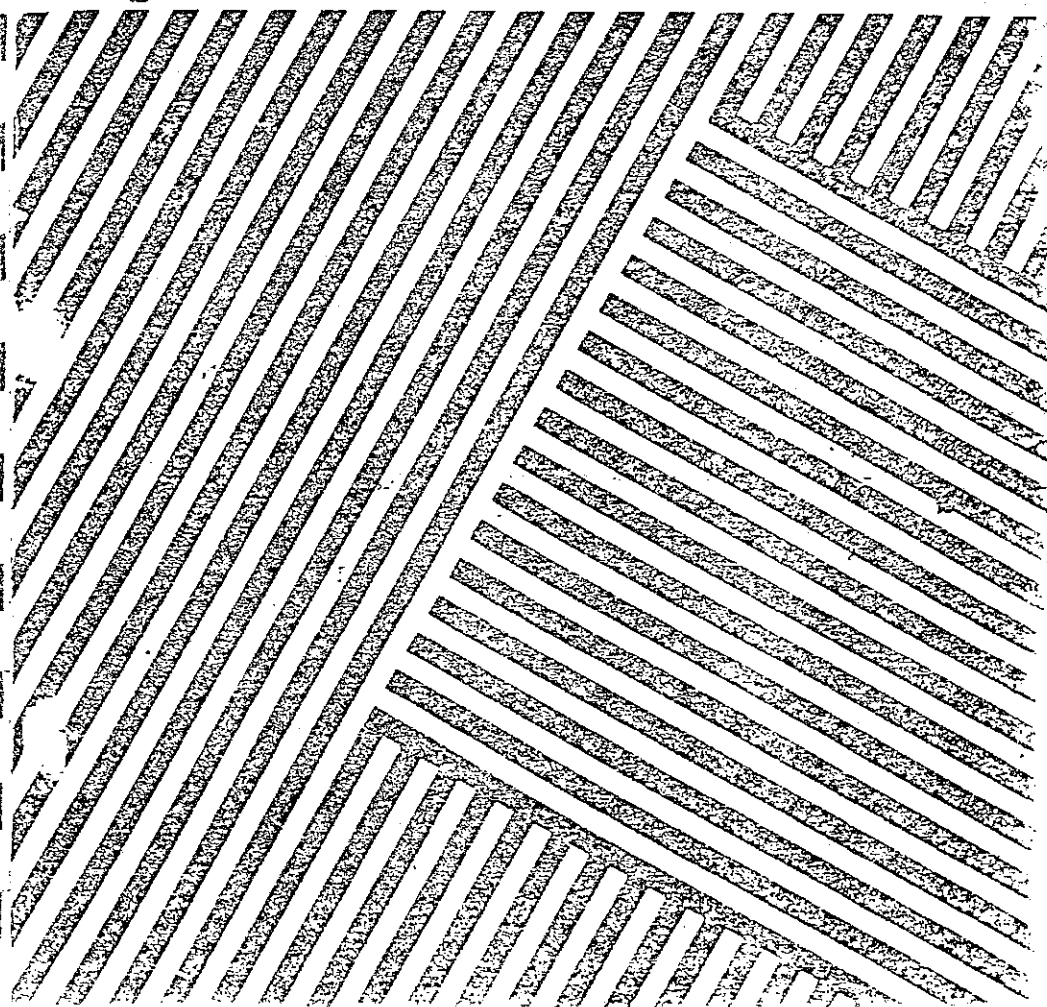


ATHENA II

Computer Aided Design
for the Atari ST

ihad

SOFTWARE INC.



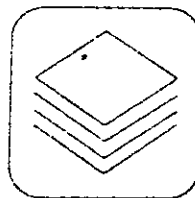
Layers

Shows which layers are active

Shows which layers are visible

Shows which layer is the current layer

Layer Menu



General

Layers contain information about the drawing. Each layer can contain a complete drawing, however if you use different layers for each type of information, you will be able to view each type of data individually or view the entire drawing at one time (Detail or the whole thing)

Number of layers

Arkana II can display 256 layers. They are selected through a matrix of squares 16 across by 16 down for clarity of view they are labeled A - P. In general you will never refer to the labels, simply use the position in the matrix to use the layers.

Selected layers

Two windows or matrixes are on the menu the left one is labeled *Selected* this is where you will find the current layer (White) and any active layers (the color of the layer). Active layers are available for editing but new information can only be placed on the current layer (White)

Visible Layers

The right window or matrix is labeled *Visible* this is where you will find which layers are visible (Colored) and which are not (Black). Many (all) layers may be visible at once but you may want to be selective in order to present the information to your eyes in a simple uncluttered manner or everything at once to get the big picture, the choice is yours.

Current Layer

Select the layer being worked on

Layer Menu

CURRENT
LAYER

Procedure

Select
current layer
with
Right Button

- Position the tip of the arrow on the square in the matrix labeled selected (left window), that corresponds to the layer that you want to work on and click the Right mouse button.

Results

The Selected square will be displayed in white.

The left and right mouse button select different statuses for the layers:

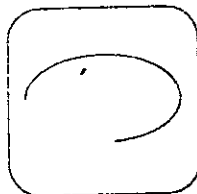
The *Right* button selects the current layer, it will be displayed in white not in the color of the layer. Only one layer at a time can be the current layer but many layers may be active layers.

The *Left* button selects that a layer is active but will not enter new data on those layers. Only the current layer may have new data entered. If a layer is selected as being active the square will show the color of the layer otherwise the layer will show a black square.

Erase Elliptical Arc

Removes selected elliptical arcs from the drawing.

Erase Menu



Procedure

Select
Elliptical Arc

- Position the center of the cross hair on the elliptical arc to be selected for deletion. Click the *left* mouse button to select the Arc.

Repeat

- Repeat the selection process until you have selected all elliptical arcs to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected elliptical arcs.

Results

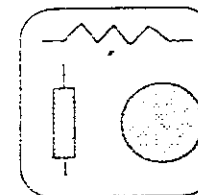
Removes the selected elliptical arcs from the drawing. Once removed the elliptical arcs are permanently gone.

If the layer that the elliptical arcs is on is not 'selected' (See Layers) then that elliptical arc will not be able to be erased. However if the elliptical arc is 'selected' but not visible it can be selected and erased.

Erase Part

Removes selected Parts from the drawing.

Erase Menu



Procedure

Select Fill

- Position the center of the cross hair on a control point of the Part, to be selected for deletion. Click the *left* mouse button to select the Part for deletion.

Repeat

- Repeat the selection process until you have selected all Parts to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected Parts.

Results

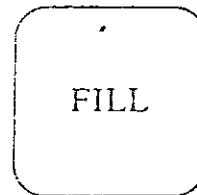
Removes the selected Parts from the drawing. Once removed the Parts are permanently gone.

If the layer that the Parts is on is not 'selected' (See Layers) then that Part will not be able to be erased, however if the Part is 'selected' but not visible it can be selected and erased.

Erase Fill

Removes Fills from the drawing.

Erase Menu



Procedure

Select Fill

- Position the center of the cross hair on a control point of the Fill, to be selected for deletion. Click the *left* mouse button to select the Fill for deletion.

Repeat

- Repeat the selection process until you have selected all Fills to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected Fills.

Results

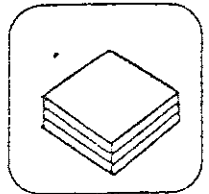
Removes the selected Fills from the drawing. Once removed the Fills are permanently gone.

If the layer that the Fills is on is not 'selected' (See Layers) then that Fill will not be able to be erased, however if the Fill is 'selected' but not visible it can be selected and erased.

Erase Layer

Removes ALL information found on the Current Layer.

Erase Menu



Procedure

Select ERASE LAYER Button

- Position the cross hair over the button for ERASE LAYER. Click the left button to start the process.

Select 'OK'

- Position the cross hair over the OK in the dialog box and click the left mouse button to erase all information on the current layer.

- Position the cross hair over the CANCEL in the dialog box to abort the command.

Results

All information on the current layer will be deleted.

To change the layer to be deleted select a new current layer (with the right mouse button) from the layer menu.

See 'Current Layer' in the layer menu section for more information on selecting a new current layer.

Erase Text

Erase Menu

Removes selected Text from the drawing

TEXT

Procedure

Select Text

- Position the center of the cross hair on the text to be selected for deletion. Click the *left* mouse button to select the text.

Repeat

- Repeat the selection process until you have selected all Text to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected Text.

Results

Removes the selected texts from the drawing. Once removed the Texts are permanently gone.

If the layer that the text is on is not 'selected' (See Layers) then that text will not be able to be erased, however if the text is 'selected' but not visible it can be selected and erased

Erase Everything

Erase Menu

Removes
Everything, Anywhere
on the drawing.

ALL

Procedure

Select ALL Button

- Position the cross hair over the button 'ALL'. Click the left mouse button to call up an erase verification box.

Select 'OK'

- Position the cross hair over the 'OK' in the dialog box and click the left mouse button to remove all information on the drawing.

- Position the cross hair over the 'CANCEL' in the dialog box and click the left mouse button to abort the command.

Results

Everything regardless of layer status will be erased from the drawing leaving a completely blank drawing surface.

TEXT

Text Menu

Places alpha - numeric characters on the drawing.

TEXT

A picture may be worth a thousand words but a technical drawing without supportive documentation may be worthless. Text is used to clarify and support your work.

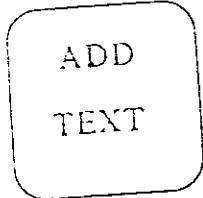
The text in *Athena II* is 'zoom-able', that is you can set a specific size that the text will be drawn at. When you Zoom Out or IN the text will become Larger or smaller with the Zoom, (See the Tutorial for a discussion on ZOOM) because of the 'variable height text' several considerations must be taken into account:

1. The Text draws up relatively slowly - so a button has been provided to turn text OFF and ON.
2. When you select the size that the text will be drawn at, you must also take into consideration the scale that this will be printed / plotted at. One of the disadvantages of drawing things to a real world dimension is that the text must be drawn in a sort of reverse scale. For instance if you are working on an architectural drawing you will probably print it at -- $1/4" = 1'$ which would mean that a text drawn in at one foot on the drawing will print out at one quarter of an inch on paper. Of course you could work backwards and scale your drawing when you first draw it, that way you would not have to calculate the final size of your text. On the other hand you would have to calculate and draw to scale, every line - just as if you were working on a standard piece of paper - rather than on one of the most sophisticated Computer Aided Design tools currently available on a personal computer.

Add Text

Text Menu

Places text on the drawing.

ADD
TEXT

Procedure

Select ADD TEXT

Enter Text

Select Point

Results

- Position the cross hair over the button Labeled ADD TEXT. Click the left mouse button to start the process.

Enter one (1) line of text. Press the return key when you are finished. You will need to add Text for each line of text that you place on the drawing.

- Position the cross hair over the point that you would like the text placed at. Click the left mouse button to place the text on the drawing.

One line of text will be placed on the drawing horizontally starting at the position that was selected with the left mouse button.

Text can be rotated and the size can be changed, please refer to the proper buttons for full information.

Place Text on the drawing at a specific angle.

Add
Rotated
Text

Procedure

Select
ADD Rotated
TEXT

Enter Text

Select Point

Enter Angle

Results

- Position the cross hair over the button Labeled ADD ROTATED TEXT. Click the left mouse button to start the process.

Enter one (1) line of text. Press the return key when you are finished. You will need to add Text for each line of text that you place on the drawing.

- Position the cross hair over the point that you would like the text placed at. Click the left mouse button to place the text on the drawing.

- Enter the angle from the horizontal that you wish the text to be placed at. Zero degrees is along the axis, to the right of the origin.

One line of text will be placed on the drawing at the angle specified, starting at the position that was selected with the left mouse button.

Text size can be changed, please refer to EDIT TEXT SIZE for full information.

Change Text Size

Changes the size of the next text to be entered.

Text Menu

CHANGE
TEXT
SIZE

Procedure

Select
CHANGE TEXT
SIZE Button

Enter Text

Results

- Position the cross hair over the CHANGE TEXT SIZE button and click the left mouse button.

- Enter the size of text then press return.

The next text entered will be displayed at the size selected. Previously entered text will not be affected.

When you select the size that the text will be drawn at, you must also take into consideration the scale that this will be printed / plotted at.

Text size can be changed, please refer to EDIT TEXT SIZE for full information.

Edit Text Size

Change the size of selected text.

Text Menu

EDIT
TEXT
SIZE

Procedure

Select
Edit Text Size

Enter Size

Select Text

- Position the cross hair over the EDIT TEXT SIZE button. Click the left mouse button to start the process.

- Enter the size of text then press return.

- Position the cross hair over the text whose size will be changed. Click the left mouse to change the size of the text.

Results

The selected text's Size will be changed to the value entered. Other existing texts will not be affected.

When you select the size that the text will be drawn at, you must also take into consideration the scale that this will be printed / plotted at.

Display Text

Displays Text

Text Menu

Display
Text

Procedure

Select
DISPLAY TEXT
Button

- Position the cross hair over the DISPLAY TEXT Button. Click the left mouse button to enable the display of text.

Results

Any text on the drawing will be displayed.

Do NOT Display Text

Text will not be displayed

Text Menu

Do NOT
Display
Text

Procedure

Select
Do NOT Display
Text

- Position the cross hair over the 'Do NOT DISPLAY TEXT' Button. Click the left mouse button to disable the display of text.

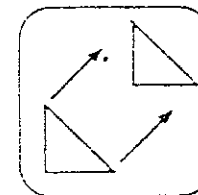
Results

Any text on the drawing will NOT be displayed. Used to speed up the redraw. Alternately used to simplify the drawing when viewing.

Transformation

Modify and change the drawing.

Transformation



No matter how good you are with the tools that are provided with *Athena II*, you are bound to make mistakes or to have a change of mind later, this is what this section is for.

Move will change the location on the drawing without modifying the objects in any way but the location.

Copy duplicates the selected objects exactly

Rotate duplicates the objects but changes the angle before it places the new object on the drawing

Mirror copies the objects through a intersecting plane before placing the new objects on the drawing.

Trim adds or removes a portion of an object so that it will perfectly match an intersecting object

Trim will be the most commonly used button. With trim you will not have to be exact in your drawing, just close. Trim the object for a much closer fit than you could ever have hoped for, even with extreme magnification.

Those of you who have suffered with other less sophisticated systems will appreciate the ease and simplicity with which the trim works - no zooming in and moving by hand the end of an object and most likely disturbing the placement at the same time. The only trick to remember, is that the two objects must intersect at one point (two with a circle).

A trick to remember is; draw a line through the point that you want an object trimmed to, trim the object(s), then erase the temporary line.

Move

Transformation

Move selected objects to a different location on the drawing.

MOVE

Procedure

Select Object

- Position the center of the cross hair on the object to be moved. Click the left mouse button to select the object.

Repeat

- Repeat the section process until all desired objects have been selected.

Click Right Button

- Click the *Right* button to end the selection process.

Select Move Point

- Position the center of the cross hair over the point from which the selected objects will be moved from. Click the left mouse button to select a 'handle' point.

Select Destination Point

- Position the center of the cross hairs over the point at which the objects will be placed. Click the left mouse button to 'anchor' the selected entities.

Results

A selected series of objects will be moved from their original locations to a specified location on the drawing.

Copy

Transformation

Duplicates selected objects.

COPY

Procedure

Select Object

- Position the center of the cross hair on the object to be copied. Click the left mouse button to select the object.

Repeat

- Repeat the section process until all desired objects have been selected.

Click Right Button

- Click the *Right* button to end the selection process.

Select Move Point

- Position the center of the cross hair over the point from which the selected objects will be copied from. Click the left mouse button to select the 'handle' point.

Select Destination Point

- Position the center of the cross hair over the point at which the objects will be placed. Click the left mouse button to 'anchor' a copy of the selected objects.

Results

A selected series of objects will be copied from their original locations to a specified location on the drawing.

Note: If the destination point is too close, the objects will overlap one another. At times this may be desirable but not normally.

Rotate

Transformation

Rotate, a copy, of selected groups of objects about a point.

ROT

Procedure

Select Object

- Position the center of the cross hair on the object to be rotated. Click the left mouse button to select the object.

Repeat

- Repeat the section process until all desired objects have been selected.

Click Right Button

- Click the *Right* button to end the selection process.

Select Pivot Point

- Position the center of the cross hair over the point from which the selected objects will be rotated about. Click the left mouse button to select the pivot point.

Select Angle

- Position the center of the cross hair over the point that describes the angle at which the objects will be placed. Click the left mouse button to set the angle.

Alternate:

Enter the angle in degrees on the keyboard.

Results

A selected series of objects will be rotated from their original angles and copied to a specified location on the drawing, at the new angle.

Note: If the destination point is too close, the objects will overlap one another. At times this may be desirable but not normally.

Mirror

Transformation

Copy a selected group of objects, mirrored around a reference line.

MIRR

Procedure

Select Object

- Position the center of the cross hair on the object to be rotated. Click the left mouse button to select the object.

Repeat

- Repeat the section process until all desired objects have been selected.

Click Right Button

- Click the *Right* button to end the selection process.

Select First Point

- Position the center of the cross hair over the first point of an imaginary line that the objects will be mirrored through. Click the left mouse button to 'set' the point.

Select Second Point

- Position the center of the cross hair over the second point of an imaginary line that the objects will be mirrored through. Click the left mouse button to 'set' the point.

Results

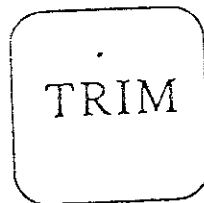
A copy of the selected objects will be reflected through the plane defined by the two selected points creating a mirror image of the selected objects.

Note: If the destination location is too close, the objects will overlap one another. At times this may be desirable but not normally.

TRIM

Transformation

Edit objects so that they exactly meet an intersecting object(s).



Procedure

Select Object

- Position the center of the cross hair on the object to be trimmed, on the half closest to the end that is to be trimmed. Click the left mouse button to select the object.

Select Object

- Position the center of the cross hair on the object to be trimmed to. Click the left mouse button to select the delineating object.

Special Case

Select Circle

- Position the center of the cross hair on the circle (not the center point) to be trimmed, on the half that is to be removed. Click the left mouse button to select the circle.

Select First Point

- Position the center of the cross hair on one of the intersecting objects to be trimmed to. Click the left mouse button to select the object.

Select Second Point

- Position the center of the cross hair on the other intersecting object to be trimmed to. Click the left mouse button to select the object.

Results

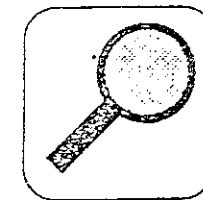
The object to be trimmed will be shortened or lengthened as necessary so that the two objects will perfectly intersect.

Note : (1) The two objects must intersect at some point or the trim will be canceled with no effect on the object to be trimmed. (2) The *counterclockwise rule* applies here. That is that a circular object is evaluated in a counterclockwise manner.

Magnify

Magnify Menu

Change the size of the viewing area and the location of the center of the screen



The ability to change the magnification at which you view the drawing is very important. With magnification set to NORMAL you see approximately real life size (I.E. one inch on the drawing is one inch on the screen.). Changing the magnification with ZOOM, you can enlarge the drawing so that you could see one thousandth of an inch as a line going across the screen, or shrink the drawing so that a thousand miles is a small dash on the screen.

You must adjust your thinking as you work with *Athena II* at each level of magnification, in that what you see is probably not what you are drawing. A one inch line on the screen may be 12 feet on the drawing. Learn to think in actual distances, not by that which you see on the screen.

Rely on the TRIM button when ZOOM-ed out to edit objects. TRIM will modify your drawing so that the objects modified will exactly intersect. If you try to draw when the objects are small, the screen may show that you have placed the mouse exactly where you wanted, but on the drawing you may find that you were actually several inches off.

A conceptual aid that you may find useful, is to imagine that the drawing is being moved closer to you or being moved further away, the closer the drawing is the more detail you see. Conversely the further away it is the less detail you see - but you can visually see how each component fits into the drawing as a whole.

Zoom In

Change the point of view to a closer point.

Magnify Menu

Zoom
In

Procedure

Select ZOOM IN

- Position the center of the cross hair over the center of the button labeled "ZOOM IN". Click the left mouse button to enlarge to drawing.

Results

The drawing will change the magnification so that approximately half of the previously visible area will be shown, with the previous center point retained.

ZOOM OUT

Change the point of view to a more distant point.

Magnify Menu

Zoom
Out

Procedure

Select ZOOM OUT

- Position the center of the cross hair over the center of the button labeled "ZOOM OUT". Click the left mouse button to shrink the drawing.

Results

The magnification will change so that approximately twice the drawing area that was previously visible will be shown, with the previous center point retained.

ZOOM AREA

View only a specific, user defined, area.

Magnify Menu

ZOOM
AREA

Procedure

Select First Point

- Position the center of the cross hair over the first point, which will begin the square that contains the area you wish to see enlarged. Click the left mouse button to select the beginning point of the square.

Select Second Point

- Position the center of the cross hair over the center of the second point, which will define the square that contains the area you wish to see enlarged. Click the left mouse button to select the ending point of the square.

Results

The selected area will be displayed so that the largest of the two axis, X and Y, will be completely displayed. As much of the other axis as is necessary to completely fill the screen will be displayed as well. The center point is determined by the center point of the area selected.

ZOOM ALL

View all objects

Magnify Menu

ZOOM
ALL

Procedure

Select ZOOM ALL

- Position the center of the cross hair over the center of the button labeled "ZOOM ALL". Click the left mouse button to display all objects, in the drawing, on the screen.

Results

The screen will display an area such that, all objects drawn on the drawing will be included.

Note : The magnification may be such that an object may only be visible as a dot on the screen, with the remaining portions of the drawing shown normally, but off to one corner or another.

NORMAL

Magnify Menu

View at the 'actual' size.

NORM

Procedure

Select NORM

- Position the center of the cross hair over the center of the button labeled "NORM". Click the left mouse button to see the objects at their 'real' size.

Results

The drawing is displayed so that one inch on the drawing, will be one inch on the screen. The center point on the screen will be set to 0,0.

OFFSET WINDOW

Offset the viewing window.

OFFSET
WIN

Procedure

Select
OFFSET WIN

Select Point

- Position the center of the cross hair over the center of the button labeled "OFFSET WIN". Click the left mouse button to start the process.

- Position the center of the cross hair over the point, that is to be the new center point. Click the left mouse button to establish the new, center of screen, point.

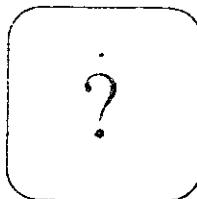
Results

The drawing will be moved so that the displayed section will have as its center of screen point, the location that you had just selected.

Information

Information Menu

Shows information about *Athena II*, screen settings, object types and locations, etcetera.



When you forget what you just did, or are just curious, this is the section for you. Here you can find out: Just exactly where is that line located? What magnification level am I at? What width line is that? What type of line is it?

So you don't like inches and feet? You want to use metric instead? This is the place to be, change your drawing units to what ever is best for the type of drawing that you are doing. It doesn't make sense to be using inches while drawing a house, feet are much better. Miles are better still for laying out a township (with contour mapping). You have several choices, chose the unit size that is best for the job at hand.

You are drawing a house and you need a thirty four foot long wall? Don't count grid points, set the 'Screen Display' to 'Relative Coordinates', and you can see exactly the distance that you have drawn. 'Polar Coordinates' will show you the angle and the distance. Chose the type of display that will work best for the job, possibly 'No Display' is what you need.

You don't like the settings that *Athena II* 'wakes up' with? Change them, set the defaults to what ever you like.

Screen Information

Display Statistics

Information Menu

SCREEN
Information

Procedure

Select
Screen Information

• Position the center of the cross hair over the button labeled SCREEN INFORMATION. Click the left mouse button to display the statistics about the screen display.

Results

The screen will show:

Heading:

The drawing units (Inch, Foot, Yard, Mile, Millimeter, Centimeter, Meter, Kilometer) and the number of pixels on the screen that will be shown at magnification one (1.0000).

Scale:

Normal is at one (1.0000), this shows the amount of magnification, that you are viewing your drawing at.

Screen Offset:

The amount that the drawing has been shifted from the center of the drawing. Both X and Y vectors are displayed.

Grid Offset:

The amount that the grid has been shifted from zero in both the X and Y directions.

Selected Layers:

Which layers are currently Active.

Visible layers:

Which layers are being displayed on the screen.

Current layer:

Which layer is the current layer (the layer that new information will be entered on.).

Grid size:

How many units of distance are the grids separated by.

Snap status: ON / OFF

Display Status: No display, absolute coordinate, relative coordinate, Polar coordinate.

Entity Information

Information Menu

Display statistics about individual objects.

ENTITY
Information

Procedure

Select
Entity Information

- Position the center of the cross hair over the button labeled ENTITY INFORMATION. Click the left mouse button to select the entity and display the statistics about the screen display.

Select Entity

- Position the center of the cross hair over the entity that you desire information on. Click the left mouse button to display the Statistics.

Results

The following information is displayed.

Entity type:
Line, Circle, Arc, Ellipse, Elliptical arc, Text.

Display layer:
Which layer is the entity found on.

Line Style:
Which style of line is it (1: Plain, 2: Large dash, 3: Dotted, 4: Dot / Dash, 5: Medium Dash, 6: Dot / Dot / Dash.)

Line Width:
Which line width (1: Thick, 2: Medium, 3: Thin)

Lines Only

X1, Y1 & X2, Y2:
The two coordinate pairs describing the beginning and ending points.

Circles Only

X Center & Y Center.
The X and Y coordinate pair describing the center point of the circular object.

Radius:
The distance from the center point to the line making the circular object.

Beginning Angle & End Angle.
The angle from the origin at which the arc begins (0.00 for a circle) and the angle at which it ends (3.60 for a circle).

Set Drawing Units

Information Menu

Set a unit measurement. Distances displayed will be measured in the unit selected.

SET
DRAWING
UNITS

Procedure

SELECT
INCH

- Position the cross hair over the button labeled INCH. Click the left mouse button to set Units to inches.

SELECT
FOOT

- Position the cross hair over the button labeled FOOT. Click the left mouse button to set Units to feet.

SELECT
YARD

- Position the cross hair over the button labeled YARD. Click the left mouse button to set Units to yards.

SELECT
MILE

- Position the cross hair over the button labeled MILE. Click the left mouse button to set Units to miles.

SELECT
MILLIMETER

- Position the cross hair over the button labeled MILLIMETER. Click the left mouse button to set Units to millimeters.

SELECT
CENTIMETER

- Position the cross hair over the button labeled CENTIMETER. Click the left mouse button to set Units to centimeters.

SELECT
METER

- Position the cross hair over the button labeled METER. Click the left mouse button to set Units to meters.

SELECT
KILOMETER

- Position the cross hair over the button labeled KILOMETER. Click the left mouse button to set Units to kilometers.

Set Screen Display

Information Menu

Select DISPLAY MODE

SET
SCREEN
DISPLAY

Procedure

Select
NO DISPLAY

- Position the cross hair over the button labeled NO DISPLAY. Click the left mouse button to disable the display of coordinates at the bottom of the screen.

Select
ABSOLUTE
COORDINATE

- Position the cross hair over the button labeled ABSOLUTE COORDINATE. Click the left mouse button to enable the display of absolute X & Y coordinates at the bottom of the screen.

Select
RELATIVE
COORDINATE

- Position the cross hair over the button labeled RELATIVE COORDINATE. Click the left mouse button to enable the display of, relative X & Y coordinates from the first selected point, at the bottom of the screen.

Select
POLAR
COORDINATE

- Position the cross hair over the button labeled POLAR COORDINATE. Click the left mouse button to enable the display of polar coordinates, vector and angle from the origin, at the bottom of the screen.

Set Default Setting

Information Menu

Change the standard default settings.

SET
DEFAULT
SETTING

Procedure

Select
Default Button

- Position the cross hair over the desired button. Click the left mouse button to change the default setting.

Enter Size

- Enter the new information on the key board (Remember to press 'Return' to enter the information)

Results

Arrow Size

Sets the size of the arrows when using dimensions.

Layer

Sets the layer that will be first drawn on.

Grid

Sets the distance apart that the grid points will be set at.

Text

Sets the size that text will be drawn at.

Print Entity Report

Prints Information about the selected entity to the printer.

(The operation is similar to Entity Information.)

Information Menu

PRINT
ENTITY
REPORT

Procedure

Select
Entity Information

- Position the center of the cross hair over the button labeled PRINT ENTITY REPORT. Click the left mouse button to Select the entity and print the statistics about the screen display.

Select Entity

- Position the center of the cross hair over the entity that you desire information on. Click the left mouse button to Print the Statistics.

The following information is printed.

Results

Entity type:

Line, Circle, Arc, Ellipse, Elliptical arc, Text.

Display layer:

Which layer is the entity found on.

Line Style:

Which style of line is it (1; Plain, 2; Large dash, 3; Dotted, 4; Dot / Dash, 5; Medium Dash, 6; Dot / Dot / Dash)

Line Width:

Which line width (1; Thick, 2; Medium, 3; Thin.)

Lines Only

X1, Y1 & X2, Y2:

The two coordinate pairs describing the beginning and ending points.

Circles Onl

X Center & Y Center.

The X and Y coordinate pair describing the center point of the circular object.

Radius:

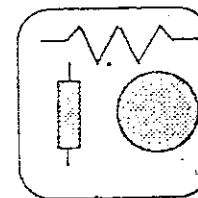
The distance from the center point to the line making the circular object.

Beginning Angle & End Angle.

The angle from the origin at which the arc begins (0.00 for a circle) and the angle at which it ends (3.60 for a circle).

Parts

Part Menu



Creates "Parts" from lines and other entities, saves them to a disk, and places them anywhere on the drawing, on command.

Parts may well be the most used section of *Athena II*. The "Parts" name came from the ability to group many types of lines, circles, text, etcetera into one piece, a Part. Now that it is drawn, give it a name, file it away on to a diskette for permanent storage in libraries. Those same Parts may then be used in many other drawings. Standard libraries are available from Iliad Software, Inc. in many different categories; Architectural, Electronic, Heating and air conditioning, hydraulics, and many others are planned. You may create you own libraries or expand on the ones that you buy. Many other Parts will be found in the special *Athena II* section of The Atari Connection! BBS (See Bugs in the Introduction) that have been drawn by other users like yourself.

Anytime that you are drawing something that will be used again, on this drawing or another, make it into a Part and save it. Why repeat yourself when the computer can do it so much faster? Learn to think in modules, you are the only one who has that spark of creative genius, don't bog yourself down with details, draw it once then file it. Spend your time doing the things that need the human touch, not the repetitive tasks that can be done with the touch of a button.

Some time needs to be spent on 'names', when you create a Part you give it a name before filing it away on a diskette. You have only eight (8) characters to name it in, yet it needs a name that will be easy to find. Group your Parts into sections with folders on the diskette, then with the name itself make a category with the first four characters, sub-category with the next two, the last two reserve for a size. Example: A cabinet for a floor plan, it is thirty six inches wide (36") and is a base cabinet, (that is one which is found on the floor rather than one that is placed on a wall). A good name might be "CAB_BS36.PRT", it placed in a folder named "FLOORPLN.PRT" (Floorplan parts) you would know that, one it is to be used in architectural applications I.E. a floorplan, that it was a cabinet (the CAB_ part of the name), it is a floor cabinet (BS) and it is thirty six inches wide (36). Don't become fanatical about names, use them - don't let them use you, but try to be consistent in your naming practices.

NOTES

A standard selector box will replace *Athena II's* normal screen. The top line just under the word "Directory:" shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN.PRT, etc). The next section is a filter with a wild card (an asterisk) for the file name and PRT as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN.PRT\CAB_????PRT" would select the folder "FLOORPLN.PRT" from the B disk drive and display only files beginning with "CAB_" and ending in the PRT extension.

Short Cut: Double click on the desired part to select and Execute.

Select

Procedure

Select

Execute

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Select

Create

Part Menu

Select a series of entities and give them a name.

CREATE

Procedure

Select Entity

- Position the cross hair over the object to be selected. Click the left mouse button to select that object for inclusion in the part.

Repeat

Repeat the process until all desired entities have been selected.

Right Button
Ends Selection

- Click the *Right* mouse button to end the selection process and begin the save process.

Select Folder
(Optional)

A standard selector box will replace *Athena II's* normal screen.

Select folder by clicking with the left mouse button while the arrow is over the folder desired.

Enter Name

Enter the Part name including extension or click on the desired name if you will be replacing an existing Part. Click **OK** with the left mouse button to save the part or **CANCEL** to abort the process.

If you want the part the you are naming to be displayed with the standard filter (*.PRT) you must include the PRT extension when you type in the new name.

Results

The Part will be saved on the diskette.

To use the part see INSERT in the Part Menu.

NOTES

A standard selector box will replace *Athena II*'s normal screen. The top line just under the word "Directory:" shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN.PRT\, etc). The next section is a filter with a wild card (an asterisk) for the file name and PRT as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN.PRT\CAB_????PRT" would select the folder "FLOORPLN.PRT" from the B disk drive and display only files beginning with "CAB_" and ending in the PRT extension.

Short Cut: Double click on the desired part to select and Execute.

DELETE

Part Menu

Remove a selected part from the diskette.

DELETE

Procedure

Select
DELETE

Select File Name

Click OK
to Delete

Click CANCEL
to Abort

Results

- Position the cross hair over the button labeled Delete. Click the left mouse button to start the process.

A standard selector box will replace *Athena II*'s normal screen.

- Position the arrow over the Part that you want deleted (if not visible click the arrow over the shaded portion of the slider bar to the right of the selector box and click the left mouse button to display a new section of Parts)

- Position the arrow over the OK. Click the left mouse button to delete the Part shown on the "Selection:" line.

- Position the arrow over the Cancel. Click the left mouse button to delete the Part shown on the "Selection:" line.

The selected parts will be deleted, they are tossed into a black hole, and can never be retrieved. Make sure that you really wish to delete the Part before you do so!

Continue the process, until you have found the Part that you wish to delete. (Note: Parts may be deleted as part of the standard GEM desktop deletion process by dragging the unwanted files to the trash can.)

BREAK

Part Menu

Disassembles a Part so that it may be modified.

BREAK

Procedure

Select Part

- Position the center of the cross hair over the origin of the part that you wish to separate into its original components. Click the left mouse button to break apart the selected part.

Results

The Part will be separated into its separate pieces. In the broken state the pieces may be trimmed, rotated, erased, and modified in any way that a standard object drawn on the drawing may be manipulated.

NOTES

A standard selector box will replace *Athena II*'s normal screen. The top line just under the word 'Directory:' shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN.PRT\, etc). The next section is a filter with a wild card (an asterisk) for the file name and PRT as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN.PRT\CAB_????PRT" would select the folder "FLOORPLN.PRT" from the B disk drive and display only files beginning with "CAB_" and ending in the PRT extension.

Short Cut: Double click on the desired part to select and Execute.

Insert

Part Menu

Place a Part on the drawing.

INSERT

Procedure

Select Insert

Select Part

Select OK
to Select Part

Select Cancel
to Abort

Multiple Placement
Use Right Button

Single Placement
Use Left Button

Use Left Button to
End

Results

- Position the cross hair over the button labeled 'Insert'. Click the left mouse button to display the available Parts.

- Position the arrow, in the selector box, over the Part desired. Click the left mouse button to select the Part.

- Position the arrow over the OK. Click the left mouse button to Insert the Part shown on the "Selection:" line.

- Position the arrow over the Cancel. Click the left mouse button to Insert the Part shown on the "Selection:" line.

- Position the cross hair over the point that you wish the Part placed at. Click the Right mouse button and a copy of the Part will be placed on the drawing. To place another copy Click the Right mouse button.

Click the left mouse button to place one Part only or to end the multiple placement of Parts when using the Right mouse button.

Note: Clicking the left button will place one Part on the drawing, regardless of whether you were using the Right button first or just placing a single Part.

One or more Parts will be placed on the drawing.

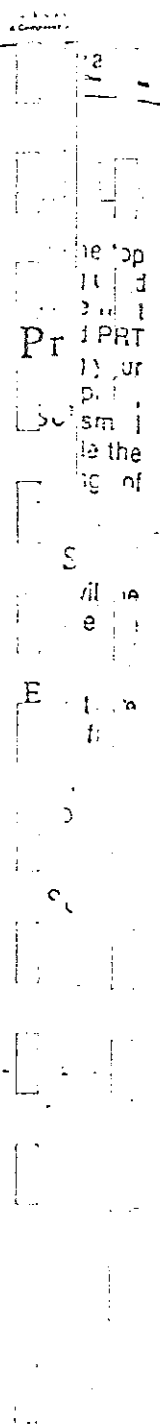
NOTES

A standard selector box will replace *Athena II's* normal screen. The top line just under the word 'Directory:' shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN.PRT, etc). The next section is a filter with a wild card (an asterisk) for the file name and PRT as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN.PRT\CAB_????PRT" would select the folder "FLOORPLN.PRT" from the B disk drive and display only files beginning with "CAB_" and ending in the PRT extension.

Short Cut: Double click on the desired part to select and Execute.



Athena II
A Computer Aided Design Program

Reference

Rename

Part Menu

Change the name of an existing Part.



Procedure

Select Rename

- Position the cross hair over the button labeled 'RENAME'. Click the left mouse button to display the available Parts.

Select Part

- Position the arrow, in the selector box, over the Part desired. Click the left mouse button to select the Part.

Enter New Name

- Enter the new name on the selector line.

Select OK
to Select Part

- Position the arrow over the OK. Click the left mouse button to Rename the Part shown on the "Selection:" line.

Select Cancel
to Abort

- Position the arrow over the Cancel. Click the left mouse button to rename the Part shown on the "Selection:" line.

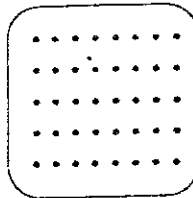
Results

The Name of the part will be changed on the disk.

GRIDS

Instant graph paper.

Grid Menu



Grids are like instant graph paper, only it will not show up on your final drawing. You can change the size of the squares without affecting the drawing. Even move the squares one way or the other, for special tasks.

One of the special features 'SNAP ON', will force the selected point to be exactly over the nearest preselected grid point. That way you can draw very accurately, but you will not have to be accurate with your mouse. Just get close to the grid point and click.

The closest that the dots will appear is approximately 1/4" apart on the monitor screen. The largest is one point on the screen with no other points showing.

Display ON

Displays the Grid Points on the screen.

Grid Menu

Display
ON

Procedure

Select Display on

- Position the center of the cross hair over the button labeled 'DISPLAY ON'. Click the left mouse button to select the function.

Results

The screen will pause for an instant and then after the menu window is gone, display the drawing area as before but with grid points showing.

If the size of magnification or the size of the grid is such that the grid points are too close together then the grid points will not be displayed until the magnification is changed so that they can be displayed. The reverse is true also, the magnification can be so great as to be looking between dots. In either case the grid points will be displayed as soon as the factors of size or magnification are changed to allow the points to be seen.

Display OFF

Turns Off the Grid point Display on the screen.

Grid Menu

Display
OFF

Procedure

Select
Display OFF

- Position the center of the cross hair over the button labeled 'DISPLAY OFF'. Click the left mouse button to select the function.

Results

The screen will pause for an instant and then after the menu window is gone, display the drawing area as before, but without the grid points showing.

The Display of grid points can be an advantage sometimes, but to reduce the confusion of points on the screen it is nice to be able to turn the display off. So as to get the uncluttered look.

SNAP ON will be functional even though the display is turned off.

Snap ON

Enables the SNAP.

Grid Menu

SNAP
ON

Procedure

Select Snap ON

- Position the center of the cross hair over the button labeled 'SNAP ON'. Click the left mouse button to select the function.

Results

There is no change of the display, but an attraction to specific point on the screen has been set up. Any selection of points on the screen for placement of lines, etcetera, will be placed over these points of attraction.

The grid points may be made visible see 'DISPLAY ON'

Snap Off

Disables the SNAP.

Grid Menu

SNAP
OFF

Procedure

Select Snap OFF

- Position the center of the cross hair over the button labeled 'SNAP OFF'. Click the left mouse button to select the function.

Results

There is no change of the display but any attraction to specific point on the screen has been canceled. Any selection of points on the screen for placement of lines, etcetera, will be placed directly in the center of the cross hairs and will not jump to a grid point.

Grid points may be visible but unless SNAP ON has been selected no attraction to those points will take place.

Size

Sets the Size of the grid points.

Grid Menu

SIZE

Procedure

Select SIZE

- Position the center of the cross hair over the button labeled 'SIZE'. Click the left mouse button to select the function.

Enter X

- Type in the X Value in what ever unit of measurement that you have set up (default is in inches).

Enter Y

- Type in the Y Value in what ever unit of measurement that you have set up (default is in inches).

Results

The distance between grid points will be changed so that the distance between points will reflect the distance entered for the X & Y axis. No effect, other than this change in distance, is visible. Unless 'DISPLAY ON' had been previously selected, then the display points will change visibly on the screen.


The X & Y distances may be different but for normal circumstances you would enter the same distance for both X & Y.

Note: Both distances must be entered or the distance will be entered as zero and SNAP ON and DISPLAY ON will be disabled.

Offset

Sets the amount of offset for the grid points.

Grid Menu

Offset

Procedure

Select Offset

- Position the center of the cross hair over the button labeled 'OFFSET'. Click the left mouse button to select the function.

Enter X

Type in the X Value in what ever unit of measurement that you have set up (default is in inches).

Enter Y

- Type in the Y Value in what ever unit of measurement that you have set up (default is in inches).

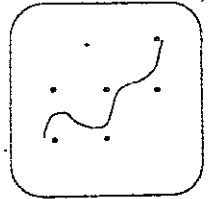
Results

The Grid points will be displaced in both the X & Y axis by the value that was entered. No visible change will be perceived unless DISPLAY ON had been selected. DISPLAY ON, SNAP ON, and SIZE are all functional with the offset.

B-Splines

Draws a line / curve through a series of control points.

B-Splines



B- Splines draw a line though a series of control points. Each point has an attraction for the line somewhat like gravity or magnetism. As the line travels through these point it follows a path that averages the attraction of each of these points into a smooth curve, that will fit perfectly through each control points influence. A good example of B-Splines at work is when you look at a contour map, each elevation has an irregular shaped curve going around each level of elevation. Someone had to take the measurements and then for, each altitude, draw a line which would be perfectly tangental to each of the other curves, which can take a very long time by hand. While you may not be drawing maps for the United States Government, you may well someday have to draw the contour of the land around a house for landscaping purposes. With B-Splines the task will be a breeze especially if you need to see what the contour will be like if you were to change it by adding or taking away some of the dirt around the house.

B-Splines can be very effective to fit a meandering sidewalk through a garden. B-Splines are very good at fitting a circuit board trace on a complex layout and never a square angle. B-Splines can make drawing a smooth graph amazingly easy. Try different ideas yourself you will soon find that they are a much used tool .

B-Splines are not like standard lines and curves and will have to be manipulated with the B-Spline menu and not with TRIM, etcetera.

Insert Splines

Place a control Point on the drawing.

B-Splines

INSERT
SPLINES

Procedure

Select Point

- Position the cross hair over a point. Click the left mouse button to select the point as a control point.

Repeat

- Repeat the process until you have placed all the control points that you need (Maximum 25 per group).

Click the Right Button

- Click the *RIGHT* mouse button to stop the selection process.

Results

A line will be drawn through the control points such that it is a smooth curve following the average of the control points.

After a maximum of 25 points have been placed the selection process will automatically terminate and the line / curve will be drawn.

Insert Control Point

Place a new control point in an existing Spline.

B-Splines

INSERT
CTRL PT

Procedure

Select Point

- Position the cross hair over the point and click the left mouse button to select the point.

After Which Point?

- Position the cross hair over the point that the new point will follow and click the left mouse button to select the insertion point.

Results

A new Control point will be inserted after the point selected.

Move a Control Point

B-Splines

Change the location of an existing control point.

MOVE
CTRL PT

Procedure

Select Control Point

- Position the cross hair over the control point that you want to move and click the left mouse button to select that point.

Select Point

- Position the cross hair over the new location of the control point and click the left mouse button to select the point.

Results

The control point will move to the new location and redraw the B-Spline line.

Note that B-splines do not use a rubber band type of move but simply moves the point and redraws.

Delete Control Points

B-Splines

Remove a Control Point from an existing B-Spline.

DELETE
CTRL PT

Procedure

Select Control Point

- Position the cross hair over the Control point to be removed and click the left mouse button to delete the point.

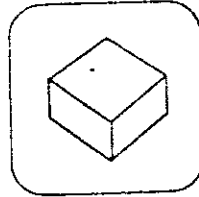
Results

The control point will be removed from the B-Spline and the line will be redrawn.

ISOMETRIC

Isometric Menu

Draws an Isometric view from selected views of an object.



An Isometric view is one in which a three dimensional object is projected onto a plane. The two dimensional surface of each of the three axes X,Y and Z, are at equal angles to each other. The original distances of lines and relationships of objects are retained in the projection.

Athena II is a two dimensional drawing program with the ability to project several views of an object, as an isometric projection. In that it is impossible to have a true three dimensional object on *Athena II*'s screen, we have to draw a view at a time of the object. Normally termed a 'Front view', 'Side View', and a 'Top View' (X,Y & Z), each of these views is what you would see of a three dimensional object, if you were able to see it from only that one axis at a time. When you have drawn three different views of an object, showing the three different sides of the object, *Athena II* will assist you in creating an isometric projection of those views. *Athena II* is not capable of doing the job on its own, (After all we have to some reason to keep us humans around.) but requires human judgment to tell it which lines are projected where.

The basic process is really quite simple, after you have the different views drawn, set a location for the isometric view to start at. Find and set a common point in the three different views. Select a view to use as a reference, select a line as a reference plane, in the view that you will be selecting objects from. (The buttons select a Reference / Selection pair) Select the objects, from the matching view, that are on the plane selected by the line in the reference view. Notice that the same lines in a view can be selected more than once when you are using different reference plane.

Note that Dimension lines are just that, lines. They can be copied to an Isometric view like any other line.

The only way to become proficient with isometrics is to experiment, select different combinations and see what happens.

Set Zero

Isometric Menu

Select the common point of all views.

SET
ZERO

Procedue

Select Point from
Top View.

- Position the cross hair over the point, on the top view, that is the same in all views. Click the left mouse button to select the common point.

Select Point from
Front View.

- Position the cross hair over the point, on the front view, that is the same in all views. Click the left mouse button to select the common point.

Select Point from
Side View.

- Position the cross hair over the point on the side view that is the same in all views. Click the left mouse button to select the common point.

Left button
Returns to Menu

- Press the left mouse button to return to the menu.

Results

The location that in all views is common to the other view must be determined by you. Then located on each view, to allow the selection of objects from each view to be placed properly on the drawing.

A simple example is a cube on the top view the common point is the bottom right corner. The front view is also the bottom right corner. The side view's common point, is the bottom left corner. Imagine it in your mind and locate those points on the cube and see if they are not indeed the same point on the cube. Remember that a point on one view is a line on the others, and a line is plane on the others.

Select Entity

Isometric Menu

Selects objects from the different views and places them at the proper location and angles on the drawing.

SELECT
ENTITY

Procedue

Select Entity

- Position the cross hair over the object (line, circle, arc, point & etc). Click the left mouse button to select the object.

Repeat

- Repeat the selection process until all desired objects, on the selection view that are on the view that you selected as a reference, have been selected and you are ready to select from another view or plane.

Right Button
Ends Selection

- Press the *RIGHT* mouse button to end the selection process.

Left Button
Returns to Menu

- Press the left mouse button to return to the menu.

Results

As each object is selected the object will be redrawn at the proper distance from the point selected by VIEW and at the proper angle with respect to the VIEW reference point.

Several lines may be selected at one time if you choose an intersection of lines and select that point.

View

Isometric Menu

Locates one point on the drawing as the point, at which the common points, on all of the views are to coincide.

VIEW

Procedue

Select Point

- Position the cross hair over the point on the drawing. Click the left mouse button to select that point as the beginning of the isometric view.

Results

When an entity (Line, circle & Etc.) is selected to be placed in the isometric view the location that it is placed at is determined by this point. Select a point, that is far enough away from your three views, that the new lines drawn for the isometric view will not overlap one another.

Top Reference Select from Front

Isometric Menu

Select a Reference plane on the Top View
that coincides with entitis on the Front
view that you will be selecting.

T-REF
F-SEL

Procedue

Select Line

- Position the cross hair on the line which defines the plane as seen on the Top View from which objects on the Front View will be selected. Click the left mouse button to select the reference line.

Left Button
Returns to Menu

- Press the left button to return to the menu.

Results

One line on the Top View will be marked as being selected as a reference plane in the front view. Using SELECT ENTITY, select the entities to be copied to the isometric view, from the Front view.

Front Reference Select from Top

Isometric Menu

Select a Reference plane on the Front View
that coincides with entitis on the Top
view that you will be selecting.

F-REF
T-SEL

Procedue

Select Line

- Position the cross hair on the line which defines the plane as seen on the Front View from which objects on the Top view will be selected. Click the left mouse button to select the reference line.

Left Button
Returns to Menu

- Press the left button to return to the menu.

Results

One line on the Front View will be marked as being selected as a reference plane. Using SELECT ENTITY, select the entities to be copied to the isometric view, from the Top view.

Right Reference Select from Top

Isometric Menu

Select a Reference plane on the Right View that coincides with entities on the Top view that you will be selecting.

R-REF
T-SEL

Procedure

Select Line

- Position the cross hair on the line which defines the plane as seen on the Right View from which objects on the Top View will be selected. Click the left mouse button to select the reference line.

Left Button
Returns to Menu

- Press the left button to return to the menu.

Results

One line on the Right View will be marked as being selected as a reference plane. Using SELECT ENTITY, select the entities to be copied to the isometric view, from the Top view.

Top Reference Select from Right

Isometric Menu

Select a Reference plane on the Top View that coincides with entities on the Right view that you will be selecting.

T-REF
R-SEL

Procedure

Select Line

- Position the cross hair on the line which defines the plane as seen on the Top View from which objects on the Right View will be selected. Click the left mouse button to select the reference line.

Left Button
Returns to Menu

- Press the left button to return to the menu.

Results

One line on the Top View will be marked as being selected as a reference plane. Using SELECT ENTITY, select the entities to be copied to the isometric view, from the Right view.

Front Reference Select from Right

Isometric Menu

Select a Reference plane on the Front View
that coincides with entitys on the Right
view that you will be selecting.

F-REF
R-SEL

Procedue

Select Line

- Position the cross hair on the line which defines the plane as seen on the Front View from which objects on the Right View will be selected.

Left Button
Returns to Menu

- Press the left button to return to the menu.

Results

One line on the Front View will be marked as being selected as a reference plane. Using SELECT ENTITY, select the entities to be copied to the isometric view, from the Right view.

Right Reference Select from Front

Isometric Menu

Select a Reference plane on the Right View
that coincides with entitys on the Front
view that you will be selecting.

R-REF
F-SEL

Procedue

Select Line

- Position the cross hair on the line which defines the plane as seen on the Right View from which objects on the Front View will be selected.

Left Button
Returns to Menu

- Press the left button to return to the menu.

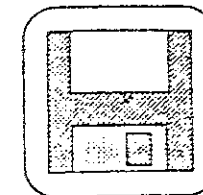
Results

One line on the Right View will be marked as being selected as a reference plane. Using SELECT ENTITY, select the entities to be copied to the isometric view, from the Front view.

Files

File Menu

Controls the loading and saving of drawings as well as printing the drawing.



This is where you will be loading and saving your drawings. Print outs are controlled from here also.

Create your data diskettes before entering *Athena II*, (See the tutorial for full instructions on how to format diskettes.) and any folders that you wish to use should be created then. If you do not have a folder created and you wish to use one, save your file with out a folder, exit the program, create a new folder with GEM, then using GEM copy the drawing into the folder.

Backup are a very good idea, that way if you make a major mistake on a drawing, you can go to the backup, and start from the previous ending point - instead of starting again from scratch. Use GEM to copy your drawings (See the tutorial for full information on copying files, and on the benefits of a RAM disk if you have only one physical drive.).

When you create a Drawing you give it a name, before filing it away on a diskette. You have only eight (8) characters to name it in, yet it needs a name that will be easy to find, and can tell you about what it contains. Group your Drawings into sections, with folders, on the diskette, then with the name itself make a category with the first four or five characters, sub-categories with the next couple, the last as a version number. Example: A house plan - a floor plan of the main floor "A:\FLOORPLAN\SPILT1M3.AII" read as - Drive A, floorplans, split level style 1, main floor, modification 3 (the extension tells you that it is a drawing from "Athena II"). With a little imagination you can pack a wealth of information into just eight characters. Don't become fanatical about names, use them - don't let them use you, but try to be consistent in your naming practices.

NOTES

A standard selector box will replace *Athena II's* normal screen. The top line just under the word "Directory:" shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN\, etc). The next section is a filter with a wild card (an asterisk) for the file name and All as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN\SPLIT???.All" would select the folder "FLOORPLN" from the B disk drive and display only files beginning with "SPLIT" and ending in the ".All" extension.

Short Cut: Double click on the desired part to select and Execute.

Save

File Menu

Creates a disk file of the entire drawing.

SAVE

Procedure

Select SAVE

- Position the cross hair over the button labeled SAVE. Click the left mouse button to save the drawing to disk.

A standard selector box will replace *Athena II's* normal screen.

- Select folder by clicking with the left mouse button while the arrow is over the folder desired.

Select Folder
(Optional)

Enter Name

- Enter the drawing name including extension or click on the desired name if you will be replacing an existing drawing.

Click OK
to LOAD

- Click OK with the left mouse button to load the drawing.

Click CANCEL
to Abort

- Click CANCEL with the left mouse button to abort the process.

If you want the drawing that you are naming to be displayed with the standard filter (*.All) you must include the ".All" extension when you type in the new name.

Results

The drawing will be saved on the diskette.

NOTES

A standard selector box will replace *Athena II*'s normal screen. The top line just under the word 'Directory:' shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN, etc). The next section is a filter with a wild card (an asterisk) for the file name and "AII" as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN\SPLIT???.AII" would select the folder "FLOORPLN" from the B disk drive and display only files beginning with "SPLIT" and ending in the "AII" extension.

Short Cut: Double click on the desired part to select and Execute.

Load

File Menu

Bring a drawing from the disk, into computer memory, so that it can be modified, Printed, etcetera.

LOAD

Procedure

Select LOAD

- Position the cross hair over the button labeled LOAD. Click the left mouse button to load the drawing from disk.

A standard selector box will replace *Athena II*'s normal screen.

Select Folder
(Optional)

Select folder by clicking with the left mouse button while the arrow is over the folder desired.

Enter Name

- Enter the Drawing name including extension or click on the desired name.

Click OK
to LOAD

- Click OK with the left mouse button to load the drawing.

Click CANCEL
to Abort

- Click CANCEL with the left mouse button to abort the process.

Results

The drawing will be loaded into memory.

NOTES

A standard selector box will replace *Athena II*'s normal screen. The top line just under the word 'Directory:' shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN\, etc). The next section is a filter with a wild card (an asterisk) for the file name and ".AII" as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN\SPLIT???.AII" would select the folder "FLOORPLN" from the B disk drive and display only files beginning with "SPLIT" and ending in the ".AII" extension.

Short Cut: Double click on the desired part to select and Execute.

Merge

Merges an existing drawing, in memory, with a drawing on the disk.

File Menu

MERGE

Procedure

Select MERGE

- Position the cross hair over the button labeled MERGE. Click the left mouse button to merge the drawing with an existing drawing.

A standard selector box will replace *Athena II*'s normal screen.

Select Folder (Optional)

Select folder by clicking with the left mouse button while the arrow is over the folder desired.

Enter Name

Enter the Drawing name including extension or click on the desired name.

Click OK to MERGE

- Click OK with the left mouse button to merge the drawing.

Click CANCEL to Abort

- Click CANCEL with the left mouse button to abort the process.

Results

The drawing will be merged with an existing drawing already loaded into memory.

NOTES

A standard selector box will replace *Athena II's* normal screen. The top line just under the word "Directory:" shows the disk drive that is being used (A:, B:, etc.) and the path or folder (\, \FLOORPLN\, etc). The next section is a filter with a wild card (an asterisk) for the file name and "AII" as the extension after the period. You can change this line by clicking your left mouse button on the line, then editing it with your cursor, backspace, and delete keys. By changing the filter, you could select just a small portion of the files available to you. Click the left mouse button while the arrow is in the area where file names are displayed to enter your change of the directory line.

To use folders click on the folder desired, the contents of the folder will be displayed. Click the close button, looks like a reverse X (X) to leave the folder.

An Example: "B:\FLOORPLN\SPLIT???.AII" would select the folder "FLOORPLN" from the B disk drive and display only files beginning with "SPLIT" and ending in the "AII" extension.

Short Cut: Double click on the desired part to select and Execute.

Delete

File Menu

Tosses the selected drawing into a 'Black Hole' where it is destroyed - forever.

DELETE

Procedure

Select
DELETE

- Position the cross hair over the button labeled DELETE. Click the left mouse button to delete the drawing.

A standard selector box will replace *Athena II's* normal screen.

Select Folder
(Optional)

Select folder by clicking with the left mouse button while the arrow is over the folder desired.

Select File Name

- Enter the Drawing name including extension or click on the desired name.

Click OK
to Delete

- Click OK with the left mouse button to delete the drawing.

Click CANCEL
to Abort

- Click CANCEL with the left mouse to abort the process.

Results

The selected drawing will be deleted, it is tossed into a black hole, and can never be retrieved. Make sure that you really wish to delete the drawing before you do so!

Print

Send the drawing to a printer or plotter.

File Menu

PRINT

Procedure

Select Print

- Position the cross hair over the button labeled PRINT. Click the left mouse button to print the drawing in memory to a hard copy device, (printer, plotter).

Click OK to Print

- Click OK with the left mouse button to print the drawing.

Click CANCEL to Abort

- Click CANCEL with the left mouse to abort the process.

Installation of the proper 'printer driver' will determine which printer is used, (or Plotter).

In the folder titled GEM.SYS is a file named 'ASSIGN.SYS' this contains information telling the computer where font files are found and where the printer driver is found.

Quit

Leave the program, and return to the desktop. Consign any unsaved programs to a never-never-land, where it is forever gone!

File Menu

QUIT

Procedure

Select QUIT

- Position the cross hair over the button labeled QUIT. Click the left mouse button to exit the program and return to the GEM Desktop.

Click OK to Delete

- Click OK with the left mouse button to delete the drawing.

Click CANCEL to Abort

- Click CANCEL with the left mouse to abort the process.

Results

The program will be exited and control of the computer will be returned to the GEM Desktop.

Warning!

Any Drawings or Parts that have **not** been saved will be **destroyed!**

Make certain that any drawings that you wish to keep have been saved or they will be gone forever, leaving you to start from scratch.

Definitions

ACSII	An acronym for American Standard Code for Information Interchange. This code is used to represent all letters and numbers as well as some special symbols, inside of the computer.
Back-up	The process of duplicating a program, file, or disk so that if any thing bad happens (see 'crash') you have another copy to fall back on.
Binary	A number system using base two, that the computer uses to do math by (and everything else) it uses only two numbers 0 and 1 or off and on.
bit	The smallest possible unit of measure in the computer it can represent only one of two possible states - on or off. Note: a bit is shown in lower case to distinguish it from a Byte.
Bomb	What a computer does at the most inopportune time usually caused by "Bugs", this is what cause the cherry bomb ICONs to appear on the screen. See also Crash
Bugs	Errors that occur in even the best of programs. It is an unwritten guaranty that a bug will only appear during the most inconvenient time when a project must be done the next day. Legend has it that during the days of huge whole building computers (made out of tubes and stuff), which were hard-wired in order to program them, that upon occasion a fly would land in the computer and be electrocuted thus causing the program to be 'hard-wired' differently and causing the engineers to 'de-bug' the computer.

Byte	A measurement of size it contains eight bits and is the standard unit of measure on a computer. It can represent 2 to the eighth power items (256 decimal) Note: a Byte is always upper case to distinguish it from a bit.
CAD	An acronym for Computer Aided Design
CAM	An acronym for Computer Aided Manufacturing
Clicking	Pressing a mouse button to start or select some process or item. The left mouse button is the 'main' button.
Counterclockwise rule	When a circular object is created or edited in a CAD system the process starts at the beginning point if their is one, and draws in a counterclockwise manner around the center point until it completes the object or encounters the next controlling point or during an edit an intersecting object.
CP/M 68K	An acronym for Control Program for Micro Computers for a 68 thousand series micro processor unit. Note: The Atari ST's use a 68000 MPU and runs under CP/ M 68K.
Crash	That which happens to a program just prior to a deadline. Generally when a back-up has not been made. Usually caused by "Bugs". See also BOMB & Bugs

Cursor

The place on the screen where the computer will put the next character, usually shown by a small square or rectangle in a color the reverse of the background of the screen. Also the point at which the mouse is pointing, usually a arrow.

Note: the point or tip of the arrow is pointing to the spot.

Desktop

The area on the screen that first appears after bootup. A file created by using the 'save desktop' option, contains: The name of all icons present on the screen, which icon is to be displayed, the colors of the screen, the resolution to be displayed, and any special functions particular to that disk.

DESKTOP.INF

A file found on some diskettes that contains information about the DESKTOP. I.E. How the disks are displayed and sorted. The printer and RS - 232 configurations etcetera.

Double Click

The process of telling the operating system that you want what ever is under the mouse to be selected and executed, without you having to do another step to execute the process. A 'double click' must be done very fast with both clicks occurring within a small portion of a second.

Drag

The Process of moving an icon or object across the screen. Point to the icon and press and hold the left mouse button down, move the mouse until the icon is positioned where you want it then release the button.

Firmware

That which is neither Hardware or Software. An example would be a diskette, and to a computerist this manual would be considered firmware. In general Firmware can be touched and has a physical presence.

See also Hardware, Software, and Vaporware.

Floppy diskettes

(Floppy disk)

The media that most small computers use as the primary method of external storage. Currently there are three sizes of diskettes in general use:

8" (Diskette), now almost extinct used several years ago on many CP/M systems,

5 1/4" (Mini diskette), Still available it is now considered to be a dinosaur and has a limited life,

3 1/2" (Micro diskette) This is the newest, and smallest, size. The micro floppy has many advantages over the others other than a smaller size, one of which is a firm case with a metal shield, but should you pull back the shield and touch the plastic surface of the diskette it will be dead.

Protect your diskettes from heat, magnetic fields, and unusually dirty conditions and they will serve you reliably for many years.

Folder

A sub-directory; contains a list of programs or files. Named because the icon representing it looks like a folder from a file cabinet. A folder may contain other folders. It is created by selecting the window of the diskette that you wish to place the folder and selecting the 'new folder' option.

GEM

Hard Disk

An acronym for Graphics Environment Manager

A computer peripheral used to store large amounts of data and programs, generally in the mega Byte range, it has a very fast retrieval time. Not to be confused with Micro Floppy Disks. See Floppy diskette

Hardware

That part of a computer system which is physically present and tangible. An example would be a printer.

See also Software, Firmware and Vaporware.

Icon	A stylized picture used to represent something. The ICON of a trash can on the desktop is used to represent a place that you can 'dispose' of your unwanted programs and files
Isometric	A projection of several views of an object on to a plane having three equally inclined faces for a stylized three dimensional view.
Kilo	(K - in upper case) A Unit of measurement generally used in connection with Bytes. Not to be confused with the metric kilo this Kilo has a value of two to the tenth power or 1024 decimal. For purposes of approximation you could consider a K to be equal to 1000. While this unit of measure has been the standard by which all computers were measured most modern computers are now being measured in Mega Bytes of memory. See Mega, Bytes, and bits.
Layers	A method of organizing a drawing into layers so as to be able to control how the drawing is displayed and to allow ease of editing.
Mega	(M - in upper case) A unit of measurement of computer memory generally used in connection with Bytes this represents a Kilo of Kilos or 1024 times 1024 or 1,048,576. See Kilo, Bytes and bits.
Monitor	A hardware device used with a computer or other video equipment for viewing the picture generated by that equipment. While a monitor could be a standard TV it generally refers to a device like a TV but lacking the tuner.
Nibble	An obsolete unit of measurement, it equals four bits thus two nibbles equal a Byte See bits, Bytes, Kilo, and Mega.
Piracy	A Romantic name for the process of taking food out of the mouths of a programmers children by selling, giving away, trading, or even accepting copies of programs which are not in the public domain and by which a programmer earns his or her living. The most common name for this type of person is a thief.

Plotter

A peripheral used for getting exelent quality graphics output. Plotters use a pen or similar tool so that there is one continuous line on the paper. Sizes of output can vary from several inches across to several feet, depending on the price and quality of the device. Prices can range from several hundred to tens of thousands of dollars,

Printer

A peripheral used for getting output on the computer. While there are many types of printers, three are of main interest.

1 - Daisy wheel named for the device which hold the characters that it prints. This is a letter quality device and can not be used for graphics.

2 - Dot Matrix While dot matrix have been frowned upon because of their generally poor quality of print, they were held in favor by many small computerist because of their price and speed. Newer printer are now rivaling "Daisy wheel" printers in terms of print quality and have almost as many dots per inch as a inexpensive Laser printer.

3 - Laser Laser printers have the quality of "Daisy wheel" printers for text and the ability to do graphics that even a top quality "Dot matrix" printer finds hard to match. Using a method similar to a photo copier they can produce several pages per minute of super clear output. Currently the price is measured in thousands of dollars but new technology may (is) bring this down into the reach of any one desiring this quality of output.

Prompt	A message from the program requesting an input or response from the user.
RAM	An acronym for Random Access Memory
RAM-DISK	A program which reserves a small portion of RAM for temporary storage of information. The same program fools the system into thinking that another disk drive is connected to the system and then redirects the information into the temporary storage area. Warning loss of power will destroy the information in the temporary storage area.
ROM	An acronym for Read Only Memory
B-splines	A curve drawn with reference to digitized control points.
Software	<p>The program that controls the computer. Software can be purchased, copied, and otherwise manipulated, but it has no physical existence. It can be found in the minds of programmers, inside computers, and on diskettes but you can't hold it.</p> <p>See also Firmware, Hardware, and Vaporware.</p>
TOS	An acronym for The Operating System
Trim	The process of editing a object in a CAD drawing so that the lines will end exactly at a specified intersecting object.
Vaporware	A name given to the many pieces of hardware and software that is advertised every year but no one ever sees.

Athena

The Grecian goddess of wisdom and warfare. Athena represented the intellectual aspect of war (I.E. technology). Athena was worshiped as the patroness of arts and crafts, - as such we thought that it was fitting that this Computer Aided Design program bear her name.

According to legend, Athena at birth sprang fully grown and dressed in armor from the forehead of Zeus, the king of the Gods. Athena is generally shown wearing a helmet and a magical shield referred to as the Aegis. Athena's primary symbol is the owl (knowledge and wisdom).

In one of the many legends about Athena, the people had a contest to see which God would be the patron of the principle Greek city in the territory of Attica. Poseidon, the Sea God, and Athena were challenged to see which would give the most useful gift. Poseidon presented the people with a horse. Athena the olive tree. The gods judged the olive tree more useful and so the city was named Athens, with Athena as its patroness.

We hope that you too will judge Athena II, a Computer Aided Design Program, more useful. If you have any questions or comments we would sincerely love to hear from you.

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A Computer Aided Design Program

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X

Y

Notes

Active Layer

Allows data on the selected layer to be modified

Layer Menu

ACTIVE
LAYER

Procedure

Select
Active layers
with
Left button

- Position the tip of the arrow on the square, in the matrix labeled selected (left window), that corresponds to the layer that you want to be able edit data on. Click the left mouse button to make the layer active.

Results

The Selected square will be displayed in the color of the layer.

Active layers are displayed in that layers color (not black or white).

If an object is close to another object on a different layer, and both layers are active, an editing operation - say ERASE, would select and erase both objects. If only one line is to be erased simply select that layer as active (color) and select the other layer as not being active (black), and only the desired layer will be affected, even if both lines were overlaid. This allows for some interesting possibilities such as using one layer as a master and copying and modifying on another layer without disturbing the master layer. Other ideas will present themselves to you as you work with layers.

Visible Layers

Selects which layers are visible

Layer Menu

VISIBLE
LAYER

Procedure

Select visible
layers

- Position the arrow tip over the desired square, on the matrix marked visible (right window). Click the left mouse button to select the layer.

Results

The layer will turn to the color of the layer indicating that it is now visible.

More than one layer may be visible at a time. To select multiple visible layer simply repeat the selection process until all the layers that you wish are visible.

Visible and invisible layers are a foggle function the first click turns the layer Off the next turns the layer ON, then off, then on, and so on, what it wasn't it now is.

When *The Draftsman* is first loaded all layers will be visible.

Invisible Layers

Makes a layer not visible

INVISIBLE
LAYER

Procedure

Make layer
Not Visible

Results

- Position the arrow tip over the desired square, on the window marked visible (right window). Click the left mouse button to select the layer.

The layer will turn Black indicating that it is now not visible.

More than one layer may be invisible at a time. To select multiple invisible layers, simply repeat the selection process until all the layers that you wish are invisible.

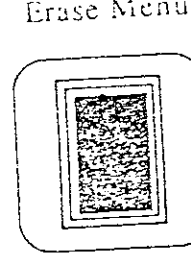
By controlling which layers will show and which will not you will be able to control the amount of detail which is shown on the screen at one time. This is very handy, say for instance that you have a drawing of a house and the wall details have the electrical outlets shown and the wires for switches and plumbing line runs. If each type of drawing detail were to be drawn on a separate layer, then by making all layers but the walls and the electrical outlets invisible you will have a much easier time viewing the information.

Be aware that just because a layer is not visible, if it is active the editing processes will affect information on the layer.

Invisibility Is Not Invulnerability

ERASE

Removes unwanted objects from the drawing.



ERASE allows you to remove unwanted objects from the drawing. Each of the different types of ERASE tools allow you to remove that type of object without disturbing a different type of object nearby.

Erase Will not leave unwanted marks behind like on a regular pencil and paper drawing so use construction lines and other aids to their fullest. Erase can remove any such helps without a trace. Construction lines used with TRIM (Relocate Menu) can greatly simplify your job and Erase can remove the evidence that you did it the easy way.

Layers will help you tremendously especially when you realize that you can delete entire layers at once. An example might be in drawing a house plan you can draw the upstairs directly over the main floor so that you know the dimensions and proportions are correct then when you are done erase the main floor layer.

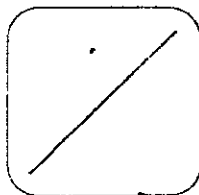
As you work with *Athena II* you will develop many such short cuts. Each time that you discover a new method for doing something jot it down in the manual. We have provided an area by each command for exactly that purpose. Experimentation is still the key - if you don't try you won't know. So go ahead and try if you make a mistake - it's ok just Erase it!

See also: Layers, Relocate, Isometric

Er ase Lines

Removes selected Lines from the drawing.

Erase Menu



Procedure

Select Line

- Position the center of the cross hair on the line to be selected for deletion and click the *left* mouse button.

Repeat

- Repeat the selection process until you have selected all lines to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected lines.

Results

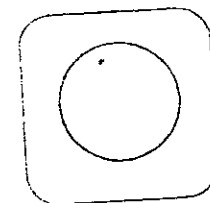
Removes the selected lines from the drawing. Once removed the lines are permanently gone.

If the layer that the line is on is not 'selected' (See Layers) then that line will not be able to be erased, how ever if the line is 'selected' but not visible it can be selected and erased.

Erase Circle

Removes selected Circles from the drawing.

Erase Menu



Procedure

Select Circle

- Position the center of the cross hair on the Circle (not the center point) to be selected for deletion and click the *left* mouse button.

Repeat

- Repeat the selection process until you have selected all lines to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected lines.

Results

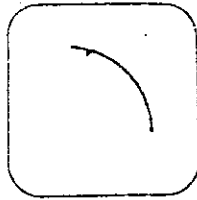
Removes the selected Circles from the drawing. Once removed the Circles are permanently gone.

If the layer that the Circle is on is not 'selected' (See Layers) then that line will not be able to be erased, how ever if the line is 'selected' but not visible it can be selected and erased.

Erase Arcs

Removes selected Arcs from the drawing.

Erase Menu



Procedure

Select arc

- Position the center of the cross hair on the Arc to be selected for deletion. Click the *left* mouse button to select the arc.

Repeat

- Repeat the selection process until you have selected all arcs to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected arcs.

Results

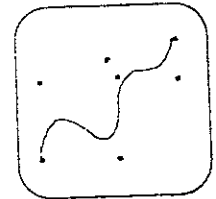
Removes the selected arcs from the drawing. Once removed the arcs are permanently gone.

If the layer that the arcs is on is not 'selected' (See Layers) then that arc will not be able to be erased, how ever if the arc is 'selected' but not visible it can be selected and erased.

Erase B-Splines

Remove selected B-Spline Groups from drawing.

Erase Menu



Procedure

Select B-Spline Group

- Position the center of the cross hair on a control point of the B-spline group, to be selected for deletion. Click the *left* mouse button to select the group for deletion.

Repeat

- Repeat the selection process until you have selected all B-spline groups to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected B-spline groups.

Results

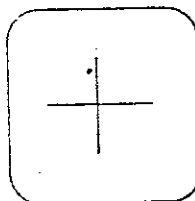
Removes the selected B-spline groups from the drawing. Once removed the B-spline groups are permanently gone.

If the layer that the B-spline groups is on is not 'selected' (See Layers) then that B-spline group will not be able to be erased, how ever if the B-spline group is 'selected' but not visible it can be selected and erased.

Erase Point

Remove selected points from the drawing.

Erase Menu



Procedure

Select Point

- Position the center of the cross hair on a control point of the Point, to be selected for deletion. Click the *left* mouse button to select the Point for deletion.

Repeat

- Repeat the selection process until you have selected all Points to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected Points.

Results

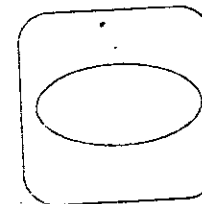
Removes the selected Points from the drawing. Once removed the Points are permanently gone.

If the layer that the Points is on is not 'selected' (See Layers) then that Point will not be able to be erased, how ever if the Point is 'selected' but not visible it can be selected and erased.

Erase Ellipse

Remove selected ellipses from the drawing.

Erase Menu



Procedure

Select Ellipse

- Position the center of the cross hair on the ellipse (not the center point) to be selected for deletion. Click the *left* mouse button to select the ellipse to be deleted.

Repeat

- Repeat the selection process until you have selected all ellipses to be deleted.

Click Right Button

- Click the *Right* mouse button to end the selection process and delete the selected ellipses.

Results

Removes the selected ellipses from the drawing. Once removed the ellipses are permanently gone.

If the layer that the ellipses is on is not 'selected' (See Layers) then that ellipse will not be able to be erased, how ever if the ellipse is 'selected' but not visible it can be selected and erased.