

## ALTERNATIVE CONTRACTS AND CONSULTANT OVERSIGHT

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**GLOSSARY**

- ACM –** Alternative contracting methods (ACM) are contracting methods that differ from traditional design-bid-build (DBB) contracting method, such as design-build (D-B) and construction manager/general contractor (CM/GC). Through the Every Day Counts priority initiative, the FHWA recommends that state DOTs use ACM as a “standard way of doing business” to accelerate project delivery.
- ATC –** Alternative Technical Concept (ATC) is a request by a proposer to modify a contract requirement, specifically for that proposer’s use in gaining competitive benefit during the bidding or proposal process. An ATC must provide a solution that is equal to or better than the minimum design requirements in the invitation for bid or request for proposal (RFP for DB) document.
- Authority –** The sponsor, implementing agency, and funding party for the project. This can be a local transportation authority or Caltrans.
- CFR –** The Code of Federal Regulations is the rules and regulations (sometimes called administrative law) published in the Federal Register by the executive departments and agencies of the federal government of the United States.
- CM/GC –** Construction Manager/General Contractor. In the Construction Manager/General Contractor process, the project owner hires a contractor to provide feedback during the design phase. Once the design phase is complete, the contractor and project owner negotiate on the price for the construction contract.
- COOP –** Cooperative agreement between Caltrans and the local transportation authority where roles and responsibilities of both Caltrans and the Authority are listed.
- Contract (D-B) –** A set of contractually binding documents between the local transportation authority and its design builder, as approved by Caltrans and the Federal Highway Administration (FHWA).
- CV –** Comment Verification. Comment verification meetings are scheduled by the design-builder after the comments from the Joint Resolution Team (JRT) meeting are addressed for submittals. The purpose of the CV meeting is for the design-builder to show the Authority and Caltrans how comments were addressed.
- D-B –** Design-Build. A system of contracting under which one entity performs both engineering and construction under a single contract with the owner.
- Deviation –** A written authorization, granted after a task has been initiated, to depart from a performance or design requirement of a specification, drawing or other document. Used in Design-Build contracts.

- DSC – Differing site condition is an unknown and hidden, concealed, or latent physical condition encountered at a site that differs materially from the reasonably anticipated conditions. Differing site condition clauses recognize two distinct types of DSCs, Type 1 and Type 2. Refer to: [FHWA Differing Site Conditions \(23 CFR 635.109\)](#) and [Geotechnical Notebook Issuances GT-15 - Geotechnical Differing Site Conditions \(1996\)](#) for geotechnical aspects of differing site conditions.
- EDMS – Electronic Document Management System is a web-based database that coordinates and controls the flow (submission, distribution, and configuration management) of electronic documents in a secure and efficient manner.
- Engineer of Record – An engineer licensed in the State who signs and stamps drawings, reports, or documents for a project. The stamp must acknowledge that the licensed engineer prepared, coordinated, or had subordinates prepare under the direct supervision of the licensed engineer, drawings, reports, or documents for a project.
- GEP – Geotechnical Execution Plan identifies required geotechnical efforts for the design and construction of the Project.
- IPO – Integrated Project Office for Design Build Projects is space, facilities, and support elements necessary to design, construct, and maintain a core office to accommodate a co-located staff composed of design-builder, the Authority, Caltrans, and consultant personnel.
- JRT – Joint Resolution Team. The Joint Resolution Team meets to discuss design-builder's responses to review comments, determine which of the review comments should be incorporated into the work, and to discuss and resolve the pending comments.
- Project Standards – A list of standards, manuals, and guidelines that the design-builder must use to design and construct the Project.
- Local Assistance – Caltrans assists outside entities, such as counties, to ensure their projects built with federal funds comply with federal and state requirements.
- NDC – Notice of Design Change. A document initiated by the Design Builder or the Authority for the notification of a change in design that could affect previously Released for Construction Documents.
- NTP – Notice to Proceed is a notification letter indicating that performance should begin under a construction contract.
- OTS – Over the Shoulder. Over-the-shoulder reviews are informal examinations by the Authority and Caltrans of consultant design documents during the project design process. Over-the-shoulder reviews mainly assess whether the requirements and design criteria of the Contract Documents are being followed.

- Owner – Caltrans is the public agency authorized under the Streets and Highways Code section of the Government Code, as well as under the Public Contract Code, for authorized expansion and improvements to California transportation systems.
- PCR – Potential Claim Record. The three-part potential claim record procedure is outlined in Section 5-1.43, “Potential Claims and Dispute Resolution” of the Standard Specifications. Potential Claim Record consists of Initial, Supplemental, and Full and Final PCR. The nature and circumstances of the potential claim must not change throughout the submittal of all three potential claim record components.
- Public-Private Partnership – An alternative contract in which a consortium of financier, designer, and contractor fund, design, build, and maintain a state facility. The state pays the consortium annually over a long period (typically 30 years) instead of raising funds ahead of time to build and maintain the facility, and ownership is transferred to the state at the end of the maintenance contract. PPP are no longer authorized in California.
- RFI – The Request for Information, or construction RFI, is a tool to resolve information gaps and eliminate ambiguities of the contract package during construction. Construction RFIs can be roughly classified into several categories: design clarifications, requests for a design change, requests for substitutions, constructability issues, and differing site conditions. Construction RFIs process can be expensive and complex if not handled properly.
- RFP – Request for Proposals is issued by the project owner on a DB project for the selection of the design-build contractor for the project.
- Special-funded Projects – Projects over \$3 million on the State Highway System that are funded and administered by external agencies, usually a county.
- Sponsor Agency – Caltrans or a Local Transportation Authority accepts the responsibility to establish the scope of a D-B or DBB project and the obligation to secure financing for the project.
- TP – Technical Provisions are part of the RFP for design-build projects. The Technical Provisions are the governing design requirements. TP are organized by discipline and can include construction requirements where they vary from the Standard Specifications.

## Introduction

Through the Every Day Counts priority initiative, the FHWA recommends that state DOTs use alternative contracting methods (ACM), such as design-build (D-B) and construction manager/general contractor (CM/GC), as a “standard way of doing business” to accelerate project delivery. Caltrans projects are also delivered using traditional design-bid-build (DBB) contracting method that may be designed by consultants (Special Funded projects), while the construction is administered by Caltrans.

To assist Geotechnical Design staff working on projects delivered with alternative contracting methods, this module provides:

- An overview of each alternative project delivery method
- Roles and responsibilities of functional units
- Specific roles, responsibilities, and authority of the Geoprofessional
- Instructions for executing geotechnical-related tasks

Alternative project delivery methods that require Geotechnical Services (GS) consultant oversight include:

1. Design-Build (D-B)
2. Construction Manager/General Contractor (CM/GC)
3. Special Funded Projects
4. Local Assistance

Requirements of the Caltrans Geotechnical Manual must be met for all reports and documents produced by consultants for any project that builds or involves Caltrans assets. This includes DPGR, PGDR, GDR, SPGR, PFR, or FR.

In addition, geotechnical work performed by consultants should comply with the following FHWA documents:

- FHWA 2003 ED-88-053, Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications
- FHWA 2016 GEC 014, Assuring Quality in Geotechnical Reporting Documents.

The criteria stated in the Caltrans Geotechnical Manual supersedes the requirements provided in the above documents.

The following are brief introductions, general roles and responsibilities of functional units, and Instructions to Geotechnical Design Staff for the four alternative project delivery methods.

## 1 DESIGN-BUILD

### 1.1 Introduction

In the design-build (D-B) contracting method, design and construction services are provided by a single contractor, which then subcontracts parts of the design. The success of a D-B project is strongly affected by the level of integration between contractors (builders) and engineering consultants (designers). A drawback of D-B is that the D-B method does not give owners complete control over the design process.

This contrasts with the traditional design-bid-build (DBB) approach used in transportation agencies, in which two different contracts are issued in sequence for engineering design and construction services.

D-B projects allow for alternative and/or innovative methods to be incorporated into delivering the project. The first opportunity to introduce the innovation is when the sponsor agency and Caltrans work collaboratively in the development of the project-specific Technical Provisions (TP). The clauses in the TP can be drafted to promote alternative and/or innovative methods for geotechnical investigation and design. During the procurement, the Alternative Technical Concept (ATC) process offers opportunity for the proposer to propose and present technical concepts that save time and cost for the D-B project. The integration of design and construction into one entity also incentivize innovation and cost reduction.

### 1.2 General Roles and Responsibilities

#### 1.2.1 *Caltrans*

Caltrans is the owner and operator of the California State Highway System. When a D-B project is funded and administered by local agencies, the roles and responsibilities of Caltrans are negotiated and agreed upon between the local agency and Caltrans, and set out in the design-build Cooperative Agreement. When a D-B project is funded and administered by Caltrans, Caltrans owns the project.

District Project Management is the Caltrans point of contact with local agencies.

District Design is Caltrans point of contact for the design of District project components, such as Caltrans standard walls, highway embankments, and culverts.

District Construction is the Caltrans point of contact during construction. The assigned District Resident Engineer (RE) is the Caltrans liaison during construction and oversees all submittals related to the construction work.



DES/PPM&OE/Office of Special Funded Projects is the Caltrans point of contact for the design of special-design project components, such as bridges, MSE, soil nail, and ground anchor walls. The assigned Liaison Engineer from Office of Special Funded Projects (OSFP) is responsible for distributing D-B submittals to functional units for review, and compiling submittal comments to the designer.

Structure Construction is the Caltrans point of contact during construction for special designed project components.

Geotechnical Services is responsible for carrying out geotechnical tasks throughout the duration of the project, including editing and preparing Technical Provisions, assisting in the development of the Request for Proposal (RFP), reviewing design submittals, and assisting in construction oversight.

### ***1.2.2 Sponsor Agency***

For local agency funded and administered projects, the sponsor agency is the local transportation authority that funds and administers the project. The sponsor agency has the authority and responsibility for delivering the project in accordance with all contractual obligations/requirements.

However, as the owner and operator of the completed work, Caltrans is responsible for ensuring the work meets Caltrans standards and without long-term integrity or maintenance issues. The differences in project mandates for the sponsor agency and Caltrans can manifest late in the project, when the sponsor agency is most sensitive to potential budget overrun and delay. Geotechnical quality issues may include anomalies in CIDH piles, excessive settlements, scour, tilting of walls, surficial failure of embankment or cut slopes.

For local agency funded and administered projects, the Project Management Consultant (PMC) and Construction Management Consultant (CMC) administer the project and review design and construction submittals for the sponsor agency. Contractually, PMC and CMC are responsible for quality assurance of the D-B work for the Sponsor Agency.

### ***1.2.3 Contractor***

The design-build contractor includes the construction contractor and the designers.

## **1.3 Instructions to Geotechnical Staff**

### ***1.3.1 Contract Development***

#### ***1.3.1.1 Risk Register and Updates***

All Caltrans capital and major maintenance projects require risk management and a Risk Register. Risk Registers identify risks, evaluate the probability of the risks, their cost and time impact, and assess strategies for response. The Risk Register is developed during the pre-bid phase. Examples of risks include: differing site conditions, review process, or bids on innovative design solutions for which design is not fully addressed by Caltrans standards.

Attend the Risk Register and Cost Estimate Review meetings and assist in the development and review of the Risk Register.

#### ***1.3.1.2 Pre-bid Geotechnical Investigation***

The purpose of the pre-bid geotechnical investigation is to review archived information, and in some cases perform a limited site investigation (e.g., drilling, sampling, preparation of Boring Records and the Geotechnical Data Report) in support of the RFP. The objective of the pre-bid geotechnical investigation is to reduce risk and uncertainty for the bidders. The pre-bid investigation will provide some geotechnical information to the DB bidders, but not enough for the actual design. The pre-bid geotechnical investigation is typically limited in time and scope. This task may be performed by Caltrans Geotechnical Design or by consultants.

When the pre-bid geotechnical investigation is performed by Caltrans, carry out the work following the Caltrans Geotechnical Manual, but with a scope based on the allocated resources and schedule, as agreed upon with the sponsor. For a project with high geotechnical uncertainties, advocate for an expanded scope for the geotechnical investigation, targeted to reducing uncertainties and risks.

When the pre-bid geotechnical investigation will be performed by a consultant, review the proposed geotechnical investigation plan to ensure the aforementioned goals are met. Upon completion of the work review the Geotechnical Data Report.

The findings of pre-bid geotechnical investigation will be presented in the Geotechnical Data Report for the RFP. It can be used for design and referenced in any differing site conditions claims by the design-builder.

#### ***1.3.1.3 Geotechnical Data Report***

A Geotechnical Data Report may be produced as part of the RFP package, either written by Caltrans, or produced by a consultant and reviewed by Caltrans. The purpose of the Geotechnical Data Report is to present subsurface information from

the pre-bid geotechnical investigation without interpretation of the information. The Geotechnical Data Report may contain:

- Geologic setting and geologic map
- Descriptions of the geotechnical investigation, including subsurface exploration, laboratory tests, geologic mapping, and geophysics
- Boring records, As-built Log of Test Borings, groundwater table elevations, and other information obtained from the pre-bid geotechnical investigation
- Laboratory test results
- References

#### *1.3.1.4 Contract*

The order of precedence for a D-B project is:

1. Change Orders and Contract amendments
2. The Contract and ATCs
3. General Provisions
4. Proposer's commitments to the ATCs and approved deviations from the Contract
5. Technical Provisions, excluding Attachments to the Technical Provisions
6. Attachments to the Technical Provisions, excluding Project Standards referenced in the Technical Provisions
7. Project Standards referenced in the Technical Provisions
8. Design-Builder's Proposal

In D-B projects, a critical clause in the Contract that is related to geotechnical work is the differing site condition (DSC) clause. The DSC clause under 23 CFR 635.109 grants relief for two distinct types of conditions:

1. "Subsurface or latent physical conditions at the site differing materially from those indicated in this contract," commonly referred to as a Type I DSC, and,
2. "Unknown physical conditions at the site of an unusual nature differing from those ordinarily encountered and generally recognized as to be inherent in work of the character provided for in this contract," commonly referred to as a Type II DSC.

*The Code of Federal Regulations, 23 CFR 635.109, dated 2018-04-01, states "(c) In the case of a design-build project," State Transportation Departments... "may consider 'differing site condition' clauses and 'significant changes in the character*

*of work' clauses which are appropriate for the risk and responsibilities that are shared with the design-builder."*

This clause exempts D-B projects from the typical DSCs clauses required by Federal Highway Administration in federal-aid projects. The typical DSC contract clauses need to be revised to allocate risk and assign responsibilities between the design-builder and the owner. There are a few options to avert the overuse of Type II DSC. The most common is setting an expiration date for filing Type II DSC claims, such as within two weeks after the design-builder completes a geotechnical investigation at the site. This option may encourage the design-builder to perform a more detailed geotechnical investigation.

Another option is adding a clause in the Technical Provisions stating that "Design-Builder may not request a change order for differing site conditions discovered during construction if a reasonable site investigation and exploration during the pre-construction phase would have indicated the condition."

Refer to *Guidelines for Managing Geotechnical Risks in Design-Build Projects, NCHRP Research Report 884, 2018*, for discussions on geotechnical risks in D-B projects. Review the contract and ensure the DSC clauses have been edited in a way that appropriately allocates risk and assigns responsibilities between the design-builder and the owner.

#### ***1.3.1.5 Cooperative Agreement***

If the D-B project is administered by the local transportation authority, the cooperative agreement, which stipulate roles and responsibilities of both parties, is a legal agreement between the local transportation authority and Caltrans.

When requested, review the cooperative agreement during the pre-bid phase of the D-B project. This requires communication with the Caltrans District D-B corridor and project managers.

#### ***1.3.1.6 Technical Provisions***

Well-prepared Technical Provisions (TP) are critical to the success of a D-B project. TP stipulate design and construction requirements in Caltrans D-B contracts. Caltrans has developed TP templates for each disciplinary area. Section 13 – Geotechnical TP cover geotechnical design and construction requirements. The Geotechnical TP template has been thoroughly vetted by HQ Design, DES Structures & Engineering Services, and Geotechnical Services. The template is maintained by HQ Design Office of Innovative Design and Delivery and they can be contacted for the latest contract and geotechnical Technical Provisions.

Edit the Caltrans Geotechnical TP template to develop project-specific Geotechnical TP. Before starting, review the Caltrans Geotechnical TP and understand the meaning and purpose of the clauses in the TP. Review Caltrans

standards, especially the Caltrans Geotechnical Manual, for any updates that may affect the clauses in the Geotechnical TP.

For projects sponsored by local transportation agencies, work with consultants and attorneys representing the project sponsor when editing Geotechnical TP.

#### ***1.3.1.7 Request for Proposal***

The Request for Proposal (RFP) is the contract package for D-B projects. When requested, review the contract, Geotechnical TP, Geotechnical Data Report, Boring Records, Log of Test Borings, and any other related TP in the RFP package for completeness, consistency, clarity, and accuracy.

### ***1.3.2 Bid Submittals Review***

#### ***1.3.2.1 Proposal***

The proposals submitted by D-B bidders include at a minimum the conceptual design and the Statement of Qualifications.

Review the Geotechnical components of conceptual designs based on project criteria, such as design and construction requirements. When reviewing the proposals, comply with the review process stipulated by the project owner, especially the signed Confidentiality Agreement.

#### ***1.3.2.2 Alternative Technical Concept***

The Alternative Technical Concept (ATC) is a contractual process for the design-build bidders to propose innovative or alternative design solutions for project components in confidential pre-bid meetings.

When asked, participate in the ATC process. Comply with the review process stipulated by the project owner, especially the signed Confidentiality Agreement.

### ***1.3.3 Design***

#### ***1.3.3.1 Notice to Proceed***

A Notice to Proceed (NTP) is a notification letter that provides the date on which work is authorized to begin.

Upon the issuance of NTP for design, the GP should expect to begin meeting with team members and reviewing documents submitted by the D-B team.

#### ***1.3.3.2 Kickoff Meeting***

Attend the project kickoff meeting. The meeting will introduce core personnel and the project management team. The meeting is to present the project, the roles and

responsibilities of the design-builder, project management coordinator, and construction management coordinator.

### ***1.3.3.3 Geotechnical Focus Meetings - Establishing Geotechnical Work Expectations***

Caltrans geotechnical reviewers should engage and communicate on geotechnical issues that require close attention and focus. Initiate geotechnical focus meetings to communicate Caltrans expectations for geotechnical work throughout the project. In these meetings, you may identify relevant modules in the Caltrans Geotechnical Manual, items in the TP that require further explanation and clarification, exchange design ideas, and identify and discuss potential geotechnical issues. These meetings, typically one for bridges, one for roadway, and one for seismic depending on the complexity of the D-B project and stakeholder's expectations, can help the geotechnical designers avoid unnecessary and time-consuming mistakes and promote a cooperative working relationship.

### ***1.3.3.4 Geotechnical Execution Plan***

The Geotechnical Execution Plan (GEP) is the first geotechnical submittal stipulated in the Geotechnical TP. In the GEP, the D-B geotechnical designers must demonstrate that they have reviewed all available geotechnical and geological information, evaluated all the known geotechnical design and construction issues, and developed a plan to address these issues. Items presented in the GEP must include:

- Assessments of geotechnical design and construction issues of project components
- A geotechnical investigation plan that identifies previous geotechnical investigations by others, and the proposed locations and types of geotechnical investigations to be performed, including sampling and laboratory testing program
- Geotechnical instrumentation, monitoring, and destruction programs
- Geotechnical testing methodologies and schedule
- Geotechnical design methodologies and schedule
- Geotechnical milestones and scheduled meetings

Review and provide comments on the submitted GEP. Attend the GEP review meeting to discuss comments.

### ***1.3.3.5 Request for Deviation***

Deviation is a written authorization, granted after a task has been initiated, to depart from a performance or design requirement of a specification, drawing, or other document. An example for deviation request is geotechnical investigation

locations, where the minimum required number of boreholes or CPTs cannot be met due to site, access, or traffic constraints.

Review and provide comments on requests for proposed deviations, which should include justifications and supporting information provided by the geotechnical engineer of record.

#### ***1.3.3.6 Geotechnical Submittals***

The design-builder is required to submit for review preliminary and final geotechnical reports, including PFR, PGDR, FR, and GDR. The PFR is submitted before Type Selection. Construction of a project component cannot begin without acceptance of the FR or GDR.

Review geotechnical reports for compliance with the requirements specified in the List of Standards in the TP, especially:

- *Caltrans Geotechnical Manual*
- *AASHTO Design Specifications*
- *FHWA 2003 ED-88-053, Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications*
- *FHWA 2016 GEC 014, Assuring Quality in Geotechnical Reporting Documents*

#### ***1.3.3.7 Type Selection***

Structure Type Selection submittals are prepared for all bridges and special-design earth retaining systems. The Type Selection process is outlined in Caltrans OSFP Information and Procedures Guide, Section 4.2: Structure Type Selection. Structure Type Selection Submittals must be submitted only after the acceptance of the Preliminary Design Submittal. Attend the Type Selection meeting and provide comments.

#### ***1.3.3.8 Over the Shoulder Review Meeting***

Over-the-shoulder (OTS) review meetings are optional and initiated by the D-B. The meetings are held to discuss and review interim designs for technical and contract compliance during the design. The meetings are typically participated by the project owner, Caltrans, and D-B designer and contractor. These meetings can establish a collaborative environment which is important for the success of the D-B projects and reducing risks in project delivery. Be available and attend the OTS review meetings in short notice.

### ***1.3.3.9 Specifications and Plans***

Specifications and Plans must be submitted for review before construction. Because D-B promotes alternative methods and innovation, design-builders tend to use special construction methods and materials, such as soil-cement mass, EPS block, or lightweight cellular concrete. Reviewing the plans and specifications of these special construction methods and materials can be very involved.

Review and provide comments on specifications and plans for conformance with recommendations in the geotechnical reports.

## ***1.3.4 Construction***

### ***1.3.4.1 Site Review and Site Visit***

Visit the site as necessary to review the construction of geotechnical-related project components. Notify Caltrans Construction and DES project representatives of any issues observed.

Visit the site when there are geotechnical-related construction issues need to be resolved in a timely manner and site visit with the D-B and Caltrans Construction is needed.

### ***1.3.4.2 Notice of Design Change***

The Notice of Design Change (NDC) is a D-B process that allows design change after Release for Construction. The NDC should include a description of the change, the drawings or special provisions related to the change. The NDC should demonstrate that the change maintains or improves quality, constructability, or modifies the design to address unexpected or changed site conditions.

When requested by the Engineer, review the NDC promptly. NDC should have the input and supporting information and documentation by the Geotechnical Designer on Record.

### ***1.3.4.3 Request for Information***

Contractual dispute provisions allow the contractor to claim additional compensation or be denied compensation based on merit. section 5-1.42, "Requests for Information," and section 5-1.43, "Potential Claims and Dispute Resolution," of the Standard Specifications include provisions for requests for information, potential claims, and claims. A Request for Information (RFI) may be submitted for clarification of the contract or site conditions during construction. An RFI may be a precursor to a Potential Claim Record (PCR). The Engineer must respond to an RFI within 5 business days, according to the Standard Specifications, sections 5-1.42 and 5-1.43.



When requested by the Engineer, review the RFI promptly. Address the RFIs based on the contract, including the specifications and plans.

#### ***1.3.4.4 Dispute Review and Respond to Claim***

Assist the Engineer in dispute reviews if asked.

Disputes become claims when the contractor lists them as exceptions to the proposed final estimate. Refer to [Construction Manual](#) and Standard Specifications for details.

#### ***1.3.5 Project Records***

##### ***1.3.5.1 Electronic Document Management System***

For a D-B project that involves multiple parties and disciplinary areas over multiple years, an Electronic Document Management System (EDMS) system that can develop, manage, track, and archive flows and approval of documents is needed. The EDMS is typically a requirement in the Project Management and Administration TP. The EDMS is selected and implemented by the project owner as the document storage and exchange system for the project. The design-builder uses the EDMS to coordinate and control the document flow, including submission, distribution, and management of electronic documents in a secure and efficient manner.

Obtain an individual account for the EDMS. Establish communication protocol among DES staff for transmittal of review comments. The DES/Office of Special Funded Projects representative is typically responsible for compiling and uploading review comments collected from functional units.

##### ***1.3.5.2 Geotechnical Archive – GeoDOG***

Archive in [GeoDOG](#) the following if developed during the project:

- Geotechnical reports,
- Log of Test Borings, Test Boring Layouts and Boring Records
- Laboratory test results
- Geotechnical data such as instrumentation monitoring
- As-built reports or records (these might include information developed during construction, such as pile driving records, design changes, etc.)

## **2 CONSTRUCTION MANAGER/GENERAL CONTRACTOR**

### **2.1 Introduction**

The Construction Manager/General Contractor (CM/GC) contracts emphasize teamwork and involve a Construction Manager (CM) in design and decision-making early in the project.

During planning and design, the CM acts as an advisor, providing professional services to the owner. The CM performs constructability reviews, cost estimates, construction phasing and schedules, and budget recommendations to determine the best options for the owner. After the project estimates have been developed, the owner and CM reconcile their bids for construction. If the owner and CM can reconcile their bids, the CM becomes the GC for the project. The owner has the option of finding another GC for the project at this point if reconciliation is not successful.

Working under the integrated team approach, CM/GC projects require a significant change in the culture and philosophy from that of traditional design-bid-build (DBB) projects. Designers, including Geotechnical staff, need to participate in frequent team meetings and work with the CM. Designers need to be flexible and be able to receive real-time input from the CM. This input can result in frequent design changes.

CM/GC projects may be broken into multiple work packages, enabling the contractor to start construction early in the project. Under CM/GC, design typically continues until the design of last work package is approved and released for construction. By this time, the construction phase of previous work packages should have been underway or completed.

### **2.2 General Roles and Responsibilities**

#### **2.2.1 *Caltrans***

For most projects, Caltrans is the sponsor agency.

#### **2.2.2 *District – Project Management, Design, District Construction***

The District Project Management typically manages the project and coordinates with the CM/GC contractor. Because CM/GC requires frequent and timely information exchanges and decision-making among all parties, the project manager needs to hold frequent meetings throughout the project.

#### **2.2.3 *Structure Design***

Structure Design coordinates with the CM/GC contractor on structure design items, such as bridges and special-design ERS.

### **2.2.4 *Geotechnical Services***

Geotechnical Services works with the District Project Manager, District Design, and Structure Design to provide geotechnical recommendations.

### **2.2.5 *Contractor***

During the design phase, the CM/GC contractor reviews preliminary designs for constructability and recommends cost-effective and time-saving design and construction options.

## **2.3 *Instructions to Geotechnical Staff***

### **2.3.1 *Design and Construction Contract Development***

Take advantage of the nature of CM/GC, where the contractor is part of the design team and can share insights from construction perspectives. Actively engage the project development team and the CM/GC contractor in discussions and decision-making for design and construction alternatives.

### **2.3.2 *Risk Register and Updates***

Identify and share geotechnical risks with the project development team and the CM/GC contractor early in the project and update the team on the risks throughout the project. Propose feasible mitigation options to the project development team.

### **2.3.3 *Geotechnical Investigation***

Perform the geotechnical investigation early in the project (0 phase) so that the subsurface information can be shared with CM/GC contractor and the project development team for design and construction decisions and developing project quantity estimates. The scope and intent of the geotechnical investigation will be the same in scope as an investigation performed for a standard design-bid-build project. Additional investigation may become necessary as the design evolves.

### **2.3.4 *Geotechnical Baseline Report***

Produce a Geotechnical Baseline Report to outline Geotechnical Design's assessment of subsurface conditions and initial evaluation of design and construction alternatives. Write the Geotechnical Baseline Report in accordance with the applicable Geotechnical Manual reporting module(s). In many CM/GC contracts, the PGDR and PFRs will function as baseline reports without being explicitly differentiated as such.

Geotechnical Design's assessment and position documented in the Geotechnical Baseline Report is important, as it may become basis to evaluate contentious design and construction issues.

### **2.3.5 *Documentation of Geotechnical Related Decisions***

During design, the CM participates in the review of constructability, cost estimating, and value engineering. Designers are continually receiving feedbacks from the CM and updating the design accordingly. Preferred design options or the direction of design may be changed as the circumstances and the priorities evolve. It is prudent to document design decisions and the basis of the decisions.

Preserve documents, such as emails and meeting minutes, of major decisions made related to geotechnical issues.

### **2.3.6 *Geotechnical Reports***

Issue geotechnical reports in compliance with the Geotechnical Manual. Document decisions made by the project team, which includes the contractor, that affect geotechnical design decisions in the GDRs or FRs. Anticipate continually evolving design. Update the reports as needed. You may issue unsigned draft reports until the design is finalized.

### **2.3.7 *Construction***

Construction of a CM/GC project may start early with the project broken into multiple stages. Because the contractor is involved in the project from the beginning, most potential construction issues should have been considered before construction.

### **2.3.8 *Construction Support***

Engage and work closely with the contractor, the Resident Engineer, and Structure Representative to resolve any issues arise during construction.

### **2.3.9 *Differing Site Condition***

The potential for differing site condition claims should be reduced under CM/GC contracts, because subsurface conditions should have been shared and thoroughly discussed with the contractor during design phase.

### **2.3.10 *Dispute Resolution***

If asked, assist the Engineer to develop presentations and rebuttals for Dispute Resolution.

### ***2.3.11 Project Records***

### ***2.3.12 Geotechnical Archive - GeoDOG***

Archive in [GeoDOG](#) the following if developed during the project:

- Geotechnical reports,
- Log of Test Borings, Test Boring Layouts and Boring Records
- Laboratory test results
- Geotechnical data such as instrumentation monitoring

As-built reports or records (these might include information developed during construction, such as pile driving records, design changes, etc.)

### 3 SPECIAL-FUNDED PROJECTS – LOCAL FUNDED

#### 3.1 Introduction

Special-funded projects are projects over \$3 million on the State Highway System that are funded and administered by external agencies, usually a county. Special-funded projects are projects that improve or build assets that belong to the State, but the design is administered by external agencies such as counties, cities, or transportation agencies. In Districts 4, 7, 8, 11, and 12, additional county sales taxes are levied to pay for State transportation projects chosen by the counties. In Districts 4 and 11 Local Assistance contracts are used. Special-funded projects may be implemented under any of the contract types in this document. If you are assigned to a special-funded project implemented under an alternative contract, follow the procedures in the applicable section of this document. This section addresses special-funded projects implemented as Design-Bid-Build projects, in which consultants to the sponsor agency perform work normally performed by Caltrans designers.

Special-funded projects may be implemented under any of the contract types in this document. For a special-funded project implemented under an alternative contract type, follow the procedures in the applicable section of this document.

For Design-Bid-Build local assistance projects, Caltrans Cooperative Agreement template stipulates that all work must be performed in accordance with FHWA and Caltrans standards, including the Geotechnical Manual.

According to Caltrans OSFP Information and Procedures Guide, for special-funded local assistance projects Caltrans OSFP Liaison Engineer will, among other tasks, “*work closely with the consultant and sponsoring agency early in the project to minimize conflicts and to assure that they fully understand Caltrans requirements...*” and will “*...provide effective project oversight by maintaining close communication with relevant members of the Project Development Team...*”. Therefore, the Liaison Engineer is responsible for, at the beginning of or early in the project, facilitating communication between the Caltrans geotechnical reviewer and the consultant to establish consensus and mutual understanding of expectations for geotechnical work.

This early and continual communication are essential to reduce the risks of costly rework or project delay. If no proper communication channels were offered before and during project execution, geotechnical submittals may require major revisions or additional work by the consultant, including additional subsurface exploration, to meet Caltrans standards. Perseverance and extra effort from all project development team members will be needed to reconcile the priority differences and reach consensus then.

## **3.2 General Roles and Responsibilities**

### **3.2.1 *Sponsor Agency***

The sponsor provides a project manager to manage the project scope, cost and schedule. The sponsor, or the sponsor's engineering consultant, usually hires a geotechnical consultant to perform field investigations, and to write geotechnical reports, plans, and specifications.

### **3.2.2 *Caltrans***

Caltrans assists local and regional agencies by ensuring project applications are processed, program requirements are met, and projects are delivered in accordance with FHWA standards, federal requirements, and any additional State requirements. The project is usually designed by a consultant to the local agency and reviewed by Caltrans.

### **3.2.3 *District – Project Management, Design***

Caltrans names a project manager, although that person is not responsible to manage the project's scope, cost, or schedule. The Caltrans project manager performs more of a liaison role.

### **3.2.4 *District Design***

Caltrans names a design manager to the project. The Design Manager is responsible for the review and approval of products produced by the sponsor. The Design Manager acts as a liaison between Caltrans functional units and the sponsor/consultant in resolving issues and making engineering decisions.

### **3.2.5 *Program/Project Management and Office Engineer***

The Office of Special Funded Projects (OSFP) has oversight responsibility for structure portions of special-funded transportation projects. The OSFP Liaison Engineer will provide project oversight to ensure that transportation-related structures in State right-of-way designed by others conform to Caltrans policies, standards and practices. Generally, the OSFP Liaison Engineer has the final authority on structure-related technical issues about Caltrans standards and practices.

### **3.2.6 *Geotechnical Services***

Geotechnical Services reviews geotechnical-related project documents, plans, and specifications. Geotechnical Services ensures that project deliverables meet Caltrans geotechnical standards.

### **3.3 Instructions to Geotechnical Staff**

DES provides support to the District, especially regarding project design oversight and meeting project schedules. Because the completed work is owned by the State, Caltrans is responsible for the operation, maintenance and tort liability of the assets. Caltrans standards apply to both design and construction. Enforce Caltrans standards and obtain consensus from the sponsor agency if conflicts, either due to schedule or cost, arise. The OSFP Liaison Engineer will generally have final say in design or schedule disputes, but the Liaison Engineer must also coordinate and work with the District to resolve disputes, especially with the schedule.

#### **3.3.1 *Geotechnical Reports, Plans, Specifications***

Review geotechnical reports and engineering calculations for compliance with Caltrans standards, especially the Caltrans Geotechnical Manual. Review the Plans and Specifications for compliance with Caltrans standards, such as Standard Special Provisions, and for consistency with the accepted Geotechnical Design Reports and Foundation Reports. Verify that plans and specifications match the recommendations in the final geotechnical reports.

Reject, without comments, geotechnical submittals that substantially deviate from Caltrans standards, including submittals that mangle subjects that should be authorized and reviewed by other disciplines, such as Materials or Hydraulics. Reject resubmittals that do not include the completed OSFP Comment and Response form.

Review only the 35%, 65% and 95% plans and specifications, and only review the packages that include a list of changes on updated plans and specifications.

Verify that quality control procedures are carried out for the submittals and review stamped calculation checks.

#### **3.3.2 *Construction Support***

Construction support must be performed by the engineer of record – the consultant to the local agency. Local agencies must retain the consultant through the construction phase of the project.

Do not directly involve yourself in construction support, such as conducting site inspections or providing engineering recommendations during construction. Only review the engineer of record's changes to recommendations during construction. Changing the design, even inadvertently, without the authority of the engineer of record may annul the engineer of record from professional responsibility for his or her work.

For example, you may be asked to substitute and review shop drawings submittal, the densification effects of compaction grouting performed by the contractor, or pile dynamic analysis results due to absence of the engineer of record. Any



recommendations or decisions that alter the design without the authorization of the engineer of record may void the engineer of record's responsibility.

### **3.4 Project Records**

#### **3.4.1 Geotechnical Archive – GeoDOG**

Archive in [GeoDOG](#) the following if developed during the project:

- Geotechnical reports,
- Log of Test Borings, Test Boring Layouts and Boring Records
- Laboratory test results
- Geotechnical data such as instrumentation monitoring

As-built reports or records (these might include information developed during construction, such as pile driving records, design changes, etc.)

## **4 LOCAL ASSISTANCE**

### **4.1 Introduction**

Local assistance projects are projects (such as bridge projects) funded and administered by sponsor agencies (Counties, Cities, Transportation Agencies, etc.) or Caltrans, and owned and operated by local agencies such as counties. Caltrans implements FHWA design standards by reviewing design work for local agency projects, prepared by engineering consultants to the local agency. The asset will not be owned or operated by Caltrans, but the design must meet FHWA standards as implemented by Caltrans.

### **4.2 General Roles and Responsibilities**

#### ***4.2.1 Sponsor Agency***

The sponsor agency provides reports, plans, and specifications to Caltrans, and forwards Geotechnical Services comments to the preparers.

#### ***4.2.2 Caltrans***

Caltrans assists local agencies by ensuring project applications are processed, program requirements are met, and projects are delivered in accordance with FHWA standards, federal requirements, and any additional state requirements.

#### ***4.2.3 Program/Project Management and Office Engineer***

Program/Project Management and Office Engineer (PPM/OE) provides independent quality assurance of locally-funded highway bridges.

The Office of Structures Local Assistance (SLA) provides all California local agencies with assistance, training, and support to aid them in the creation and delivery of their Federal aid structure projects.

#### ***4.2.4 Geotechnical Services***

Geotechnical Services reviews contract documents, plans, and specifications with Geotechnical components at the request of the Office of Special-Funded Projects and Structures Local Assistance (OSFP/SLA).

### **4.3 Instructions to Geotechnical Staff**

#### **4.3.1 *Geotechnical Reports***

Caltrans sets the standard for federally-funded projects in California transportation infrastructure. When federal funds are used for a project, the design must comply with Caltrans geotechnical standards.

Review geotechnical report submittals for adherence to Caltrans standards. Submit comments using OSFP Comment and Response Form and verify that geotechnical comments are addressed in subsequent submittals. However, if Caltrans is not the owner of the project, for example, a bridge on a county road, Caltrans does not formally approve the reports.

You may perform advisory or courtesy reviews for local agencies for projects with no federal funds. The review can be as brief or as extensive as you deem necessary.

For projects that present any risk or potential impact to Caltrans facilities, review the geotechnical submittals as if they were produced in-house. Request confirmation that your comments have been incorporated into the project documents.

### **4.4 Project Records**

#### **4.4.1 *Geotechnical Archive – GeoDOG***

If the owner of a Local Assistance project is the Local Agency (for example, a bridge on a county road), archiving the approved design reports in our system is not necessary.

## REFERENCES

***Design Build (D-B)***

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- [Caltrans Project Management Glossary](#)
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- “*Public-Private Partnership Agreement for the Presidio Parkway Project between California Department of Transportation and Golden Link Concessionaire, LLC*”, January 3, 2011
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**Construction Manager/General Contractor (CM/GC)**

- [Caltrans Procedures for Construction Manager/General Contractor \(CM/GC\) Pilot Projects](#)
- [CM/GC Guidelines for Public Owners](#), AGC Publication No. 2912

**Special Funded Projects (SFP)**

- *OSFP Information and Procedures Guide*, Caltrans, June 2019

## **Appendix 1: Introduction to Design-Build**

### **Success Factors for Design-Build Contracting**

Based on published surveys of DOT D-B project owners and contractors, the factors for a successful D-B project delivery are:

- The Technical Provisions should be project specific.
- The Technical Provisions should be concise and not overly prescriptive to allow for innovation in design.
- The RFP should be concise and clear with clear expectations.
- Owner needs to allow for innovative design concepts.
- Owner should have adequate staffing and qualified geotechnical personnel dedicated to the project.
- The RFP should include requirements for Statement of Qualification that require the D-B to provide highly qualified and experienced geotechnical staff in its team.
- The owner staff and D-B team should collocate and work in an integrated project office. (IPO)

### **Innovation**

D-B permits designers and contractors to introduce new design and construction alternatives that meet or exceed contract performance requirements. These alternatives also allow contractors to optimize the design to match their capabilities and equipment.

### **Communication**

One of the key lessons from improving D-B projects is the importance of maintaining communication between the sponsor agency, the owner and the D-B team. The following presents the findings:

- During the design and construction phases, all parties involved in the project should have constant, open, and face-to-face communication with each other.
- A workshop should be held with all relevant parties involved in the project to go over the milestones and project deliverables, with the aim of setting up the roadmap for open, free flowing and effective communication.
- The workshop should be followed by a series of technical-focused meetings with the D-B team presenting high-risk technical issues for discussion.
- There should be jointed weekly meetings with the lead design and construction quality managers and the project manager(s).

- It is important to maximize the use of formal and informal over-the-shoulder design reviews with the fundamental understanding that over-the-shoulder design reviews are not synonymous with acceptance.

## **Roles and Responsibilities**

Knowing and understanding one's roles and responsibilities is vital to the success of a D-B project. The roles and responsibilities of the geotechnical reviewers are primarily to review all aspects of geotechnical analysis and design.

The geotechnical reviewers are expected to verify that geotechnical submittals meet design criteria and can be constructed. The geotechnical reviewers should be available in a matter of hours or days, not weeks, to answer questions and provide feedback.

It is important to operate under a partnering environment with over-the-shoulder reviews. The geotechnical reviewers will be approving or concurring the design, and the D-B have the responsibility for ensuring the project proposal is correct.

The D-B contracting method is often used on large, fast-paced projects, which can create challenges for performing Quality Assurance (QA). A well-defined QA program, Quality Management Plan, coordination, and communication is essential for effective quality management.

## **Project staffing & Skill Sets**

High quality project team and oversight staff with adequate experience in D-B project delivery along with the required skill sets for a successful D-B project delivery are crucial.

The foremost knowledge domain and skill sets in staffing determination found to be critical to the success of implementing D-B projects are:

- Leadership and ability to coordinate and work with others
- Strong technical and analysis skills
- Strong partnering and team-building skills
- Knowledge of project delivery and procurement procedure
- Ability to analyze constructability reviews and project phasing
- Knowledge of construction contract administration
- Strong commitment to successful outcomes
- Accountability
- Innovative problem-solving attitude
- Flexibility and open to new concepts
- Decisive and quick decision-making ability

- Being available and having flexibility to respond to geotechnical design and construction issues by adapting to the fast pace nature of the D-B delivery process

### **Integrated Project Office**

An integrated project office (IPO) where the D-B team, Project Management, Local Transportation Authority key project personnel, PMC, CMC, and Caltrans core design build staff are co-located is critical to a successful D-B project delivery.

This co-location allows all parties of the D-B project to work collaboratively and creates a cohesion amongst the staff. It also allows a quick and efficient oversight for the delivery of the fast-paced D-B projects.

Furthermore, given the tremendous scope of the construction activities in a complex and large D-B project, having been able to be where the action and be out in the construction project site allows the geotechnical reviewers to be available where is needed to respond to the RFI.



## Appendix 2: Introduction to Construction Manager/General Contractor

The Construction Manager/General Contractor (CM/GC) contracting method integrates both the design and construction teams early in a project. The contractor, or construction manager (CM), is typically retained before the start of design phase through a qualifications-based or best-value selection process. The CM acts as the consultant to the owner and designers in the design phase and offers new innovations, best practices and reduced costs and schedule risks. During design, the CM also performs constructability reviews, cost estimates, construction phasing and schedules, and budget recommendations to assist in determining the best options for the owner. Bringing in a CM early through CM/GC can significantly reduce changes, delays, constructability issues, and schedule challenges, while increasing ease of contracting and procurement.

At approximately 60% to 90% design completion, the project owner and the CM negotiate a 'Guaranteed Maximum Price' (GMP) for the construction of the project based on the defined scope and schedule. If this price is acceptable to both parties, they execute a contract for construction services, and the CM becomes the general contractor (GC). The owner has the option of finding another GC for the project at this point if there is no agreement on the terms and price.

The construction phase typically begins when the project team releases its first work package for construction. The GC awards subcontracts in a fixed price, cost-reimbursable, or guaranteed maximum price contract. When a GC is bound to a GMP, the most fundamental character of the relationship is changed. In addition to acting in the owner's interest, the GC must manage and control construction costs to not exceed the GMP.

CM/GC occupies the middle ground between DBB and D-B. Benefits for using the CM/GC process include:

- Fostering innovation: CM/GC encourages both contractor and project owner to look at all options including using innovative techniques or approaches that reduce time and cost.
- Mitigating risk: The project owner is able to understand the risk and explore mitigation options with feedback provided by the contractor.
- Improving design quality: The CM is able to review the designs and provide feedback, answer designer questions, and provide changes. By including the CM review, the designer can produce better designs that reduce issues in construction and prevent change orders that can lead to project overruns.
- Improving cost control: Value engineering is part of the CM/GC process. With CM as part of the design team, CM is able to provide cost estimates for all designs and alternatives within the design phase. The project owner can use the estimates to make informed decisions around projects costs.
- Optimizing construction schedules: The CM/GC process allows the contractor to begin planning the construction schedule during the design phase. By planning

during the design phase, the team can review how construction will impact traffic and adjust the construction schedule accordingly to minimize traffic impacts. Also, projects may be broken down into small work packages, and early construction components may be fast-tracked before complete design.

- Controlling design: In CM/GC contracts, the owner has control over design, as opposed to the D-B contracts, in which the design-builder has most of control over design.
- Coordinating third-party issues: For issues such as utilities, ROW, and permits, external institutions can be more responsive to contractors even if the project is in the design phase.

Projects in which the owner needs contractor feedback during the design phase are best suited for the CM/GC contracting method. Other projects that are a good fit for CM/GC contracting are projects that have public involvement or include right-of-way or utility issues that impact the overall schedule, and projects that the owner wants to retain control through final design and to have continuing influence during construction. Both traditional design-bid-build and design-build itself are less well suited for procurement under these circumstances.

The CM/GC contracting method is not without potential disadvantages, including the fact that the owner has less leverage over the contractor when pricing construction items since there are no other competitors. The owner may not have available complete information on construction market conditions, information that is otherwise revealed through the competitive bidding process. To overcome these disadvantages, the owner must be experienced in construction and have the internal resources to check contractor cost proposals and negotiate a contract with confidence that the agreed upon terms are fair and reasonable.

A CM/GC project can be executed more effectively when the majority of design decisions are made during regular project meetings with all the design and construction team members actively participating in discussion and decision-making, instead of conducting design in individual offices with little or no active involvement from other team members. In CM/GC, the focus of design effort shifts from traditional plans production to team work, with critical design decisions made during regular design-construction meetings.

Because CM/GC gives the owner and designers the ability to get what they want from the CM during design and price items accordingly, the owner and designers should be more involved in the deliberation of construction issues. If executed properly, and with most of the construction issues considered and resolved with the CM during design, CM/GC offers the fastest way for a construction project to progress from conception to completion.

Due to early involvement of the contractor in the project, CM/GC requires a significant change in the culture and philosophies of the owners, designers, and contractors from traditional DBB projects. The designers are required to take a more active role in working with the CM during design and be prepared in receiving real-time input from the CM and provide accelerated and iterative deliveries of reports and plans.

Under CM/GC, the project may be broken into small work packages so that construction can start early in areas where ROW and permits have been obtained or utilities relocations have been completed. Early work packages can be broken into such items as partial clearing and grubbing, constructing retaining walls on friendly parcel takes, which requires more design effort than traditional “station-to-station” designs. Typically, design continues until the last work package is approved and released for construction. By this time the construction phase is well underway.

Refer to [Caltrans Procedures for Construction Manager/General Contractor \(CM/GC\) Pilot Projects](#) for more details.

### Appendix 3: Introduction to Local Assistance

The Office of Special Funded Projects and Structures Local Assistance (OSFP/SLA) comprises two entities: Special Funded Projects and Structures Local Assistance.

Special Funded Projects Liaison Engineers provide liaison and technical support to regional transportation agencies to ensure that transportation structures they construct on the state highways conform to Caltrans' policies, standards, and practices. Structures Local Assistance Liaison Engineers provide liaison and technical support to local governments for structures they construct on their local road systems. Technical support is provided to ensure conformance of both Federal and State standards. This is done through the Local Agency Highway Bridge Program (HBP), the Local Agency Seismic Safety Retrofit Program (LSSRP), and other State and Federally funded structure projects.

Caltrans Division of Local Assistance [Local Assistance Procedures Manual](#) (LAPM) provides an overview of Caltrans Local Assistance procedures. The Manual includes subjects that are essential for geotechnical reviewers, such as: Roles and Responsibilities, Agreements, Design Guidance, and Oversight and Process Reviews.

Additional resources used in the preparation of this module are the Office of Special Funded Projects [Information and Procedures Guide](#), and the Caltrans [Project Management Glossary](#).

The following is an excerpt from the Office of Special Funded Projects Information and Procedures Guide:

Caltrans is responsible for operations, maintenance and tort liability after State Highway projects are constructed. ...

To ensure that projects on the State Highway system are well designed, safe, and properly constructed, all project planning, design, and construction should be performed in accordance with Caltrans standards and practices and according to the Caltrans project development process.

Caltrans assures that special funded projects (i.e. projects to be built on State Right of Way which are sponsored and developed by others) conform to the appropriate standards and procedures by providing oversight through all project phases from inception through construction completion. The Office of Special Funded Projects (OSFP), of the Division of Engineering Services (DES), has oversight responsibility for structure portions of special funded projects that involve transportation related structures.

...

One primary role and responsibility all project stakeholders share is to develop projects in accordance to Caltrans procedures, standards and policies. This is a legislative borne requirement which enables Caltrans to provisionally allow others to

perform work on the State Highway, while at the same time ensuring quality projects and maintaining protection from tort liability. The need to meet Caltrans standards is clearly spelled out in the following excerpt from the Project Development Procedures Guide:

“All improvements to State highways are considered to be Caltrans projects. This applies even if the project will be financed by others. As owner-operator of these transportation facilities, Caltrans is responsible for operation, maintenance, and tort liability after construction. Caltrans is also responsible for providing for the authorized expansion of the system and for assessing the impact of improvements proposed by others to the existing system.

To ensure that transportation facilities are well designed, safe, and properly constructed, all project planning, design, right-of-way acquisition, and construction should be performed in accordance with Caltrans standards and practices and according to Caltrans project development process.”