CHAPTER 9 RIGHT OF WAY MAPPING CADD 9-3

9.1 RIGHT OF WAY MAPPING CADD STANDARDS 9-3
9.1.1 File Naming Convention 9-3
9.1.2 Standard File Names 9-3
9.1.3 Seed File Settings 9-4
- English Seed File Settings (Non-Survey Inch) 9-4
- Advanced Working Unit Settings 9-4

9.1.4 Standard Text Fonts 9-5
- Key Strokes for Font 58 9-5

9.1.5 Standard Text Size 9-5
- Recommended Base Text Sizes for (English) R/W Mapping 9-5

9.1.6 Line Styles 9-6
- Custom Line Styles 9-6
- Right of Way Mapping Custom Line Styles 9-7

9.1.7 R/W Mapping Cell Library 9-8
- CELL TABLE 9-8

9.1.8 Standard Symbology Tables 9-11

9.2 RIGHT OF WAY FDOT MENU 9-19
9.2.1 Overview 9-19
9.2.2 View Levels 9-20
9.2.3 RW Hot Lists 9-21
- R/W Hot Boxes 9-25

9.2.4 R/W Attachments 9-26
9.2.5 R/W Map Sheets 9-26
- RW Tab Sheet (Axiom) 9-27
- Create Cover Sheet > With Map(DGN) 9-30

9.2.6 Line Style Tools 9-33
- Modify Custom Line Styles 9-34
- Leader Lines, Tie Lines and Station/Offset Lines 9-35

9.2.7 Text Tools 9-36
- Set Text Size 9-36

9.2.8 Cells 9-37
- North Arrow 9-37
- Place Spring Line 9-38
- Place Bar Scale 9-38
- Monuments 9-39
- Curve Data 9-39

9.2.9 Arrows 9-40
- Place Delineators 9-40
- Begin/End Baseline Flag Right/Left 9-42

9.2.10 Certification Notes 9-42
9.2.11 Legal Descriptions 9-45
9.2.12 Tool Boxes 9-48
- AA-AS 9-49
- Lines2 9-49
- Views2 9-49
- Arcs2 9-50
- CivTools (Civil/Site Tools) 9-51

9.2.13 QC-Std 9-52

9.3 GEOPAK'S PLAN VIEW LABELER 9-53
- Text 9-54
- Styles 9-55
- Params 9-58

9.4 PLAN SHEET LAYOUT 9-59
9.4.1 Creating R/W Plan Sheets 9-59

9.5 DESIGN AND COMPUTATION MANAGER 9-60
9.5.1 Selection of R/W Database (English) 9-60

9.6 GEOPAK FEATURE PREFERENCES 9-61

9.7 WORKING WITH R/W METRIC DESIGN FILES & MICROSTATION V8 9-62

9.8 CONVERTING R/W DESIGN FILES TO MICROSTATION V8 9-67
9.8.1 Batch Converter 9-69

Chapter 9 Right of Way Mapping CADD

CADD Production Criteria Handbook

9.1 Right of Way Mapping CADD Standards

9.1.1 File Naming Convention

FDOT utilizes standard naming conventions for all of its files. Some of the automation implemented in various tools provided by FDOT depends on naming conventions being met. More importantly, the naming convention confers information to the downstream customer of the data.

9.1.2 Standard File Names

Standard file names should follow this format: **AABBBB##.ex*t***
Where **AA** = *abbreviated group description*, **BBBB** = *Sheet type*, ## =*Sequence number.*

NOTE: Please see CPCH Chapter 4 for more information for file extensions.

The following table defines the Right of Way Mapping File Name Standards in regards to FDOT Projects with the understanding that each file name will include sequence numbering. The standard map naming convention shall be a maximum of an eight character prefix and a .dgn suffix. The prefix shall be a two letter group name with a four letter file name and two-digits for the sheet number

(Note: F.P. = Financial Project Number).

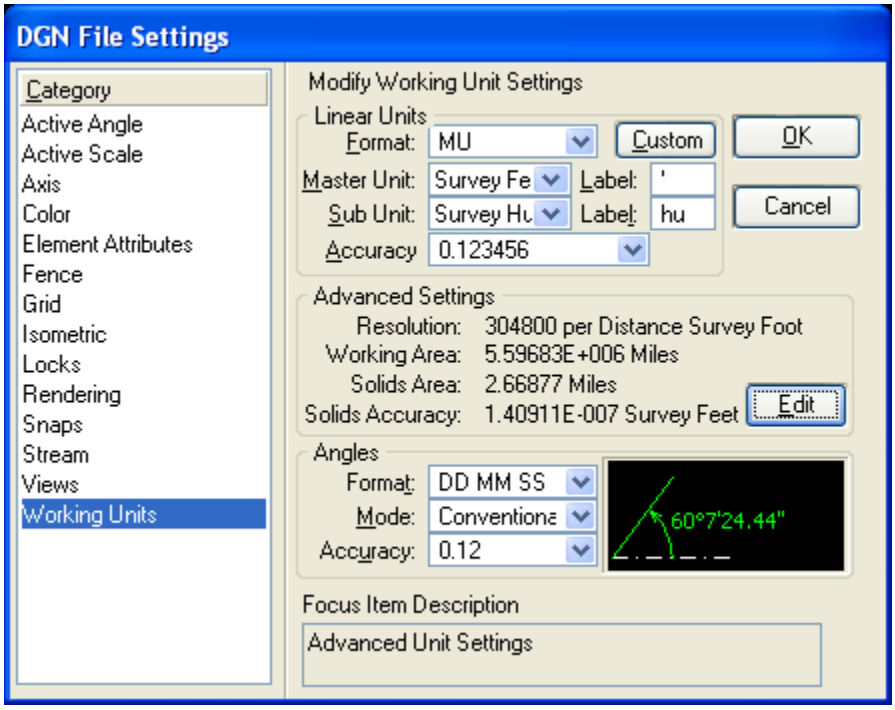
Example: RWDETL01.DGN
RW ..... Right of Way Mapping **Group**
..... DETL Detail Sheet **File**
01 Sheet **Number** 1

File Name	Descriptions	Critical File
CS(7 Digit F.P. No.)	Control Survey Master Design File	
CSCOVR.DGN	Control Survey Cover Sheet	X
CSDETL.DGN	Control Survey Detail Sheet	X
CSKEYM.DGN	Control Survey Key Map Sheet	X
MM(7 Digit F.P. No.)	Maintenance Map Master Design File	
MMCOVR.DGN	Maintenance Map Cover Sheet	X
MMDETL.DGN	Maintenance Map Detail Sheet	X
MMKEYM.DGN	Maintenance Map Key Map Sheet	X
RW(7 Digit F.P. No.)	R/W Master Detail Design File	
RWCOVR.DGN	R/W Cover Sheet	X
RWDETL.DGN	R/W Detail Sheet	X
RWFACS.DGN	R/W Cover Sheet FA Project	X
RWKEYM.DGN	R/W Key Map Sheet	X
RWPNCTAB.DGN	R/W Project Network Control Tabulation Sheet	X
RWPR.DGN	R/W Parcel Sketch Sheet (11”x17” Landscape)	X
RWPS.DGN	R/W Parcel Sketch Sheet (8.5”x11” Portrait)	X
RWSPS.DGN	R/W Specific Purpose Survey Sheet	X
RWTAB.DGN	R/W Tabulation Sheet	X
RWTABENG.PLT	R/W Tabulation Sheet Data (ENGLISH)	X

9.1.3 Seed File Settings

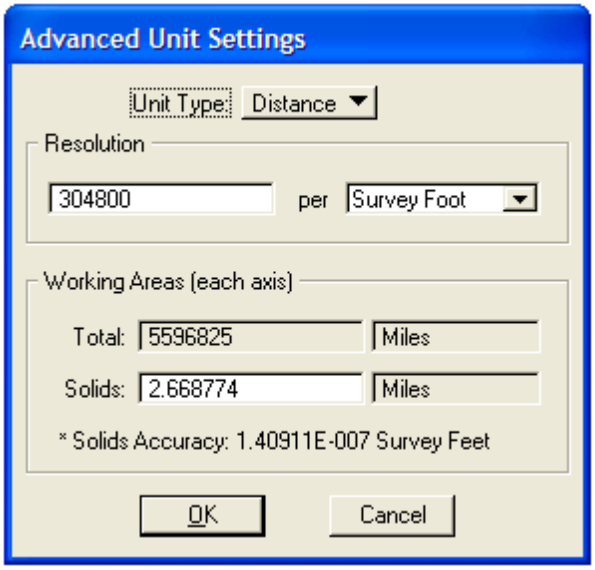
- **English Seed File Settings (Non-Survey Inch)**

English Working Units for MicroStation V8 are set to “US Survey Foot” standard (1 Survey Foot = 1200/3937m >> 0.30480061). The seed file for Right of Way Mapping is “**RWSEED2D.DGN**”. The design file global origin shall be center of the design plane 7400, 7400.



- **Advanced Working Unit Settings**

The Edit button opens the Advanced Unit Settings dialog box. These settings define two items. The first establishes the size of a grid (similar to the design plane in MicroStation/J) that overlays the drawing area. This grid is used for backward compatibility with older versions of MicroStation. The Advanced Unit Settings should appear as shown here.



9.1.4 Standard Text Fonts

MicroStation font libraries are resource files and typically have the extension ".rsc." They contain essentially the same information as font libraries from earlier versions, but in a different format. By carefully assigning the first 128 of the 256 available font numbers in a font library, backward compatibility is maintained with previous versions of MicroStation. The font library, "font.rsc," contains all of the traditional MicroStation fonts in the "fontlib" font library supplied with previous versions.

Font 58 is a vertical font that “mimics” the “Leroy” font style with an emphasis on even spaced letters that was created exclusively for Right of Way Mapping. This font is located in the **ZDOTFONT.RSC** resource file.

- **Key Strokes for Font 58**

Key Stroke
Result

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
A	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
~	!	@	#	$	%	^	&	*	(	)	_	+	{	}	|	:	“	<	>	?					
±	∆	@	#	$	%	°	&	*	(	)	_	+	℄	℄	m 2	:	“	<	>	?					
`	1	2	3	4	5	6	7	8	9	0	-	=	[	]	\	;	‘	,	.	/					
℄	1	2	3	4	5	6	7	8	9	0	-	=	[	]	\	;	‘	,	.	/					
1/2	1/4	3/4	1/8	3/8	5/8																				
½	¼	¾	⅛	⅜	⅝																				

NOTE: There is a setting within MicroStation that provides the user with a graphical representation of the above font keystrokes for use with the place text application. To activate this setting in MicroStation go to Workspace/Preferences, SELECT Category = Text, under the Text Editor Style drop down SELECT “WYSIWYG” and Select OK. Save these Settings. Please also note that text in Cells will not be editable when using WYSIWYG.

9.1.5 Standard Text Size

The following tables of text sizes are to be used as a guide for the recommended text sizes for all right of way mapping projects at a given scale. **Readability** of text data should be considered as priority; however no text should be smaller than 3.2’ on a 1” = 40’ scale (0.08” actual plotted size).

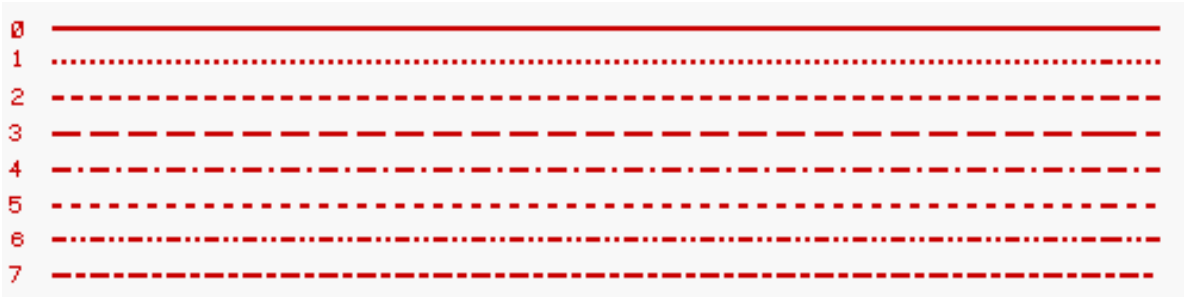
- **Recommended Base Text Sizes for (English) R/W Mapping**

D-SIZE (24”x36”)

SCALE	RECOMMENDED TEXT SIZES
1” = 5’	0.5’
1” = 10’	1.0’
1” = 20’	2.0’
1” = 30’	3.0’
1” = 40’	4.0’
1” = 50’	5.0’
1” = 100’	10.0’
1” = 200’	20.0’
1” = 400’	40.0’

9.1.6 Line Styles

Line style is part of the symbology of an element, for example, whether a line is solid, continuous dashes, dots and dashes, and so on. In plotting, a line style is an index in the range 0 to 7 that designates a particular sequence of pen up/down pairs to be used when drawing or plotting a graphic element. Each element has its own line style. See below for MicroStation standard line styles.



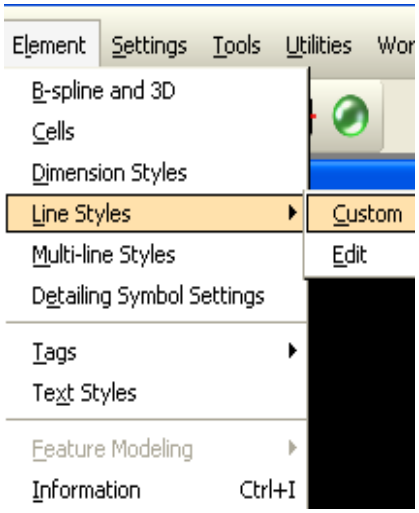
- **Custom Line Styles**

MicroStation® provides for the creation of "Custom Line Styles". Custom Line Styles have the same characteristics as standard MicroStation line codes and can be set as the active line style using "LC=" key in. For English units, "**RWLINENG.RSC**" was created at a 1:1 scale. Standard MicroStation line styles are based on output device coordinates, and therefore are not truly WYSIWYG, as are custom line styles, see above. It is recommended that you use custom line styles instead of standard line styles with patterned lines. When using Right of Way Mapping custom line styles with MicroStation it is important to set the correct active custom line style scale. For example: to place an English custom line styles simply set the scale the same as the drawing scale.

Only FDOT resource ".RSC" files should be used.

To set custom line style scale:

Select "Line Styles>Custom" from the "Element" menu.



- **Right of Way Mapping Custom Line Styles**

English custom line styles are created at a scale of 1” = 1’

NOTE: Symbols in tables are not displayed at their required weights/thickness.

NAME	SYMBOL
ANGLE – Angle Delineator	
ARROW2 – R/W Width	
ARROWPOINT	
ARROWTIE	
CLIMIT - City Limit	
CLIMIT2 – City Limit(Hash Only)	
COLINE – County Line	
EECL – Existing Easement Centerline	
EXLA – Existing L/A RW	
EXRW – Existing State Road R/W	
GRTL - Grant Line	
LA - Proposed L/A RW	
LEADERLT – Leader Left	
LEADERRT – Leader Right	
LICENSE – License	
LOC - Limits of Construction	
NONVH - Non-Vehicular Access Line	
NSPF - Nat./State Park/Forest	
NSPF2 – Nat./State Park/Forest (Hash Only)	
PESMT - Perpetual Ease.	
QSEC - ¼ Section Line	
RR - Railroad	
SECLIN - Section Line	

NAME	SYMBOL
STL - State Line	
SUBDIV – Subdivision Arrow	
SUBDIV2 – Arrows2	
SUBDIV2LT – Arrows 2 LT.	
SUBDIV2LTOnly – Arrows 2 LT.	
SUBDIV2RT – Arrows 2 RT.	
SUBDIV2RTOnly – Arrows 2 RT. Only	
SUBDIVLT	
SUBDIVRT	
TEMPE – Temporary Easement	
TIITF – Murphy Reservation Line	
TWPRGE – Township/Range	
WaterMapBoundary	

9.1.7 R/W Mapping Cell Library

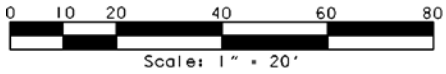
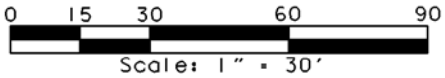
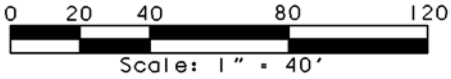
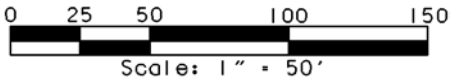
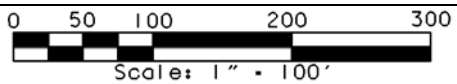
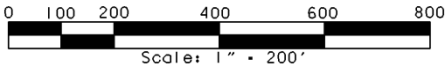
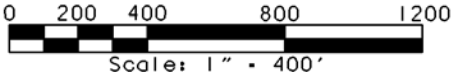
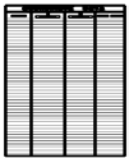
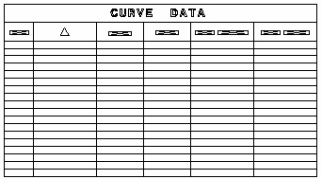
Cells are created in cell library ROW.CEL At 1” = 1’

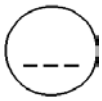
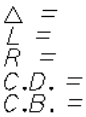
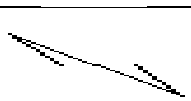
==========
NOTE: RW Cells must be placed with the True Scale toggle “ON”.
==========

- **CELL TABLE**

NOTE: Cells in tables are not displayed at their required weights/thickness. See Symbology Index for Cell symbology.

ELEMENT	TYPE	SYMBOL	Macro
ARROW TERMINATOR LEFT (Place on ByLevel of Text Element Relative Toggle “ON”)	C = ARRWLG		Place Delineator
ARROW TERMINATOR RIGHT (Place on ByLevel of Text Element Relative Toggle “ON”)	C = ARRWRG		Place Delineator
LINE TERMINATOR@POINT G = Graphic type cell	C =ARRLT	Terminator	Place Delineator
LINE TERMINATOR@POINT G = Graphic type cell	C =ARRRT	Terminator	Place Delineator

ELEMENT	TYPE	SYMBOL	Macro
BAR SCALE 1” = 20’	C = BS20		Place Bar Scale
BAR SCALE 1” = 30’	C = BS30		Place Bar Scale
BAR SCALE 1” = 40’	C = BS40		Place Bar Scale
BAR SCALE 1” = 50’	C = BS50		Place Bar Scale
BAR SCALE 1” = 100’	C = BS100		Place Bar Scale
BAR SCALE 1” = 200’	C = BS200		Place Bar Scale
BAR SCALE 1” = 400’	C = BS400		Place Bar Scale
BASELINE CURVE DATA BOX (Used with Geopak Table Tutorial)	C = BLBOX		
BASELINE SYMBOL	C = BL		
CENTERLINE SYMBOL	C = CL		
CONCRETE MONUMENT OPEN	C = MONSQ		
CONCRETE MONUMENT SOLID	C = MONSQS		
CONCRETE R/W MONUMENT (R/W MONUMENTATION MAP)	C = MON		
COORDINATE DATA BOX (Used with Geopak Table Tutorial)	C = COORD		
CURVE DATA BOX (Used with Geopak Table Tutorial)	C = CURBOX		
CURVE DATA (English) (Used with Geopak Table Tutorial)	C = CDATA	P.I.STA. Δ = D = T = L = R = P.C.STA. P.T.STA.	

ELEMENT	TYPE	SYMBOL	Macro
NORTH ARROW	C = NOARR		
PARCEL BUBBLE 100	C = PB100		
PARCEL BUBBLE 700	C = PB700		
PARCEL BUBBLE 800	C = PB800		
PARCEL BUBBLE 900	C = PB900		
PERMANENT R/W MONUMENT (R/W MONUMENTATION MAP)	C = PRWM		
PROPERTY LINE HOOK	C= PLHOOK		
PROPERTY LINE HOOK	C= PLHTOP		
PROPERTY LINE HOOK	C =PLHBOT		
PROPERTY LINE SYMBOL	C = PL		
ROD MONUMENT OPEN	C = MONRD		
ROD MONUMENT SOLID	C = MONRDS		
SEGMENTED CURVE CHORD DIST./BEARING (Used with Geopak Table Tutorial)	C = SEGCUR		
SPRING LINE (Place on Symbology of Assoc. Element)	C=SPRING		Place SpringLine

9.1.8 Standard Symbology Tables

Refer to the Symbology tables below for the listing of right of way elements and their symbologies. The list of elements shown may not contain **all** of the elements that appear within a right of way map, as this list would be extensive. The elements shown are those that are required for specific types of right of way maps and which may appear within all of the design file types.

When other files are referenced the element symbology of those files will be adhered to. If elements that are not required of a file are placed within that file, the element symbology of the file they normally reside in will be adhered to. All R/W level symbologies are created as MicroStation V8 ByLevel elements.

IMPORTANT: Readability of text data should be considered as priority.

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
BaselineCurveData	1500	Cell:Baseline Curve Data	0	0	2
BaselineFlagLT	1501	Annotation:Begin End Baseline Flag Left	0	LEADERLT	2
BaselineFlagRT	1502	Annotation:Begin End Baseline Flag Right	0	LEADERRT	2
BaselineLeaderWt0	1503	Annotation:Leader:Baseline Survey (weight = 0)	0	ArrowPoint	0
BaselineLeaderWt1	1504	Annotation:Leader:Baseline Survey (weight = 1)	0	ArrowPoint	1
BaselineLeaderWt2	1505	Annotation:Leader:Baseline Survey (weight = 2)	0	ArrowPoint	2
BaselineSideStreet	1506	Baseline:Baseline Side Street	0	0	0
BaselineStaTie	1507	Annotation:Station Tie:Baseline Station Tie	0	ArrowTie	0
BaselineSurvey	1508	Baseline:Baseline Survey	0	0	2
BaselineTangentLine	1509	Miscellaneous:Baseline Curve Tangent (PC-PI-PT)	0	2	0
BaselineTextWt0	1510	Annotation:Text:Baseline (weight = 0)	0	0	0
BaselineTextWt1	1511	Annotation:Text:Baseline (weight = 1)	0	0	1
BaselineTextWt2	1512	Annotation:Text:Baseline (weight = 2)	0	0	2
BuildingLeader	1513	Annotation:Leader:Building	0	ArrowPoint	0
BuildingStaTie	1514	Annotation:Station Tie:Building	0	ArrowTie	0
BuildingText	1515	Annotation:Text:Buildings	0	0	0
ClipBorder	1516	Cell:Miscellaneous:R/W Clip Border	4	2	0
ClipBorderLine	1517	Cell:Miscellaneous:R/W Clip Border	4	0	4
ClipBorderOutside	1518	Cell:Miscellaneous:R/W Clip Border	3	0	0
Closing-SameLine	1519	Miscellaneous:Closing Line, Same	0	ArrowTie	0

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
		Point, or Same Line			
Closing-SameLineText	1520	Miscellaneous:Text:Closing Line, Same Point, or Same Line	0	0	0
ConstLimits	1521	Proposed:Limits of Construction Line	3	LOC	0
ConstLimitsLeader	1522	Annotation:Leader:Limits of Construction (Proposed)	3	ArrowPoint	0
ConstLimitsStaTie	1523	Annotation:Station Tie:Limits of Construction (Proposed)	3	ArrowTie	0
ConstLimitsText	1524	Annotation:Text: Limits of Construction (Proposed)	3	0	0
CoordPtText	1525	Annotation:Text:Miscellaneous:Coordinate Geometry Points	4	0	0
DataBoxWt0	1526	Cell:Miscellaneous:Data Table Wt0 For Text and Linear Elements	0	0	0
DataBoxWt1	1527	Cell:Miscellaneous:Data Table Wt1 For Text and Linear Elements	0	0	1
DataBoxWt2	1528	Cell:Miscellaneous:Data Table Wt2 For Text and Linear Elements	0	0	2
DataBoxWt3	1529	Cell:Miscellaneous:Data Table Wt3 For Text and Linear Elements	0	0	3
DataBoxWt4	1530	Cell:Miscellaneous:Data Table Wt4 For Text and Linear Elements	0	0	4
DetailBorder	1531	Miscellaneous: Border for Mapping Detail	0	3	3
EaseLine_ep	1532	Easement:Easement Line (Existing)	1	2	0
EaseLineLeader_ep	1533	Annotation:Leader:Easement (Existing)	1	ArrowPoint	0
EaseLineStaTie_ep	1534	Annotation:Station Tie:Easement (Existing)	1	ArrowTie	0
EaseLineText_ep	1535	Annotation:Text:Easement Lines (Existing)	1	0	0
EaseLineWidthArrow_ep	1536	Annotation:Arrow:Easement Width (Existing)	1	ARROW2	0
EaseLineCenterline_ep	1537	Baseline:Centerline:Easement (Existing)	1	EECL	0
EaseLicLine	1538	Easement:License (Proposed)	0	LICENSE	1
EaseLicLeader	1539	Annotation:Leader:License (Proposed)	0	ArrowPoint	0
EaseLicStaTie	1540	Annotation:Station Tie:License (Proposed)	0	ArrowTie	0
EaseLicText	1541	Annotation:Text:Easement Lines, License (Proposed)	0	0	1
EaseLicWidthArrow	1542	Annotation:Arrow:License Width	0	ARROW2	0

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
		(Proposed)			
EasePerpLine	1543	Easement:Perpetual Easement Line (Proposed)	4	PESMT	2
EasePerpLeader	1544	Annotation:Leader:Easement Perpetual (Proposed)	4	ArrowPoint	1
EasePerpStaTie	1545	Annotation:Station Tie:Easement Perpetual (Proposed)	4	ArrowTie	0
EasePerpText	1546	Annotation:Text:Easement Lines, Perpetual (Proposed)	4	0	1
EasePerpWidthArrow	1547	Annotation:Arrow:Easement Perpetual Width (Proposed)	4	ARROW2	0
EaseTempLine	1548	Easement:Temporary Easement Line (Proposed)	6	TEMPE	1
EaseTempLeader	1549	Annotation:Leader:Easement Temporary (Proposed)	6	ArrowPoint	1
EaseTempStaTie	1550	Annotation:Station Tie:Easement Temporary (Proposed)	6	ArrowTie	0
EaseTempText	1551	Annotation:Text:Easement Lines, Temporary (Proposed)	6	0	1
EaseTempWidthArrow	1552	Annotation:Arrow:Easement Temporary Width (Proposed)	6	ARROW2	0
GenNotesLeader	1553	Annotation:Leader:Miscellaneous:General Notes	0	ArrowPoint	2
GenNotesText	1554	Annotation:Miscellaneous:Text: General Notes	0	0	2
GovCityLimitHLine_ep	1555	Government:City Limit Line (Hash Only)	3	Climit2	0
GovCityLimitLine_ep	1556	Government:City Limit Line	3	CLIMIT	0
GovCountyLine_ep	1557	Government:County Line	3	COLINE	3
GovGrantLine_ep	1558	Government:Grant Line	3	GRTL	2
GovGreenLeaderWt0_ep	1559	Annotation:Leader:Government (color = green)(weight = 0)	2	ArrowPoint	0
GovGreenLeaderWt2_ep	1560	Annotation:Leader:Government (color = green)(weight = 2)	2	ArrowPoint	2
GovGreenStaTie_ep	1561	Annotation:Station Tie:Government (color = green)	2	ArrowTie	0
GovGreenTextWt0_ep	1562	Annotation:Government Text Green Weight of 0	2	0	0
GovGreenTextWt2_ep	1563	Annotation:Government Text Green Weight of 2	2	0	2
GovLotLine_ep	1564	Government:Lot Line	3	0	1
GovMeanderLine_ep	1565	Government:Meander Line	3	3	1

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
GovParkHLine_ep	1566	Government:National or State Park or Forest Line (Hash Only)	2	NSPF2	0
GovParkLine_ep	1567	Government:National or State Park or Forest Line	2	NSPF	0
GovQtrQtrLine_ep	1568	Government:Quarter / Quarter Section Line	3	QSEC	0
GovQuarterLine_ep	1569	Government:Quarter Section Line	3	QSEC	1
GovRedLeaderWt0_ep	1570	Annotation:Leader:Government (color = red)(weight = 0)	3	ArrowPoint	0
GovRedLeaderWt2_ep	1571	Annotation:Leader:Government (color = red)(weight = 2)	3	ArrowPoint	2
GovRedStaTie_ep	1572	Annotation:Station Tie:Government (color = red)	3	ArrowTie	0
GovRedTextWt0_ep	1573	Annotation:Government Text Red Weight of 0	3	0	0
GovRedTextWt2_ep	1574	Annotation:Government Text Red Weight of 2	3	0	2
GovSectionLine_ep	1575	Government:Section Line	3	SECLIN	2
GovStateLine_ep	1576	Government:State Line	2	STL	3
GovTwpRgeLine_ep	1577	Government:Township and Range Government Survey Line	2	TWPRGE	3
LARWLine	1578	Proposed:Limited Access Right of Way Line	4	LA	3
LARWLine_ep	1579	Existing:Limited Access Right of Way Line	7	EXLA	0
MaintLeader	1580	Annotation:Leader:Maintenance	4	ArrowPoint	2
MaintLine	1581	Proposed:Maintenance Line	4	0	4
MaintStaTie	1582	Annotation:Station Tie:Maintenance	4	ArrowTie	0
MaintText	1583	Annotation:Text: Maintenance	4	0	2
MaintWidthArrow	1584	Annotation:Arrow:Maintenance Width (Proposed)	4	ARROW2	0
MHWL_TIITF_Leader	1585	Annotation:Leader:TIITF:Mean High Water Lines or Ordinary High Water Lines	7	ArrowPoint	2
MHWL_TIITF_StaTie	1587	Annotation:Station Tie:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	7	ArrowTie	2
MHWL_TIITF_Text	1588	Annotation:Text:TIITF:Mean High Water LInes or Ordinary High Water Lines	7	0	2
MHWL_TIITF_WidthArrow	1589	Annotation:Arrow:TIITF:Mean High Water LInes or Ordinary High Water	7	ARROW2	2

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
		Lines			
MonConcOpen	1590	Cell:Monument,Concrete Open	4	0	1
MonConcSolid	1591	Cell:Monument, Concrete Solid	4	0	1
MonConRW	1592	Cell:Monument, Concrete RW	4	0	2
MonLeader	1593	Annotation:Leader:Found / Set Monuments (Not Government Corners)	4	ArrowPoint	0
MonPermRW	1594	Cell:Monument, RW Permanent (RW Survey Map)	4	0	2
MonRodOpen	1595	Cell:Monument, Rod Open	4	0	1
MonRodSolid	1596	Cell:Monument, Rod Solid	4	0	1
MonStaTie	1597	Annotation:Station Tie:Found / Set Monuments (Not Government Corners)	4	ArrowTie	0
MonText	1598	Annotation:Text:Found / Set Monuments (Not Government Corners)	4	0	0
Murphy_TIITF_Leader	1599	Annotation:Leader:TIITF:Murphy Reservations Lines	2	ArrowPoint	1
Murphy_TIITF_Line	1600	TIITF: Upland TIITF:Murphy Reservations Lines	2	TIITF	1
Murphy_TIITF_StaTIe	1601	Annotation:Station Tie:TIITF:Murphy Reservations Lines	2	ArrowTie	1
Murphy_TIITF_Text	1602	Annotation:Text:TIITF:Murphy Reservations Lines	2	0	1
Murphy_TIITF_WidthArrow	1603	Annotation:Arrow:TIITF:Murphy Reservations Lines	2	ARROW2	1
NonVehcLeader_ep	1604	Annotation:Leader:Non Vehicular Access	3	ArrowPoint	0
NonVehcLine_ep	1605	Existing:Non-Vehicular Access Line	3	NONVH	0
NonVehcStaTie_ep	1606	Annotation:Station Tie:Non Vehicular Access	3	ArrowTie	0
NonVehcText_ep	1607	Annotation:Text:Non-Vehicular Access (Existing)	3	0	0
ParcelBubble100	1608	Cell:Miscellaneous:Right of Way Parcel Bubble with Leader	3	0	2
ParcelBubble700	1609	Cell:Miscellaneous:Temporary Easement Parcel Bubble with Leader	6	0	2
ParcelBubble800	1610	Cell:Miscellaneous:Perpetual Easement Parcel Bubble with Leader	4	0	2
ParcelBubble900	1611	Cell:Miscellaneous:License Parcel	0	0	2

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
		Bubble with Leader			
PropertyLine_ep	1612	Existing:Property Line	7	0	0
PropertyLineHook_ep	1613	Cell:Miscellaneous:Property Line Hook	4	0	0
PropertyLineLeader_ep	1614	Annotation:Leader:Property Line (Existing)	7	ArrowPoint	0
PropertyLineStaTie_ep	1615	Annotation:Station Tie:Property Line (Existing)	7	ArrowTie	0
PropertyLineSymbol	1616	Cell:Miscellaneous:Property Line Symbol	4	0	0
PropertyLineText_ep	1617	Annotation:Text:Property Line (Existing)	7	0	0
RFClipPoint	1618	Cell:Miscellaneous:Point (Point Cell for RFCLIP Program)	4	0	10
RRBaseline	1619	Baseline:Rail Road Centerline	0	RR	0
RRLeaderWt0	1620	Annotation:Leader:Railroad (weight = 0)	0	ArrowPoint	0
RRLeaderWt1	1621	Annotation:Leader:Railroad (weight = 1)	0	ArrowPoint	1
RRLeaderWt2	1622	Annotation:Leader:Railroad (weight = 2)	0	ArrowPoint	2
RRTextWt0	1623	Annotation:Text:Railroad (weight = 0)	0	0	0
RRTextWt1	1624	Annotation:Text:Railroad (weight = 1)	0	0	1
RRTextWt2	1625	Annotation:Text:Railroad (weight = 2)	0	0	2
RW_Line	1626	Proposed:Right of Way Line	4	RW	3
RW_Line_ep	1627	Existing:RW Line	7	RW	0
RWandLA_Leader	1628	Annotation:Leader:R/W & L/A (Proposed)	3	ArrowPoint	2
RWandLA_Leader_ep	1629	Annotation:Leader:R/W & L/A (Existing)	7	ArrowPoint	0
RWandLA_StaTie	1630	Annotation:Station Tie:R/W & L/A Lines (Proposed)	3	ArrowTie	0
RWandLA_StaTie_ep	1631	Annotation:Station Tie:R/W & L/A Lines (Existing)	7	ArrowTie	0
RWandLA_Text	1632	Annotation:Text:R/W & L/A Lines Taking Lines (Proposed)	3	0	2
RWandLA_Text_ep	1633	Annotation:Text:R/W & L/A Lines (Existing)	7	0	0
RWandLA_WidthArrow	1634	Annotation:Arrow:RW & LA Width (Proposed)	3	ARROW2	0

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
RWandLA_WidthArrow_ep	1635	Annotation:Arrow:RW & LA Width (Existing)	7	ARROW2	0
ScratchElements	1636	Scratch:None Plotting Level for Draft Elements, Temporary Elements, Etc.	3	0	0
ScratchLevel1	1637	Scratch:Level for Undefined Items - weight of 1	0	0	1
ScratchLevel2	1638	Scratch:Level for Undefined Items - weight of 2	0	0	2
ScratchLevel3	1639	Scratch:Level for Undefined Items - weight of 3	0	0	3
SegCurveData	1640	Cell:Miscellaneous:Segmented Curve Data (Place on Text Symbology of Assoc. Element)	0	0	0
SideStLeaderWt1	1641	Annotation:Leader:Side Street (weight = 1)	0	ArrowPoint	1
SideStLeaderWt2	1642	Annotation:Leader:Side Street (weight = 2)	0	ArrowPoint	2
SideStStaTie	1643	Annotation:Station Tie:Side Street	0	ArrowTie	0
SideStTextWt1	1644	Annotation:Text:Side Street Curve Data, Curve & Coordinate Box Text	0	0	1
SideStTextWt2	1645	Annotation:Text:Side Street Data:Stations,Names,Leader Lines&Circles for (PC,PT,PI,POT)	0	0	2
SubBlockNumberText	1646	Cell:Miscellaneous:Subdivision:Text: Block Number Enter Data Field	5	0	2
SubDivDelineator	1647	Annotation:Subdivision Delineator Line for Subdivision Terminator	5	0	1
SubDivLine	1648	Existing:Subdivision Line	5	0	0
SubDivLineText	1649	Annotation:Text:Subdivision: Lines & Vacated / Original Lot Lines (Existing)	5	0	0
SubDivNameText	1650	Annotation:Text:Subdivision: Plat Name (Existing)	5	0	2
SubDivRW_WidthArrow	1651	Annotation:Arrow:Subdivision	5	ARROW2	0
SubDoubleArrow	1652	Annotation:Subdivision: Boundary Arrows Double <<---->>	5	SUBDIV2	1
SubLotNumberText	1653	Annotation:Text:Subdivision: Lot Numbers	5	0	1
SubSingleArrow	1654	Annotation:Subdivision: Boundary Arrows <---->	5	SUBDIV	1
SubSingleLTArrow	1655	Annotation:Subdivision: Boundary Arrows Single Left <----	5	SUBDIVLT	1
SubSingleRTArrow	1656	Annotation:Subdivision: Boundary Arrows Single Right ---->	5	SUBDIVRT	1

Level Name	Level No.	Level Description	ByLevel Color	ByLevel Style	ByLevel Weight
SubTwoLTArrow	1657	Annotation:Subdivision: Boundary Arrows Two Left <<---->	5	SUBDIV2LT	1
SubTwoLTOnlyArrow	1658	Annotation:Subdivision: Boundary Arrows Two Left Only <<----	5	SUBDIV2LTOnly	1
SubTwoRTArrow	1659	Annotation:Subdivision: Boundary Arrows Two Right <---->>	5	SUBDIV2RT	1
SubTwoRTOnlyArrow	1660	Annotation:Subdivision: Boundary Arrows Two Right Only ---->>	5	SUBDIV2RTOnly	1
SubVacOrigLotLeader	1661	Annotation:Leader:Subvivision: Lines & Vacated / Original Lot Lines (Existing)	5	ArrowPoint	0
SubVacOrigLotLine	1662	Existing:Subdivision Vacated or Original Lot Line	5	5	0
SubVacOrigLotStaTie	1663	Annotation:Station Tie:Subdivision Vacated & Original Lot	5	ArrowTie	0
SUEL_TIITF_Leader	1664	Annotation:Leader:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	ArrowPoint	2
SUEL_TIITF_Line	1665	DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines established by DEP methodology	2	PESMT	3
SUEL_TIITF_StaTie	1666	Annotation:Station Tie:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	ArrowTie	2
SUEL_TIITF_Text	1667	Annotation:Text:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	0	2
SUEL_TIITF_WidthArrow	1668	Annotation:Arrow:DEP:TIITF:Safe Upland Elevation Lines or Jurisdictional Lines	2	ARROW2	2
TabOwnshpText	1669	Annotation:Text:Miscellaneous: Table of Ownerships	0	0	1
TopoText_ep	1670	Annotation:Text:Miscellaneous: All Other Topograhic Element Labels (Reference Files)	0	0	0
WaterEdge_ep	1671	Annotation:Mapping Boundary for Rivers, Streams, or Lakes	7	WaterMapBoundary	0

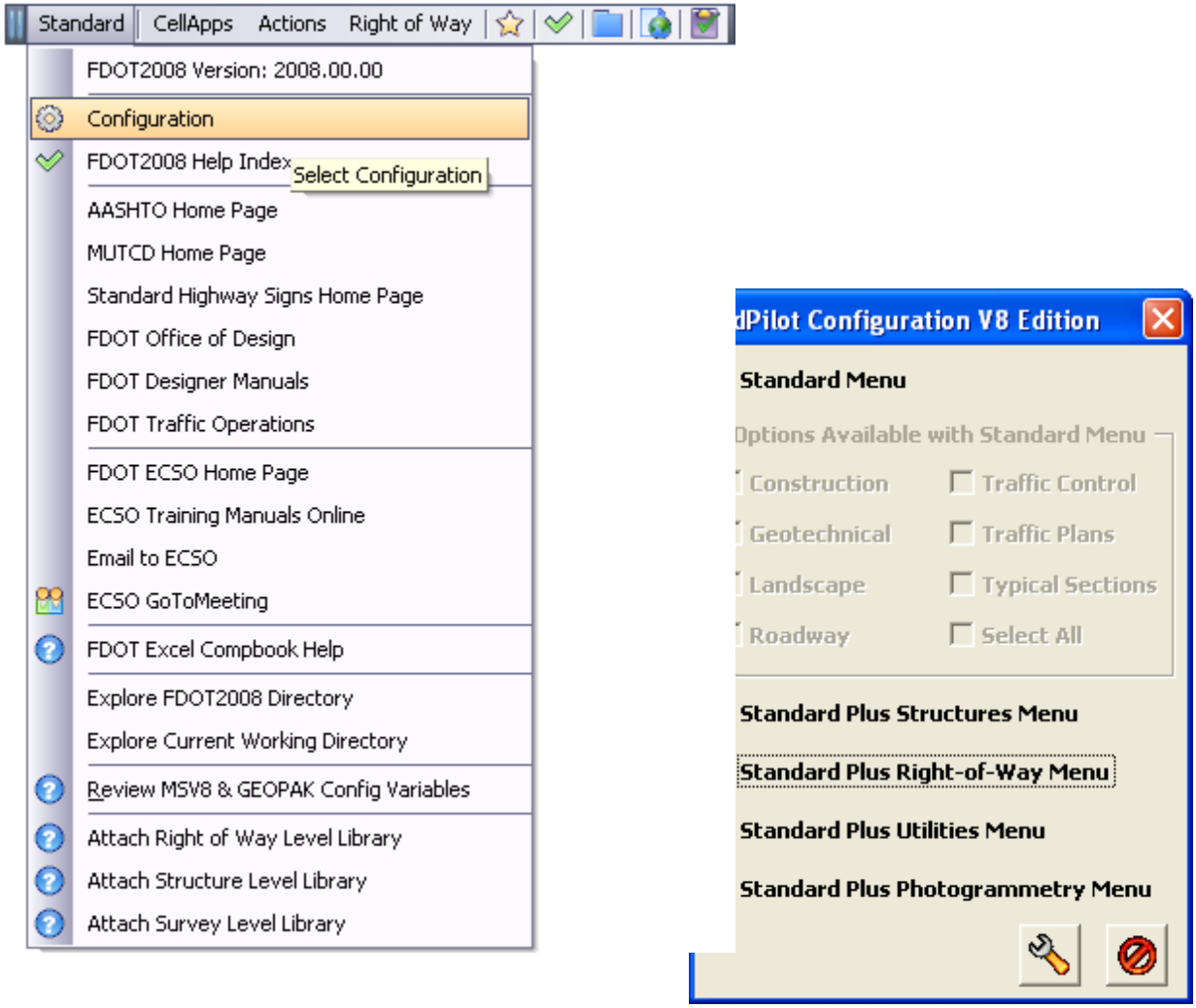
9.2 Right of Way FDOT Menu

9.2.1 Overview

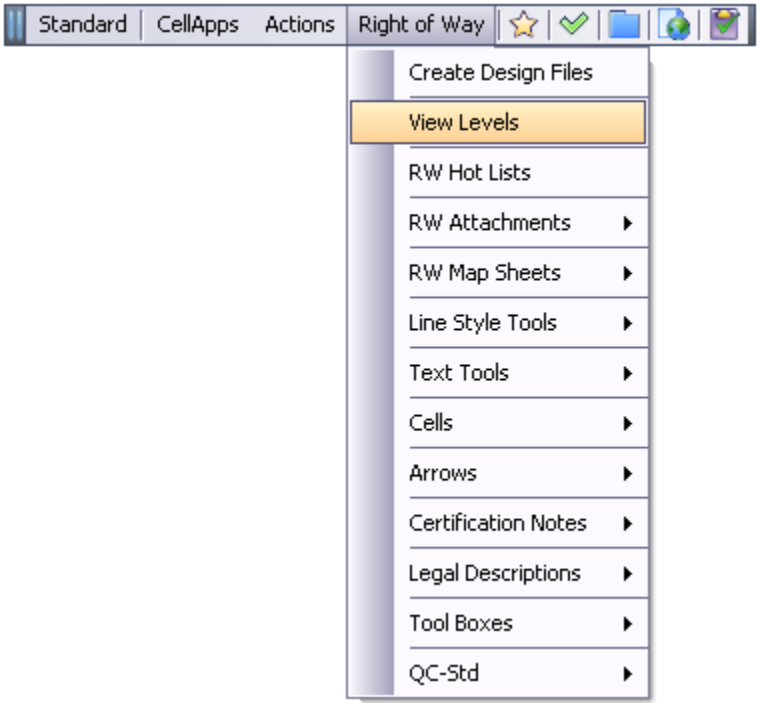
Right of Way FDOT Menu was designed with the user in mind. It is a package that facilitates right of way mapping plans preparation incorporating the R/W Mapping CADD Standards, Cell Libraries, Custom Line Styles and Notes etc. The FDOT Menu provided on the FDOT2008 software is a C++ executable program called FDOT Menu.

The Standard FDOT Menu is made available by setting the MicroStation Manager Workspace to "**FDOT2008**" for English unit projects and displays upon opening a design file.

The User may select from the Standard pull down option (see below) to configure the FDOT Menu bar to include the R/W FDOT Menu and other Discipline specific FDOT Menu's. When selected, the FDOT Menu Configuration dialog (see below) displays in which the user can select the desired discipline menu(s). All of FDOT's MicroStation applications have been included in the FDOT Menu's plus some useful tools from MicroStation's Vault CD. These applications are maintained within the FDOT Menu selections CellApps, Locks, and Actions. For detailed instructions on the use of FDOT Menu select Standards > FDOT Menu Getting Started.



9.2.2 View Levels

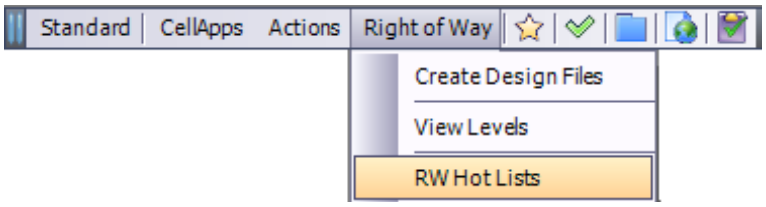


This is a VBA macro that allows you to display used levels individually in a slide-show type of manner. If you tend to crawl up and down your levels a lot, you may find this much faster than traditional methods.

- **Levels:** Displays a list of level names that currently exist in the design file.
- **Restore View on Exit:** When selected (on) all levels in list will be displayed when macro is exited. When not selected (off) the current active will be the only level displayed when the macro is exited.
- **Previous:** Moves to the level previously selected in the list.
- **Next:** Moves to the next level in the list.
- **Exit:** Exits the program.

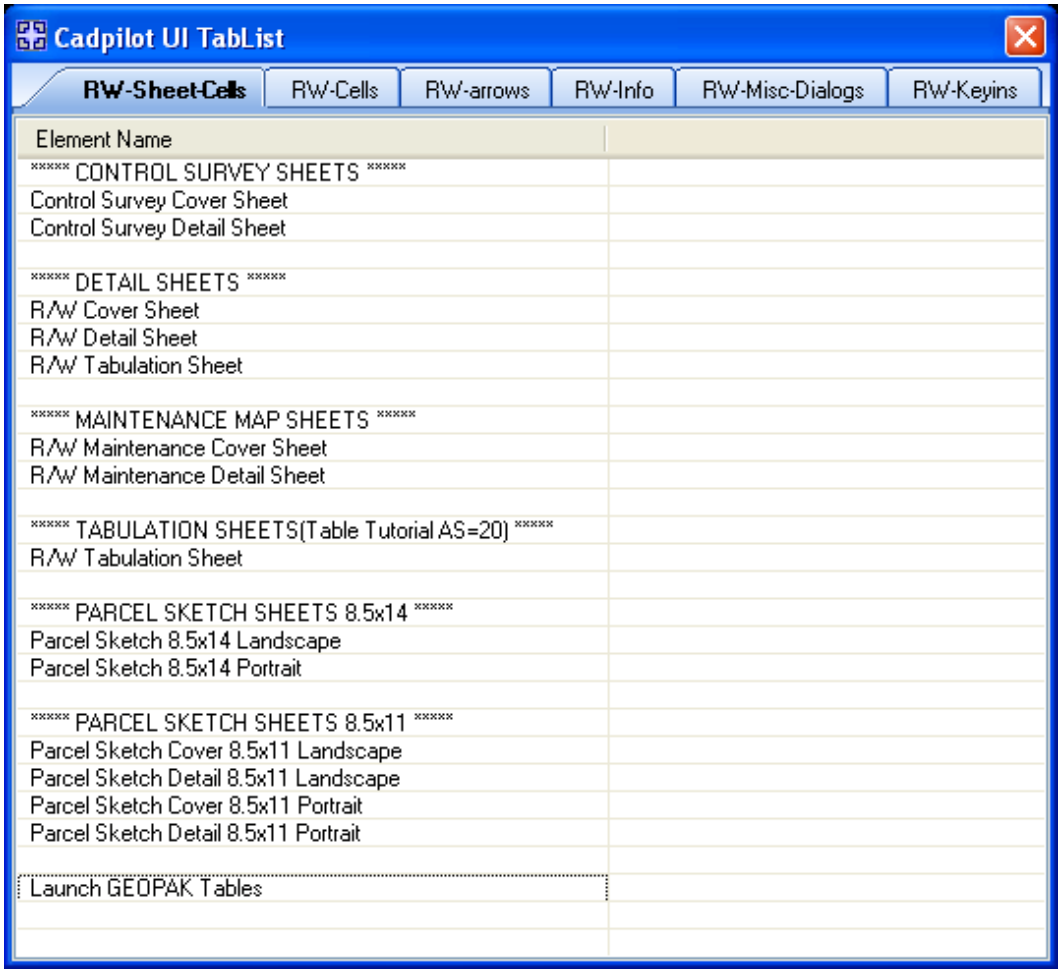
9.2.3 RW Hot Lists

The R/W Mapping FDOT Menu **Hot List** dialog provides the user with quick access to many of the categories and items located on the FDOT Menu pull downs. The Hot List dialog can be activated by selecting **Right of Way > RW Hot Lists:**

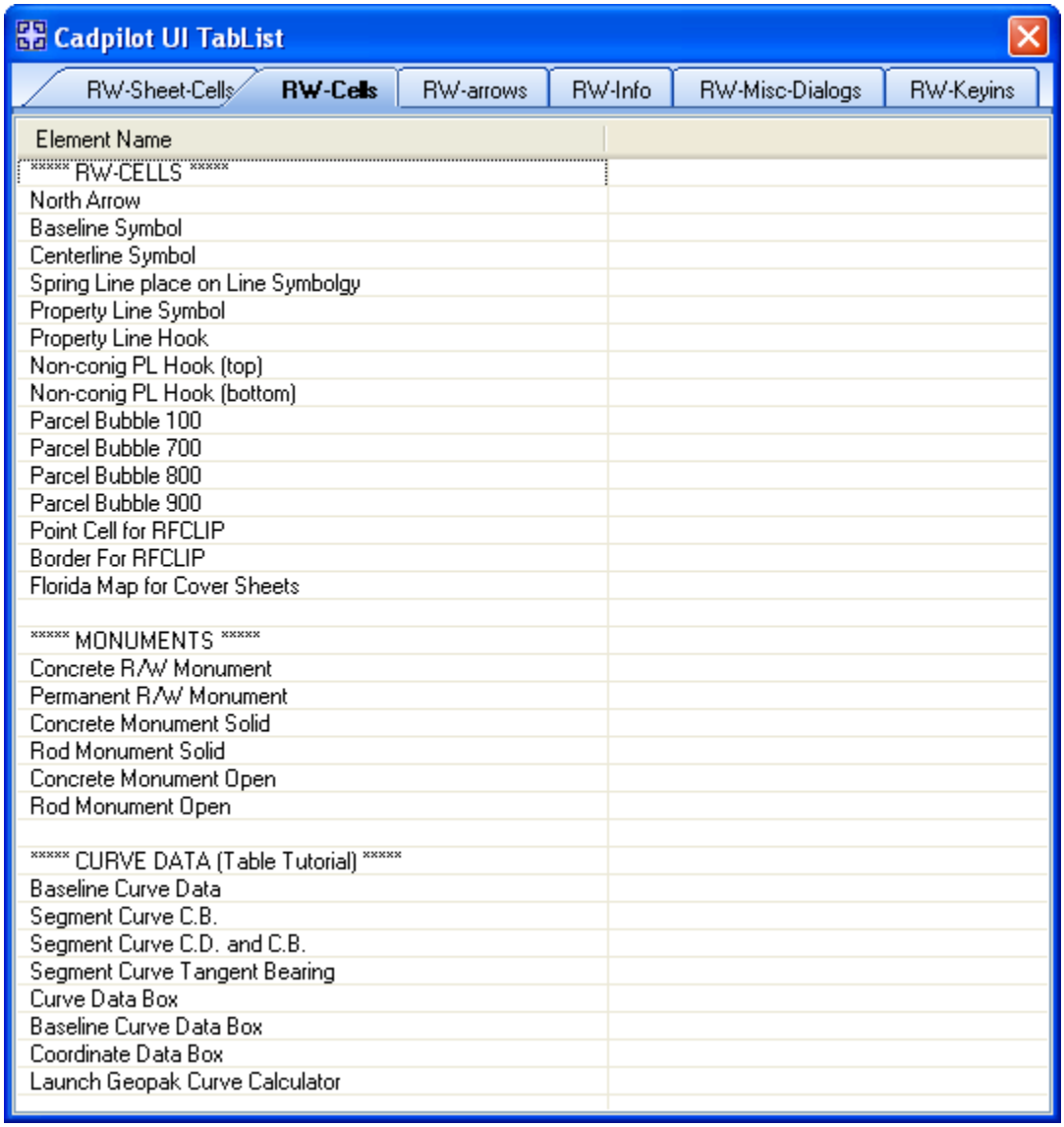


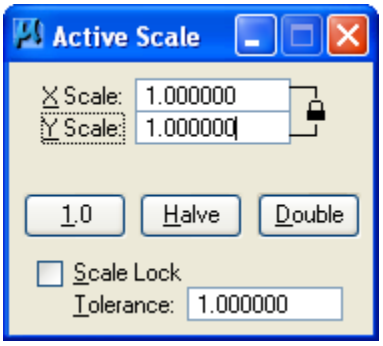
The **RW Hot Lists** dialog box contains the following tab selections:

- **RW-Sheet-Cells** - Mapping sheet cells for placement into the MicroStation design file. The same process is used for placement of sheet cells as described under RW-Cells shown previously.

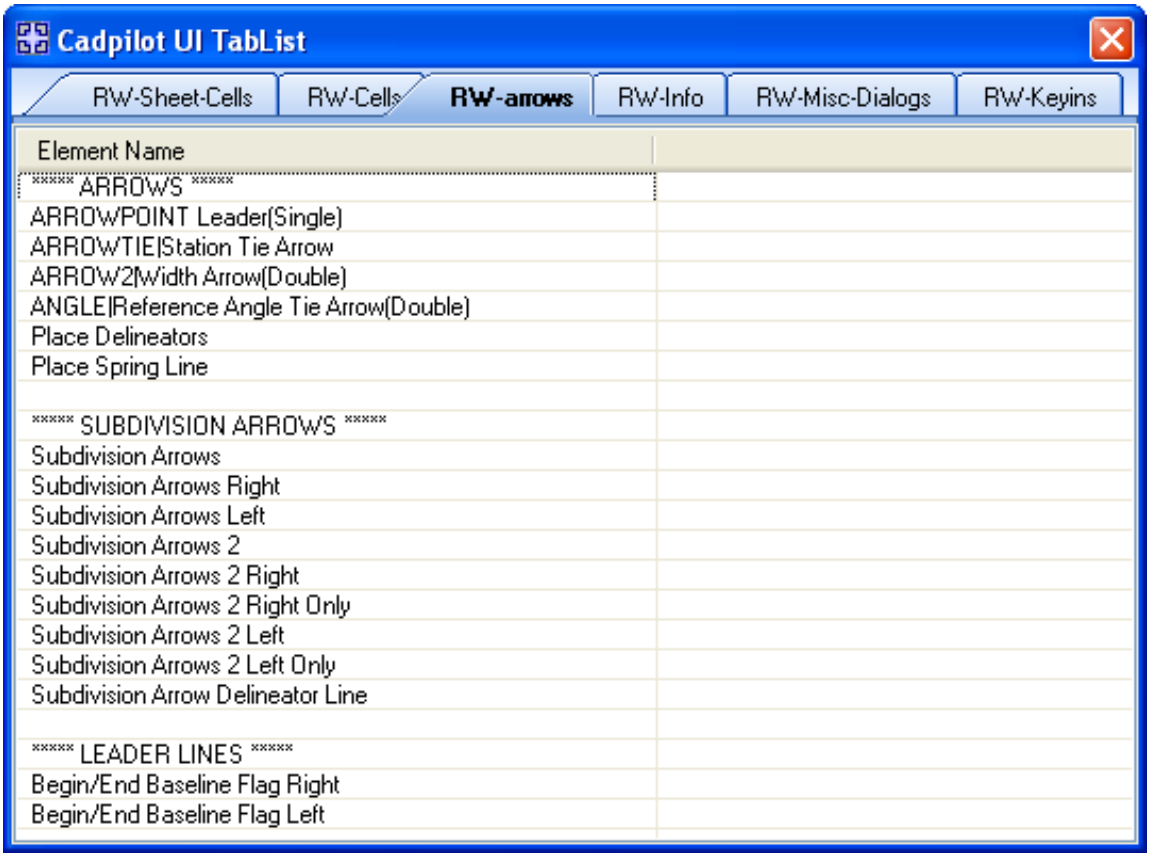


- **RW-Cells** – Provides quick access to R/W Mapping cells for placement into a MicroStation design file. Simply select the desired cell name and double click. The cell placement command will execute and the cell will be attached to the MicroStation cursor for placement. The Active Scale dialog (also shown) will be activated for adjustment of scale prior to the data point to place the cell.



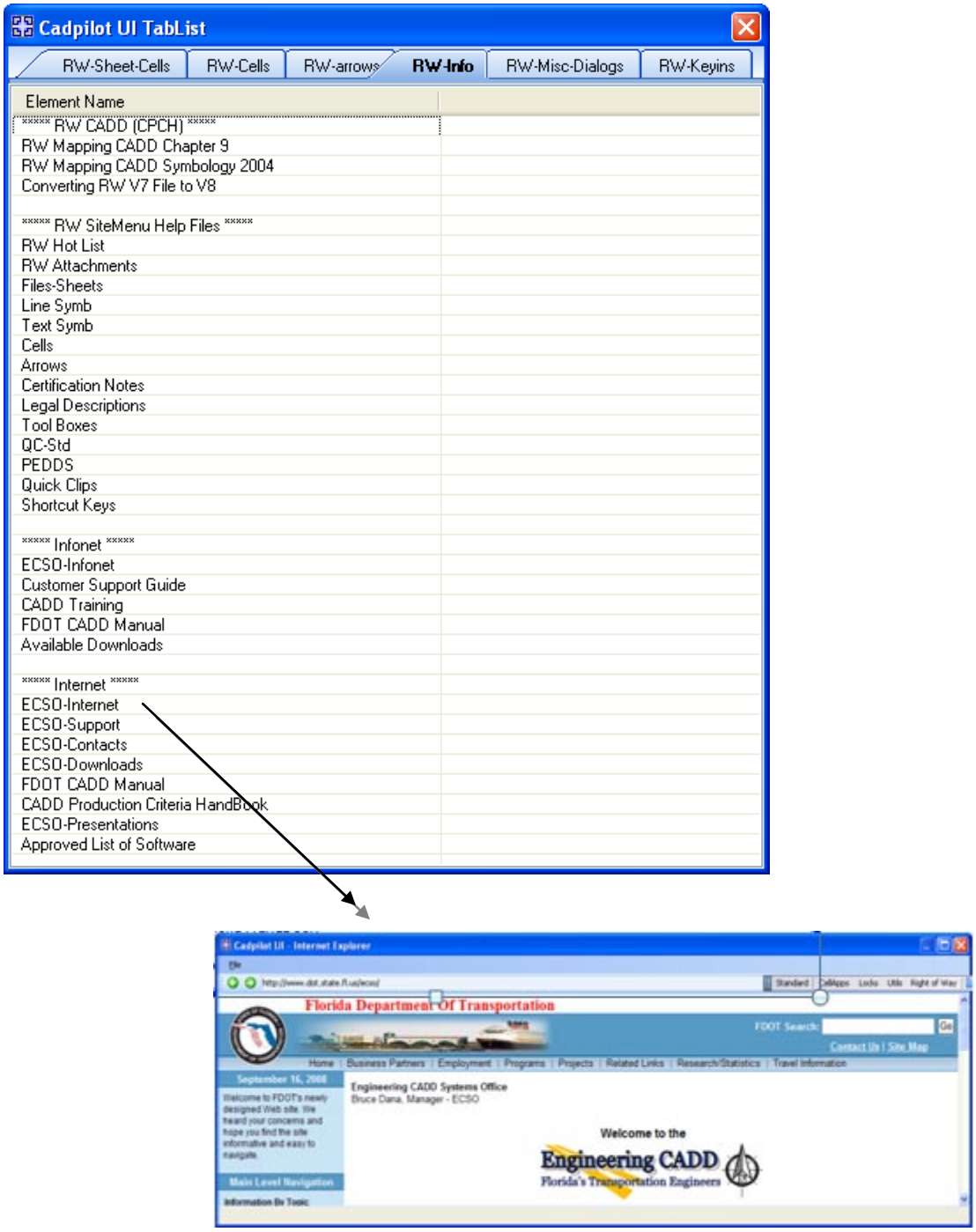


- **RW-Arrows** – Provides access to all R/W Mapping Arrows, Delineators and other annotation applications as located on the R/W Mapping FDOT Menu.

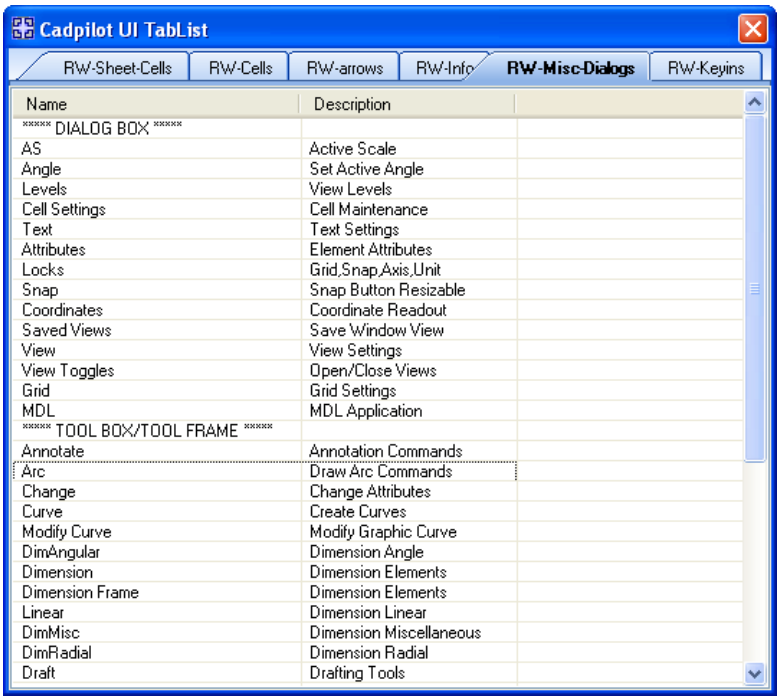


- **RW-Info** – Provides access to a variety of R/W Mapping information such as R/W Mapping CADD Chapter 9 and R/W Mapping CADD Symbology 2008 which are chapters of the FDOT2008 CADD Production Criteria Handbook (CPCH). Also the user has access to Help files on R/W Mapping FDOT Menu categories.

  Web site access is also provided, for Engineering/CADD Systems Office(ECSO) Infonet web sites and ECSO Internet web sites for quick access to important information. When Infonet or Internet web sites are selected the Rowse Company FDOT Menu Browser will be actived within MicroStation for viewing/browsing web sites.



- **Misc-Dialogs** – Provides quick access to various MicroStation command dialogs.

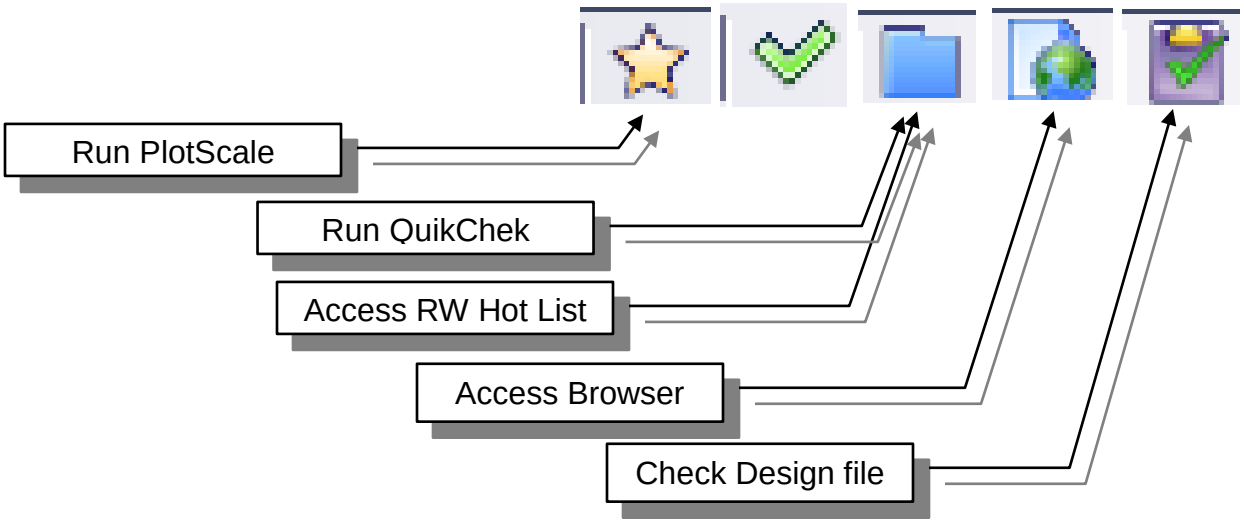


Name	Description
***** DIALOG BOX *****	
AS	Active Scale
Angle	Set Active Angle
Levels	View Levels
Cell Settings	Cell Maintenance
Text	Text Settings
Attributes	Element Attributes
Locks	Grid,Snap,Axis,Unit
Snap	Snap Button Resizable
Coordinates	Coordinate Readout
Saved Views	Save Window View
View	View Settings
View Toggles	Open/Close Views
Grid	Grid Settings
MDL	MDL Application
***** TOOL BOX/TOOL FRAME *****	
Annotate	Annotation Commands
Arc	Draw Arc Commands
Change	Change Attributes
Curve	Create Curves
Modify Curve	Modify Graphic Curve
DimAngular	Dimension Angle
Dimension	Dimension Elements
Dimension Frame	Dimension Elements
Linear	Dimension Linear
DimMisc	Dimension Miscellaneous
DimRadial	Dimension Radial
Draft	Drafting Tools

- **R/W Hot Boxes**

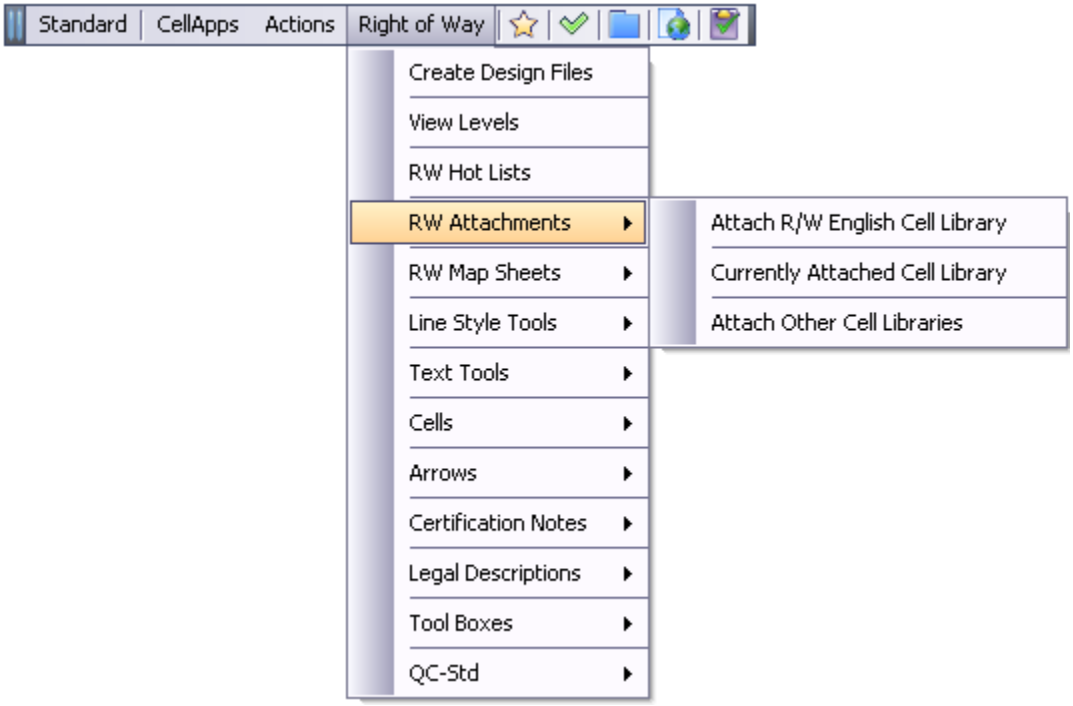
The R/W Mapping FDOT Menu also provides a means of quick access to Hot List dialog and browser windows by using Hot Box icons. After the FDOT2008 software has been installed and the Right of Way Mapping discipline selected from the FDOT Menu Standard>Select Configuration as shown previously, the FDOT Menu should appear as shown below with five icons located to the right of the menu bar.

These icons provide quick access to Run PlotScale, Quick Check, R/W Hot Lists, Browser and QC Compliance by simply passing the cursor over the desired icon. This can be very useful in such cases where the user has selected a FDOT Menu Help icon which opens the information in the browser. To dismiss the browser the user must simply place a data point or reset within the MicroStation design file. To bring back the browser the user would simply pass the cursor over the blue icon and the browser will be reopened at the previously selected site or help file location.



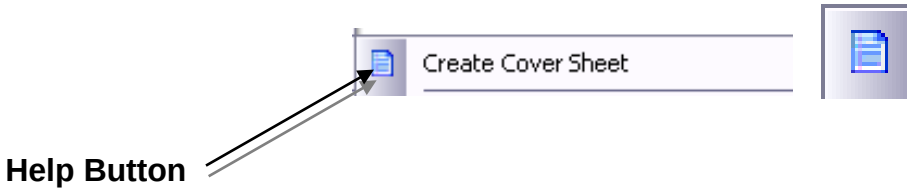
9.2.4 R/W Attachments

The **R/W Attachments** selection provides options for attaching the Right of Way Mapping cell libraries for English (row.cel) projects, determining the "Currently Attached Cell Library" which displays results in the MicroStation message window, "Attach Other Cell Libraries" which displays the MicroStation Cell Utility dialog.

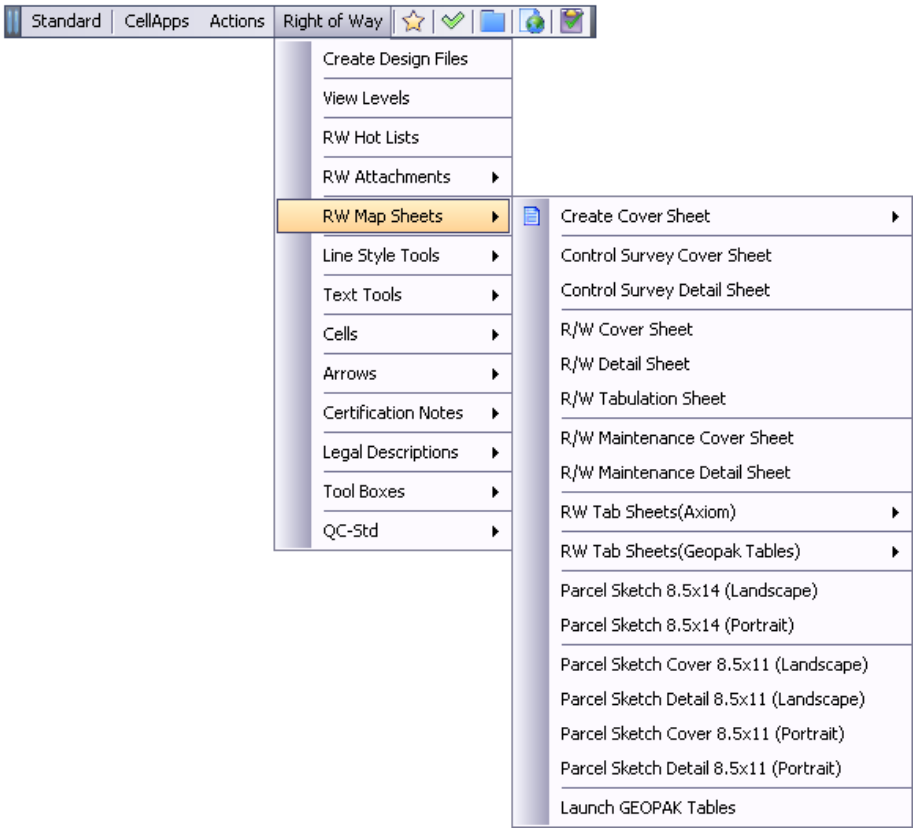


9.2.5 R/W Map Sheets

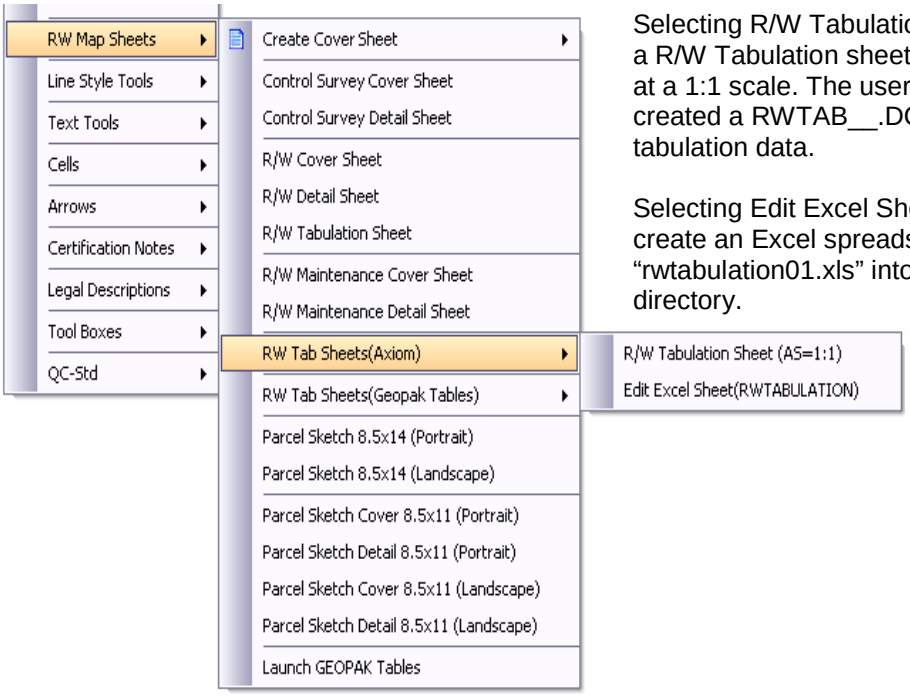
Note: A **Help** button is located to the left of the category name containing help information on that menu selection.



This option places various R/W Map sheet cells of the user's choice in the active design file. The user simply selects the type of sheet cell, and places it in the file. When the R/W Tabulation Sheets (Geopak Tables) is selected, the tabulation sheet will be placed in the design file at the scale of 1"=20'. This accommodates the use of Geopak Table Tutorial text placement. When selected, the Launch Geopak Tables provides a short cut to launch the Geopak Table Tutorial dialog.



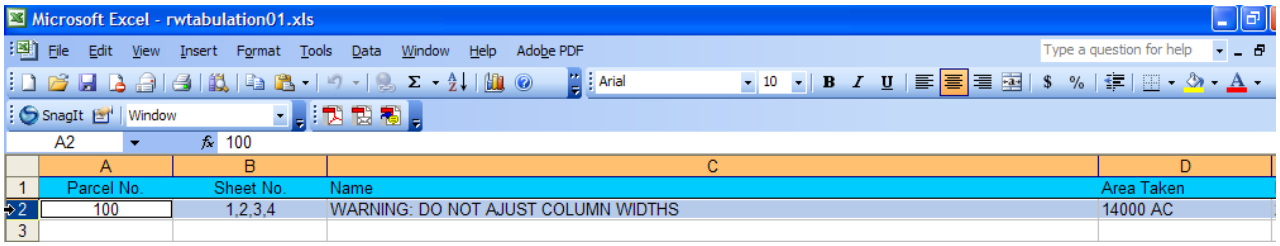
- **RW Tab Sheet (Axiom)**



Selecting R/W Tabulation Sheet (AS = 1:1) places a R/W Tabulation sheet into the current design file at a 1:1 scale. The user should have previously created a RWTAB__.DGN standard design file for tabulation data.

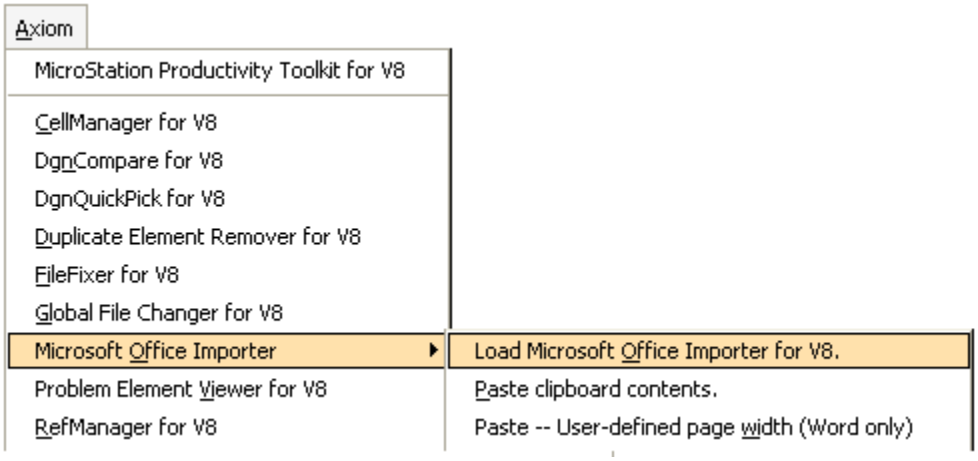
Selecting Edit Excel Sheet (RWTABULATION) will create an Excel spreadsheet entitled "rwtabulation01.xls" into the user's current dgn directory.

Warning: Do not adjust column widths on spreadsheet or data will not be placed correctly on tabulation sheet.

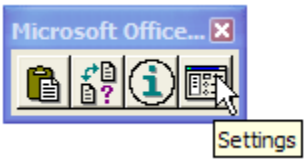


This spreadsheet is specifically designed to work with Axiom's "Microsoft Office Importer for V8". **Consultants can contact Axiom, Inc to purchase the program.**

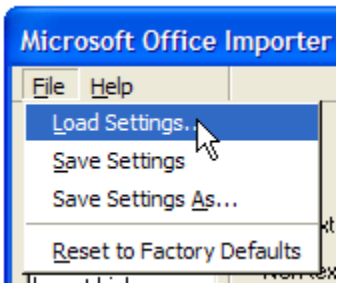
The Office Importer requires the use of an "ini" file for specific settings. For R/W this file is called **office.ini** and is located in the **C:\fdot2008\resources\data** directory. The user should check that this file is attached by first opening the Office Importer dialog as shown:



Once selected, the Office Importer dialog box should appear and the user should select the Settings button as shown:



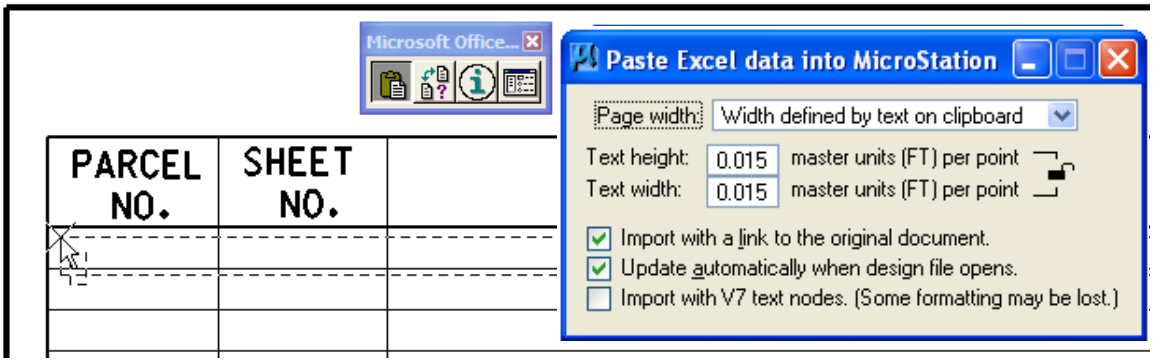
The Settings dialog should display the required file attached. If the required office.ini is not attached then the correct file can be accessed by selecting:



Warning: Do not make any adjustments to the current settings in the office.ini file or the program will not work correctly.

The Excel spreadsheet can be edited for additional data by placing the required information in each column and saving the file. Once data has been saved, the rows that are to be added to the tabulation sheet can be highlighted by standard window operations and then selection Edit>Copy. Excel will display a highlighted border around the selected data. To place this data onto the tabulation sheet select the **Paste** button.

After the Office Importer **Paste** button has been selected the data will be attached to the dgn cursor with a border displayed surrounding the copied information.



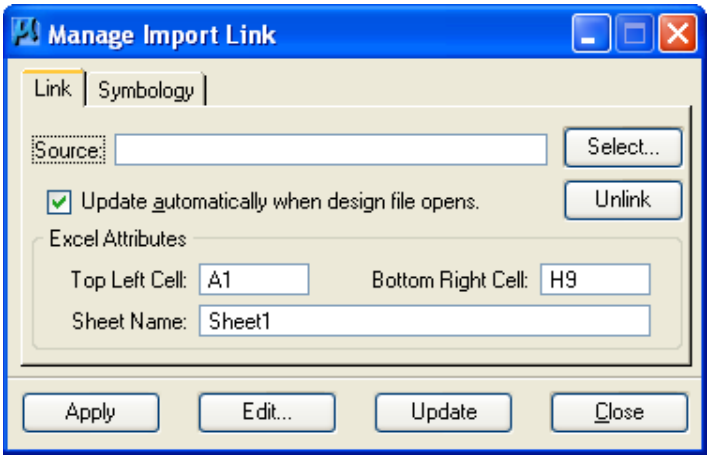
The data can be placed on any line within the tabulation sheet by placing a tentative button at the upper left corner of the desired line and then accepted by a data point.

Changes to the existing data can be accomplished by selecting the **Manage** button.

The "Manage" tool on the main dialog box allows you to update linked information manually, edit the source document or change the status of the links.
After the **Manage** button has been selected the user will be prompted:

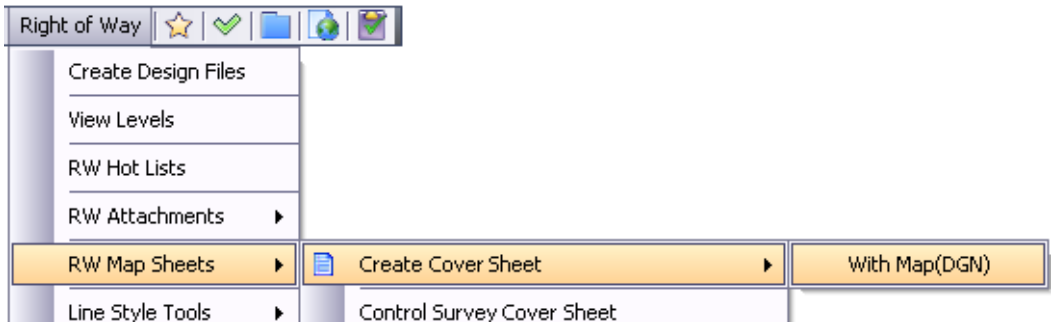
Manage Import Link > Identify element

Click any portion of the part of the linked data that you want to update, and the "Manage Import Link" dialog box will appear.

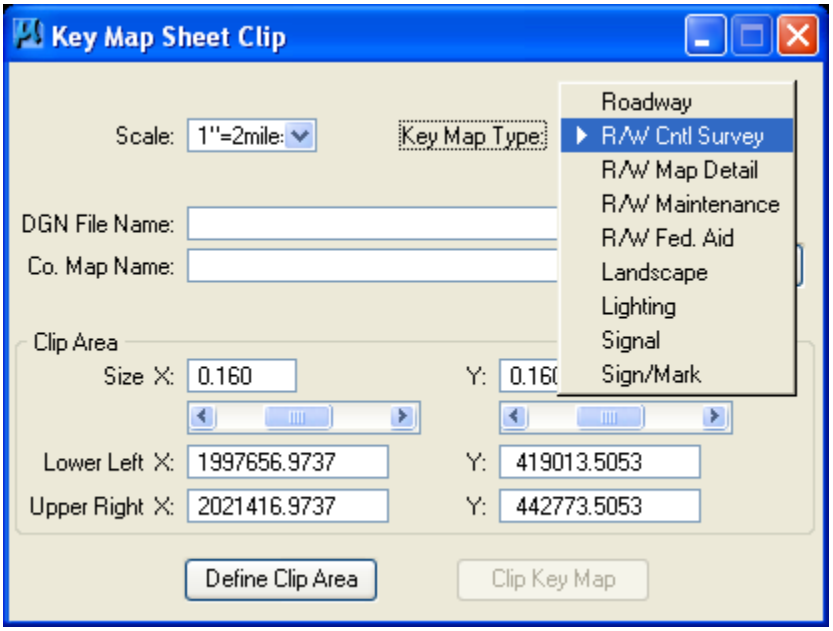


The **Update** button must be selected for data to be changed. Office Importer will also update linked data that has been changed in the current spreadsheet each time the linked design file is opened. For additional information refer to the Office Importer Help selection.

- **Create Cover Sheet > With Map(DGN)**

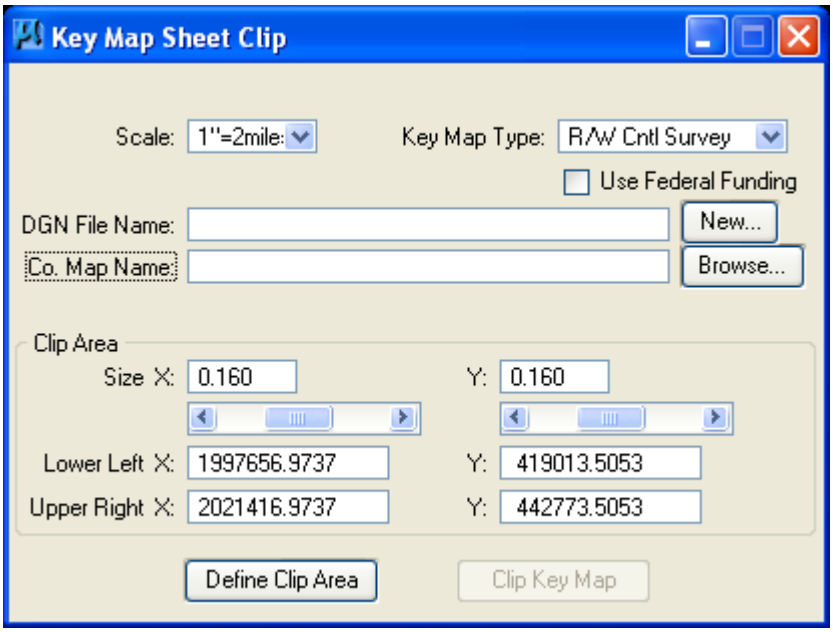


This option automates the creation of the various right of way map cover sheets for “Control Survey”, “Right of Way Map”, and “Maintenance Map”.



o **Key Map Type** - gives you a choice of three different R/W Cover Map Sheet Types for Right of Way Mapping:

Selection	Cover Sheet
Control Survey	Control Survey Cover Sheet
R/W Map	Right of Way Map Cover Sheet
Maintenance	Maintenance Map Cover Sheet

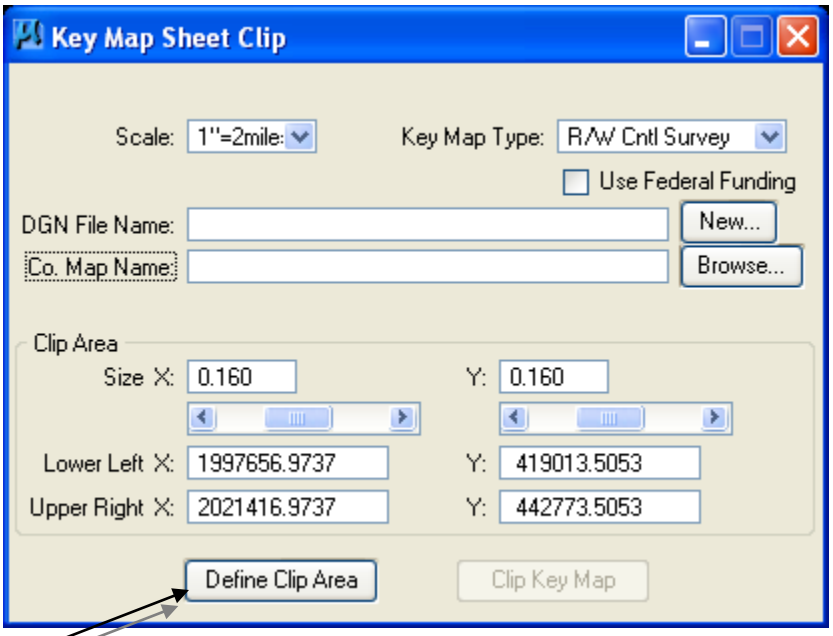


- **DGN FILE Name** - The name of the design file that the Cover Sheet is drawn in. The Cover Sheet will be placed at the center of the Design Plane. The DGN file will have the proper naming convention (rwcovr01.dgn). Unlike 'Create File' this option will not increment the file name (rwcovr01..02..03). The New button when selected displays the file location dialog for selecting a new/different design file name or location.

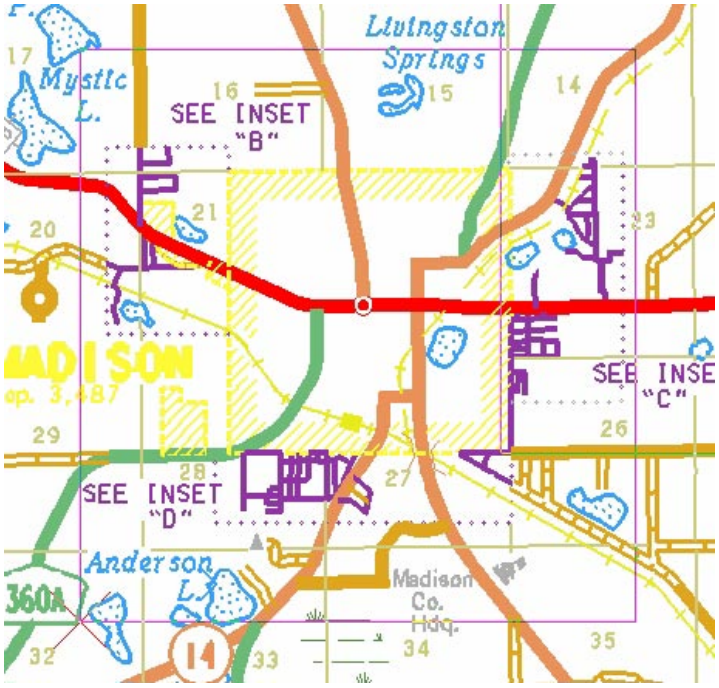
- **Co. Map Name** - The name of the County Map that the clip area will be taken from. The Map can be local on the workstation or remote via a NFS mount on the Server. The Browse button when selected displays the file location dialog for selecting a new/different county map design file name or location.

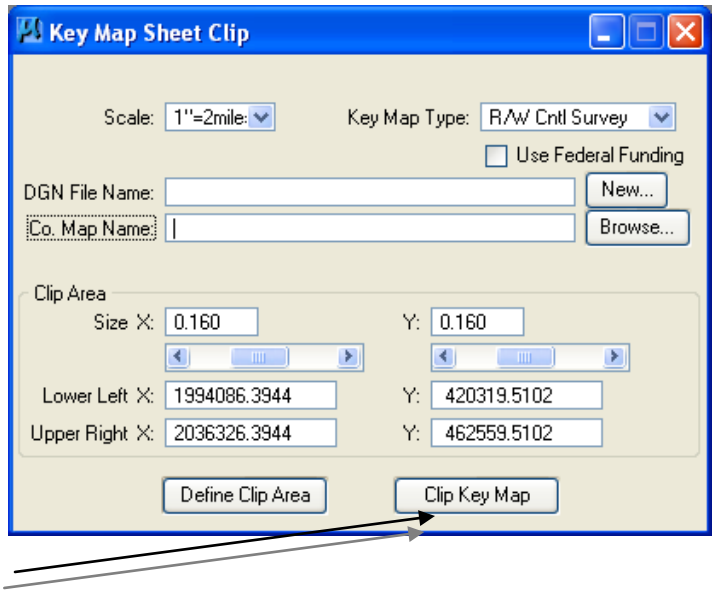
- **Clip Area Size X: and Clip Area Size Y** - This value is used to adjust the size of the clip area (within limits). The default size of the clip area for the metric version is 0.085 meters on each side (@ 1:1 scale). The values can be adjusted up and down, within limits, independently in the X and Y. The Slider Bar below each one will adjust the values or they can be keyed-in.

- **Lower Left X: Y: and the Upper Right X: Y:** - This entry defines the clipping coordinates. The coordinates are generally for information only, since the coordinates are normally set with the Define Clip Area Button. But if the user knows the clipping coordinates, they can be manually typed into these fields.



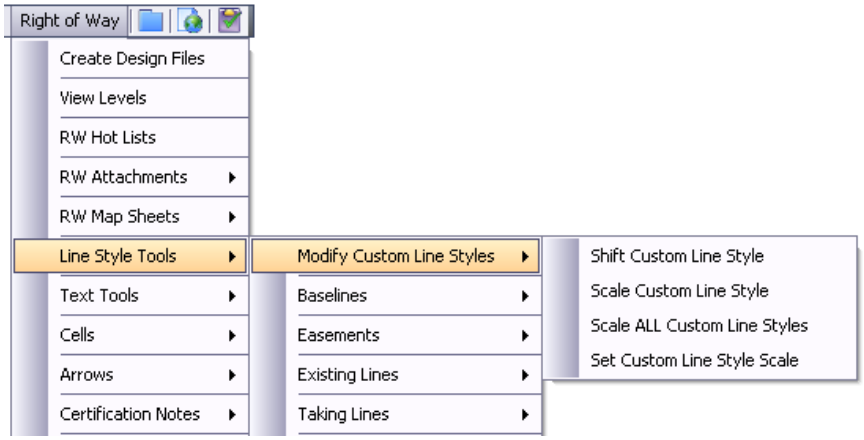
- **Define Clip Area** - This button will retrieve the county map design file that is to be clipped. A rectangle that represents the clipping area will be attached to the cursor. The rectangle defines the area that will be clipped out and moved to the Cover Sheet. The placement of the rectangle can be manipulated by MicroStation commands to position the project location map as desired. Select the area to clip with a data point. The lower left and upper right coordinates will be displayed in the coordinate fields of the dialog box (Lower Left X: Y:, Upper Right X: Y:).



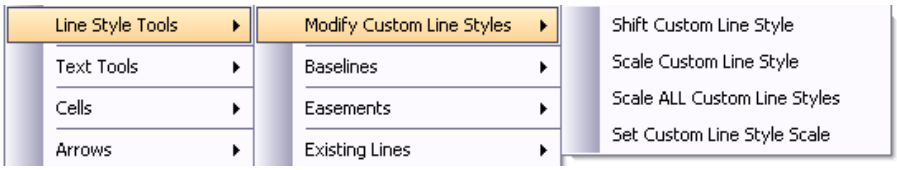


- **Clip Key Map** - This button will attach the County Map File as a reference file and clip the area designated as the project location map into the Output Design File. The Clipped Area will be scaled accordingly English or Metric Units. During processing, if the Cells needed to create the cover sheet cannot be located (no library or wrong library attached), then the application will pop up a message informing the user of this problem and prompt the user to select OK to attach the correct Cell Library or CANCEL to Stop Processing. If OK is selected, the Cell Library Open dialog box will appear. If the MX_LIBDIR variable is set to the correct location (Metric or English), then the user will be presented with a list of cell libraries to attach. If it is not set, then the user must navigate to the correct location of the cell library. When the drawing is complete, the application will do a FIT command and SAVE DESIGN.

9.2.6 Line Style Tools

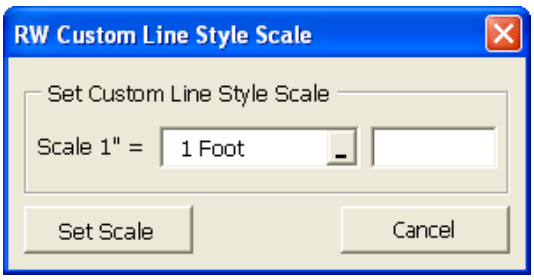


- **Modify Custom Line Styles**

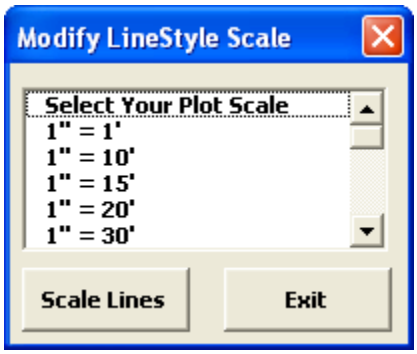


- **Shift Custom Line Style** - Dynamically shifts the custom line style pattern when the line style is selected by a data point and the cursor is then moved parallel to the line. When the line style is shifted to the desired position/appearance another data point will accept the change.

- **Scale Custom Line Style** - Dynamically scales the custom line style pattern when the line style is selected by a data point and the cursor is then moved parallel to the line. When the line style is scaled to the desired amount another data point will accept the change.

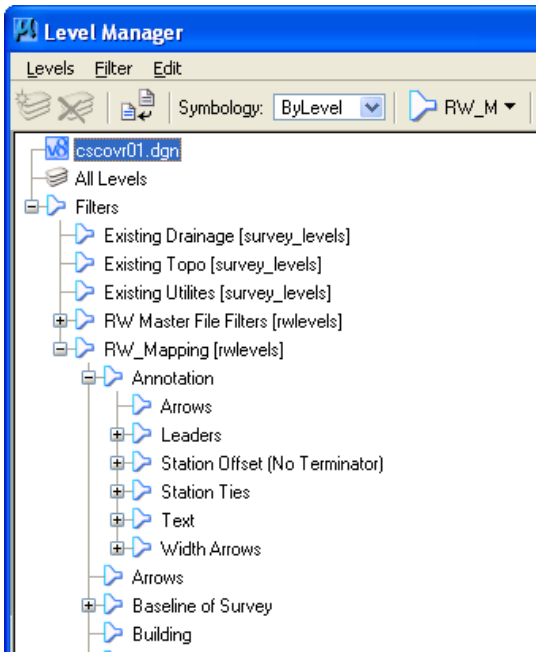


- **Scale All Custom Line Styles** - When selected the dialog shown below should appear. Select the desired custom line style scale and then click on the Scale Lines button ALL custom line styles in the current design file will be scaled.

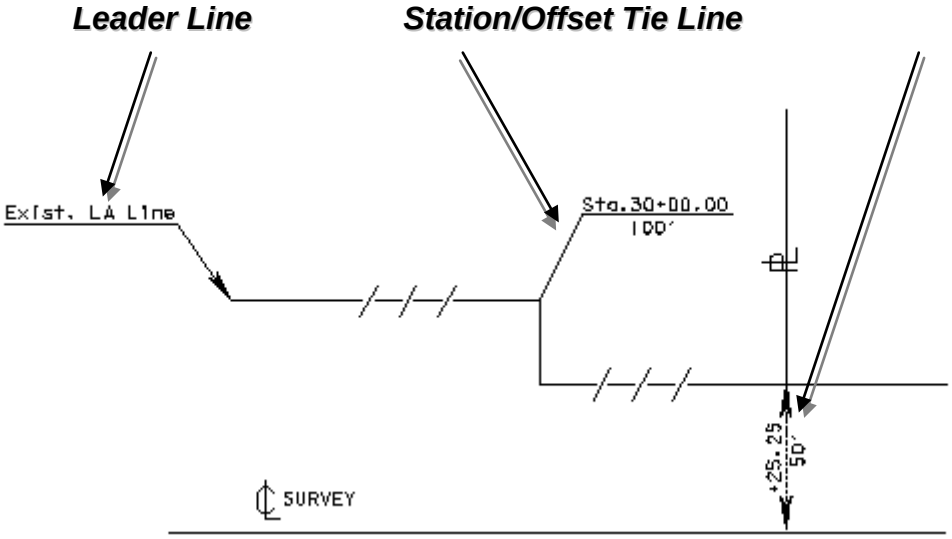


- **Set Custom Line Style Scale** - The custom line styles scale can be changed for other plot scales by selecting Set Custom Line Style Scale option shown above. This will open the R/W Custom Line Style Scale dialog box. (shown below) The user may then select from the Scale 1" = pull down list for standard mapping scales or select from the pull down Keyin Scale = and type in the desired scale in the text window. Opening the MicroStation Line Styles dialog box from the main menu, and toggling on Show Details can check this. This dialog must be reopened each time the scale is changed from the FDOT Menu if the user desires to check the current scale factor, as the dialog is not dynamic. (See the MicroStation Help files for instructions on Line Styles).

- **Leader Lines, Tie Lines and Station/Offset Lines**

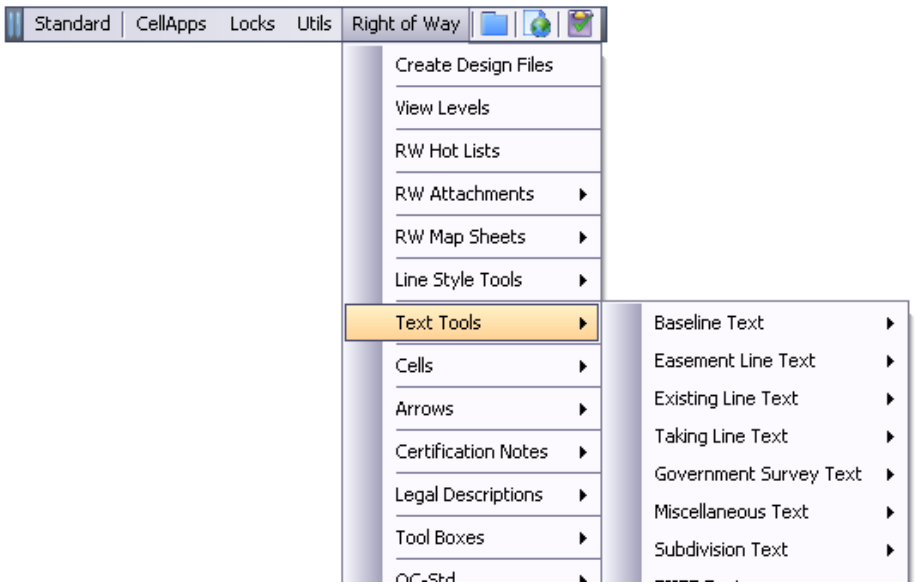


These three categories, which can be found and set through the MicroStation V8 Level Manager, contain the same list of items for setting the symbologies of each line type listed in the Line Style Tools menu. The symbologies for **Leader Lines** and **Tie Lines** have required symbology standards. **Station-Offset Lines** will be placed on the corresponding Text ByLevel. A diagram of each category and their typical use is shown below:



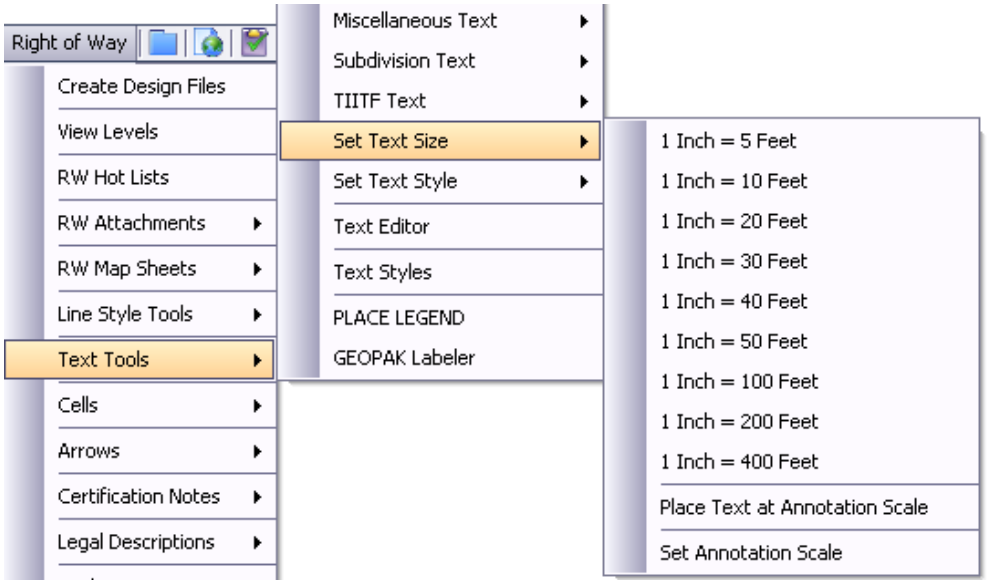
9.2.7 Text Tools

The **Text Tools** menu selection provides the user with various tools for placing, editing and modifying text for annotating Right of Way Mapping design files.



- **Set Text Size**

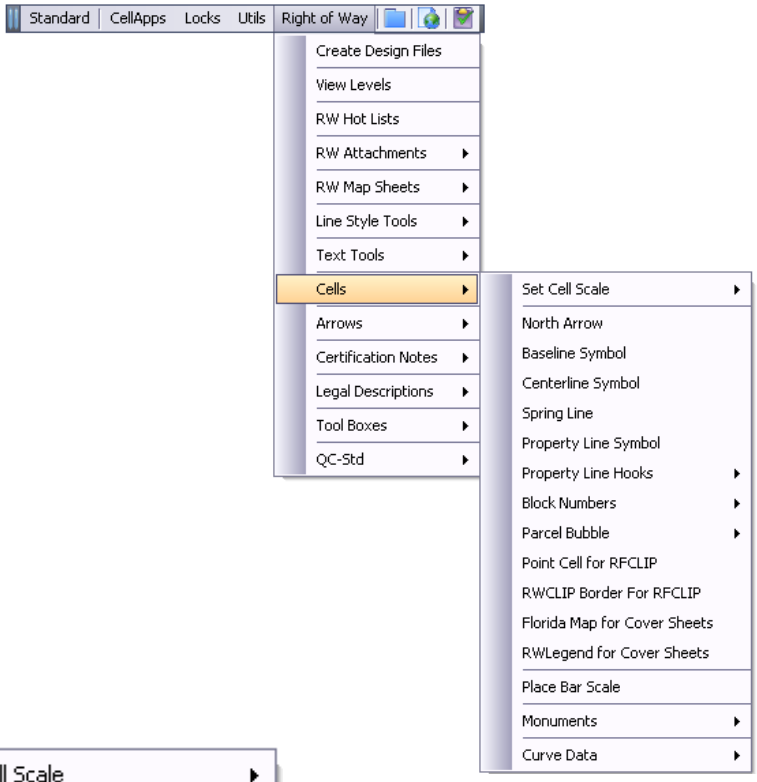
Sets the standard default text size for the selected design file scale. For example, if the user selects "1 Inch = 100 Feet" the default standard text size will be set to TH = 10', TW = 10'. The user should not attempt to use one text size for all text placed in the design file.



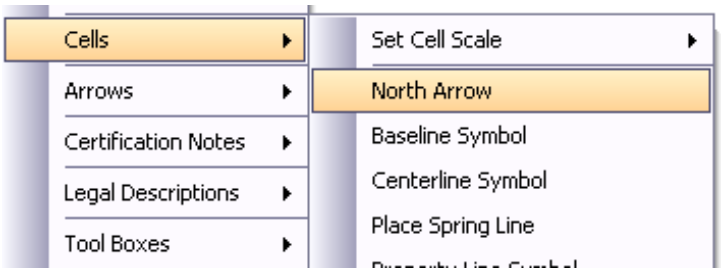
As stated, **Readability** of text data should be considered as priority, however no text should be smaller than 3.2' on a 1" = 40' scale (0.08" actual plotted size).

9.2.8 Cells

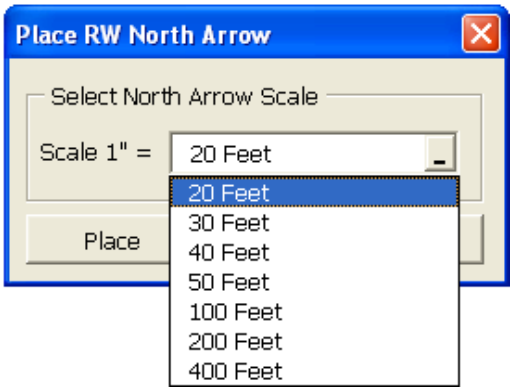
This option lists the R/W Mapping CADD Standard cells for placement into design files. Active scale can be set by selecting **Set Cell Scale**. All other MicroStation settings should be considered prior to cell placement. The user should assure that the required cell library has been attached for the appropriate workspace.



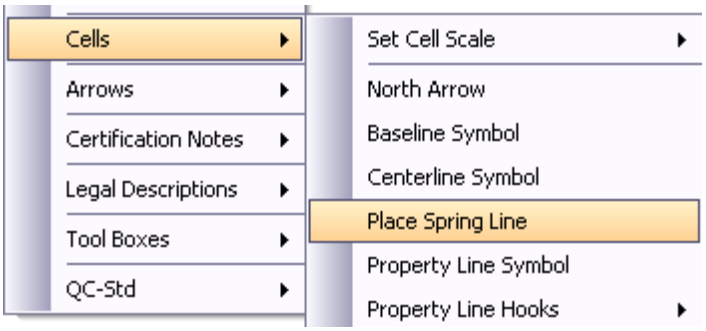
- **North Arrow**



  - **North Arrow** - This command automates the process of placing a north arrow. The English cell library row.cel must be attached to the current design file. The program will prompt the user if it cannot find the required cell library.



- **Place Spring Line**



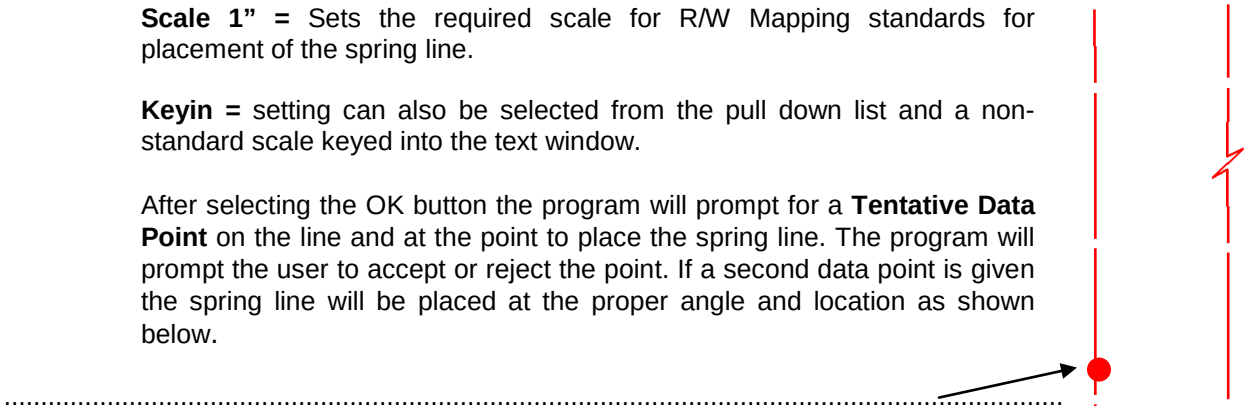
- **R/W Mapping Spring Line** - This command automates the process of placing a spring line for lines that are partially deleted in order to fit mapping area limits. The English cell library row.cel must be attached to the current design file. The program will prompt the user if it cannot find the required cell library.

- ***Match Line Symbology*** - R/W Mapping standards require that spring lines be placed using the same line symbology for the line type being used. The button will prompt the user to select the associated line and will set the required symbology in MicroStation.

  Scale 1" = Sets the required scale for R/W Mapping standards for placement of the spring line.

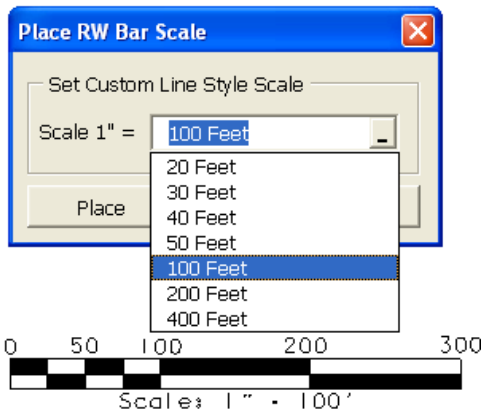
  Keyin = setting can also be selected from the pull down list and a non-standard scale keyed into the text window.

  After selecting the OK button the program will prompt for a **Tentative Data Point** on the line and at the point to place the spring line. The program will prompt the user to accept or reject the point. If a second data point is given the spring line will be placed at the proper angle and location as shown below.



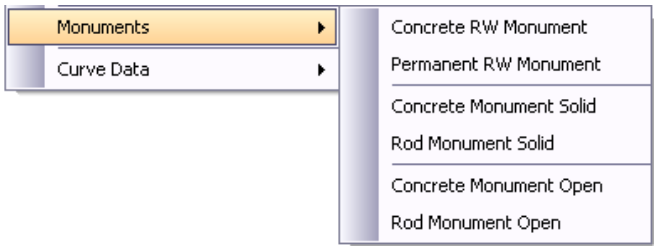
- **Place Bar Scale**

This command opens the R/W Mapping English Bar Scale dialog which displays the list of available standard Bar Scales for various mapping scales. Once the desired Bar Scale is selected and the Place button is pressed the bar scale cell will be attached to the cursor for placement.



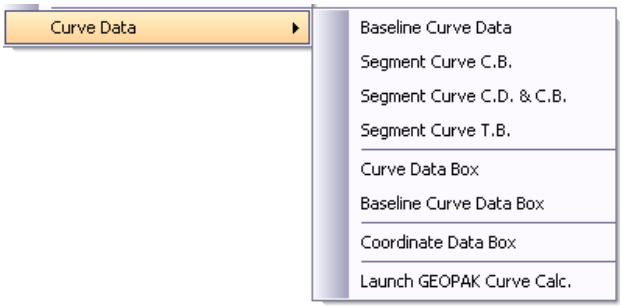
- **Monuments**

Provides access to all monument cells created in the English libraries. Monument cells that are described as **Solid** are area filled and require the MicroStation **Settings > View Attributes** "Fill" selection be turned on for proper display.

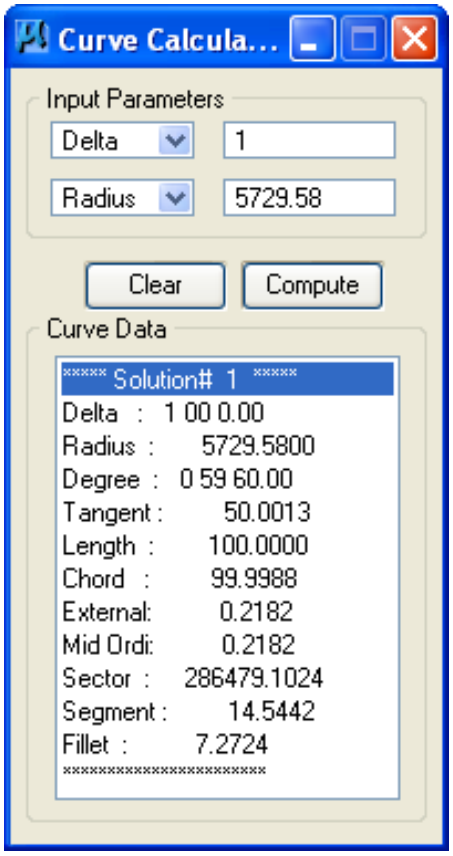


- **Curve Data**

Contains all cells used for creating full curve data layout or segment curve data. Baseline Curve Data, Segment Curve C.B. (C.B. = Chord Bearing), Segment Curve C.D. &C.B. (C.D. &C.B. = Chord Distance and Chord Bearing) and Segment Curve T.B. (T.B. = Tangent Bearing) are the basic curve data information required for R/W Mapping. Each of these cells is used in association with the Geopak Table-Tutorial program including the Curve Data Box, Baseline Curve Data Box and Coordinate Data Box.

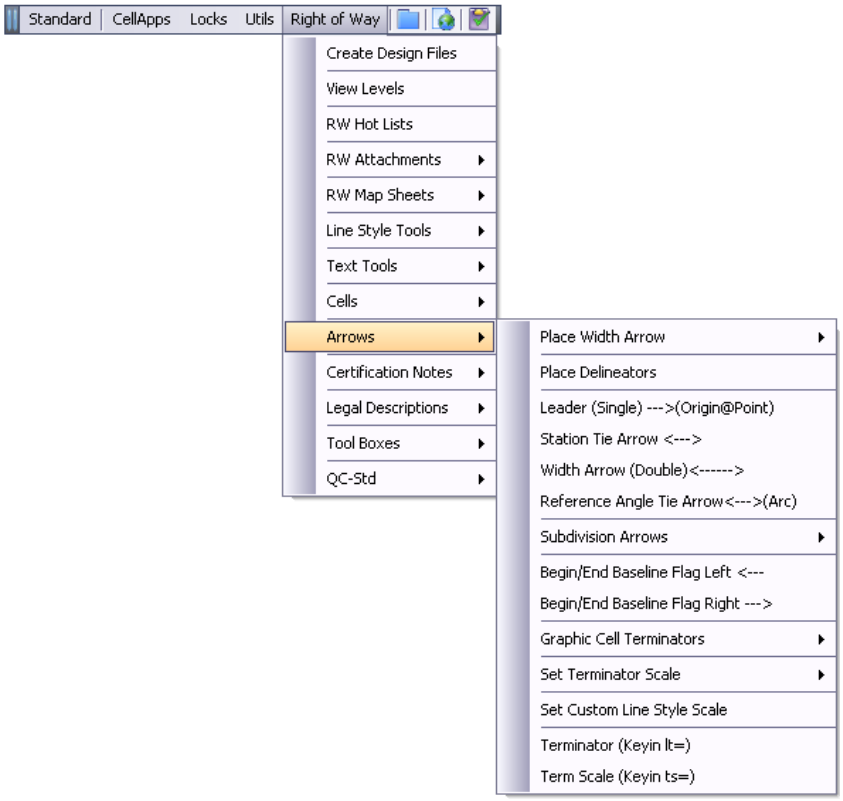


  - **Launch Geopak Curve Calc** - It's the Geopak curve data application that provides quick curve data calculations for reviewing curve data information. The program requires at least two curve elements for computing the curve data as provided in the two pull down selection lists. The program will also maintain each Computed solution (Solution#1, Solution#2 …) until the Clear button is selected. This curve data is for informational review only and cannot be placed into the design file.

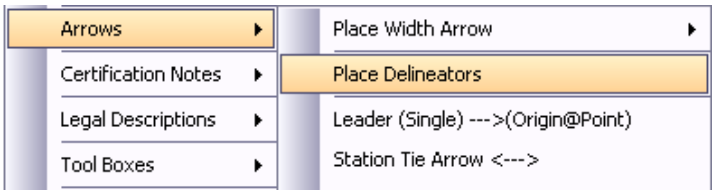


9.2.9 Arrows

The **Arrows** menu selection provides several delimiter types and terminators for use in the R/W Mapping procedures. Most of the delimiters are built using custom line styles and many contain filled areas and therefore the **Fill Attribute** setting should be turned on as previously mentioned.



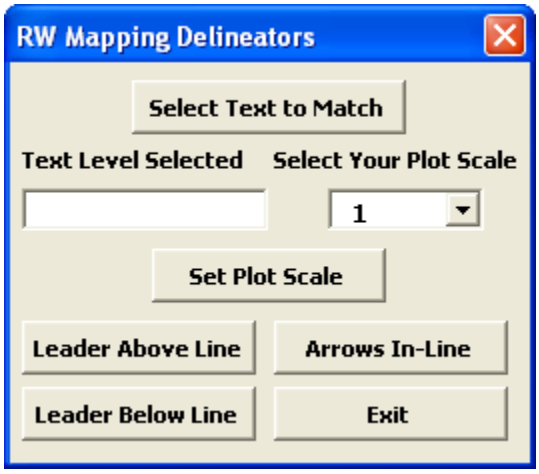
- **Place Delineators**



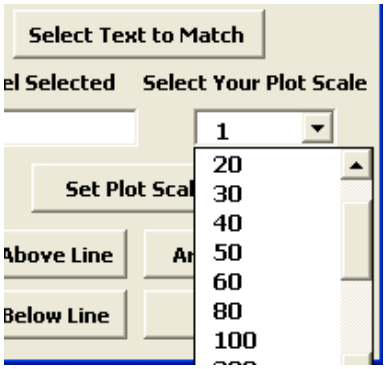
R/W Mapping Delineators – This command automates the process of placing delineator arrows for bearing and distance or other delineated line segmented data. After selecting the program you will need to select the text element using the Element Selection tool that the delineators are to be placed on then press the *Select Text to Match* button, choose the scale that you would like the delineators place at from the pull down and then press the *Set Plot Scale* button. Then choose the line that the delineators need to be placed on and the program will find the beginning and ending points of the line segment, and then choose how you want the delineator placed. Delineators will then be placed at the beginning and end point of the line segment.

- **Select Text to Match** – R/W Mapping standards require that delineator arrows be placed using the associated text symbology for the line type being used.

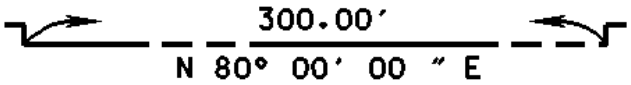
  Use the element selection tool to select the associated text then press the Select Text to Match button and the required symbology will be set in *Text Level Selected* box.



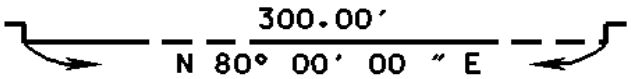
- **Select Your Plot Scale** – Sets the required scale for R/W Mapping standards for placement of the delineator arrows. Multiple scales are place in the pull down.



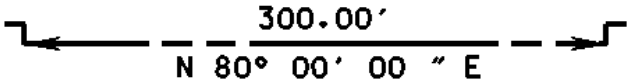
- ***Leader Above Line*** – This option will place delineators with an arc and terminator arrow as shown below depending on the direction the line was original drawn in.



- ***Leader Below Line*** – This option will place delineators with an arc and terminator arrow as shown below depending on the direction the line was original drawn in.

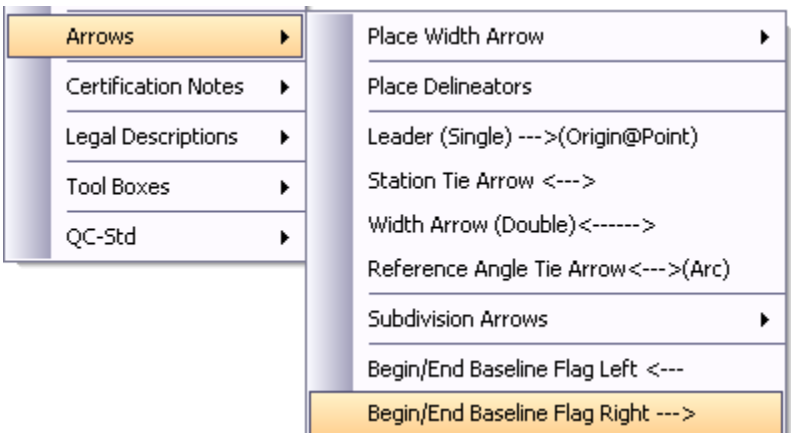


- **Arrows In-Line** – This option places delineator arrows at the end of the line segment as shown below.

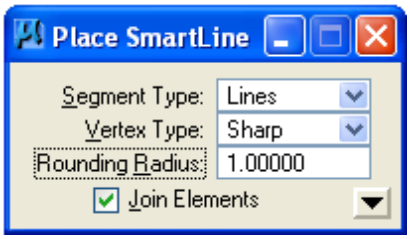


- **Begin/End Baseline Flag Right/Left**

This selection provides access to custom line styles used in delineating Begin/End of projects, R/W acquisitions and similar graphic elements.



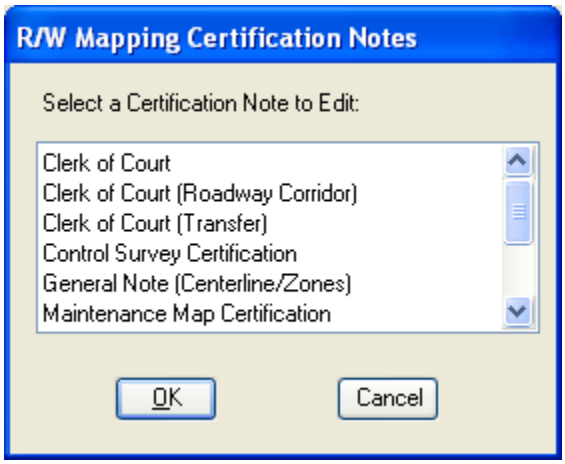
When placing these custom line styles the MicroStation "Place SmartLine" command should be used with the "Join Elements" turned **ON** as shown below. This setting will eliminate additional arrow delineators if multiple line segments are placed.

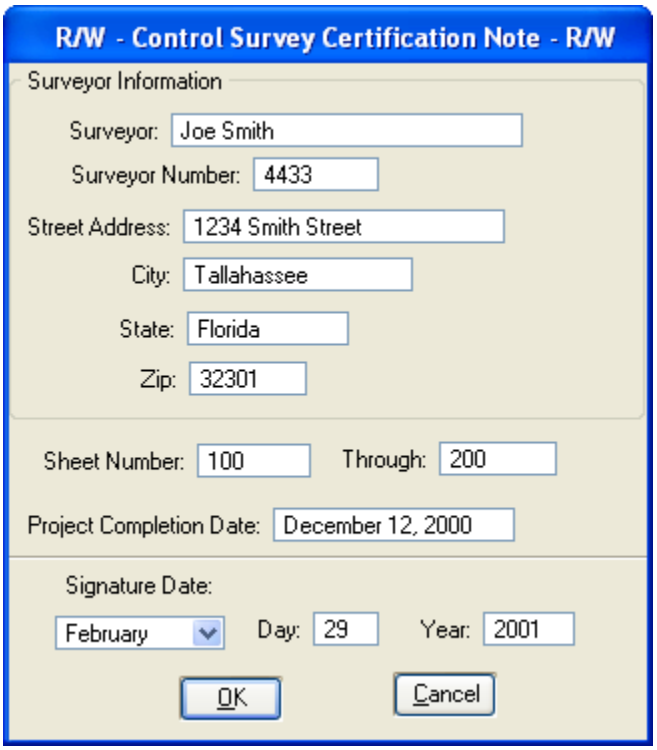


Join Element Off Join Element On

9.2.10 Certification Notes

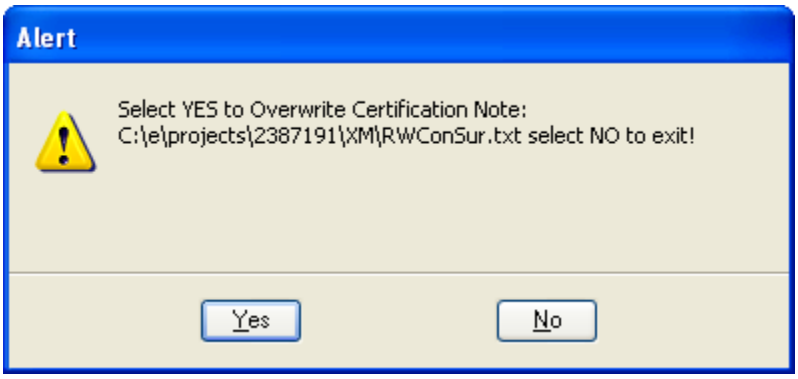
The **Certification Notes** menu item provides the user with a list of all the standard certification notes used in various R/W maps. The first selection **Text Import Settings** will set the standard text requirements for TX= (text size), LS= (line spacing) and LL = (line length) for the given scale. After selecting **New Certification Notes** the user is presented with the **R/W Mapping Certification Notes** dialog shown below. This dialog contains the list of certification notes by which the user may scroll up or down, select the desired note and then select the OK button. The selected certification note, such as **Control Survey Certification**, shown as selected in the dialog below will then open a MicroStation Basic macro dialog box containing areas for information input that are required for the selected certification note.



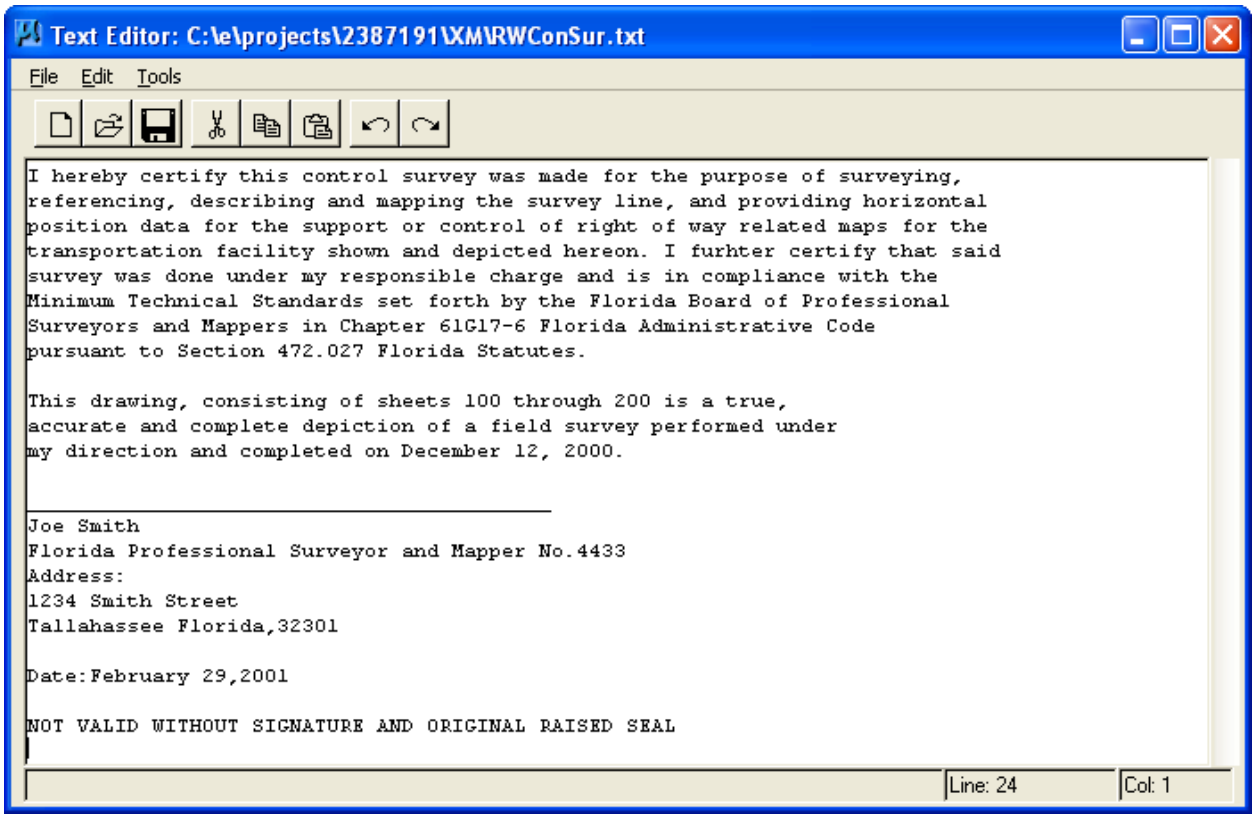


Once all required information has been input into the corresponding dialog for the certification note the user then selects OK. The program will search the certification notes directory for the required note and copy the note to the users working directory. An Alert dialog will display the directory path in which the note has been copied and prompt the user to continue or exit by selecting No.

Note: Each certification note is created with a unique name and should not be changed by the user.

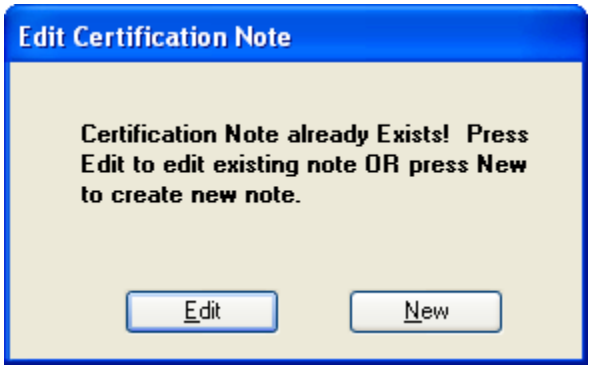


If the user selects **Yes,** the note will then be overwritten and all information previously supplied by the user will be placed into the required locations within the note. The note will then be placed into a text editor dialog as shown below for any additional editing.

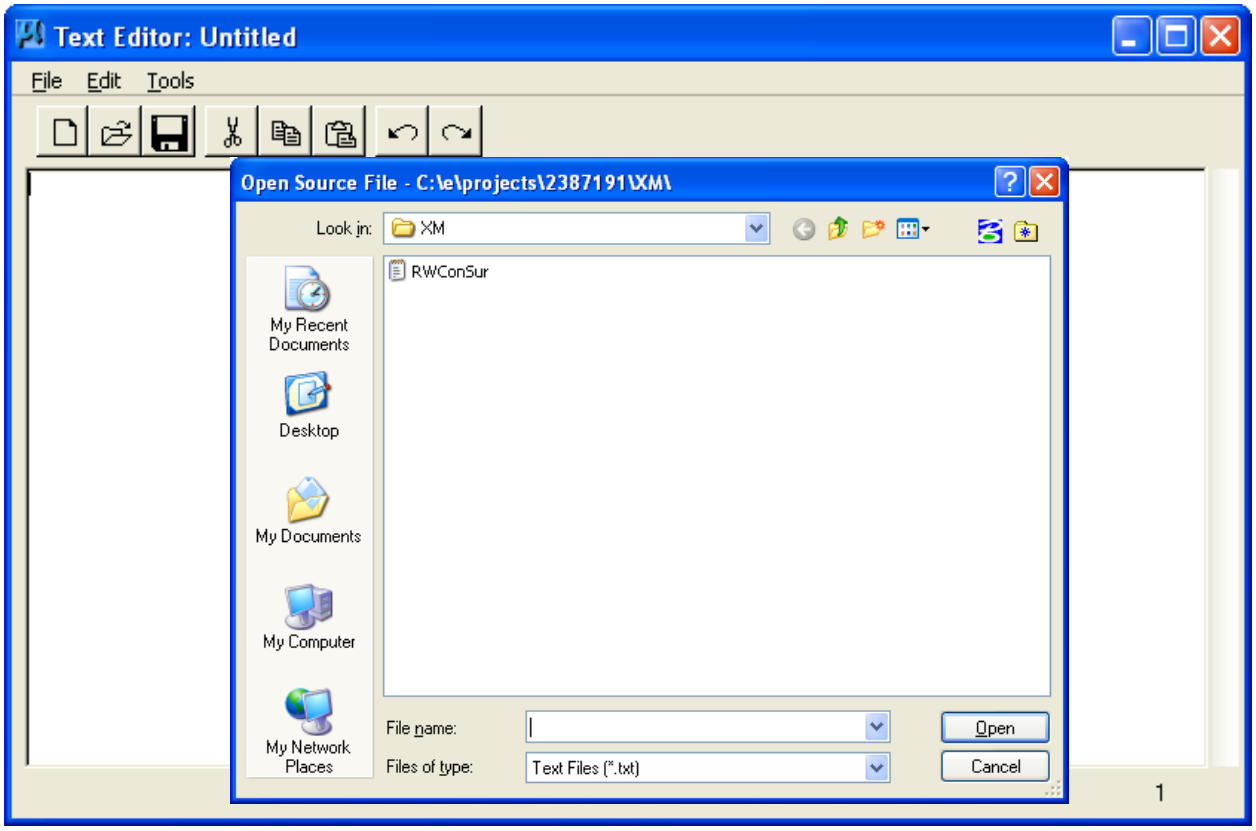


If additional changes to the note are made the user should save these changes by selecting **Save>File**. **Selecting Tools>Import Text** from the editor dialog and then place the certification note into the design file. The certification note will be attached to the MicroStation cursor for placement by a data point into the design file.

There are two methods for editing an existing certification note. In the first method the user should be located in the required working directory for the program to find the existing note. By selecting **Certification Notes > New Certification Notes**, which will again display the **R/W Mapping Certification Notes** dialog, the user can then select the name of an existing note previously created in that directory. The dialog shown below will prompt the user to edit the existing note by selecting Edit and the note will then be placed into a text editor, or create a new note by selecting New in which the corresponding input dialog for that note will be displayed.



The second method is to select **Certification Notes >Edit Certification Note**, which will open the text editor and **Open Source File** dialog allowing the user to navigate to the desired certification note for editing.



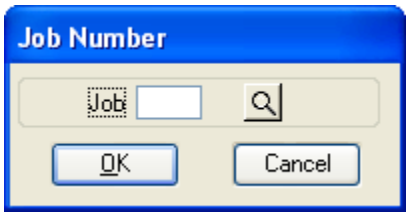
9.2.11 Legal Descriptions

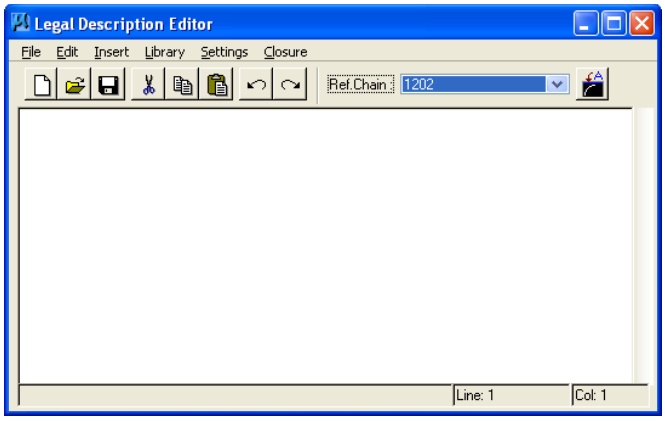
The **Legal Descriptions** menu selection provides the user with the ability to create two standard parcel legal description types commonly used by FDOT R/W Mapping offices. This program works in combination with Geopak's **Legal Description Editor** and therefore derives coordinate data, curve data and distance and bearing input directly from Geopak's **Coordinate Geometry** program**.**

Because of the many diverse ways to compose legal descriptions it is not possible to cover all types of legal description styles within this program. But with these basic templates and the Legal Description Editor the user can compose the desired description without the possibility of transposition errors. Once the description is complete the file can be saved from the editor to an ASCII (.txt) text file and then imported to a word processor, such as Microsoft Word for any additional editing.

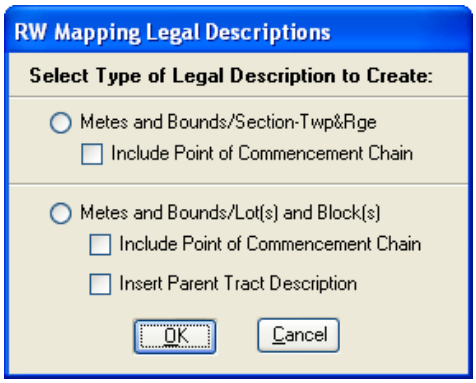
To begin the composition the user should first select from the FDOT Menu **Legal Description > Geopak Legal Description Editor**. Geopak will prompt for a coordinate geometry database Job number. If the Job number is not known the Select button can be used to select from a list of Job numbers in the current project directory (defined in Geopak Preferences). Once the Job number is selected the OK button will open the Legal Description Editor as shown below.

The instructions for using Geopak's Legal Description Editor are too extensive to describe within this document. The user should consult Geopak's manuals or Geopak's' Help files for complete instructions.



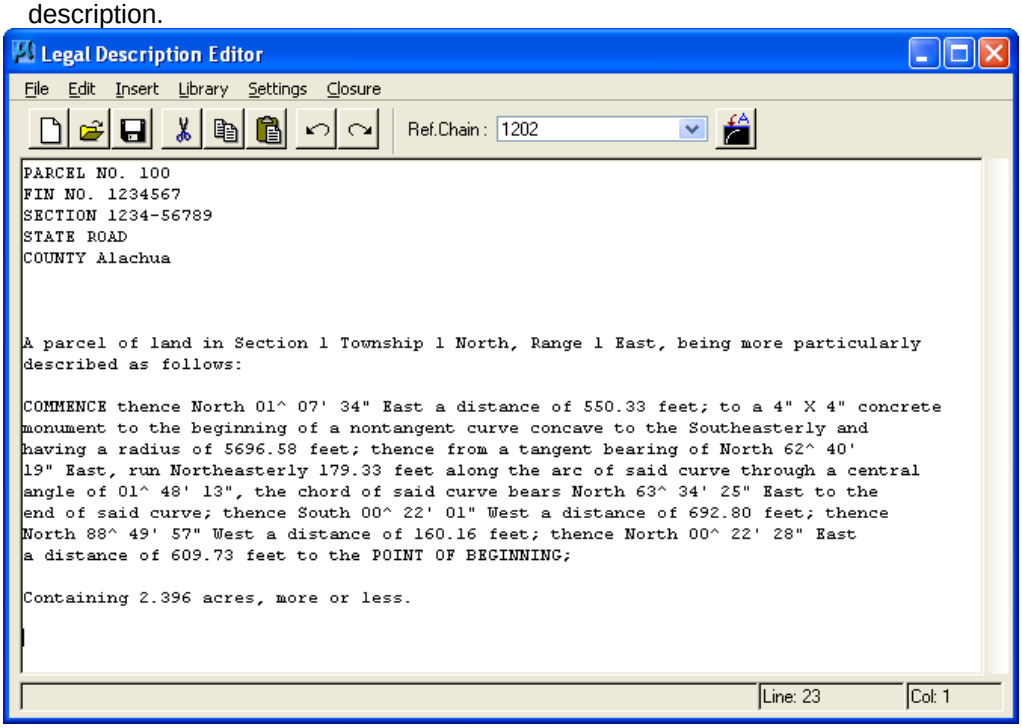


Select from the FDOT Menu **Legal Descriptions > RW Mapping Legal Descriptions**, this will open the program dialog shown below **<u>GEOPAK</u> <u>Legal</u> <u>Description</u> <u>Editor</u> must be running** for this application to work.



There are two description options to select from:

- **Metes and Bounds/Section–Twp&Rge** – This selection will create a standard metes and bounds legal description contained within a defined section, township and range. The program will prompt the user for all required information to complete the legal description.

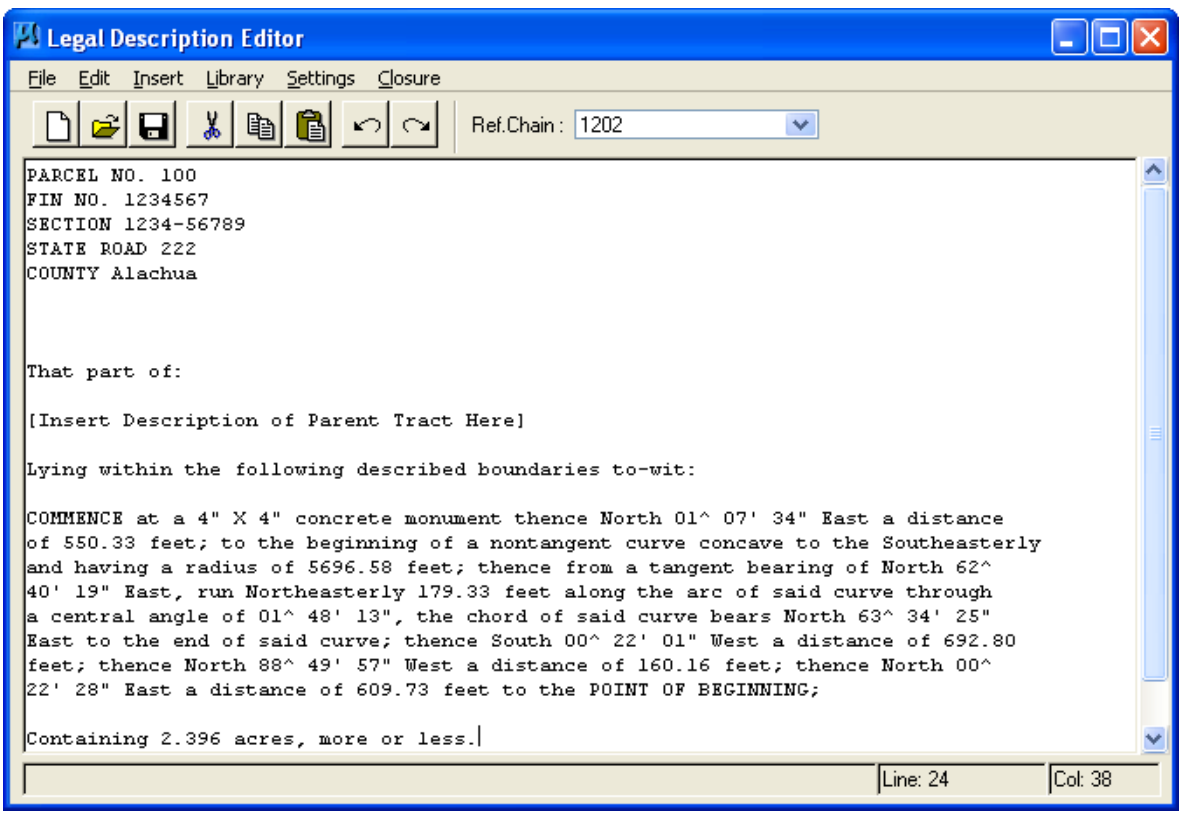


Include Point of Commencement Chain – If this option is selected the program will prompt the user for a previously stored geometry chain name to describe the traverse from the point of commencement to the point of beginning. It is suggested the commencement chain name be described to associate the chain with the corresponding parcel, such as "100C". The resulting description will be similar to the one shown below.

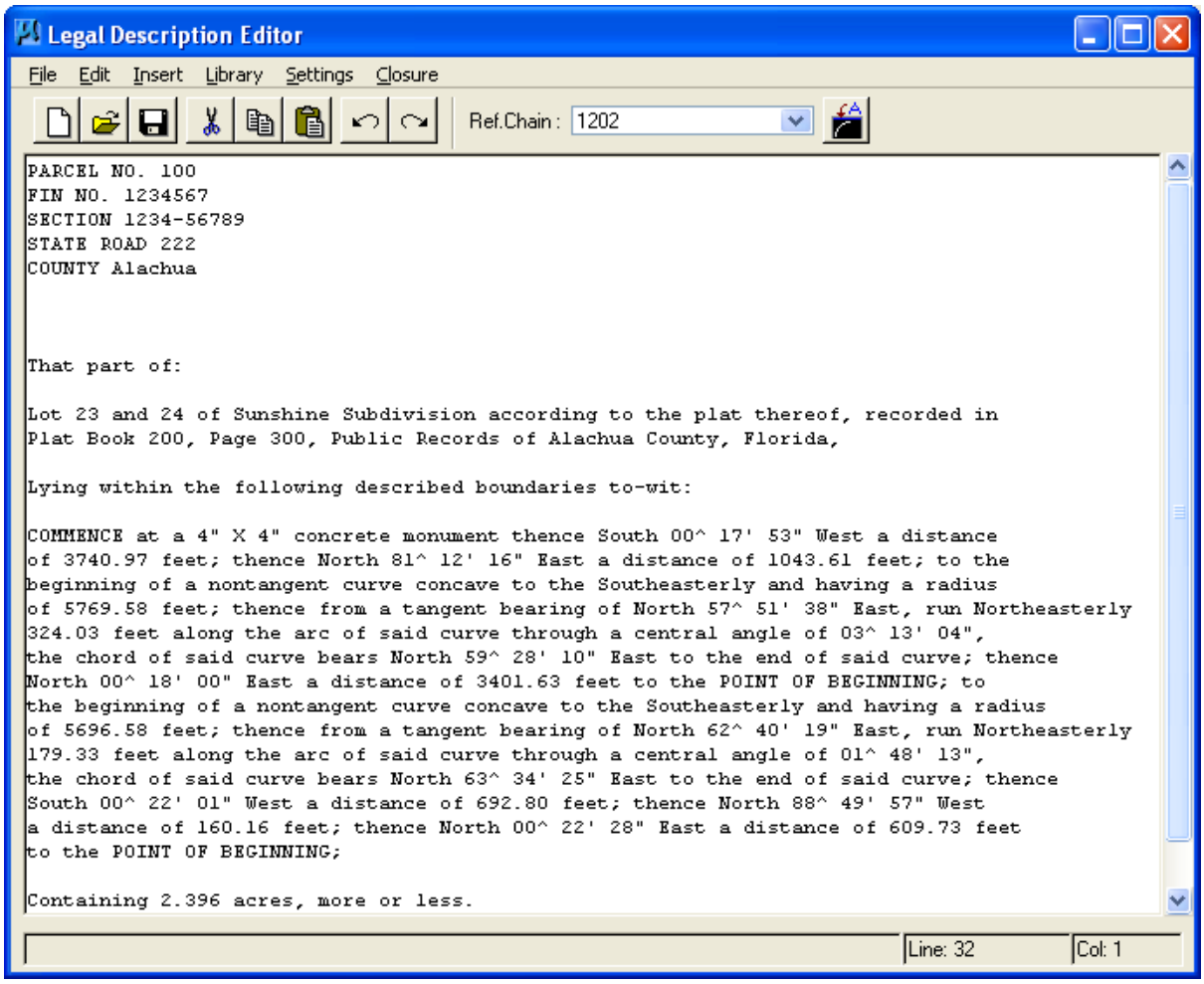
- **Metes and Bounds/Lot(s) and Block(s)** – This selection will create a standard metes and bounds legal description for Lot(s) and Block(s) or for inserting a parent tract description.

Include Point of Commencement Chain – If this option is selected the program will prompt the user for a previously stored geometry chain name to describe the traverse from the point of commencement to the point of beginning. It is suggested the commencement chain name be described to associate the chain with the corresponding parcel, such as "100C".

Insert Parent Tract Description – *If this option is used,* the program will create at the proper location a line stating "[Insert Parent Tract Description Here]". The user then has the option to manually type the tract description or cut and paste the description into the editor at the required location. The resulting description will be similar to the one shown below.

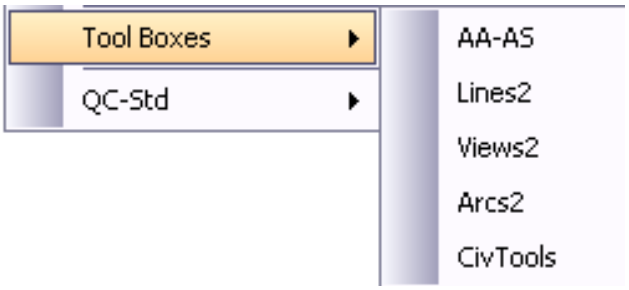


Insert Parent Tract Description – *If this option is not used,* the program will prompt the user to input the Lot number(s) in place of the parent tract description. The resulting description will be similar to the one shown here.

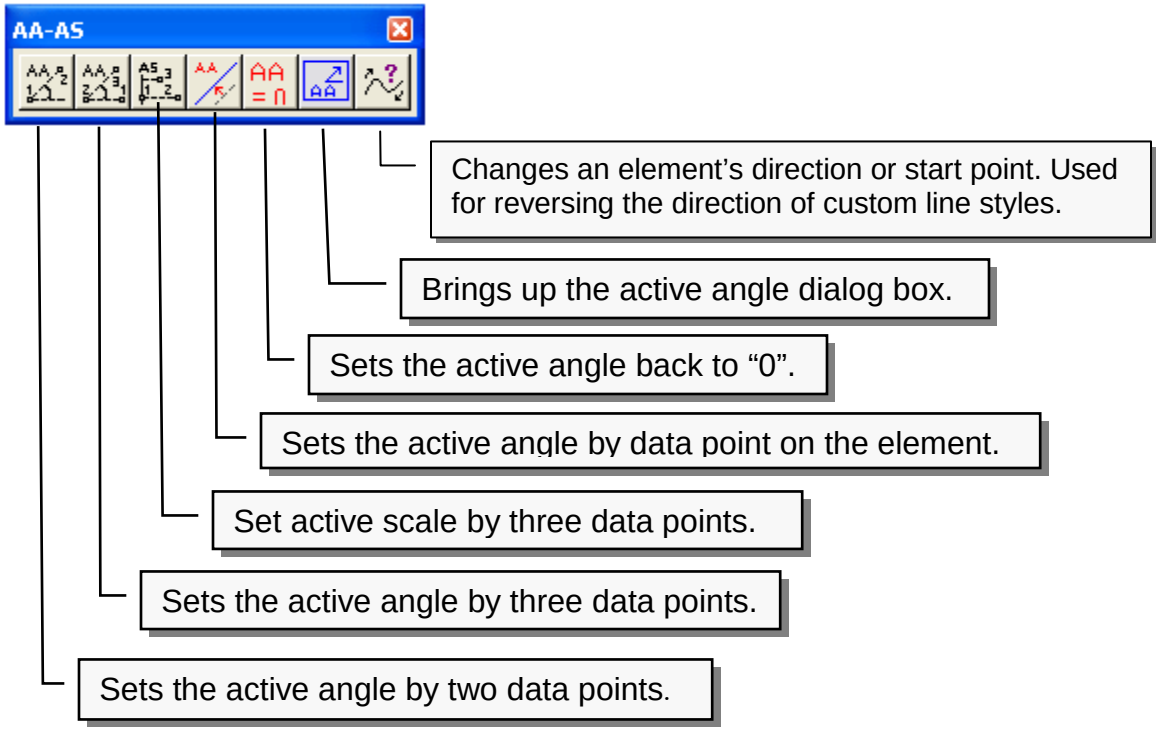


9.2.12 Tool Boxes

The **Tool Boxes** provides a variety of tools for drafting purposes. Brief descriptions of some of these tools are described below. The user should practice use of these various tools to determine which tools best fit their needs during mapping production.



- **AA-AS**

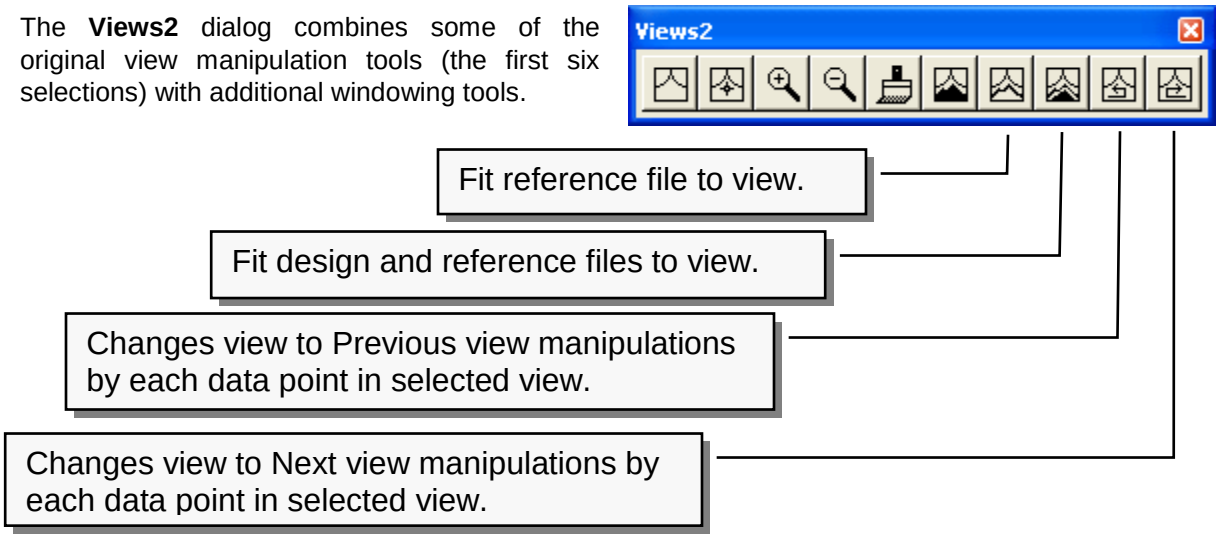


- **Lines2**

The **Lines2** dialog combines most MicroStation 4.0 and 5.0 line construction tools no longer located on later versions into a single dialog box for easy access by the user. This dialog box is dockable on any border of the working area.

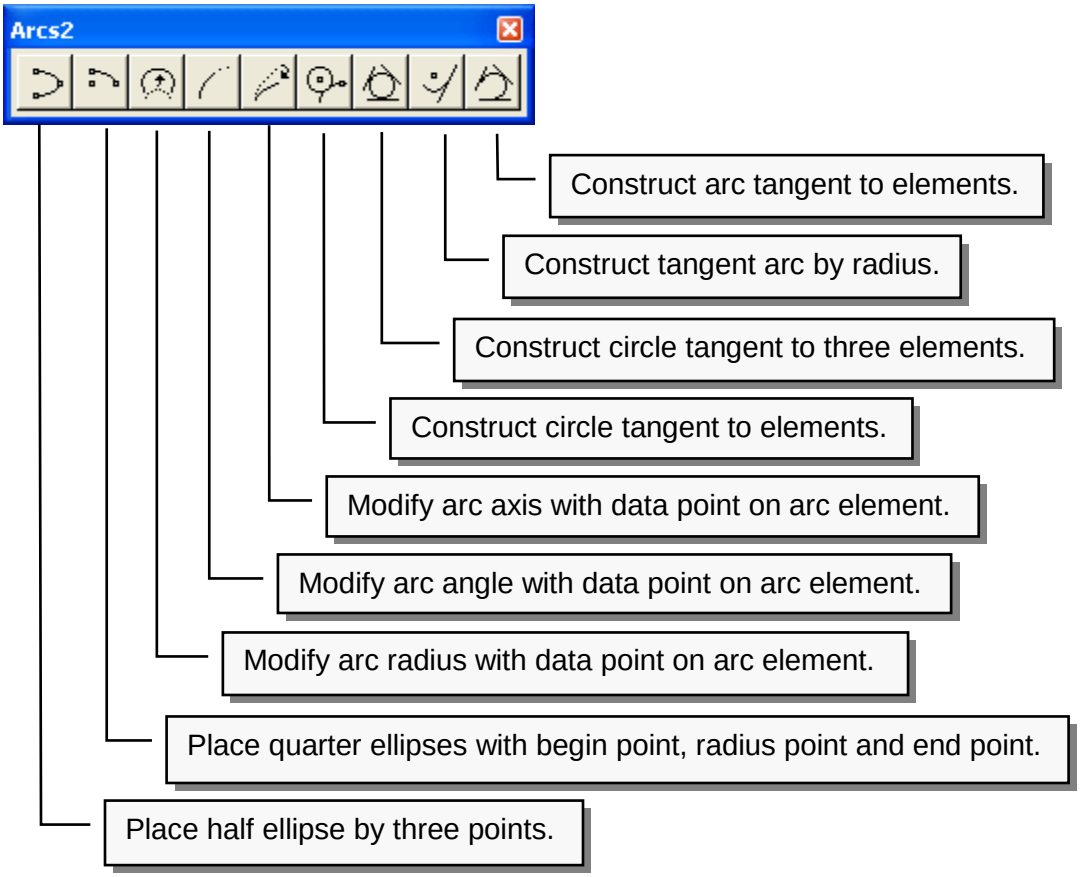
- **Views2**

The **Views2** dialog combines some of the original view manipulation tools (the first six selections) with additional windowing tools.



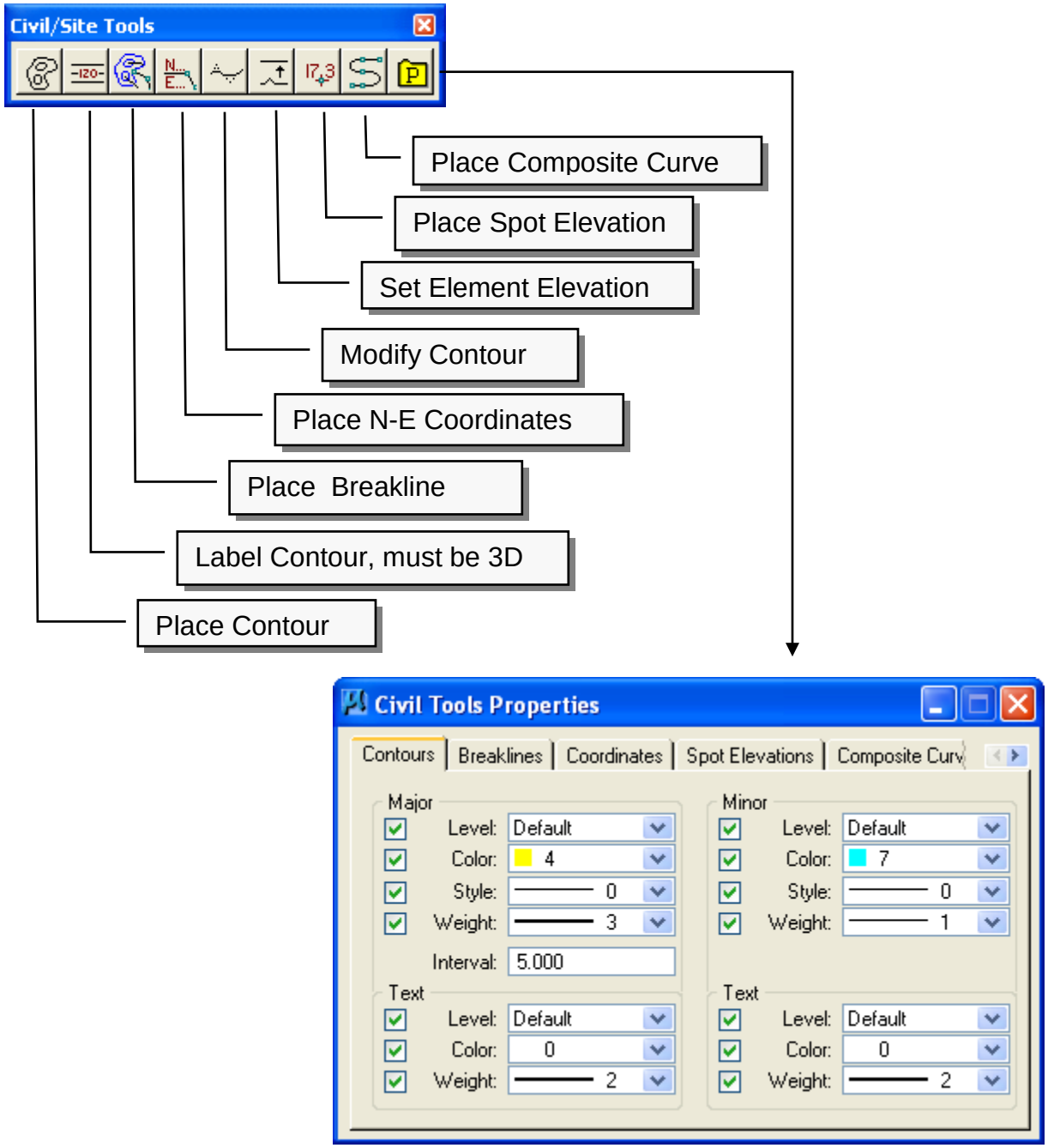
- **Arcs2**

The **Arcs2** dialog contains tools for the creating of curves and ellipses by various methods and tools for modifying these elements. Some of these tools will display additional dialogs for precise user input.

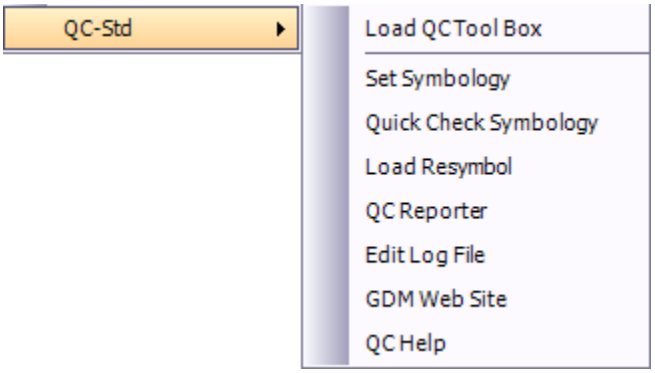


- **CivTools (Civil/Site Tools)**

The **CivTools (Civil/Site Tools)** dialog contains several tools for placement of civil and site type elements into a design file. Each of these tools also contains additional dialogs for precise input by the users. The **Parameters for Civil Tools** dialog contains settings for element attributes including text size and element symbologies for each of the tools on this dialog.



9.2.13 QC-Std



Note: The following topics contain a brief description on using the QC tools, for in-depth instructions use the online help documentation that can be accessed from the FDOT Menu at QC Help or from the QC Tool Box icon:

This option provides the user with the ability to complete a "Quality Control" review of all mapping project types produced by Right of Way Mapping. This is accomplished through the use of four “QC” tools and their related “Rule” files. These rule files have the extension of **.rul** and contain the standard symbology requirements for elements placed in a right of way design file project. For right of way mapping the rule file name for 2008 English is **rweng08.rul**. The directory location for this file is **fdot2008\QC_Rules\std_2008**. These are binary files and cannot be changed or modified by the user.

These QC tools will process each element in a file sequentially comparing each element found against the selected rule file. As each element is processed, all rules are evaluated to see which one most closely matches the element. Only one rule is used to process an element. An element will not be processed by any rule unless the element meets all the selection criteria in that rule.

For an example consider three rules with these selection criteria:

a) Level
b) Level, color
c) Level, color, weight

Rule (c) is most specific, and will be applied to all elements that match on all three criteria: level, color, and weight. All elements matching (c) also match (a) and (b) but (c) will score the higher value and will therefore be used. Similarly, rule (b) will be used for all elements that have level 3 and color 2 (and not weight 4). Any elements that are level 3 (and not color 2) will be processed by rule (a).

The user may select each QC tool from the pull down menu on the FDOT Menu or by selecting **Load QC Tool Box**. The user can then access each QC tool via the dialog box shown below:

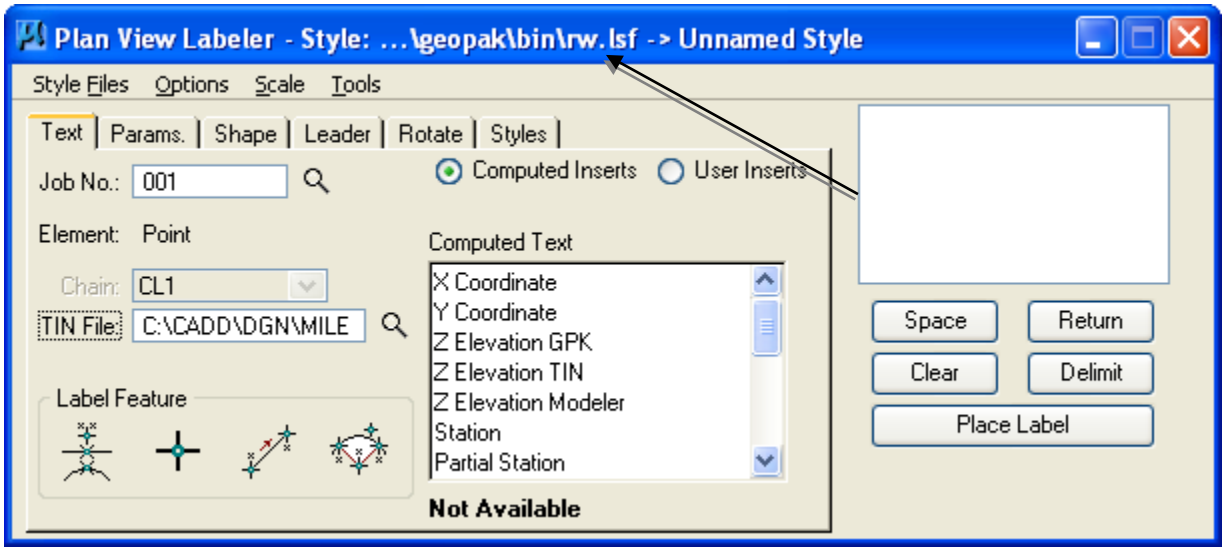
Note: The QC Tools dialog box is a dock able menu.

9.3 Geopak's Plan View Labeler

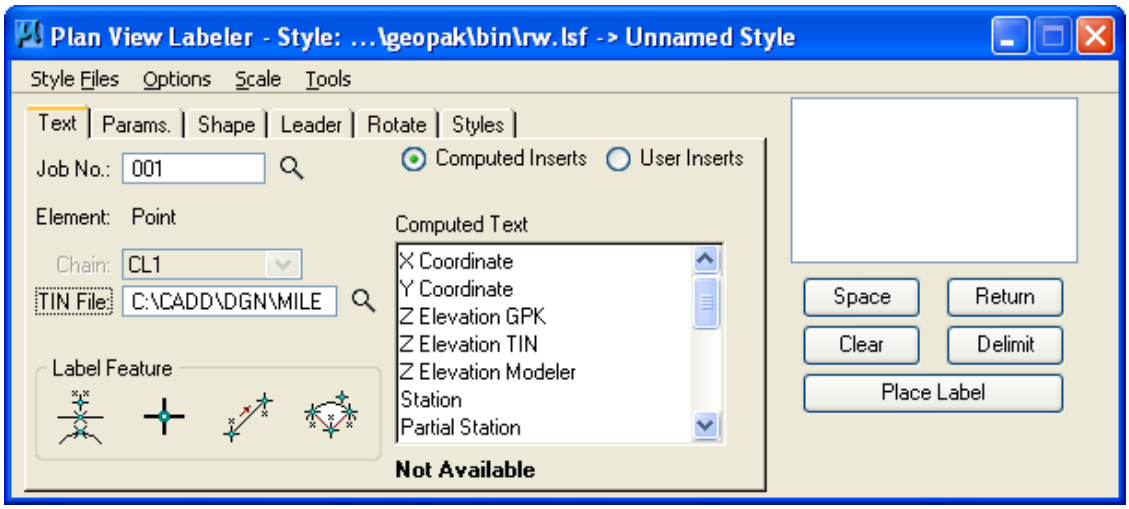
The **Plan View Labeler** tool provides the user with numerous methods to create annotation for design file project data. This annotation can include user type data supplied by the user or computed data created from Geopak and MicroStation elements. The labeling tool can be accessed by selecting **Application>Geopak Roads** or **Geopak Survey>Plans Preparations>Plan View Labeling**. The labeling tool can also be accessed from the **Geopak Survey Tools** menu or **Geopak Road Tools** menu as shown below:

When selected the **Plan View Labeler** dialog will be displayed as shown below:

Note: The use of this dialog is to extensive to allow for detailed instructions within this document. The user should refer to the Geopak Help for complete detailed instructions.



One of the main uses for this labeling tool is the creation of labeling styles that can be saved for future use. A Right of Way Mapping style file has been created called **RW.LSF,** which contains useful annotation styles for placement of required mapping data. These styles are listed under the category **RW-Labels**. The user may add additional styles to this category for specific labeling used at their site. It is, however, recommended that the file be saved as a different name than the original in order to prevent the edited version from being written over during future updates of the CADD software. The currently attached style file can be determined by viewing the information banner at the top of the dialog.



- **Text**

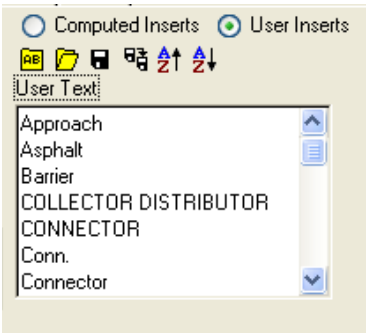
This tab contains specific items that will need to be set and selection inputs in order for the labeler to work with the current design file and Geopak geometry data.

- **Job No**. – The Geopak job number for the current design file must be input. The Select button can be used and Geopak will display a dialog listing the .gpk geometry database files in the current Geopak project.

- **Chain** – Select the geometry chain name that will be used to compute data such as station and offsets.

- **Computed Inserts** – When selected the Computed Text insert list is made available for use as shown above. The element type selected in the design file determines the type of computed text inserts displayed linear or curved.

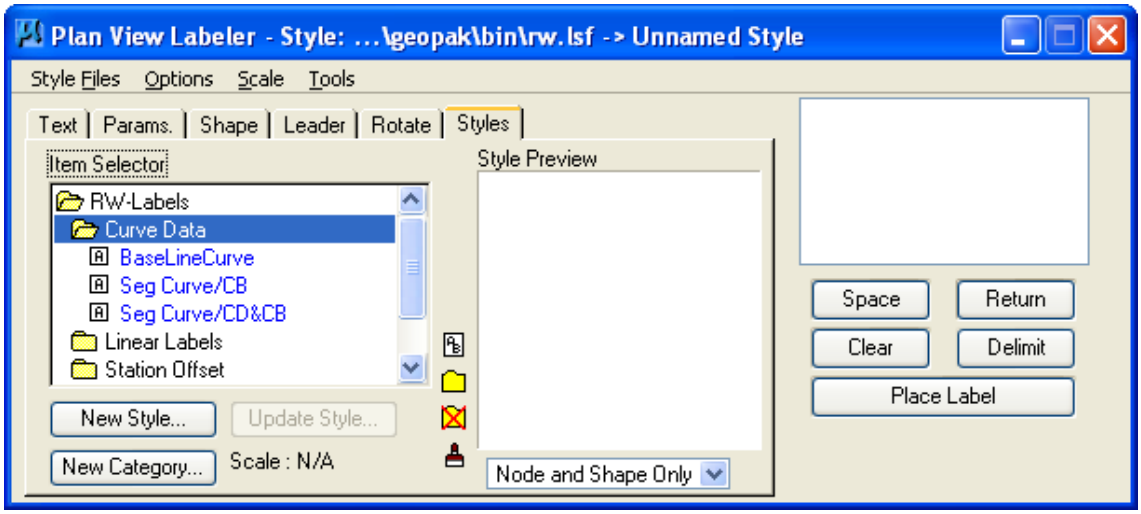
- **User Inserts** – When selected the item selection window changes to the User Text and displays text provided from the rwlabels.ins file located in the FDOT2008\Geopak\-\bin directory. Text items can be added to this file by inserting each text item on a single line.



- **Label Feature** – There are two selections that the user should select here for most all of the R/W Mapping labels. Press the Geopak/MicroStation Element button, and then select a GEOPAK or MicroStation element to utilize within computed text inserts. Press the Data Point button, then issue a data point on the screen. Functions include locating the text placement point, identifying a point for calculation of the computer text inserts, ect.

- **Styles**

This tab provides access to label styles previously created or for creating additional labels. The label style can be selected by double clicking the style name in the Item Selector window. The following is a brief description of the labels currently available in the rw.lsf file:



- **BaseLineCurve** - Places the standard R/W Mapping baseline curve data format. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the desired baseline curve element previously plotted into the design file. The curve element will be highlighted and then accepted with the second data point. The curve data will then be attached to the cursor for location placement by data point.

```
CURVE 1
P.I.STA.5+02.06
Δ = 20° 00' 00"
D = 5° 00' 00"
T = 202.06'
L = 400.00'
R = 1145.92'
P.C.STA.3+00.00
P.T.STA.7+00.00
```

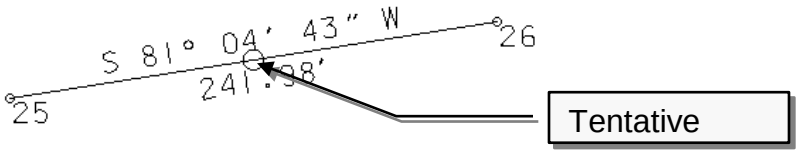
- **SegCur/CB** – Places the standard R/W Mapping segmented curve data with Chord Bearing. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the desired baseline curve element previously plotted into the design file. The curve element will be highlighted and then accepted with the second data point. The curve data will then be attached to the cursor for location placement by data point.

```
Δ = 19° 38' 36"
L = 410.01'
R = 1195.92'
C.B. = N 86° 00' 00" E
```

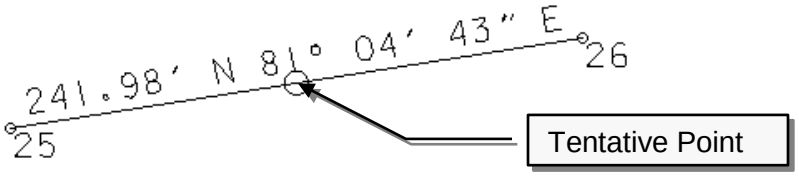
- **SegCur/CB&CD** - Places the standard R/W Mapping segmented curve data with Chord Bearing and Chord Distance. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the desired baseline curve element previously plotted into the design file. The curve element will be highlighted and then accepted with the second data point. The curve data will then be attached to the cursor for location placement by data point.

```
Δ = 4° 00' 00"
L = 396.51'
R = 5679.58'
C.D. = 396.43'
C.B. = S 87° 00' 00" W
```

- **Bear/Dist. and Bear.00/Dist.** – Places the standard R/W Mapping bearing and distance format for linear elements stored in the design file. The Bear.00/Dist format places a bearing with seconds to two decimal places. The user should select the Geopak/MicroStation button located on the Text tab and then select by data point the linear element to be labeled. The linear element will be highlighted and then accepted by a second data point. The distance and bearing will then be attached to the cursor for location and placement. The text justification for the label is set to center/center; this allows the label to be placed with the desired spacing by a tentative point on the linear element.



- **Dist-Bear and Dist-Bear.00** - These styles are basically the same as the previous styles except the label places the distance and bearing of the linear element on a single text line as shown below:

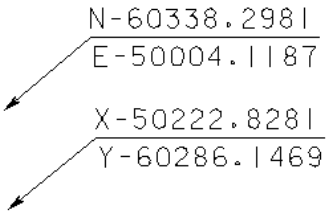


- **NECoords. and XYCoords.** – These two styles place coordinate data information (four decimal places) associated with a stored Geopak point or any data point location in the design file. The user should select the Data Point button located on the Text tab. Associated with these label styles is a leader line as shown on the Leader tab below. The leader line settings are automatically set as part of the saved label style. These defined settings for the leader line are, under Leader Type as a One Point Leader and under Terminator as an AT or current Active Terminator.

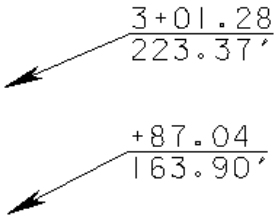
  Other AT terminators can be selected by using the MicroStation key-in “AT =” or can be selected from the R/W Mapping FDOT Menu under the ARROWS menu item. The AT terminator scale can also be set at ARROWS>Set Terminator Scale> on the FDOT Menu.

  Note: It is suggested that the user select the **graphic** type terminator cells provided on the Right of Way FDOT Menu. Geopak will place these as special Geopak cells in the associated symbology. This will eliminate the problem of non-rotating point cells if the design file is rotated.

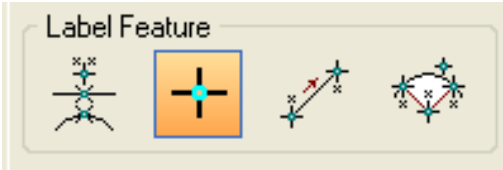
Once a data point in the design file has been selected the associated coordinate values for that point will be displayed in the Labeler dialog. Select the Place Label button to attach the coordinate labels to the cursor for placement. The next data point defines the location of the label from the selected point. The user is then given the option to place the leader line to the right or left side of the label by moving the cursor right or left of the label. Once this has been determined a data point will place the terminator line with the terminator at the location of the selected point.



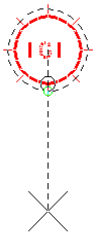
- **Full Station/Offset and Part. Station/Offset** - These two label styles allow the user to place station and offset data associated with a Geopak point or any data point location in the design file. The Full Station/Offset label places the whole station value while the Part. Station/Offset label places only the plus station value. The desired stationed Geopak chain that will be used to compute the station and offset values should be selected in the Text tab Chain window. The Data Point button should also be selected in the Text tab dialog. The leader line associated with this label style and procedures for placing these labels are the same as described in the previous label style.



- **Parcel Bubble** – This label style was created to assist the user in quickly placing standard parcel bubbles with the required parcel number and leader line. The Parcel Bubble is created with a circle shape selected on the Shape tab dialog. Also a leader line has been associated as previously described but with the Terminator selection being No Terminator. The required R/W symbologies have been set for this label style as there is only one symbology standard used with parcel bubbles. The user should use the Data Point Location button located on the Text tab dialog for placement of the parcel bubble.



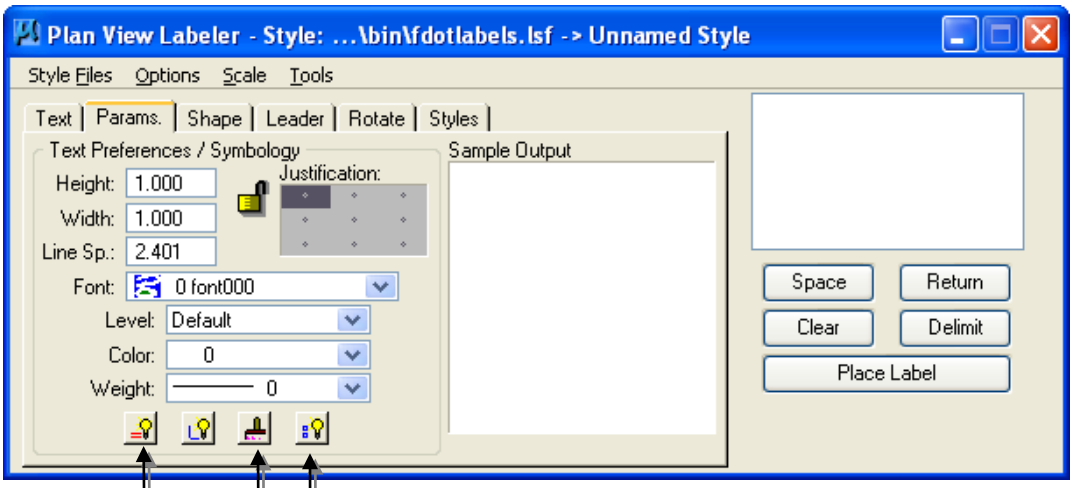
Editing the number displayed in the Labeler text window will change the parcel number. For best results, once the Parcel Bubble style has been selected the user should open **the Te**xt tab dialog and select the Data Point button for placement of each parcel bubble. The next step is to select the **Pl**ace Label button and the parcel bubble will then be attached to the cursor for placement. The second data point will place the parcel bubble at the desired location an**d a graduated circl**e will be displayed to **assi**st in placing the leader line as shown. The next data point will define the location of the beginning of the leader line from the parcel bubble with the leader line attached to the cursor.



The last data point will determine the direction and terminus point of the leader line as shown below. To continue placing parcel bubbles do not reset, but simply change the parcel number in the text label window and the parcel number will be updated automatically.

- **Params**

When using the Plan View Labeler it is important to set the required R/W Mapping CADD symbologies for that label. The quickest way to set these required symbologies is to use the R/W Mapping FDOT Menu in combination with the labeler. This can be accomplished, for example, by using the Right of Way FDOT Menu to set symbologies for text at the Text Symb>RW Text Symbologies menu item and then selecting the desired text element. This will set symbologies for level, color and weight. From the same menu location the text size can be set at Text Symb>Set Text Size. Once all required symbologies are set in MicroStation these settings can be transferred to the Labeler using the following methods located on the Params. tab dialog shown below:

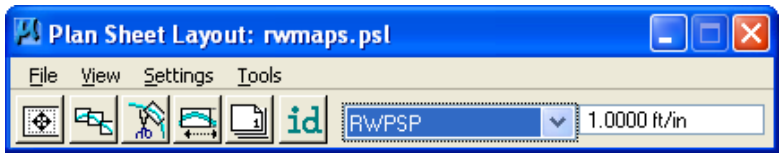


Set All Parameters – When this button is selected the symbologies set in the current tab dialog are used to set the symbologies for all tabs containing symbology settings.

D&C Symbology – Selecting this button will open the Geopak Design and Computation Manager in which the user can select an element and that element's symbology will be used.

Set By Current – Selecting this button will set the Labeler text to the current MicroStation text symbology. Symbologies for Shape and Leader are not set and must be set separately.

9.4 Plan Sheet Layout



The **FDOT CADD Software** also provides a standard Sheet Library file for R/W Mapping called **RWMAPS.PSL** to be used with the **Plan Sheet Layout** program.

This version of Geopak's Plan/Profile sheet clipping program contains, in most part, the same procedures as the Classic version previously described, with some additional enhancements.

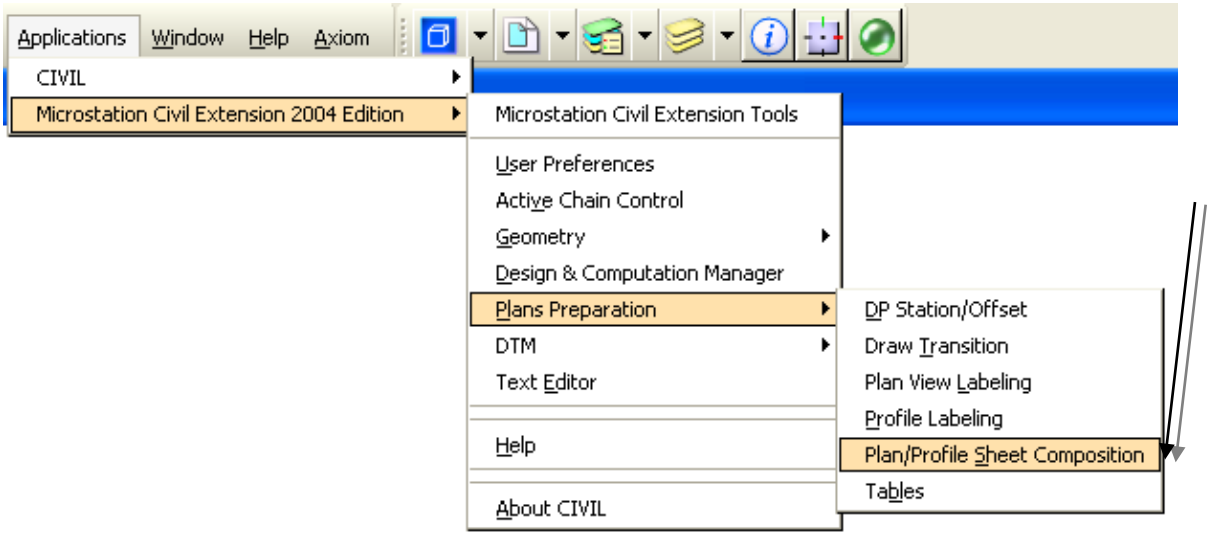
In the **Plan Sheet Layout** program all sheet layouts for R/W are contained in this single library file rwmaps.psl.

The following table lists the available R/W Sheet Layouts:

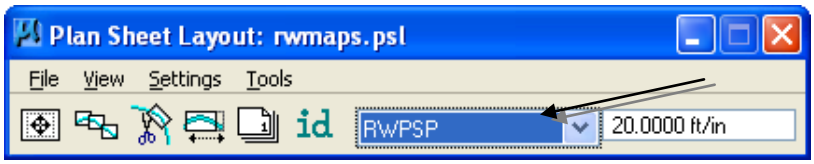
Sheet Name	Description	Scale	Sheet Type
CSDETL	Control Survey Detail	Any Scale	Plan (Port1)
CSKEYM	Control Survey Keymap	Any Scale	Plan (Port1)
MMDETL	Maintenance Detail Sheet	Any Scale	Plan (Port1)
MMKEYM	Maintenance Keymap	Any Scale	Plan (Port1)
RWDETL	Right of Way Detail	Any Scale	Plan (Port1)
RWKEYM	Right of Way Keymap	Any Scale	Plan (Port1)
RWPSL	Right of Way Parcel Sketch (Landscape)	Any Scale	Plan (8.5" x 14") (Port1)
RWPSP	Right of Way Parcel Sketch (Portrait)	Any Scale	Plan (8.5" x 14") (Port1)
RWMAPS	Used for ALL R/W Sheet Types w/ Auto - Title Block Annotation	Any Scale	Plan (Port1)

9.4.1 Creating R/W Plan Sheets

From the **MicroStation Civil Extension** select the Plan/Profile icon.



Before beginning the clipping process make sure the correct sheet layout library is attached. The currently attached library name is displayed at the top of the Sheet Layout dialog as shown:



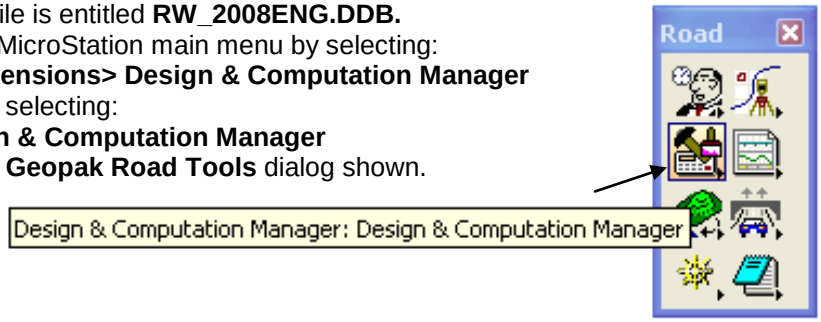
Select the R/W sheet name from the pull down list and input the desired plot scale in the text window to be used during the clipping process.

For complete detailed instructions see Geopak documentation.

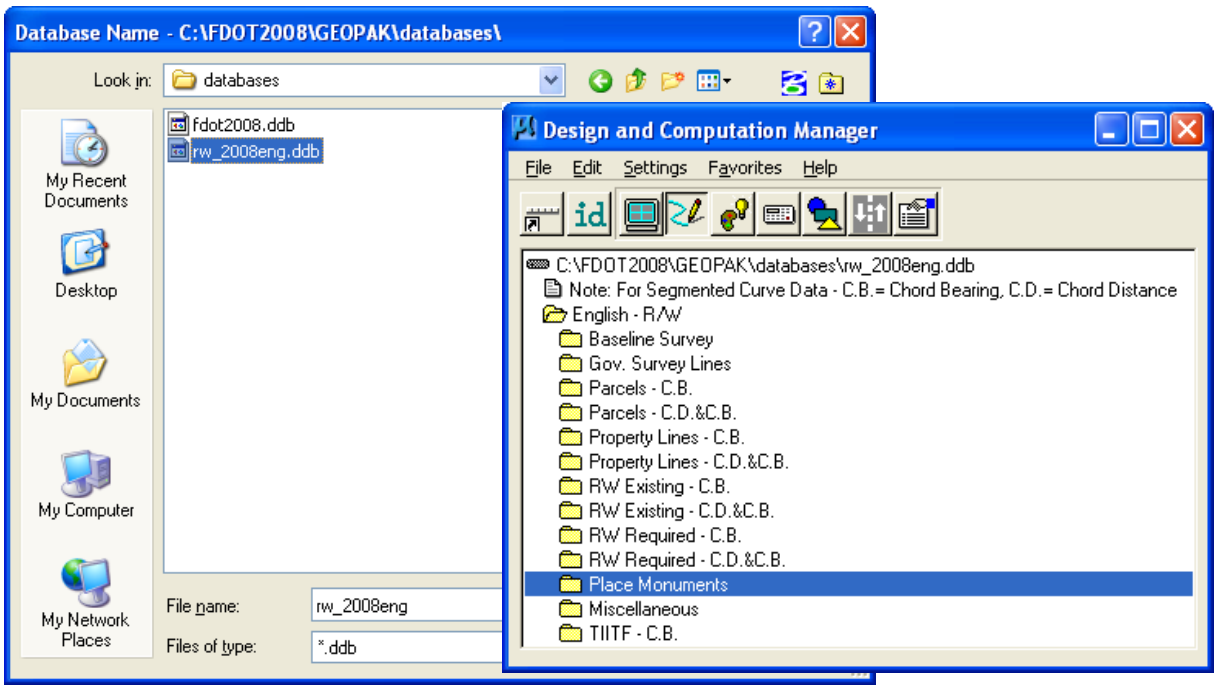
9.5 Design and Computation Manager

9.5.1 Selection of R/W Database (English)

The Right of Way Mapping database file is entitled **RW_2008ENG.DDB.**
The file can be accessed through the MicroStation main menu by selecting:
Applications>MicroStation Civil Extensions> Design & Computation Manager
Or through the Geopak main menu by selecting:
Applications>Geopak Road> Design & Computation Manager
or by selecting the icon located on the **Geopak Road Tools** dialog shown.



This database contains one main category, for plotting elements in **English** units. When the **D&C Manager** is accessed for the first time after installing the **FDOT2008 CADD** software the user may need to select from the Design and Computation Manager **File > Open**. Then from the file listing select **rw_2008eng.ddb** as shown:



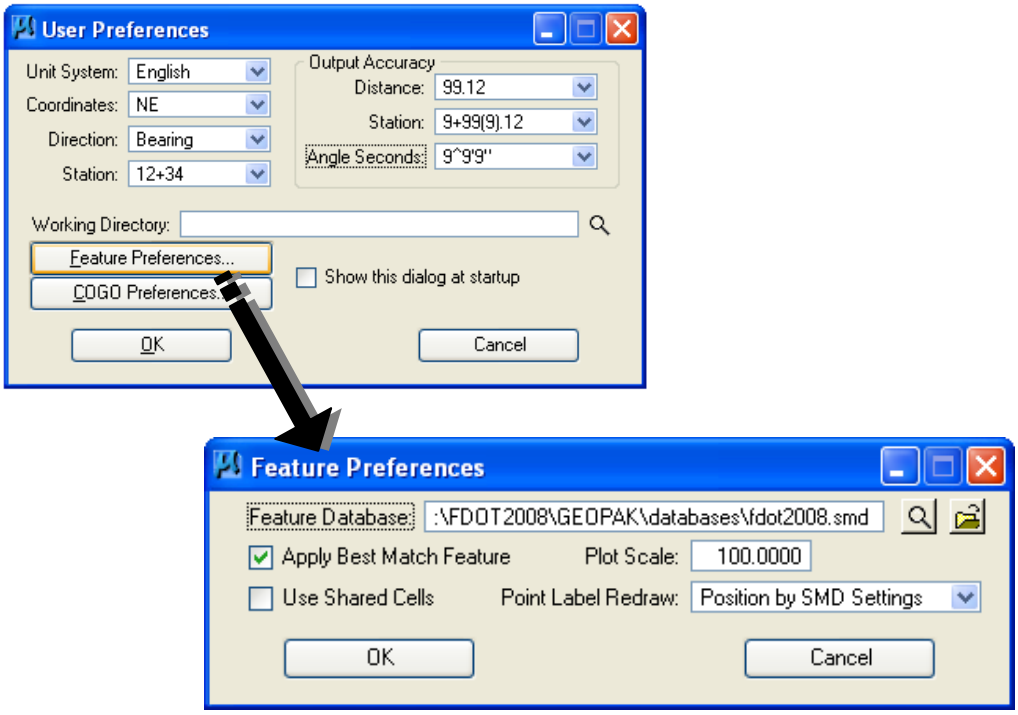
9.6 Geopak Feature Preferences

Geopak **COGO** has the ability to plot design file elements which contain drawing parameters including element symbology, attribute drawing options and DTM controls. These **Feature** attributes are defined in a **Survey Database** with a file extension of **.SMD**. The FDOT2008 software contains the database **fdot2008.smd** with the following categories:

Default Feature
Location Survey
Right of Way
Roadway

This database should be automatically attached as the default when using the FDOT2008 software which is defined by the Geopak configuration variable **GPK_SURVMNGR_SMDFILE**.

The user can verify which database is being used or change to another database from the **Geopak User Preferences** dialog. This dialog can be accessed by selecting form the Applications menu **Geopak>Road/Site/Survey>Preferences**. Select the **Feature Preference…** button to display the **Feature Preference** dialog shown below.



The **Feature Preference** dialog contains the following items:

- **SMD File:** Displays the current working database. A different working database can be located and attached by the Select… button.

- **Edit SMD**… This button will bring up the Survey Preference dialog for editing the database much in the same method as the Design and Computation Manager.

- **Apply Best Match Feature** - When this toggle is active, the best match feature from the feature survey preference database is utilized. In the fdot2008.smd database the Default Feature category will be used if the active feature does not match a feature item in the current database category.

- **Plot Scale:** Defines the scale at which linear elements such as custom line styles and cells will be plotted. It is important that the user set this prior to plotting elements into the design file project from the Coordinate Geometry dialog.

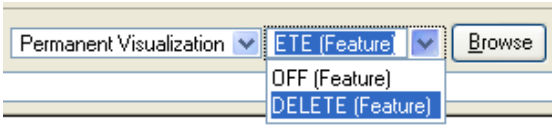
There are three **Visualization** settings on the Coordinate Geometry dialog used to control plotting of feature elements into the design file:

- **Disable Visualization** - When active no elements are visualized during the COGO session.

- **Temporary Visualization** - When active elements utilizing the feature symbology (or default symbology if no feature is present) are displayed during the COGO session.

- **Permanent Visualization** - When active elements utilizing the feature symbology (or default symbology if no feature is present) are displayed during the COGO session. Upon exiting the COGO session the elements remain in the design file.

There are two **Feature** settings on the Coordinate Geometry dialog used to control plotting of feature elements into the design file:



- **OFF (Feature)** - When the Off option is set, any element subsequently stored does not have a Feature attached.

- **Delete (Feature)** - The Delete Feature deletes any feature on subsequent commands, or does not attach features to newly stored elements.

9.7 Working With R/W Metric Design Files & MicroStation V8

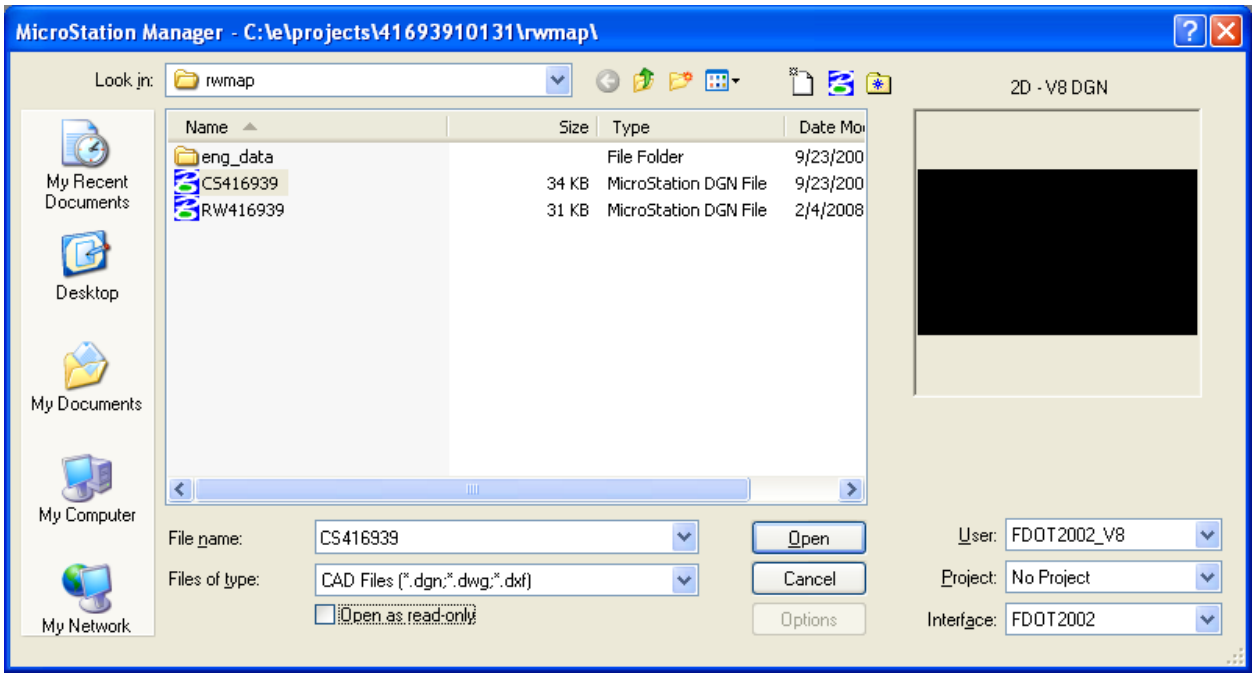
The Engineering CADD Systems Office (ECSO) provides limited support for metric unit CADD design files. This support consists mainly of bringing forward previous versions of metric support files such as the English and Metric files provided within the FDOT2002 CADD software.

Right of Way Mapping CADD users working on revisions to metric design files in MicroStation V8/FDOT2008 CADD software will need to be aware of some specific procedures when working in Metric:

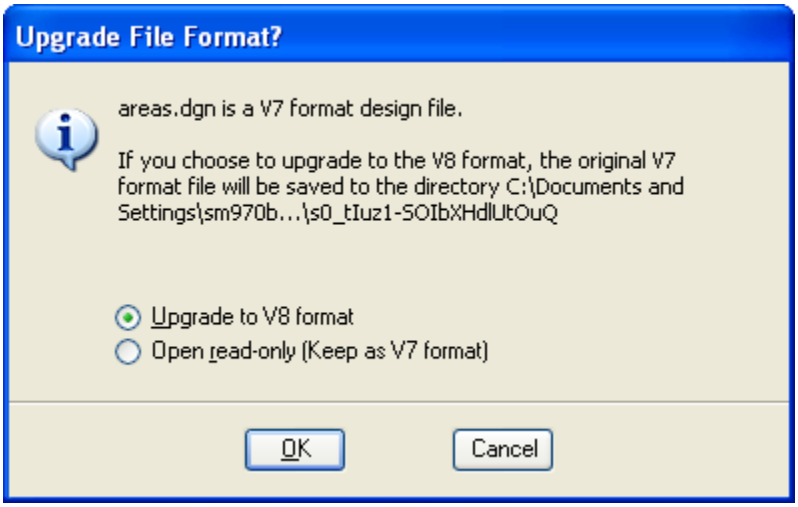
In previous versions of FDOT CADD software such as the FDOT2002 version ECSO provided MicroStation “Workspaces” that allowed the user to easily work in English or Metric environments. These two workspaces were entitled “sitefdoteng” and “sitefdotmet” respectively. These workspaces automatically provided settings needed to work within the required units. The FDOT2008 workspace is based on support for English units as this is the required unit for all future design projects with FDOT. The workspaces provided are as follows:

- FDOT2008 – uses the V8 file format and FDOT2008 CADD standards. This option requires existing files to be converted for both file format and CADD Standards. All new supporting files and programs are accessible.
- FDOT2002_V8 – uses the V8 file format with FDOT2002 CADD Standards. This option only requires existing files to be converted to the new file format. Requires the use of old support files (i.e. criteria files, Geopak support databases, etc.)
- FDOT2002_V7 – maintains the V7 files format, by forcing MicroStation to operate in V7 Work mode, and uses the FDOT2002 CADD standards. Requires no conversion, but significantly reduces the capabilities of Geopak.

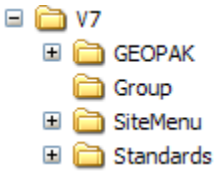
- For the purpose of working on revisions to RW Metric design files, it is recommended that the user select the FDOT2002_V8 workspace provided and the FDOT2002 interface setting. The MicroStation Manager dialog workspace "User" and "Interface" settings should appear as shown:



After selecting the desired design file MicroStation will prompt the user with the following dialog for design files that are not in V8 format. Since this file is being edited for revision purposes only and is to maintain original V7 level settings there should be no need to convert these to new V8 level names. The user should select "Upgrade to V8 format" as shown:

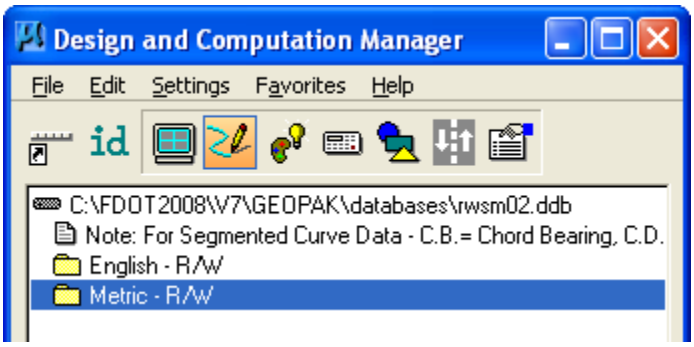


The FDOT2004 CADD software provides a subdirectory that contains support files for MicroStation V7 production. These files are located in the following subdirectories below the main FDOT2004 directory:



The **FDOT2002_V8** workspace sets environment variables that point to these V7 subdirectories that contain R/W support files for working with metric units.

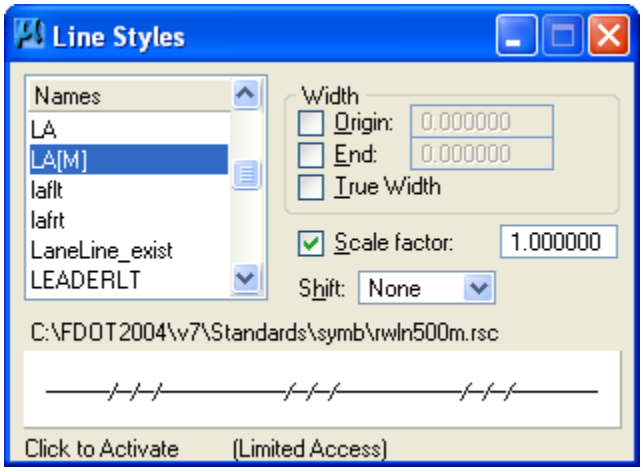
- **GEOPAK/databases** - rwsm02.ddb, Design and Computation Manager database for V7 that contains both English and Metric elements. The user should check that this database is selected. If not, select “File>Open” from D&CM dialog.



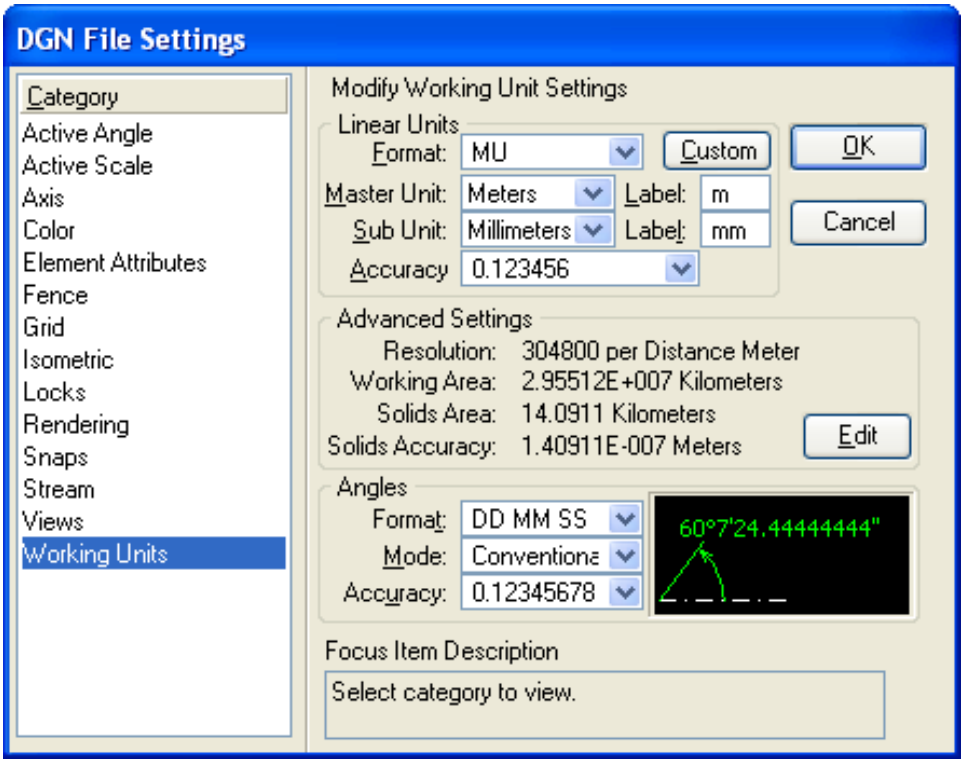
- **Standards/cells** – rwmet.cel and row.cel, V7cell library files for English and Metric design files respectively.

- **Standards/seed** – rwmet2dv7.dgn, V7 seed file format.

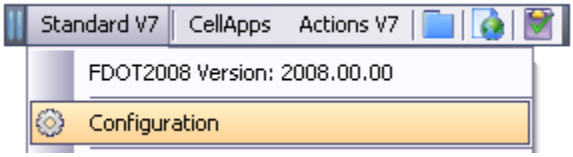
- **Standards/symb** – rwlineng.rsc and rwln500m.rsc, V7 custom line style formats for English and Metric line styles respectively. The Metric custom line styles are created at a ratio of 1:500 and scale settings should be set accordingly. All Metric custom line styles will contain [M] text appended to each line style name. To assure that the metric lines style resource file has been loaded select from MicroStation Main Menu “Edit>Line Styles> Custom:

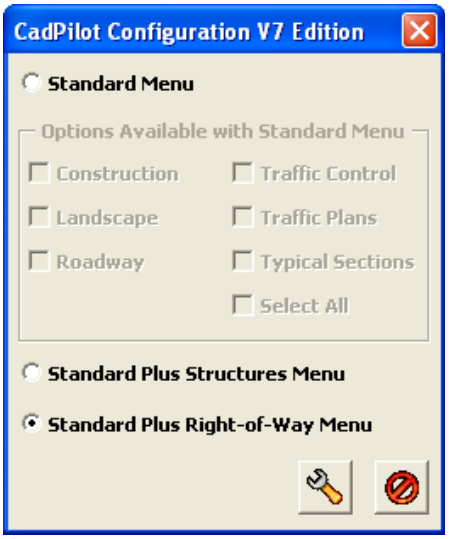


The working units of the design file should be set to Metric by selecting from the MicroStation Main Menu “Settings>Design file…” and if needed changing the Master Unit and Sub Unit as shown:

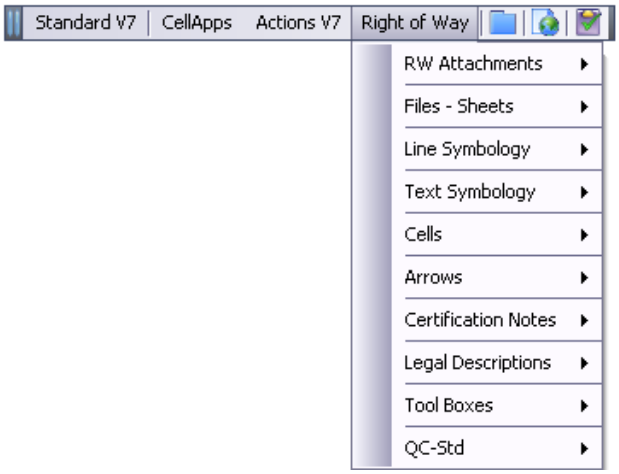


The **FDOT2002_V8** workspace will automatically set the FDOT Menu to the FDOT2002 standards. To set the FDOT Menu to Right of Way select from the menu “Standard V7> Configuration” and select “Standard Plus Right-of-Way Menu”.

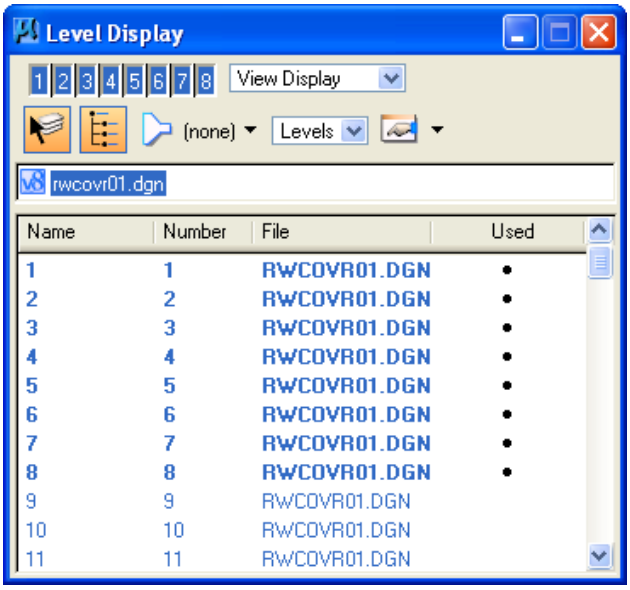


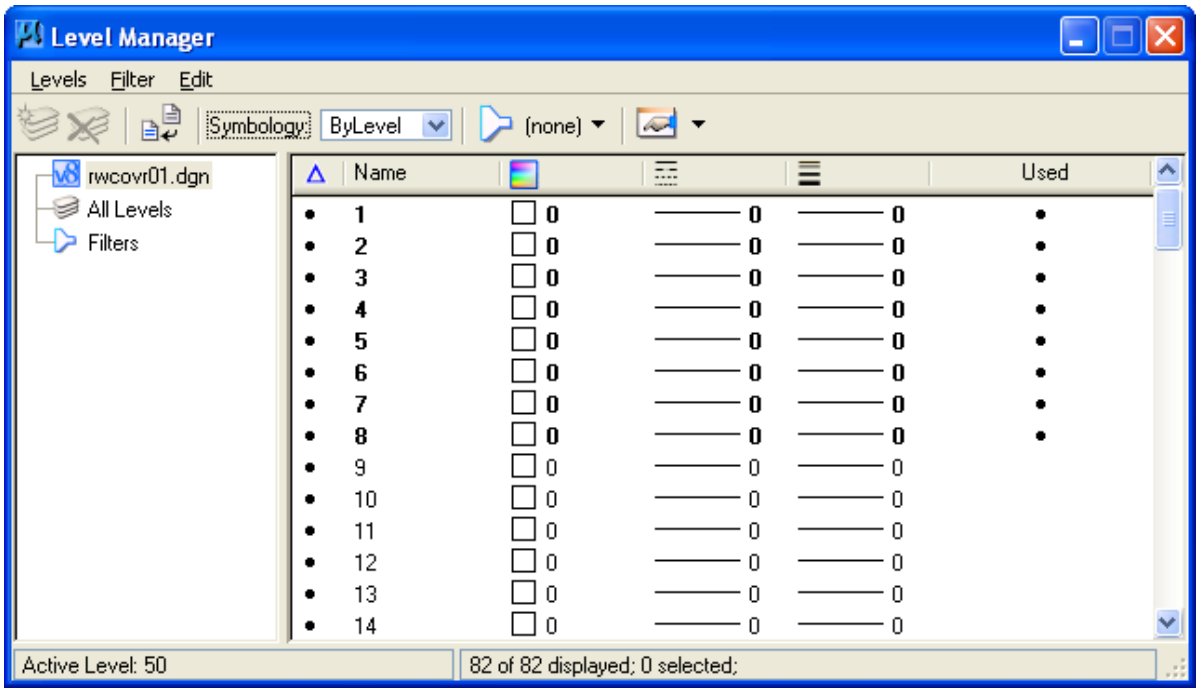


MicroStation will restart and the menu items will be as shown:



The **FDOT2002_V8** workspace will also use a MicroStation V8 design file level library (v7_levels.dgnlib) that contains legacy level names from FDOT V7 format. These are the 1 – 63 levels previously used for FDOT CADD symbology. When R/W MicroStation V7 files are converted to V8 format, as suggested above for Metric revisions, the original level settings used for each element will be brought forward and can be used in conjunction with the **D&CM**, **V8 Level Display** and **V8 Level Manager** as shown below:





All of the above items should be checked by the user prior to working on Metric design files in MicroStation V8. It is also recommended that the entire project be upgraded to V8 format even if the revision(s) will only impact a portion of the project. Once the project has been upgraded to V8 it should not be converted back to V7 format as this could cause some data lose. Coordination with other departments that may need access to these files in original V7 format should be considered prior to upgrading V7 files to V8 format.

9.8 Converting R/W Design Files to MicroStation V8

Prior to converting Right of Way Mapping project/design files to V8 format the user should consider the following:

- It is important that all design files that are to be converted should adhere to the CADD Standards the project was created in.
- The design files must be QC compliant to FDOT CADD Standards (file names and graphical symbology).
- The design files must be free of errors related to file integrity. This can be done with tools such as Axiom's FileFixer.
- If an entire project is to be converted to V8, all disciplines working on that project must be migrated at the same time (No exceptions).
- If the design file to be converted is a V7 design file use the FDOT script files provided. If the design file is to convert format only, simply open in MicroStation V8 and accept the option to convert to V8 file format.
- After the conversion convert any support file such as Geopak input files. Check Global Origin, Working Units, Level Names and Reference Attachments.
- **IMPORTANT: Always work on a COPY of files to be converted.**

To convert V7 design files to MicroStation V8 the following procedure is recommended:

A R/W conversion script file is provided with the FDOT2008 CADD software and is located in the following directory:

C:\FDOT2008\RESOUCES\data**rwv7toMR3.csv**
C:\FDOT2008\RESOUCES\data**V8MR3toXM.csv**

This file is an Excel spreadsheet and contains required column data for converting V7 design files to V8 Right of Way Mapping CADD Standards.

During the conversion process this file is used to search for existing elements symbologies within the V7 design file and selects those elements that match the description within the table and converts these to V8 symbology elements in the output design file.

rwv7tov8.csv

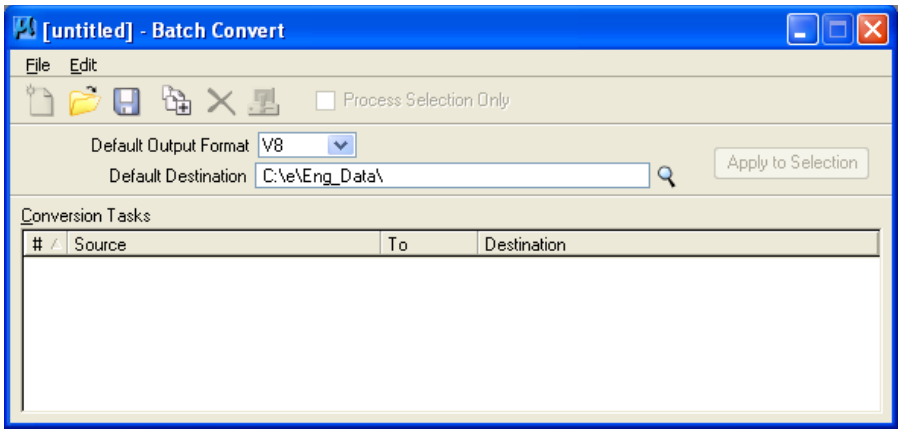
	A	B	C	D	E	F	G	H	I	J
1	%section	Levels								
2	Level	Color	LineStyle	Weight	Cell	ElementType	V8OutPutLevel	ByLevelColor	ByLevelStyle	ByLevelWeight
3	%%32	0	LEADERLT	2			ArrowLeaderLT_Term	0	LEADERLT	2
4	%%32	0	LEADERRT	2			ArrowLeaderRT_Term	0	LEADERRT	2
5	%%32	0	ARROW2	0			ArrowRWWidth	0	ARROW2	0
6	%%47	5	SUBDIV2	1			ArrowSubDouble	5	SUBDIV2	1
7	%%47	5	SUBDIV	1			ArrowSubSingle	5	SUBDIV	1
8	%%47	5	SUBDIVLT	1			ArrowSubSingleLT	5	SUBDIVLT	1
9	%%47	5	SUBDIVRT	1			ArrowSubSingleRT	5	SUBDIVRT	1
10	%%47	5	SUBDIV2LT	1			ArrowSubTwoLT	5	SUBDIV2LT	1
11	%%47	5	SUBDIV2LTOnly	1			ArrowSubTwoLTOnly	5	SUBDIV2LTOnly	1
12	%%47	5	SUBDIV2RT	1			ArrowSubTwoRT	5	SUBDIV2RT	1
13	%%47	5	SUBDIV2RTOnly	1			ArrowSubTwoRTOnly	5	SUBDIV2RTOnly	1

MicroStation V8 provides several methods for converting design files to V8. Only one method is described here and is the recommended procedure for R/W CADD users. This procedure uses the MicroStation:

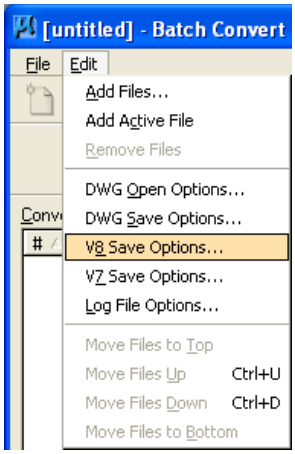
9.8.1 Batch Converter

The Batch Converter utility can convert a single design file or multiple files across different directories and apply different conversion format types to selected design files. For full instructions on the use of this utility the user should refer to MicroStation Help files.

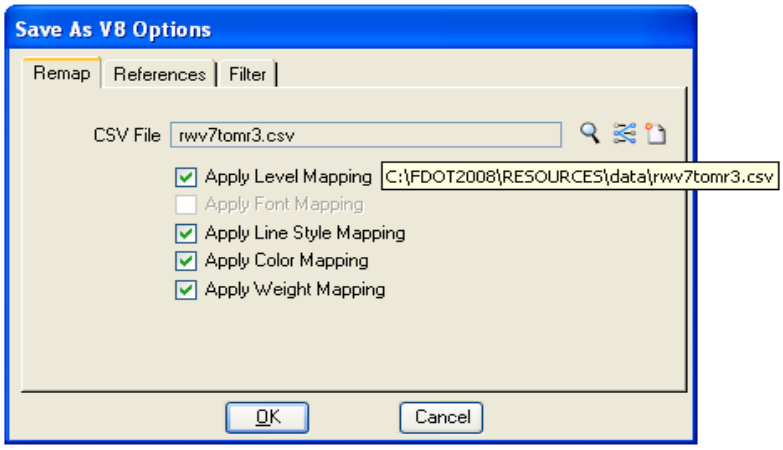
To begin the conversion process on a single V7 design file open the Batch Converter by selecting from the Main Menu **Utility>Batch Converter**:



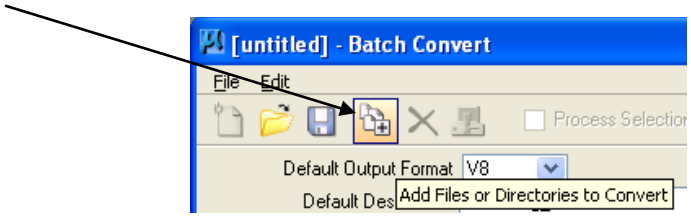
- **Default Output Format** – Set the output format to V8
- **Default Destination** – Set the directory location for the output file. The small magnifying glass can be selected to browse to the desired location. It should be noted that the Batch Converter program will not overwrite an existing design file in the output directory with the same name. However the program does not prompt the user that a file already exists with the same name but will state in the conversion dialog that the file is up to date.
- **Select Edit >V8 Options** – Sets the conversion file name (rwv7toMR3.csv and what element symbology types to convert.)



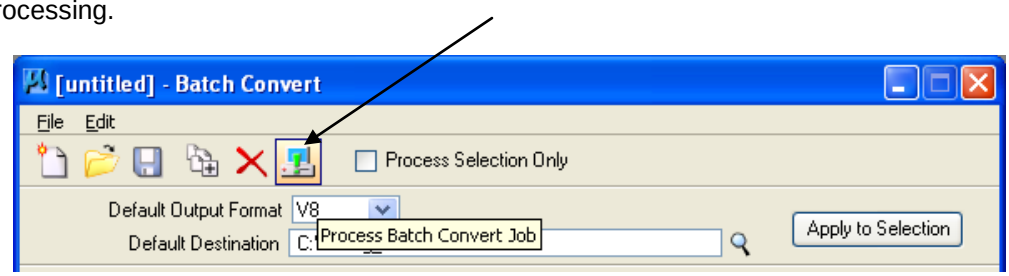
In the **Save V8 Options** dialog box set the CSV file name to **rwv7toMR3.csv** or by selecting the magnifying glass the user can browse to the desired location. Make sure each element symbology type to be converted is selected. Note that the **Apply Font Mapping** is grayed out, as this conversion file contains no data for converting font types. Select the OK button when complete.



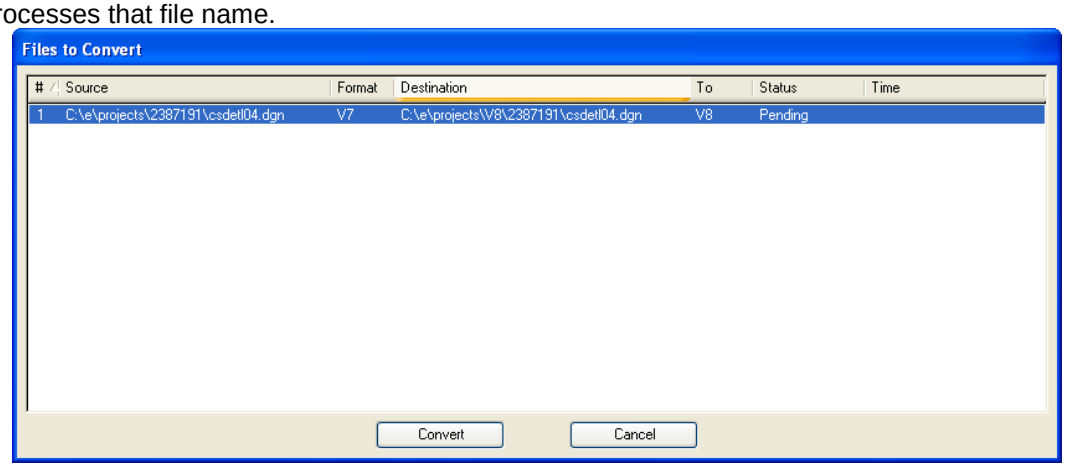
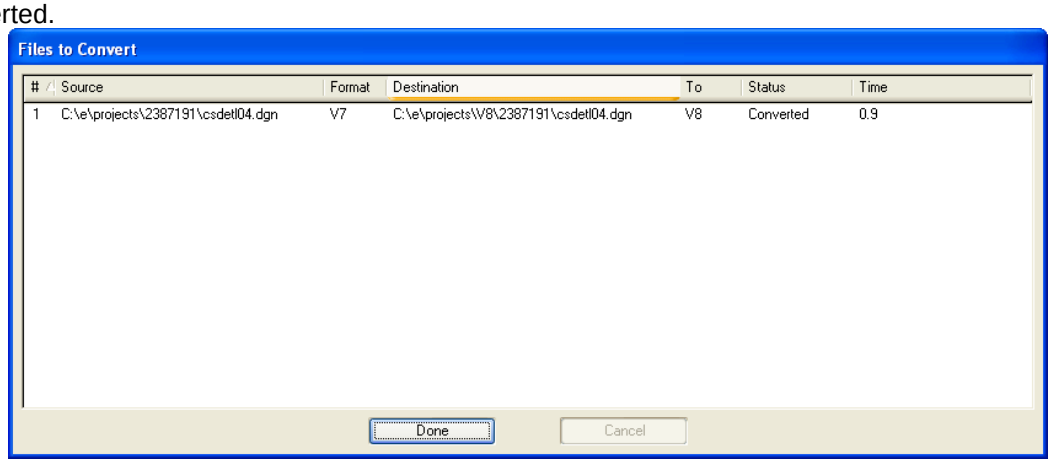
Select the **Add Files or Directories to Convert** button to open the directory and file selection dialog. As stated, multiple files or directories can be added to the file list as needed.



After all files to be converted are added to the list, select the **Process Batch Convert Job** button to begin processing.



The **Files to Convert** dialog displays the file path and name of the file to be converted, the destination file name and path along with the Status: **Pending** or **Up to Date**. As stated, if the Status is up to date a file with the same name already exists at that directory location and the converter will not processes that file name.



Select the **Convert** button and all files will be converted to V8 format with standard R/W V7 elements converted to standard FDOT2008 R/W V8 symbologies. After conversion, the above dialog should appear as shown below, with the Convert button changed to Done and the Status column changed to Converted.