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CHAPTER 2: DIRECTORY STRUCTURES

2.1 - M:\ Project Directory Structure

The sharing of information is a vital part of the success of a EFLHD project. Thus, when a new project begins, a centralized directory structure is needed. Since it is important that data is shared but not corrupted by unauthorized users, the Division has established a standard procedure for directory creation and file naming.

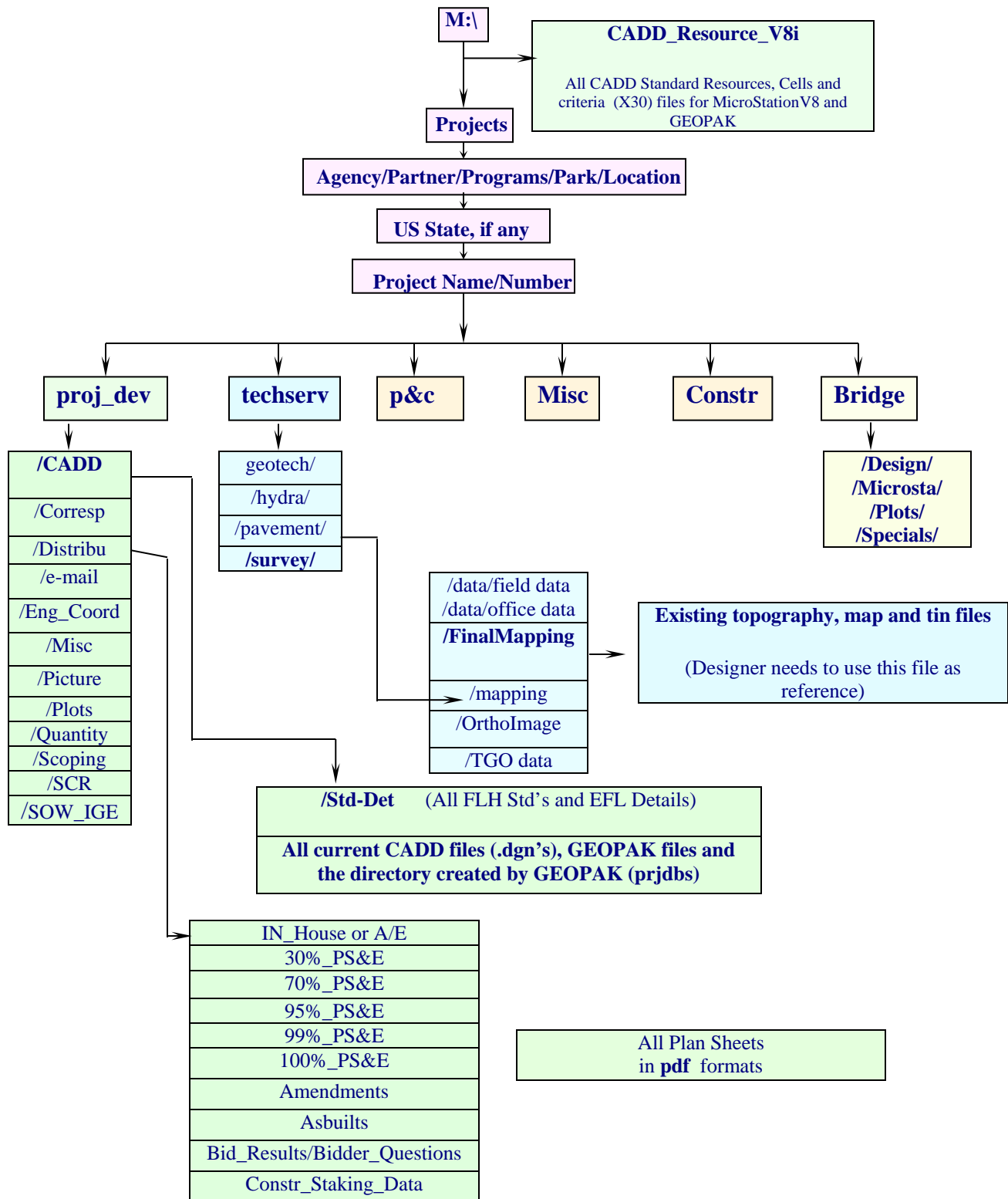
Generally new project directories are requested by the Planning & Programming Branch in conjunction with the request to add the project into the Project Management System (PrMS). If an additional directory is needed, or if the original request has not been made or fulfilled in a timely fashion, Users should contact the PrMS Specialist (Bradley Bookwalter) or the CADD Coordinator (Spencer Beale) by email to make the request. The email request should include the project number, name of the Agency, and the State of the project. The Coordinator will setup the standard root directories on the central CADD server.

Each directory has the appropriate security access set by section. Thus, Highway Design staff is only allowed write access to the “**proj_dev**” subdirectory. Other directories will be “read only” for Highway Design staff. The Highway Design **CADD Directory Structure** is shown in “**Green**”. See directory structure **Section 2.1.1**.

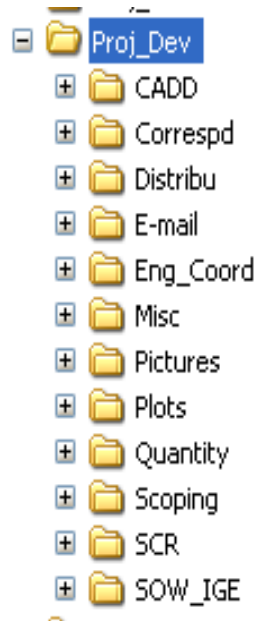
IT Services has optimized levels of security so that project related folders, up to and including the “**proj_dev**” root directories, cannot be deleted or edited. However, folders can be created by an individual user, at different levels below the Proj_Dev folder. Users need to follow certain naming conventions of folders in order to effectively communicate with others.

If preferred, after each milestone distribution, create a new subdirectory with the equivalent name (30%, 70%, etc...) under the CADD folder. Create a copy of all .dgn files and place them into this new directory as an electronic record. Current CADD files will always stay in CADD sub-directory of the project directory. (It is recommended that you manage the old files as design progresses, ex; delete 30% milestone dgn files after 95% PS&E is distributed. Delete 70% dgn files after 100% is distributed . . .)

2.1.1 - Directory Structure



Project related files, including CADD drawing files, survey & mapping data, and engineering data files, will be contained within a specific project directory structure. Files contained within this directory structure also include; correspondence, project documentation, reports, etc. Following the directory structure as indicated in this chapter will allow for consistent handling of CADD related project files, as well as allow for easier archiving at project completion. The first level project directory is shown below. The following pages outline each first level directory in greater detail, including subdirectories, purpose of each directory, and types of files typically stored within each directory.



While not all directories will be needed for each project, the structure naming convention must be followed where applicable.



The M:\ project directory structure has evolved over the last few years so the directory structure for older projects may not match what is shown here. The directory structure and file locations for older projects need not be changed. However, all new projects will use the directory structure outlined in this Chapter.

CADD

The primary sub-directories of the CADD root directory are detailed below. Individual files should not be placed under the root CADD directory. These main subfolders under CADD should not be edited.



This is the primary folder for current CADD files. It is the storage folder of files needed to prepare plans, including; Alignment file, utility and drainage, traffic control, signing and striping, erosion control, superelevation shapes, patterns, and overall cross-sections.

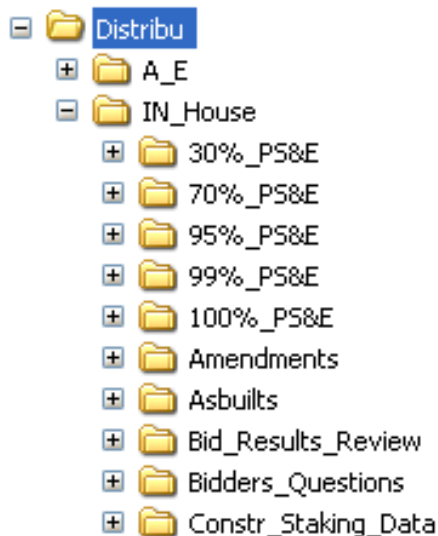
The Std-Det folder is to be used to assemble all project Standard and Detail drawings.

A Misc folder is added for miscellaneous CADD files that do not fit into the overall use of the higher level CADD folder, such as; AutoCad dwg's, tif's, pdf's, etc.

Distribu

This directory's primary use is to document and record deliverables for major project milestones. Place files in the appropriate subfolder at PS&E review periods.

Working files should not be placed under this directory.

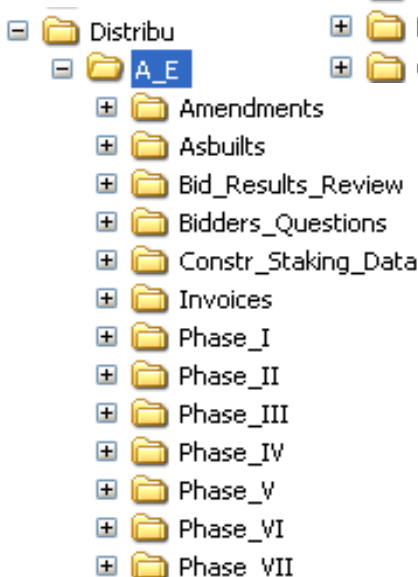


The Distribu folder has two subfolders; A_E and In_House. Select the folder based on the design type.

Place files in the appropriate subfolder at PS&E review periods.

The 95% and 100%_PS&E folders have default PDF subfolders for your use in paperless distribution.

Note that Staking Notes are to be placed in the Constr_Staking_Data folder.



The A_E folder under Distribu is set up according to the common deliverable workflow from consultant design firms. The % complete folders found in the In_House folder are substituted with design "Phase" folders.

Phase I - Prelim. Activities
 Phase II – 30%
 Phase III – 70%
 Phase IV – 95%
 Phase V – 99%
 Phase VI – 100%

2.2 - File Naming Conventions and Plan Sheet Organization

There are many types of files in use at EFLHD. Of utmost importance is the naming convention of the MicroStation design files produced throughout a project. The file naming convention is set up to allow anyone to identify the contents of a CADD file without actually opening the file. The following design File Naming Convention is to be implemented on all new projects. This convention is to be used by all EFLHD users and A&E consultants.

Also shown at the end of this section, is the order of plan sheets for a typical EFLHD project. It is hard to foresee every type of file that may be created. If a file is not shown, best judgment must be exercised to place the file in an appropriate place within the plan set.

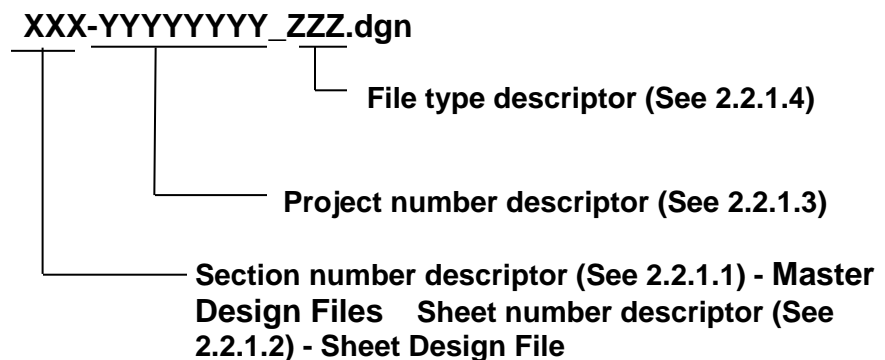
2.2.1 - Highway Design- CADD File Naming Conventions

There are two types of design files that are produced in the process of generating construction plan sheets; Sheet design files and Master design files. Sheet design files represent the finished construction documents for a project, and the Master design files will be used as a reference to the Sheet design files. Following are examples of two types of files used in developing a set of construction plans.

Sheet Design Files: Title Sheets, Typical section sheets, Plan & profile sheets, Cross section sheets, etc. Master Design Files: Survey files (contain topography, utility), Master GEOPAK design files (contains proposed alignment, shape, etc.), Sheet border file (contain sheet border, project #, etc.), Hydraulic files (contains all proposed drainage and erosion control items), etc.

Assigning file names to CADD design files is to be done with consistency to make future searches for the files and plan organization a simpler task.

All EFLHD MicroStation design files should be named with the following formats.



2.2.1.1 - For all Master Design Files:

Section Number Descriptor	Departments or Sections
01	Highway design
02	Survey
03	Hydraulics
04	Safety/Environmental
05	Geotechnical
06	Traffic/Pavement
07	Bridge
08	Construction
09	A&E (Consultant)

2.2.1.2 - Plan Sheet Organization:

Sheet Number Descriptor	Description
A	Title Sheet, Conventional Plan Symbols and Abbreviations, Location plan, Survey and horizontal alignment information plan
B	Typical Sections
C	Tabulation of quantities and Summaries & Schedules
D	Mainline Plan and Profile Sheets
E-H	Minor Roadways Plan and Profile Sheets and others.
K	Pipe Profiles or Drainage Cross Sections
M	Erosion Control Plan & Narrative, Landscape Plan (last)
N	Temporary Traffic Control Plans
P	Permanent Signing & Striping Plans
R	Bridge Plans
S	Standard Details Sheets and Special Details (Only for Highway design)
T	Mainline Cross Section Sheets
U-Z	Minor Roadways and others Cross Section Sheets

Note:- I, L, O, and Q letter designations are not to be used so as not to cause confusion between these letters and the numbers 0 and 1.

2.2.1.3 - Project Number Organization:

	Forest Highway	Park Road	Refuge Road	Other
Project Name	AR PFH 65-3(5)	PRA RICH 300(1),305(1)	RRP-LOP 10(2)	MT OMAD 18(33)
State/Park/Program	Arkansas	Richmond National Park	Lake Ophelia national Wildlife Refuge	Missile Road
Highway Route	65	300, 305	N/A	18
Segment of Route	3	N/A	N/A	N/A
Project Number	5	1	2	33
Project Number Descriptor	AR653(5)	RICH300(1)	LOP10(2)	OMAD18(33)

2.2.1.4 - Roadway Design File Type Descriptor:

File types refer to the designated use.

File Type	File Type descriptor
Sheet Design Files	
Title Sheet	ttl
Symbols and Abbreviations	sym
Vicinity Maps/Location Sheet	loc
Survey & Horizontal Alignment Inf.	sur
Typical Sections	typ
Summary of quantities/Tabulation	qnt
Plans and profiles	Pln(for plan), prf(for profile), p&p(for plan & profile)
Storm drainage plan	dpl
Storm drainage profile	dpr
Box Culvert Plan & Profile	bpp
Drainage cross section	dxs
Utility Plans and profiles	upp
Erosion Control Plan/narrative	e&s
Landscaping Plan	lnd
Temp Traffic control plan	tcp
Permanent Signing & Striping plan	ssp
Bridge Plan	brp

Roadway Cross sections sheets	xss
Master Design Files	
Project Border File	bdr
Master file for design and Alignment	des
Master file for Profile	pro
Super elevations, pattern for x-sections	wrk
GEOPAK Lines not for plan sheets	lin
Area Pattern for new pavement etc.	pat
Master Cross section (mainline)	Dxs
Minor Roadways cross section& others	Exs, Fxs, Gxs, Hxs, etc.
Hydraulic, drainage, sediment & erosion	hyd

Note: The 3-digit file descriptor is given for most of the sheets in a typical plan set and master design files. As it is hard to foresee every type of file that may be included in a plan set, a special case may arise where there is no file descriptor for a file that has been created. In such a case, follow the rest of the naming convention as closely as possible, while generating a unique file descriptor for the new file.

2.2.2 - File Naming Conventions of Standards and Special Details

- All FLH standards should be downloaded from WFLHD and not renamed.
- All EFLHD Details are copied from EFLHD's Standard directory and also not renamed.
- Standards, Details, and Special Details will be kept in Std-Det directory on the project directory.



Do not copy Standards or Details from old projects. The approved Standard or Detail may have been updated since last used.

Note:

1. A special Detail is a modified standard, detail, or project specific detail and should end with a letter .
2. The Standard Sheet number should have S prefix on it as shown in Section 2.2.1.2.
3. The sheet numbers of the specials and details are determined after all the standards, details, and special details are assembled.

2.2.3 - File Naming Conventions of EFLHD GEOPAK Job number ” .gpk” files:

JobXXX.gpk

This binary file is created when the user starts a coordinate geometry (COGO) session for the first time or is created through the Project Manager. All coordinate geometry elements are stored in this file. Multiple users can access this file at the same time, and only one file should be created for each project. The “XXX” is the only variable in this filename. It represents a job number (up to 3 alphanumeric characters) unique to a project and is defined by the CADD Coordinator upon creation.

When working on EFLHD projects, the .gpk number will be assigned by the CADD Coordinator. Internally, **EFLHD personnel will request a .gpk number from the CADD Coordinator. The request MUST come from the desk of the HDM. The CADD Coordinator will then assign a number, from a file on the server, documenting the project information for the assigned number.** This document will be the master list of all .gpk files assigned for all projects.

The read-only file is located at;
M:\Engineering_Software\cadd_resource_v8\Master_GPK Numbers\MasterGPK-List.xls.

2.2.4 - Example:**Suggested Naming Convention for Lake Ophelia National Wildlife Refuge, RRP LOP 10(2)**

Sheet Series	Sheet No.	Description	Design File names	Remarks
A	A01 A02 A03 A04	Title Sheet Symbol & Abbreviation Sheets Location Map Sheet Survey Information Sheet	A01-LOP10(2)_ttl A02- LOP10(2)_sym A03-LOP10(2)_loc A04-LOP10(2)_sur	
B	B01 B02	Typical Section Sheet 1 Typical Section Sheet 2	B-LOP10(2)_typ Model name B01 Model name B02	Typical Sections
C	C01 C02 C03 C04	Tabulation Of Quantity Sheet Summaries & Schedules 1 Summaries & Schedules 2 Summaries & Schedules 3 etc.	C-LOP10(2)_qnt Models name C01 Models name C02 Models name C03 Models name C04	Quantity Sheets
D	D01 D02 D03 D04	Plan & Profile Sheet 1 of Road 1 Plan & Profile Sheet 2 of Road 1 Plan & Profile Sheet 3 of Road 1 Plan & Profile Sheet 4 of Road 1	D-LOP10(2)_pnp Models name D01 Models name D02 Models name D03 Models name D04	Plan & Profile sheet for Mainline Roadways
	D05 D06 D07 D08	Plan & Profile Sheet 1 of Driveway Plan & Profile Sheet 2 of Parking lot Plan & Profile Sheet of Box Culvert Plan & Profile for Utilities	D05- LOP10(2)_p&p D06- LOP10(2)_p&p D07- LOP10(2)_p&p D08- LOP10(2)_p&p	Driveway, Parking lot, culvert, and utilities related to Mainline roadways
E-H		Road 2, all minors roads, and other roadways		Follow same as D series Sheets
K	K01 K02 K03	Drainage Cross Sections Road 1 Drainage Cross Sections Road 2 Drainage Cross Sections others	K01- LOP10(2)_dxs	
M	M01 M02 to M03 M04- to M05	Erosion Control Narrative Erosion Control Plan sheet Road 1 Erosion Control Plan sheet Road 2	M01- LOP10(2)_e&s MA-LOP10(2)_e&s MB-LOP10(2)_e&s	Use models M02 & M03 Use models M04 & M05
N	N01 to N03 N04 to N05 N6	Temp. Traffic Control Plan Road 1 Temp. Traffic Control Plan Road 2 Temp. Traffic Control Plan others	NA-LOP10(2)_tcp NB-LOP10(2)_tcp N06-LOP10(2)_tcp	Use models N01 N02, & N03 Use models N04 & N05
P		Permanent Signing & Striping Plan		Follow as N Series sheets
T	T01 to T30	Cross Section Mainline Road 1	T-LOP10(2)_xss	All cross section sheets of Road 1 will be in one design file
U	U01 to U10	Cross Section minors Road 2	U-LOP10(2)_xss	Same as in T Series

2.3 - Plan Sheet Organization**Example of Index to Sheets for the above project:**

Sheet No.	Description
A01	Title Sheet
A02	Symbol & Abbreviation Sheets
A03	Location Map Sheet
A04	Survey Information Sheet
B01 –B02	Typical Sections
C01	Tabulation Of Quantity
C02 –C04	Summaries & Schedules
D01-D08	Plan & Profile Sheet of Mainline Road, Driveway, Parking Lots.
E01-E06	Plan & Profile Sheets of minor road 2, Driveway, Parking Lot
K01-K03	Drainage Cross Sections
M01- M05	Erosion Control Plan and Narrative
N01-N06	Temp. Traffic Control Plan
R01-R09	Bridge Plans
S01-S19	Standard Details Sheets
T01 to T30	Cross Section Mainline Road 1
U01 to U10	Cross Section minors Road 2