

3 Reference Files

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3.1 Reference Files

Reference files allow you to join files to create an integrated design file. In MicroStation a Reference File is a file that maintains a link with its parent file. Whatever changes are made to the parent file will appear next time your project file is refreshed. This allows several departments to easily share information about a project and keep their drawings up to date.

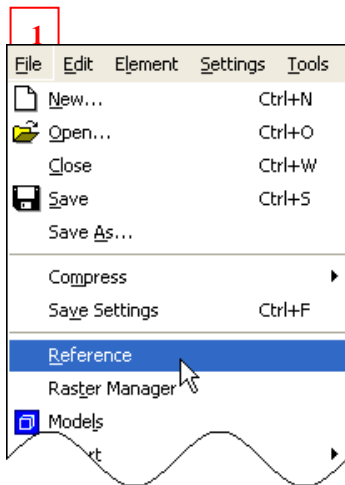
3.2 Working with Reference Files

MicroStation has the ability to reference a file, but because DMS cannot recognize more than one layer of references, at MDT the multi-reference capabilities of MicroStation have been disabled.

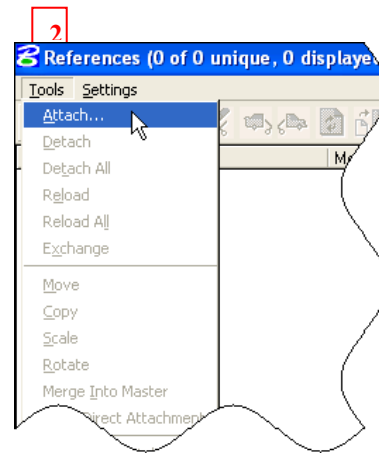
3.2.1 Not on MicroStation Instructions

MicroStation is an expansive CADD program that provides the user with various methods to accomplish any of given task involved in generating a finished CADD drawing. Due to this wide range of methods, it is less cumbersome to document one of the various methods. The methods documented here are by no means the only way to accomplish tasks. There are many other methods. Some methods may be quicker or simpler. There is no reason not to discover and use other methods. The method used matters little compared to generating, accurately and efficiently, a usable CADD drawing.

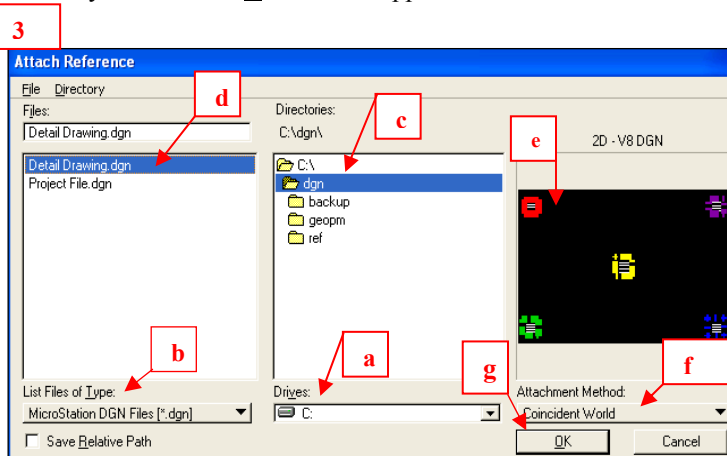
3.2.2 Attaching Reference Files



1. Move your cursor to the upper-left hand corner of the MicroStation Window and left click on File to open the menu. Move your cursor down the menu and left click on Reference. This will open the Reference Window, which will remain open until you close it manually.

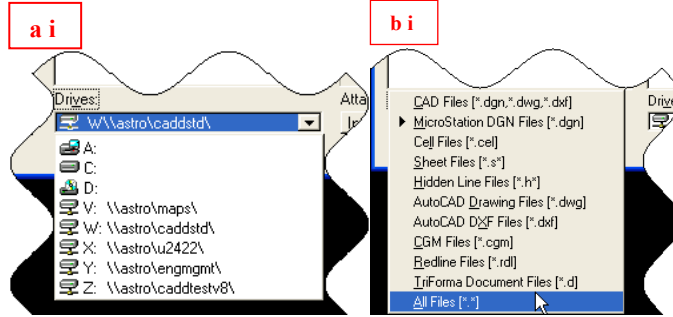


2. Move your cursor to Tools in the upper-left hand corner of the Reference Window, and left click to open the menu. Move your cursor down the menu to Attach, the first option on the drop down menu, and then left click on Attach. This will open the Attach Reference Window.

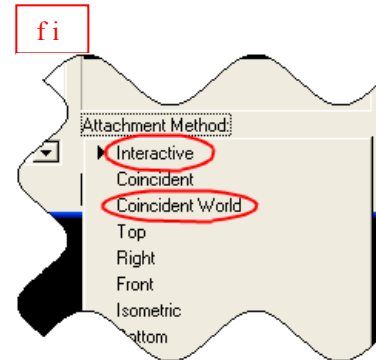


3. To find the desired Reference File you want to attach, you must browse the Attach Reference Window. First make sure that MicroStation is searching under the correct drive to

find your desired file. If you need to change the drive under which the you are searching, left click in the lower-middle section of the Attach Reference Window anywhere on the white bar or down arrow under the text **Drives:**. (a) A menu will appear listing the A:\, C:\, and D:\ drives, along with any other drives that are mapped out on your computer. Select the appropriate drive by moving your cursor along the menu until the right drive is highlighted, and then left click. This will select the drive. (a i) Now you need to make sure that MicroStation will look for the proper file type. In the left most third of the window, left-click on the bar, under the text List Files of Type: (b) This will open up a menu. (b i) Scroll through the menu until you find the correct file type. If you are unsure of which file type you are looking for, or the file type you need is not listed, select All Files [*.*] at the bottom of the menu. Once you have the right drive and file type selected, then you must browse the file tree under the file **Directories**, located in the center pane of the Attach Reference Window.



(c) To select a file to open, move your cursor over the file and double-click the left mouse button. This may show the appropriate files in the leftmost pane section of the Attach Reference Window, (d) or you may have to navigate further into the file tree. If you go too far just double-click the left mouse button on a file higher up in the file tree to back up to that file. When you find the right folder with the file you want, click on the file name in the leftmost pane, (d) and a preview of the file should appear in rightmost pane of the Attach Reference Window. (e) Then you must choose the Attachment Method by clicking on the bar in the lower-right corner of the Attach Reference Window, under the text Attachment Method. (f) This will open a menu. (f i) At MDT the only options used are Interactive or Coincident World. Interactive allows you to choose where in the view the reference file will appear as well as select which Saved Views will be used, which will be explained in Step 4.

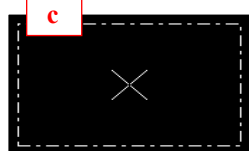
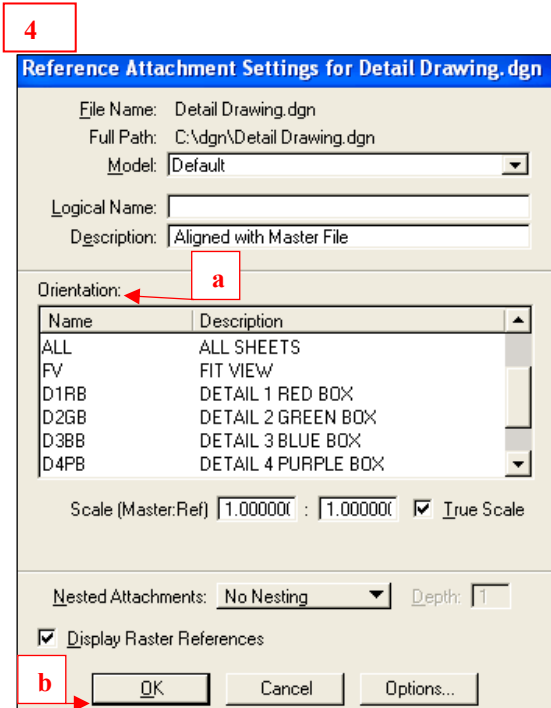


as select which Saved Views will be used, which will be explained in Step 4.

Coincident World

places the reference file at a predetermined x, y coordinate within the view. Select the appropriate attachment method by moving your cursor over it until it highlights and then left click the mouse. Once the Attachment Method has been selected left click **OK**. The Attach Reference Window will automatically close. (g)

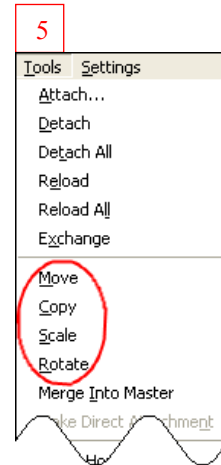
- If you are selecting Interactive, go to Step 4.
- If you are selecting Coincident World, go to Step 5.



(c) Left click on the View where you want the Detail Drawing to be placed.

4. Within the Reference Attachment Settings for Detail Drawing Window are all the Saved Views, or previously set sections of a larger drawing. To find the Saved View that you need, use the scroll bar to the left of the central pane under the text **Orientation:** until you find your desired Saved View. (a) Left-click on your desired view, and then left click to **OK**. (b) The Reference Attachment Settings for Detail Drawing Window will automatically close. Now your cursor, when it hovers over the view, will have changed to an X surrounded by a dotted line.

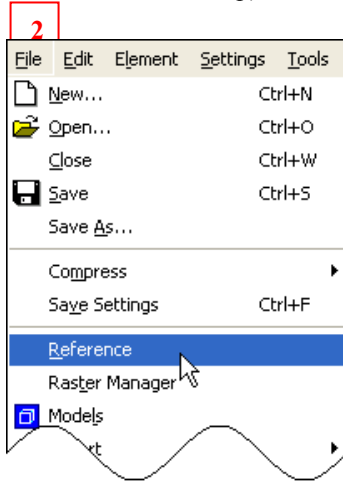
- If the Detail still needs adjusting, go to Step 5.
 - If the Detail is as required, go to Step 6.
5. Go back to the Reference Window. In the main pane of the Reference Window, left-click on the reference file that you want to adjust. Left-click on Tools in the upper-left corner. You have four adjustment options in the second section of the menu. **M**ove allows you to change the position of the reference file. **C**opy allows you to create a duplicate of the reference file. **S**cale allows you to enlarge or reduce the size of the reference file. **R**otate allows you to turn the reference file at an angle.



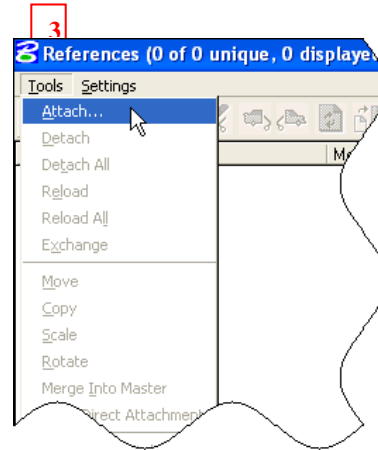
3.2.3 Circular References (Self Referencing)

Circular References Files are the only Reference Files which do not require Logical Prefix. A Circular Reference uses a part of the existing file as scaled reference.

1. Before you can Reference a section of Project File you must have a Saved View of that section. (See: Micro Station Help)

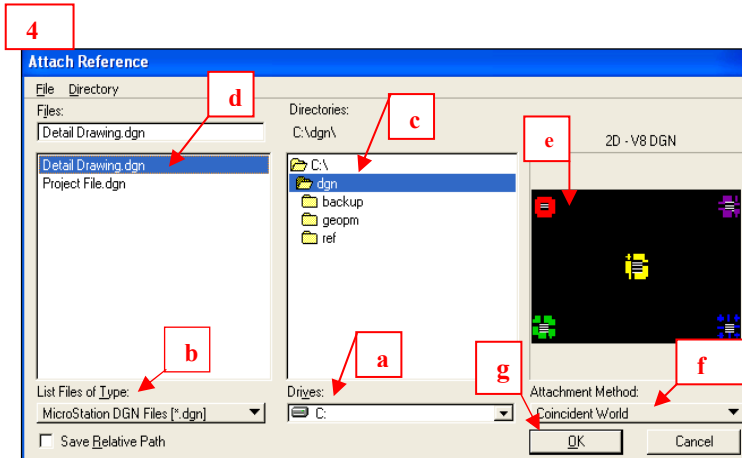


2. Move your cursor to the upper-left hand corner of the MicroStation Window and left click on **F**ile to open the menu. Move your cursor down the menu and left click on **R**eference. This will open the Reference Window, which will remain open until you close it manually.

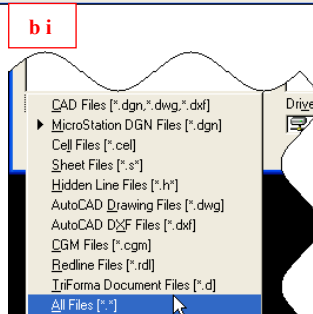
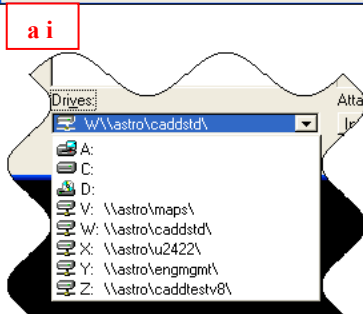


3. Move your cursor to **T**ools in the upper-left hand corner of the Reference Window,

and left click to open the menu. Move the cursor down the menu to **A**ttach, the first option on the drop down menu, and then left click on **A**ttach. This will open the Attach Reference Window.

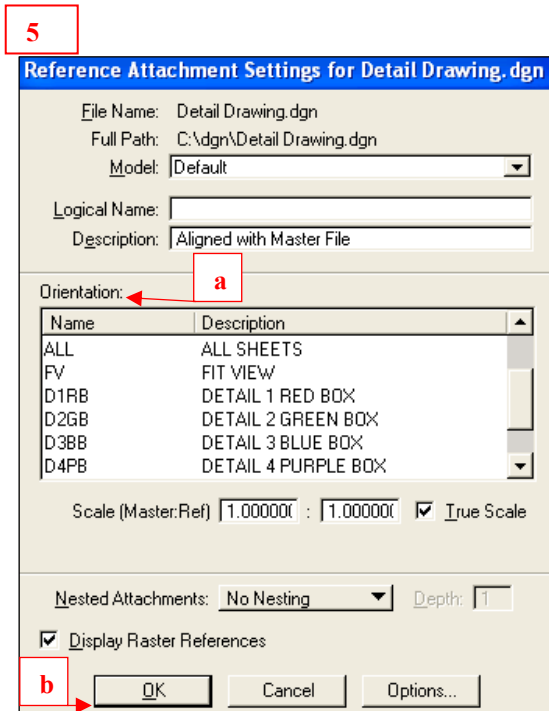
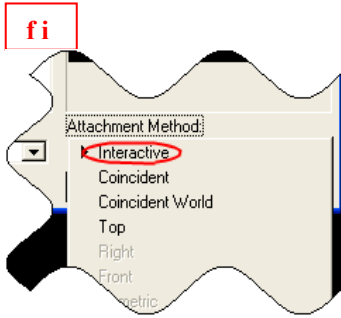


4. Now you must locate your current Project File. To find your Project File, you must browse the Attach Reference Window. First make sure that MicroStation is searching under the correct drive to find your Project File. If you need to change the drive, under which you are searching, left click in the lower-middle section of the Attach Reference Window anywhere on the white bar or down arrow under the text **Drives**: (a) A menu will appear listing the A:\, C:\, and D:\ drives, along with any other drives that are mapped out on your computer. Select the appropriate drive by moving your cursor along the menu until the right drive is highlighted, and then left click. This will select the drive. (a i) Now you need to make sure that MicroStation will look for the



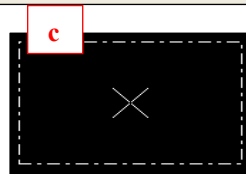
proper file type. In the left most third of the window, left-click on the bar, under the text List Files of Type: (b) This will open up a menu. (b i) Scroll through the menu until you find the correct file type. If the file type you need is not listed, select **A**ll Files [*.*] at the bottom of the menu. Once you have the right drive and file type selected, then you must browse the file tree under the file **D**irectories, located

in the center pane of the Attach Reference Window. (c) To select a file to open, move your cursor over the file and double-click the left mouse button. This may show the appropriate files in the leftmost pane section of the Attach Reference Window, (d) or you may have to navigate further into the file tree. If you go too far just double-click the left mouse button on a file higher up in the file tree to back up to that file. When you find the right folder with the file you want, click on the file name in the leftmost pane, (d) and a preview of the file should appear in rightmost pane of the Attach Reference Window. (e) Then you must choose the Attachment Method by clicking on the bar in the lower-right corner of the Attach Reference Window, under the text Attachment Method. (f) This will open a menu. (f i) To do a Circular Reference Select Interactive. Once Interactive has been selected left click **OK**. The Attach Reference Window will automatically close and the Reference Attachment Settings for Detail Drawing Window will open.



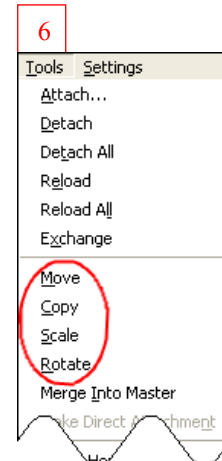
5. Within the Reference Attachment Settings for Detail Drawing Window are all the Saved Views, or previously set sections of a larger drawing. To find the Saved View that you need, use the scroll bar to the left of the central pane under the text **Orientation:** until you find your desired Saved View. (a) Left-click on your desired view, and then left click to **OK**. (b) The Reference Attachment Settings for Detail Drawing Window will automatically close. Now your cursor, when it hovers over the view, will have changed to an X surrounded by a dotted line. (c) Left click on the View where you want the Circular Reference to be placed.

- If the Circular Reference still needs adjusting, go to Step 6.
- If the Circular Reference is as required, go to Step 7.



adjust. Left-click on Tools in the upper-left corner. You have four adjustment options in the second section of the menu. **M**ove allows you to change the position of the reference file. **C**opy allows you to create a duplicate of the reference file. **S**cale allows you to enlarge or reduce the size of the reference file. **R**otate allows you to turn the reference file at an angel.

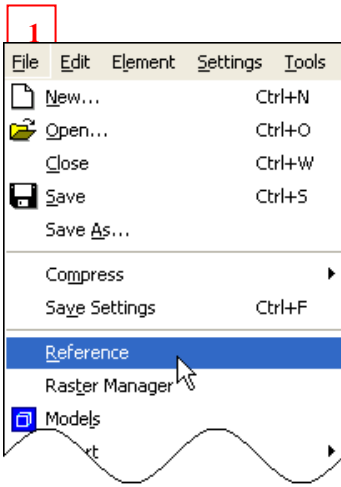
6. Go back to the Reference Window. In the main pane of the Reference Window, left-click on the reference file that you want to



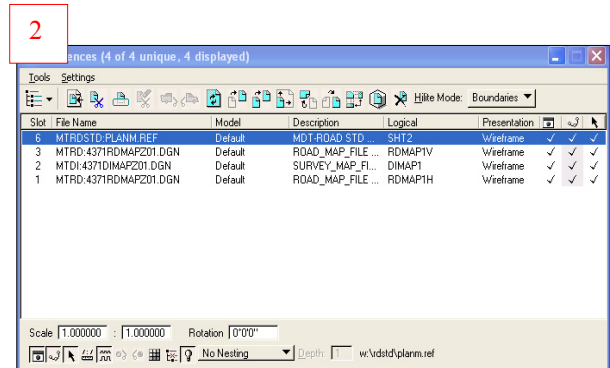
3.2.4 Renaming a Reference File

Before you can successfully put a Project File out on DMS, you need to make sure that DMS knows where to search for the attached Reference Files. Any reference, that is not a circular reference, will need to have a Logical Prefix added, NOT to be confused with Logical Name (3.4.1 on page 3-10).

3.2.4.1 Adding a Logical Prefix

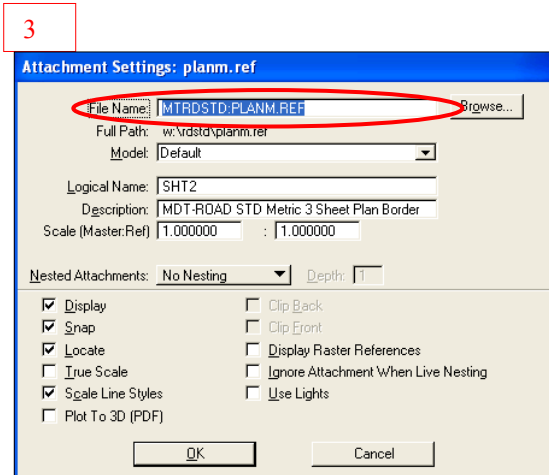


1. Move your cursor to the upper-left hand corner of the MicroStation Window and left click on **F**ile to open the menu. Move your cursor down the menu and left click on **R**eference. This will open the Reference Window, which will remain open until you close it manually.



2. Double click on the file that you want to add a Logical Prefix to or alter a preexisting one.

This will open the Attachment Settings Window.



3. In the Attachment Settings Window, click on the field next to File Name and add the appropriate Logical Prefix as occurring to following tables. Then click OK. The Attachment Settings Window will close.

3.2.4.1.1 Reference File Attachment Logical Prefix Listing

Main Project Directory		
DMS Workgroup Directories	Information	Logical Prefix
AB	As-Builts	MTAB:
BR	Bridge – Plans & Comps	MTBR:
CO	Construction – Plans	MTCO:
CP	Contract Plans	MTCP:
DI	District – Working Plans, Survey Files	MTDI:
EL	Traffic Electrical	MTEL:
EN	Environmental - Plans and Documents	MTEN:
GE	Traffic Geometrics	MTGE:
HY	Hydraulics – Plans & Comps	MTHY:
IN	Traffic Investigations	MTIN:
MA	Materials Pavement etc.	MTMA:
MT	Materials Geology	MTMT:
PH	Photogrammetry	MTPH:
RD	Road Design – Plans and Documents	MTRD:
RO	Right of Way – Plans, Exhibits & Documents	MTRO:
SA	Traffic Safety – Plans & Documents	MTSA:
SI	Traffic Signing - Plans & Documents	MTSI:
SU	Survey – Plans and Documents	MTSU:
UT	Utility – Plans & Documents	MTUT:
VI	Visualization – Plans	MTVI:

Standard Reference files that do not come from the server still need a Logical Prefix.

CADD Standards Main Directory (W:\)		
Root Directories	Information	Logical Prefix
BRSTD	Bridge Standards	MTBRSTD:
ELSTD	Electrical Standards	MTELSTD:
GESTD	Geometric Standards	MTGESTD:
INSTD	Traffic Investigation Standards	MTINSTD:
RDSTD	Road Design Standards	MTRDSTD:
ROSTD	Right of Way Standards	MTROSTD:
SASTD	Traffic Safety Standards	MTSASTD:
SISTD	Traffic Signing Standards	MTSISTD:
UTSTD	Utility Standards	MTUTSTD:
Root Dir (W:/)		MTSTD:
STDDET/ENGLISH/	English Standards Drawings	MTSTDE:
STDDET/METRIC/	Metric Standards Drawings	MTSTDM:

3.2.4.2 Cross Referencing Projects

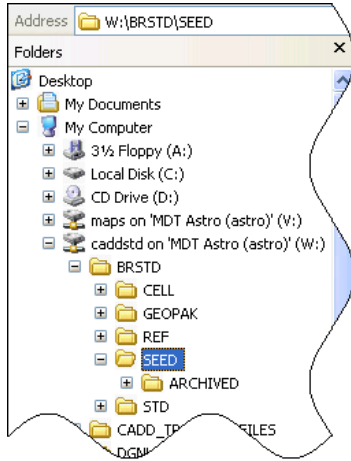
When DMS searches for reference files, it will automatically search for files that share the Control Number with the original project file. So, before you can put a project file that contains outside project reference you must attach added part of the Logical Prefix. The second part of the logical prefix is the Control number of the file that you are attaching.

Example:

MTAB1234001:1234001RDMAP.DGN

3.3 Reference Files by Department

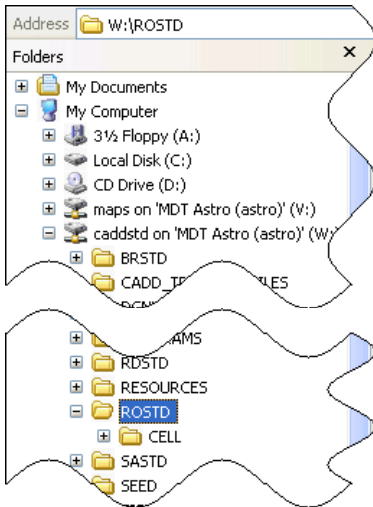
3.3.1 Bridge Reference Files



Open, rename w/ UPN. Correct ref attachment. Maintain ref attachment. Do not merge or detach.

3.3.2 Right Of Way Reference Files

The Right of Way Metric Reference Files are under W:\ROSTD.



Right of Way Metric Reference Files

Reference File	Description
METRWPL.REF	Standard Right of Way plan sheet, no border.
PLANM.REF	This is the shared road design file from ROSTD that is used to build the border in the Right of Way plan sheets.
METRWTL.REF	Standard Right of Way title sheet.
MDEED2.REF	Standard exhibit sheet, with title block in lower right corner, which is used generally.
MDEEDLL.REF	Standard exhibit sheet, with title block in lower left corner. Used when the drawing covers the standard placed title block area.
MDEEDUL.REF	Standard exhibit sheet, with title block in upper left corner. Used when the other blocks interfere with drawing.

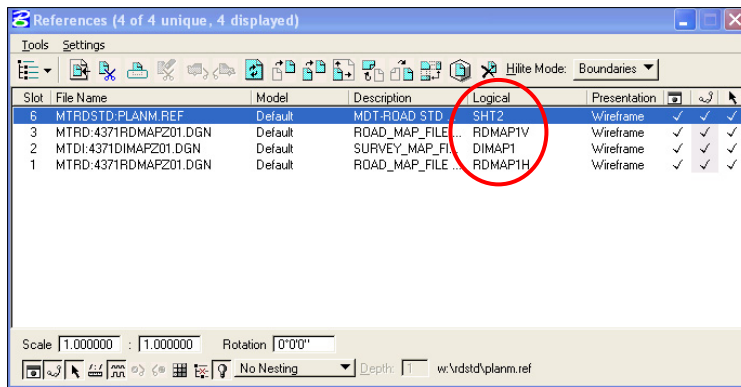
3.4 Typical Reference File Usage Scheme

Within certain project files, department have a typical batch of reference files.

Mention logic, its purpose (Macro') Generated by GeoPak, Macros, and users. Used in other Macros. Newer Macro will correct logical names.

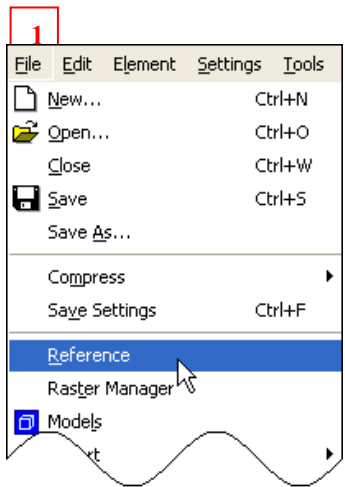
3.4.1 Logical Name

The Logical Name, NOT to be confused with the cross references Logical Prefix (3.2.3 on page 3-7), is used for identification purposes within the MicroStation file environment and Marcos. The Logical Name is generated by GeoPak, certain Macros, or users manually altering the name within MicroStation. Certain files may still contain the old Logical Names from the older MicroStation version 7. The OLD Logical Names are still acceptable. The NEW Logical Names will be used and set by the latest MicroStation Macros



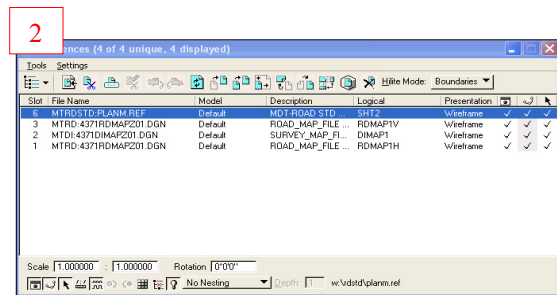
3.4.1.1 Manually Altering the Logical Name

With the main purpose of the Logical Names being identification with MicroStation and Macros, a situation may occur in which you will need to edit references Logical Name. The following steps show you how.

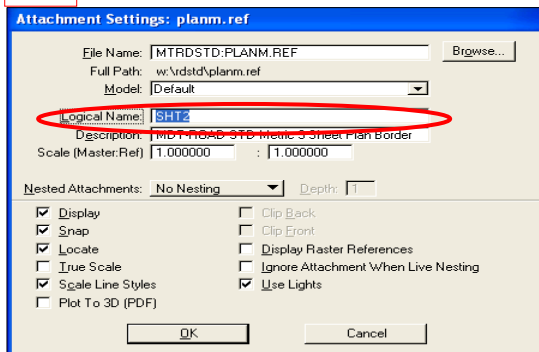


1. Move your cursor to the upper-left hand corner of the MicroStation Window and left click on **F**ile to open the menu. Move your cursor down the menu and left click on **R**eference. This will open the Reference Window, which will remain open until you close it manually.

2. Double click on the file that you want to add a Logical Name to or alter a preexisting one. This will open the Attachment Settings Window.



3



3. In the Attachment Settings Window, click on the field next to Logical Name and edit the field as you wish. Then click OK. The Attachment Settings Window will close.

3.5 Typical Reference File Usage Scheme by Department

The follow tables list the typical files reference by each department according to the file's class
Included are the Old and New Logical Names.

3.5.1 Photogrammetry

File Class	Ref File	Logical Name	
		Old %	New %
MAP			

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.2 Road Design

File Class	Ref File	Logical Name	
		Old %	New %
MAP	Survey Mapping File	Map	DIMAP#
	Photogrammetry Mapping File	Map	PHMAP#
	Sue Utility Mapping File	Suemap	UTMAP#
	Right of Way Mapping File	Rwmap	ROMAP#
	Traffic Electrics Mapping File †	Trmap	ELMAP#
	Traffic Geometrics Mapping File †	Trmap	GEMAP#
	Traffic Safety Mapping File †	Trmap	SAMAP#
Traffic Signing Mapping File †	Trmap	SIMAP#	
PLP PLN	Plan Sheet Border (planm.ref)	SHT	SHT
	Survey Mapping File *	FL#	DIMAP#
	Photogrammetry Mapping File *	FL#	PHMAP#
	Sue Utility Mapping File *	RDUT#	UTMAP#
	Road Design Mapping File * Horizontal Alignment	H#	RDMAP#H
	Road Design Mapping File * Vertical Alignment	V#	RDMAP#V
	Road Design Contour Map		RDCMA
	Right of Way Mapping File *	R#	ROMAP#
	Right of Way Plan Sheet File *	RO#	ROPLN#
	Traffic Electrics Mapping File * †	Trmap	ELMAP#
	Traffic Geometrics Mapping File * †	Trmap	GEMAP#
	Traffic Safety Mapping File * †	Trmap	SAMAP#
	Traffic Signing Mapping File * †	Trmap	SIMAP#
	Traffic Electrics Detail Sheets * †		ELDET#
	Traffic Geometrics Detail Sheets * †		GEDET#
	Traffic Safety Detail Sheets * †		SADET#
	Traffic Signing Detail Sheets * †		SIDET#
	Traffic Electrics Plan Sheets * †		ELPLN#
Traffic Geometrics Plan Sheets * †		GEPLN#	
Traffic Safety Plan Sheets * †		SAPLN#	
Traffic Signing Plan Sheets * †		SIPLN#	

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.3 Right of Way

File Class	Ref File	Logical Name	
		Old %	New %
ARE	Right of Way Mapping File	RW#	ROMAP#
	Road Design Mapping File	Rdmap	RDMAP#
	Traffic Electrics Mapping File †	Trmap	ELMAP#
	Traffic Geometrics Mapping File †	Trmap	GEMAP#
	Traffic Safety Mapping File †	Trmap	SAMAP#
	Traffic Signing Mapping File †	Trmap	SIMAP#
EXH	Right of Way Deed Exhibit border		SHT
	Plan Sheet Border (planm.ref)	SHT1	SHT1
	Survey Mapping File *	FL#	DIMAP#

	Photogrammetry Mapping File *	FL#	PHMAP#
	Sue Utility Mapping File *	RDUT#	UTMAP#
	Road Design Mapping File * Horizontal Alignment	H#	RDMAP#H
	Right of Way Mapping File *	RW#	ROMAP#
	Right of Way Plan Sheet File	RWPL	ROPLN#
	Right of Way Area File *		ROARE#
MAP	Survey Mapping File	Map	DIMAP#
	Photogrammetry Mapping File	Map	PHMAP#
	Sue Utility Mapping File	Suemap	UTMAP#
	Road Design Mapping File	Rdmap	RDMAP#
	Traffic Electrics Mapping File †	Trmap	ELMAP#
	Traffic Geometrics Mapping File †	Trmap	GEMAP#
	Traffic Safety Mapping File †	Trmap	SAMAP#
Traffic Signing Mapping File †	Trmap	SIMAP#	
PLP PLN	Right of way Plan sheet boarder (metrwpl.ref)	SHT	SHT
	Plan Sheet Border (planm.ref)	SHT1	SHT1
	Survey Mapping File *	FL#	DIMAP#
	Photogrammetry Mapping File *	FL#	PHMAP#
	Sue Utility Mapping File *	RDUT1	UTMAP#
	Road Design Mapping File * Horizontal Alignment	H#	RDMAP#H
	Road Design Plan sheet *	R#	RDPLP#
		R#	RDPLN#
	Right of Way Mapping File *	RW#	ROMAP#
	Traffic Electrics Mapping File * †	Trmap	ELMAP#
	Traffic Geometrics Mapping File * †	Trmap	GEMAP#
	Traffic Safety Mapping File * †	Trmap	SAMAP#
	Traffic Signing Mapping File * †	Trmap	SIMAP#
	Traffic Electrics Detail Sheets * †		ELDET#
	Traffic Geometrics Detail Sheets * †		GEDET#
	Traffic Safety Detail Sheets * †		SADET#
	Traffic Signing Detail Sheets * †		SIDET#
	Traffic Electrics Plan Sheets * †		ELPLN#
	Traffic Geometrics Plan Sheets * †		GEPLN#
Traffic Safety Plan Sheets * †		SAPLN#	
Traffic Signing Plan Sheets * †		SIPLN#	
OWN	Right of Way Plan Sheet Boarder (metrwpl.ref)	SHT	SHT
	Plan Sheet Border (planm.ref)	SHT1	SHT1
SUM	Right of way Plan sheet boarder (metrwpl.ref)	SHT	SHT
	Plan Sheet Border (planm.ref)	SHT1	SHT1
	Right of Way Coordinate Sheet Frame † (mcoord.ref)	COORD	SHT2
	Road Design Control Traverse Sheet †		RDSUM#
TTL	Road Design Title Sheet	map	RD TTL
	Right of Way Title Sheet Border (metrwti.ref)	SHT	SHT

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.4 SUE

File Class	Ref File	Logical Name	
		Old %	New %
SUE			

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.5 Survey

File Class	Ref File	Logical Name	
		Old %	New %
MAPN			

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.6 Traffic Electric

File Class	Ref File	Logical Name	
		Old %	New %
MAP	Survey Mapping File	MAP	DIMAP#
	Photogrammetry Mapping File	MAP	PHMAP#
	Sue Utility Mapping File	Suemap	UTMAP#
	Road Design Mapping File	RDMAP	RDMAP#
PLN	Plan Sheet Boarder (planm.ref)	SHT	SHT
	Traffic Plan sheet border	SHT1	SHT1
	Traffic Electrics Mapping File †	T#	ELMAP#
	Traffic Geometrics Mapping File †	T#	GEMAP#
	Traffic Safety Mapping File †	T#	SAMAP#
	Traffic Signing Mapping File †	T#	SIMAP#

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.7 Traffic Geometrics

File Class	Ref File	Logical Name	
		Old %	New %
MAP	Survey Mapping File	MAP	DIMAP#
	Photogrammetry Mapping File	MAP	PHMAP#
	Sue Utility Mapping File	Suemap	UTMAP#
	Road Design Mapping File	RDMAP	RDMAP#
PLN	Plan Sheet Boarder (planm.ref)	SHT	SHT
	Traffic Plan sheet border	SHT1	SHT1
	Traffic Electrics Mapping File †	T#	ELMAP#
	Traffic Geometrics Mapping File †	T#	GEMAP#
	Traffic Safety Mapping File †	T#	SAMAP#
	Traffic Signing Mapping File †	T#	SIMAP#

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.8 Traffic Safety

File Class	Ref File	Logical Name	
		Old %	New %
MAP	Survey Mapping File	MAP	DIMAP#
	Photogrammetry Mapping File	MAP	PHMAP#
	Sue Utility Mapping File	Suemap	UTMAP#
	Road Design Mapping File	RDMAP	RDMAP#
PLN	Plan Sheet Boarder (planm.ref)	SHT	SHT
	Traffic Plan sheet border	SHT1	SHT1
	Traffic Electrics Mapping File †	T#	ELMAP#
	Traffic Geometrics Mapping File †	T#	GEMAP#
	Traffic Safety Mapping File †	T#	SAMAP#
	Traffic Signing Mapping File †	T#	SIMAP#

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.9 Traffic Signing

File Class	Ref File	Logical Name	
		Old %	New %
MAP	Survey Mapping File	MAP	DIMAP#
	Photogrammetry Mapping File	MAP	PHMAP#
	Sue Utility Mapping File	Suemap	UTMAP#
	Road Design Mapping File	RDMAP	RDMAP#
PLN	Plan Sheet Boarder (planm.ref)	SHT	SHT
	Traffic Plan sheet border	SHT1	SHT1
	Traffic Electrics Mapping File †	T#	ELMAP#

	Traffic Geometrics Mapping File †	T#	GEMAP#
	Traffic Safety Mapping File †	T#	SAMAP#
	Traffic Signing Mapping File †	T#	SIMAP#

† = Optional

* = Referenced in three sections in the File Sheets of the Standard English/Metric Three Sheet Format.

= Project Number

3.5.10 Utility

File Class	Ref File	Logical Name	
		Old %	New %
PLN	Right of way Plan sheet boarder (metrwpl.ref)	SHT	SHT
	Plan Sheet Border (planm.ref)	SHT1	SHT1
	Survey Mapping File *	FL#	DIMAP#
	Photogrammetry Mapping File *	FL#	PHMAP#
	Sue Utility Mapping File *	RDUT#	UTMAP#
	Road Design Mapping File * Horizontal Alignment	H#	RDMAP#H
	Road Design Plan sheet * - \$ P or L for File type	R#	RDPL\$#
	Right of Way Mapping File *	RW#	ROMAP#
	Right of Way Plan Sheet File	RWPL	ROPLN#
	Traffic Electrics Mapping File * †	Trmap	ELMAP#
	Traffic Geometrics Mapping File * †	Trmap	GEMAP#
	Traffic Safety Mapping File * †	Trmap	SAMAP#
	Traffic Signing Mapping File * †	Trmap	SIMAP#
	Traffic Electrics Detail Sheets * †		ELDET#
	Traffic Geometrics Detail Sheets * †		GEDET#
	Traffic Safety Detail Sheets * †		SADET#
	Traffic Signing Detail Sheets * †		SIDET#
	Traffic Electrics Plan Sheets * †		ELPLN#
	Traffic Geometrics Plan Sheets * †		GEPLN#
	Traffic Safety Plan Sheets * †		SAPLN#
Traffic Signing Plan Sheets * †		SIPLN#	

3.6 Road Design Standard Ref File

3.6.1 PLANM.REF Sheet use

The Standard Boarder Sheets have a lot of information that will not be needed for every project.

Some reference files contain information only needed in certain circumstances. Using the MicroStation levels you can turn on and off certain pieces of information depending on what type of sheet you are submitting.

Certain Seals are used to identify the supervisor of the project. Certain ones are outdated; the supervisor no longer holds that position, but the old seals are kept to maintain legacy projects. New seals are created on new levels.

Type of Sheet	Level Used
PLAN-PROFILE	1-4,10,15,16,17,20,25,26,27,30,35,36,37
DETAIL	1-4,10,12,14,20,22,24,30,32,34
TYPICAL	1-4,10,11,14,20,21,24,30,31,34
SUMMARY ONLY	1-4,10,14,20,24,30,34
TITLE SHEET (SHT 1)	1-4,10,14, 52-59 and one of the following 60, 61, 62, 63
TITLE SHEET (SHT 3)	1-4,10,14,20,24,40-47 and one of the following 48,49,50,51

See 3.6.2 on page 3-17 for more details on levels and Symbology Information

3.6.2 PLANM.REF levels

Metric Level	Information	Sheet
1	Left Margin Information: File Sheet #, File Name, Date, Time, & User.	1-3
2	MDT logo. Plotting Points Half Sized (Green) and Full Sized (Yellow)	1-3
3	Sheet Border	1-3
4	Cut Lines Top And Bottom Of Sheets & Designed by Block	1-3
5	Consultant firm name and seal & Associated. Project. Box Lower Left ‡	3
6	Title - Related Project & Associated. Project & Plans Prepared by Box Lower Left For consultants projects. ‡	3
7	Consultant firm name and seal & Associated. Project. Box Lower Left ‡	1
8	Title - Related Project & Associated. Project & Plans Prepared by Box Lower Left For consultants projects. ‡	1
9	Full Sized plotting border, Half Sized plotting border	1-3
10	Project, Plan Package Sheet # Border	1
11	Typical - Half Lines & Center Points	1
12	Detail - Title Block Lower Right	1
13	Detail - Check Block Lower Left	1
14	Detail, Typical, Summary -Preliminary Stamp	1
15	Plan & Profile - Preliminary Stamp	1
16	Plan & Profile - Grid (20 Meters)	1
17	Plan & Profile - Grid (10 Meters)	1
20	Project, Plan Package Sheet # Border	2
21	Typical - Half Lines & Center Points	2
22	Detail - Title Block Lower Right	2
23	Detail - Check Block Lower Left	2
24	Detail, Typical, Summary - Preliminary Stamp	2
25	Plan & Profile - Preliminary Stamp	2
26	Plan & Profile - Grid (20 Meters)	2
27	Plan & Profile - Grid (10 Meters)	2
28	Title – Consultant Design Engineer: Thomas S. Martin	1
29	Title – Bridge Engineer: Kent M. Barnes	1
30	Project, Plan Package Sheet # Border	3
31	Typical - Half Lines & Center Points	3
32	Detail - Title Block Lower Right	3
33	Detail - Check Block Lower Left	3
34	Detail, Typical, Summary - Preliminary Stamp	3
35	Plan & Profile - Preliminary Stamp	3
36	Plan & Profile - Grid (20 Meters)	3
37	Plan & Profile - Grid (10 Meters)	3
38	Title – Traffic And Safety Engineer: Duane E. Williams	1
39	Title – Highways Engineer: Paul R. Ferry	1
40	Title - Preliminary Stamp	3
41	Title - For Plan In Hand Only Note	3
42	Title - Montana Map Upper Left	3
43	Title - Design Data Box Upper Right	3
44	Title - Related Project & Associated. Project. Box Lower Left & Project Approval Box Lower Right	3
45	Title – Mt. Depart. Of Transportation Text	3
46	Title - Project Length, Scales Horizontal & Vertical	3
47	Title - Cross Section Scale	3
48	Title - Preconstruction Engineer Seal	3
49	Title – Traffic and Safety Engineer: Robert D. Morgan	3
50	Title – Administrator Highway Division – Engineering: Gary A. Gilmore	3
51	Title - Bridge Engineer Seal: Joseph P. Kolman	3
52	Title - Preliminary Stamp	1
53	Title - For Plan In Hand Only Note	1
54	Title - Montana Map Upper Left	1
55	Title - Design Data Box Upper Right	1
56	Title - Related Project & Associated. Project. Box Lower Left & Project Approval Box Lower Right	1
57	Title – Mt. Depart. Of Transportation Text	1
58	Title - Project Length, Scales Horizontal & Vertical	1
59	Title - Cross Section Scale	1
60	Title - Preconstruction Engineer Seal: Carl S. Peil	1
61	Title – Traffic and Safety Engineer Seal: Robert D. Morgan	1
62	Title – Administrator Highway Division - Engineering Seal: Gary A. Gilmore	1
63	Title - Bridge Engineer Seal: Joseph P. Kolman	1
64	Title – Director of Transportation: Jim Lynch	1
65	Title - Director of Transportation: David A. Galt	1

‡ = For Out of House Consultants only

3.6.3 Plane.ref for Road Design

S BOT RD TITLE Scales Text
S ALL Alt Drawing boarders
S TOP Design Area and County Frame
S BOT RD TITLE Associated Project Frame
S BOT RD TITLE Associated Project Text
S BOT RD TITLE Related Project Frame
S BOT RD TITLE Related Projects Text
S BOT RD TITLE Block Frame
S BOT Title Montana Map
S BOT Design Area and County Frame
S BOT Preliminary Text AGR
S BOT DesignBy Frame
S MID Preliminary Text AGR
S BOT RD TITLE Design Data Frame
S BOT RD TITLE Letting Date Text
S BOT RD TITLE Letting Date Line
S BOT Title MDT Title Line
S BOT RD TITLE Scales Length Text
S BOT RD TITLE Scales Cross Sec Text
S BOT RD TITLE Scales Vertical Text
S BOT RD TITLE Scales Horizontal Text
S ALL MDT Logo Frame
S ALL MDT Text
S ALL MDT Logo
S ALL MDT Text Line
S ALL Sheet Info Box
S BOT BR Revised

S ALL Sheet Info Box Text
S TOP Preliminary Text AGR
S BOT RD TITLE Scales Reduced Print Text
S MID Design Area and County Frame
S ALL Sheet Number Text
S ALL Sheet Number Shape
S BOT RD TITLE Seal Paul Ferry
S BOT RD TITLE Plans Prepared By Text
S BOT RD TITLE Plans Prepared By Frame
S ALL Sheet Border
S BOT Title MDT Title Text
S MID DesignBy Frame
S TOP DesignBy Frame
S ALL Sheet Number Frame
S ALL 11x17 sheet boarder
S ALL Plotter Limits Shape
S MID DesignBy Text
S TOP DesignBy Text
S BOT Preliminary Frame
S MID Preliminary Frame
S BOT RD TITLE Block Text
S TOP Preliminary Frame
S BOT Project Info Frame
S TOP Project Info Frame
S BOT BR Approved

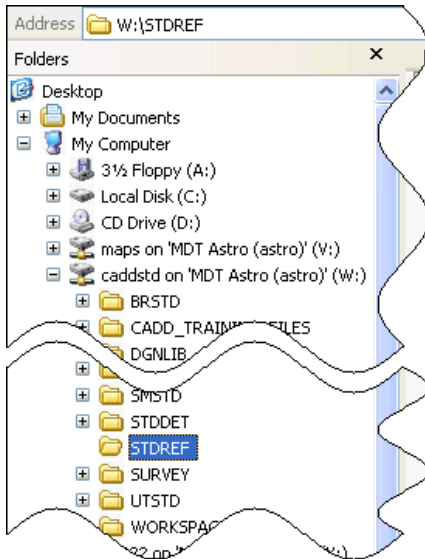
Cells that are part of this reference file:

BKSRND	NOTES BACKSLOPE ROUNDING DETAIL
LINLEV	NOTES LINEAR AND LEVEL DATA
SKEW	NOTES SKEW DIAGRAM
TOC	NOTES TABLE OF CONTENTS
TTLNOTE1	NOTES Map Locator Title Sheet
TTLSHTDF	Datafields Title Sheet

3.6.4 Plane.ref for

3.6.5 Plane.ref

Plane.ref is the standard reference fill for any English MicroStation V8 project.



S BOT RD TITLE Scales Text
S ALL Alt Drawing boarders
S BOT RD TITLE Director James Lynch
S TOP Design Area and County Frame
S BOT RD TITLE Assoiated Project Frame
S BOT RD TITLE Associated Project Text
S BOT Detail Title Block
S MID Detail Title Block
S TOP Detail Title Block
S BOT RD TITLE Related Project Frame
S BOT RD TITLE Related Projects Text
S ALL RW ScaleBar
S ALL RW Scale 1 To 100
S BOT RD TITLE Block Frame
S BOT Title Montana Map
S BOT Design Area and County Frame
S BOT RD TITLE Prelim Text
S BOT Preliminary Text AGR
S BOT DesignBy Frame
S MID Preliminary Text AGR
S BOT RD TITLE FOR PIH Only Text
S BOT RD TITLE Design Data Frame
S BOT RD TITLE Letting Date Text
S BOT RD TITLE Letting Date Line
S BOT Title MDT Title Line
S BOT RD TITLE Scales Length Text
S BOT RD TITLE Scales Cross Sec Text
S BOT RD TITLE Scales Vertical Text
S BOT RD TITLE Scales Horizontal Text
S ALL MDT Logo Frame
S ALL MDT Text
S ALL MDT Logo
S ALL MDT Text Line
S ALL Sheet Info Box
S ALL Sheet Info Box Text

S TOP Preliminary Text AGR
S BOT Preliminary Text FPIH
S BOT RD TITLE Scales Reduced Print Text
S MID Design Area and County Frame
S ALL Sheet Number Text
S ALL Sheet Number Shape
S BOT RD TITLE Seal Paul Ferry
S BOT RD TITLE Seal Duane Williams
S BOT RD ProfileGid Hoz 10ft
S BOT RD TITLE Plans Prepared By Text
S BOT RD ProfileGrid Vert 100ft
S BOT RD ProfileGrid Vert 50ft
S BOT RD TITLE Plans Prepared By Frame
S MID RD ProfileGid Hoz 10ft
S MID RD ProfileGrid Vert 100ft
S MID RD ProfileGrid Vert 50ft
S MID RD ProfileGrid Hoz 2ft
S TOP RD ProfileGid Hoz 10ft
S TOP RD ProfileGrid Vert 100ft
S TOP RD ProfileGrid Vert 50ft
S TOP RD ProfileGrid Hoz 2ft
S BOT RD ProfileGrid Hoz 2ft
S BOT RD Typical Line
S MID RD Typical Line
S TOP RD Typical Line
S ALL Sheet Border
S TOP RD Typical Points
S MID RD Typical Points
Default
S BOT RD Typical Points
S BOT RD PlanPoints
S MID RD PlanPoints
S TOP RD PlanPoints
S BOT Title MDT Title Text
S MID DesignBy Frame

S TOP DesignBy Frame
S ALL RW Scale 1 To 50
S ALL RW Scale Not To Scale
S ALL Sheet Number Frame
S ALL 11x17 sheet boarder
S ALL Plotter Limits Shape
S MID Preliminary Text FPIH
S TOP Preliminary Text FPIH
S ALL Standard Sheet Data Fields
S ALL Demo Text Temp
S BOT DesignBy Text
S MID DesignBy Text
S TOP DesignBy Text
S BOT Preliminary Frame
S MID Preliminary Frame
S BOT RD TITLE Block Text
S BOT RD TITLE Block CSD Frame
S BOT RD TITLE Block CSD Text
S TOP Preliminary Frame
S BOT Preliminary Text
S MID Preliminary Text
S TOP Preliminary Text
S BOT Preliminary Text PIH
S MID Preliminary Text PIH
S TOP Preliminary Text PIH
S BOT RD TITLE Seal Thomas S Martin
S BOT RD TITLE Seal Kent M Barnes
S BOT Project Info Frame
S MID Project Info Frame
S BOT BR Sheet Info Frame
S BOT BR Sheet Info Text
S BOT BR Design By Block Frame
S BOT BR Design By Block Text
S BOT BR UPN Number Text
S BOT BR Drawing No Text
S BOT BR Preliminary Text
S BOT BR Title Layout Numbers
S BOT BR MDT Logo
S TOP Project Info Frame
S ALL RW ScaleBlock
Level 2
S ALL RW EXH Exhibit Legend
S BOT RW TTL Heading Proj Length
S ALL RW PLN SeeSheet ForOwnership
Level 1
S BOT RW TTL Plan Legend
S BOT RW TTL AssocProj Block
S BOT RW TTL Related Proj Block
S ALL RW DateBlock Lines
S Xsec Grid Horiz 10ft
S Xsec Grid Vert 10ft
S Xsec Grid Horiz 2ft
S Xsec Cut-Fill Text
S ALL Plotter Limits
S ALL DesignBy Text
S ALL DesignBy Frame
S ALL Design Area and County Frame
S ALL Preliminary Frame
S ALL Project Info Frame
S ALL Preliminary Text
S ALL RW DateBlockFHWA Text
S ALL RW DateBlock
S BOT RW TTL SeeOwnershipSheet Text
S ALL RW ProjectBlock
S ALL RW RightOfWay Text
S ALL RW StateMontana Text
S ALL RW RW ID Text
S ALL RW UPN Text
S ALL RW Sheet No Block
S ALL RW PLN ClipBoundary RD Plans
S BOT RW TTL ClipBoundary Map
S ALL RW PLN ClipBoundary StripMaps

S BOT RW TTL Heading RW Plan Text
S ALL RW Notes
S ALL RW Stamp ForAppraisalOnly
S ALL RW Stamp Preliminary
S ALL RW EXH ParcelAndSheet
S ALL RW EXH Exhibit Text
S ALL RW Sheet No Text
S ALL RW ScaleBlock RW Plan Text
S ALL RW ConstLimitsNote
S ALL RW BackslopeRoundingNote
S ALL RW PLN 7 Lines Heading
S ALL RW PLN 7 Lines
S ALL RW ScaleBlock MDT Text
S BOT RW TTL North Arrow
S BOT RW TTL AccessControlledFacility Text
S BOT RW TTL Heading Proj Info DF
S BOT RW TTL AssocProj Block DF
S ALL UT Utility PIH Text
S ALL RW OWN DoubleLines
S ALL RW OWN Lines
S ALL RW OWN Heading
S BOT UT TITLE Authorization Block
S BOT UT TITLE Legend Symbols
S BOT UT TITLE Legend Text
S BOT UT TITLE Legend Telephone
S BOT UT TITLE Legend Gas
S BOT UT TITLE Legend Power
S BOT UT TITLE Legend TV
S BOT UT TITLE Legend Water
S BOT UT TITLE Legend San Sewer
S BOT UT TITLE Legend Border
S BOT UT TITLE North Arrow
S BOT UT TITLE Wetland Hatch
S BOT UT TITLE Wetland Box
S BOT UT TITLE Sheet Standard Text
S TOP UT OWN Text
S TOP UT OWN Black Lines
S TOP UT OWN Gray Lines
S MID UT OWN Text
S MID UT OWN Black Lines
S MID UT OWN Gray Lines
S BOT RW TTL Related Proj Block DF
S BOT RW TTL Initials DF
S BOT RW TTL DateBlock DF
S BOT RW TTL Sheet No DF
S BOT RW TTL ProjectBlock DF
S BOT RW TTL SeeOwnershipSheet DF
S BOT RW TTL Heading Proj Length DF
S ALL RW PLN 7 Lines DF
S ALL RW PLN DateBlock DF
S ALL RW PLN Initials DF
S ALL RW PLN ProjectBlock DF
S ALL RW PLN Sheet No DF
S ALL RW PLN SeeSheetForOwnership DF
S ALL RW PLN County DF
S ALL RW OWN DateBlock DF
S ALL RW OWN Initials DF
S ALL RW OWN Sheet No DF
S ALL RW OWN ProjectBlock DF
S ALL RW OWN County DF
S ALL RW EXH ParcelAndSheet DF
S ALL RW EXH Legend Hatching DF
S ALL RW EXH DatePreparedRevised DF
E Misc Misc DefaultPoint
E Misc Misc DefaultText
E Misc Misc DefaultLine
P Alignment Design Text
P Alignment Design
S BOT BR Approved
New Level (0)
S BOT BR Revised

3.6.6 GRIDMGP.REF levels

Metric Level	Information	Sheet
1	State, Project, Sheet No., Embankment & Excavation Text Cut line	
2	Grid Lines 2m (Red)	
3	Grid Line 1m (Green)	

3.7 Traffic Signing Standard Ref File

Some of the reference files contain information that is only needed in certain circumstances. Using the MicroStation levels you can turn on and off certain pieces of information depending on what type of sheet you are submitting.

3.7.1 MTRAFPL.DGN sheet use

Type of Sheet	Level Used
TRAFFIC ELECTRICAL	50,51,52,53,54,56
TRAFFIC Sign - PLAN SHEETS	9,11,12,21,22,31,32
TRAFFIC Sign - DETAIL SHEETS	5,9,11,12,21,22,31,32
TRAFFIC Sign - SUMMARY & SPEC SHEETS	12,23-29,33-43
TRAFFIC Sign - SPEC SHEETS	13-19,23-29,33-39

See 3-22 on page 3-22 for more details on levels and Symbology Information

3.7.2 MTRAFPL.DGN levels

Metric Level	Information	Sheet
5	Detail - sheet heading	1-3
9	Preliminary stamp	1-3
11	Plan - Points for placing roadway section	1
12	Plan - Signature block	1
13	Specification - headings, Grid lines, signature block	1
14	Specification - grid lines	1
15	Specification - grid lines	1
16	Specification - grid lines	1
17	Specification - grid lines	1
18	Specification - grid lines	1
19	Specification - grid lines	1
21	Plan - Points for placing roadway section	2
22	Plan - Signature block	2
23	Specification - headings, Grid lines, signature block	2
24	Specification - grid lines	2
25	Specification - grid lines	2
26	Specification - grid lines	2
27	Specification - grid lines	2
28	Specification - grid lines	2
29	Specification - grid lines	2
31	Plan - Points for placing roadway section	3
32	Plan - Signature block	3
33	Specification - headings, Grid lines, signature block	3
34	Specification - grid lines	3
35	Specification - grid lines	3
36	Specification - grid lines	3
37	Specification - grid lines	3
38	Specification - grid lines	3
39	Specification - grid lines	3
40	Summary - Quantities frame	1
41	Summary - Quantities frame with Splits	1
42	Summary - Final Stamp	1
43	Summary - Sheet Heading	1
50	Scales Indicator w/out text (Scale 1:500)	1-3
51	Scales Indicator w/out text (Scale 1:250)	1-3
52	Revisions Block	1-3
53	Preliminary Stamp	1-3
54	Title Block	1-3
55	Scales Indicator with text (Scale = 1:500, etc.)	1-3
56	Scales Indicator with text (Scale = 1:250, etc.)	1-3
57	Data Fields for the revised and checked information	
58	Scale Indicator with text (Scale = 1:100)	
59	Scale Indicator with text (Scale = 1:1000)	
63	Read-me information for file	

3.7.3 Mplanshe.trrs

SAVED VIEW	DESCRIPTION
Bikeln	Typical Bike Lane Markings
Clmbln	Truck Climbing Lane
Medmk	Typical Median Markings
Mergar	Merge Arrows Detail
Ohguid	Overhead Guide Detail
Ohxing	Overhead School Xing Detail
Ovcan	Overhead Cantilever Structure
Ovhdd3	Overhead D-3 Sign Detail
Pedx	Typical Pedestrian Xing
Rrxin	RR Xing Pavement Marking Typical
School	School Xing Detail

Singsq	Single Square Tube
Sngsqm	Single Square Tube Multi Post
Tcm	Typical Curb Markings
Telesq	Telescoped Square Tube
Tpm	Typical Pavement Markings
Twltl	Urban Two Way Left Turn Lane
Twltr	Rural Two Way Left Turn Lane

3.7.4 Mplanst2.trc

NAMED VIEW	DESCRIPTION
2mbtu	Both Mailbox Turnouts
Brsm	Barrier Rail Sign Mounting
Chev	Chevron Detail
Deldet	Ramp Delineation Detail
Hist1	Historic Marker Site
Hist2	Historic Marker Details
Mail1	Typical Mailbox at Approach
Mail2	Typical Mailbox Pullout
Mail3	Off Mainline Butte Special
Mdutr	Median U Turn Detail
Pwhsc	Portable Weigh Scale

3.7.5 Msign1.trc

NAMED VIEW	DESCRIPTION
Signs	15 Metric Sign Design Calculation Sheets

3.8 *Bride Standard Reference Files*

3.8.1 Bridge Bureau English Standard Drawings

Include drawings with plans when applicable

English Standard Drawing Number (Revision/approved date)	CADD File name	Description
B-1 (9/26/96)	STDB196.STD	Standard Prestressed Concrete Beam Type I
B-A (5/13/96)	STDBA96.STD	Standard Prestressed Concrete Beam Type A
B-4 (5/13/96)	STDB496.STD	Standard Prestressed Concrete Beam Type IV
M-72 (Checked date 3/15/91) (New drawing No. to be assigned when project is complete) (Rev. 4/98)	M7297.BRG	Standard Prestressed Concrete Beam Type M-72
SL-5 (5/13/96)	STD5L596.STD	Standard Slab, Barrier and Diaphragm Details
SL-6 (5/13/96)	STD6L696.STD	Standard Slab, Rail and Diaphragm Details
SBR-T101 (5/3/96)	T101REV3.STD	Bridge Rail Type T 101
DS (3/3/05)	DS305.STD	Standard Drilled Foundation Anchor Post

3.8.2 Bridge Bureau Metric Standard Drawings

Include drawings with plans when applicable

Metric Standard Drawing Number (Revision/approved date)	CADD File name	Description
MB-1 (3/5/01)	MB1RV301.STD	Standard Prestressed Concrete Beam Type 1
MMT-28 (2/3/03)	MMT28.STD	Standard Prestressed Concrete Beam Type MT-28
MB-A (3/5/01)	MBARV301.STD	Standard Prestressed Concrete Beam Type A
MB-4 (3/5/01)	MB4RV301.STD	Standard Prestressed Concrete Beam Type IV
MM-72 (3/5/01)	MM72301.STD	Standard Prestressed Concrete Beam Type M-72
MSL-5 (5/1/03)	MSL5503.STD	Standard Slab, Barrier and Diaphragm Details
MSL-6 (5/1/03)	MSL6503.STD	Standard Slab, Rail and Diaphragm Details
MSL-7 (10/25/04)	MSL71004.STD	Standard Slab, Rail and Diaphragm Details
MSBR-T101 (3/4/03)	MT101303.STD	Standard Bridge Rail Type T101
MDS (3/22/04)	MDS304.STD	Standard Drilled Foundation Anchor Post
MSBR-W740 (8/25/05)	MM740805.STD	Standard Bridge Rail Type W740
MSBR-W830 (8/25/05)	MM830805.STD	Standard Bridge Rail Type W830

3.9 Right of Way Standard Reference Files

3.9.1 Metrwp1.ref

Level	Description	Sheet
3	"Montana Department of Transportation" and "DOT Approval" & Fence Plotting Reference Points	1-3
4	Ownership Frame (Heading & Lines 1-5)	1-3
5	"Cut Section" & Construction limit symbols	1-3
6	Sheet separator lines	1-3
7	"FHWA/"	1-3
8	"Backslope Limits Include Rounding"	1-3
9	"For Appraisal Only"	1-3
10	"Preliminary"	1-3
11	Block and Text - upper right corner	1-3
12	Block and Text - lower right corner	1-3
14	"See Sheet No. For Ownership, Names, Addresses, Areas, etc."	1-3
15	"All measurements are Metric"	1-3
16	Notes	1-3
21	Ownership Frame (Lines 6-10)	1-3
22	Ownership Frame (Lines 11-15)	1-3
23	Ownership Frame (Lines 16-20)	1-3
24	Ownership Frame (Lines 21-25)	1-3
25	Ownership Frame (Lines 26-30)	1-3
26	Ownership Frame (Lines 31-35)	1-3
27	Ownership Frame (Lines 36-40)	1-3
28	Ownership Frame (Lines 41-45)	1-3
29	Ownership Frame (Lines 46-50)	1-3
30	Ownership Frame (Lines 51-55)	1-3
31	Ownership Frame (Lines 56-60)	1-3
32	Ownership Frame (Lines 61-65)	1-3
40	Note - All text block (Level Information)	1-3
41	"Utility Plan"	1-3
42	"Right of Way Plan"	1-3
47	"Right of Way ID."	1-3
49	"RDROW" in binding edge	1-3
51	Data points (3000')	1-3
52	Sheet location block	3

3.9.2 Metrwti.ref

Level	Description
1	North Arrow
2	"MDT"
3	Frames and title blocks
4	Conventional Signs Legend
5	Montana map
7	"FHWA/"
9	"For Appraisal Only"
10	"Preliminary"
11	"State Montana", "Sheet No.", "Total Sheets"
13	Proposed approach, "Montana CADD", Sheet Designation
14	"See Sheet No. For Ownership, Names, Addresses, Areas, etc."
15	"All Measurements Are Metric"
20	Related Projects frame and text
23	"MONTANA DEPARTMENT OF TRANSPORTATION"
40	Note (Level Information)
41	"Utility Plan of" and "Utility poles in possible conflict"
42	"Right of Way Plan of"
43	"A Control Access Facility"
44	"Associated Project Id"
47	"Right of Way ID."
49	"RDROW" in binding edge
51	Plotting Alignment Dots
52	Sheet Designation Fill

3.10 Mdeed2.ref

Standard exhibit sheet, title block in lower right corner, generally used.

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3.11 Mdeed11.ref

Standard exhibit sheet, title block in lower left corner, use if drawing covers the standard placed title block area.

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3.12 Mdeedul.ref

Standard exhibit sheet, title block in upper left corner, use if other blocks interfere with drawing.

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40	Sheet Level Assignment Notes
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3.13 UTIPLANM.REF levels

1	From planm.ref Sheet information	0-1
2	From planm.ref Sheet points	0
3	From planm.ref Sheet border	0
4	From planm.ref Blue Sheet Line	0
9	Batch Plot Fence Boundry	0-4
10	Profile Grid – Sht 0	0
11	Profile Grid – Sht 1	1
12	Profile Grid – Sht 2	2
13	Profile Grid – Sht 3	3
16	Plan Legend Title Sheet 1	1
17	North Arrow Title Sheet 1	1
18	FHWA/MDT Approval, Associated & Related Project Blocks Title Sheet 1	1
19	“Utility Plan of” Title Sheet 1	1
20	Additional Profile Grid Sheet 0	0
21	Additional Profile Grid Sheet 1	1
22	Additional Profile Grid Sheet 2	2
23	Additional Profile Grid Sheet 3	3
25	ROW Cut/Fill – Authorization Sheet 1	1
26	ROW Cut/Fill – Authorization Sheet 2	2
27	ROW Cut/Fill – Authorization Sheet 3	
30	Porwer Utility Color = 3	
31	Gas Utility Color = 20	
32	Unknown Utility Color = 7	
33	Sanitary/Storm Sewer Utility Color = 2	
34	Television Utility Color = 5	
35	Telephone Utility Color = 6	
36	Water Utility Color = 1	
40	Detail Split Sheet Line Sht 0	
41	Detail Split Sheet Line Sht 1	
42	Detail Split Sheet Line Sht 2	
43	Detail Split Sheet Line Sht 3	
48	Notes	
49	“UTILITIES” Left Side	
50	Utility Project Info Block Sheet 0	
51	Utility Project Info Block Sheet 1	
52	Utility Project Info Block Sheet 2	
53	Utility Project Info Block Sheet 3	
54	State Map Title Sheet 1	
55	Design Data Block Title Sheet 1	
57	“DEPARTMENT OF TRANSPORTATION” Title Sheet 1	
60	Detail Title Block Sheet 0	
61	Detail Title Block Sheet 1	
62	Detail Title Block Sheet 2	
63	Detail Title Block Sheet 3	