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Chapter 11: Plans and Packaging

Overview

Central Federal Lands Highway Division employs specific practices in which plans are prepared and packaged. This chapter will describe the required information that is shown on plan sheets as well as the requirements and procedures for preparing and organizing a plan package.

Plan Sheets

Refer to the Scope of Work or Project Manager for individual project requirements on plan sheets. Unless specifically noted, a printed “hard-copy” of plans is required for review submittals including: specific project information, page numbering and sheet labeling.

Project Information and Regions

Complete the project information section on all plan sheets for all submittals. Use two letter abbreviations for the State designations. The Project section should include both the project number and the project name. It is acceptable for all submittals, with the exception of final (95% or later) plans, to have the sheet numbers and total sheets handwritten.

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
■	■	■ ■	■	■

Figure 11-1: Project Information FP-03

STATE	PROJECT	SHEET NO.

Figure 11-2: Project Information FP-14

Regions

Regions will only be shown on project using FP-03. Regions for CFLHD’s partnering agencies can be found in the links below. Use the regional codes or abbreviations as shown in the examples.

Forest Service

<http://flh.fhwa.dot.gov/resources/design/tools/cfl/documents/RegionalAreasOfTheForestService.pdf>

Example: Use “R4” for the Intermountain Regional area of the Forest Service.



National Park Service

<http://flh.fhwa.dot.gov/resources/design/tools/cfl/documents/RegionalAreasOfTheNationalParkService.pdf>

Example: Use “PWR” for the Pacific West Region.

National Wildlife Refuge

<http://flh.fhwa.dot.gov/resources/design/tools/cfl/documents/RegionalAreasoftheNationalWildlifeRefuge.pdf>

Example: Use “2” for the Southwest Region.

Other Partnering Agencies (BLM, OMAD, BIA...)

Central Federal Lands have other partnering agencies for which plans are prepared. These agencies may have different regional designations. Consult with the CFLHD Project Manager to obtain the correct regional codes.

Title Blocks and Sheet Labels

Include the Title Block section in the lower right hand corner of the sheet as represented in the CFLHD Sample Plans. The standard outlines and text for the title blocks are found within the CFLHD standard border sheets. Individual elements of the title block can be displayed or “turned off” using the level display tools within MicroStation.

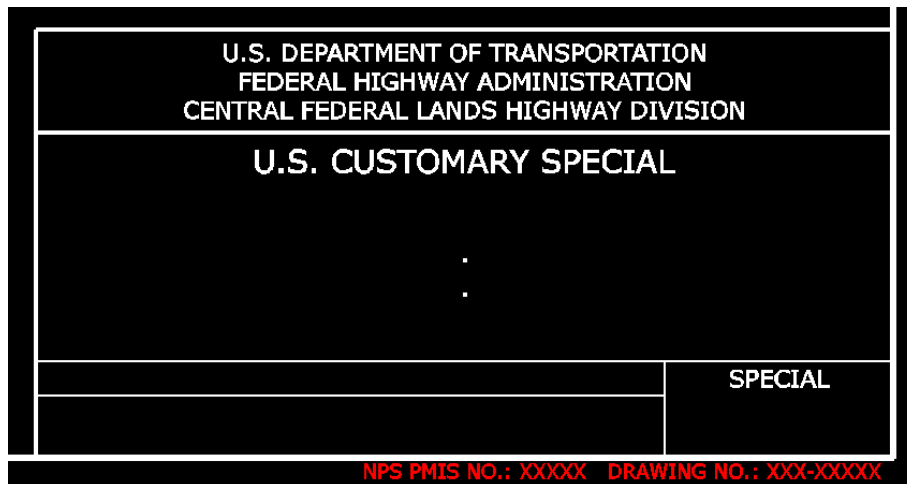


Figure 11-3: Title Block

The displayed title block information is different for the various “types” of plan sheets. For example; Title sheets, Summary of Quantities, and Plan & Profile sheets each display different title blocks. Refer to the Sample Plans for examples on how the title block for each “type” of plan sheet is completed.

<http://flh.fhwa.dot.gov/resources/design/plans/cfl/sample-plans/>

The NPS PMIS and drawing numbers is to be included on all National Park projects. This information may be provided by the CFLHD project manager.



Revisions to Plans

Changes to plan sheets made prior to bid solicitation must be incorporated and submitted as part of the final package. During solicitation for bids, revisions or “amendments” to plans may be necessary and must follow the process outlined in the paragraph below. Changes to plans made after award and during construction will be noted in the “as-built” plans.

The process for making an amendment to a drawing includes: clouding the area within the sheet that has the revision, placing a triangle with revision number next to the cloud, describing the revision in the lower right corner of the plan sheet, and placing the revision date in the title block.

Examples of how to show revisions are also included in the Sample Plans.

<http://flh.fhwa.dot.gov/resources/design/plans/cfl/sample-plans/amendments.htm>

Date Stamping/File Name & Path

Place a date stamp and file name on the left edge of each plan sheet. This is done automatically when the correct border sheet and pen tables are used to create and print the files.

Date stamping and file name printing are done by placing a text string that contains a series of “\$” symbols along with text codes. These strings are then read by the pen tables used by CFLHD and converted into dates, file paths and file names.

Plan Packaging

A standardized approach to the organization of a project plan set provides consistency that enables easier and better plan reviews and allows for locating specific drawings quickly. The guidelines for plan packaging in the CADD Standards Manual, as discussed in this chapter as well as chapters 2 and 3, refer to a typical CFLHD project, and should be used whenever possible. Flexibility in the use of these guidelines is allowed for individual and specific project needs.

Structuring and Organization of Plan Packages

All plan sheets that are included within a plan package are placed within the project’s ...Roadway\Sheets\ subfolders. Each of these subfolders corresponds to a similar organization for plan sets. Below is a table of the standard structuring of subfolders and types of plan sheets for proper plan organization.

Plan Organization	
(Borders)	Project Specific Border Sheets
A Sheets	Title Sheet, Typical Sections
B Sheets	Summaries and Tabs
C Sheets	Mainline Plan and Profile Sheets
D Sheets	Minor Road, Parking, Pullout Plan and Profile Sheets
E Sheets	Division 150 Layouts, Standards/Details and Specials ⁽¹⁾
F Sheets	Division 200 Layouts, Standards/Details and Specials ⁽¹⁾
G Sheets	Division 250 Layouts, Standards/Details and Specials ⁽¹⁾
H Sheets	Division 300 Layouts, Standards/Details and Specials ⁽¹⁾
K Sheets	Division 400 Layouts, Standards/Details and Specials ⁽¹⁾
R Sheets	Division 500 – Structural Sheets
S Sheets	Division 550 - Structural Sheets
T Sheets	Division 600 Layouts, Standards/Details and Specials ⁽¹⁾
X Sheets	Mainline Cross Sections
Y Sheets	Parking Area, Minor Road Cross Sections
Z Sheets	Culvert Cross Sections

Table 11-1: Plan Organization

Plan Set Organization Notes

- (1) For the order of sheets, layout sheets should be placed 1st, standards/details 2nd, and specials last.
- (2) Do not use I, J, and O letter designations to avoid confusion between these letters and the numbers 0 and 1.
- (3) The letter designations may be adjusted to fit project-specific requirements. For example, a complicated project may have a lot of T sheets, so the designer may break the T sheets into the following:
 - a. T Sheets – Division 600 sheets (through Section 629)
 - b. U Sheets – Utility layouts and related drawings
 - c. V Sheets – Section 633 and 634 layouts, standards, details, and specials
 - d. W Sheets – Section 635 layouts, standards, details, and specials

Index to Sheets

An index to sheets is included on the title page of the plan set. Page numbers and sheet titles are provided for all sheets within a plan set. There may be individual groups of sheets within each Layout Tab or sections in the plan set.



Standard Title sheets can be downloaded from the [cflhd.gov](http://flh.fhwa.dot.gov/resources/design/plans/cfl/template/fp14) website at: <http://flh.fhwa.dot.gov/resources/design/plans/cfl/template/fp14>



Individual sheets or groups are to be identified and labeled in the index as shown in the example below.

Example Index to Sheets	
A1	Title Sheet
A2-A3	Conventional Plan and Symbols and Abbreviations
A4	Control Point Listings
A5-A6	Typical Sections
A7	Typical Sections Approach Road
B1-B5	Summary of Quantities
B6	Grading Summary and Mass Haul Diagram
B7	Drainage Summary
B8-B10	Miscellaneous Summaries
C1-C20	Mainline Plan and Profile Sheets
D1	Sacramento Lake Parking Area Plan and Profile
D2	Sunspot Road Intersection Plan
D3-D4	Thousand Mile Canyon Parking/Pullout Plan and Profile
E1-E11	Erosion Control Plan Sheets
E12-E13	157-1 Silt Fence
F1	C204-50 Embankment Benching
F2	207-A Subexcavation and Shoulder Stabilization
G1	C251-50 Placed Riprap
G2-G3	251-A Stream Bank Protection
G4-G9	MSE Wall Layout Sheets
G10	255-A MSE Wall Modular Block Face
G11	255-B MSE Wall Welded Wire Face
K1	401-A Asphalt Curb and Paved Ditch
S1-S9	Bridge Plans for Clear Creek
S10-S15	Bridge Plans for Rio De Las Vacas
T1-T2	601-1, 2 Concrete Headwall
T3-T7	602-1, 2, 3, 4, 6 Pipe Culvert
T8-T10	617-10, 17, 23 Guardrail
T11-T12	619-1, 2, 3 Cattle Guard
T13-T22	633 Mainline Signing and Striping layout
T23	633-A Sacramento Lake Parking Striping Plan
T24	633-B Thousand Mile Canyon Parking Striping
T25	635-1, 2, 3, 5, 6, 8, 14 Temporary Traffic Control
T26-T28	635-A Temporary Traffic Control Site Plan
T29	635-B Detour 28+020 to 28+084
X1-X60	Mainline Cross Sections
Y1-Y5	Sacramento Lake Parking Area Cross Sections
Y6-Y10	Thousand Mile Canyon Parking Cross Sections
Z1-Z20	Culvert Cross Sections

Table 11-2: Index to Sheets



Stamping and Approvals

Professional Engineers (P.E.) do not need to sign CFLHD internally designed and delivered plan package documents. Architect-Engineer (A/E) consulting firms are required to seal plan package documents. Refer to the following link for CFLHD policies for Sealing and Signing.

<http://flh.fhwa.dot.gov/resources/pm/cfl/policies.htm>