

## **5-3 Cost Reduction Incentive Proposals**

Construction contractors can propose Cost Reduction Incentive Proposals (CRIPs) on Special Funded projects in accordance to the Standard Specifications and other contract documents as a way to potentially reduce construction costs.

Though CRIP proposals can potentially reduce construction costs, CRIPs have true economic merit for a project as a whole only when there is still a savings after development and review costs are factored in. CRIPs become especially unviable from an economic viewpoint when the sponsoring agency's review costs exceed their portion of the construction savings.

CRIPs must undergo thorough reviews before being approved and implemented since they revise contract work previously reviewed and approved through the project development process. Construction administration personnel must review CRIPs for constructability and for conformance to the construction contract. Project development personnel must review CRIPs for conformance to design standards and project objectives.

Structure related CRIPs on Special Funded Projects require review and approval by the OSFP Liaison Engineer.

The purpose of this Guide section is as follows:

- 1) Address the roles, standards, and procedures required to obtain OSFP's input, review, and approval in a timely manner.
- 2) Define how OSFP involvement fits into the framework that Resident Engineers/Structure Representatives use to process CRIPs as outlined in the *Caltrans Construction Manual*.

To achieve this purpose, this Guide expands upon the principles described in the *Construction Manual* for processing CRIPs. And, like the *Construction Manual*, this section is not to establish terms of the construction contract, but is to inform those involved with CRIPs of the requirements to make for efficient development and review.

### **Roles and Responsibilities**

Listed below are the primary representatives and their roles in developing structure related CRIPs on Special Funded Projects. The role descriptions are those as it relates to OSFP's goal in the CRIP process to provide timely input, reviews, and approvals. The roles do not address the involvement of other units as required by their own procedures.



### **Contractor**

- 1) Conceptualizes and proposes CRIPs.
- 2) Extensively coordinates CRIP proposals with the Resident Engineer/Structure Representative.
- 3) Develops the necessary documents to support and construct the change.
- 4) Provides the design construction support for the change.
- 5) Reimburses sponsoring agencies for review costs.

### **Resident Engineer/Structure Representative**

- 1) Coordinates with the Liaison Engineer.
- 2) Coordinates with the Caltrans Project Manager (for projects administered by Caltrans).
- 3) Coordinates with the Sponsoring Agency.
- 4) Reviews CRIPs for feasibility, constructability and conformance to the construction contract.
- 5) Leads, coordinates, and facilitates CRIP development and reviews with the contractor and the Liaison Engineer.
- 6) Arranges and facilitates meetings between affected parties.
- 7) Determines if a CRIP is cost effective.
- 8) Takes the necessary steps to administratively recover review costs.
- 9) Provides the final CRIP approval in the form of a contract change order.

### **Caltrans Structure Construction Oversight Engineer (for locally administered projects)**

- 1) Coordinates with the Liaison Engineer.
- 2) Coordinates with the Caltrans Project Manager.
- 3) Reviews the Structure Representative's procedures.
- 4) Reviews CRIPs for feasibility, constructability, cost effectiveness, and conformance to construction standards.

### **Caltrans Project Manager**

- 1) Coordinates with sponsoring agency.
- 2) Works with the local agency to revise the Cooperative Agreement, if necessary, especially relative to the reimbursement of Caltrans review costs.
- 3) Ensures project objectives are attained.

### **Sponsoring Agency**

- 1) Provides concurrence with the general nature of CRIP changes and the impacts on project costs and schedules.
- 2) Engages the design consultant to review CRIPs.
- 3) Reimburses Caltrans for review costs.

### **Liaison Engineer**

- 1) Coordinates with the Resident Engineer/Structure Representative.
- 2) Coordinates with the Caltrans Structure Construction Oversight Engineer (for locally administered projects)
- 3) Leads structure design reviews and approvals.
- 4) Provides input relative to feasibility and cost effectiveness of the proposed CRIP.
- 5) Obtains reviews and concurrences from designers of record.
- 6) Provides oversight and quality assurance through the necessary DES units.
- 7) Provides the final structure design approval.

### **Designers of Record (original)**

- 1) Provides input to the Liaison Engineer relative to feasibility and cost effectiveness.
- 2) Reviews CRIPs for structural integrity, impacts to the original design, and ensures conformance to project development standards.

## **CRIP Development and Review**

The Construction Manual outlines incremental stages of CRIP development. For the purposes of this section, the stages are summarized as follows:

- Conceptual Proposal Stage
- Preliminary Proposal Stage
- Complete Proposal Stage

CRIP development must proceed through the above incremental stages. In each stage, the contractor develops and submits the proposals to the Resident Engineer/Structure Representative for input and review (the remainder of this Guide section will assume the Structure Representative is the key contract administrator). If the Structure Representative determines the proposals warrant further review, the proposals must be submitted to the Liaison Engineer for review.

CRIP development should not proceed to the next stage until concurrence is obtained from the Liaison Engineer.

The discussion below briefly describes the proposal stages and the procedures, requirements, and considerations necessary to obtain the Liaison Engineer's review and approval. Upon request, in all stages, the Liaison Engineer will meet with the Structure Representative, contractor, and other key representatives as necessary to discuss and resolve issues. The designers of record must attend the meetings upon request.

### Conceptual Proposal Stage

At the Conceptual Proposal Stage, the contractor informs the Structure Representative of a potential CRIP and the general parameters the CRIP will involve. In this stage, the Liaison Engineer requires the following information:

- The potential structural changes and the purpose
- The identity of the designers who will develop the CRIP
- The desired schedule to implement the change

To warrant further consideration, the Conceptual Proposal must meet the following:

- The concept must appear to be potentially structurally feasible, cost effective, and have merit.
- The contractor must not intend to directly employ the designers of record, or their sub-consultants, to prepare the CRIP (per Section 2-1.056 of the Standard Specifications and for conflict of interest reasons. However, the Sponsoring Agency may directly employ the designers of record to develop the CRIP).
- The designers of record must recommend concurrence with the concept.
- The designers of record must be available to perform reviews in a timely manner.
- The pertinent DES units must recommend concurrence with the concept.
- The sponsoring agency and contractor must concur with potential schedule changes.
- The sponsoring agency must be willing to pay for CRIP reviews by the designers of record and reimburse Caltrans for review costs incurred.

The duration for this review will be a minimum of two weeks.

As a part of the Conceptual Proposal Stage, the Structure Representative should lead a meeting that includes the Liaison Engineer, contractor, and others as appropriate to discuss the concept and considerations to develop the CRIP further. The meeting should address the following:

- Procedural requirements to develop the CRIP further
- Design criteria—ordinarily, the most recent current design standards and practices are required
- Reports and documents the contractor must prepare
- Review times
- Schedule for further CRIP development
- Review costs
- Method of reimbursement for review costs

### Preliminary Proposal Stage

At the Preliminary Proposal stage, the contractor further develops the CRIP and identifies the nature of all changes and shows the changes will have merit. In this stage, the Liaison Engineer requires the following:

- Preliminary details that identify the structural modifications
- Preliminary analysis that show the general design approach and general affects on all affected structure elements
- Preliminary estimate of construction cost savings
- Preliminary estimate of the review costs
- Net savings the CRIP will achieve

The contractor must develop this proposal up to the point of preparing final analysis, design, and details as part of the following Complete Proposal Stage.

The Preliminary Proposal must show or meet the following to warrant further consideration:

- The changes can be designed to be structurally adequate, will be based on the proper parameters, will be constructable, and will conform to standards.
- The necessary supporting reports and documents, including plan details, calculations, foundation reports, hydraulic reports, etc. will be prepared.
- The designers of record and pertinent internal DES units concur with the proposal.
- The CRIP will effect a cost savings after review costs are considered.

The duration for this review will be a minimum of two weeks.

At this stage, all parties should have an understanding of the following:

- Procedural requirements to develop the CRIP further
- Design criteria and the extent of analysis that must be performed
- Reports and documents the contractor must prepare
- Review times
- Review costs
- Schedule for further CRIP development
- Who will be the designers of record for the different portions of the structure design and who will provide the associated construction support
- Who will prepare as-built plans

If necessary to discern these issues, the Structure Representative should lead a meeting that includes the Liaison Engineer, contractor, and others as appropriate.

### Complete Proposal Stage

At the Complete Proposal Stage, the contractor prepares the final design, details, and supporting documents necessary to support the change. In this stage, the Liaison Engineer requires the following:

- Final plan details that show the changes
- Complete analysis and calculations that support the structural modifications
- Reports and other documentation necessary to support the change
- Final cost estimates and savings the CRIP will achieve

The Complete Proposal must meet the following to warrant approval of the CRIP by the Liaison Engineer:

- Plans, calculations, and other documents must fully address the changes proposed and conform to the requirements outlined later in this Guide section.
- The changes must be structurally adequate, based on the proper parameters, are constructable, and conform to the appropriate standards.
- The designers of record and pertinent internal DES units must concur with the proposal.
- The CRIP must effect a net cost savings.

The approximate durations to perform the reviews and quality assurance are shown under “Deliverables” later in this Guide section.

The conclusion of this stage should result in the approval of the CRIP (if warranted), a calculation of the final cost savings performed by the Structure Representative, and the issuance of a contract change order.

### Structure Related CRIP Documents

The following documents must be developed as necessary to support the CRIP:

- Plan Details
- Contract Specifications
- Structure Calculations
- Quantity Calculations and Cost Estimates
- Foundation Report
- Hydraulics Report
- Other documents as required

The documents must meet the same quality standards as for documents prepared in the project development phases and must conform to the requirements in “Contract Change



Orders” elsewhere in this Guide. Documents that are sub-standard will not be accepted. Reviews will not commence until documents of sufficient quality are submitted.

### Deliverables

The exact documents required will depend on the scope of changes and will be determined by the Liaison Engineer.

Type of Document	Number of Copies	
	Initial and Intermediate Submittals	Final Submittal*
Revised, Supplemental, Replacement Plan sheets or details	7	6
Final Plan Details (full size)	--	1
Final Plan Details (electronic)	1	1
Special Provisions	4	--
Quantities	2	--
Check Quantities	2	--
Cost Estimates	2	--
Structure Design Calculations	1	--
Structure Independent Check Calculations	1	--
Foundation Report	3	--
Hydraulics Report	2	--
Other backup documents needed to support the change	As Required	As Required

\*Assumes that documents not required were received and determined to be final in previous reviews

Review times for the deliverables will be dependent on the changes involved in the CRIP.

For scheduling purposes, the review times for the First Complete Submittal may be assumed to be 6 weeks.

Review times for subsequent submittals are dependent on the adequacy of the preceding submittal. For scheduling purposes, the minimum review period for subsequent submittals should be assumed to be not less than 2 weeks.