display. After the file has been loaded, the program will shift immediately into the design option of the program. You can then modify or continue to design the display. When you are finished, you can save the display back to the same or a different disk.

Loading data from a BASIC program

LSCREEN is an Advan BASIC command to load screen display data from a disk file. For example, suppose you want to load the screen data from the file named DATA.001 on disk 1. The following BASIC line would do this.

```
100 LSCREEN 1%,"DATA.001"
```

This opens the file on disk 1 named DATA.001 and assigns it a channel number equal to one. After the data is loaded, the file is automatically closed. Just as in any OPEN command, the channel number must be 0, 1, 2, or 3. While the LSCREEN command is being executed, no other file can be using the same channel number.

4. Returning to BASIC

When you have finished with SCREEN.COD you can return to BASIC. To do so, you must be in the initial menu and then type 4. The system will print the message 'INSERT BASIC DISK&RETURN'. You can either insert the Advan BASIC Master disk into drive 1 or another disk with the BASIC on it (i.e., a disk formatted with FORMAT1.COD. See Ch. 17 of the Advan BASIC manual). After you have inserted the disk into drive 1, press RETURN.

5. Custom graphics modes

The standard graphics modes use the same mode (with the possible exception of a text window) for the entire display. Moreover, they use the standard width display, which leaves a border around the display area. The ATARI computers, however, can use a wide display mode which eliminates these borders. If you want to do scrolling, this is a very helpful feature since you usually want objects to enter and leave at the edge of the viewing area, rather than at the borders.

Advan custom graphics modes use the wide display and also allow you to mix graphics modes in a given display. In addition, they allow vertical and horizontal fine scrolling. To use these custom modes, you need to understand a little about how a display is designed. A screen display is divided into horizontal lines (screen lines), with the number visible depending on the TV or monitor. Usually it's about 216, but it could be as small as 192 or as large as 256. A single display line uses from 1 to 16 screen lines depending on the mode. For example, a mode 0 display line uses 8 screen lines (i.e., each character is 8 lines high). On the other hand, a mode 8 display line uses only one screen line. To set up a display, you need to provide a list of the modes you want to use for the display lines; this is called a display list and is actually a series of commands to the graphics processor in the ATARI.

For example, your list might be 30 commands long with each command specifying mode 0. Since each mode 0 display line is 8 screen lines, this is more than most TVs can display. The first line would be completely