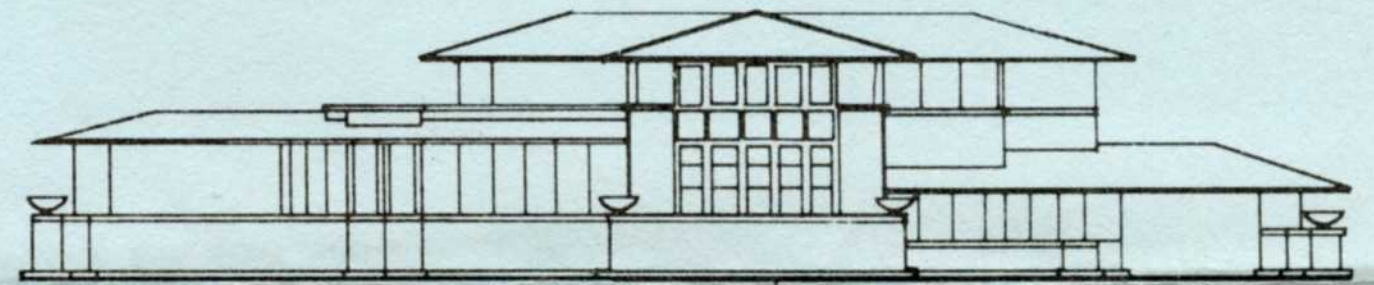
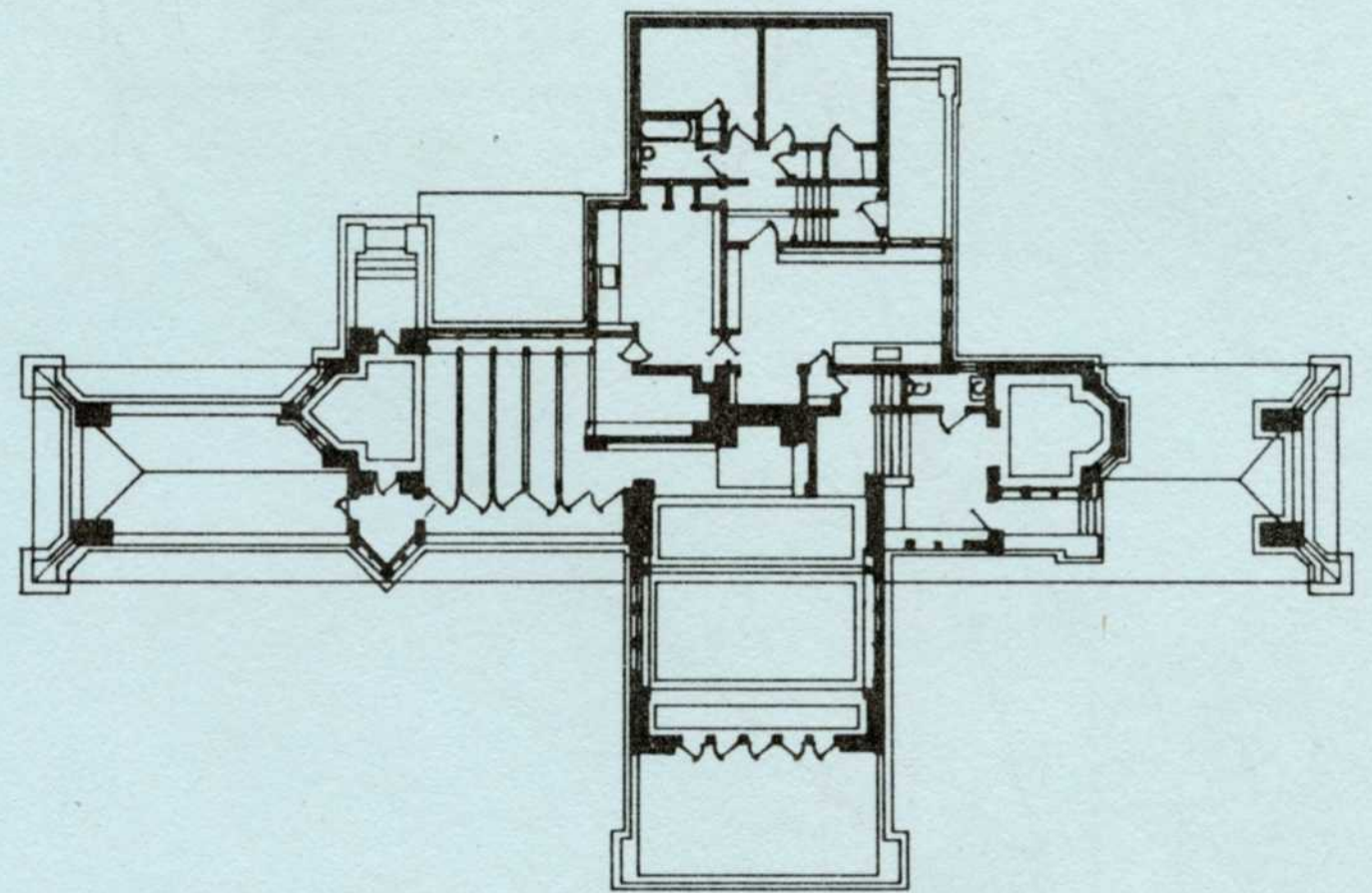

AUTOCADTM

A MICROCOMPUTER-AIDED DRAFTING AND DESIGN PROGRAM

AutoCADTM is a two-dimensional computer-aided drafting and design system which runs on low-cost microcomputers, bringing the benefits of a high-performance drafting facility within the range of even the smallest drawing office. And AutoCADTM is priced at only \$1,000.



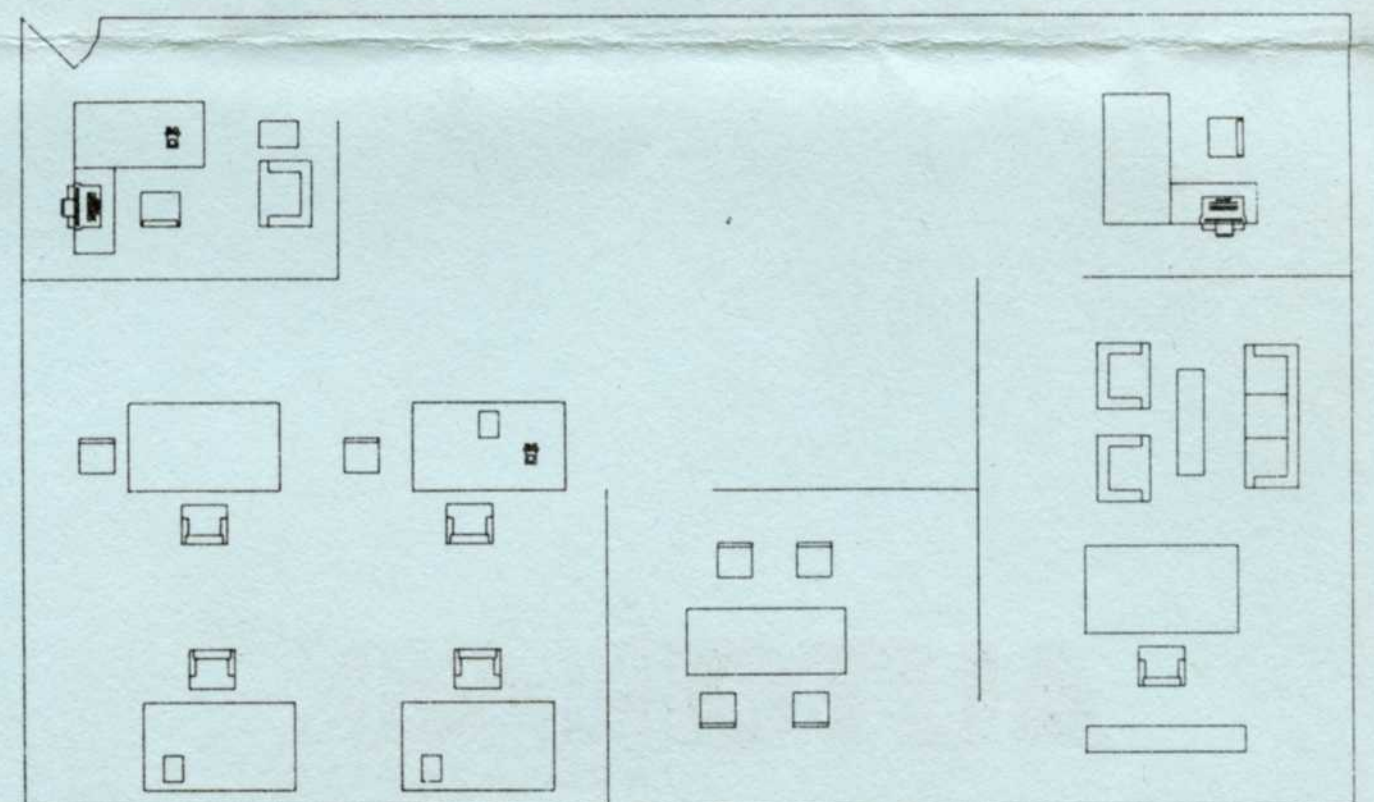
AutoCADTM is a general-purpose system, suitable for a wide variety of applications, including architectural and landscape drawings, drafting for mechanical, electrical, chemical, structural and civil engineering, and printed-circuit design. The ability to create user-defined screen menus, via ordinary text files, and to define parts libraries simply by drawing them, makes it exceptionally easy to gear the system very closely to each user's specialized requirements.



ARCHITECTURE

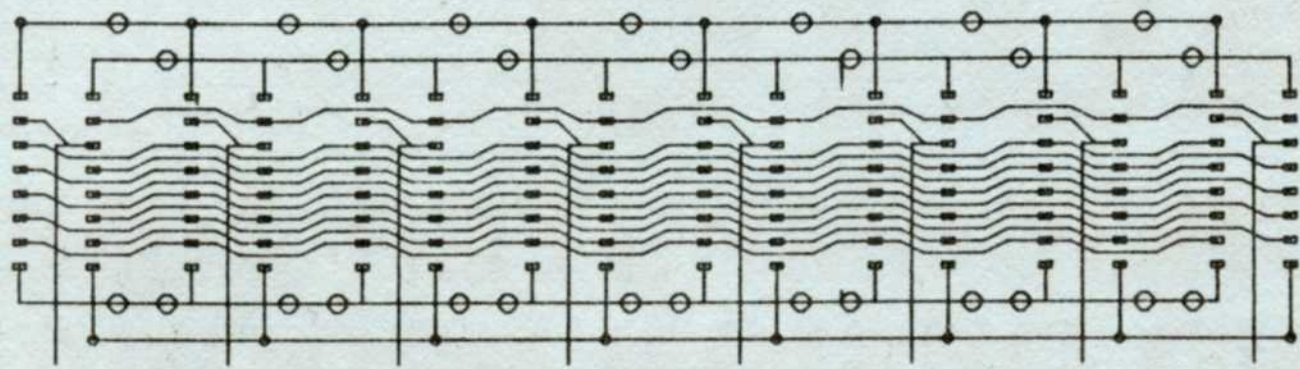
AutoCADTM requires no computer knowledge, and is easy to learn and use. It acts as a word-processor for drawings, allowing the user to interactively create and edit drawings of any size and to any desired scale, using as components both previously-created drawings and basic elements such as lines (of any width), circles, arcs, and solid-filled areas. Drawings are stored on disc, and can be output on a plotter at any point during the drawing process: they may be annotated with text of any size, inserted at any position and orientation.

Drawings are created and edited using a light-pen and on-screen menus, from existing paper drawings via a digitizing tablet, through commands entered on the keyboard or a mouse—or by any combination of these. The large set of editing commands allows drawn objects to be moved, copied, modified, erased, rotated, and scaled vertically and horizontally. Repetitive patterns such as brick walls or memory arrays can be generated automatically.

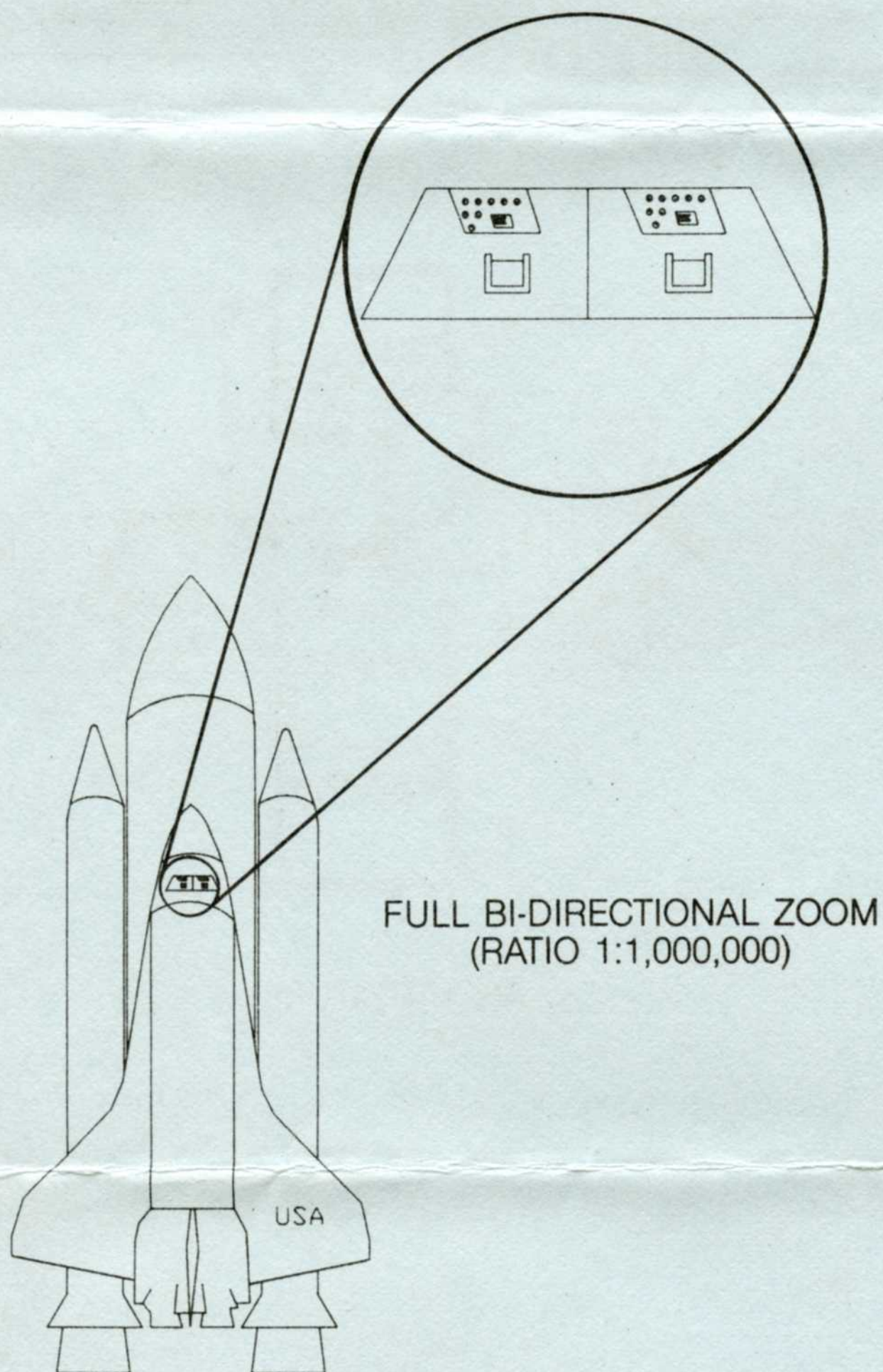


FACILITIES PLANNING

A full bi-directional zoom facility allows working on the drawing at any level of detail. The programs maintain data internally in full floating-point format, allowing a ratio of at least a million to one between largest and smallest objects. Objects may be aligned to grid boundaries and lines may be forced to run vertically and horizontally only. An optional



PRINTED CIRCUIT



alignment grid may be displayed on the screen as a drawing aid. Up to 127 layers and colors may be used, allowing selective viewing or plotting of drawings as if on transparent overlays.

The distance between any two points, or the area of a polygon enclosed by any number of points, can be calculated and displayed automatically. Status and list commands display the current status of a drawing, or details of any objects within it. A dimensioning facility is available as an option.

A high-precision plotter gives fast output of drawings to any desired scale, with a resolution of 0.025mm, on either paper or transparent film from A to E size (depending on plotter model). Each drawing color may be assigned to a plotter pen and line type. Utilities supplied with the package can convert drawings to or from an ASCII text file. This allows user programs to process information entered in graphic form through AutoCAD™ or, conversely, the viewing or editing with AutoCAD™ of drawings produced by data from user programs.

AUTOCAD™ currently runs on VICTOR 9000, IBM PC and XT, Zenith Z100, NEC APC, Columbia, Eagle PC, plus CP/M-80 computers; and will soon run on NCR Decision-Mate, DMS, DEC, SONY, Televideo, Eagle 1600, Texas Instruments and Corona computers. Input and output devices supported include Sun-Flex, Houston Instruments, Summagraphics, Hitachi, Kurta, USI Opto-Mouse, Mouse Systems, Strobe, Hewlett Packard, Zeta, Sweet-P and Epson.

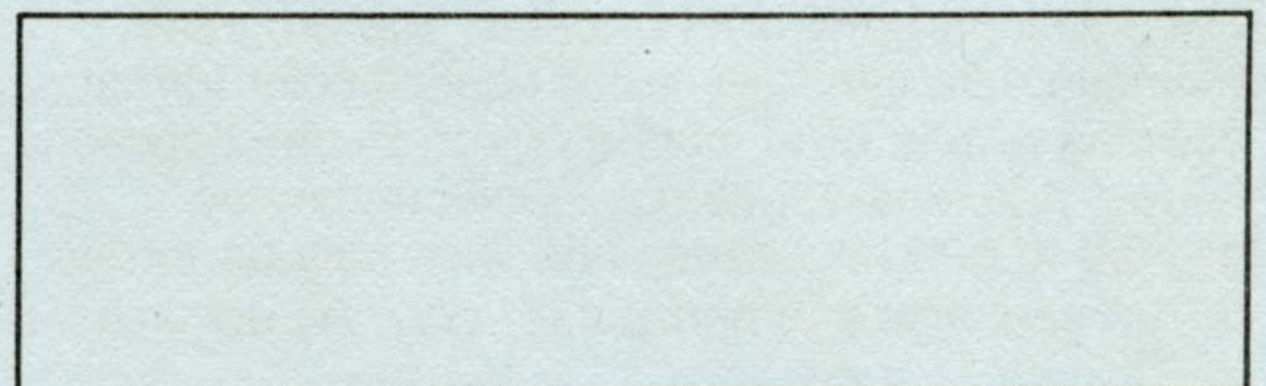
Features to be released shortly include cross hatching, dimensions in feet and inches, splines, fillets, polylines, double walls, partial delete, sketch mode and IGES support.

An AUTOCAD™ software license for a single computer, including drivers for most major peripherals is \$1000. Automatic dimensioning is an optional extra for \$500.

AutoCAD™ dealers can supply a complete, ready-to-run system, with all necessary hardware, programs and operating manuals. Contact your dealer or write AUTODESK, INC.

AUTODESK
INCORPORATED

150 Shoreline Highway
Building B
Mill Valley, CA 94941
415/331-0356



AUTOCAD TECHNICAL SPECIFICATION

AutoCAD is operated from a single main menu, from which the user selects the operation required. The standard program options allow for creating a new drawing, editing an existing drawing, plotting a drawing, making a drawing interchange file from an existing drawing, and creating a drawing from an externally produced drawing interchange file.

Creating and editing drawings

Drawings are composed of a number of basic elements:

- LINES, automatically drawn to the smallest resolvable thickness on the display or plotter;
- TRACES, of any desired thickness, with automatic calculation of the correct ending angle on each segment of a multi-segment trace;
- CIRCLES, specified either with a centre point and radius, or by entering any 3 points on the circumference;
- ARCS, to join 3 specified points;
- POINTS, drawn to smallest resolvable width, as with lines;
- SOLIDS, solid-filled quadrilateral or triangular sections;
- TEXT, inserted at any point, to any desired scale and rotation, with automatic positioning of multiple lines;
- REPEATS, allowing rapid construction of arrays of objects once drawn (or called in from disc), to user-specified number of rows and columns and separation between rows and columns;
- SHAPES, user-defined simple shapes that can be loaded into main memory as a library and then manipulated very rapidly;
- OTHER DRAWINGS, of any complexity, can be called in from disc and inserted at any point in the current drawing, at any desired rotation, with different X and Y scaling if required.

Drawings are created and edited either using a light pen or touch pen and on-screen menu, or by keyboard commands, or using a digitizing pad — or by any combination of all three where appropriate. On-screen menus are defined by the user, with the ability to quickly call up sub-menus, and in many applications this means the keyboard need only be used for entering text.

Flexible alternative methods of specifying entities allow convenient drawing in different situations. Lines and traces can be run between a series of separate points, entered either as specific known coordinates through the keyboard, or by light pen or digitizer pointing. Points can also be specified as relative to the last point entered, and this allows lines and traces to be specified by a distance and an angle from a given point. Any length, such as the radius of a circle or the height of text, can be specified by marking two points on the screen with light pen or digitizer.

Drawing aids

A full zoom facility allows working on the drawing at any level of detail. The portion of the drawing to be viewed can be specified either as a numeric factor of the whole, or by simply pointing to the lower left and upper right corners of the “window” desired. A pan command allows moving the display window up, down, right or left, without changing the current scale.

A reference grid of dots, at any defined separation, can be displayed as an aid to alignment and positioning. Lines can be forced to run only diagonally and vertically. All points entered can be forced to snap to a user-defined resolution. All three modes can be turned on and off at will during the drawing process, and grid spacing and snap resolution can be changed whenever desired.

Up to 127 layers may be used to place parts of drawings on the equivalent of transparent overlays. Different layers can be turned on and off as required, and viewed or plotted separately or together. Up to 127 colors can be assigned to different layers.

Individual drawing objects, including complete inserted drawings, can be moved, copied, or erased (a command allows restoring unintentionally erased objects).

The distance between any two points, or the area of a polygon enclosed by any number of points, can be calculated and displayed automatically. Status and list commands display the current status of a drawing, or details of any object within it.

User-defined menus and parts libraries

Multiple specialised menus can be created by the user (by editing standard ASCII text files), and displayed on the graphics screen for rapid interactive entry of commands and data via lightpen/touchpen or digitizer. A menu macro facility enables single-word menu entries to be expanded, when selected, to longer command and data sequences. This allows previously-created drawings or shapes to be called in simply by pointing to a single menu item. Complete user parts libraries can be listed in sub-menus to be called into the menu area when working on different sections of a drawing.

Internal data precision

The package maintains data internally in full floating-point format. On Z-80-based systems this gives over 6 decimal digits of precision; on 8088/8086 systems, the IEEE-standard double-precision format gives over 14 decimal digits.

Advanced Drafting Extensions

This optional package includes dimensioning, cross hatch/pattern fill, fillets, partial delete, axis command for ruler lines, sketch mode, and a units command for both dimensions and coordinates in feet and inches.

The logo for AutoCAD, featuring the word "AUTOCAD" in a bold, sans-serif font. The letters "O" and "C" are stylized with horizontal lines passing through them.

**150 Shoreline Highway #B
Mill Valley, CA 94941
(415) 331-0356**

CUSTOMER WILL PICKUP _____ or SHIP _____

AUTOCAD ORDER FORM
PLEASE TYPE OR PRINT CLEARLY

order date _____
customer p.o. # _____
order taken by _____

Name: _____ EU
Organization: _____ DL
Address _____ phone() _____ MFG
City _____ State _____ Zip _____ PUB
How did you hear of AUTOCAD? _____
What hardware do you want AUTOCAD to run on? _____

AUTOCAD for IBM PC/XT

_____ AUTOCAD (manual and program)	\$1000	_____
_____ AUTOCAD advanced drafting extensions	\$ 500	_____
_____ Manual + Training Disk	\$ 50	_____

AUTOCAD is furnished only on double sided disks.

AUTOCAD for Zenith Z-100, NEC APC, TI (circle one)

_____ AUTOCAD (manual and program)	\$1000	_____
_____ AUTOCAD advanced drafting extensions	\$ 500	_____
_____ Manual + Training Disk	\$ 50	_____

AUTOCAD for Victor 9000 is distributed by Sun-Flex Company,
20 Pimentel Court, Novato, CA 94947, (415) 883-1221.

AUTOCAD for CP/M-80 systems is distributed by MOMS Computing,
Fort Cronkite, Sausalito, CA 94965, (415) 331-2043.

AUTOCAD Updates (new program and manual)

requires return of original disk with registration #.
you will receive latest version of comparable program

AUTOCAD Ser # _____ computer # _____ \$ 120 _____

sub-total _____

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE. Allow 14 days for delivery.

CA Residents please add 6% or 6.5% tax
(ORDERS RECEIVED WITHOUT TAX will be returned unfilled.)

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150 Shoreline Highway #B20
Mill Valley, CA 94941

(415) 331-0356

6 JAN 84

Minimum Configuration Requirements for AUTOCAD

A IBM Personal Computer (there are 4 differing IBM configurations)

PC-DOS Operating System 1.1 or 2.0, 256K memory, 2 double-sided floppy disk drives
RS-232 serial port IBM compatible at standard address
plus one of the following:

- 1 IBM single screen - Color/graphics display adapter with monitor
- 2 IBM dual screen - Monochrome display adapter with monitor
Color/graphics display adapter with monitor
- 3 Hercules - Hercules Graphics Board with IBM monitor
- 4 Vectrix VX384 on parallel port, monochrome display adapter with monitor
(On the IBM dual screen and Vectrix above, AUTOCAD requires 2 monitors.)

B VICTOR 9000

MS-DOS Operating System, 384K memory
Keyboard (either Word Processing or Programmer)

C CP/M-80 machines

CP/M-80 Operating System, 64K memory (and 54K or more free space after CP/M)
8" disks (or some way to convert from a standard 8" CP/M disk)
At least 256 K bytes per disk (standard 8" single density)
Some way to attach one of the display devices AUTOCAD supports:

- ```
* S-100 Bus for Graphics Development Labs A1000 board GDL (415) 843-1522
* S-100 or Multibus for Scion MicroAngelo board
* RS-232 serial port for Vectrix VX384
```

D      NEC Advanced Personal Computer

CP/M-86 Operating System, 256K memory, monochrome or color graphics option

E Zenith Z-100, 256K memory

**F** Texas Instruments Professional Computer, 256K memory, 3 plane graphics board

Performance of above systems (A,B,C,D,E,F) may be enhanced by the components listed below.

- |             |                                                           |                                     |          |
|-------------|-----------------------------------------------------------|-------------------------------------|----------|
| A,B,D,E,F   | Additional memory                                         |                                     |          |
| A,B,C,D,E,F | Any large capacity, high speed disk drive                 |                                     |          |
| A,B,D,E,F   | Gould Colorwriter graphics plotter                        | Gould, (415)                        | 782-0852 |
| A,B,D,E,F   | GTCO #5 digitizing tablet                                 |                                     |          |
| A           | Hercules Graphics Board                                   | Hercules Computer Technology, (415) | 654-2476 |
| A,B,C,D,E,F | Hewlett-Packard 7470, 7475, 7220, 7580, 7585 plotter      | HP, (800)                           | 541-3386 |
| A,B,C,D,E,F | Hitachi Tiger digitizing tablet                           | Hitachi, (213)                      | 533-0888 |
| A,B,C,D,E,F | Houston Instruments HIPAD DT11AA digitizing tablet        | HI, (512)                           | 835-0900 |
| A,B,D,E,F   | Houston Instruments 7000 series digitizing tablet         | HI, (512)                           | 835-0900 |
| A,B,C,D,,FE | Houston Instruments DMP-7, 8, 29, 40, 41 or 42 plotter    | HI, (512)                           | 835-0900 |
| A           | IBM Asynchronous Communication Adapter                    |                                     |          |
|             | (for plotter/digitizer up to 2 serial ports)              |                                     |          |
| A,B,D,E,F   | Intel 8087 Numeric Processor                              |                                     |          |
| A           | Mouse Systems Mouse                                       | Mouse Systems Corporation, (408)    | 988-0211 |
| A,D,F       | Optional second RS232 serial port (for plotter/digitizer) |                                     |          |
| C           | SCION light pen                                           | SCION Corporation, (703)            | 476-6100 |
| A,B,D,E,F   | Strobe 100, 200, or 260 plotter                           | Strobe Inc, (415)                   | 969-5130 |
| A,B,C,D,E,F | Summagraphics Bitpad digitizing tablet                    | Summagraphics, (203)                | 384-1344 |
| A,B         | Sun-Flex Company Touchpen                                 | Sun-Flex, (415)                     | 883-1221 |
| A,B,E,F     | Sweet-P plotter                                           | Enter Computer, (619)               | 450-0601 |
| A,B,C,D,E,F | USI Opto-Mouse                                            | USI, (415)                          | 468-4900 |
| A,C         | Vectrix VX384 display controller                          | Vectrix, (919)                      | 294-6640 |
| A,B,D,E,F   | Western Graphtec (Watanabe) plotter                       | Western Graphtec, (714)             | 770-6010 |