TYPICAL CAD STANDARDS ORGANIZATION

Also visit http://www.nationalcadstandard.org

INTRODUCTION

- Goal of providing office wide coordination.
- Evolving document.

PERSONNEL ORGANIZATION

CAD Technology Committee

- CAD Technology Committee to convene (intervals) to discuss and resolve CAD issues.
- Advise Partners to the direction of the committee and the firm.
- Committee officers and makeup.
    - Senior Advisor, committee members, and from which offices or departments.

DIRECTORY STRUCTURE

- Never save work to local workstation hard dive.
- Network drive hierarchy accessible by all and the breakdown categories.

DRAWING FILE CONVENTIONS

Project Number conventions.

Drawing File Organization, Naming, Layout.

- Site Master Files.
- Discipline Master Files.
- Drawing Sheet Files.
    - Drawing File Naming Conventions.
    - Sheet Numbering and Organization.

DRAWING SETUP

- Drawing Origin, WCS, UCS, and orientation.
- Cleanup of a drawing by others.
- Color and Linetype by Layer.
- Pen Color Standards.
- Layer Naming Standards.
- Plotting CTB Standards.
- Viewports and scale.
- Xref's and Discipline Master Files.

GRAPHIC STANDARDS

- Text Font and Size Standards.
- Schedules and Legend Standards.
- Dimension Styles.
- Notations, Reference Notes hierarchy.
- Standard Block Libraries.

DETAILS

- Detail Format sizes and layouts.
- Detail layer naming standards.
- Detail File System.
- Referencing, callout methods and graphics.
- Inserting details into the drawing set.
- Converting older details to the new system.

DELIVERABLE REQUIREMENTS

- Office plotting procedures.
- Methods of deliverables.
- Submittal stages and related deliverables.
- AutoCAD DWG drawings.
    - When DWG submittals are appropriate.
    - Drawings in the Clients pen colors.
- PDF files.
- Word and Excel documents.

DRAWING FILE CONVENTIONS

There is fairly wide variation on how different firms number their sheets and name their drawing files. As it is up to the discretion of the firm or organization to define their naming standards, here are some recommendations that can be made on drawing naming and sheet numbering

A good general rule would be to keep it simple and keep it consistent for all projects. It could also be desirable to have the project number (or code identifier) used in the drawing names for the project, in case they get misplaced or saved in the wrong location, you can easily identify where they should be.

The ultimate goal of naming CAD drawing files is to have a CAD drawing that represents a certain sheet in the drawing set, although there are certain variations to this. To achieve this goal, you must have an organized system where each discipline (sitework, planting, irrigation, etc.) uses the same site base information, and the discipline work can be organized into the individual sheets in the drawing set.

SHEET NUMBERING, SHEET IDENTIFICATION, CONVENTIONS

While there is no consistent strict method of sheet identification, a couple of options will be shown here.

Basic Numbering Convention

On the most basic level a sensible sheet numbering system would allow the flexibility for additions to the drawing set as more sheets may have to be added. This would suggest not using a simple numbering system such as L-1, L-2, etc., but a system where sheets are grouped by discipline. This would mean, for example, the L-100 series sheets would be for landscape sitework, L-200 series would be for Irrigation, L-300 for planting, L-400 for details, L-500 for notes and specs, etc.

Thus you could have an L-101, L-102, L-103, and find that you need to add a sheet in the sitework to the construction set, so you make it L-104 without having to disrupt the sheet numbers after it.

This type of sheet numbering could be represented in a variety of ways:

L-101, L-201, L-301…
L101, L201, L301…
L1.01, L2.01, L3.01…

The series number would be classified within your office according to the type and scope of the work that you do. You may have a defined rigid system for the series numbers, such as:

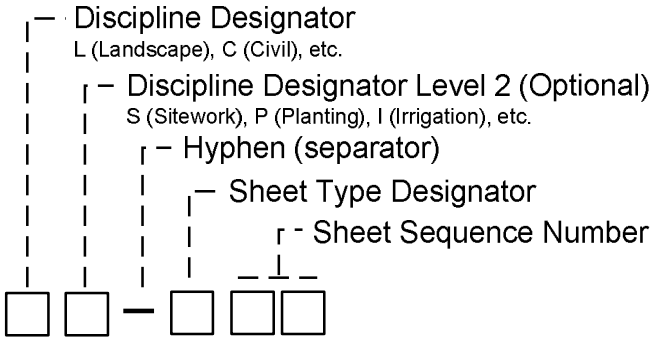
L-000 General (Legends, notes, etc.)
L-100 Demolition
L-200 Site Plans (material plans)
L-300 Dimension Plans (horizontal control, Staking Plans, etc.)
L-400 Grading and Drainage
L-500 Irrigation
L-600 Planting
L-700 Details
L-800 Schedules and Notations

Or it may be up to the Project Manager to make a determination for the numbering as is appropriate for each project.

Uniform Drawing System – National CAD Standards Conventions

This is a breakdown of the NCS Uniform Drawing System sheet identification system, and more information can be found within the National CAD Standards,

www.nationalcadstandard.org.



Discipline Designator: One letter identifier that defines "Agent Responsible", Design Professional who is professionally liable for the information by virtue of professional licensure and role on the project.

L Landscape
A Architectural
C Civil
E Electrical, etc. See the full list on the National CAD Standards.

Discipline Designator Level 2: This is optional, although with the NCS naming system is seems to be absolutely necessary to define the grouping. It is a user defined additional Discipline Designator to define the subset of the discipline, an example for Landscape:

S Sitework
G Grading
P Planting
I Irrigation
D Details, etc. The individual user defines the subset identification.

Sheet Type Designator: A single number to define the Sheet Type, with the NCS examples of:

0 General (symbols, legends, notes, etc.)
1 Plans (horizontal views)
2 Elevations (vertical views)
3 Sections
4 Large Scale Views
5 Details
6 Schedules and Diagrams
7 User Defined
8 User Defined
9 3-D Representations (isometrics, perspectives, photos)

Sheet Sequence Number: 00 through 99 for the sheets fitting that designator and sheet type.

For example, the third sheet of a set of a Planting Plan might be

LP-103 LP (Landscape, Planting) – 1 (for plan) 03 (third sheet of this set).

"MODEL" CAD FILE NAMING CONVENTIONS

Model CAD Files

A Site Model File is your site base indicating all aspects of the site work or base information that will need to be displayed on either all or any one of your work disciplines. By "disciplines" I mean the various disciplines that reflect your scope of work, such as Planting, Irrigation, Landscape Site, Grading, Drainage, Demolition, Lighting, etc.

This is the "parent" Site Base Models that all of the work will refer to, and the work will refer to it by having this drawing Xrefed into each discipline. The types of things this Site Base Model might include are:

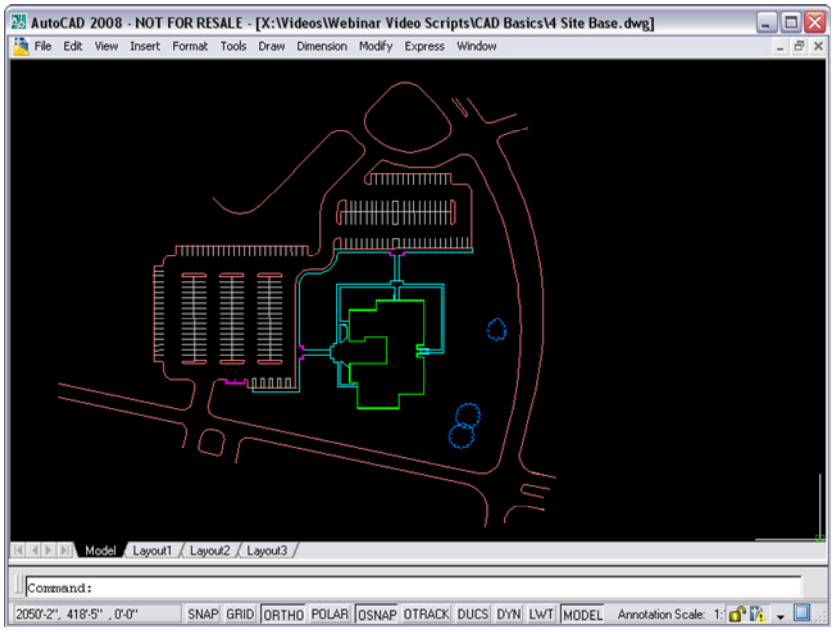
- Existing conditions.
- Items for demolition.
- New site design elements.
- Paving and hardscape layouts.
- Mow strips, header boards, or other planter related work.

- Street names, building names or numbers, or other titles that you will wish to appear on all of the other sheets. These names and titles may also be added to the Sheet Layout Master later on.

You would obviously use layer control to turn on or off certain layers of the site to reflect the desired information for each discipline.

You would Xref this Site Base Model into other drawings to do your work on. You may continually find yourself coming back to this Site Base Model during the design process to add or revise the site design or site elements, as this is the "parent" site base for all of your work.

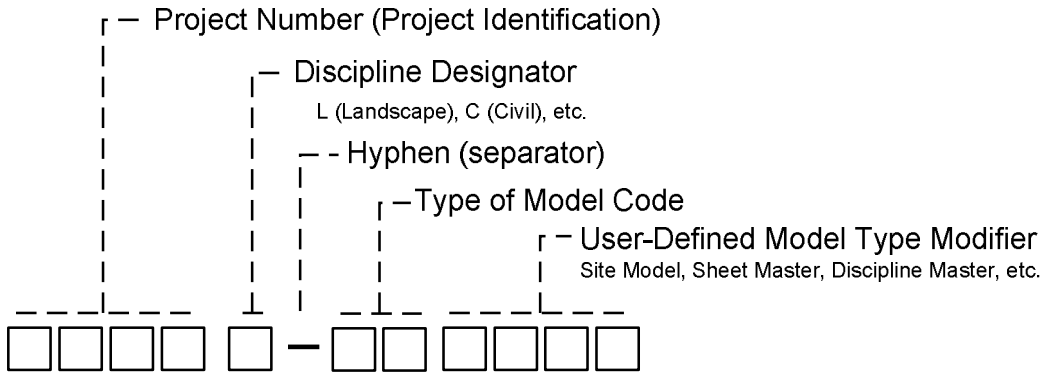
This Site Base Model would be compiled from one or more sources: you may have created it from your layout and site review; it might be the site base file supplied by the Civil Engineer, the Surveyor, the Architect, or the Client; or it may be a combination of all of those sources. At any case, you would have cleaned up this drawing to remove unwanted information and data, as per our webinars on the subject.



Example Site Model Base for a project site.

NCS CAD File Naming for the Site Model

It is optional, but desirable good CAD habits, to have any drawing file's name begin with the Project Number or Project Code for your project. The NCS recommendations for a Model file naming would be:



The Project Number and Discipline Designator are standard items defined previously. The Type of Model Code, with the NCS, is defined as:

FP Floor Plan
SP Site Plan
(see the NCS listing for the other examples)

Finally, there is a User-Defined modifier for defining what this model is of.

One CAD File Naming Suggestion

Our example of a file name for the Site Base Model will be a simpler variation of the NCS naming, specifically for a Project Number of “1108”, let's name this Site Base Model:

1108SITE-M.dwg

We don’t need a Discipline Designator (L) in the name (unless your are a multi-discipline firm and require it), as you already know what discipline you are, and the Type of Model Code does not make sense for this project as all we do is Landscape or site related work. It is mostly User-Definable anyway, and thus up to the individual firm for how they name it. Just be consistent, thus you may ask your fellow worker, “Have we finished the SITE-M drawing for this project?”…and by SITE-M all will know you mean “the Site Model that will form the basis of our work and drawing layouts”.

“SHEET LAYOUT MASTER” CAD FILE NAMING CONVENTIONS

These would form a master layout for the work as it relates to the sheet organization. The Site Base Model would be Xrefed into these files, and they would then be translated into how each discipline is represented as drawing sheets.

When you Xref:

You should always be careful to follow these guidelines when you Xref a Site Base Model into a drawing for your work:

- Keep the insertion point at 0,0. Do not change the location of the 0,0 insertion point from that on the Site Base Model.
- Keep the World Coordinate System (WCS) intact. Do not rotate the Xref of the Site Base Model differently than that on the original drawing. You may have to change or rotate the viewing of the site, but you will do that with a User Coordinate System (UCS) when you set up the sheet view.
- Verify that the units are correctly formatted.

The Sheet Layout Master will have all of the information that will be required for each discipline, such as titles, north arrow, scale, title blocks, street names, building names or numbers, etc., and any other such information that will appear on the sheet for each discipline in the drawing set.

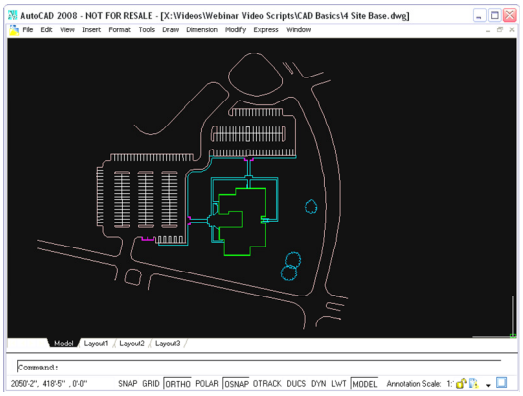
Note: The naming of different drawings below are possible suggestions, your naming of the different files is up to your discretion, as there is not set CAD standard.

Basic One Sheet Layout

The “Basic One Sheet Layout” is where the site is small enough to fit on just one sheet of the drawing set, at a proper scale, for each discipline.

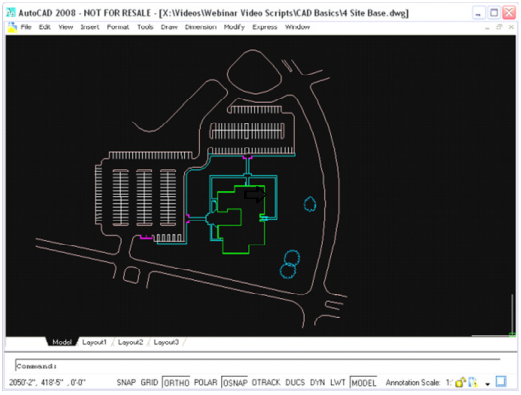
Xref the Site Base Model into a new drawing, and format the first Layout Tab as the sheet to represent the site for each discipline.

The Site Base Model
1108SITE-M.dwg

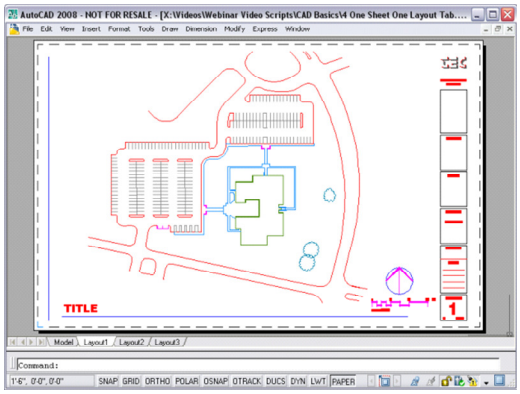


Xref the Site Base Model.

The Sheet Layout Master
1108LAND-X.dwg



Model Space of the drawing.



Layout Tab (Paper Space)
of the sheet layout.

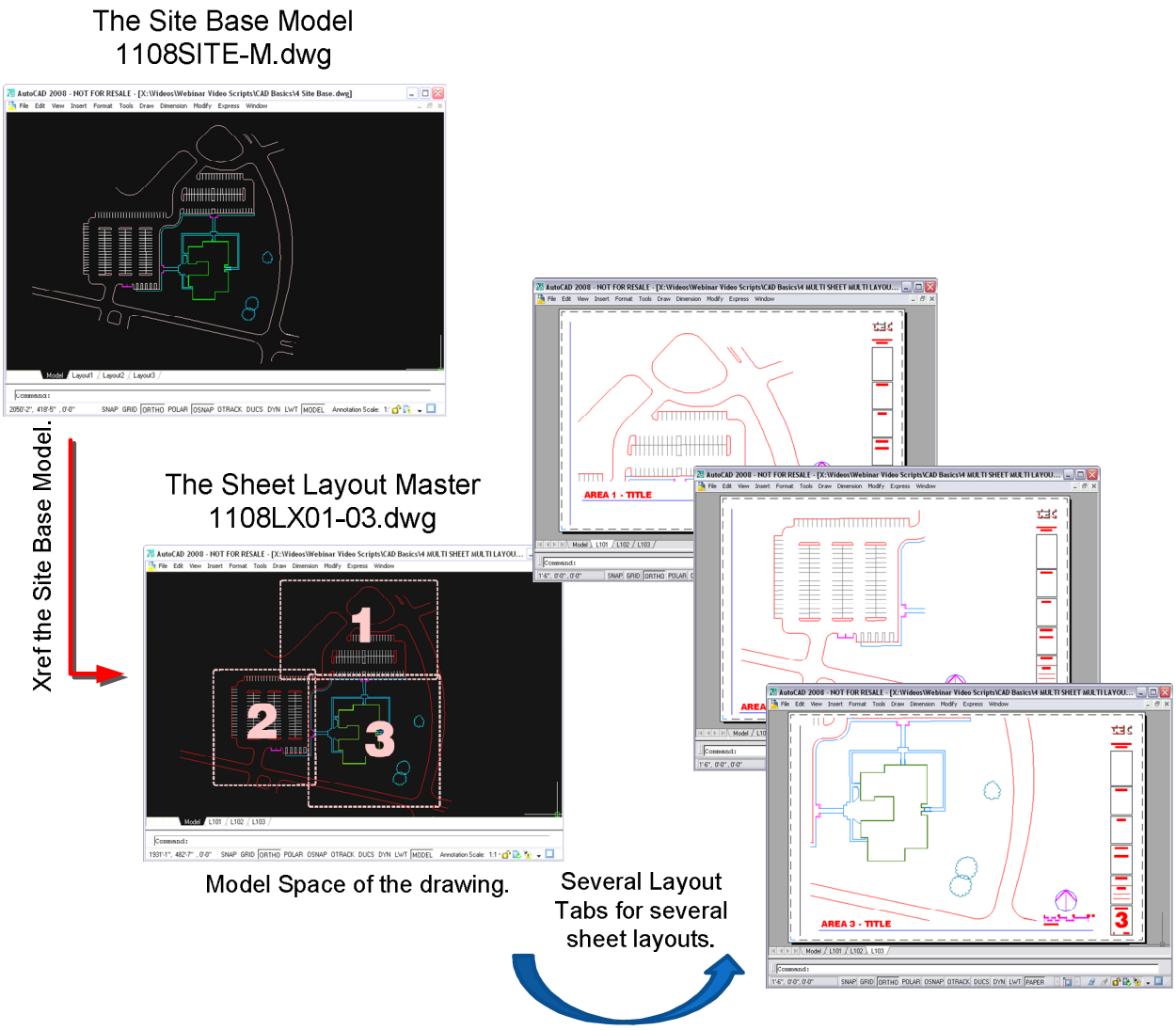
In this example the Site Base Model, *1108SITE-M.dwg*, is Xrefed into a drawing where the Site Base Model is reflected in the Model Space of the drawing, and only one sheet is necessary to view the site, so the first Layout Tab is formatted for the size of paper, with the proper title block, titles, north arrow, scale, etc. that will be necessary for all of the disciplines. This is you Sheet Layout Master and could be named:

1108LAND-X.dwg

for this example project (1108) LAND (for Landscape), and X for Master.
After you have saved this Sheet Layout Master, you can turn around and save it over and over as the various sheets in the drawing set, such as *1108L101.dwg, 1108L201.dwg,* and *1108L301.dwg* for the site, irrigation, and planting disciplines. You would always retain the original *1108LAND-X.dwg* for the unforeseen occasion in adding yet another discipline, such as a delayed request by the client for grading or lighting plans.

One DWG with Multiple Sheet Layouts

Where a site is large enough to be represented on several sheets you can use the above technique but have several Layout Tabs be several sheets. **Note:** This is not the recommended approach, but is a common approach for many firms in dealing with multiple sheets.



In this example the Site Base Model, *1108SITE-M.dwg*, is Xrefed into a drawing where the Site Base Model is reflected in the Model Space of the drawing, and several sheets are necessary to view the site, so there are several Layout Tabs formatted for the size of paper, with title blocks, north arrow, scale, etc. that will be necessary for all of the disciplines. This is you Sheet Layout Master and could be named:

1108LX01-03.dwg

for this project (1108) LX (for Landscape Master), and 01-03 for the three sheets in the drawing set for each discipline, such as L-101, L-102, and L-103.

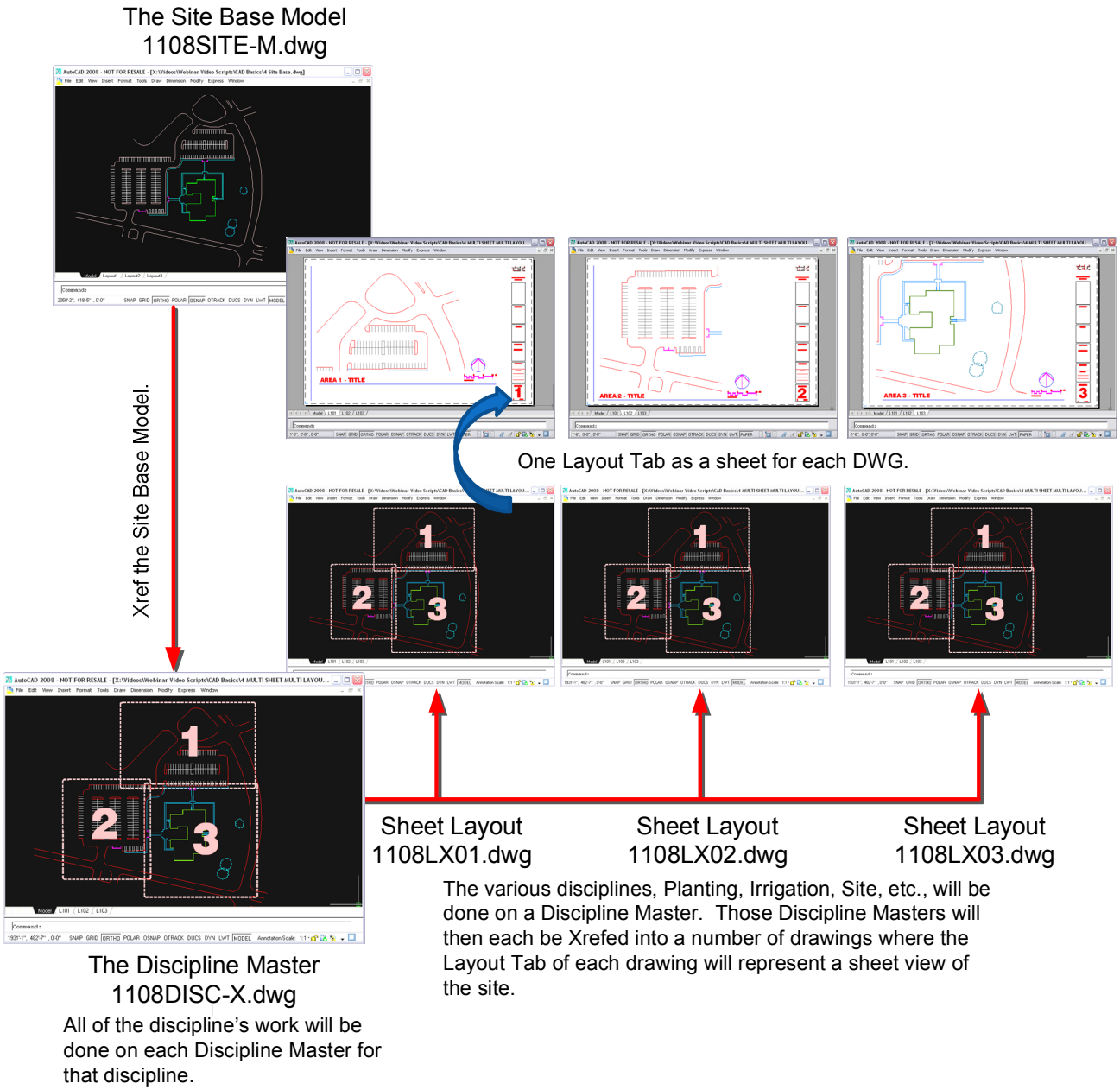
This is definitely the easiest method for setting up multiple sheets, but it may not be the preferable method considering CAD standards. The reason is that the name of the drawing file reflects many sheets, and that is counter to the desires of many firms and client requirements, where they need one CAD drawing to represent one sheet. If you don't care about that, this is an easy method, so use it.

After you have saved this Sheet Layout Master, you can turn around and save it over and over as the various disciplines the drawing set, such as *1108L101-103.dwg, 1108L201-203.dwg,* and *1108L301-303.dwg*, for the site, irrigation, and planting disciplines. You would always retain the original *1108LX01-03.dwg* for the unforeseen occasion in adding yet another discipline, such as a delayed request by the client for grading or lighting plans.

Multiple DWG's, Each Representing One Sheet and the Discipline Master

This is where a site is large enough to be represented on several sheets, but each CAD drawing must reflect only one sheet. This is the accepted practice with most firms. With this technique you need to have an interim drawing, the "Discipline Master". This Discipline Master will then be Xrefed into a number of drawings, each with one Layout Tab viewing one sheet area.

The Discipline Master:
This would be an Xref of the Site Base Model. You would then use this master for each discipline, and all of the work for each discipline would be done on one site drawing, then this drawing would be Xrefed into other drawings, each representing one sheet view of the site.



In this example the Site Base Model, *1108SITE-M.dwg*, is Xrefed into a drawing that will act as the Discipline Master. All of the work for each discipline, i.e., planting, irrigation, site work, will each be done on one Discipline Master, therefore there will be a master for each discipline, i.e., *1108PLANT-X.dwg*, *1108IRRG-X.dwg*, *1108SITE-X.dwg*, etc.

This Discipline Master should have a thought out organization of how the sheets are to be laid out, where Match Lines and Street Names or Building Numbers will occur, as all of the discipline work will be done on this one site, but will be viewed as individual sheets later.

The Resulting Sheet Master:
In setting up the Sheet Masters, you could make a Discipline Master, *1108DISC-X.dwg*, that will, in effect, be a somewhat temporary placeholder for the real Discipline Masters of the various disciplines, Planting, Irrigation, Site, etc. This "temporary" Discipline Master (DISC-X) will in turn be Xrefed into a number of fresh drawings that will serve as the sheet view.

Each of these Sheet Master drawings, representing each sheet, will in turn be prepared for the final master view of the sheet. If they site needs view rotations based on UCS, perform those. The Layout Tabs will need viewports correctly viewing the proper site area, title blocks, title locations, north arrow, scale notation, key map, and match lines to define the view cuts. You might also need street names, buildings names or numbers, etc. In other words, you will need to take the time to make sure this Sheet Master has all of the information on it that will be necessary for each discipline.

You would save each Sheet Master will a sheet number naming along the lines of:

1108LX01, 1108LX02, 1108LC03, etc.

This represents the Landscape Masters for the sheets 01, 02, 03, etc., of the sheet sets.

Setting Up Each Sheet of the Drawing Set
After you have prepared the Sheet Masters, you will then turn your attention to replacing the placeholder Discipline Master (DISC-X) with the correct Discipline Xref. Go to the original DISC-X drawing and resave it over and over as the master for the various disciplines, such as *1108PLANT-X.dwg* (Planting Discipline Master), *1108IRRIG-X.dwg* (Irrigation Discipline Master), etc.

After establishing your various discipline master base drawings, to back to the various Sheet Masters, and go to Model Space. Set the World Coordinate System as the active one (if it was set to a different UCS), and detach the DISC-X Xref. Now attach one of the Discipline Masters, such as *1108PLANT-X.dwg*. As the 0,0 insertion is retained, it should go in at exactly the same location as the DISC-X site base.

Now save this Sheet Master, let's say *1108LX01.dwg*, as the related planting sheet, and for this example planting will be the L300 series sheets. So it would be saved as *1108L301.dwg*, to represent sheet number L301 for project 1108, which is the Planting Plan. After saving this drawing, refine the titles to reflect the proper sheet number and planting related titles. Go through each Sheet Master, insert the proper Xref Discipline Master, and re-save it as a specific sheet, always retaining the original Sheet Master.

Doing Your Work on the Discipline Master
After you have set up each Discipline Master and coordinated their Xref into the specific sheets, you can start to do your work on each Discipline Master, i.e., do your planting on the PLANT-X and it will already be Xrefed and prepared for the various sheet views for the planting sheets.

For the most park, you will be doing all of your work for the entire project on this Discipline Master. The only variation from this would be unique requirements that may be demanded by

certain projects, such as various detail areas or alternates that may have to be considered. As you are doing your work on one plan, some care will have to be taken to understand where the sheet view breaks are occurring, so you don't have, for instance, callouts from one sheet being reflected in another sheet.

You would have a set location for your overall Planting Schedule in the Model Space of this Discipline Master. One of your sheets you would have set up would have a viewport looking at this schedule location, so if the schedule is updated, that update would be reflected on the sheet, as it is an Xref.

Printing of Your Drawing Set
To print the drawing set, simply load up each sheet and print the Layout Tab of the sheet. The only thing you may have to review is the date information in the title block.

"SHEET LAYOUT MASTER" CHECKLIST

The end result of any of the above methods is to produce a master that your sheets will be based upon. Each of these sheets should have all of the information in them that will be reflected in each discipline. This will save you time so that you only have to do the initial setup just once. Here is a checklist of some of the items to be concerned with when you setup these Sheet Masters:

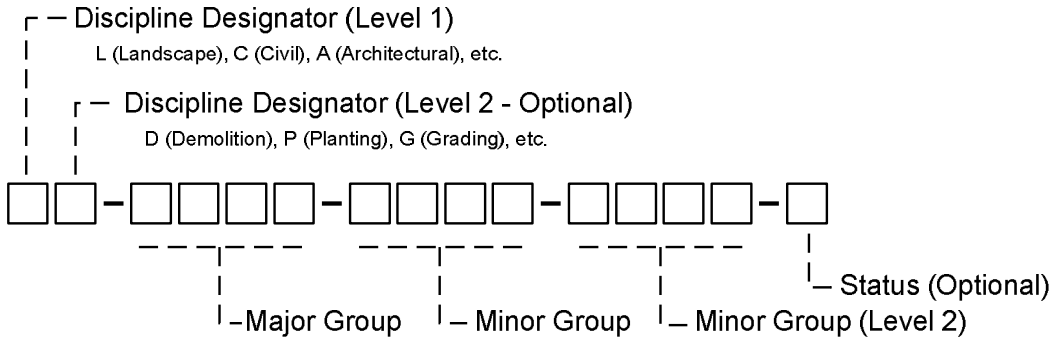
- Xref the Site Base Model or the Discipline Master, which would include the Site Base Model.
- Retain the 0,0 insertion point when you Xref the above so that both site plans will match in XY coordinate location.
- Always respect the World Coordinate System, WCS, when you Xref. Do not physically rotate the site to make it conform to your orientation needs, you will do that next.
- If you need to orient the viewing of the site, use the User Coordinate System, UCS, to do this. Land F/X has an automated method on doing this, see the Land F/X Help file *Drawing Setup/UCS Definition.*
- Format your Paper Space Layout Tab for the type of plotter, sheet size, and plotting *ctb* file.
- Insert your title block, as either a block that you explode and fill in the details, or as an Xref.
    - It is simpler, on smaller projects, to bring the title block in as a block, explode it, and fine tune the details, such as sheet number, date, etc. for each sheet.
    - Larger projects may require the title block to be brought in as an Xref, and even with attributes to be filled in, as the project has a large number of sheets in it, and this is an easier way to handle title block changes in the set.
- Insert the viewport, or viewports, as necessary for the sheet

- If you have UCS orientations to view the site as desired, orient those within the viewport. You can use the Land F/X Restore UCS function, listed in the Help file note previously.
- Scale the viewport and size it appropriately for the sheet. Use “vpclip” if necessary to shape the viewport for your viewing area.
- You may wish to “Lock” the viewport by highlighting it and right clicking for “Properties”. “Display locked” will be one of the options, and you can mark that as “Yes”.
- Place a text location for the sheet title. This will be edited for each discipline when you are ready.
- Place a north arrow and scale bar as necessary. Land F/X has a function for this, see the Help topic *Graphics/Discipline Graphics/North Arrow & Scale*.
- If not already in the Xref, add street names and building names or numbers, and other labels you may want on all disciplines. This can be in Model Space or Paper Space as you desire. Land F/X has a function for entering text and automating its scaling, see the Help topic *Graphics/Font Manager and Font Styles*.
- Place the Match Line indications as necessary. Land F/X has a function for this, see the Help topic *Graphics/Discipline Graphics/Callouts*.
- Insert a Key Map as required to highlight the view area for this sheet of the site.
- Set the *Land F/X Project* to the correct project.
- Set the *Land F/X Scale* to the scale of the viewport.

CAD LAYER NAMING GUIDELINES

NATIONAL CAD STANDARDS LAYER NAMING CONVENTIONS V3.1

NCS Basic Format



Discipline Designator (Level 1)
Discipline Designator in a one letter identifier that defines "Agent Responsible" (Design Professional who is professionally liable for the information by virtue of professional licensure and role on the project)

A B C D E F G H I L M O P Q R S T V W X Z are designators used by NCS.

Discipline Designator (Level 2)

One letter modifier of the Discipline Designator, an optional modifier as needed. Designators vary by discipline, with some examples:

D	Demolition
I	Irrigation
P	Planting
G	Grading
R	Relocation
S	Site
L	Lighting
J, K	*user defined*

Status

Optional where required

N	New Work
E	Existing to Remain
D	Existing to Demo
1-9	Phases

Major Group Codes

Four letter identifier to describe the major group. These vary by discipline, with some examples:

ANNO	Annotation
BLDG	Building
BNDY	Political boundary
BRKL	Break line
BLIN	Base line
DETL	Detail
ESMT	Easement
FENC	Fence
IRRG	Irrigation
PLNT	Planting
PVMT	Pavement
ROAD	Road
RRAP	Riprap
PRKG	Parking
PROP	Property boundaries
SWLK	Sidewalk
TOPO	Topographic
WALL	Wall
WATR	Water supply

Minor Group Codes

Four letter identifier to further describe the major group. These vary by discipline, with some examples:

DIMS	Dimensions
LABL	Label
LEGN	Legend
MATC	Match line
NOTE	Notes
REFR	External reference
SCHD	Schedule
SYMB	Symbols
TITL	Drawing or detail title
TTLB	Border or title block
TEMP	temporary
TOPB	Top of bank
TRAL	Trail/path
TREE	Trees
TURF	Turf area
UNDR	Underground
VEGE	Vegetation, trees, shrubs, etc

Annotation Layer Guidelines

Annotation consists of text, dimensions, notes, sheet borders, detail references

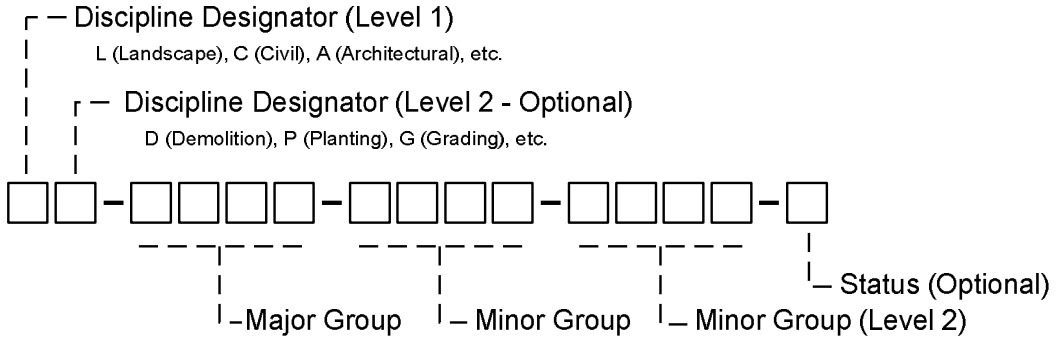
XX-ANNO-*as follows*

DIMS	dimensions
IDEN	Identification tag
KEYN	keynotes
LABL	labels
LEGN	legends, symbol keys
MATC	match line
NOTE	note
NPLT	non plot
REVC	revision cloud
REVS	revision
SCHD	schedules
SYMB	reference symbols
TEXT	text
TITL	title of drawing or detail
TTLB	title block

LAND F/X LAYERS

The naming of Land F/X layers conform to the National CAD Standards (NCS) V3.1 where possible. Land F/X primarily deals with layer naming of blocks that make up the components of Land F/X, and various related code layers such as for error checking or block placement. The naming of this type of layers is usually not considered by NCS, and as such, they are fairly unique. The layer names used in Land F/X by code can be adjusted to the users needs in the Land F/X Preferences. The layer names used in Land F/X blocks can be changed and adjusted on a mass level with the Land F/X function called *BatchMan*.

Land F/X Basic Format



Discipline Designator (Level 1)

Discipline Designator in a one letter identifier that defines “Agent Responsible” (Design Professional who is professionally liable for the information by virtue of professional licensure and role on the project)

L	Landscape
V	Survey

Discipline Designator (Level 2)

One letter optional modifier of the Discipline Designator. Designators vary by discipline, with some examples:

LI	Landscape Irrigation
LP	Landscape Planting
LS	Landscape Site
LL	Landscape Lighting
LK	Block

Land F/X Blocks Layer Naming

Discipline Designator

LK-	Landscape Block

Major Group Identifiers

-CONC	Concrete
-MSRY	Masonry
-METL	Metal
-WOOD	Wood
-IRRG	Irrigation
-PLNT	Plant
-TEXT	Text
-TREE	Tree
-SHRB	Shrub

Minor Group Identifiers

Used to further define the Major Group Identifiers, or used without a Major Group Identifier to generically define a block layer intent, i.e., simply drawing a line within a block with no distinct Major Group, as in LK-013M to define a thin line defining the block in a generic sense.

-013M	0.013mm (0.005”) line weight
-025M	0.25mm (0.010”) line weight
-035M	0.35mm (0.014”) line weight
-050M	0.50mm (0.020”) line weight
-070M	0.70mm (0.028”) line weight
-100M	1.00mm (0.040”) line weight
-CNTL	Center line
-HIDD	Hidden line
-NPLT	Non-plot
-PATT	Pattern

Land F/X Detail Layer Naming

Discipline Designator

L-DETL	Landscape Detail
*-DETL	“C” Civil Detail; “A” Architectural Detail, etc.

Major Group Identifiers

-013M	0.013mm (0.005”) line weight
-025M	0.25mm (0.010”) line weight
-035M	0.35mm (0.014”) line weight
-050M	0.50mm (0.020”) line weight
-070M	0.70mm (0.028”) line weight
-100M	1.00mm (0.040”) line weight
-CNTL	Center line
-HIDD	Hidden line
-NPLT	Non-plot
-PATT	Pattern
-DIMS	Dimension line
-FLFAB	Filter Fabric
-GRID	Grid
-PROP	Property Line
-RBAR	Reinforcement
-SM50	Screened Medium (0.35mm, 0.014”) line, screened to 50 percent
-SM60	Screened Medium (0.35mm, 0.014”) line, screened to 60 percent
-SM70	Screened Medium (0.35mm, 0.014”) line, screened to 70 percent
-SM80	Screened Medium (0.35mm, 0.014”) line, screened to 80 percent
-TEXT	Text

Minor Group Identifiers

-013M	0.013mm (0.005”) line weight
-025M	0.25mm (0.010”) line weight

-035M	0.35mm (0.014”) line weight
-SECT	Section
-ELEV	Elevation
WWFR	Woven wire fabric

Land F/X Irrigation Layer Naming

Discipline Designator

LI-*	Landscape Irrigation

Major Group Identifiers

-COVR	Coverage
-DRIP	Drip
-EQPM	Equipment
-LTRL	Lateral pipe
-MAIN	Mainline pipe
-SLVE	Sleeve
-SPKL	Heads
-VALV	Valve

Land F/X Planting Layer Naming

LP-TREE	Tree
LP-SHRB	Shrub
LP-VINE	Vine

Land F/X Site Layer Naming

These are suggested layer names, and are not used in any Land F/X code or blocks.

Discipline Designator

LS-*	Landscape Site

Major Group Identifiers

-CURB	curb
-CURB-BACK	back of curb
-CURB-FACE	face of curb
-DECK	decking
-FENC	fencing
-FENC-LINK	
-FENC-LINK-04FT(etc)	
-FENC-WOOD	
-FURN	furnishing
-PVMT	pavement edge
-PVMT-CONC	

-PVMT-JNTC	joint control
-PVMT-JNTE	joint expansion
-PVMT-PAVR	pavement edge unit pavers
-PVMT-STEP	
-RRAP	riprap
-SPRT	sports field
-SPRT-EQPM	equipment
-SPRT-PRIM	perimeter
-WALK	
-WALL	wall
-WALL-RTWL	retaining wall
-TOPO	proposed grading
-TOPO-INDX	index contour
-TOPO-INTR	intermediate contour
-TOPO-LIMI	limit of grading
-TOPO-SPOT	spot elevations