Electronic Exchange of CADD Data

I. General

This document is the Maine Department of Transportation's (MaineDOT) specification for required electronic (computer) data as it relates to engineering design project deliverables.   Consultants wishing to perform professional engineering services for MaineDOT are required to deliver electronic data as specified in this document. This specification also requires organizations to accept and utilize pertinent electronic input data as provided by MaineDOT.

MaineDOT uses MicroStation as our drafting software, and Bentley InRoads as our roadway design application, products of Bentley Systems, Inc.. In general, graphical data is to be provided in MicroStation's .DGN drawing format. Roadway design data shall be submitted in a format that can be imported directly into InRoads without translation, and with no loss of accuracy.

II. Electronic Deliverables to MaineDOT:

All CADD files submitted to MaineDOT shall be organized in accordance with the Department's CADD Standards. *No translation of graphical or roadway design information by MaineDOT personnel shall be required*.

MaineDOT's CADD standards, custom MicroStation and InRoads configuration files, and current version information are available for download from the MaineDOT CADD Support Page on the Internet at http://www.maine.gov/mdot/caddsupport/

MicroStation drawing files (.DGN) must meet MaineDOT's conventions for Working Units, Global Origin, Level Structure and Naming, File Names, File Content and Referencing, Line Styles, Line Weights, Fonts, Cells, and Color Tables. Roadway design data shall be provided in InRoads model files (.dtm, .rwk, .alg, .itl, ird, .xin), and/or LandXML.   MaineDOT's Standard InRoads Feature Naming Convention must be used for all roadway design data files. The Consultant is solely responsible for any translation and verification required to convert non-MicroStation graphics files to the current MaineDOT MicroStation design file format, and roadway design files to the MaineDOT InRoads format or LandXML. MaineDOT reserves the right to reject any file transmitted that does not conform to these standards.

It is recommended that the Consultant install the Department's MicroStation configuration as an alternative to their own. All of our MicroStation resources including seed files, cell libraries, line styles, fonts, macros, color table, settings manager files, menus, etc. are available from the web site, along with instructions for setting up MaineDOT's configuration on an existing MicroStation installation. Provisions are available to easily switch between other configurations and MaineDOT's.

The schedule of preliminary design electronic file submissions will be determined on a project-by-project basis, depending on scope of work.   Files at this stage of design may be submitted via MaineDOT's FTP site (ftp.mainedot.smartfile.com) contained in a .ZIP file, or written to portable flash drives, CD, or DVD's as individual files.

Upon MaineDOT approval and acceptance of the final signed and stamped plans, the Consultant shall provide to MaineDOT the final electronic versions of all MicroStation files, roadway design files, and associated resource files on portable data storage device. The Consultant will be required to provide copies of final plan sheets in Adobe Portable Document Format (PDF) at MaineDOT's discretion. The PDF files will serve as the electronic, read-only record plans for the project, and must match all aspects of the final hardcopy signed and stamped plans. *These electronic delivery items **DO NOT** replace any **hardcopy** delivery items.*

A Project Journal File shall accompany all electronic files submitted to MaineDOT, both those written to a portable data storage device, and those transmitted via MaineDOT's FTP site. This document shall contain the Town Name, State Work Identification Number (WIN), date, and a list of the files being transmitted with a brief description of each file.

Portable flash drives, CD's or DVD's used to transmit electronic files to MaineDOT shall, at a minimum, be labeled with the Town Name, State Work Identification Number (WIN), and date. If more than one data storage device is required to transmit the files, the disc label shall also include the device number and total devices of the set transmitted, (ex: Disk 1 of 5).

III. MaineDOT Furnished Services and Information:

MaineDOT will provide copies of the latest files used to configure, customize, and utilize MicroStation and InRoads in our own project development process to the Consultant through the MaineDOT CADD Support page on the Internet.

MaineDOT will provide access to Engineering Applications Group personnel for information and answers to questions on MaineDOT CADD standards, MicroStation and InRoads setup, configuration, customization, and documentation.   Contact information is available on the web site.

MaineDOT's Survey Section will determine the horizontal and vertical datum to be used for each project. Files exchanged between MaineDOT and the Consultant will reflect these datums.

MaineDOT will provide separate drawings for existing topographic information, text, contours, and a Digital Terrain Model (DTM) of existing surfaces in MicroStation DGN format.

Consultants using InRoads software can request the original MaineDOT InRoads Survey model.

A variety of standard reports created during the processing of survey data for input into InRoads are also available to the Consultant from MaineDOT. Examples of these reports can be found on the InRoads portion of the MaineDOT CADD Support web site. *It is the responsibility of the Consultant to translate this data into other formats required for use in their design software.*