

Keys for Successful CADD CD Development

Not all items listed, are in the CADD Manual or the CADD Criteria Handbook, nor does it the cover all areas addressed in the publications. These are important items that need to be addressed as the job progresses.

Note: Some projects may not involve all of these tasks, but the list below is generally applicable to most projects. Refer to the appropriate Chapters in The CADD Criteria Handbook, and the documentation in both the software and ECSCO's website for more specific information on the individual tasks.

A Short List of Important Tasks.

Draw the CADD files to FDOT standards as defined in The CADD Criteria Handbook.

Document all approved deviations from FDOT standards in the project journal file(s).

Document important methods used and decisions made in the project journal file(s).

Create required engineering data output files (ASCII) for each discipline (some are defined in The CADD Criteria Handbook). This includes x-section .gen files and project geometry.

Generate Quality Control (QC) Reports for all design files using the tools provided.

Authenticate files received from sub-consultants using PEDDS.

Merge all external project files into the primary project directory structure. This includes all files from sub-consultants, external reference files, scanned images for utility sheets and specification documents.

Create final Postscript images and any paper plots from MicroStation design files.

Bundle MicroStation dependent resource files into the project subdirectory**syimb** (these include user created fonts, line styles and cells).

Check for any duplication of files and resolve the duplicates (documenting why the duplicates occur – PEDDS can help with this activity).

Using EDI (an Electronic Delivery software module- Project Browser tool), create final versions of the project index and sheet index reports, including an HTML format version.

Using the Project Browser Tool, Create the composite Acrobat file (Project.PDF) of all the plan sheets.

Using EDI (a module within the Electronic Delivery software), create a final version of the project index and plan sheet index, include an HTML format versions of these files.

Electronically sign and/or sign and seal files as required per the project scope.

Review the project for completeness and accuracy.

Secure the entire project with PEDDS for electronic delivery to FDOT.

Create the Secured Project CD-ROM (Project CD) with the appropriate label and the required checklist and PEDDS documents.

Create the Plans and Specs CD-ROM containing the data used for advertising the project for letting with the appropriate label and PEDDS documents.

Burn several copies of the secured project onto a CD-ROMs, with the appropriate label and the required checklist and PEDDS documents.

In addition to the delivery of all files used or produced during the course of the project, the **FDOT CADD Manual** requires the inclusion of *engineering data files* for critical geometrics in the design of the transportation facility. These include the alignments, profiles, cross section, and quantity details for such items as the centerline of the proposed mainline roadway, side streets, special ditches, utilities, etc. The geometric files delivered must contain sufficient data for the Department, or any customer to reconstruct these critical geometrics in any design package in the future. The engineering data files delivered with the project will comply with the standards defined in The CADD Criteria Manual. This is applicable for all CADD projects produced by and for the Department, regardless of the software packages used to develop the project.

CROSS SECTIONS

Data will be required which defines each surface in a cross section data set. Special attention must be made to ensure that each line in the cross section that defines earthwork quantities is Represented. Those lines include existing ground terrain, bottom of the proposed template, undercut lines, muck lines, limits of construction, etc. that are defined in FDOT Roadway and Traffic Design Standards, Indexes 500, 505 and 506. The Cross Section General file format can represent cross sections, station equations, horizontal offsets, and limits. Cross section data is delivered in a separate file from the alignment geometry, and in the past, has been referred to as the Multiline General file format (.GEN). The format is documented in The CADD Criteria Handbook. The .gen file will be processed with Multiline by construction. Multiline can be obtained from Tallahassee CADD at no cost. It is recommended that the consultant obtain Multiline and run it against the gen files to make sure they are correctly set up.

Other things that need to be checked.

QA/QC reports need to be at 95% or more compliance. If it is to less, it needs to be documented in discipline journal files and approved by FDOT Project Manager.

Key sheet will contain key map on both dgn file and postscript file.

Reference files will be attached to the sheet files. They may be turned off but if they are relevant they will be attached.

All electronic computations, used in the Construction Computation Book, are to be included on the Project CD, in the Estimates Directory. This includes backup computations.

AUTHENTICATING A DELIVERY

PEDDS and the PEDDS paper reports received with the project will be used by FDOT to authenticate a project. The Authentication Report generated by the authentication process in PEDDS will be compared against the documents submitted with the delivery, including the Signature Documents provided and the Manifest Document. If the project submitted is found to generate the same hash codes, the delivery will be considered authenticated.

8.4.6 Media Requirements for Delivery

All electronic projects submitted to FDOT will be on CD-ROM or DVD-ROM unless otherwise approved by the FDOT Project Manager. If the project is too large to fit on one CD-ROM, then the process for delivery to the Department must be reviewed with the FDOT Project Manager before splitting the project on multiple CD-ROMS or choosing an alternate media. All Project CD's must be labeled with the required project identification information shown. Media not labeled with this information are not acceptable.

Project Identification Label:

Financial Project ID Number of Project:

Project Description (including County and State Road numbers, local road designation):
Firm doing the work (if done with consultant services) or District

Name of FDOT and Consultant Project Managers

Creation Date of the Media

Disk (#) of (total #)

Delivery type label (Project CD, Plans and Specs CD, etc.)

Anticipated Letting Date for the project

Contact Person (District Five requirement)

8.4.7 Compliance Certification

All electronic data submittals are to be delivered to the FDOT Project Manager, unless an alternate agreement is reached. A Compliance Certification is found on the following page (and a similar one is presented in the Electronic Delivery software) containing items that should be checked before a final submittal. Although this checklist is not completely comprehensive of all work ensuring a quality electronic delivery, it does represent minimum assurance to the Department that care was exercised preparing the delivery. A copy of this form should accompany the documents in the delivery and be given to the Project Manager.



Compliance Certification Checklist Report

All electronic data submittals are to be transmitted to the FDOT Project Manager. The following questions shall be answered before submittal, and given to the Project Manager along with the submittal.

Note: Not all of the items below may apply to scopes entered prior to July 2000.

- 1. Have project journals been created containing all necessary project information?
- 2. Is the listing of the software packages and versions used to create all delivered files included in the journal?
- 3. Are all the native files generated by the CADD / Design software in checklist item 2 included in the delivery package?
- 4. Are design graphics files in MicroStation format, and are they compliant with the FDOT CADD standards for directory structure, file naming, and element symbology?
- 5. Does the submittal include all user-created MicroStation resource files (line styles, fonts) that may have been used with the project?
- 6. Has the GDM QC program been run against the MicroStation design files specified in the CPCH? Are the resultant reports of compliance included in the delivery submittal?
- 7. Have the project's corresponding engineering data files supporting the design been generated?
- 8. Have the prescribed ASCII Engineering data files been created and submitted for the alignments, profiles, and quantities in the formats described in the CADD Production Criteria Handbook? Is this information stored in the appropriate directories?
- 9. Have ASCII Multiline general file format files been created and included for the surfaces represented in the cross sections?
- 10. Are project raster images for photogrammetry work submitted in Descartes HMR format?
- 11. Have Postscript image files for all sheets been created, checked and included for all sheets in the plan set? If not Postscript, are the files in PDF or Group-4 TIFF format?
- 12. If the project is intended for electronic advertisement and letting (the official record will be electronic), are the files representing the plans, referenced by Volume I, Chapter 19 of the FDOT Plans Preparation Manual, signed and sealed with PEDDS? Is the Electronic Plan Note on each sheet?
- 13. Has the entire delivery been secured with PEDDS? Has the resulting Manifest Document been signed? Have all Signatory sections been checked and initialed?
- 14. Are hardcopy reports of the PEDDS documents included, printed and signed? This includes the signed and initialed Manifest Documents and all signed Signatory Documents.
- 15. Has the final media for submission been properly labeled and re-checked to make sure the data is readable and can be authenticated with PEDDS?
- 16. Has a Project.PDF file been included that contains all sheets that are defined by the delivery's index?
- 17. Has an index report SheetNDX.htm file been included that links all sheets that are defined by the delivery's index for the plans?
- 18. Has a projectfiles.htm file been included?
- 19. Has a projectindex.html file been included?
- 20. Has QC File Checker been run for the entire project?

FPN: _____

Date of Scope: _____

Certified by EOR: _____