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### INSTRUCTIONS:

#### **Main Set Up:**

Install Program

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Download **TSWS\_Acad\_Package** file. This is a compacted self extracting file to your hard drive. The additional file **TSWS\_Objects** is not required for running the **TSWS\_acad** program. You will be unable to imports blocks using the program.

Execute the **TSWS\_Acad\_Package.exe** from the directory where you have downloaded it. You will be asked for a directory to extract file to. This directory does not have to be the final directory for your files.

Goto the Directory that you have extracted the **TSWS\_Acad\_Package** file to. In this directory, there will be a **SETUP.EXE** file.

Execute the **SETUP.EXE** file for actually installing the program and windows system information. You will be asked for a location for placing the files, and this will be the final location for the program.

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## AutoCAD Set up:

### Create Profile

Start AutoCAD, Go to the **Preferences** (AutoCAD 2000) or **Options** menu and select Profiles. Add a directory to the SUPPORT FILES SEARCH PATH to your newly created subdirectory "\\...\Acad" containing the **TSWS** files.

This will give AutoCAD access to the necessary lintetyps, patterns and shape file.

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## TSWS\_Acad Operation

### Start Up AutoCAD

Start AutoCAD and either create a new drawing or Open an existing drawing.

### Start Up TSWS\_Acad

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### Setting the Scale

For new drawings without a scale factor already set, a menu will appear to allow for a selection of drawing scale. The initial menu allows selection of Architectural units (1/8"=1'-0, 1/4"=1'-0,etc) or Civil Engineering Units (1=100, 1=200,etc).

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### Layer Information Execution

Selection is made for the drawing discipline, then the drawing type, and then the Group Type before allowing a selection of possible Layer Names, as provided in the drop down menu selection. Selecting the Layer will show the proper Layer settings that may be sent to AutoCAD using the **Send** button on the TSWS\_Acad panel (Tab 1). When the SEND button is selected, the Layer name becomes the current Layer Name in AutoCAD, and the layer color and LineType become what is set in the standards. The entities will have drawn afterward will be drawn on the selected layer, and color and LineType are **ByLayer**.

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### Text Insertion Execution

For Layers which have TEXT associated, the **TEXT** Selection button will be visible for Selection. Selecting this will place the User in the AutoCAD drawing with the text scale factor based upon the drawing scale and the database information.

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### Object and Symbol Insertion

There are an optional set of Objects and Symbols contained in the download file TSWS\_Objects.exe File. This is a self extracting file which contains various block drawings referenced in the standards database.

When accessible, these predrawn ".DWG" blocks are inserted according to a scale depending upon whether the Block is:

A **Symbol** (generally drawn at 1:1 size and scaled according to the Drawing Scale) NOTE: See Customization Section for information on Customizing the Scale factor.

A scaleable **Object** Block (drawn at a parametric scale to allow scaling based upon criteria from within database and specific selected object (ie: a single block exists for a Double hung window, but is scaled to a value of 36 for a 36" wide window, 48

for a 48" wide window,etc.) NOTE: See Customization Section for information on Customizing the Scale factor.

A Predefined Object Block drawn at 1:1 and inserted at a scale of 1 for real world Objects (such as an 8x16 concrete Block or an 8x8 concrete block Lintel ). NOTE: See Customization Section for information on Customizing the Scale factor.

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#### Status Controls

When the Status Group is selected and the Override Box is checked, the Name of the Name of the selected status appears to the Right of the Check Box. When objects are inserted while the Status Box is checked, the object is placed on the Status layer instead of its normal Layer.

#### Settings:

##### AutoCAD system Variables affected

*UserS5*: a string variable set for the drawing scale selected.

*LTScale*: The Line Type Scale is set as a factor in relation to the Drawing Scale. ( A 1/4"=1' -0" (which will be printed at 1/48th its original size.) drawing will have a LTScale of 48.

*DimScale*: This will be the same scale factor as the *LTScale*., determined by the drawing scale.

*Measureinit*: This will be set depending upon whether metric or the IPS system is chosen.

*Measurement*: This will be set depending upon whether metric or the IPS system is chosen.

*Clayer*: The program will set the current layer to that which is selected in the TSWs\_Acad Menu. Layer Color, linetype and eventually line weight will be assigned according to the standards information.

*DimTextSets*: the dimension Text scale depending upon drawing scale or a factor in the standards.

*DimTxtSty*: This sets the current dimension Text style to Standard, and the Font will be set to ROMANS.

*Lunits*: This will set the Units to 3 for engineering and 4 for architectural as required by the standards.

*DimUnits*: This will set the Dimension Units to 3 for engineering and 4 for architectural as required by the standards.

*HPScale*: This will set the Hatch Pattern Scale factor to a factor determined by the standards except for patterns that are real world objects (such as brick or CMU).

*CmdDia*: Turned off before inserting objects, turned on afterwards.

*AttDia*: Turned off before inserting objects, turned on afterwards. *FileDia*: Turned off before inserting objects, turned on afterwards.

*CmdEcho*: Turned off before inserting objects, turned on afterwards.

### Scale Factors and what is affected.

The following variables are set by selecting the drawing scale, and produce a consistent plotted size entity for all scales:

The Linetype scale (the scale of the linetypes), The DimScale (main scale factor of dimension), DimTxt (dimension text size).

The Text Size is based upon the drawing size and the factor as given in the standards. Currently there is only one text size established.

HPscale: Sets the scale of most hatch patterns (symbols) based upon the scale of the drawing. Patterns such as brick and block are set to be the actual size of block and brick.

The following variables are set depending upon the discipline chosen:

Lunits, Dimunits, For Civil engineering, this factor is set for "3" (Engineering Units), otherwise it is set for "4", Architectural units.

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### Customization:

#### Alternate Object File Location Setup

The default expects to find the ACAD\_Objects directory in the same path where the TSWS\_Acad.exe file is located. The file **Initial\_Settings.Txt** can be edited to provide an alternate location, for example if there are multiple users on a network sharing the same Acad\_Objects directory on the , server.

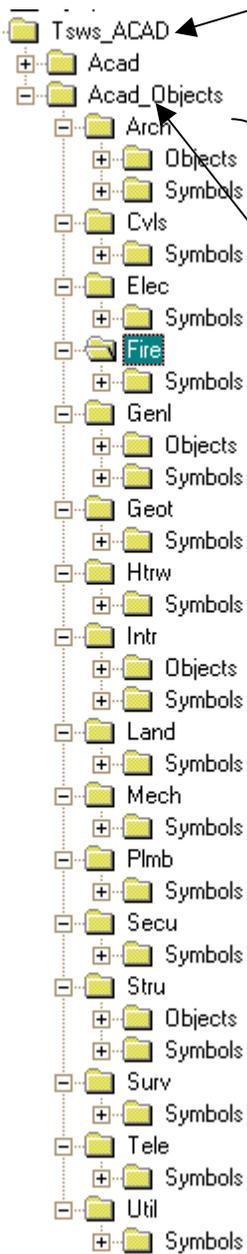
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#### Alternate Object / Symbol Scale Setup

To set specific alternate scales for Objects and symbols, the file Symbols\_Settings.Txt can be modified. The scale at which an object is brought in at (both "X" and "Y" scales) can be manually set and can have both metric and IPS settings.

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# FILE ORGANIZATION



## Tsws\_ACAD

The main directory contains the main **TSWS.EXE** executable file to execute the program.

It also contains :

**Initial\_Settings.txt** Allows the location of the **Acad\_Object** Files to be redirected for a common shared usage.

**Symbol\_Scale.txt:** Allows for an alternate scale value for the individual Blocks which are inserted as part of the program under

### Acad\_Objects

**tsw.txt** The main body of Standards criteria for the workspace, which the TSWS program reads.

## Tsws\_ACAD\Acad

The Directory containing the files to create standard linetypes, hatch patterns, and the required SHX file used by several linetypes.

<b>Tsaec.lin</b>	Line types
<b>tsaec.shx</b>	Shape file
<b>*pat</b>	Various Pattern Files

## Tsws\_ACAD\Acad\_Objects

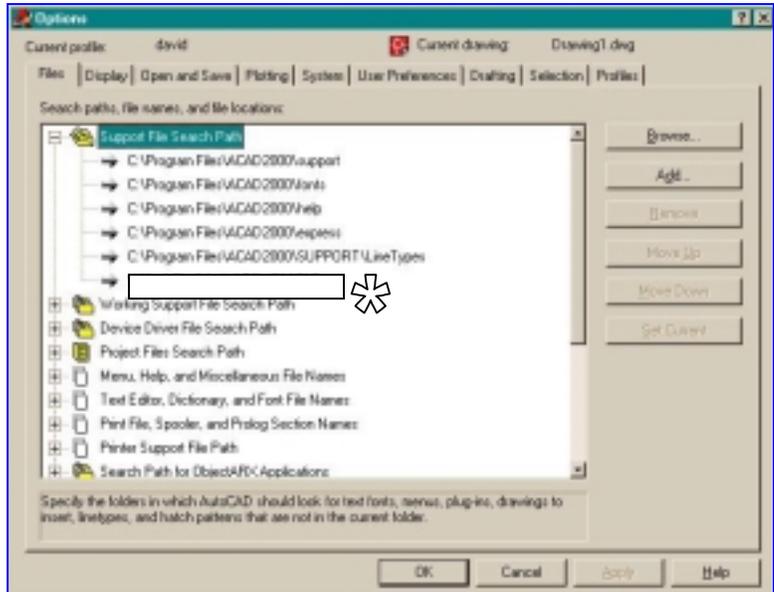
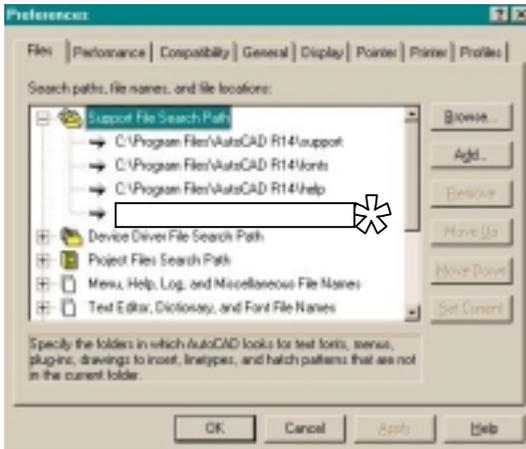
### The Block files with Bitmaps for display in the TSWS data reader.

These files are read by the TSWS depending upon discipline, drawing type and group, and are inserted into the drawing at a drawing scale dependent either upon the drawing scale used (for scaleable symbols) or a full size for some objects or for a selected size (such as doors and windows) as part of the program.

Run the **TSWS\_Acad.exe** program file to start the program.

# SETTING UP THE DRAWING PROFILE

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## Modifying the Profile:

✱ **Add additional Support path** for to include Pattern, Linetypes files.

To allow the additional Linetypes, hatch patterns and SHX file for the Linetypes, there needs to be an additional file location added to the Support path .

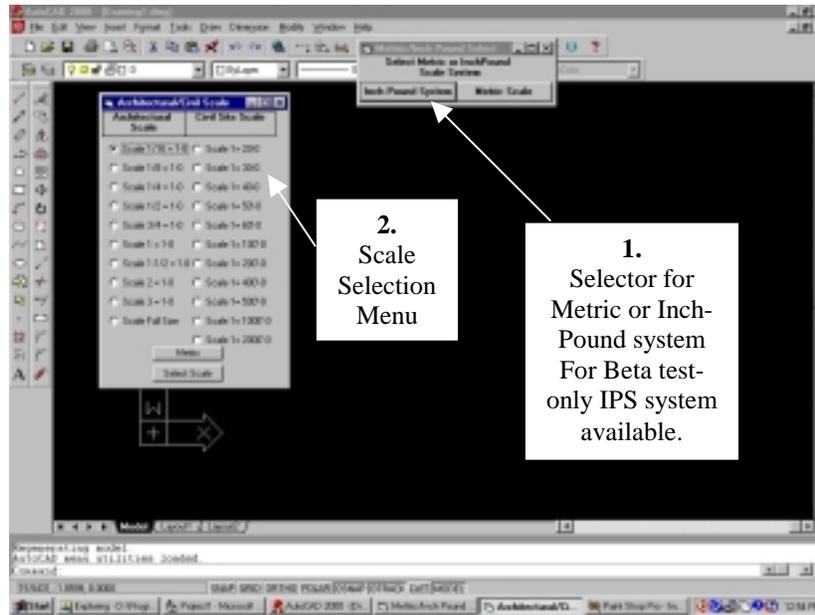
This path will be where AutoCAD finds the additional information needed to implement the standards.

NOTE: THE DIRECTORY LOCATION WHERE THE TSWs FILE IS LOCATED WILL HAVE A SUN\BDIRECTORY CALLED "...\\ACAD".

This is where the pattern, linetype information and SHX file is stored and referenced by AutoCAD. The "\\ACAD needs to be at the end of the file location for referenced by AutoCAD.

|

# DRAWING FORMAT, SELECTING SCALE



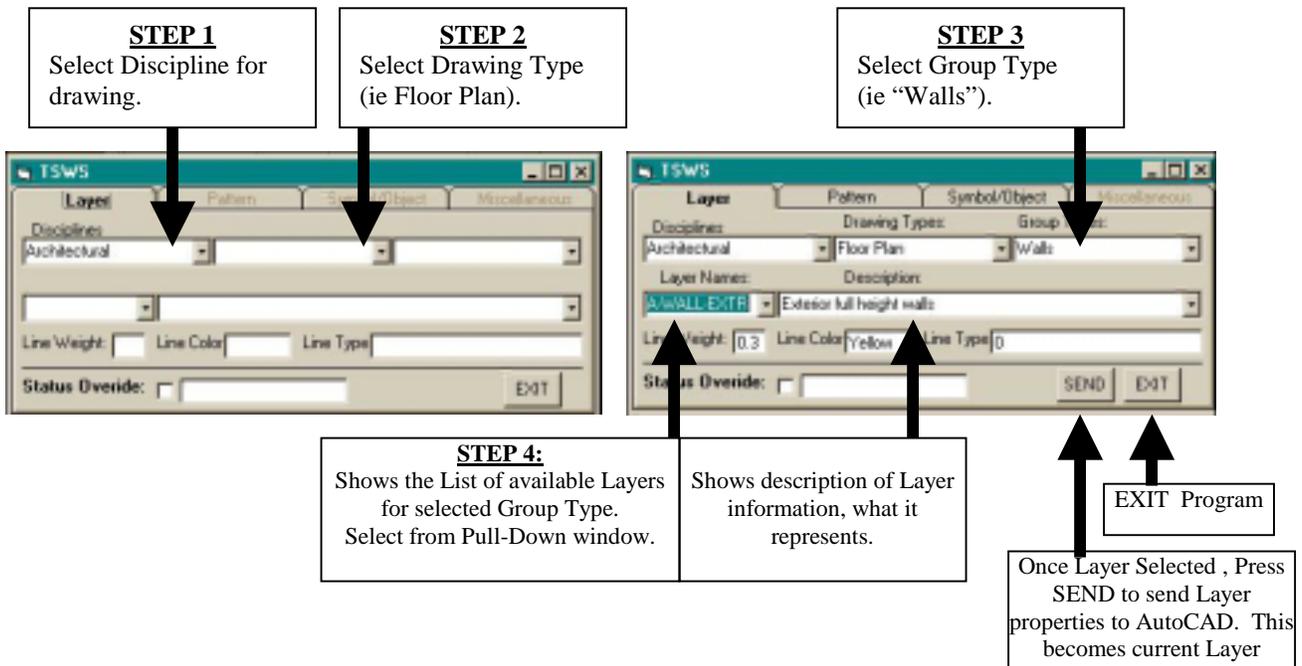
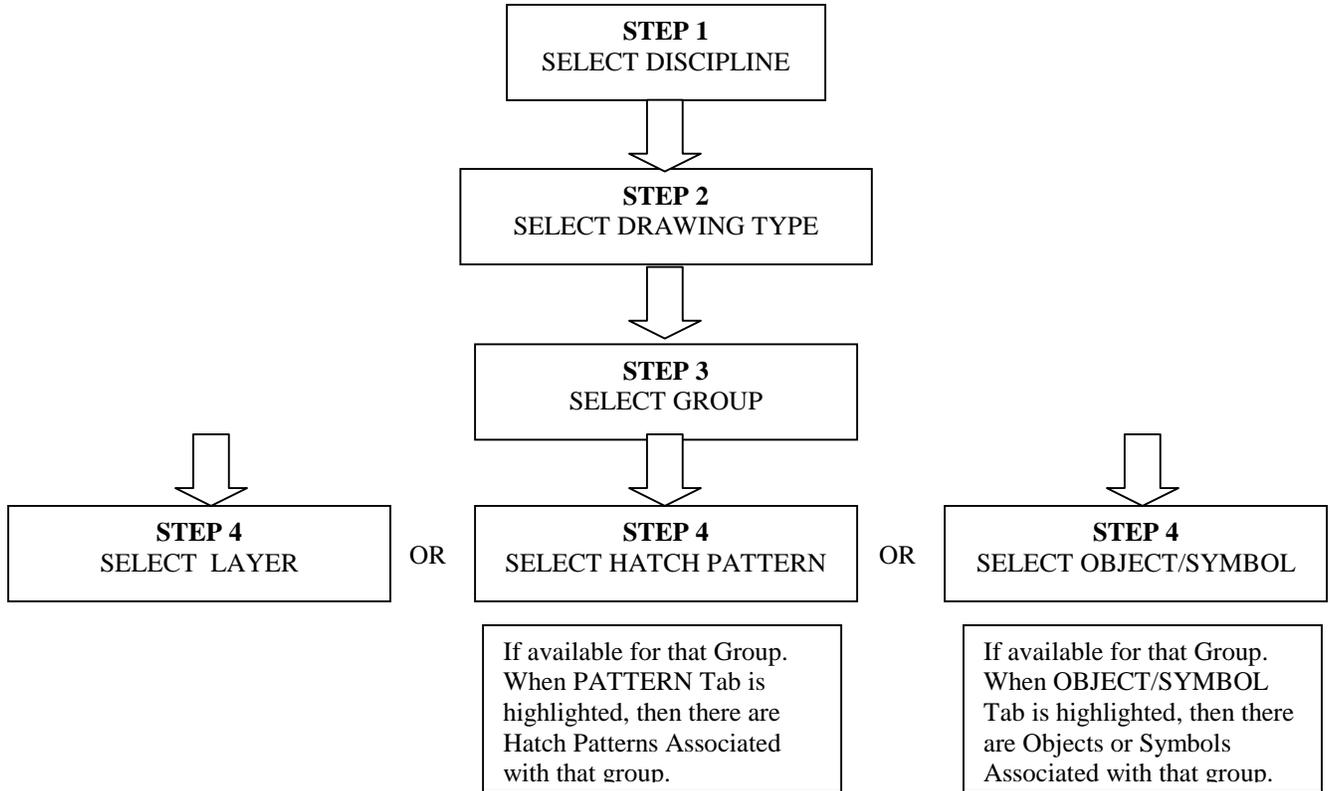
## 1. Select Metric or InchPound Scale System

For a new drawing, the Workspace initially checks in the AutoCAD system variable “USERS5” for a scale variable. If this variable is not set, a Selector Menu is brought up to select using the Metric system or the IPS system. ( For the BETA test, the Metric selection has been disconnected)

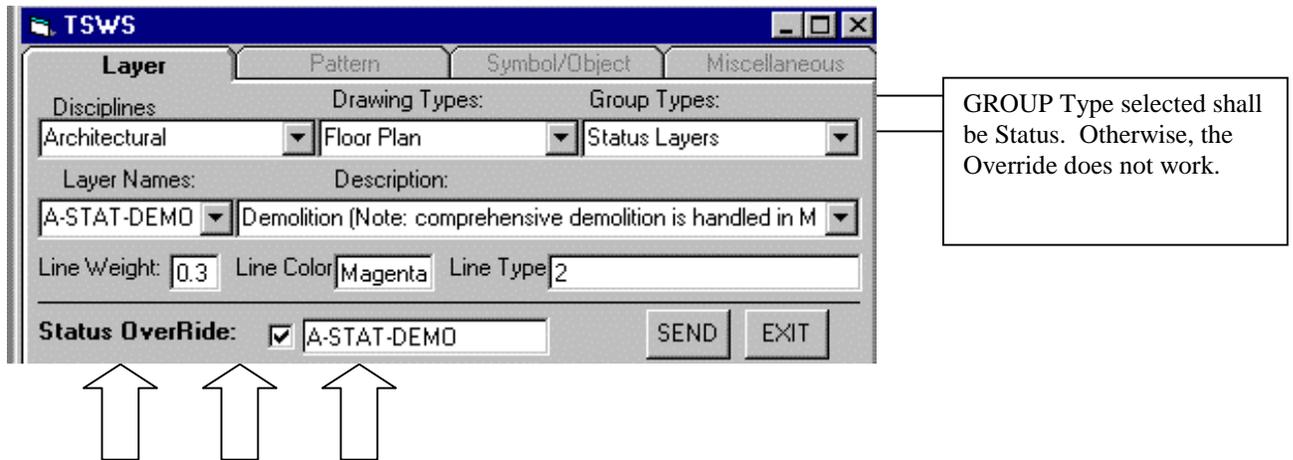
## 2. Architectural/Civil Scale

When the Inch Pound System has been selected, the SCALE SELECTION Dialog Box is brought up, and allows the User to select a scale for the drawing. This scale factor is set in the system variable USERS5. After this is done, the user will not be asked for a scale selection for this drawing unless the variable USERS5 is modified or reset.

# ORDER OF OPERATION



## STATUS OVERRIDE



The Status OverRide is used to identify items as part of a group of objects that are Not in Contract, To be Moved, for Demolition, etc.

A layer name based upon the selected Discipline is selected and the linetype as set by the standards.

When the Status Group is selected and the Override Box is checked, the Name of the Name of the selected status appears to the Right of the Check Box. When objects are inserted while the Status Box is checked, the object is placed on the Status layer instead of its normal Layer.

For example, a door inserted that was to be demolished and while the Status layer OverRide is set to Demo, would cause the object to be placed on the Demo Layer (A-STAT-DEMO) and not on the door layer.

To release the status override, turn off Check by reselecting check mark.

## LAYER SELECTION/ TEXT SELECTION

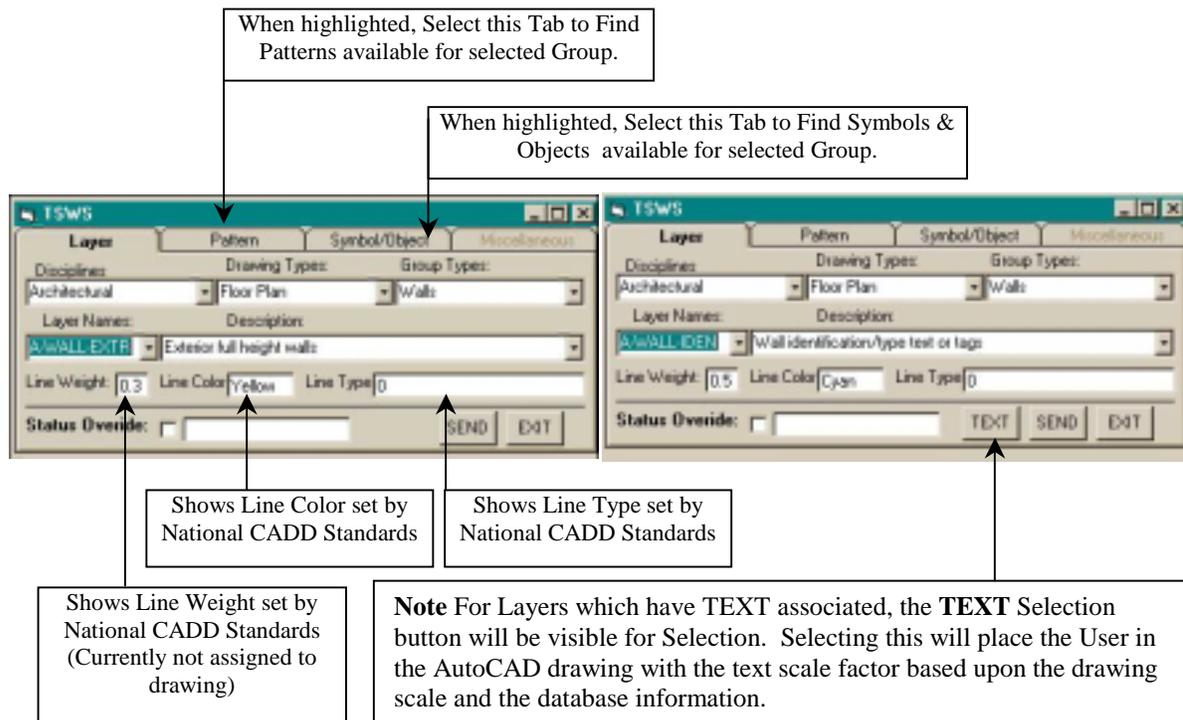
When the **TSWS\_Acad** Dialog Box appears, the first set is to actively select the DISCIPLINE that will be used from the drop down menu on the Left.

Once the Discipline is selected, then the DRAWING TYPE is to be selected from the drop down menu.

After a Drawing Type has been chosen, a selection of GROUPS becomes available. When the GROUP is selected from the drop down list, list of Layer Names becomes available.

Also, if there are Block Symbols related for this Group (such as Windows or Doors) then the *Symbol/Object* Tab becomes visible. (See page \_\_ for more information on selecting Objects)

If there are hatch Patterns associated with this Group (such as Floors) then the *Pattern* Tab becomes visible. (See page \_\_ for more information on selecting Patterns)



To Send Line Setting Information into AutoCAD, Select the Layer Name form the Drop Down List.

A description of the purpose of the Layer is shown , and it's color, Line Weight and Line Type are also shown.

## SYMBOL & OBJECT INSERTION

When the correct Layer Name is selected, Use the SEND button on the Right to send the information into AutoCAD.

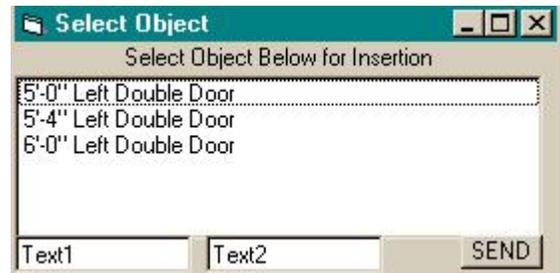
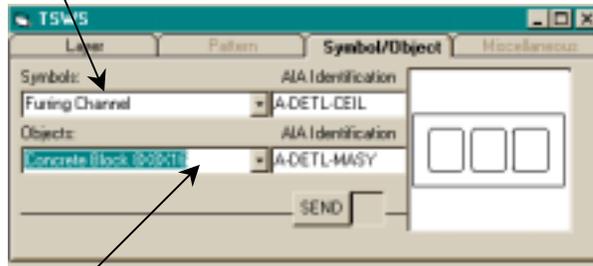
The Layer becomes the current drawing Layer with the color and linetype set.

### Object & Symbol Selection Dialog Box

### Parametric Object Selection Dialog Box

List of Symbols

Parametric Objects:



List of Scaled Objects

### Selecting **SYMBOL** :

This will show the Symbol Image in the Picture Box . To **SEND** the symbol into the drawing, use the SEND button. The program will set the scale factors for inserted Objects according to the drawing scale, and will ask for an Insertion point. At his point, the User is placed in AutoCAD to select the angle of rotation and the Attribute information if required.

Note: The command to Select the block insertion point is **PUNTO BASE** (Base Point).

### Selecting **OBJECT** :

This will allow show the Object Image in the Picture Box .

There are two different types of Objects: Those to be inserted at full scale and those to be inserted at a certain scale.

#### **Full Size Objects:**

To **SEND** the full scale **Object** into the drawing, use the SEND button. The program will set the scale factors for inserted Objects to 1, and will ask for an Insertion point. At his point, the User is placed in AutoCAD to select the angle of rotation and the Attribute information if required.

If an **Object** is selected that is to be scaled, (such as a Door or Window), then the **SELECT OBJECT** Menu (see below) appears with the alternate scale selections listed. Select the specific size **Object** and then select **SEND** on the **Select Object** Menu to insert the Object at the proper scale.

**Note:** The command to Select the block insertion point is **PUNTO BASE** (Base Point).

## HATCH PATTERN INSERTION

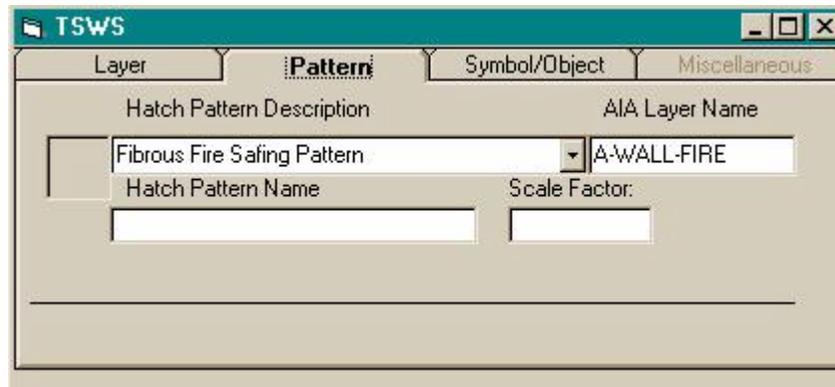
When a **Group** is selected that is associated with a Hatch Pattern, the second Tab **PATTERN** becomes Highlighted. Selecting the **PATTERN** Tab brings up the Dialog box shown below.

Under the heading *Hatch Pattern Description* label is a drop down list of hatch patterns associated with the selected **Group**.

When the Hatch pattern is selected, the Pattern name appears under the *Hatch Pattern Name* label, and the preselected scale is shown under *Scale Factor* label. The name of the Layer as determined by the Standards is shown under the label *AIA Layer Name*.

Selecting the Hatch Pattern automatically sets the current layer of your drawing to what is shown under the label *AIA Layer Name*. The correct line type and color are also set. The focus changes from the **TSWS\_Acad** program to the drawing and the **Boundary Hatch** dialog box is activated. The current hatch pattern in the dialog box is the one selected from the standards and the current scale is set to the drawing scale factor.

At this point you are in the drawing and ready to select objects or pick points or make any changes within the drawing environment.



# CUSTOMIZATION

The following is an excerpt from the **Initial\_Settings.Txt** file in the application directory where **TSWS\_Acad.exe** is located:

```

Setup Information for TSWS program
New Installation=1
Object Directory defines another directory for storing Objects
other than default location
(allows combining several users w/ the same object files)
OBJECT_DIR    Object Directory []

METRIC_OFF
    
```

This file can be used to customize the location where the Objects and Symbols are searched for, allowing them to be placed on a network server and accessed by several machines. Note: the Object and Symbols file (**TSWS\_Objects.exe**) is a separate download and installation from the **TSWS\_Acad** program.

The standard location that the program expects to find the object and symbol files is in the **ACAD\_Objects** subdirectory under the directory where **the TSWS\_Acad.exe** program is located. Follow the steps below for creating an alternate directory.

Alternate Location for Object directory is to be placed within the brackets.

Example : (File Location shown in bold):

**OBJECT\_DIR** Object Directory [**d:\Program Files\Acad\_Objects**]

The following is an excerpt from the **Symbol\_Scale.txt** file in the application directory where **TSWS\_Acad.exe** is located:

```

'Symbol_Scale File
'Form:
'Expr1'DISCIPLINE_ID'DRAWTYPE_ID'GROUP_ID'AIA_ID'DEF_ID      'SYMBOL_ID      'Symbol Name'ElementType
'ToolFrame    ARCH    16    38    A-DETL-CEIL    244    552    FURCHN    Symbol
'ToolFrame    ARCH    16    38    A-DETL-CEIL    244    553    FURCHH    Symbol
'SYMBOL_ID'OBJECT_ID
'      0      1      2      3      4      5      6      7
'Symbol_ID'Symbol Name`M`X`M`Y`M`Z`I`X`I`Y`I`Z
552`FURCHN`1`1`1`5`5`1
553`FURCHH`1`1`1`2.56`2.56`1
    
```

**Alternate scale for Symbols:**

The name of an object from the Symbol file and referenced in the TSW.txt file may have an alternate scale substituted.

Note Any information preceded by a “ ” is ignored.

Example : SYMBOL Scale settings:

```

553    `FURCHH    `1    `1    `1    `2.56 `2.56 `1
NOTE1  Symbol Name  Metric scale factors      Inch Pound Scale Factors
                        X value Y value Z value  X value Y value Z value
    
```

NOTE 1: The Symbol Number is found in the TSW.Txt file to the left of the Symbol Name: (from the **TSW.txt** file )

```

ToolFrame`ARCH`16`38`A-DETL-CEIL`244`553`FURCHH`Furring Channel
Hat`Symbol` `ARCH_SYM.CEL
    
```