

Fig. 6 Plumb



Fig. 11 Levelling



Fig. 17 Levelling

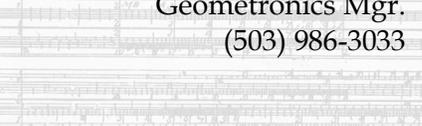


Fig. 18 Four foot Gauging Rod



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**CADASTRAL DRAFTING
TECHNICAL BULLETIN**

**TECHNICAL INFORMATION ON THE
DRAFTING OF SURVEY FILING MAPS**

June, 2008

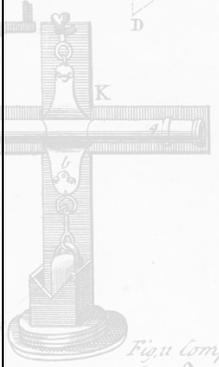


Fig. 8 Gunners Level



Fig. 9 Compass



Fig. 9 Levelling

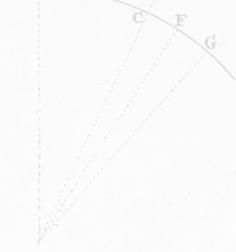


Fig. 10 Levelling

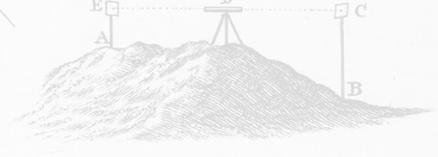


Fig. 16 Semi Circle



Fig. 12 Compass Surveying



Fig. 21 Circumferentor



Fig. 20 Circumferentor Plain Table



Fig. 25 Theodolite



Fig. 27 Gauging

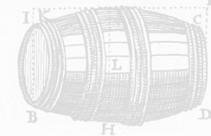


Fig. 23 Perambulator

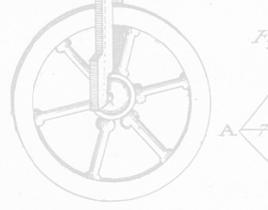


Fig. 24 Gress



Fig. 25 Theodolite



Fig. 30 Quadrant

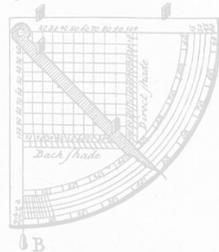


Fig. 29 Protractor

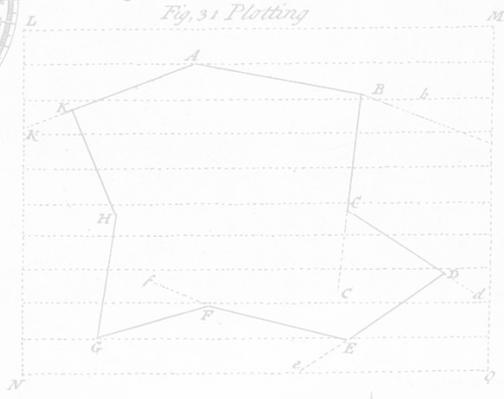


Fig. 31 Plotting

Fig. 31 Plain Table

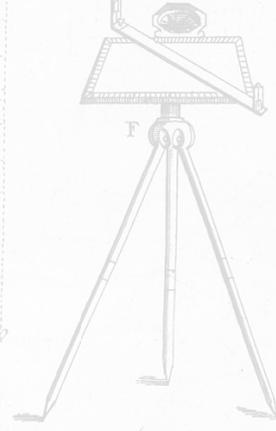


Fig. 34 Plain Table

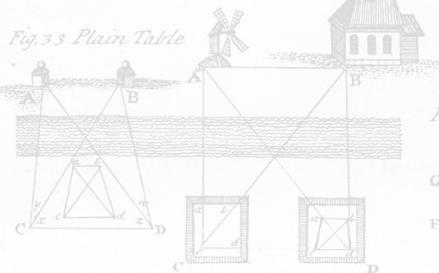
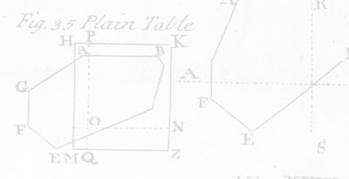


Fig. 33 Plain Table

Fig. 35 Plain Table



This technical bulletin contains information not found in the standards documents that is specific to the drafting of survey filing maps. The intent is to provide the drafter with documentation on the Cadastral drafting menu and the Cadastral cell library. The document also provides various tips and tricks involved with drafting that will help the drafter in producing the final products.

This bulletin is intended to be a dynamic document and will be updated periodically. Users are encouraged to submit tips and tricks that they have come across for inclusion in the bulletin.

Table of Contents

Appendix A	The Cadastral Drafting Menu
Appendix B	The Cadastral Drafting Menu Symbology
Appendix C	The Cadastral Cell Library
Appendix D	Tips and Tricks

Appendix A - The Cadastral Drafting Menu

An overview of the ODOT menu for use in drafting Survey Filing Maps and Right of Way Maps

The Cadastral drafting menu is an ODOT customized bar menu created to aid in the drafting and design of MicroStation files with ODOT's drafting standards for filed surveys and right of way maps. The menu utilizes pull down options which include commands to place text, draw features, place cells, call out macros, and other helpful MicroStation commands.

This document is intended to give the reader an overview of the overall look of the menu and the options available from the pull downs. For specific details of the symbology on the pull down options, refer to the Survey Filing Map standards and the Right of Way Engineering Manual.

The Cadastral Menu

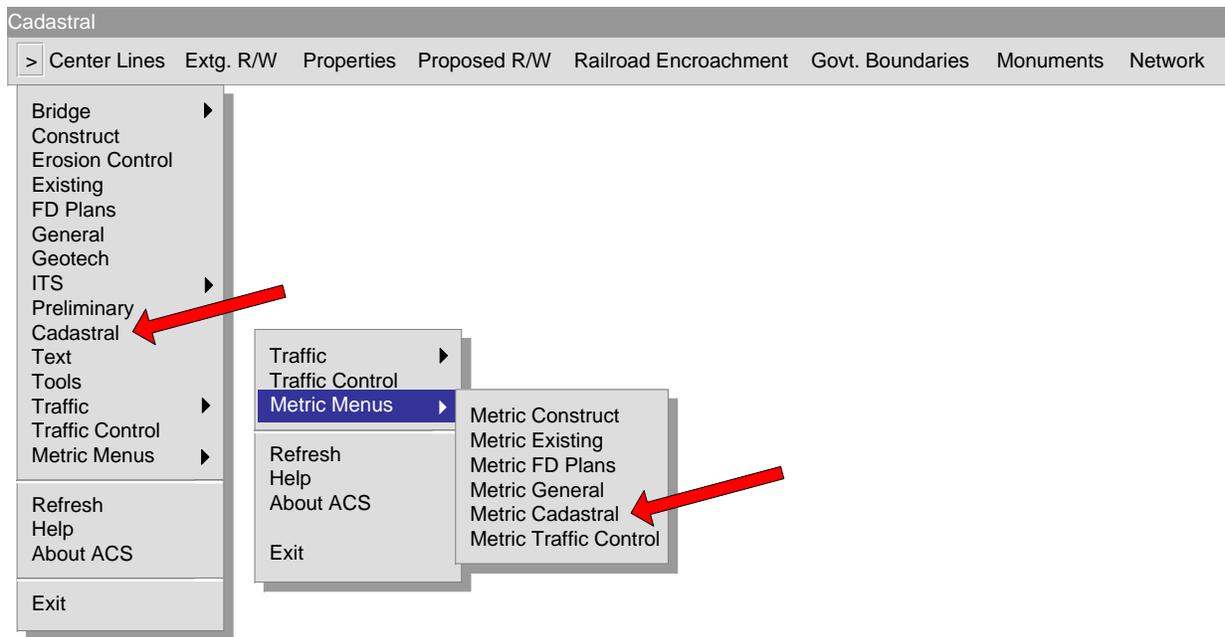
The Cadastral menu is divided into 13 sections, with each section being a pull down for specific options. The different pull down sections are: Menus, Center Lines, Extg. R/W, Properties, Proposed R/W, Railroad Encroachment, Govt. Boundaries, Monuments, Filed Survey Mapping, Right of Way Mapping, Misc., and Active Scale.

While filed surveys and right of way maps contain much the same information, the specific nature of the two disciplines dictates the final products have different looks. Menu options for a specific discipline only are broken out in a separate pull down or sub pull down. Menu options not broken out separately may be used for either discipline.



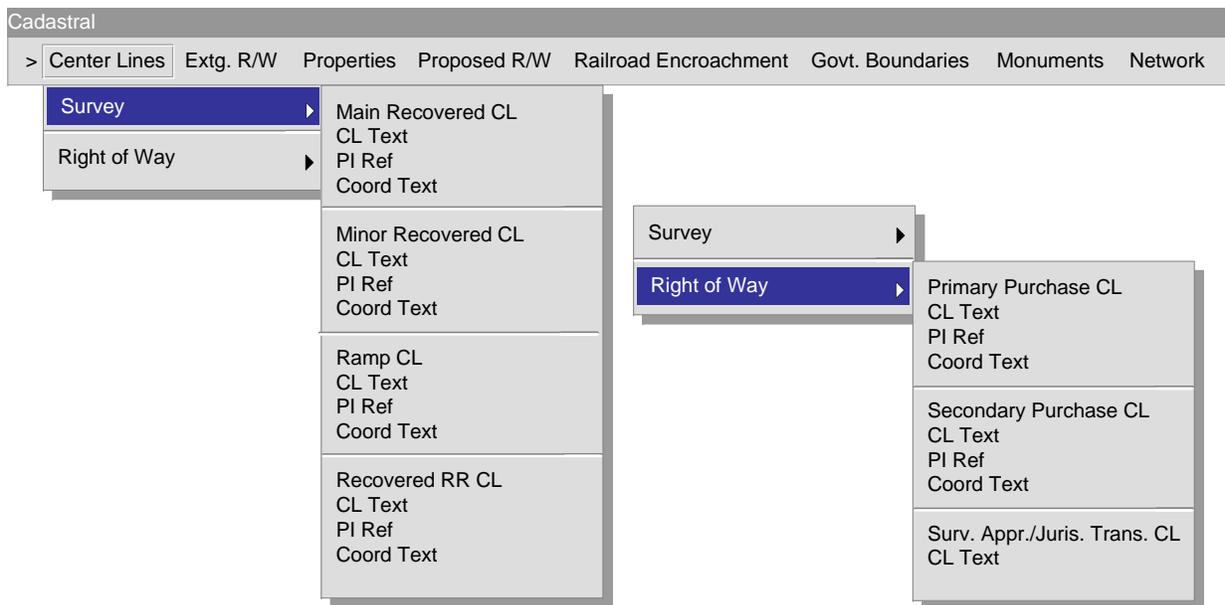
The Menus Pull down

The Menu pull down, is shown with the symbol ">" and is a standard pull down for all ODOT drafting menus. The pull down contains all the available menus for the various disciplines, plus tools and text. These menu choices allow the drafter to choose and switch between disciplines as needed. Both English and Metric menus are available to choose from, depending on the units of your drawing.



The Center Line Pull down

The Center Lines pull down is divided into two subpull down menus; Survey and Right of Way. The Survey subpull down allows you to choose center line, center line text, PI reference and Coordinate text symbology for Main Recovered Center line, Minor Recovered Center line, Interchange Ramp Center line and Railroad Recovered Center line. The Right of Way subpull down has options for Primary and Secondary Purchase Center lines, plus a specialized center line used on exhibits for resolution documents.

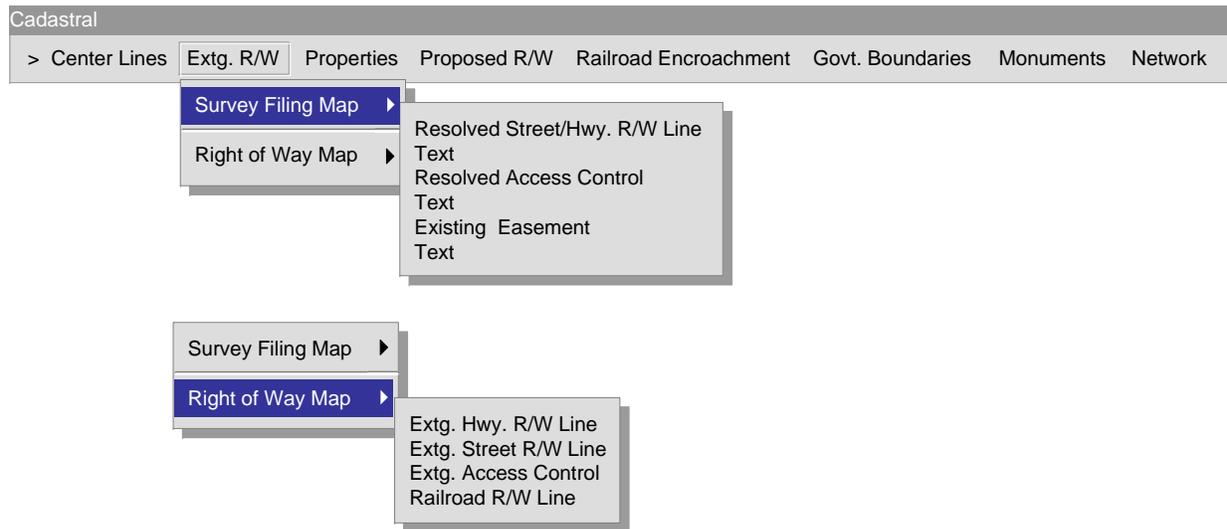


The Existing R/W Pull down

The Existing R/W pull down is divided into Survey Filing Map and Right of Way Map subpull downs. The Survey Filing Map subpull down contains linestyles and text for resolved street and highway R/W lines, resolved access control, and existing easements.

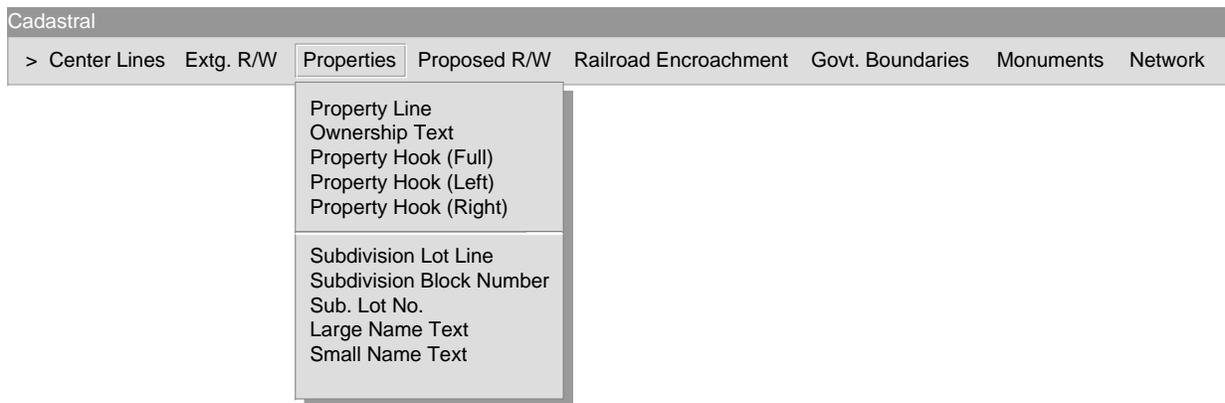
The Right of Way Map subpull down contains linestyles for existing highways, existing city streets or county roads, existing access control and railroad right of way lines.

The existing right of way lines on the two subpull downs have different symbology due to the different disciplines and have their own dedicated level structures.



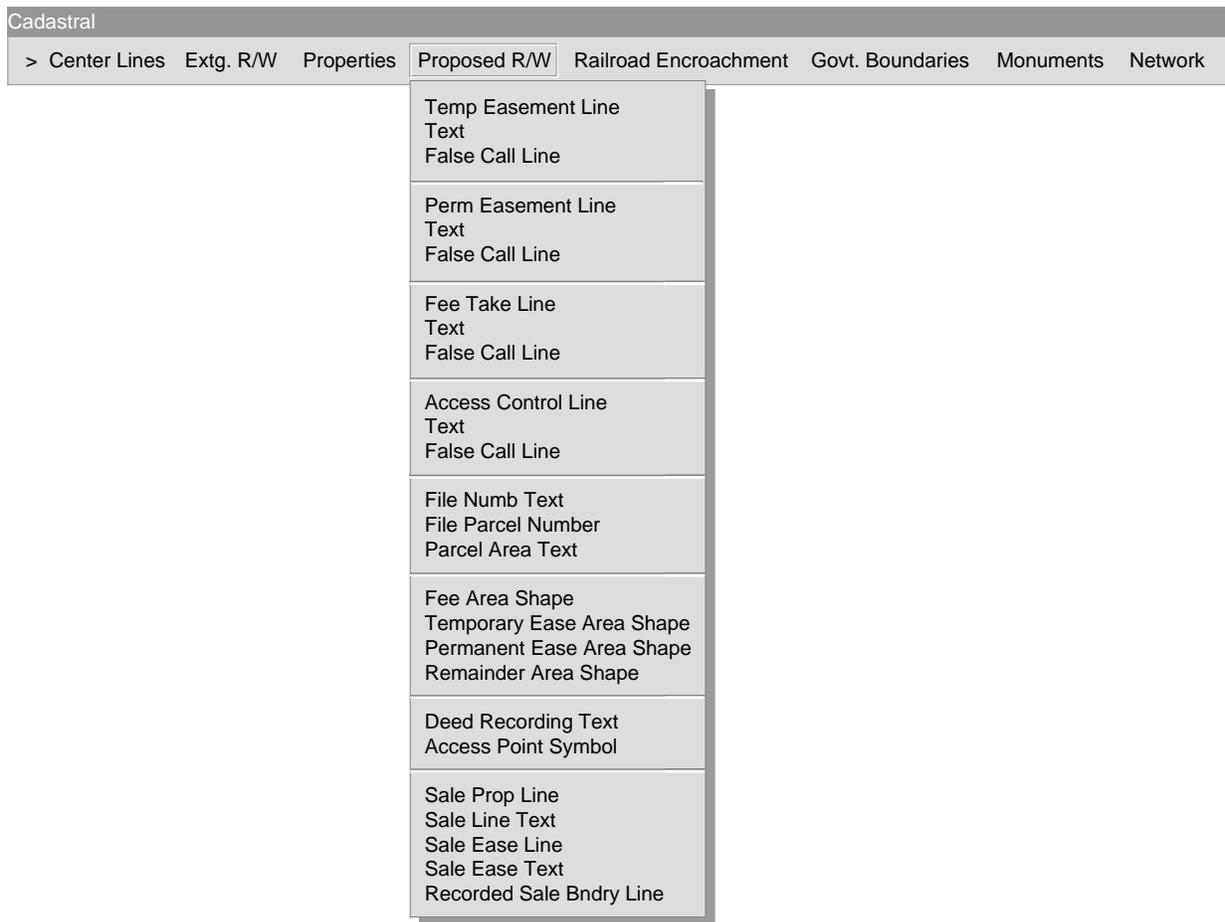
The Properties Pull down

The properties pull down contains options for placing existing private property lines, subdivision lot lines, subdivision lot and block numbers and names and property ownership names including vesting deed references. The pull down also contains symbols for placing hooks indicating common ownership across a boundary.



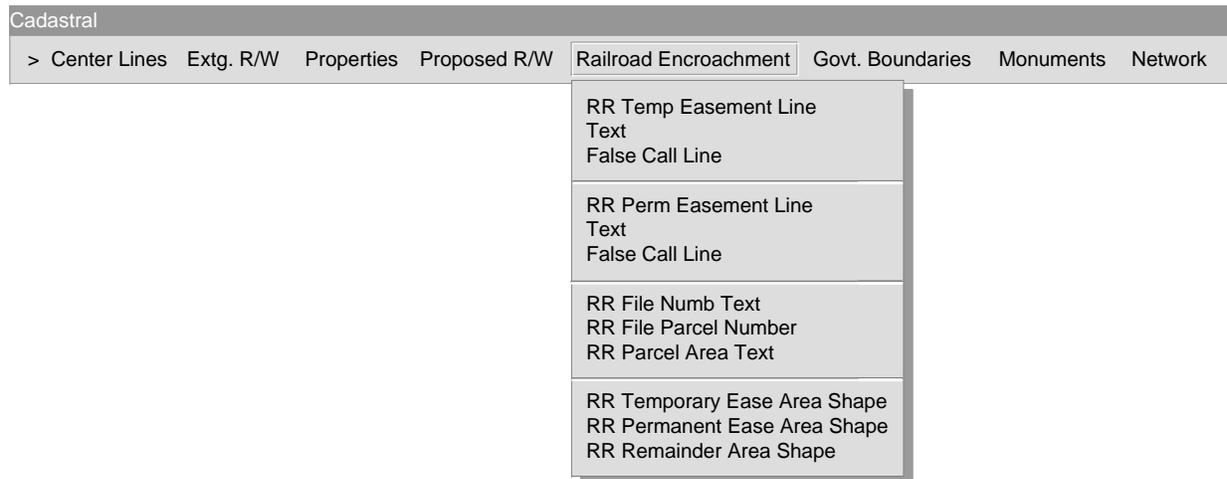
The Proposed Right of Way Pull down

The Proposed R/W pull down is used primarily for building the right of way acquisition map. The pull down contains all the lines, text and symbols for placing proposed new right of way acquisition lines, and text including Right of Way file numbers, area text and recorded acquisition deed information. The pull down also contains lines and text for surplus property sales.



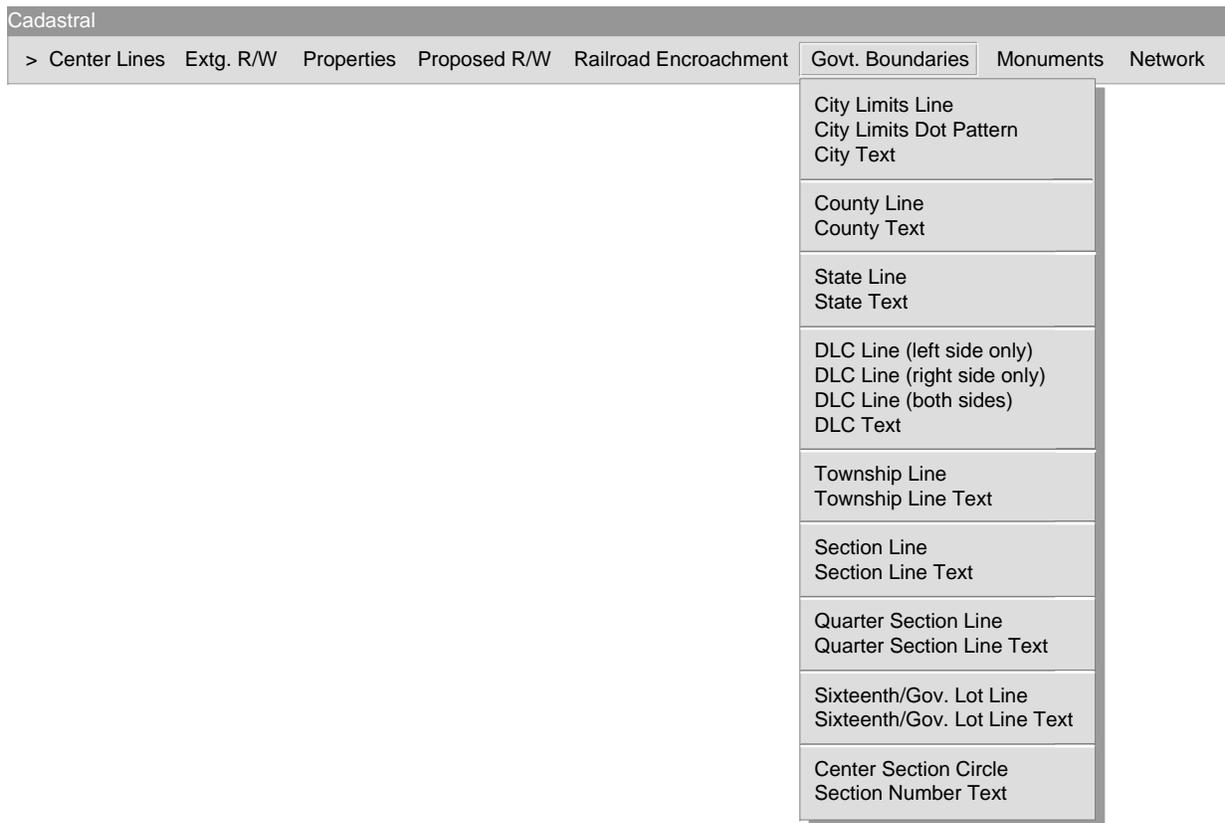
The Railroad Encroachment Pull down

Similar to the Proposed R/W pull down, the Railroad Encroachment pull down contains lines and text specifically for drafting proposed railroad acquisitions.



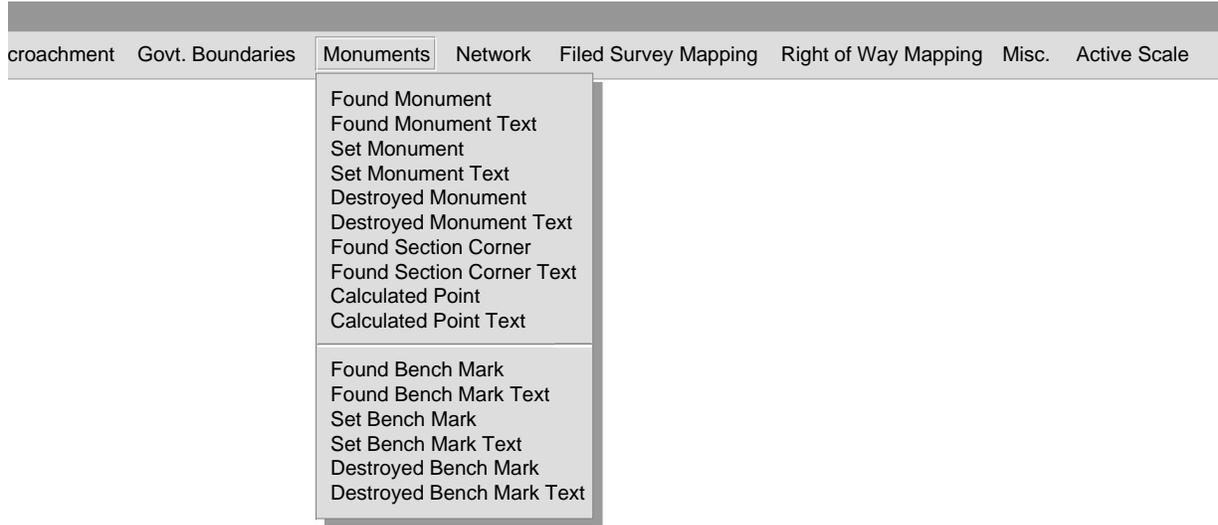
The Government Boundaries Pull down

The Govt. Boundaries pull down contains lines and text for placing City, County, State and Government Land Office boundaries. The options on this pull down may be used for both survey filing and right of way maps.



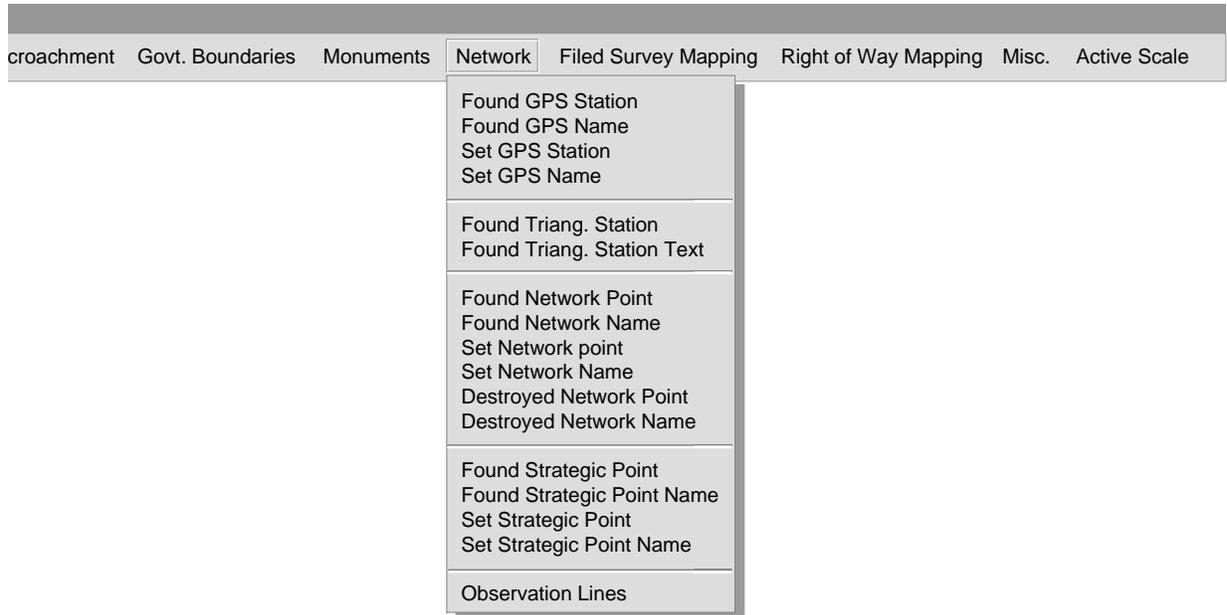
The Monuments Pull down

The Monuments pull down contains found, set and destroyed monuments, including calculated points and bench marks, used both in survey filing maps and right of way maps. The options found on this pull down may be used for both survey filing and right of way maps.



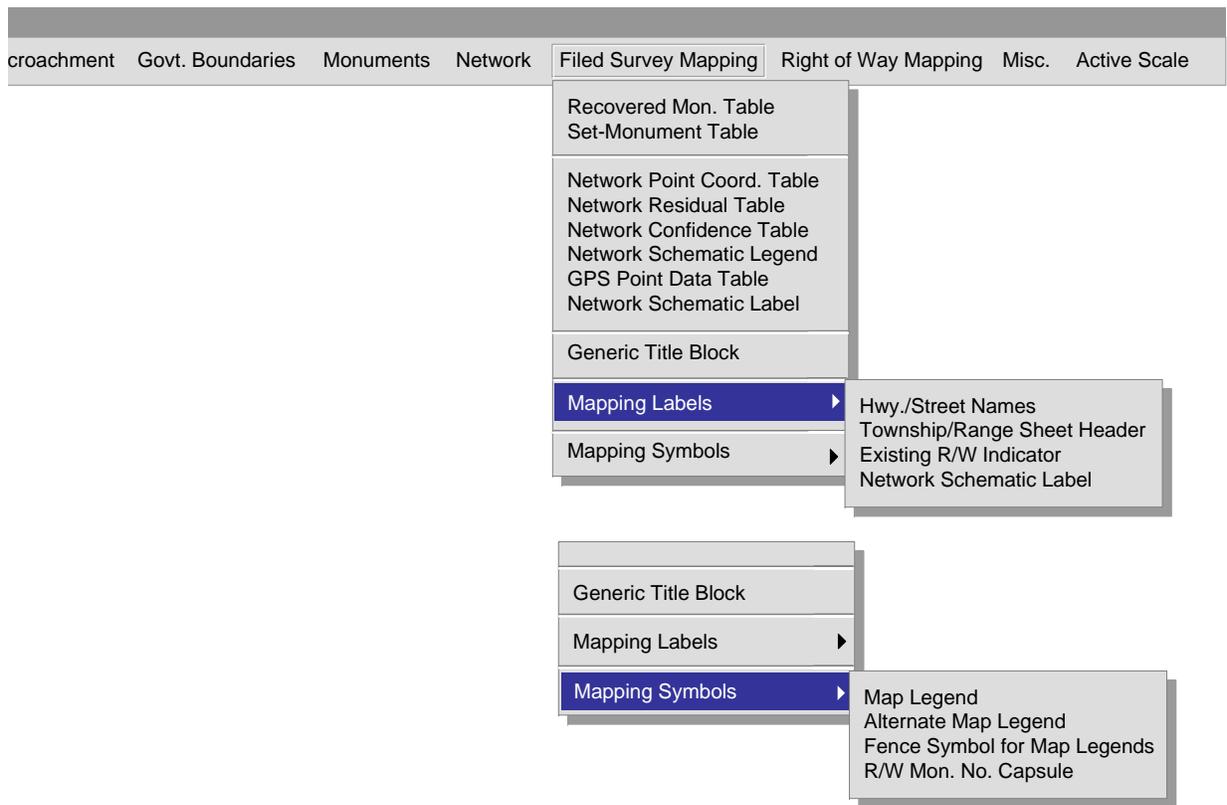
Network Pull down

The Network pull down contains found and set monuments and lines for survey networks, including GPS stations, Government Triangulation Stations, and observation lines. Though primarily for survey filing maps, these pull down options may also be used on right of way maps.



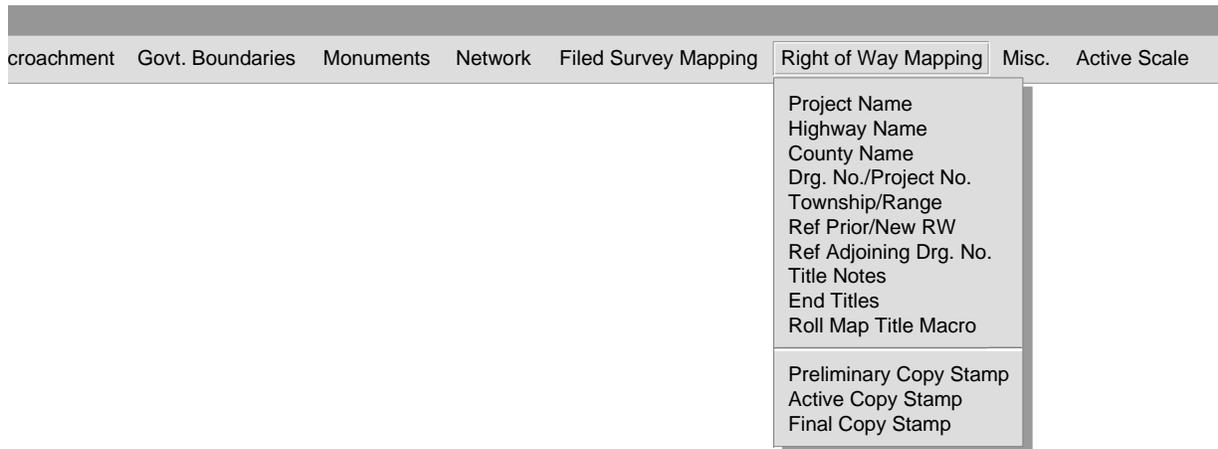
The Filed Survey Mapping Pull down

The Filed Survey Mapping pull down contains tables, symbols and text specific to producing the filed survey sheets.



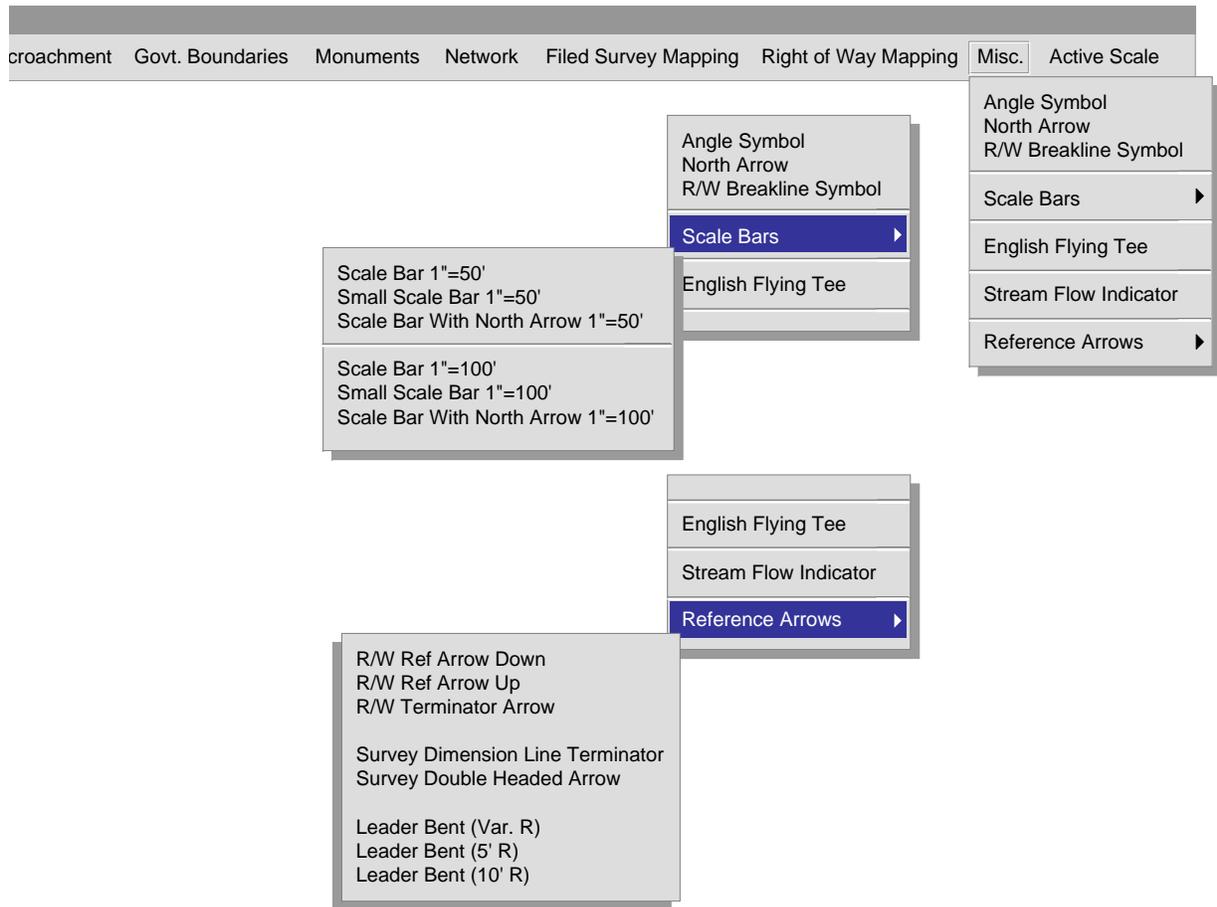
The Right of Way Mapping Pull down

The Right of Way Mapping pull down is specific to right of way map and drawings. It contains text and cells used to produce the titles and notes found within the plotting border of the right of way map.



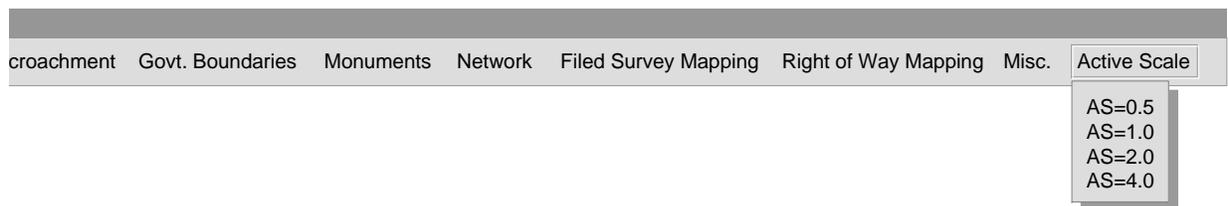
The Misc. Pull down

The Misc. pull down contains miscellaneous cells and elements common to both survey filing and right of way maps. Two subpull downs provide options for scale bars both for 1"=50' and 1"=100' drawings. The reference arrow subpull down provide options for terminator arrows and leaders for both right of way maps and filed surveys.



The Active Scale Pull down

The Active Scale pull down contains several options for setting the active scale of the CAD file. This is a standard pull down found on all ODOT drafting menus.



Appendix B - The Cadastral Drafting Menu Symbology

This appendix contains the symbology for all the elements found in the Cadastral Drafting Menu. The symbology tables contain level names, color, weight, styles, text sizes and fonts, cell names and menu macros. The following is a general layout of the symbology tables.

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Center Lines											
Survey											
Main Recovered CL	E_SURV_ALIGN_Main	3	5	0							
CL Text	E_SURV_ALIGN_MainTx	0	2	0	6	6	24	4	lb		
PI Ref	E_SURV_ALIGN_Main	0	1	2							
Coord Text	E_SURV_ALIGN_MainTx	0	1	0	5	5	24	3.333	lt		

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Center Lines											
Survey											
Main Recovered CL	E_SURV_ALIGN_Main	3	5	0							
CL Text	E_SURV_ALIGN_MainTx	0	2	0	6	6	24	4	lb		
PI Ref	E_SURV_ALIGN_Main	0	1	2							
Coord Text	E_SURV_ALIGN_MainTx	0	1	0	5	5	24	3.333	lt		
Minor Recovered CL	E_SURV_ALIGN_Minor	3	5	0							
CL Text	E_SURV_ALIGN_MinorTx	0	2	0	6	6	24	4	lb		
PI Ref	E_SURV_ALIGN_Minor	0	1	2							
Coord Text	E_SURV_ALIGN_MinorTx	0	1	0	5	5	24	3.333	lt		
Ramp CL	E_SURV_ALIGN_Ramp	3	5	0							
CL Text	E_SURV_ALIGN_RampTx	0	2	0	6	6	24	4	lb		
PI Ref	E_SURV_ALIGN_Ramp	0	1	2							
Coord Text	E_SURV_ALIGN_RampTx	0	1	0	5	5	24	3.333	lt		
Recovered RR CL	P_RW_ALIGN_RR	3	2	0							
CL Text	P_RW_ALIGN_RRTx	0	2	0	6	6	24	4	lb		
PI Ref	P_RW_ALIGN_RR	0	1	2							
Coord Text	P_RW_ALIGN_RRTxCoor	0	1		5	5	24	3.333	lt		
Right of Way											
Primary Purchase CL	P_RW_ALIGN_Prim	3	5	0							
CL Text	P_RW_ALIGN_PrimTx	0	2	0	6	6	24	4	lb		
PI Ref	P_RW_ALIGN_Prim	0	1	2							
Coord Text	P_RW_ALIGN_PrimTxCoor	0	1	0	5	5	24	3.333	lt		
Secondary Purchase CL	P_RW_ALIGN_Sec	3	2	0							
CL Text	P_RW_ALIGN_SecTx	0	2	0	6	6	24	4	lb		
PI Ref	P_RW_ALIGN_Sec	0	1	2							
Coord Text	P_RW_ALIGN_SecTxCoor	0	1	0	5	5	24	3.333	lt		
Surv. Appr. \Juris. Trans. CL	P_RW_ALIGN_SurvApp	3	0	survey app_V8							
CL Text	P_RW_ALIGN_SurvAppTx	0	2	0	6	6	24	4	lb		

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Extg. R/W											
Survey Filing Map											
Resolved Street/Hwy. R/W Line	E_SURV_BNDRY_SROW	4	4	0							
Text	E_SURV_BNDRY_SROWTx	4	4	0	5	5	2	3.333	lc		
Resolved Access Control	E_SURV_BNDRY_SAccessControl	4	4	access_V8							
Text	E_SURV_BNDRY_SAccessControlTx	4	4	0	5	5	2	3.333	lc		
Existing Easement	E_SURV_BNDRY_Easement	4	1	2							
Text	E_SURV_BNDRY_EasementTx	4	1	0	5	5	2	3.333	lb		
Right of Way Map											
Extg. Hwy. R/W Line	E_SURV_BNDRY_ROW	4	1	0							
Extg. Street R/W Line	E_SURV_BNDRY_CROW	4	1	0							
Extg. Access Control	E_SURV_BNDRY_AccessControl	4	1	access_V8							
Railroad R/W Line	E_SURV_BNDRY_RROW	4	1	rrr/w_V8							
Properties											
Property Line	E_SURV_BNDRY_Property	4	1	0							
Ownership Text	E_SURV_BNDRY_OwnerTx	4	2	0	6	6	24	4	cc		
Property Hook (Full)	E_SURV_BNDRY_Property	0	1							hook	
Property Hook (Left)	E_SURV_BNDRY_Property	0	1							hookleft	
Property Hook (Right)	E_SURV_BNDRY_Property	0	1							hookright	
Subdivision Lot Line	E_SURV_BNDRY_Subdivision	4	1	4							
Subdivision Block Number	E_SURV_BNDRY_SubdivisionTx	4	2	0	6	6	24	0	cc		rwcir\ b
Sub. Lot No.	E_SURV_BNDRY_SubdivisionTx	4	1	0	5	5	24	3.333	cc		
Large Name Text	E_SURV_BNDRY_SubdivisionTx	4	2	0	18	18	42	12	cc		
Small Name Text	E_SURV_BNDRY_SubdivisionTx	4	2	0	12	12	42	8	cc		

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Proposed R/W											
Temp Easement Line	P_RW_EASE_Temp	5	2	2							
Text	P_RW_EASE_TempTx	5	1	0	5	5	24	3.333	lc		
False Call Line	P_RW_EASE_Temp	5	1	1							
Perm Easement Line	P_RW_EASE_Perm	5	2	2							
Text	P_RW_EASE_PermTx	5	1	0	5	5	24	3.333	lc		
False Call Line	P_RW_EASE_Perm	5	1	1							
Fee Take Line	P_RW_FEE_Normal	5	3	0							
Text	P_RW_FEE_NormalTx	5	2	0	5	5	24	3.333	lc		
False Call Line	P_RW_FEE_Normal	5	1	1							
Access Control Line	P_RW_FEE_Access	5	3	access_V 8							
Text	P_RW_FEE_AccessTx	5	2	0	5	5	24	3.333	lc		
False Call Line	P_RW_FEE_Access	5	1	1							
File Numb Text	P_RW_FILE_NumTx	5	2	0	8	8	24	5.5	lb		
File Parcel Number	P_RW_FILE_ParcelNumTx	5	1	0	5	5	24	0	cc	apar	rwcir\p
Parcel Area Text	P_RW_FILE_ParcelAreaTx	5	1	0	5	5	24	3.333	lc		
Fee Area Shape	P_RW_FILE_AreaShapeFee	0	0	0							
Temporary Ease Area Shape	P_RW_FILE_AreaShapeEaseTemp	0	0	0							
Permanent Ease Area Shape	P_RW_FILE_AreaShapeEasePerm	0	0	0							
Remainder Area Shape	P_RW_FILE_AreaShapeRemain	0	0	0							
Deed Recording Text	P_RW_FILE_DeedRecTx	5	1	0	5	5	24	3.333	lc		
Access Point Symbol	R_RW_FILE_AccessPoints	5	1	0	5	5	3	0	cc	access	rwcir\a
Sale Prop Line	P_RW_SALE_PropLine	3	3	0							
Sale Line Text	P_RW_SALE_PropLineTx	3	2	0	5	5	24	3.333	lc		
Sale Ease Line	P_RW_SALE_Ease	3	2	2							
Sale Ease Text	P_RW_SALE_EaseTx	3	1	0	5	5	24	3.333	lc		
Recorded Sale Bndry Line	P_RW_SALE_Boundary	3	7	3							

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Railroad Encroachment											
RR Temp Easement Line	P_RW_EASE_RRTemp	5	2	2							
Text	P_RW_EASE_RRTempTx	5	1	0	5	5	24	3.333	lc		
False Call Line	P_RW_EASE_RRTemp	5	1	1							
RR Perm Easement Line	P_RW_EASE_RRPerm	5	2	2							
Text	P_RW_EASE_RRPermTx	5	1	0	5	5	24	3.333	lc		
False Call Line	P_RW_EASE_RRPerm	5	1	1							
RR File Numb Text	P_RW_FILE_RRNumTx	5	2	0	8	8	24	5.5	lb		
RR File Parcel Number	P_RW_FILE_RRParcelNumTx	5	1	0	5	5	24	0	cc	apar	rwcir\p
RR Parcel Area Text	P_RW_FILE_RRParcelAreaTx	5	1	0	5	5	24	3.333	lc		
RR Temporary Ease Area Shape	P_RW_FILE_RRAreaShapeEaseTemp	0	0	0							
RR Permanent Ease Area Shape	P_RW_FILE_RRAreaShapeEasePerm	0	0	0							
RR Remainder Area Shape	P_RW_FILE_RRAreaShapeRemain	0	0	0							
Govt. Boundaries											
City Limits Line	E_SURV_BNDRY_GovCity	6	2	city_V8							
City Limits Dot Pattern	E_SURV_BNDRY_GovCity			citydot_V8							
City Text	E_SURV_BNDRY_GovCityTx	6	2	0	8	8	2	5.5	lb		
County Line	E_SURV_BNDRY_GovCounty	6	3	county_V8							
County Text	E_SURV_BNDRY_GovCountyTx	6	3	0	8	8	2	8	lb		
State Line	E_SURV_BNDRY_GovState	6	5	state_V8							
State Text	E_SURV_BNDRY_GovStateTx	6	5	0	8	8	2	11	lb		
DLC Line (left side only)	E_SURV_BNDRY_GovDLCLine	6	1	dlc1_V8							
DLC Line (right side only)	E_SURV_BNDRY_GovDLCLine	6	1	dlc2_V8							
DLC Line (both sides)	E_SURV_BNDRY_GovDLCLine	6	1	dlc3_V8							
DLC Text	E_SURV_BNDRY_GovDLCLineTx	6	5	0	8	8	2	8	cc		
Township Line	E_SURV_BNDRY_GovTownship	6	5	0							
Township Line Text	E_SURV_BNDRY_GovTownshipTx	6	3	0	8	8	2	5.5	lb		
Section Line	E_SURV_BNDRY_GovSectionLine	6	3	0							
Section Line Text	E_SURV_BNDRY_GovSectionLineTx	6	3	0	8	8	2	5.5	lb		

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Govt. Boundaries (Cont.)											
Quarter Section Line	E_SURV_BNDRY_GovQuartsectLine	6	2	quarter_V8							
Quarter Section Line Text	E_SURV_BNDRY_GovQuartsectLineTx	6	3	0	8	8	2	5.5	lb		
Sixteenth/Gov. Lot Line	E_SURV_BNDRY_GovSixSectLine	6	1	sixsec_V8							
Sixteenth/Gov. Lot Line Text	E_SURV_BNDRY_GovSixSectLineTx	6	3	0	8	8	2	5.5	lb		
Center Section Circle	E_SURV_MON_FdCorner	6	2	0						ctrsec	
Section Number Text	E_SURV_BNDRY_GovSixSectLineTx	6	3	0	8	8	2	5.5	cc		
Monuments											
Found Monument	E_SURV_MON_FdMon	4		0							
Found Monument Text	E_SURV_MON_FdMonTx	4	1	0	5	5	2	3.33	lt		
Set Monument	E_SURV_MON_SetMon	4		0							
Set Monument Text	E_SURV_MON_SetMonTx	4	1	0	5	5	2	3.33	lt		
Set Center Line Monument	E_SURV_MON_SetCLMon	4		0							
Set Center Line Monument Text	E_SURV_MON_SetCLMonTx	4	1	0	5	5	2	3.33	lt		
Destroyed Monument	E_SURV_MON_DestroyedMon	4		0							
Destroyed Monument Text	E_SURV_MON_DestroyedMonTx	4	1	0	5	5	2	3.33	lt		
Found Section Corner	E_SURV_MON_FdCorner	6	3	0	8	8	2			seccor	seccor
Found Section Corner Text	E_SURV_MON_FdCornerTx	6	1	0	5	5	2	3.33	lt		
Calculated Point	E_SURV_MON_CalcPt										
Calculated Point Text	E_SURV_MON_CalcPtTx	4	1	0	5	5	2	3.33	lt		
Found Bench Mark	E_SURV_MON_FdBm										
Found Bench Mark Text	E_SURV_MON_FdBmTx	4	1	0	5	5	2	3.33	lt		
Set Bench Mark	E_SURV_MON_SetBm										
Set Bench Mark Text	E_SURV_MON_SetBmTx	4	1	0	5	5	2	3.33	lt		
Destroyed Bench Mark	E_SURV_MON_DestroyedBm										
Destroyed Bench Mark Text	E_SURV_MON_DestroyedBmTx	4	1	0	5	5	2	3.33	lt		

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Network											
Found GPS Station	E_SURV_NTW_FdGPS		1								
Fd GPS Name	E_SURV_NTW_FdGPSTx	4		0	5	5	2	3.33	lt		
Set GPS Station	E_SURV_NTW_SetGPS										
Set GPS Name	E_SURV_NTW_SetGPSTx	4	1	0	5	5	2	3.33	lt		
Found Triang. Station	E_SURV_NTW_FdTriSta										
Found Triang. Station Text	E_SURV_NTW_FdTriStaTx	4	1	0	5	5	24	3.33	lt		
Found Network Point	E_SURV_NTW_FdNtwPt										
Found Network Name	E_SURV_NTW_FdNtwPtTx	3	1	0	5	5	2	3.33	lt		
Set Network Point	E_SURV_NTW_SetNtwPt										
Set Network Name	E_SURV_NTW_SetNtwPtTx	3	1	0	5	5	2	3.33	lt		
Destroyed Network Point	E_SURV_NTW_DestroyedNtwPt										
Destroyed Network Name	E_SURV_NTW_DestroyedNtwPtTx	3	1	0	5	5	2	3.33	lt		
Found Strategic Point	E_SURV_NTW_FdStrategicPt										
Found Strategic Point Name	E_SURV_NTW_FdStrategicPtTx	3	1	0	5	5	2	3.33	lt		
Set Strategic Point	E_SURV_NTW_SetStrategicPt										
Set Strategic Point Name	E_SURV_NTW_SetStrategicPtTx	3	1	0	5	5	2	3.33	lt		
Destroyed Strategic Point	E_SURV_NTW_DestroyedStrategicPt										
Destroyed Strategic Point Name	E_SURV_NTW_DestroyedStrategicPtTx	3	1	0	5	5	2	3.33	lt		
Observation Lines	E_SURV_NTW_ObservationLine	3	1	0							
Filed Survey Mapping											
Tables											
Recovered Mon. Table	E_SURV_MAPS_General									Month1	
Set-Monument Table	E_SURV_MAPS_General									smlist	
Network Point Coord. Table	E_SURV_MAPS_General									nettbl	
Network Residual Table	E_SURV_MAPS_General									resid	
Network Confidence Table	E_SURV_MAPS_General									contbl	
GPS Point Data Table	E_SURV_MAPS_General									gpstbl	
Generic Title Block	E_SURV_MAPS_General									tblock	

Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Filed Survey Mapping (Cont.)											
Mapping Labels											
Hwy./Street Names	E_RDWY_ROAD_NameTx	2	2	0	9.4	9.4	2	6.267	lt		
Township/Range Sheet Header	E_SURV_MAPS_NarrText	0	1	0	6	6	4	4	lt		
Existing R/W Indicator	E_SURV_BNDRY_ROWText									extgrw	
Network Schematic Label	E_SURV_NTWBasisofBearingTX	3								basis	
Mapping Symbols											
Map Legend	E_SURV_MAPS_General									legend	
Alternate Map Legend	E_SURV_MAPS_General									legnd2	
Network Schematic Legend	E_SURV_MAPS_General									netleg	
Fence Symbol for Map Legends	E_SURV_MAPS_General									fensym	
R/W Mon. No. Capsule	E_SURV_MAPS_General									moncap	
Right of Way Mapping											
Project Name	P_RW_PLANS_DrawingTx	0	7	0	18	18	2	12	cc		
Highway Name	P_RW_PLANS_DrawingTx	0	3	0	12	12	2	8	cc		
County Name	P_RW_PLANS_DrawingTx	0	3	0	8	8	2	5.5	cc		
Drg. No./Project No.	P_RW_PLANS_DrawingTx	0	3	0	8	8	2	5.5	cc		
Township/Range	P_RW_PLANS_DrawingTx	0	3	0	8	8	2	5.5	cc		
Ref Prior/New RW	P_RW_PLANS_DrawingTx	0	5	0	12	12	2	8	cc		
Ref Adjoining Drg. No.	P_RW_PLANS_DrawingTx	0	3	0	8	8	2	5.5	cc		
Title Notes	P_RW_PLANS_DrawingTx	0	1	0	8	8	2	5.5	lt		
End Titles	P_RW_PLANS_DrawingTx	0	3	0	8	8	2	5.5	lt		
Roll Map Title Macro	P_RW_PLANS_DrawingTx									rwtitle	
Preliminary Copy Stamp	P_RW_PLANS_Symbols	4								rw preliminary	
Active Copy Stamp	P_RW_PLANS_Symbols	4								rw active	
Final Copy Stamp	P_RW_PLANS_Symbols	4								rw final	
Misc.											
Angle Symbol	P_RW_ALIGN_GenTx										
North Arrow	P_RW_PLANS_Symbols										
R/W Breakline Symbol	P_RW_PLANS_Symbols										
Alternate Breakline Symbol	P_RW_PLANS_Symbols										

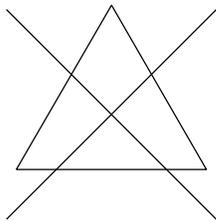
Description	LevelName	Color	Weight	Line Style	Text Height	Text Width	Font	Line Space	Text Just	Cell Name	Macro Name
Misc. (Cont.)											
Scale Bars											
Scale Bar 1"=50'	P_RW_PLANS_Symbols	0	1							Scale50	
Small Scale Bar 1"=50'	P_RW_PLANS_Symbols	0	1							Smscale50	
Scale Bar With North Arrow 1"=50'	P_RW_PLANS_Symbols	0	1							Arrowscale50	
Scale Bar 1"=100'	P_RW_PLANS_Symbols	0	1							Scale100	
Small Scale Bar 1"=100'	P_RW_PLANS_Symbols	0	1							Smscale100	
Scale Bar With North Arrow 1"=100'	P_RW_PLANS_Symbols	0	1							Arrowscale100	
English Flying Tee	E_SURV_MAPS_General	4								English tee	
Stream Flow Indicator	E_SURV_MAPS_General	2	1	0						flow	
Reference Arrows											
R/W Ref Arrow Down	P_RW_FILE_ParcelNumTx									rfarrowdn	
R/W Ref Arrow Up	P_RW_FILE_ParcelNumTx									rfarrowup	
R/W Terminator Arrow										tarrow	
Survey Dimension Line Terminator										sfmterm	
Survey Double Headed Arrow										sfmterm	
Leader Bent (Var. R)											
Leader Bent (10' R)											
Leader Bent (5' R)											

Appendix C - The Cadastral Cell Library

This appendix contains the names, descriptions and element symbology of the cells found in the cell library, Cadastral.cel.

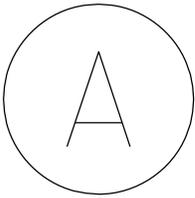
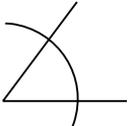
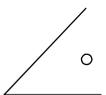
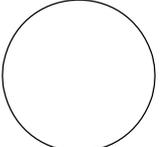
Note: Some cells in Cadastral.cel reflect prior survey standards, or they are cells seldom used and are not found in the current drafting menu. These cells have been perpetuated in the cell library because of the possibility of work on older documents, and are included at the end of this appendix.

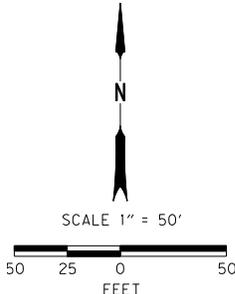
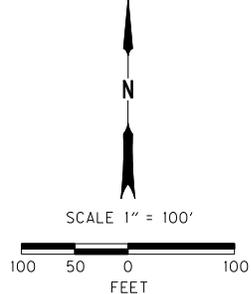
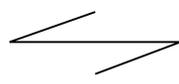
The general layout of the cell library table is as follows:

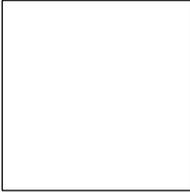
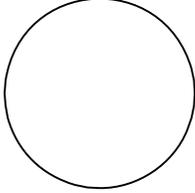
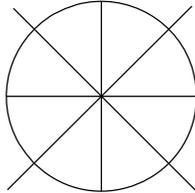
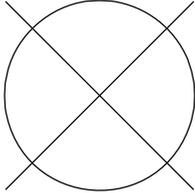
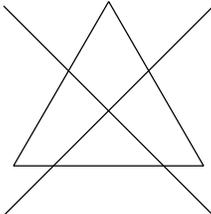
CELL NAME	DESNTW	
DESCRIPTION	SURVEY DESTROYED NETWORK POINT	
LEVEL NAME	E_SURV_NTW_DestroyedNtwPt	
COLOR	3	
STYLE	0	
WEIGHT	1	

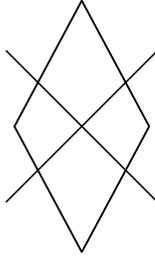
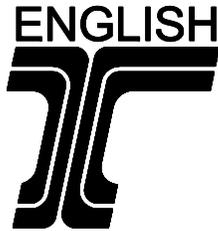
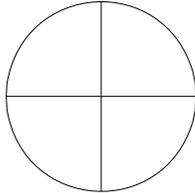
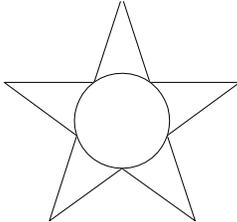
Cell information

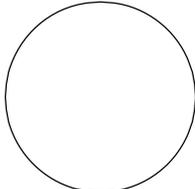
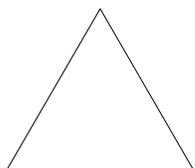
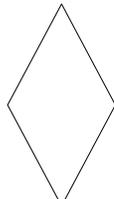
Cell image

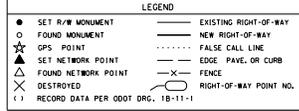
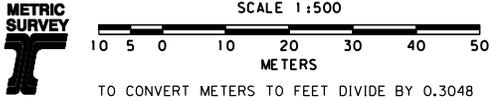
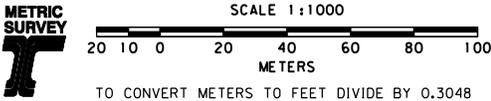
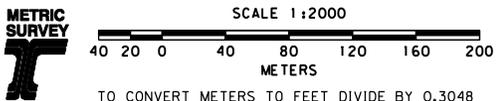
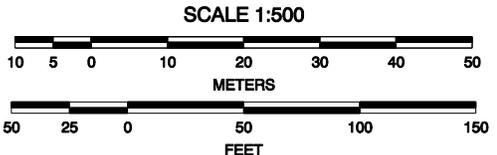
CELL NAME	ACCESS	
DESCRIPTION	ACCESS POINT SYMBOL	
LEVEL NAME	P_RW_FILE_AccessPoints	
COLOR	5	
STYLE	0	
WEIGHT	1	
CELL NAME	ANGLE	
DESCRIPTION	ANGLE SYMBOL	
LEVEL NAME	P_RW_ALIGN_GenTx	
COLOR	0	
STYLE	0	
WEIGHT	2	
CELL NAME	ANGLPT	
DESCRIPTION	ANGLE POINT SYMBOL	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	0	
STYLE	0	
WEIGHT	1	
CELL NAME	APAR	
DESCRIPTION	AREA PARCEL CIRCLE	
LEVEL NAME	P_RW_FILE_ParcelNumTx	
COLOR	5	
STYLE	0	
WEIGHT	1	
CELL NAME	ARROW	
DESCRIPTION	NORTH ARROW	
LEVEL NAME	P_ODOT_PLAN_General	
COLOR	6	
STYLE	0	
WEIGHT	1	

CELL NAME	ARROWSCALE50	
DESCRIPTION	SMALL ENGLISH SCALE BAR 1"=50' WITH NORTH ARROW	
LEVEL NAME	P_ODOT_PLAN_General	
COLOR	Varies	
STYLE	0	
WEIGHT	1	
CELL NAME	ARROWSCALE100	
DESCRIPTION	SMALL ENGLISH SCALE BAR 1"=100' WITH NORTH ARROW	
LEVEL NAME	P_ODOT_PLAN_General	
COLOR	Varies	
STYLE	0	
WEIGHT	1	
CELL NAME	BASIS	<p style="text-align: center;">BASIS OF BEARING AND CONTROL NETWORK SCHEMATIC</p> <hr style="width: 50%; margin: auto;"/> <p style="text-align: center;">NOT TO SCALE</p>
DESCRIPTION	SURVEY BASIS OF BEARING LABEL	
LEVEL NAME	E_SURV_NTW_BasisofBearingT	
COLOR	3	
STYLE	0	
WEIGHT	Varies	
CELL NAME	BREAK1	
DESCRIPTION	BREAKLINE SYMBOL	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	3	
STYLE	0	
WEIGHT	1	
CELL NAME	BREAK2	
DESCRIPTION	ALT BREAKLINE SYMBOL	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	3	
STYLE	0	
WEIGHT	1	

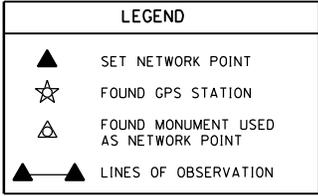
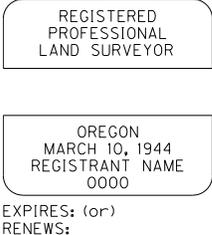
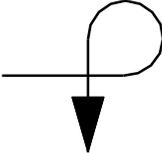
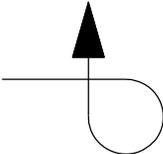
CELL NAME	CALCPT	
DESCRIPTION	SURVEY CALCULATED POINT	
LEVEL NAME	E_SURV_MON_CalcPt	
COLOR	4	
STYLE	0	
WEIGHT	1	
CELL NAME	CTRSEC	
DESCRIPTION	CENTER SECTION CIRCLE	
LEVEL NAME	E_SURV_MON_FdCorner	
COLOR	6	
STYLE	0	
WEIGHT	2	
CELL NAME	DESBM	
DESCRIPTION	SURVEY DESTROYED BENCHMARK	
LEVEL NAME	E_SURV_MON_DestroyedBM	
COLOR	4	
STYLE	0	
WEIGHT	1	
CELL NAME	DESMON	
DESCRIPTION	SURVEY DESTROYED MONUMENT	
LEVEL NAME	E_SURV_MON_DestroyedMon	
COLOR	4	
STYLE	0	
WEIGHT	1	
CELL NAME	DESNTW	
DESCRIPTION	SURVEY DESTROYED NETWORK POINT	
LEVEL NAME	E_SURV_NTW_DestroyedNtwPt	
COLOR	3	
STYLE	0	
WEIGHT	1	

CELL NAME	DESSTRAT	
DESCRIPTION	DESTROYED STRATEGIC POINT	
LEVEL NAME	E_SURV_NTW_DestroyedStrategicPt	
COLOR	3	
STYLE	0	
WEIGHT	1	
CELL NAME	ENGLISH TEE	
DESCRIPTION	ENGLISH FLYING TEE	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	4	
STYLE	0	
WEIGHT	0	
CELL NAME	EXTGRW	
DESCRIPTION	SURVEY EXISTING R W INDICATOR	
LEVEL NAME	E_SURV_BNDRY_ROWTx	
COLOR	4	
STYLE	0	
WEIGHT	1	
CELL NAME	FDBM	
DESCRIPTION	SURVEY FOUND BENCH MARK	
LEVEL NAME	E_SURV_MON_FdBM	
COLOR	4	
STYLE	0	
WEIGHT	1	
CELL NAME	FDGPS	
DESCRIPTION	SURVEY FOUND GPS STATION	
LEVEL NAME	E_SURV_NTW_FdGPS	
COLOR	0	
STYLE	0	
WEIGHT	1	

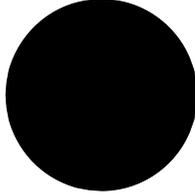
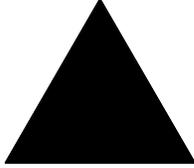
CELL NAME	FDMON	
DESCRIPTION	SURVEY FOUND MONUMENT	
LEVEL NAME	E_SURV_MON_FdMon	
COLOR	4	
STYLE	0	
WEIGHT	1	
CELL NAME	FDNTW	
DESCRIPTION	SURVEY FOUND NETWORK POINT	
LEVEL NAME	E_SURV_NTW_FdNtwPt	
COLOR	3	
STYLE	0	
WEIGHT	1	
CELL NAME	FDSTRAT	
DESCRIPTION	FOUND STRATEGIC POINT	
LEVEL NAME	E_SURV_NTW_FdStrategicPt	
COLOR	3	
STYLE	0	
WEIGHT	1	
CELL NAME	FENSYM	
DESCRIPTION	SURVEY FENCE SYMBOL FOR LEGEND	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	3	
STYLE	Fence CE_V8	
WEIGHT	1	
CELL NAME	FLOW	
DESCRIPTION	STREAM FLOW INDICATOR	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	2	
STYLE	0	
WEIGHT	1	

CELL NAME	LEGND2	 <p>LEGEND</p> <ul style="list-style-type: none"> ● SET R/W MONUMENT ○ FOUND MONUMENT ☆ GPS POINT ▲ SET NETWORK POINT △ FOUND NETWORK POINT ✕ DESTROYED () RECORD DATA PER ODOT DRG. 18-11-1 — EXISTING RIGHT-OF-WAY — NEW RIGHT-OF-WAY ⋯ FALSE CALL LINE — EDGE PAVE. OR CURB — FENCE ○ RIGHT-OF-WAY POINT NO.
DESCRIPTION	SURVEY ALT. MAP LEGEND SHAPE	
LEVEL NAME	Varies	
COLOR	Varies	
STYLE	Varies	
WEIGHT	Varies	
CELL NAME	METCON500	 <p>METRIC SURVEY</p> <p>SCALE 1:500</p> <p>10 5 0 10 20 30 40 50</p> <p>METERS</p> <p>TO CONVERT METERS TO FEET DIVIDE BY 0.3048</p>
DESCRIPTION	SURVEY 1:500 METRIC SCALE	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	Varies	
STYLE	0	
WEIGHT	Varies	
CELL NAME	METCON1000	 <p>METRIC SURVEY</p> <p>SCALE 1:1000</p> <p>20 10 0 20 40 60 80 100</p> <p>METERS</p> <p>TO CONVERT METERS TO FEET DIVIDE BY 0.3048</p>
DESCRIPTION	SURVEY 1:500 METRIC SCALE	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	Varies	
STYLE	0	
WEIGHT	Varies	
CELL NAME	METCON2000	 <p>METRIC SURVEY</p> <p>SCALE 1:2000</p> <p>40 20 0 40 80 120 160 200</p> <p>METERS</p> <p>TO CONVERT METERS TO FEET DIVIDE BY 0.3048</p>
DESCRIPTION	SURVEY 1:500 METRIC SCALE	
LEVEL NAME	E_SURV_MAPS_General	
COLOR	Varies	
STYLE	0	
WEIGHT	Varies	
CELL NAME	MF500	 <p>SCALE 1:500</p> <p>10 5 0 10 20 30 40 50</p> <p>METERS</p> <p>50 25 0 50 100 150</p> <p>FEET</p>
DESCRIPTION	RW METRIC SCALE BAR 1:500	
LEVEL NAME	P_RW_PLANS_Symbols	
COLOR	0	
STYLE	0	
WEIGHT	1	

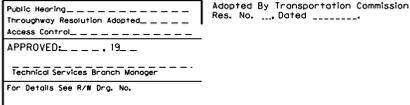
CELL NAME	MF1000																																																																
DESCRIPTION	RW METRIC SCALE BAR 1:1000																																																																
LEVEL NAME	P_RW_PLANS_Symbols																																																																
COLOR	0																																																																
STYLE	0																																																																
WEIGHT	1																																																																
CELL NAME	MODOT																																																																
DESCRIPTION	METRIC FLYING TEE																																																																
LEVEL NAME	P_RW_PLANS_Symbols																																																																
COLOR	Varies																																																																
STYLE	0																																																																
WEIGHT	Varies																																																																
CELL NAME	MONCAP																																																																
DESCRIPTION	SURVEY ROW MON. NO. CAPSULE																																																																
LEVEL NAME	E_SURV_MAPS_General																																																																
COLOR	0																																																																
STYLE	0																																																																
WEIGHT	1																																																																
CELL NAME	MONTBL	<table border="1"> <thead> <tr> <th colspan="7">RECOVERED MONUMENT LIST</th> </tr> <tr> <th>PT</th> <th>TOP</th> <th>TOP</th> <th>STATION</th> <th>OFFSET</th> <th>DATE</th> <th>DESCRIPTION & REFERENCE DOCUMENTS</th> </tr> <tr> <th>NO.</th> <th>NORTHING</th> <th>EASTING</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	RECOVERED MONUMENT LIST							PT	TOP	TOP	STATION	OFFSET	DATE	DESCRIPTION & REFERENCE DOCUMENTS	NO.	NORTHING	EASTING																																														
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PT	TOP		TOP	STATION	OFFSET	DATE	DESCRIPTION & REFERENCE DOCUMENTS																																																										
NO.	NORTHING		EASTING																																																														
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LEVEL NAME	E_SURV_MAPS_General																																																																
COLOR	Varies																																																																
STYLE	0																																																																
WEIGHT	Varies																																																																
CELL NAME	MSURVY																																																																
DESCRIPTION	SURVEY METRIC SURVEY SYMBOL																																																																
LEVEL NAME	E_SURV_MAPS_General																																																																
COLOR	Varies																																																																
STYLE	0																																																																
WEIGHT	1																																																																

CELL NAME	NETLEG																																									
DESCRIPTION	SURVEY NET SCHEMATIC LEGEND																																									
LEVEL NAME	Varies																																									
COLOR	Varies																																									
STYLE	Varies																																									
WEIGHT	Varies																																									
CELL NAME	NETTBL	<table border="1"> <thead> <tr> <th colspan="5">NETWORK POINT COORDINATE TABLE</th> </tr> <tr> <th>PT. NO.</th> <th>LOP NORTHING</th> <th>LOP EASTING</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NETWORK POINT COORDINATE TABLE					PT. NO.	LOP NORTHING	LOP EASTING	DATE	DESCRIPTION																														
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LEVEL NAME	E_SURV_MAPS_General																																									
COLOR	Varies																																									
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CELL NAME	SCALE100	<p>SCALE 1" = 100'</p> <p>100 50 0 100 200 300 FEET</p>
DESCRIPTION	ENGLISH SCALE BAR 1'=100'	
LEVEL NAME	P_RW_PLANS_Symbols	
COLOR	0	
STYLE	0	
WEIGHT	1	
CELL NAME	SECCOR	
DESCRIPTION	SURVEY FOUND SECTION CORNER	
LEVEL NAME	Varies	
COLOR	6	
STYLE	0	
WEIGHT	Varies	
CELL NAME	SETBM	
DESCRIPTION	SURVEY SET BENCH MARK	
LEVEL NAME	E_SURV_MON_SetBM	
COLOR	4	
STYLE	0	
WEIGHT	2	
CELL NAME	SETCLMON	
DESCRIPTION	SET CENTER LINE REFERENCE MONUMENT	
LEVEL NAME	E_SURV_MON_SetCLMon	
COLOR	4	
STYLE	0	
WEIGHT	2	
CELL NAME	SETGPS	
DESCRIPTION	SURVEY SET GPS STATION	
LEVEL NAME	E_SURV_NTW_SetGPS	
COLOR	Varies	
STYLE	0	
WEIGHT	2	

CELL NAME	SETMON																																																	
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LEVEL NAME	E_SURV_MAPS_General																																																	
COLOR	0																																																	
STYLE	0																																																	
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CELL NAME	SMMF500	<p style="text-align: center;">SCALE 1:500</p>
DESCRIPTION	RW SMALL METRIC SCALE BAR 1:500	
LEVEL NAME	P_RW_PLANS_Symbols	
COLOR	0	
STYLE	0	
WEIGHT	1	
CELL NAME	SMMF1000	<p style="text-align: center;">SCALE 1:1000</p>
DESCRIPTION	RW SMALL METRIC SCALE BAR 1:1000	
LEVEL NAME	P_RW_PLANS_Symbols	
COLOR	0	
STYLE	0	
WEIGHT	1	
CELL NAME	SMSCALE50	<p style="text-align: center;">SCALE 1" = 50'</p>
DESCRIPTION	SMALL ENGLISH SCALE BAR 1"=50'	
LEVEL NAME	P_RW_PLANS_Symbols	
COLOR	0	
STYLE	0	
WEIGHT	1	
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DESCRIPTION	SMALL ENGLISH SCALE BAR 1"=100'	
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COLOR	0	
STYLE	0	
WEIGHT	1	
CELL NAME	SUB	
DESCRIPTION	SURVEY SUBDIVISION BLOCK CIRCLE	
LEVEL NAME	E_SURV_BNDRY_SubdivisionTx	
COLOR	4	
STYLE	0	
WEIGHT	2	

CELL NAME	SURVAP	 <p>Public Hearing _____ Throughway Resolution Adopted _____ Access Control _____ APPROVED: _____, 19____ Technical Services Branch Manager _____ For Details See R/W Dwg. No. _____</p> <p>Adopted By Transportation Commission Res. No. _____, Dated _____</p>
DESCRIPTION	RW SURVEY APPROVAL TITLE BLOCK	
LEVEL NAME	P_RW_PLANS_DrawingTX	
COLOR	0	
STYLE	Varies	
WEIGHT	Varies	
CELL NAME	TACL	<p>ACCESS CONTROL LINE ——— - ———</p>
DESCRIPTION	RW ACCESS CONTROL LINE LEGEND FOR MAP TITLE	
LEVEL NAME	Varies	
COLOR	0	
STYLE	Varies	
WEIGHT	3	

Appendix D - Tips and Tricks

This appendix contains various tips to speed the flow of work in drafting. It is intended that this be a dynamic document, and the drafter is encouraged to submit items.

Use of MicroStation V8 Models

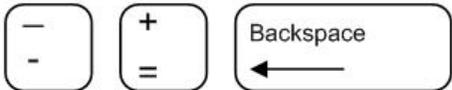
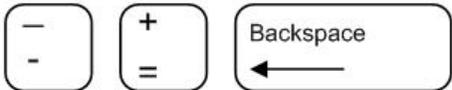
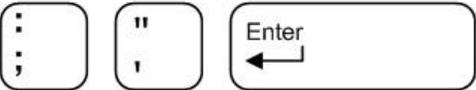
MicroStation V8 has the ability to create and work within multiple models in the open DGN file. A model acts like a separate DGN file within the open DGN, can be set up as either 2D or 3D, and have its own unit system. The drafter can reference both external DGN files into a model as well as other models within the open file.

MicroStation V8's structure with multiple models within the DGN file and self referencing gives the drafter the ability to contain all elements needed to produce the filed survey document. Different models can be set up in the DGN for design, topography and plotting. Self referencing between models eliminates the need for external reference files. This will allow the CAD file to be a functional "stand alone" document allowing secure archiving.

Special Symbols in MicroStation

MicroStation allows the use of special keystrokes and characters to display various symbols, such as degree, center line, and plus/minus. These characters and keystrokes allow the drafter to be able to quickly and easily use these symbols in their work without having to rely on specialized graphical cells.

The following special symbols are available with fonts 2, 3, 4, and 24. The character fonts can be combined, for example to type 4,384 Ft[±], the key-in would be 4,384 Ft\2|

Symbol to place		Keystrokes	
Squared number	Ft ²	\2	
Cubed symbol	Yd ³	\3	
Angle point		}	
Delta	Δ	<	
Center line		{	
Degree	°	^	
Plus or minus	±		

The use of specialized pen tables for plotting

The CAD files produced for the survey filing maps may be used for more than one document. For example, the existing right of way and property lines may be used for the recovery survey, the right of way map and the monumentation survey. Each of these documents portrays these lines differently depending on the focus of the drawing. On the recovery survey, the existing highway right of way lines will want to be emphasized so as to stand out from property lines and intersecting street right of way. The right of way drawing and monumentation survey will want the new right of way lines to be able to stand out from the existing right of way. To accomplish this without resorting to a lot of redrafting of these lines, several pen tables have been developed that alters the weight of the survey lines upon plotting. These pen tables are available on the ODOT workspace and can be selected when plotting the drawing. There are four pen tables available, two for Horizontal Control and Recovery Surveys and two for Right of Way Monumentation Surveys:

Horizontal Control and Recovery Survey

Surv_CRR_BW.tbl

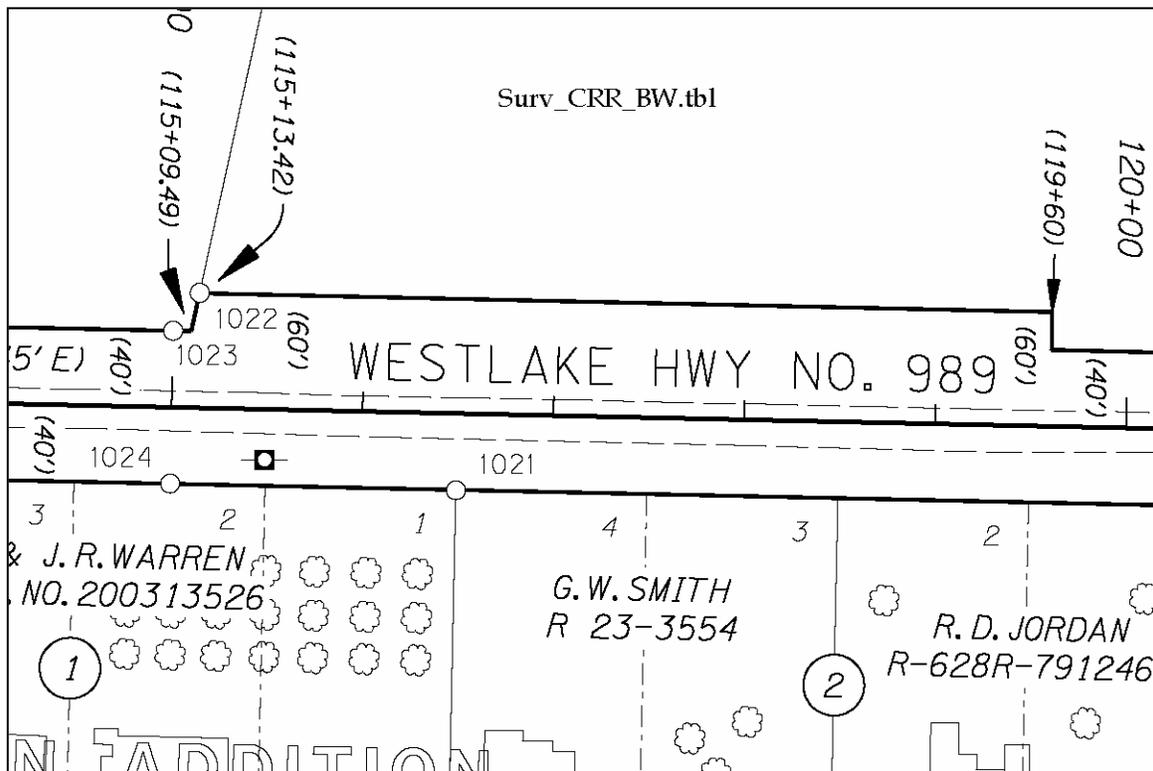
Surv_CRR_GS.tbl

Right of Way Monumentation Survey

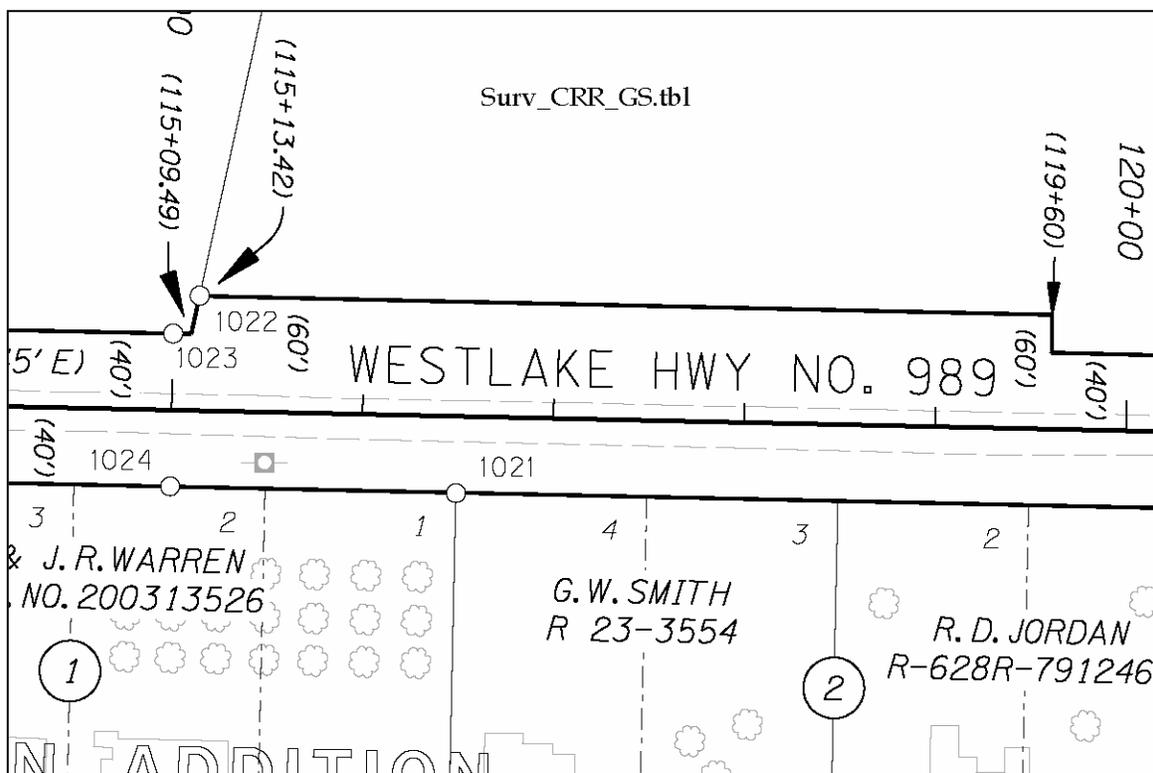
Surv_RWM_BW.tbl

Surv_RWM_GS.tbl

Surv_CRR_BW.tbl and Surv_RWM_BW.tbl will plot a strict black and white drawing with all graphics at the same value.



Surv_CRR_GS.tbl and Surv_RWM_GS.tbl will plot a black and white drawing with specified features halftoned or "gray shaded".

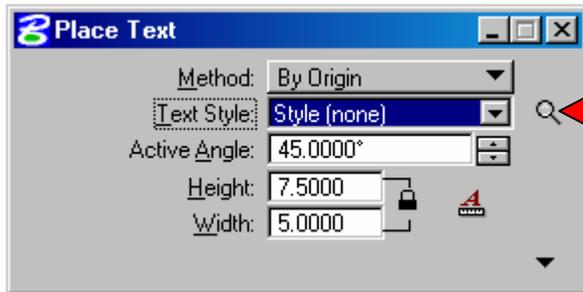


The gray shade pen tables are structured so that upon plotting, reference files with the word "shade", "reg", or "exist" in the logical name, will be toned at 89 percent. Only reference files attached with these key words in the logic name will be shaded. All other references and the main model will be plotted at 100 percent. It is intended that only features tha

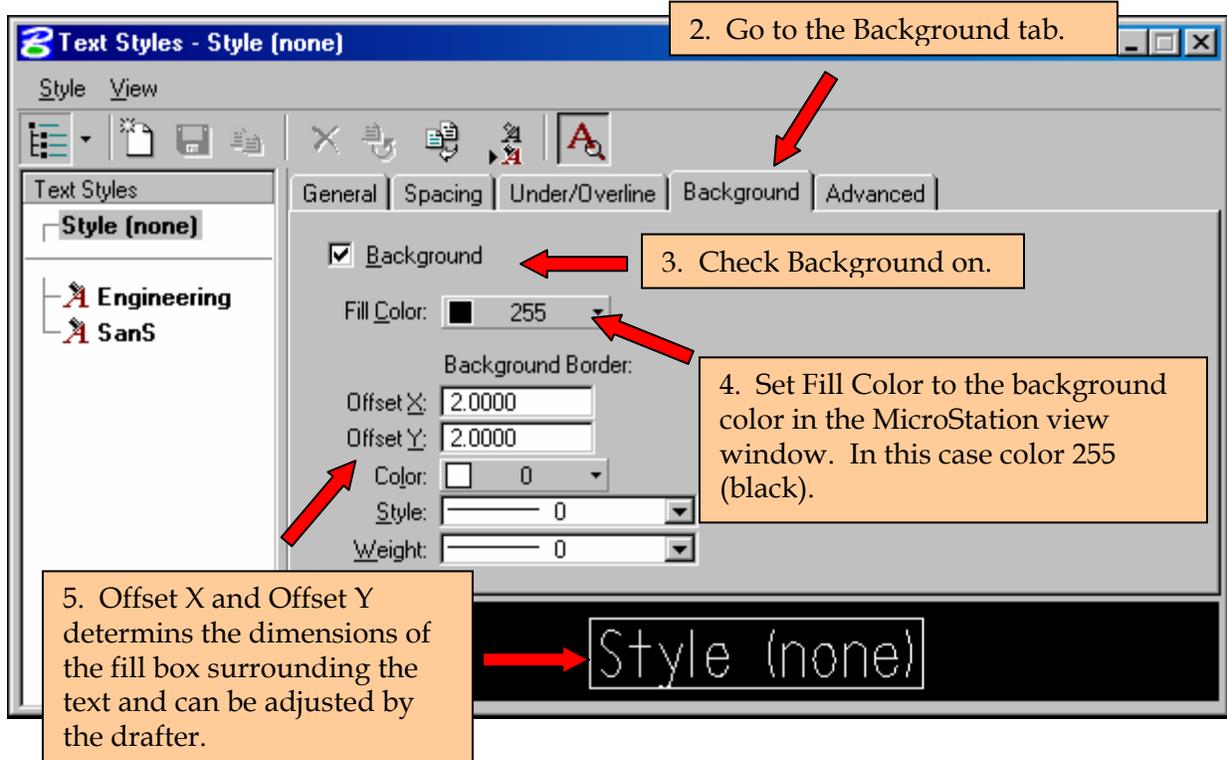
The gray shade option for survey filing maps can only be used in those counties that allow it. Always check with your county surveyor before using the gray shade pen tables.

Text masking

MicroStation allows the drafter to be able to place a background color around a piece of text. By making this background color the same as the MicroStation window, any underlying graphical elements will be effectively masked. By using this feature, one can clean up clutter and allow text to stand out.



1. From the Place Text dialog box, click on the magnifying to bring up the Text Styles dialog box.

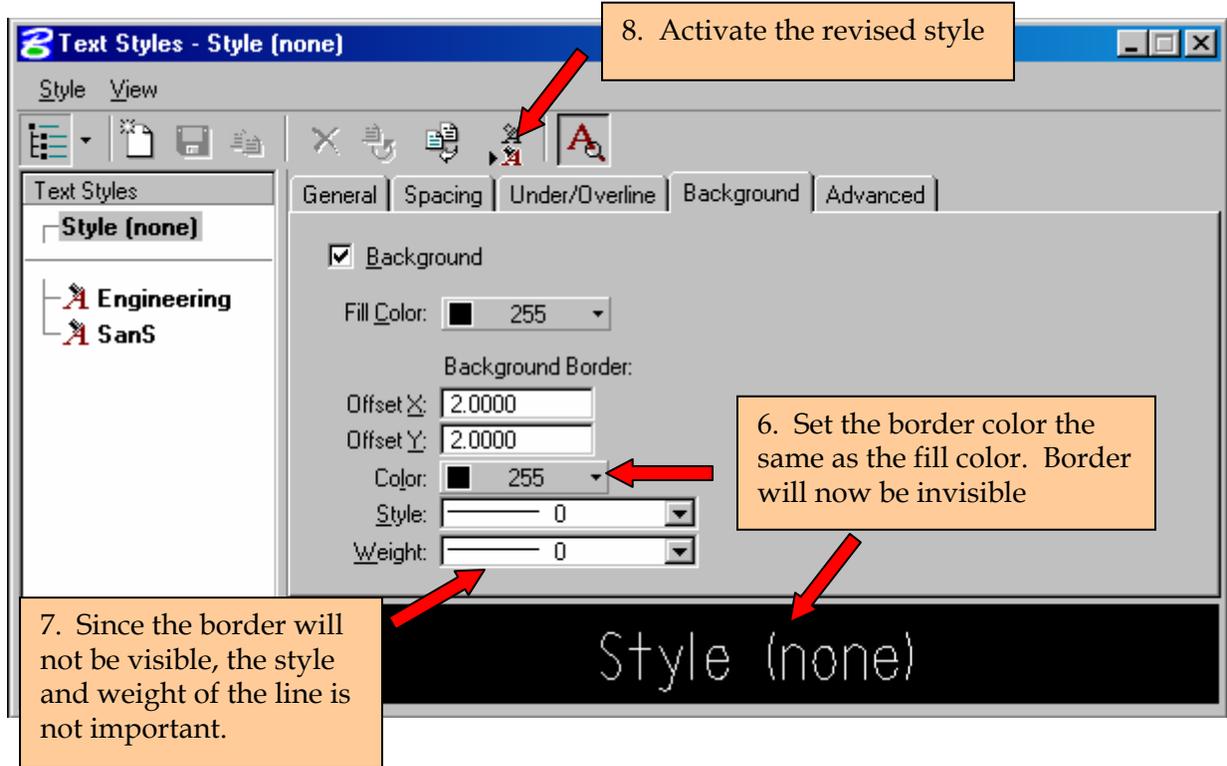


2. Go to the Background tab.

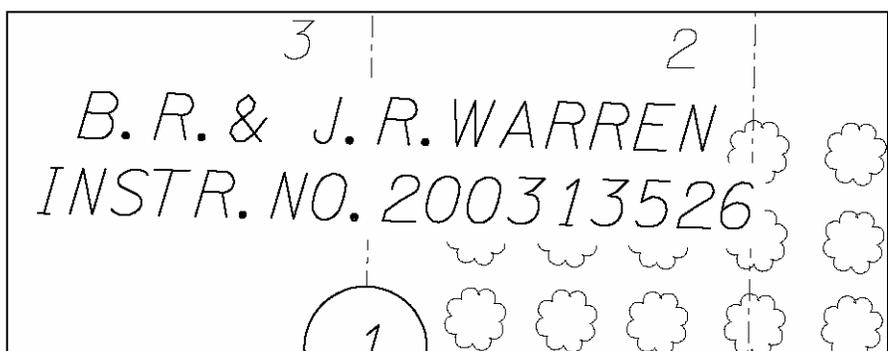
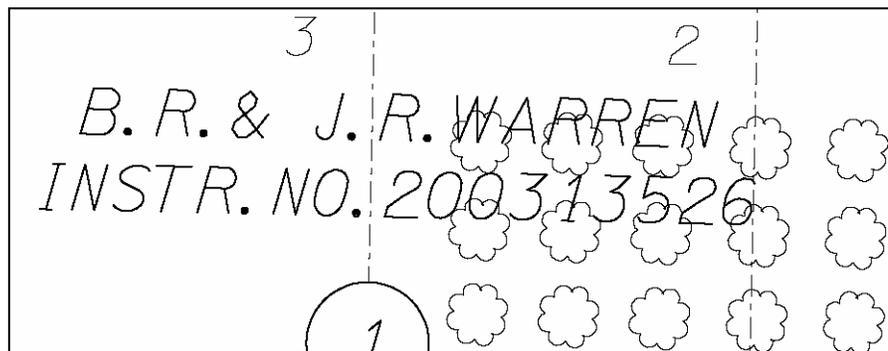
3. Check Background on.

4. Set Fill Color to the background color in the MicroStation view window. In this case color 255 (black).

5. Offset X and Offset Y determines the dimensions of the fill box surrounding the text and can be adjusted by the drafter.



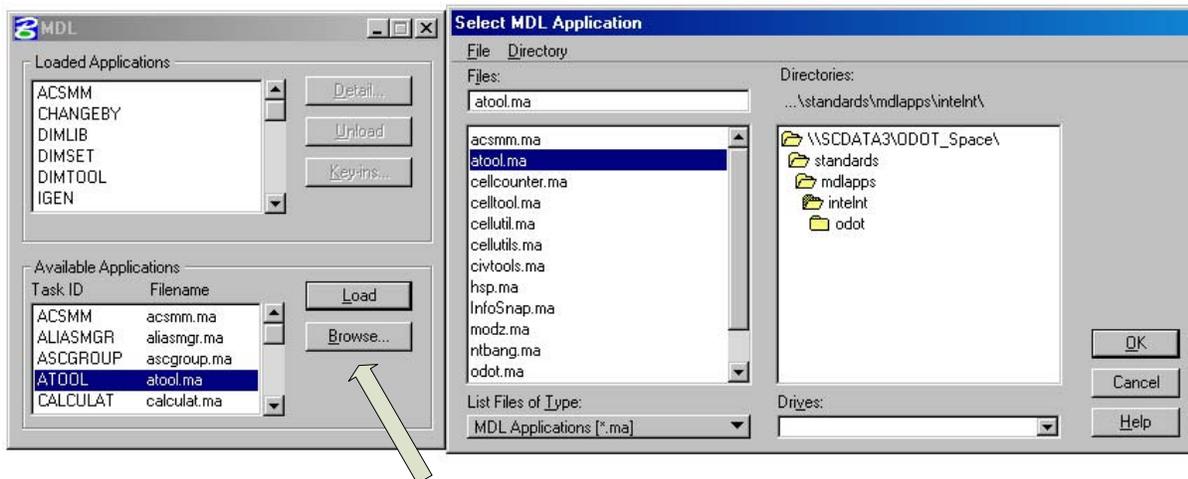
Once the style is activated, text placed will have the new attributes. The following examples show text without masking and text with masking. This method is a good way of clearing up clutter from the drawing, without having to spend time partially deleting elements.



Area Tools MDL

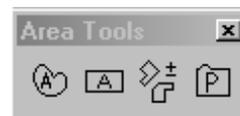
Atool is a useful mdl that will allow the drafter to measure an area of a shape and place that area as text within the MicroStation drawing. You can customize the tool to measure the area in whatever units desired and the text can be placed with specified symbology.

To load the mdl application type MDL LOAD ATOOL in the key-in browser. From the main menu, select Utilities > MDL Applications. Select ATOOL from the available applications or use the Browse button to select from the list on the workspace.



When the MDL application is loaded, a tool box will appear on your screen displaying the following four icons from left to right:

1. Measure Area and Place Text
2. Place Area with Text
3. Calculate Area
4. Parameter Settings

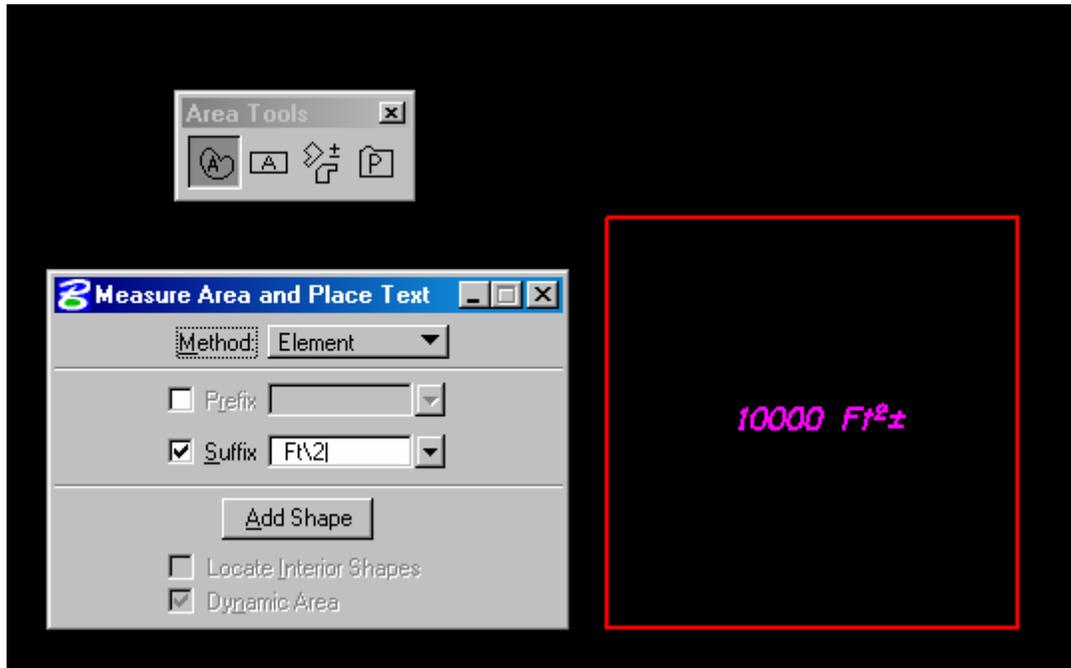


Measure Area and Place Text

The Measure Area and Place Text dialog box allows the user to select the method of calculating the area (Element, Flood, Union, Intersection, Difference, and Points), specify a prefix and suffix for the text to be placed, and has the ability to add multiple shapes to an area. When placing the text, if the "Place Text Automatically at Center" option is checked in the Parameter Settings, then the text will be placed in the center of the shape being measured. Leaving the "Place Text Automatically at Center" unchecked allows the drafter to manually position the text. See the discussion on Parameter Settings below.

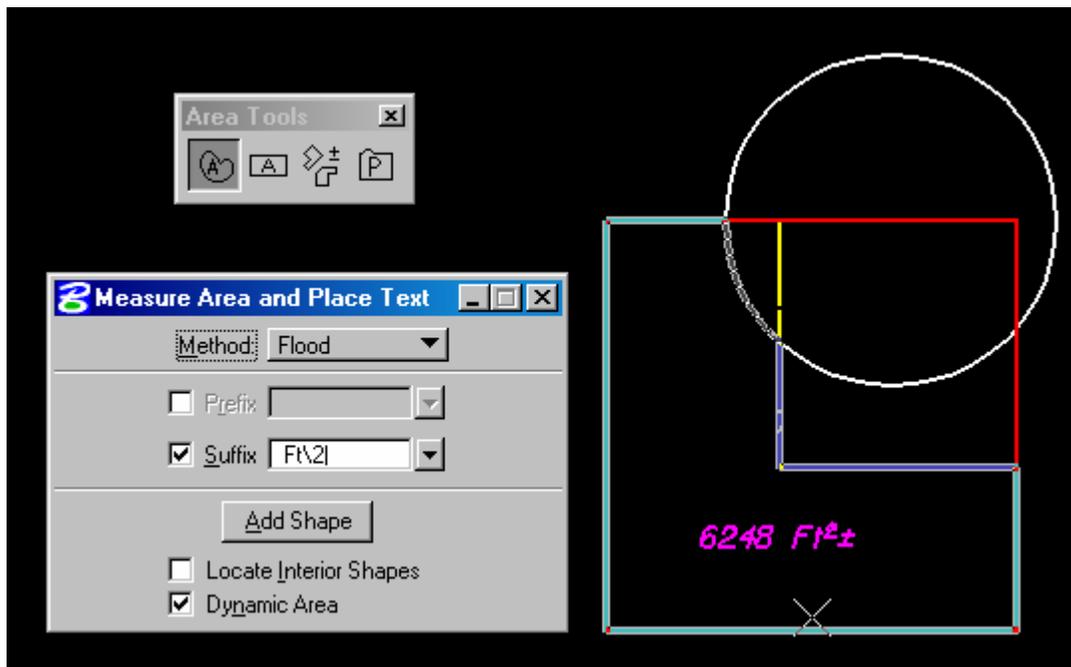
1. Element

The Element option will calculate the area of a single closed shape. Select the shape with a data point and accept to place the area.



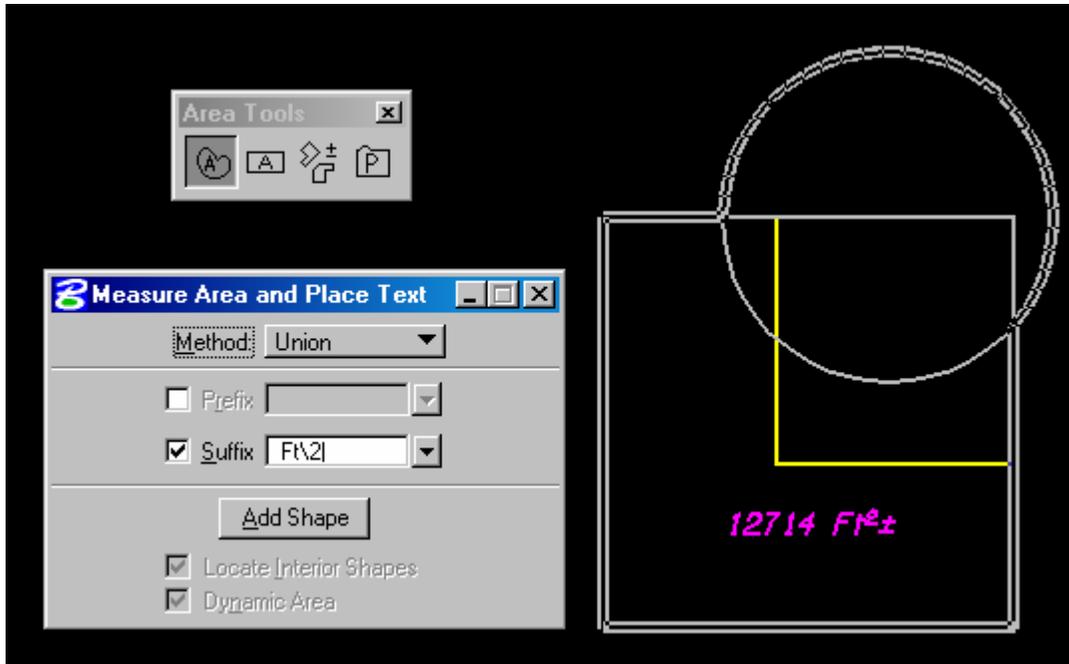
2. Flood

The Flood option will compute the area of the smallest region bounded by the user-entered data point. This area has to be defined graphically, but does not have to be a closed shape.



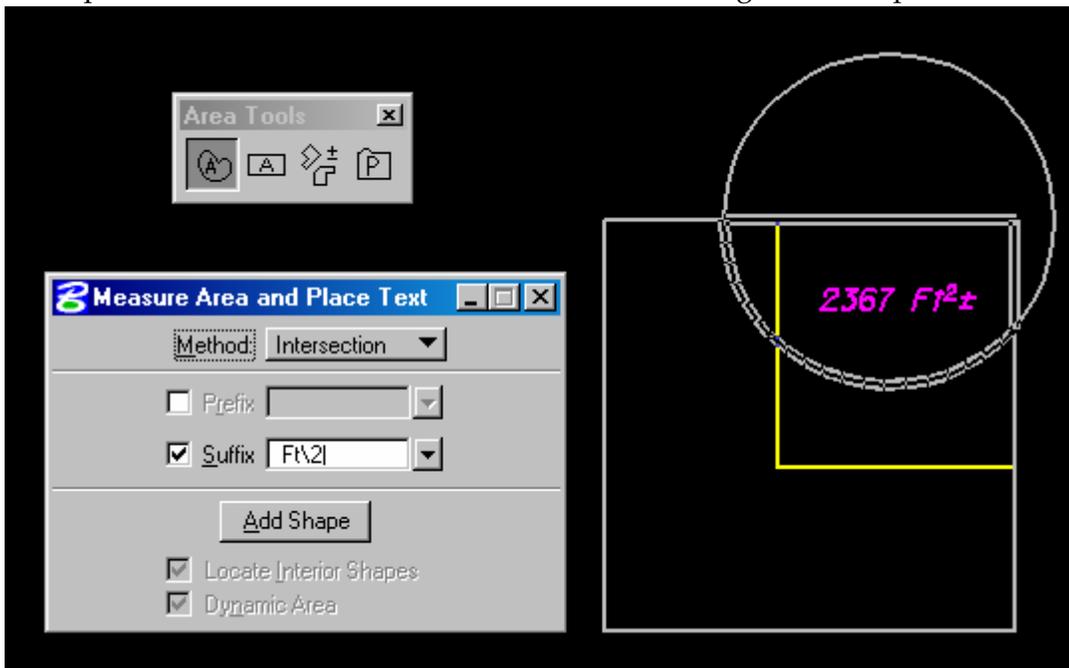
3. Union

Union will calculate the total area of two or more shapes. The selected shapes may be overlapping or disjoint. If the union is disjoint and the "Place Text Automatically at Center" is toggled on, then the text will be placed at the center of the first accepted shape.



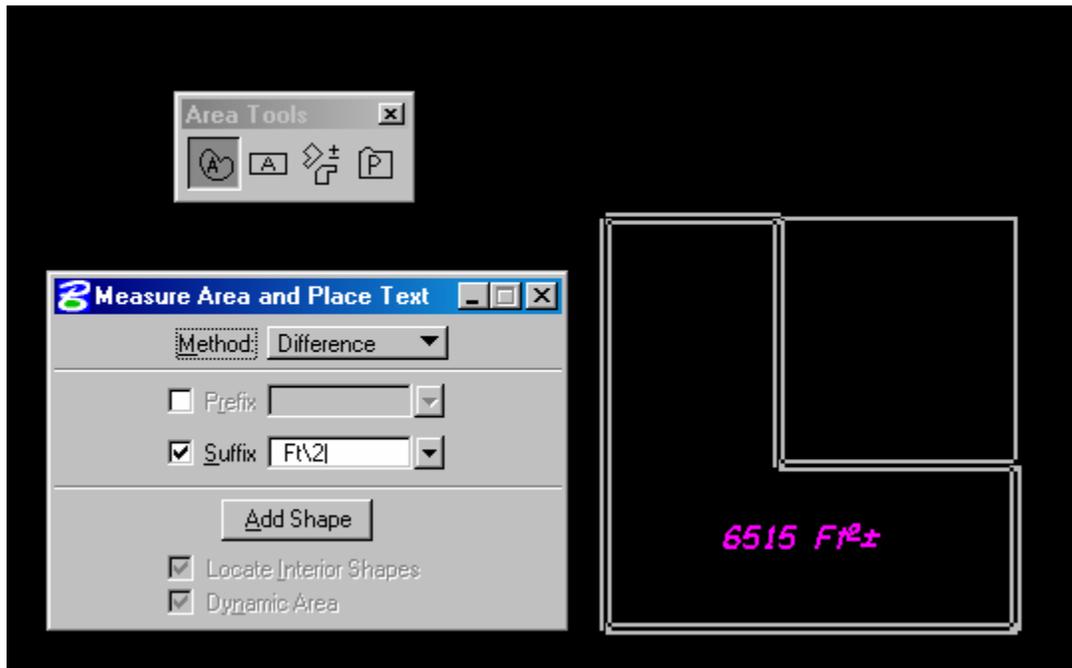
4. Intersection

This option calculates the area of two or more intersecting closed shapes.



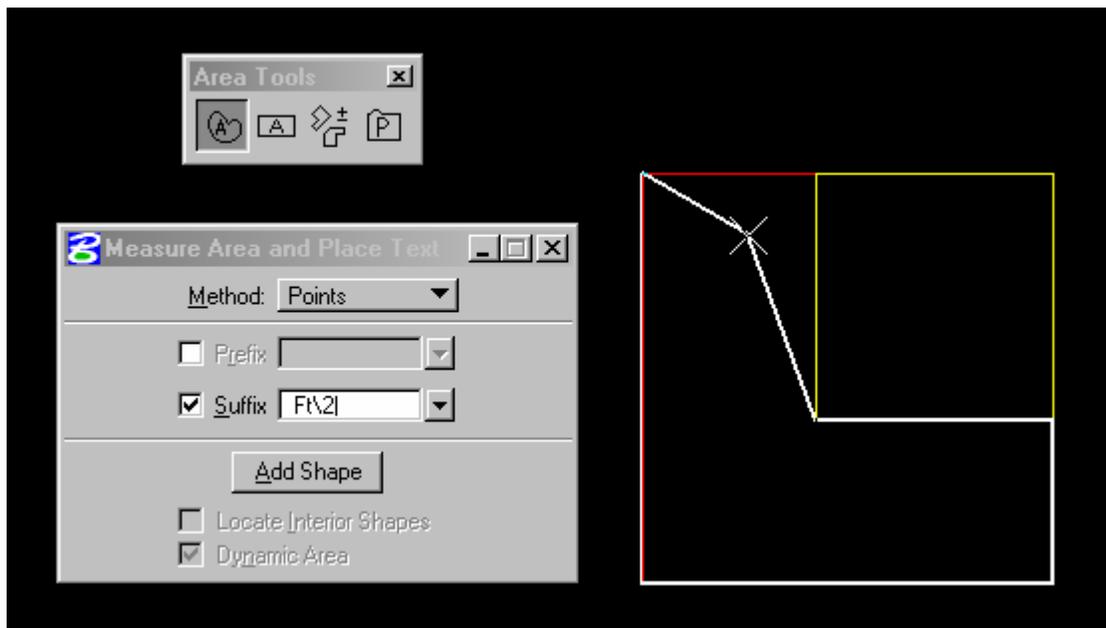
5. Difference

This tool calculates the difference between two closed elements.



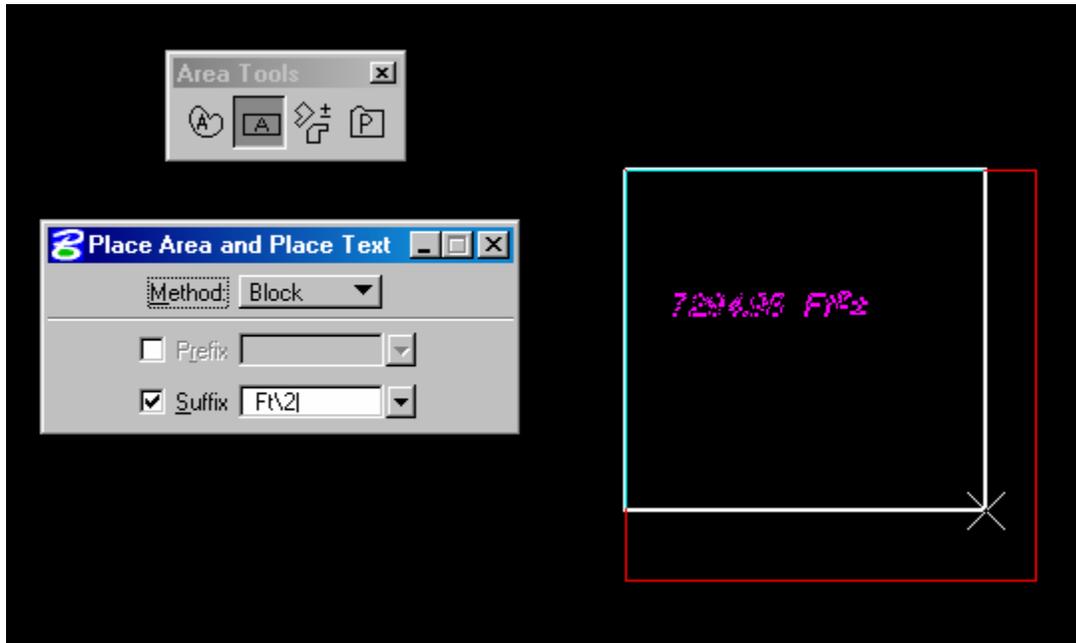
6. Points

The Points tool allows the user to measure the area of a user-defined virtual shape. The command first prompts the user to enter data points to define the polygon.



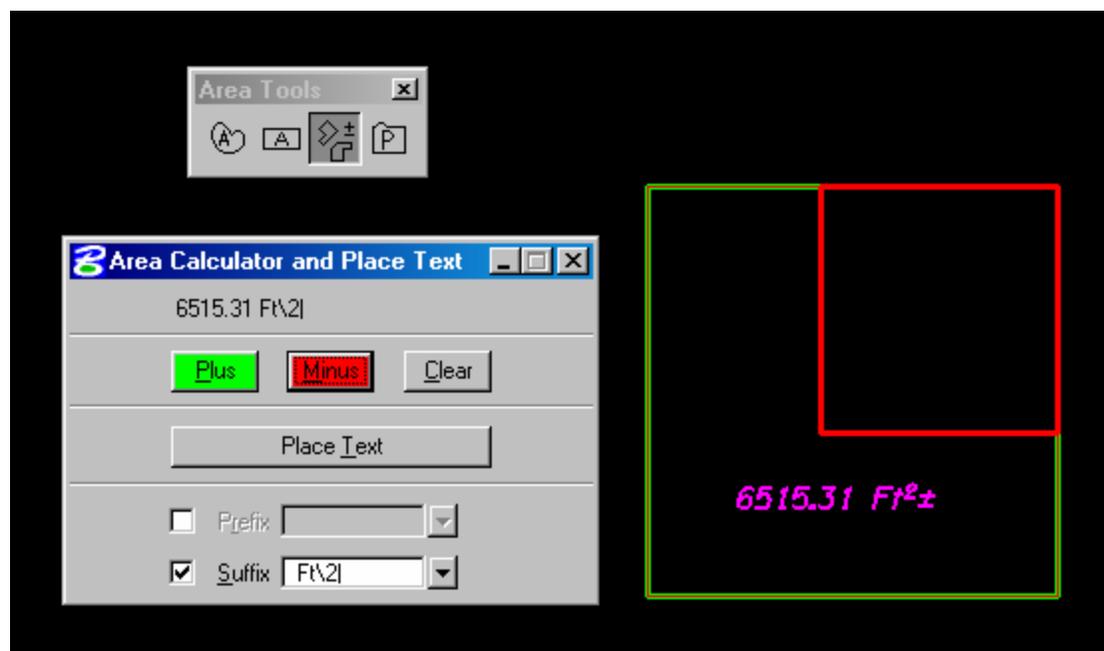
Place Area and Place Text

This command lets you place a closed shape or a block while it calculates the enclosed area dynamically.



Area Calculator and Place Text

The area calculator provides a mechanism for the user to calculate cumulative area measurements of selected closed shapes within a design file. The user has the option of adding areas to, or subtracting areas from this total area measurement. The areas selected for addition will be displayed in green, while those areas subtracted from the total will be displayed in red. The Place Text button will place the total value of the areas selected for inclusion.

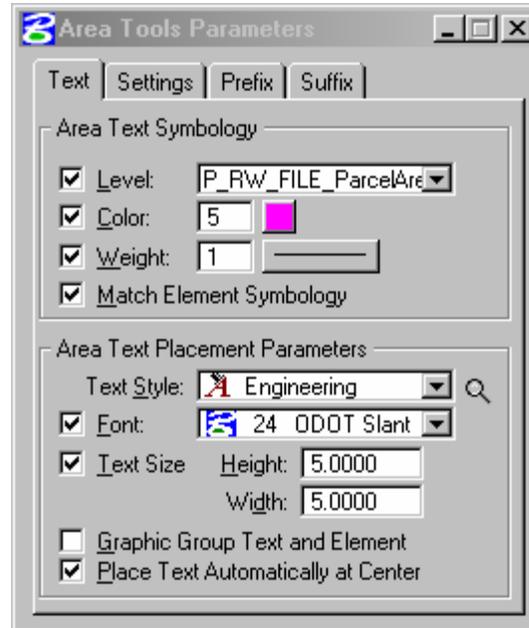


Area Tools Parameters

The Area Tools Parameters icon on the Area Tools tool box allows you to customize how the measured areas are placed in the design file. There are four tabs in the Area Tools Parameters dialog; Text, Settings, Prefix, and Suffix.

Text tab

This tab allows the user to set the symbology of the text to be placed: Color, Level, Weight, Font, Text Height and Width. It also allows graphic grouping with the element measured, and text placement. If “Place Text Automatically at Center” is checked, the text will be placed at the center of the shape. If left unchecked, the user can specify the placement.

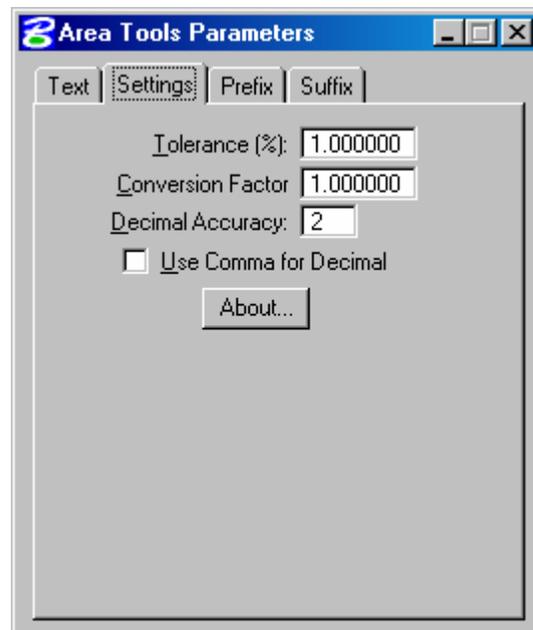


Settings tab

This tab will define the Tolerance, Conversion Factor, and Decimal Accuracy of the measured area.

- Tolerance

Tolerance is the maximum allowable error when calculating intersections between curved elements when used with the Union, Intersection and Difference methods. With the Flood method it represents the maximum allowable gap between adjacent boundaries of the elements. When calculating the area, Tolerance is the maximum distance between the actual curve and the approximation of that curve. A smaller Tolerance value will increase the accuracy of the measured area, but will also increase the processing time.



- Conversion Factor

The ATOOL application calculates the area in the working units set in the design file. The Conversion Factor value is used to divide the calculated area's result to display the desired units. For example, if your design file working units are set for feet and inches and the measured area desired is square feet, the conversion factor will be 1. If the desired measured area is to be acres, then set the conversion value to 43560.

- Decimal Accuracy

This determines the number of decimal places used for the area value when placing the text. For measurements taken to the nearest square foot, the decimal accuracy should be set to zero. For measuring acreage, the desired value is usually to the hundredth of an acre. In this case, set the decimal accuracy to 2.

Prefix and Suffix

These tabs allow the user to create custom prefixes and suffixes for use throughout the Area Tool application. A prefix or suffix can be created by typing the unit text in the appropriate window in the measurement dialog box. This will automatically add the unit text to the appropriate tab. Or in the Prefix or Suffix tab, type the unit text in the window and press the Add button. Unit text can also be deleted from the tabs by selecting the text and pressing the Delete button. If you wish not to show a prefix or suffix, define a blank prefix or suffix by pressing the Add button when no value is entered in the text window. Then select the blank option from the prefix or suffix window in the measurement box.

