is IMPERATIVE that you do this, because you may need to copy these original files to run ASEAM3.0 if your changes are unsuccessful.

To make back-up copies of all original screen input files, you will need a blank formatted disk. Refer to the list of copy commands below and copy all input screen files from the ASEAM3.0 subdirectory to your backup disk.

```
`copy a:*.lis b:' (CR) [Loads screens]
`copy a:*.sis b:' (CR) [Systems screens]
`copy a:*.pis b:' (CR) [Plant screens]
`copy a:*.mis b:' (CR) [Specify Analysis screens]
`copy a:*.lsd b:' (CR) [Weather/Solar, ECO, and Quick Input screens]
```

Store the backup disk in a safe place. If at any point you have trouble with your modified screen input files, you will need to retrieve these files.

Note that when you modify the input screen files, the filename may not be changed. ASEAM3.0 identifies the files by the names given only.

- 2) Enter your text editor (or word processor) and retrieve the file to be modified in the ASEAM3.0 directory. The EDLIN program on your DOS diskette will work just fine. Note that all screen input files are in ASCII format a DOS text file.
- 3) Edit the data for the portions of the screen that you want to change. (See Section C.3 for descriptions of the effects of the data values in the various fields.)
- 4) After all the changes have been made with your text editor, save the file. Be sure to

save the file as a DOS text file!

BEWARE - Many word processors have their own format for saving text and data files - complete with margin settings, page control keys, etc. It is ABSOLUTELY NECESSARY that all ASEAM3.0 editing done on ASCII files be saved in an ASCII or DOS TEXT file format. ASEAM3.0 will abort if you fail to do this since the file format will be different.

5) Exit your text editor. You may check to see if the file was saved in the proper format by "typing" the file (e.g.: `type liwalldt.lis' (CR)). If non-ASCII characters (symbols - not numbers or characters) are displayed on the screen, you have NOT saved the file in the proper format!

C.3 Input Screen File Format

Each input screen has a unique file which determines the way the screen appears, the help messages, default values, and error checking routines. When changing any of these parameters, you must first find the proper file. A listing of files is provided in Appendix E.

The following filename convention is used:

LI-----.LIS - loads input screen file SI-----.SIS - systems input screen file PI-----.PIS - plant input screen file MI-----.MIS - specify analysis screen file OI-----.LSD - ECO input screen file QI-----.LSD - quick input screen file WI-----.LSD - weather input screen file

(Note: the `-' refers to any alphabetic character)

Find the names of the files you want to modify. Each file must be changed using a text editor or word processor, as described in Section C.2, one file after another.

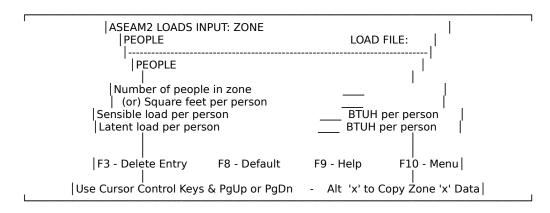
C.3.1 Sample Files and Screens

The format of the input screen files will be described line by line. Two example files will be used: LIPEOPDT.LIS (people input screen, from loads) which demonstrates single column input screens, and LIWALLDT.LIS (wall input screen, from loads) which demonstrates multiple column input screens. The files and the screens created using them are shown on the following pages. Refer to them when reading the line-by-line file descriptions.

File: LIPEOPDT.LIS

AS2 LOADS INPUT SCREEN/DATA FILE - PEOPLE ('LIPEOPDT.LIS')
6,"LOAD DATA: INTERNAL LOADS FOR ZONE:"
7,PEOPLE
3
5,1,1,PEOPLE

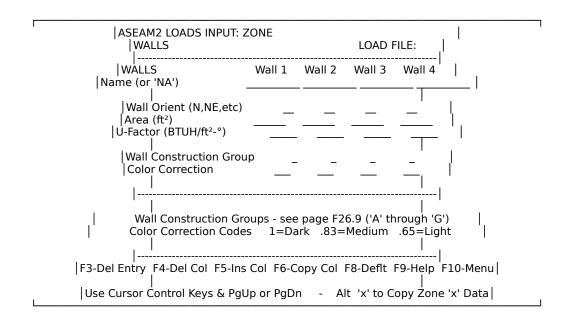
```
4,1,1,Number of people in zone
4,1,3,(or) Square feet per person
4,2,1,Sensible load per person,58,BTUH per person
4,2,1,Latent load per person,58,BTUH per person
2
997
2
996
999
1,4
ir cse lo hih
                     d dft$
1,6,52,4,1, 0,999,0,
                         0
2,7,52,4,3, 1,999,0,
                         0
3,8,52,4,3,100,2000,3,"26.21",1,230
4,9,52,4,3,100,2000,3,"26.21",1,190
```



File: LIWALLDT.LIS

```
AS2 LOADS INPUT SCREEN/DATA FILE - WALLS ('LIWALLDT.LIS')
6,"LOAD DATA: EXTERNAL LOADS FOR ZONE:"
7,"WALLS"
3
5,5,1,WALLS,35,Wall 1,46,Wall 2,57,Wall 3,68,Wall 4
4,1,1,Name (or 'NA')
2
4,1,1,"Wall Orient (N,NE,etc)"
4,1,1,Area (ft²)
4,1,1,U-Factor (BTUH/ft²-°)
2
4,1,1,Wall Construction Group
4,1,1,Color Correction
2
3
2
4,1,12,Wall Construction Groups - see page F26.9 ('A' through 'G')
4,1,12,Color Correction Codes 1=Dark .83=Medium .65=Light
```

```
998
2
996
999
4.6
11
r c selo hih msq$
                                      d dft$
5, 35, 10, 4, 10, 0,
                                     1,NA
7,-35, 2,4, 6, 0,
8, 35, 6,3, 1,999,0,
                                      0
9, 35, 5,3, 0, 2,1,"See Chapter 23, Fundamentals",0
11,-35, 1,4, 9, 1,"See Table 6, page F26.9", 1,D
12, 35, 3,3, 0, 1,1,"See Note 2b, page F26.10", 1,.83
```



C.3.2 Screen Appearance

The first portion of the input screen file determines the screen appearance only. This portion of the file ends with the entry `999' on a line by itself (line 16 in LIPEOPDT.LIS and line 24 in LIWALLDT.LIS). The second portion of the file determines the help messages, default values, and error checking routines, and is discussed in section C.3.3.

The screen appearance portions of the two example screens are reprinted below, with line numbers for your reference. The first line is a dummy line. All the other lines correspond to lines on the screen, offset by one line. That is, line 2 of the file describes what will be printed on line 1 of the screen, line 10 of the file describes what will be printed on line 9 of the screen, etc. The code `999' terminates this portion of the program. Subsequent lines after the `999' code do not correspond to screen lines in this manner.

File: LIPEOPDT.LIS AS2 LOADS INPUT SCREEN/DATA FILE - PEOPLE ('LIPEOPDT.LIS') 6,"LOAD DATA: INTERNAL LOADS FOR ZONE:" 7,PEOPLE 3 5,1,1,PEOPLE 4,1,1,Number of people in zone 4,1,3,(or) Square feet per person 4,2,1,Sensible load per person,58,BTUH per person 4,2,1,Latent load per person,58,BTUH per person 2 2 997 2 996 999 1.4 ir cse lo hih d dft\$ 1,6,52,4,1, 0,999,0, 0 2,7,52,4,3, 1,999,0, 0 3,8,52,4,3,100,2000,3,"26.21",1,230 4,9,52,4,3,100,2000,3,"26.21",1,190 File: LIWALLDT.LIS AS2 LOADS INPUT SCREEN/DATA FILE - WALLS ('LIWALLDT.LIS') 6,"LOAD DATA: EXTERNAL LOADS FOR ZONE:" 7,"WALLS" 3 5,5,1,WALLS,35,Wall 1,46,Wall 2,57,Wall 3,68,Wall 4 4,1,1,Name (or 'NA') 4,1,1,"Wall Orient (N,NE,etc)" 4,1,1,Area (ft²) 4,1,1,U-Factor (BTUH/ft²-°) 4,1,1,Wall Construction Group 4,1,1,Color Correction 2 3 4,1,12, Wall Construction Groups - see page F26.9 ('A' through 'G') 4,1,12,Color Correction Codes 1=Dark .83=Medium .65=Light 2 3 998 2

996 999

```
4,6
11
r c s e lo hi h msg$ d dft$
5, 35,10,4,10, 0, 1,NA
7,-35, 2,4, 6, 0, 0
8, 35, 6,3, 1,999,0, 0
9, 35, 5,3, 0, 2,1,"See Chapter 23, Fundamentals",0
11,-35, 1,4, 9, 1,"See Table 6, page F26.9", 1,D
12, 35, 3,3, 0, 1,1,"See Note 2b, page F26.10", 1,.83
```

- Line 1 This line is not used by ASEAM3.0. It contains a description of the input file and filename. There is no reason to change this line.
- Line 2 header code, header text. The code `6' tells ASEAM3.0 that the line is a header line. The program will print the header, followed by some additional information (in this, case, the zone number). The exact words printed out may be seen by referring to the example screens. The code `6' is defined in the individual screen input segments of the ASEAM3.0 code and may only be changed by recompiling the program. Header text should be enclosed within quotation marks (").
- Line 3 header code, header text. The code `7' tells ASEAM3.0 that the text that follows is also a header. The header is printed, again followed by some additional information (in this case, the loads input filename). The code `7' is defined in the individual screen input segments of the ASEAM3.0 code and may only be changed by recompiling the program. Header text should be enclosed within quotation marks (").
- Line 4 `3'. The code `3' prints a line of dashes.
- Line 5...24 The next lines, up to at most line 24, contain the text to be printed on the screen. There are also some format codes (single numbers) which may be used.

To print text, the format is `#,#,#,text,#,text,#,text, etc.

This line contains several pieces of data, delimited by commas. The first number is a code, `5' meaning that the text will be highlighted, `4' meaning that the text will be printed normally. The second number indicates the number of text entries to be printed on the line. Following the second number are `#,text' pairs, for as many pairs as there are text entries. The number indicates the column at which the text is to be printed and the text is the text string to be printed.

Example: 5,1,1,PEOPLE

The first number, `5', indicates that the text on this line is to be highlighted

The second number, `1', indicates that one set of `#,text' strings are to be printed.

The third number, `1', indicates that the first (and only) text string to be printed begins in column 1 of this line.

The fourth string, `PEOPLE', is the text to be printed.

Example: 5,5,1,WALLS,35,Wall 1,46,Wall 2,57,Wall 3,68,Wall 4

The above example line for walls would be printed as:

WALLS Wall 1 Wall 2 Wall 3 Wall 4

Other codes, besides the `4', `5', `6', and `7' codes described above , may also be used in formatting the screen:

- `2' blank line
- `3' line of dashes across the screen
- `998' function key menu (multiple column screens)
- `997' function key menu (single column screens)
- `996' description of alt-x for copying data

Text strings may be added or changed but be aware of the following:

- All screen text must fit on the 24 line screen. That is, the `999' code must be located on or before line 25 of the input file. ASEAM3.0 will abort with an "illegal function call" if you fail to do this.
- If you add or delete lines, you will have to adjust the second portion of the file (discussed below) to account for the change in location of the input cursor (smiley face). If you add a line, for example, and do not change the location of the cursor for the input questions (described in C.3.3), the smiley face will not appear adjacent to the proper question it will appear one row above. The second portion of the file actually locates the placement of the data entry area and cursor.
- Make sure you leave room for the data entry. That is, if you change or add additional text on a line (using most of the 80 columns), the data entry area may overwrite your text.

The code `999' signals the end of the screen format portion of the file. Again, this code MUST appear on or before line 25 of the screen input file.

CAUTION - Certain characters are interpreted by BASIC as delimiters or "separators" between entries. Examples include the comma and colon. It is a always good idea to enclose all text strings in quotes; then, if the text string does include a delimiter, it will simply be printed as part of the text string. Be sure to include the quotation marks (") at the very beginning and ending of each text string.

Note that this portion of the file determines only the appearance of the input screen. The position and length of the data entry field for each question is determined in the second part of the file, described below.

C.3.3 Default Values, Help Messages, and Error Checking.

All input parameters for each question (e.g., default values, help messages, and error

checking routines) are determined in the second part of the file, beginning with the line immediately following the line which contains `999'. This will be on or before line 26. (In the sample files, this part starts on line 17 for people and line 25 for walls. These portions of the files are reprinted, with line numbers, below.)

File: LIPEOPDT.LIS

Line # Contents of Line (as appear in file)

17	1,4								
18	i	r	С	S	е	lo	hi	h	d dft\$
19	1,	6,	52,	4,	1,	0,	999,	0,	0
20	2,	7,	52,	4,	3,	1,	999,	0,	0
21	3,	8,	52,	4,	3,	100,	2000,	3, "26.21",	1,230
22	4,	9,	52,	4,	3,	100,	2000,	3, "26.21",	1,190

File: LIWALLDT.LIS

Line # Contents of Line (as appear in file)

```
25
       4.6
26
       11
27
                                                                                        d dft$
                                    lo
                                            hi
                                                           msg$
              С
                      S
                             е
                                                   h
28
       5,
              35,
                      10.
                             4,
                                    10.
                                                   0.
                                                                                        1.NA
29
       7,
              -35,
                      2,
                             4,
                                    6,
                                                   0.
                                                                                        n
30
              35,
                             3,
                                    1,
                                            999,
       8,
                      6,
31
                                                   1, "See Chapter 23, Fundamentals", 0
       9,
              35,
                      5,
                             3,
                                    0,
                                            2,
                                    9,
                                                   1,"See Table 6, page F26.9",
32
              -35,
       11,
                             4,
                      1,
       1.D
33
       12,
              35,
                      3,
                             3,
                                                   1,"See Note 2b, page F26.10",
                                    0.
                                            1,
       1..83
```

The first line after `999' contains two numbers. The first of these is the number of columns in which data is entered. The second number on this line is the number of input questions in each column. If there is more than one column, the next line (line 26 in the wall screen) indicates the spacing between columns. The actual input parameters for each question begins after these lines.

Example: Line 17 of LIPEOPDT.LIS reads "1,4"

This means there is one column of data with four entries. Data specification begins on Line 18.

Example: Line 25 of LIWALLDT.LIS reads "4,6." Line 26 of LIWALLDT.LIS reads "11."

This means there are four columns of data with six entries each. The columns have 11 spaces from the beginning of one column to the beginning of the next. Data specification begins on Line 27.

WARNING: You should NEVER change either the number of columns, or the number of

questions in a column. If you do, ASEAM3.0 will abort since the data is stored in predefined arrays. If you want to add or delete input questions, you will have to make substantial changes in several ASEAM3.0 programs - not just the input programs.

The next line contains headers which are used to line up the data in the rows below. The data in this line is not used by ASEAM3.0. Each of these letters corresponds to a data field, where:

- i question number (1,2,3...see note below)
- r row number on screen where question appears
- c column number on screen where question appears
- s number of spaces for data entry
- e error checking code
- lo error checking low limit
- hi error checking high limit
- h help message code
- msg\$ help message text string (also printed as "hlp\$" in some screens)
- d default value code
- dft\$ default value text string

NOTE - The multiple column screens do not have the "i" for the question number. The question numbers are automatically inserted by ASEAM3.0.

Following the header line are data lines, one for each input question. Some of the data fields requir an entry, others are "conditional". Each data field is separated from other data fields by commas. All the commas line up down the screen, making it easy to see what entries are in which fields. It is suggested that when you modify files you adhere to this convention. Some fields may be left blank (for example, when there is no help message). If you omit an entry for a field, then you must also omit the comma (delimiter) that goes with it - there should NEVER be two commas in a row.

The fields are defined as follows:

i - question number

This field, which is used only for single column screens, defines the question number for which this line of data is used. It begins with 1 and goes on, in increments of 1, until all questions have been defined.

r - row number

This field defines the row number (on the screen) on which the input question is asked. If you are working in a word processor which shows you the line number you are on, the screen row number will be one less than the line number on which you define the question text (in the first portion of the file) because the first dummy line is not printed to the screen. This value should be between 4 and 24 (the first three rows contain header information).

c - column number

This field defines the column number where the data entry should begin. If there is more than one column, the columns will be evenly spaced, the first column starting

at this number and subsequent columns beginning at increments as specified in the line prior to the header.

NOTE - if the column number is negative, ASEAM3.0 will convert all lower case letters to upper case letters.

s - field length

This field defines the allowable length of the data entry string. This number of blank underlines will be printed for the data entry. If you try to enter more characters than this on the line, they will not be accepted - the last character will be overwritten.

Examples: `40' will limit a string to 40 characters. `3' will limit a string to 3 characters. If you want to be able to enter a value less than 100 with two decimal places, the field length must be `5' (xx.xx). A field length of four would limit you to values under 10 with two decimal places (x.xx) or values between 10 and 100 with one decimal place (xx.x).

e - error checking code

This field indicates the type of error checking to be done for the input question. The type of error checking also determines the entries for the next two fields. Five codes are used in ASEAM3.0:

- 0 no error checking (used for names, descriptions)
- 1 numeric entry required, a blank is acceptable, however; low and high limits are used.
- 2 special check (entry must be from list of values), see note below
- 3 numeric entry required, forced entry. Blank entries are NOT permitted with this code; low and high limits are used.
- 4 special check (entry must be from list of values), forced entry. Blank entries are not permitted.

NOTE: Error check codes `2' and `4' are used when you are required to enter only certain values (e.g.: only `D' or `S' for the lighting control type; only `A' through `G' for a wall type; only `Y' or `N'; etc.). You should have no reason to modify these types of error checks. The list of specific values acceptable are imbedded within the ASEAM3.0 code at GOSUB 26000 in each input program.

lo - low limit error check

The entry in this field depends on the error check code used for e, described above. In contrast to all the above data fields, data may or may not be entered in this field.

error code	entry
0	leave blank (no error checking)
1,3	low limit, `-999' for any negative number

2,4 DO NOT CHANGE THE EXISTING CODE. This is another code which refers to a specific error check for this entry.

hi - high limit error check

The entry in this field depends on the error check code used for e, described above.

error code	entry
0	leave blank (no error checking)
O	leave blank (no error checking)
1,3	high limit, `999' for any positive number
2.4	leave blank

h - help message code

This field determines the type of help message available for the question. It also determines what form the help message text string, next entry, should take.

help code	entry					
0	no help message (a message stating that there is no help for this					
message will print if the F9 (help) key is pressed).						

- 1 help message. ASEAM3.0 prints this text string verbatim.
- 2 ASEAM3.0 prints "ASEAM3.0 User's Manual, Section " plus this text string. Make sure the text string is less than 10 characters.
- Prints "ASHRAE 1985 Handbook of Fundamentals, page " plus this text string. Make sure the text string is less than 10 characters.

msg\$ - help message text string

This field is the help message which will be printed. The form of the text string depends on the help message code entered previously. Text strings should be surrounded by quotation marks.

d - default code

This field indicates whether there is a default message.

default code	entry
0 -	no default value
1 -	default value

This field is also used to print a listing of available files in the AS2MENU program for

specifying analyses. If the default code is a `0' or a `1' you may change it. If the default code is any other number, do NOT make any changes.

dft\$ - default message text string

This field contains the value which will be entered on the data entry line when the F8 (default) key is pressed. This value is only used if the default code is `1'. If there is no default and you want to add one, first change the default code to `1' and then enter the default value.

C.3.4 Examples

The original second part of the screen input file for the people screen is shown below:

Line # Contents of Line (as appear in file)

17		1,	4						
18		i	r d dft\$	С	S	е	lo	hi	h
19		1,	6, 0	52,	4,	1,	0,	999,	0,
20		2,	7, 0	52,	4,	3,	1,	999,	0,
21	1,230	3,	8,	52,	4,	3,	100,	2000, 3,"26	.21",
22	1,190	4,	9,	52,	4,	3,	100,	2000, 3,"26	.21",

Explanation (beginning on line 17)

There will be one column of entries with four guestions.

The data entry for the first question is on row 6 of the screen (text is defined in row 7 of the input file) and begins on column 52. The data entry length is four-characters and is a numeric entry. A blank is acceptable. If a value is entered, it must be any positive number. There is no help message or default value.

The second question is on row 7 of the screen (text is defined in row 8 of the input file). The answer blank starts at column 52 and allows a four-character numeric entry. A blank is not acceptable. (Note: within the program there is another error check which skips this second question if the first is answered. This is often done when there are two questions, such as number of people and people per square foot, one of which must be entered.) If a value is entered, it must be a positive number greater than one. There is no help message or default value.

The third question is on row 8 of the screen (row 9 of the input file). The answer blank starts at column 52 and allows a four-character numeric entry. A value must be entered - a blank is not acceptable. The value must be between 100 and 2000. The help message available by pressing F9 key reads "See 1985 ASHRAE Handbook of Fundamentals, page 26.21". The default value for this entry is 230.

The fourth question is on row 9 of the screen (row 10 of the input file). It is just like the third question except that the default value is 190.

The original second part of the screen input file for the walls screen is shown below:

Line # Contents of Line (as appear in file)

25 26	4,6 11							
27	r d dft\$	С	S	е	lo	hi	h	msg\$
28	5,	35, 1,NA	10,	4,	10,		0,	
29	7,	-35, 0	2,	4,	6,		0,	
30	8,	35, 0	6,	3,	1,	999,	0,	
31	9,	35,	5,	3,	0,	2,	1,	"See Chapter 23, Fundamentals",0
32	11,	-35,	1,	4,	9,		1,	"See Table 6, page F26.9", 1,D
33	12, 1,.83	35,	3,	3,	0,	1,	1,	"See Note 2b, page F26.10",

Explanation (beginning on line 25)

There will be four columns of entries with six questions in each column.

The columns will be eleven spaces apart.

The first question is on row 5 of the screen (row 6 of the input file). The first column data entry begins at column 35 and allows a ten-character entry. Data entries for columns 2, 3, and 4 begin at columns 46,57, and 68, respectively. Each column has the same number of spaces, error checks, help message, and default - only the beginning column number is different. An entry must be made for this entry. There is no help message. The default entry is "NA".

The second question is on row 7 of the screen (row 8 of the input file). The answer blanks are at columns 35,46,57, and 68. A two-character entry from a designated list must be made. If you examine the source code beginning at line 26000, you will find that only valid orientations are permitted. The entry will be made in capital letters. There is no help message or default value.

The third question is on row 8 of the screen (row 9 of the input file). The answer blanks are at columns 35,46,57, and 68. A numeric entry of up to six-characters must be made. Any positive number greater than one is acceptable. There is no help message or default value.

The fourth question is on row 9 of the screen (row 10 of the input file). The answer blanks are at columns 35,46,57, and 68. A numeric entry between 0 and 2 must be made. The help message is "See Chapter 23, Fundamentals". There is no default value.

The fifth question is on row 11 of the screen (row 12 of the input file). The answer blanks are at columns 35,46,57, and 68. A one-character entry must be made from a specified list. The entry will be made in capital letters. The help message is "See Table 6, page F26.9". The default value is "D".

The sixth question is on row 12 of the screen (row 13 of the input file). The answer blanks are at columns 35,46,57, and 68. An up to three-character numeric entry between 0 and 1 must be made. The help message is "See Note 2b, page F26.10". The default value is ".83".