

CHAPTER 15 – Final Project Development Procedures

Table of Contents

CHAPTER 15 – Final Project Development Procedures	15-3
SECTION 1 Contract Procedures	15-3
Prepare Project for Advertising – No District Director Delegation	15-3
Prepare Project for Advertising – District Director Delegation	15-3
Addenda	15-4
Advertise and Award	15-4
SECTION 2 Construction	15-5
Resident Engineer File	15-5
Survey File	15-6
Construction Activities	15-6
Coordination	15-7
Contract Change Orders	15-7
SECTION 3 Project Completion	15-8
Constructability Review	15-8
Contract Acceptance	15-8
Maintenance Agreements and Relinquishment Maps	15-8
Project History Files and As-built Plans	15-9
Archive-ready As-built Plans	15-9
Microfilming As-built Plans	15-10

CHAPTER 15 – Final Project Development Procedures

SECTION 1 Contract Procedures

Prepare Project for Advertising – No District Director Delegation

The Headquarters Division of Engineering Services-Office Engineer is responsible for verifying that all aspects of the plans, specifications, and estimate (PS&E) are complete before preparing the project for advertising. All permits must be current, right-of-way must be certified, freeway and cooperative agreements must be executed, and the necessary funds must be voted by the California Transportation Commission (CTC).

After all corrections have been made to the PS&E, the final product is assembled and “boilerplate” language is added (legal language specific to a particular type of project). The Basic Engineering Estimating System (BEES) estimate (final engineer’s cost estimate) is locked after a draft contract is ready for advertisement once Ready to List (RTL) requirements are met. A locked BEES can only be changed by the Headquarters Division of Engineering Services-Office Engineer. All contract documents are then reproduced for distribution to prospective bidders.

Prepare Project for Advertising – District Director Delegation

The authority to execute all documents leading to project advertising for selected projects has been delegated to the District Directors as shown in their respective “Authority to Advertise District Delegation” delegations from the Chief Engineer. When the District Director elects to exercise their delegation, they will certify that plans, specifications, and estimate of cost, and all forms necessary to advertise and fund the project have been prepared, executed and are on file in Caltrans. The project must be in final form and ready for advertisement.

Addenda

After the project has been listed for advertising, additional information may become available that would affect the bidding process. At the request of the district, an addendum may be issued by the Headquarters Division of Engineering Services-Office Engineer prior to bid opening to notify prospective bidders of any errors, omissions, or conflicts in the bidding documents.

Advertise and Award

The duration times for advertising are based on the cost and complexity of the project. These time durations are summarized in the [*Ready to List and Construction Contract Award Guide \(RTL Guide\)*](#). Bid openings for projects (except “Minor B” projects) are coordinated by the Headquarters Division of Engineering Services-Office Engineer. After the opening, the contract is awarded to the lowest responsive and responsible bidder, provided that sufficient funding is available. The district is responsible for providing the Headquarters Division of Engineering Services-Office Engineer with a recommendation to award within five days of the bid opening. The contract is executed by the contractor and Caltrans. The Headquarters Division of Legal approves the contract for the Attorney General, and the contractor is notified of contract approval. For further information on the bid review and contract approval process, see the [*Ready to List and Construction Contract Award Guide \(RTL Guide\)*](#).

SECTION 2 Construction

Resident Engineer File

After the contract is advertised and awarded, the project is ready for construction. The project engineer (PE) is responsible for furnishing the resident engineer (RE) with any pertinent project data required to administer the construction contract. The information is compiled in a resident engineer file and appropriate items to be placed in this file include, but are not limited to the following:

- Calculations (quantity calculations, structures movement rating sheets, etcetera)
- Right-of-way clearance letters
- Foundation studies and geology report
- Falsework clearances and calculations
- Agreements and permits
- Hazardous waste contracts (if hazardous waste is not removed prior to construction)
- Right-of-way contracts and obligations
- Project cost estimates
- Safety review report
- Aesthetics report
- Drainage report
- Materials handouts, including tests
- Permits, licenses, agreements, certifications (PLAC), and approvals
- Final environmental review and reevaluation, listing required mitigation (include environmental commitment record)
- Funds request and CTC vote
- Contract documents
- Exceptions to mandatory and advisory design standards
- PE (designer) notes
- Preliminary progress schedule, structures working day schedule, etcetera
- Cross sections
- Pending relinquishment actions (to inform right-of-way engineering four months before completion of construction)
- Risk register and Risk Register Certification Form

Refer to [Appendix GG](#) – Project Data Checklists for a Resident Engineer File Checklist.

Survey File

The survey file is a compilation of electronic design data generated during the development of the plans, specifications, and estimate.

The engineer of record, typically the PE, provides an accurate and complete survey file to the project surveyor by the Ready to List date. The district office engineer verifies the delivery of the survey file upon submittal of a completed verification of survey file delivery letter. The survey file data must be accurate, complete, and timely to minimize costly delays, claims, contract change orders, and re-staking charges during construction. The survey file should be included in all constructability reviews and throughout the development of projects without constructability reviews, e.g. minor projects, to drive consultation and communication on project issues.

The survey file is critical to the construction of a project as:

- The project surveyor uses the survey file to prepare construction staking packages for the survey crews, enabling them to complete the RE's construction staking requests in a timely and effective manner.
- A review of the survey file by the project surveyor provides an important quality control check of project constructability prior to construction.
- The survey file facilitates the use and integration of automated systems; e.g., computer-aided design and drafting (CADD) systems, automated surveying systems, machine guidance construction technology, etc.

The PE and the project surveyor are encouraged to work together to determine the level of information to be included in the survey file as soon as the scope of the project is well defined. These actions help identify and resolve problems during the design phase and assure the survey file and contract plans are consistent by contract approval.

For additional guidance on developing survey files refer to the [Appendix QQ – Preparation Guidelines for Survey File](#) and the [CADD Users Manual](#).

Construction Activities

Activities performed during the construction of a project are described in the [Construction Manual](#). These activities include the following:

- Inspection for compliance to contract plans and specifications.
- Testing of materials.

- Public relations.
- Measurement and payment for work performed.
- Processing contract change orders.
- Oversight for local agency contracts.
- Maintaining contract and permanent records.

Coordination

Prior to the start of construction, a meeting must be held between the RE and the contractor (and appropriate subcontractors) to discuss the plan of work. To review the project, a separate preconstruction meeting should be held between the project manager (PM), the PE, the RE, the environmental coordinator, and any other interested parties. Topics to be discussed include right-of-way obligations, materials sites, traffic handling, environmental commitments, potential maintenance problems, project scheduling, as well as items found in [Chapter 13](#) – Project Related Permits, Licenses, Agreements, Certifications, and Approvals.

During the course of constructing the project, it may be necessary to hold subsequent meetings to discuss complicated design features or to resolve unanticipated problems. The PM must monitor the progress of the contract to ensure adherence to all permits, right-of-way obligations, agreements, environmental mitigation, and other project commitments.

Contract Change Orders

If revisions to design features are required, the contract change orders (CCO) must have review and concurrence by the PE and must be approved by the PM before execution. If the revisions require exceptions to mandatory or advisory design standards, the exceptions must be approved following the procedures in [Chapter 21](#) – Exceptions to Design Standards.

The RE is responsible for contacting the environmental unit to determine the impact of proposed changes to any environmental obligations. Proper coordination between all involved parties is needed to expedite decisions and minimize delays to the contractor.

SECTION 3 Project Completion

Constructability Review

See [Chapter 8](#) – Overview of Project Development, for information on meeting constructability requirements. Include a discussion of the positive and negative aspects of the project and changes that were required for the project.

Contract Acceptance

The improvements belong to the contractor for the time period during construction. Upon completion of construction, the resident engineer recommends acceptance of the contract as the representative of the State. The Headquarters Division of Construction ultimately accepts the construction contract for the Director of Caltrans. Local agency officials are involved in the process for those projects financed or constructed by the local agencies, but acceptance rests with the State for the portion of the project that is within the State right-of-way. When the contract includes work on local agency facilities, the local agency officials must be involved in the acceptance reviews.

Upon contract acceptance, the RE must assemble the final construction project records as described in the [Construction Manual](#). The proposed final estimate is then transmitted to the contractor for acceptance. Claims from the contractor for specific items of work or liquidated damages may result in a lengthy process for reviews and negotiations.

Maintenance Agreements and Relinquishment Maps

The acquisition of right-of-way may include property that is no longer required at end of project. Such excess acquisitions may have resulted from total parcel acquisitions, retention of property for the contractor's yard or State construction office, use of land for detours, the purchase of material sites, etc. It is now necessary to dispose of these excess lands. For more details, see [Chapter 26](#) – Disposal of Rights-of-Way for Public or Private Road Connections.

Projects may also involve improvements that will be relinquished to the local agency upon completion of construction. Relinquishment procedures include the preparation of maintenance agreements and maps. (See [Chapter 25](#) – Relinquishments.)

Project History Files and As-built Plans

After the construction contract improvements are accepted on behalf of the State of California, the project history file is prepared. For this file, the RE accumulates construction contract records and the PE contributes pertinent planning and design data. To determine which records should be included in this file, see [Chapter 7 – Uniform File System](#). The project manager is responsible for insuring that the compiling and archiving of this information is accomplished.

The RE must prepare the draft as-built plans to reflect all pertinent changes or corrections made during the life of the project contract. If the plans have not been edited to indicate the as-built conditions, future misinterpretation of existing field conditions may result.

As-built plans for projects with fewer than 300 total plan sheets (roadway and structure combined) must be submitted to the Document Retrieval System (DRS) unit at the Headquarters Division of Design-Office of Computer Aided Drafting Design and Engineering Global Information System Support (Office of CADD and Engineering GIS Support) within 180 days from construction contract acceptance (CCA). As-built plans for projects with more than 300 plan sheets must be submitted within 270 days from construction contract acceptance. The date of entry into the DRS will be used as the milestone date indicating the as-built plan set is completed.

Archive-ready As-built Plans

Archive-ready as-built roadway plans are to be completed and submitted by the district to the DRS unit. Archive-ready as-built structure plans are to be completed by Headquarters Division of Engineering Services and submitted through Structure Maintenance and Investigations to the DRS unit. All projects (including minor projects implemented or funded by others) are to be submitted electronically in a tiff format for entry into the DRS. It is the responsibility of the districts and Headquarters Division of Engineering Services to obtain these archive-ready as-built plans from the consultants and local agencies preparing these products.

Structure as-built plan sheets will also continue to be entered into the Bridge Inspection Retrieval Information System (BIRIS) by Structure Maintenance and Investigations, using existing procedures. Encroachment permit as-built plans will continue to be submitted using existing procedures. The backlog of as-built plans shall be handled according to procedures found in the [CADD Users Manual](#).

As-built standards and procedures for creating electronic as-built sheets from the as-awarded computer aided-drafting design files can be found in the following manuals:

- [*Plans Preparation Manual.*](#)
- [*CADD Users Manual.*](#)
- [*Construction Manual.*](#)
- [*Bridge Design Details Manual.*](#)
- [*Bridge Memo to Designers.*](#)

Microfilming As-built Plans

The microfilming of as-built plan sheets follows the procedures outlined in the [*CADD Users Manual.*](#) The microfilm set includes microfilm from the district and Structure Maintenance and Investigations as-built files.

Microfilming of encroachment permit as-built plan sheets is the responsibility of the Headquarters Division of Business, Facilities and Security-Office of Administrative Services-Microfilm Unit.