



Connecticut DOT

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Bureau of Engineering and Construction

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ENGINEERING & CONSTRUCTION DIRECTIVE

Chief Engineer

Electronic Engineering Data Delivery, Phase 1

The Department is beginning implementation of a planned three-phase process to provide bidders and contractors with Electronic Engineering Data (EED) in conjunction with most Department-advertised construction contracts. Additionally, to improve program management, a requirement is being introduced to update project polygons as design progresses.

This directive provides an overview of the Department's EED initiative and specific Phase 1 requirements, which apply to projects with Final Design Plan (FDP) dates after November 22, 2017 and it supersedes Engineering and Construction Directive 2015-5-EC, "[Release of CAD Files](#)", which is now obsolete.

Background

EED is produced during the design phase and may include two-dimensional (2D) CAD models, three-dimensional (3D) terrain models, coordinate geometry files and drainage data. This data may be useful for construction and post-construction functions, including:

- Constructability analysis (stage construction),
- Quantity estimation,
- Automated stakeout,
- Construction equipment automated control/guidance (AMC/AMG),
- Uniform compaction,
- Clash detection,
- Generation of "live" as-built drawings,
- Inspection and verification, such as use of GPS to measure for payment,
- Asset management,
- GIS.

Without the EED, contractors have been generating digital data by repurposing the contract portable document format (pdf) plans provided by the Department. This process is time consuming, costly and potentially unreliable. Providing design-generated EED to 'downstream' users (i.e., inspectors, bidders, contractors) will improve the efficiency, accuracy and quality of the bidding, inspection and construction processes.

The Department's EED strategy is consistent with national trends, including the Federal Highway Administration (FHWA) "Every Day Counts" initiative. More information is available on FHWA's [3D Engineered Models web page](#).

Phase 1 Requirements and Limitations

Phase 1 requirements include:

- Replacing cursory project polygons (geo-spatial boundary) with more accurate versions at Design Approval and the Design Completion Date (DCD),
- Delivery of the EED to ProjectWise in accordance with [Digital Project Development Manual](#) at FDP for all State-advertised contracts, unless covered by an exception, and
- Inclusion of the [EED Notice to Contractor](#), available through the Department's [Owned Special Provisions web page](#), in State-advertised contracts with EED.

Except as stated in this directive and the [Digital Project Development Manual](#), no CAD files, models and other design-generated electronic data will be provided to potential bidders or contractors. This includes, but is not limited to, plan sheets with notes, miscellaneous details, typical sections, grading plans, bridge layout plans, signing and pavement marking plans. This information is readily available in the vectorized pdf contract plan set which can be converted into CAD files by the user (see [Repurposing PDF Contract Plans](#)). Requests for such information under the Freedom of Information Act should be processed in consultation with Legal Services. Bureau units and personnel shall not facilitate requests or intervene on behalf of requesters.

Future Phases

The Department's general plans for subsequent phases are:

- **Phase 2:** Phase 1 deliverables with the addition of a curb to curb top surface digital terrain model within the roadway limits.
- **Phase 3:** A full 3D model (slope limit to slope limit) developed using OpenRoads software.

Specific requirements and instructions for these phases will be issued by future bulletins.

Additional information is available from the AEC Applications unit.