



CALTRANS

ALTERNATIVE PROCUREMENT GUIDE

April 2008

Developed By



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1. INTRODUCTION

The traditional procurement system involving the separation of design and construction services, the qualifications-based procurement of designers, and the competitive low-bid system for construction has served the public well over the past century. The foundation of this system is the principle of selecting designers based on qualifications and selecting construction contractors based on competitive sealed bids, with award to the lowest responsive bidder who meets specific conditions or responsibility. Over the decades, this procurement system has provided taxpayers with an adequate, safe, and efficient transportation facility at the lowest price that responsible, competitive bidders can offer. For the most part, it has resulted in a reasonable degree of quality, and has effectively prevented favoritism in spending public funds while stimulating competition in the private sector.

The State Contract Act requirement obligating the Department to award contracts to the lowest responsible bidder, based on 100% PS&E, has likewise served the public goals described above. However, as this process can foster adversarial relationships with contractors, restrict innovation, and result in high cost and time growth, it may not necessarily provide the best-value to the state for all project circumstances or types. In recent years, this issue has become a more pressing concern, as California's deteriorating infrastructure and increasing population have created tremendous pressure to move critical projects quickly from the planning stage, through design and into construction, without a commensurate increase in available funding. Underlying these external pressures is the basic requirement to include quality concepts in all phases of the highway program. Thus, there is a continuing need for the Department to review and evaluate procurement and contracting procedures that promote improved efficiency and quality.

The Federal Highway Administration (FHWA) has long championed initiatives to improve the quality of the highway construction process. It has been a leader in promoting innovation – to include the development, use, and evaluation of innovative procurement and contracting methods for highway construction. FHWA's Special Experimental Project No. 14 (SEP-14) was implemented in 1990 as a vehicle for state highway agencies to use federal-aid funds, with FHWA approval, to experiment with innovative contracting techniques for selected projects. In return, the FHWA asked that agencies report on outcomes, particularly in terms of the ability to save time, reduce costs, or improve performance. SEP-14 also has tracked the use of innovative contracting methods by state highway agencies (SHA) and updated this information on an annual basis, adding to the collective body of highway construction knowledge. The FHWA mainstreamed the use of lane rental, incentive/disincentive (I/D) provisions, and A+B bidding in 1995 and subsequently published final rules guiding the use of warranties in 1996 and design-build in 2003.

The Department already includes in its Project Delivery Acceleration Tool Box methods designed to yield time savings during the procurement and/or construction phases of a project. These methods include the use of design-sequencing as an alternative project delivery system and the use of A+B bidding, I/D provisions, lane rental, and flexible notice to proceed dates as alternative procurement and contracting methods. The Department has also experimented with the use of warranties for Hot Mix Asphalt (HMA) pavements, chip seals, and microsurfacing projects.

PURPOSE OF THIS GUIDE

In 2005, Caltrans (the Department) organized a committee to address the use of alternative contracting methods. The committee considered several innovative procurement methods that would be compatible with, and add, potential value to Caltrans. The items selected from the review are included in this *Alternative Procurement Guide*.

The purpose of this guide is to provide the Department with a framework of alternative methods for contracting and procurement of work for capital projects. This guide provides project staff with the tools

necessary for methods for effective use of alternative project delivery, procurement, and contract management as well as project selection for use of appropriate alternative procurement methods.

This guide is intended as a reference for all Department staff contributing to the development of capital projects, including Project Engineers, Resident Engineers, Project Managers, and Contract Administrators.

This guide provides alternative project development practices and construction management methods that may generate expedited project delivery, enhanced cost control, improved quality, and allow use of innovative materials, methods, and processes.

CAUTION: The Department does not have authority to use many of the methods contained in this guide. Before considering the use of an alternative method, verify the Department's authority for that method. The user should read the authority section for each method to determine what authority exists for the use of that method. This guide will be updated as the Department's authority may change over time for the included methods.

CONTENT, STRUCTURE, AND ORGANIZATION

This guide is divided into three sections that include the *Project Selection Tool*, *Project Delivery Systems*, and *Procurement & Contract Management Methods*. The guide may be used partially or as a whole and is a living document that may change over time.

This guide includes the following three elements:

1. Project Selection Tool

The Project Selection Tool (Section 2) provides a methodology and scoring tool for selecting and documenting appropriate project delivery systems for use on individual projects.

2. Project Delivery Systems

Project delivery systems (Section 3) are the overall processes by which a project is designed and constructed. This section includes three methods of alternative project delivery: Design-Sequencing, Design-Build, and CM at-Risk. The information provided for each delivery method highlights how each method differs from the Department's traditional method, and describes procedures unique to each delivery method. It also integrates the procedures for these alternative methods into existing Department processes; and offers a consistent approach to developing, procuring, and overseeing projects delivered using these methods.

3. Procurement and Contract Management Methods

This section identifies alternative contracting methods, provides guidance for each method's application and describes the risks associated with its use. It also identifies special administrative procedures associated with the use of these methods; and it includes special provisions, with samples provided for illustrative purposes.

Procurement Methods include:

- Alternate Design and Alternate Bids
- Additive Alternates
- Flexible Notice to Proceed

Contract Management Methods include:

- No Excuse Incentive
- Shared Risk Contingency
- Warranties

SOURCES

This guide should be used in combination with other Department manuals. These manuals include the following:

- Project Development Procedures Manual
- Project Development Workflow Tasks (PDWT) Manual
- Caltrans Project Management Handbook
- Project Communication Handbook
- Project Risk Management Handbook

The information presented in this guide may supplement the existing manuals identified above with information specific to each section.

The guidance has been developed based on industry best practices, with consideration given to how these practices can be best integrated into the Department's existing project management processes. This guide does not "reinvent the wheel," but shows where and how the use of these alternative methods offer an approach that differs from the Department's standard practices.

Should any requirements contained in this guide conflict with the content of other manuals, the requirements should be reconciled before using the alternative method on a project.

CHAPTER 2

PROJECT SELECTION TOOL

THIS SECTION:

- Identifies a four-step approach to project delivery systems decisions, that include the following elements:
 - Assemble List of Candidate Projects
 - Convene Selection Committee
 - Evaluate Project Scope / Characteristics
 - Evaluate Project Success Criteria
 - Make Project Delivery Decision
- Provides a methodology and scoring tool for selecting and documenting appropriate project delivery systems on individual projects.

2. PROJECT SELECTION TOOL

2.1. INTRODUCTION

No one project delivery system is appropriate for every type of project. Having a variety of delivery systems to apply to a wide range of project types will help the Department to meet its delivery commitments in the most efficient way possible. The Department has design-bid-build and design-sequencing options available for use, but construction manager-at-risk (CM at-Risk) and design-build are currently important alternatives that are missing from its toolkit.

Design-build project delivery involves a single contract between the Department and a design-builder covering both the final design and construction of a project. While design-build is being used by more than half of the state highway agencies in the U.S. and is the fastest growing project delivery method in both the public and private construction sectors, the Department does not currently have the authority to use design-build to deliver its projects. When compared to the traditional design-bid-build method of delivery, design-build has documented benefits of faster delivery, better cost containment and cost certainty, increased innovation, and a wider range of risk allocation alternatives. However, these design-build benefits will only be realized if design-build is applied to appropriate projects. The following Caltrans website includes many references to studies and publications about design-build:

<http://pd.dot.ca.gov/design/specproj/design-sequence.asp>

Construction manager-at-risk is often viewed as a nice compromise between design-bid-build and design-build project delivery. CM-at-Risk allows the Department to retain full control of the design process while gaining valuable preconstruction input from the construction contractor who will eventually build the job. Its use in transportation is just beginning to be seen. However, it enjoys a wide acceptance in the building construction community. Its major benefits are the selection of the prime construction contractor on a basis of qualifications and past performance, the use of a guaranteed maximum price contract and the ability to establish formal contingencies within the contract to allow the Department to maximize the scope and quality of a given project within the limits of its budget. Additionally it lends itself well to fast-tracking and phased construction. However, like design-build, these benefits will only be realized if CM-at-Risk is applied to appropriate projects.

2.1.1. Purpose of this Section

This section provides a methodology and scoring tool for selecting and documenting appropriate project delivery systems on individual projects. Selection of a project delivery system is complex and involves many technical and managerial variables. Alternative project delivery systems will not be appropriate or successful on all projects. Engineers and managers should understand when the traditional design-bid-build approach will not provide the traveling public with the best product and service, and be able to justify the selection of an alternative delivery option from their toolkit.

Unique project characteristics and project goals can be used to determine the most appropriate project delivery system. As the Department develops its alternative delivery toolkit, selection of appropriate projects for each alternative delivery method will increase the likelihood of project success, decrease the learning curve for engineers and project managers, and streamline the development of policies and procedures for these alternative project delivery systems.

2.1.2. Definitions

This project selection tool compares the appropriateness of five project delivery methods: 1) design-bid-build; 2) design-sequencing; 3) construction manager-at-risk 4) design-build/low-bid; and 5) design-build/best-value. The following definitions are provided for each of these systems.

Design-Bid-Build: A project delivery method where the design is completed either by in-house professional engineering staff or a design consultant before the construction contract is advertised. This is also called the “traditional method.”

The California Public Contract Code establishes the requirement for the Department to use design-bid-build, stating: “before entering into any contract for a project, the department shall prepare full, complete and accurate plans and specifications and estimates of cost, giving such directions as will enable any competent mechanic or other builder to carry them out” (Public Contract Code 10120). The Code includes additional requirements for advertising the project and for receipt of sealed bids. The Department then awards a contract to the lowest responsible and responsive bidder. This delivery method has the advantages of being well established, widely understood and clearly defining roles for the parties involved. It also gives the Department significant control over the end product since the Department produces the design and conducts extensive inspection of construction.

Design-Sequencing: A project delivery method that allows the Department to award a construction contract when only the initial phase is completely designed and the design for the remaining phases is partially complete. The remainder of the design is delivered for each construction phase at predetermined dates.

In 1999, the Legislature authorized the Department to utilize a new process called design-sequencing on a limited number of projects. This process permits the Department to advertise and award a project when overall design is “30 percent complete.” The remainder of the design is delivered at predetermined dates during construction.

Construction Manager-at-Risk (CM at-Risk): A project delivery method through which the Construction Manager (Contractor) provides the Department with a Guaranteed Maximum Price (GMP); the Construction Manager (Contractor) furnishes preconstruction services for the Department during the design phase and acts as the General Contractor during the construction phase of the contract. Also called construction manager/general contractor (CM/GC).

Construction Manager-at-Risk (CMR) projects allow the Department to maintain full control of the design while getting early involvement of the construction contractor through its preconstruction services contract. Often the CMR is required to competitively bid all subcontracted work packages. This delivery method lends itself well to both phased and fast-track projects because there is only one construction procurement cycle, thus it relieves the Department of legal and functional responsibility to coordinate the activities of multiple prime contractors on a given project. The preconstruction services often allow the CMR Contractor to award long lead material supply work packages and subcontractor work packages before design is 100% complete thus locking in critical construction costs at the earliest opportunity and enhancing construction cost certainty. Additionally, the method utilizes a GMP with formal contingencies established for both the Department and the CMR Contractor. This permits more flexibility in dealing with unexpected changes to the scope of work without the need to initiate change orders. The GMP is established when the design has evolved to a point where the CMR Contractor can confidently quantify the construction costs and moves the impact of cost risk to the formal contingency where it can be managed in accordance with the terms of the contract.

Design-Build/Low-Bid: A project delivery method where both the final design and the construction of the project are simultaneously awarded to a single entity through a low-bid procurement method.

Design-build is a project delivery method involving a single contract between the project owner and a design-build contractor covering both the final design and construction of a transportation project. The design-build contractor furnishes the project design based on a scope of work and technical requirements specified in contract documents developed by the Department. The design-build contractor is also responsible for construction of the project and therefore has responsibility for all coordination between design and construction. In the design-build/low-bid system, contractors submit separate price and technical responses to the scope of work provided by the Department. The Department first evaluates the technical response. The Department then opens price proposals for only those design-builders that meet the technical requirements and awards the project on a basis of lowest price.

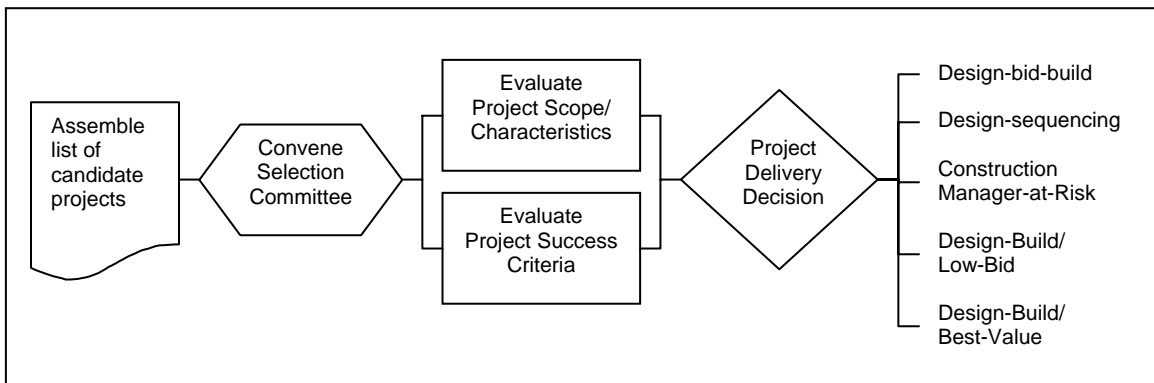
Design-Build/Best-Value: A project delivery method where both the final design and the construction of the project are simultaneously awarded to a single entity through a best-value procurement method.

Design-build/best-value varies from design-build/low-bid primarily in the method of procurement and the amount of design provided in the scope of work. In design-build/best-value, contractors submit separate price and technical responses. The price and technical responses are then combined through a formula to determine the “best-value” and the contract is awarded to the team with the best combination of technical solution and cost. This delivery system allows the Department to award a project with a lower level of design, thereby shortening the project duration and increasing the potential for contractor innovation.

2.1.3. Approach

The project selection tool uses a four-step approach to the project delivery decision as shown in figure 2.1.3 (below).

Figure 2.1.3 Four Step Approach to Project Delivery



2.1.3.1. Assemble List of Candidate Projects

The project selection tool can be used on projects of any type or size and with a variety of project goals. It can be used on only one project, but the results will be most useful if multiple projects are analyzed in a comparative fashion. Critical information for each project involves knowledge of the project size, project complexity, the level of design, unique project constraints, unique project

impacts, schedule issues, opportunities for innovation, quality issues, cost issues, and staffing issues.

2.1.3.2. Convene Selection Committee

The choice of an appropriate project delivery system is a complex decision involving many variables. Although a single person could answer all of the project selection tool questions, it is advisable to adopt a team approach due to the wide range of project characteristics and success criteria needed to determine the project delivery selection. The team approach, in addition to being required to obtain an accurate selection, will also facilitate a meaningful dialogue and common understanding of the delivery decision. Personnel for each selection committee will vary by phase of project development and location within the State, but common personnel may include planners, designers, construction, and maintenance personnel.

2.1.3.3. Evaluate Project Scope/Characteristics

The project selection tool is provided in Appendix 1. Worksheet 1 contains nine (9) questions concerning project scope and project characteristics. Some of the questions are objective and easily answered depending upon the current state of the project scope and characteristics (e.g. current stage in project development). Other questions are more subjective and will benefit from a group discussion and a comparison with other projects (e.g. significance of impacts to highway users).

2.1.3.4. Evaluate Project Success Factors

There are 15 project success criteria questions contained on Worksheet 2. Similar to the project characteristic questions, the worksheet contains both objective and subjective questions. Again, the questions will be best answered in a committee forum with recognition of how the projects compare with other candidates on the project list.

2.1.3.5. Make Project Delivery Decision

The most appropriate project delivery system will be indicated by the highest score. Additionally, some project delivery systems may be eliminated (with a “no-go” response) based upon unique project characteristics. When there is a significant difference in the project delivery scores, the decision will be apparent. However, when scores are similar, the selection committee will need more deliberation on the final choice of project delivery system. The selection committee should keep in mind that the scoring is a simplification of the decision provided to facilitate a meaningful and organized discussion. Unique characteristics, or particularly success factors, may cause the committee to override the selection suggested by the scoring system.

2.1.4. Conclusions

No one project delivery system is appropriate for every type of project. The project delivery decision can be made by considering a project’s unique characteristics and success criteria. While many of these criteria are objective, some important criteria are inherently subjective in nature. The project delivery decision should be made through a team approach. This project delivery tool will provide guidance and facilitate a meaningful dialogue and common understanding of the final project delivery system decision.

CHAPTER 3

PROJECT DELIVERY SYSTEMS

THIS SECTION:

- Identifies and describes the following three alternatives to the traditional project delivery method of design-bid-build:
 - Design-Sequencing
 - Design-Build
 - CM at-Risk
- Presents detailed guidance to help staff develop a consistent approach to developing, procuring, and overseeing projects delivered using these alternative methods.

3. PROJECT DELIVERY SYSTEMS

3.1. INTRODUCTION

3.1.1. What is a Project Delivery System?

Project delivery involves the steps and processes required to implement a project from initiation to final completion. This includes environmental clearance, right of way acquisition, design and construction of the project. For the purposes of this guide, project delivery systems refer to the processes that are used by the Department to design and construct a project. A project delivery system may also include some elements of environmental clearance and right of way acquisition.

3.1.2. Traditional Delivery System

At Caltrans, project delivery has traditionally entailed the almost exclusive use of the design-bid-build system.

Under design-bid-build, contractors competitively bid projects based on completed plans and specifications provided by the Department. The Department then evaluates the bids received, awards the contract to the lowest responsible and responsive bidder, uses prescriptive or method specifications for construction, and retains significant responsibility for quality, cost, and time performance.

3.1.3. Alternative Delivery System

This section explores use of the following methods as alternatives to the traditional design-bid-build approach to project delivery:

- Design-Sequencing
- Design-Build
- CM at-Risk

Detailed guidance is provided on the use of each of these methods to help staff:

- Understand how these methods differ from design-bid-build;
- Understand procedures unique to these methods of delivery;
- Integrate procedures for these alternative methods into existing Department processes; and
- Develop a consistent approach to developing, procuring, and overseeing projects delivered using these methods.

The guidelines provided are general enough to accommodate varying project types, sizes, and procurement requirements, yet still have sufficient specificity to serve as a valuable tool for both novice and experienced practitioners of these alternative methods.

3.1.4. Selecting a Delivery System

As addressed in Section 2, no one project delivery system is appropriate for every type of project. Choosing the right method for a particular project depends upon specific project characteristics and the goals and objectives identified for that project. The project selection tool presented in Section 2 should be used to determine which method(s) is appropriate for a given project. In most cases,

this will be design-bid-build, and no further reference to the information contained in this section is necessary.

However, if the selection tool suggests that the project is better suited to one of the alternative methods, this section presents detailed guidance, specific to each delivery method considered, related to:

- Identifying project goals and developing project scope,
- Preparing solicitation documents,
- Selecting the successful bidder or proposer,
- Preparing contract documents, and
- Administering and overseeing the design and/or construction of the project.

3.1.5. Relation to Other Department Manuals

Existing Department manuals, such as the *Project Development Procedures Manual* and the *Project Management Handbook*, assume project delivery by the traditional design-bid-build system. The information presented in this section supplements such existing manuals with information specific to the design-sequencing, design-build, and CM at-Risk delivery approaches.

The guidance provided has been developed based on industry best practices, with consideration given to how these practices can be best integrated into the Department's existing project management process. The effect is therefore not to "reinvent the wheel" but merely to point out where and how the use of these methods will dictate an approach that differs from the Department's standard practices.

Should any requirements contained in this guide conflict with the content of other manuals, the requirements should be reconciled before using the alternative method on a project.

3.2. DESIGN-SEQUENCING

3.2.1. Introduction

The information presented in this section supplements existing Caltrans manuals with information specific to the design-sequencing method of project delivery. The information provided has been developed based on best practices from the use of design-sequencing in transportation, with consideration given to how these practices can be best integrated into the Department's existing project development and project management processes. Should any requirements conflict with the content of other manuals, the information presented in this section should take precedence for design-sequencing projects only.

Much of the content in this section was selected from the draft Caltrans Design-Sequencing Pilot Program Guidelines, dated June 2007. It includes more detail than available in those guidelines to enhance the usefulness of this alternative approach.

This section is divided into three core parts that include considerations for developing the design-sequencing project, developing its contract, and administering the contract.

3.2.1.1. Purpose of this Section

This section provides the project manager, functional manager, and other staff engaged in the delivery of capital projects for the Department detailed guidance on the use of design-sequencing as an alternative project delivery system. Topics addressed include the following:

- Project Development
- Contract Development
- Contract Administration

The information provided is primarily geared towards projects developed, funded, and constructed by the Department, but aspects related to contract administration apply equally to locally or privately sponsored projects for which the Department personnel are acting in an oversight role in accordance with a Cooperative or other Agreement.

NOTE: Only the Department can use design-sequencing.

3.2.1.2. What is Design-Sequencing?

Design-sequencing is defined as a method of contracting that enables each construction phase to commence when design for that phase is complete, instead of requiring design for the entire project to be completed before beginning any construction. Design-sequencing aims to accelerate project delivery by allowing the Department to award a project to a contractor based on plans that are at least 30 percent complete while the Department continues the project design. One of the goals of design-sequencing is to promote collaboration with the construction contractor during the remaining design process.

3.2.1.3. How is Design-Sequencing Different?

With design-sequencing, the Department sequences design activities in a manner that will allow the start of each construction phase when the design for that particular phase is complete, instead of requiring the design for the entire project to be complete before allowing construction to begin. After construction has started, the Department will deliver all remaining phases as their design is completed and as set by predetermined dates.

To implement design-sequencing, the Department will develop plans and an estimate to a level sufficient to define the project scope and to allow the contractor to select anticipated

subcontractors. The bid documents must contain all anticipated items necessary for the complete design.

Due to the potential for Department-caused delays in releasing subsequent design sequences, design-sequenced projects typically do not incorporate other time-saving contracting techniques, such as A+B bidding or Incentive/Disincentive provisions.

3.2.1.4. Terminology

30% Complete Plans: At project advertisement, phase one plans will be 100 percent complete. In addition, the plans for each subsequent phase will be at least 30 percent complete.

Design-Bid-Build: The traditional project delivery system where the Department (or, alternatively, a consulting engineer working for the Department) designs the project, and the Department solicits bids, and awards the construction contract to the lowest responsible and responsive bidder.

Design-Sequencing: A method of contracting that enables the sequencing of design activities to allow each construction phase to start when design for that phase is complete, instead of requiring design for the entire project to be completed before starting construction.

Nomination Fact Sheet: Part of the Nomination Package. This is used for proposing design-sequencing projects for selection and approval.

Nomination Package: Consists of the Project Selection Criteria Sheet, and the Nomination Fact Sheet, both located in Appendix 2.1-B.

Project Selection Criteria Sheet: Part of the Nomination Package. It consists of measurable criteria used for selecting design-sequencing projects.

Request for Qualifications (RFQ): An invitation by the Department to solicit services to be performed by a Contractor. The Contractor responds with a Statement of Qualifications (SOQ).

Sequence: A design package containing plans and details of unique subsequent work activities (e.g. signing and striping of the entire project.)

Statement of Qualifications (SOQ): The written information submitted by a contractor in response to the Request for Qualifications (RFQ). The SOQ contains information about the contractor's capabilities, team members, previous experience, and general understanding of the project.

Work: All resources necessary to complete the design and construction of the project.

3.2.1.5. Why Should We Use Design-Sequencing?

There are six project characteristics that could support the use of design-sequencing as the project delivery system of choice. These project characteristics include many of the following circumstances:

Minimal Public Controversy: If projects are under the public spotlight, there are greater likelihood for public controversy to adversely impact the innovation inherent in design-sequencing. Projects with minimal public scrutiny are usually ideal as design-sequencing projects.

Final Environmental Document/Determination Complete: Because design-sequencing provides the opportunity to reduce construction time by procuring at 30 percent complete design, ensure that all environmental documentation, clearances, and determinations are final and complete. Incomplete documentation will hinder the potential time reducing benefits of design-sequencing.

Note: The Department must have environmental approval to advertise.

Project Approval (approved Project Report or equivalent): The approval process is initiated by the submittal of the Nomination Package to the Division of Design - Office of Special Projects. The

Program Manager will review and analyze the package to ensure the candidate project is consistent with the intent of the authorizing legislation and the departmental goals for the pilot program. The Nomination Package is then forwarded to the Chief, Division of Design, and the Chief Engineer for concurrence. The next step in the process is transmittal of the package to the Department Director for final approval. The timeframe for approval can take up to twelve weeks from submittal of the complete package.

Right-of-Way Acquisition Complete: Design-sequencing projects use a fast-track approach to construction. If right of way acquisition is not completed, projects with acquisition processes continuing after procurement of the contractor may adversely impact the potential time savings of design-sequencing projects.

Utility Conflicts Identified: Just as with right-of-way acquisition, projects with all or most utility conflicts identified are ideal. Projects with utility conflicts not identified may tend to experience greater impacts to the timeliness of project completion. Identification of utility conflicts is essential for design-sequencing projects.

Full Project Funding: Design-sequencing projects require full Department funding to accommodate this fast-tracking approach. Partial funding or limited Department resources may adversely impact the timely completion of design-sequencing projects. Projects that are fully funded are ideal candidates for design-sequencing delivery. **Note:** The Department cannot advertise a contract without full funding.

3.2.1.6. Statutory Authority

The design-sequencing delivery system is unique to Caltrans, and no other states have considered using this method of project development. California has enacted statutes authorizing the use of design-sequencing contracting in the public sector. Design-sequencing is currently at the pilot program stage, and the Department has only applied the method to a small number of projects.

FHWA requires an approved environmental document/determination for the entire project prior to the award of any phase or sequence of the project. Full compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act is also required. Bid opening cannot occur until HQ R/W and FHWA approve an updated R/W Certification. Additionally, HQ R/W and FHWA must approve subsequent sequences prior to beginning work on those sequences.

California Streets and Highways Code 217 et seq. provides for the use of design-sequencing by the Department on a pilot basis as described below.

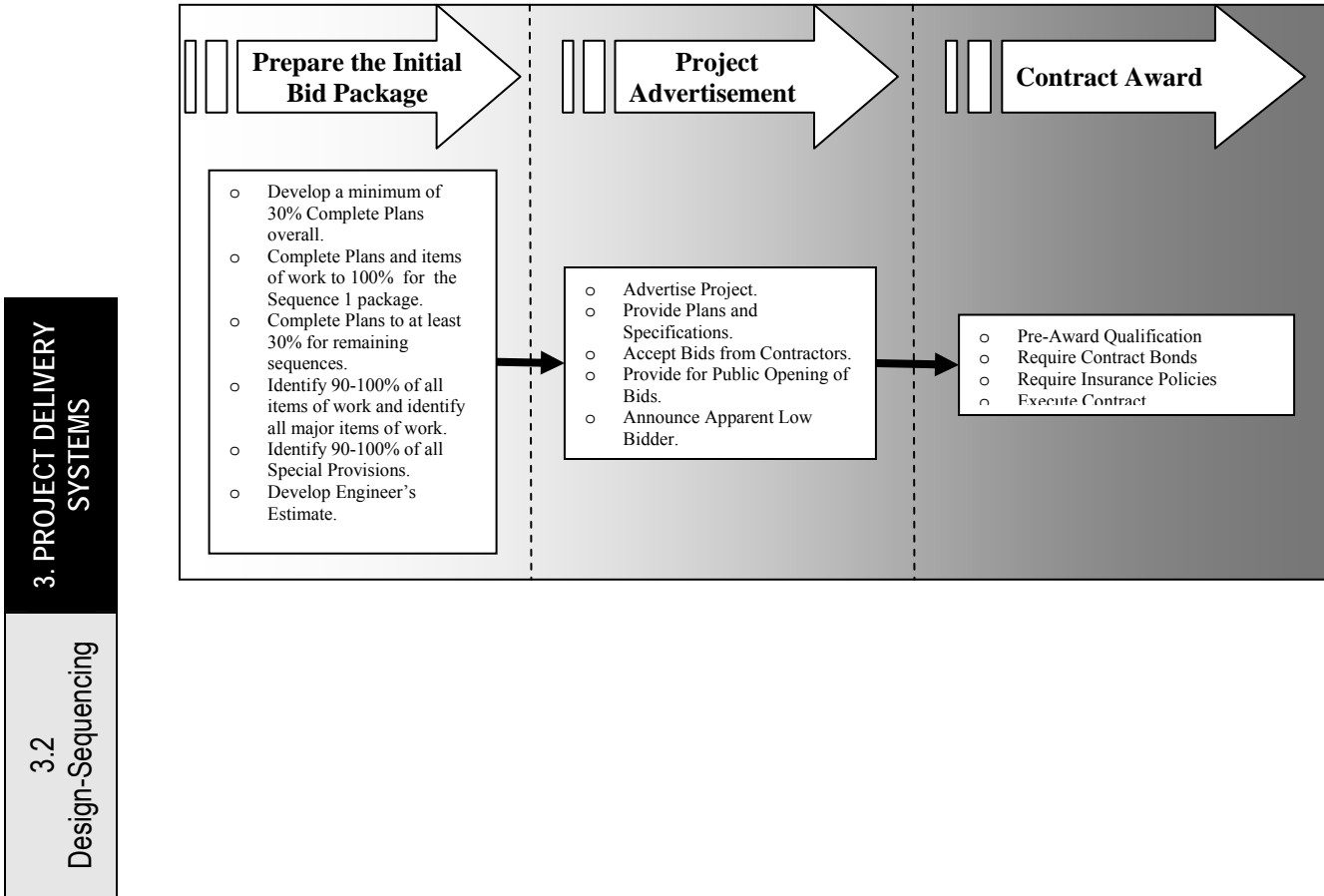
Assembly Bills 405 (Knox), Chapter 378, Statutes of 1999, and 2607 (Torlakson), Chapter 340, Statutes of 2000, authorized the California Department of Transportation (Department) to conduct a pilot program to use design-sequencing contracts for the design and construction of no more than 12 transportation projects (see Appendix 2.1-A - Legislation). Senate Bill 1210 (Torlakson), Chapter 795, Statutes of 2004, authorized a second pilot program of twelve projects. The legislation further requires that the Department:

- Prepare and submit, no later than July 1 of each year, a status report to the Legislature on the pilot program's contracting methods, procedures, costs, and delivery schedules;
- Upon completion of all design-sequencing contracts, establish a Peer Review Committee to prepare a final report for submittal to the Legislature that will evaluate the outcome of the contracts by stating both the positive and negative aspects of using design-sequencing as an alternative project delivery method.

3.2.1.7. Overview of the Design-Sequencing Procurement Process

The following graphic identifies the key elements in the procurement process for a project using the design-sequencing delivery method.

Figure 3.2.1 Design-Sequencing Procurement Process



3.2.2. Project Development

During the project development process, the Department should evaluate options and select an appropriate delivery system for a given project. Steps included in the project development process develop preliminary documentation (Environmental, Utilities and Right of Way) and develop design documents to a level that best prepares for procurement of a contractor for the selected delivery method (see Section 3.2.3).

Early in the project development process, the Department should begin to identify the goals and objectives of the project and the procurement strategy. Once complete, the nomination, selection, and approval steps can follow. The final step includes the procurement of the contractor.

This section identifies the key considerations, processes and documents necessary for all of the above procedures to occur effectively.

3.2.2.1. Identify Goals and Objectives / Eligibility Criteria

.1 Eligibility Criteria

At a minimum, projects must satisfy all of the following conditions to be considered as a candidate for design-sequencing:

- Minimal public controversy
- Final Environmental Document/Determination
- Project Approval (approved Project Report or equivalent)
- Established project footprint
- Utility conflicts identified
- Fully funded
- Right of Way footprint established

.2 Project Goals and Objectives

Identification and ranking of project goals and objectives, preliminary project development, and identification and allocation of project risks are instrumental in the final decision to use design-sequencing and will affect the final drafting of the contract documents. Develop project goals and objectives that assist in the development of the procurement strategy and solidify procurement documentation described in the next section. Ask questions addressing timing, cost, quality, and public needs and document in a format that will support the nomination and selection steps.

.3 Project Nomination / Selection

A Nomination Fact Sheet and a Project Selection Criteria Sheet (hereinafter referred to as Nomination Package – see Appendix 2.1 B) must be prepared and submitted to the Headquarters Division of Design, Office of Special Projects (OSP), for all candidate design-sequencing projects. All information should be provided in a clear, brief, and concise format. By submitting a Nomination Package, the District certifies that the decision to pursue design-sequencing was discussed by the Project Development Team (PDT) and that the PDT concurs with that decision.

Electronic copies of the Nomination Fact Sheet and Project Selection Criteria Sheet can be obtained on the Office of Special Projects website:

<http://pd.dot.ca.gov/design/specproj/design-sequence.asp>.

.4 Project Approval Process

The approval process is initiated by the submittal of the Nomination Package to the Division of Design - Office of Special Projects. The Program Manager reviews and analyzes the package to ensure the candidate project is consistent with the intent of the authorizing legislation and the departmental goals for the pilot program. The Nomination Package is then forwarded to the Chief, Division of Design, and the Chief Engineer for concurrence. The next step in the process is transmittal of the package to the Department Director for final approval. The time frame for approval can take up to twelve weeks from submittal of the complete package.

3.2.2.2. Assemble Project Selection Team / Roles & Responsibilities

.1 Design

All projects will use the Standard Specifications and Standard Plans that are current at the time of contract award. The Bid Package should include: 100% complete project concept and scope (enough information for contractors to provide bids). Develop Plans and estimate to a level sufficient to define project scope and to allow for the selection of all anticipated subcontractors.

The estimate may include items not shown on plans. The estimate should include all anticipated items and quantities of the complete design with the understanding that some items may be modified at a later date.

All utility conflicts should be identified and relocation plans approved by the Project Engineer. The Project Engineer should try to avoid, mitigate or design around potential utility conflicts. Relocation of utilities in conflict should be addressed in the Bid Package with attention given to the date when such utilities will be cleared, if they are not cleared prior to construction. Any coordination required between the contractor and the utility company’s work to complete the relocation must be shown in the Bid Package. The project Engineer’s Certification form is the preferred documentation to show that this task has been completed. The actual utility relocations may be performed during construction.

The entire project must be certified with a special design-sequencing certification (R/W Certification #3 DS) which must specify contracted delivery dates for all parcels and each segment of the project, and any approved workarounds.

Work arounds for Sequence 1 must be clearly identified in the bid package including dates when parcels are available to the contractor.

Work arounds for subsequent sequences should be clearly identified in the bid package specifications and dates provided when each sequence will be available to the contractor.

The bid package specifications must contain dates for delivery of 100% complete designs for each sequence. These designs must be provided to the contractor prior to the start of construction for each sequence. NOTE: The contractor may start on a subsequent sequence only upon receipt of an updated R/W Certification for that sequence and with approval from the Resident Engineer (RE). Work from later sequences may be advanced if the work does not affect the ongoing design effort, the work has proper right of way clearances, and adequate progress is being made on the current construction sequence.

.2 Environmental

Prior to right of way acquisition and utility relocation, all design-sequencing projects must have an approved environmental document or determination, except in cases where advance acquisition has been approved by Headquarters Right of Way.

3. PROJECT DELIVERY SYSTEMS
3.2 Design-Sequencing
3.2.2

All mitigation must be identified.

All necessary permits must be identified, obtained, and executed by the responsible resource agencies.

No scope changes will be allowed after issuance of the Project Approval and Environmental Document.

3 Right-of-Way

Design must have progressed to the point where final right of way requirements can be determined with certainty, including the identification of:

- Project hydraulic and drainage requirements,
- Temporary easements,
- Utility easements,
- Design features affecting parcels,
- Design detail to adequately support the approval of a Resolution of Necessity by the California Transportation Commission or local board(s),
- Completion of Hazardous Waste Investigation Reports and approved Project Development Certificates of Sufficiency.

Complete design to a level where appraisal, acquisition, and certification can proceed for right of way parcels.

Use the early acquisition process prior to Project Approval & Environmental Document with Headquarters right of way approval, if the project fits criteria identified in Right of Way Early Acquisition Guidelines dated December 9, 2002.

During construction, if the contractor's work is delayed due to the Department's failure to meet the certification schedule with any work arounds as outlined in the special provisions, the Resident Engineer will consider and evaluate additional compensation to the contractor in accordance with Section 8-1.09, Right of Way Delays, of the Standard Specifications. In addition, for contracts with the time-related overhead bid item and specification, the time-related overhead contract item will compensate the contractor for the number of days that controlling work is delayed.

For contracts without the time-related overhead item, the Department will compensate the contractor for additional overhead only after completion of an independent CPA audit provided by the contractor, after contract acceptance, and after the Office of Audits and Investigations has completed its audit review.

For Right of Way Certification, ensure the following:

- The entire project is certified with a special design sequencing certification (R/W Certification #3 DS). The initial right of way project certification and each subsequent sequence update requires Headquarters and Federal Highway Administration approval, 30 days prior to certification. Work arounds for parcels on specific sequences should be given dates of physical possession by the Department and included in the Bid Package.
- The project certification #3 DS must meet the requirements of a R/W Certification 3 or better for the first construction sequence, and include a right of way parcel certification schedule for each subsequent sequence.
- Except for the first sequence, which requires a Cert #3 or better, remaining sequences may initially be certified #3 DS without approved Resolutions of Necessity. A first written offer must have been made on all parcels included in subsequent design-sequences, prior to issuing the initial R/W Certification #3 DS. The first written offer will allow the

Department to assess the property owner's response and identify delivery risks to the sequencing schedule.

- The certification schedule for each subsequent sequence and any work arounds represents a contractual commitment to the contractor. Provide a certification schedule that accurately reflects the expected clearance and availability of right of way parcels. The Department may compensate the contractor for right of way delays in accordance with SS8-1.09, "R/W Delays".

- Provide updated sequence certifications in accordance with the sequence certification schedule set forth in the initial certification for the overall project. A certification for a subsequent sequence or any portion may be advanced with R/W concurrence if requested by the Resident Engineer (RE) and deemed to be in the best interest of the Department. An updated certification for that sequence or portion is also required.

- The Utility Certification will provide a statement about the status of all utilities located within entire project area. There is no Certification #3 option available for utilities.

For Railroads, ensure the following:

- Obtain approval from the railroad for RR structure plans before certification.
- Design must have progressed to the point where all railroad impacts and conflicts (including clearances, drainage, etc.) have been identified.
- All temporary and permanent easements must have been identified.
- For railroad overhead structures, design must meet railroad standards and have progressed to the point where a General Plan must be ready to submit to the Railroad. All dimensions to railroad tracks and facilities must be shown on the General Plan and not subject to change.
- For railroad underpass structures, design must be 100% complete before railroad approval can be obtained.
- The special design-sequencing certification with work arounds may be used for railroad parcels if appropriate.
- Execute all necessary Railroad, Construction, and Maintenance Agreements or Service Contracts and obtain any required California Public Utilities Commission approval(s) before advertising the project, if possible. All agreements, service contracts, and approvals must be obtained before bid opening.

For Utilities, ensure the following:

- Design must have progressed to the point where all utility conflicts have been identified.
- Design features, including hydraulics and drainage, have been developed to allow the preparation of utility relocation plans by utility companies and the identification of utility replacement easements.
- Compliance with the Department's high/low risk policy (Project Engineer's Certification form) is required for all projects.
- Utility relocation plans must be approved by the Project Engineer before relocation notices (Notice to Owners) can be issued.

NOTE: The complexity of project design and the significance of any existing utilities will greatly impact the ability of design to meet these requirements for a design-sequenced project.

- Use the advance utility design process with prior Headquarters R/W approval, if the project meets the Department's criteria and the design has progressed (i.e. utility locations verified and conflicts identified, utility relocation plans prepared and approved, and utility agreements prepared). Do not issue relocation notices before the environmental clearance is obtained.
- Authorize long lead-time materials orders with state funds only after environmental approval.
- Identify and acquire, or have possession of, any necessary utility replacement easements.
- Utility relocation notices must be issued before right of way certification for all projects. Show all known obstructions on the plans along with the dates they will be cleared. Identify any required coordination with the contractor and include all information in the Bid Package and in the Special Provisions.
- Underground service alert notifications should be made by the contractor and verified by the Resident Engineer before working in areas of existing utilities. Do not allow the contractor to work in areas of existing utilities before their relocations in subsequent sequences.

For Relocation Assistance, ensure the following:

- All occupants within the right of way must be relocated in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act prior to sequence certification and start of work.
- If a project schedule dictates, consider requesting a special design sequence certification identifying a work around of remaining occupants on a particular sequence or parcel. R/W must stipulate that replacement housing has been made available and that occupants remaining within the right of way after project advertisement and contract award will not result in unnecessary inconvenience or disproportionate injury. This action cannot be coercive in nature. The date they will be cleared must be detailed in the Special Provisions.
- Contractors should not disturb or encroach on occupants to be relocated or property that will be cleared in the future, but before to subsequent design sequences.

NOTE: R/W will not issue a Notice to Vacate (30 or 90 days) until environmental clearance has been obtained.

For Demolition and Clearance, ensure the following:

- Show all known utility related obstructions on the plans and include the date they will be cleared in the Special Provisions.
- Clear improvements before right of way certification. Timing may dictate that some demolition operations occur after right of way certification. The contractor must perform demolition operations in compliance with all applicable laws, statutes, and regulations. During demolition operations, the Resident Engineer must verify that the contractor does not damage constructed improvements or existing facilities that will remain in place.

.4 Construction

A+B bidding or incentive/disincentive (I/D) specifications are normally not incorporated into design-sequenced projects because of the potential for substantial Department-caused delays due to the unknown nature of subsequent design sequences. Use of A+B bidding or I/D provisions is

especially discouraged if other existing issues may cause delays, such as right of way issues or potential utility conflicts. I/D provisions are only recommended for portions of the work with completed design. For work scheduled in a later design sequence, I/D provisions for that work are not recommended.

In addition, consider the following factors for design-sequencing projects:

1. Multiple calendars and 6-day or 7-day calendars are not recommended due to variability of subsequent design sequences and the compressed engineering schedule that these would require.
2. The Time-Related Overhead (non A+B) and Progress Schedule (CPM) specifications should always be incorporated into all design-sequencing projects, since the Engineer's Estimate is generally greater than \$5 million on these projects.
3. The Resident Engineer should communicate routinely with the Project Engineer. It is essential that these two individuals have a close working relationship. In the event there are conflicting or overlapping work between the contract documents of the initial sequence and subsequent design-sequences, the Resident Engineer will consult with the Project Engineer to verify the conflict or overlap and to determine the remedy.
4. The initial pre-construction meeting prior to awarding the contract should include representatives of all functional units anticipated to be involved throughout all design-sequences and should cover the final design of the first sequence as well as anticipated designs of following sequences.
5. The initial pre-construction meeting should notify the contractor that no early fabrication of materials anticipated to be used in subsequent design-sequences is permitted, unless advancement of work in later sequences is approved, fabrication of materials involved in the advanced work is permitted, but no early fabrication of materials not to be incorporated in the advanced work shall be permitted, unless approved in writing by the Resident Engineer.
6. Mini-pre-construction meetings should be held for each subsequent design-sequences as well. The mini-pre-construction meetings should only include representatives of functional units anticipated to be involved in the upcoming sequence. These meeting should be scheduled immediately after the contractor receives the project plans and specifications of the next sequence from District Office Engineer. The Resident Engineer should confirm in this meeting that there are no conflicts or overlapping work between documents of the current sequence and previous contract documents.
7. The Resident Engineer's review and analysis of the contract prior to the pre-construction meetings should verify that the "Order of Work" specification is complete and coordinated with the design-sequencing of the project. Stage construction separately within each sequence, and throughout all sequences, should be reviewed, analyzed, and verified. If significant changes are needed, the project engineer should be requested to re-design the stage construction as needed at highest priority.
8. The Critical Path Method baseline schedule is developed by the contractor to include milestones of subsequent design-sequences. The Resident Engineer should thoroughly review and analyze the baseline schedule and not accept the baseline by requesting re-submittal by the contractor in the event that any of the estimated activity milestones and/or durations are not realistic.
9. Baseline schedule activity durations assigned to sequences other than the initial sequence that are unknown at the time of development of the baseline schedule are included in the baseline by the contractor as estimated durations. The baseline schedule is not changed once it is accepted and approved by the Resident Engineer. The estimated durations are updated or revised, if necessary, in CPM monthly updates or revised CPM schedules as new information becomes available.

10. Revised CPM schedules are submitted by the contractor within 15 days after receipt of subsequent design-sequences for approval for any new activities required by the design-sequence.

11. Proposed changes to specifications, including those related to subsequent design-sequences, are made in contract change orders requiring Division of Construction approval.

12. A list of contract items anticipated by Design to significantly increase, decrease, or be eliminated in the next sequences is provided to the Resident Engineer from the Project Engineer. Changes in quantities and elimination of contract items are made pursuant to Section 4-1.03, "Changes," of the Standard Specifications. In addition, a list of items of supplemental work anticipated by Design to be added in following sequences is provided to the Resident Engineer from the Project Engineer.

13. The District Office Engineer sends each contract package to the Resident Engineer who sends copies to the contractor. The Resident Engineer will compensate the contractor in accordance with Section 4-1.03D, "Extra Work," of the Standard Specifications. Upon receipt of each contract package for subsequent design-sequences, the Resident Engineer deletes any contract items that were anticipated to be needed during the design phase but are discovered to be unnecessary during construction due to new information made available during construction. If details presented in the project plans and specifications of the subsequent design-sequences materially changes the character of the work of a contract item in the initial contract, an adjustment in compensation is made in accordance with Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications.

14. The District Office Engineer sends a letter to the Resident Engineer that accompanies each design-sequence contract package informing the Resident Engineer of the provision of the project plans and specifications for the Design-Sequence No. XX.

15. Supplemental Work and Contingencies provided should be at least 10%, but not more than 15%, of the Engineer's Estimate. If it is not, a G-12 supplemental funds request may be necessary immediately.

16. The right-of-way office may provide tentative railroad clauses in the initial design-sequence and therefore the final form of railroad clauses may not be available in the initial design-sequence. Modification of the clauses may be necessary as more design information becomes available, and in that event, updates to the railroad clauses are made in contract change orders requiring Division of Construction approval.

17. The Project Engineer must deliver a finalized design package of each sequence prior to the start of work on that sequence to the Resident Engineer, who will deliver copies to the contractor.

18. The contractor shall submit a request for approval by the Resident Engineer to start work on each new sequence. The contractor may only start work on a new sequence after the Resident Engineer approves the written request by the contractor. This request and approval may be done in writing at the mini-pre-construction meeting.

19. Work may be advanced from subsequent design-sequences only by approval from the Resident Engineer and only if the following apply:

- The Resident Engineer obtains concurrence from the Right-of-Way Division to advance Right-of-Way Certification of the subsequent design-sequence.
- All work-arounds are clearly identified in the contract.
- The advanced work does not impede the on-going work.
- Satisfactory progress is maintained on entire project.
- Progress by the contractor on the current sequence is no later than 5% behind schedule.

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20. The Certification schedule, any specified work-arounds, detailed descriptions of work in subsequent design-sequences, as well as the dates specified in the special revisions of when the subsequent design-sequence packages will be delivered to the contractor are all contractual. If these schedules are not met and the contractor is delayed, compensation will be made pursuant to Section 8-1.09, "Right of Way Delay," of the Standard Specifications and if the controlling operation is delayed, compensation will be made pursuant to the "time-related overhead" specification. If the controlling operation is delayed, contract time will be granted on a contract change order. If changes in subsequent design-sequences occur and the controlling operation is delayed, a commensurate amount of contract time will be granted on a contract change order as well.

21. The exact time of delay is determined by requiring a time impact analysis from the contractor, and acceptance by the Resident Engineer after verifying its accuracy. In the event of a delay to any of the contractor's operations (especially the controlling operation), the Resident Engineer should consider advancing work from subsequent design-sequences in order to mitigate the delay.

22. District Office Engineer will deliver project plans and specifications for subsequent design-sequences to the Resident Engineer for transmittal to the contractor no later than the targeted date specified in the Special Provisions.

23. If the District Office Engineer is late in delivering subsequent design-sequences, obtain a new target date by consulting with the Project Engineer and Resident Engineer. Consider directing removal of contractor's equipment and labor forces from the job site. In addition, consider removal of the contractor's field office from the job site.

24. Time-related overhead is not eligible for compensation after the contractor's field office is demobilized. Any compensation for unabsorbed home office overhead after removal of the field office must be justified after contract acceptance and only after the contractor has submitted an independent CPA Audit showing that an unabsorbed amount is due for the delay. Typically, if the delay is four or more months, it is more economical to direct de-mobilization and re-mobilization of the contractor's field office than to pay time-related overhead.

25. Escrowed bid documents are made available to the Resident Engineer from the Division of Engineering Services – Office Engineer for analysis and response to notices of potential claims.

3.2.2.3. Develop Scope of Work

Consider the project goals and objectives as the basis for developing the project scope of work. The requirements or constraints for project timing, cost, quality, and public needs should be incorporated into the project. Create a scope of work that addresses these parameters and will be compatible with design-sequencing processes. Ensure that the project approach, phasing, and scoping will provide opportunities to capture the potential benefits of design-sequencing.

3.2.2.4. Define and Allocate Project Risks

Risk management is important to the success of any project. The Department has therefore incorporated into its standard project delivery process a systematic approach for identifying, analyzing, responding to, and monitoring project risks. This process, as outlined in the Project Risk Management Handbook, allows the PDT to make informed decisions regarding the relative risk of alternative approaches, and the potential effect of these alternatives on the likelihood of achieving project goals.

According to the Department's risk management process, the PDT is to develop a risk register during the Project Initiation Document phase. Once the project is programmed, the PDT is to then amend and refine this register if subsequent engineering studies eliminate (or reduce the likelihood of) previously identified risks or, conversely, identify previously unknown risks. Risk management

is therefore an inherently iterative process, and one which can take on the added complexity of allocating risks traditionally held by the Department to other parties.

In general, risk should be allocated to the party best able to manage and mitigate the adverse impacts of the risk. Whether this party is the Department, the design-sequencing contractor, or others is entirely dependent upon project-specific conditions and the willingness of the Department to potentially pay for the design-sequencing contractor to assume responsibility for a specific risk.

3.2.2.5. Preliminary Project Development

During preliminary project development, address the established project goals and objectives, identified risks, and use the scope of work as the base document for creating the preliminary project documents. Specifically, address the following areas as necessary to prepare the project for advertisement.

.1 Environmental

All design-sequencing projects must have an approved environmental document or determination. All mitigation measures must be identified. All necessary permits must be identified, obtained, and executed by the responsible resource agencies. No scope changes will be allowed after issuance of the Project Approval and Environmental Document.

.2 Right Of Way

Complete design to a level where appraisal, acquisition, and certification can proceed for right of way parcels. Work arounds for parcels on specific sequences should be given dates of physical possession by the Department and included in the Bid Package. Provide updated sequence certifications in accordance with the sequence certification schedule set forth in the initial certification for the overall project.

.3 Utilities

Identify all utility conflicts in the design and develop design features, including hydraulics and drainage, to allow for the preparation of utility relocation plans and the identification of utility replacement easements. Authorize long lead-time materials orders with state funds only after environmental approval. Identify and acquire, or possess, any necessary utility replacement easements.

Utility relocation notices must be issued before right of way certification for all projects. Show all known obstructions on the plans along with the dates they will be cleared. Identify any required coordination with the contractor and include all information in the Bid Package and in the Special Provisions.

.4 Railroads

Identify all railroad impacts and conflicts including clearances, drainage, etc. in the project design. Also identify all temporary and permanent easements for railroad conflicts. Show all dimensions to railroad tracks and facilities on the General Plan. For railroad overhead structures, design must meet railroad standards and for railroad underpass structures, design must be 100% complete. Obtain approval from the railroad for RR structure plans before certification.

3.2.2.6. Project Preliminary Design Document Preparation (30% Min)

The Initial Bid Package is defined as the package of Plans, Specifications and Estimate (PS&E) used to procure a contractor for construction of a design-sequencing project. Design-sequencing

allows the Department to enter into a construction contract with a minimum of 30% complete plans and begin constructing the project while subsequent phases of the project are under final design.

For the purpose of these Guidelines, 30% complete plans is defined as follows:

All plans and items of work for the Initial Bid Package should be 100% complete.

All plans completed to at least 30%.

90-100% of all items of work identified. All major items of work should be identified.

90-100% of all Special Provisions identified.

In addition, consider the following refinements:

Specifically describe the status of the 30% design for remaining sequences.

Clearly articulate the scopes for all phases, stages, and sequences of work.

Provide status information on all subsequent plans provided to the contractor.

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3.2.3. Contract Development / Procurement

At this point in the project development process, the Department will have developed the preliminary items for a design-sequencing contract and must now develop contract documents required for selecting and procuring a design-sequencing contractor. This section of the guide highlights the key elements required by the Department and the design-sequencing contractor during the procurement phase. Such items include initial bid package preparation, project advertisement, and award of the contract.

3.2.3.1. Preparing the Initial Bid Package

Prepare the Initial Bid Package of Plans, Specifications and Estimate (PS&E).

At project advertisement, phase one plans must be 100 percent complete. In addition, the plans for each subsequent phase should be at least 30 percent complete (see example below).

Figure 3.2.3 Example of 30 percent complete plan showing all packages.

Initial Bid Package: @ 100% Complete		Sequence I: @ 30% Complete		Sequence II: @ 30% Complete	
Bid Item	% Complete	Bid Item	% Complete	Bid Item	% Complete
Utility Plans	100%	Utility Plans	100%	Utility Plans	100%
Construction Area Signs	100%	Construction Area Signs	50%	Construction Area Signs	30%
Electrical Plans	100%	Electrical Plans	50%	Electrical Plans	10%
Highway Planting Plans Details & Quantities	100%	Highway Planting Plans Details & Quantities	30%	Highway Planting Plans Details & Quantities	3%
Sign Plans, Details & Quantities	100%	Sign Plans, Details & Quantities	5%	Sign Plans, Details & Quantities	3%
TOTAL	100%	TOTAL	47%	TOTAL	30%

.1 General

All design-sequencing projects will use the Standard Specifications and Standard Plans that are current at the time of contract award.

All design-sequencing projects shall be categorized and submitted as Service Level 1 projects to the Division of Engineering Services – Office Engineer (DES-OE). DES-OE will log in and track the PS&E milestone dates and monitor the project status information for the Initial Bid Package.

The PS&E Submittal Cover Memorandum and the Ready to List Certification Form should indicate that the project being submitted is a design-sequencing project. Information as to the percent of project completion, the number of sequences the project will have, and when subsequent packages are to be delivered during the contract should be indicated.

The Initial Bid Package should contain 100% complete project concept and scope (enough information to bid on). Plans and estimate must be developed to a level sufficient to define project scope and to allow for the selection of all anticipated subcontractors.

For any work that will be included in a subsequent sequence, the plans and the specifications should contain sufficient information to bid the contract item(s) involved. For bidding purposes, some information may be assumed. Assumptions may be verified later in the subsequent sequence(s) when the project is under construction.

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Avoid sequencing item(s) of work that are unfamiliar to the contractor (e.g. mechanical, electrical work) which may require a lot of plan details to complete the work. If this cannot be avoided, provide assumptions that the contractor can use as a basis for bidding.

The initial bid package must contain contractual dates certain for delivery of the 100% complete design of each sequence, which must be provided to the contractor prior to construction of that sequence.

.2 Project Plans

The Title Sheet will be marked "Preliminary for Bidding Purposes Only."

Project plan sheets on which the details of work are to be completed in the next sequence(s), showing details that are partially complete or assumed should be marked, "Preliminary For Bidding Purposes Only."

The Title Sheet should be signed and sealed by the Project Engineer. The signature and seal of plan sheets where the details shown are already completed also should be signed and sealed. For all other sheets marked "Preliminary for Bidding Purposes Only," the signature and seal may be left blank.

The project plans, together with the Standard Plans, should show the design details (whether they are complete, partial or assumed) for all contract items listed in the Engineer's Estimate.

Stage Construction sheets of the project plans should be coordinated with the project's design-sequencing segments (i.e., if the portion to be completed by the next sequence is at the end of the project schedule, the stage construction should reflect this).

DES-OE will fill in the "Plans Approval Date," plan sheet numbers, and the federal aid number, if applicable.

The Utility Plans should show all utilities anticipated to be relocated, abandoned, and/or protected for all design-sequences.

.3 Specifications

Special Notices

The front covers of the contract books ("Notice to Contractor and Special Provisions" and the "Proposal and Contract" book) will have a special identification on the front covers as indicated in the following example:

Contract No. 04-259014
 (DESIGN-SEQUENCING CONTRACT)
 04-Sol-80-R16.6

Book 1 will contain a special notice alerting the bidders to the fact that the project is a design-sequencing project. The special notice shall read as follows:

Special Notice

This project is part of a pilot program for "Design-Sequencing," per Section 217, et seq., of the Streets and Highways Code (Assembly Bills 405 and 2607). The purpose of the pilot

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program is to evaluate design-sequencing as a tool for acceleration of project completion. Design-sequencing is a method of contracting where bids are based on partial project design, and final design activities are sequenced to permit each construction phase to commence when the design of that phase is complete. The project plans, specifications, and estimate for this project are not considered complete to construct the work anticipated by the contract, and the Engineer's Estimate may contain anticipated items of work that are not indicated on the project plans. Design and final project plans, specifications, and the estimates of quantities, will be complete after initial construction adjustments to the contract items and / or quantities, and will be in conformance with the Standard Specifications.

In the Notice to Contractor, the heading will be shown as follows:

<p>NOTICE TO CONTRACTORS</p> <hr style="width: 80%; margin: 0 auto;"/> <p>THIS IS A DESIGN-SEQUENCING CONTRACT</p> <p>Contract No. 04-259014</p>
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Section 1 – Specifications and Plans

Add a statement that the project plans are not complete and that the project will be completed in sequence after approval of the contract.

Provide a schedule showing when the next set of project plans (including changes to the specifications and estimate) will be received by the contractor after approval of contract. If the next set of project plans is received later than the schedule shows and the contractor is delayed, compensation for delay will be made in accordance with Subsection 8-1.09 of the Standard Specifications.

Provide a detailed description indicating what each set of plans will include for each design-sequence, and the work that will be required.

Section 2 – Proposal Requirements and Conditions

No changes are required to the boiler plate sections regarding Disadvantaged Business Enterprise (DBE) or Disabled Veterans Business Enterprise (DVBE) requirements.

"Escrow of Bid Documentation" will be added in the special provisions regardless of the Project's cost for use in the resolution of contractor disputes.

Section 4 – Beginning of Work, Time of Completion and Liquidated Damages

A+B bidding or incentive/disincentive (I/D) specifications are normally not incorporated into design-sequenced projects because of the potential for substantial Department-caused delays due to the unknown nature of subsequent design-sequences. Use of A+B bidding or I/D provisions are especially discouraged when other issues (besides design-sequencing) exist that may cause delays, such as right-of-way issues or potential utility conflicts. I/D provisions are only recommended for portions of the work with completed design. If any portion of the work is to be done in a later design-sequence, I/D provisions for that work are not recommended.

The use of Incentives/Disincentives (I/D) should only apply to portion(s) of work in the project where the design is complete and when the estimate of the number of (internal) working days to finish such portion has been finalized. I/D should not apply to portion(s) of work which will be design-sequenced.

Use of multiple calendars and use of 6-day or 7-day calendars is not recommended due to variability of subsequent design-sequences and the compressed engineering schedule it would require.

Section 5 – General

Cost reduction incentive specifications should not change.

The "Partnering" SSP will be included in all design-sequencing projects regardless of the Project's cost. This will allow the contractor to provide suggestions for the development of subsequent sequence(s) and recommend schedule adjustments to facilitate project completion.

Section 10 – Construction Details

In the "Order of Work" SSP, consider the following:

- If an order of work is to be specified, the order of work should be coordinated with the design-sequencing of the project.
- State that the contractor shall not order fabricated materials for items of work until the design for such items of work requiring fabricated materials is complete except when approved by the Resident Engineer.
- State that the contractor may be allowed to continue to work and complete the construction of an item of work(s) pending the complete design of the item of work(s) if approved by the Resident Engineer.
- If there is a particular way of working around an obstruction where the details of its relocation are incomplete, and around areas with pending right of way certification, specify this. This is also true for working around railroad parcels.
- Note that the Critical Path Method (CPM) chart shall be updated when the contractor receives subsequent design-sequences.
- State that upon approval by the Resident Engineer, the contractor may work on subsequent sequence(s) if design is sufficiently complete, and right of way certification has been achieved for that sequence. The Resident Engineer must determine that sufficient progress has been made in the current sequence before approving work on subsequent sequences.

In the "Obstructions" SSP, consider the following:

- List all the utilities that will be relocated or abandoned before and during construction and include the target dates as to when they will be relocated or abandoned. If some dates are still being negotiated and are not available until the next sequence, provide a reasonable assumed target date after consultation with the District Utility Coordinator.
- Include the number of days the utility owners require to relocate or abandon their utilities. A reasonable number should be estimated if data is unavailable after consultation with the District Utility Coordinator.
- Underestimating contract time to relocate or abandon utilities should be avoided. Any underestimate will result in compensation to the contractor for right of day delay, and if the controlling operation is delayed, may result in time-related overhead for the number of days underestimated.
- Utilities identified and mentioned in this SSP should match the utilities shown on the Utility Plan sheets.

- All design-sequencing projects should include the "Progress Schedule (CPM)" Standard Special Provision. The Baseline Schedule should include milestones based on the Contractor's targeted receipt of subsequent sequence(s).
- Pre-bid and/or pre-qualification meetings are not recommended. Pre-bid meetings are usually reserved for projects with extraordinary issues (such as safety) that need to be brought forward and addressed prior to start of bidding and construction. Inclusion of Pre-Bid and Pre-Award Qualification meetings requires prior approval by the Deputy Director and the District Director per memorandum dated March 22, 2002. (Note: It is often difficult for DES-OE and District personnel to set up and attend these meetings).
- Items paid by Lump Sum (LS) should not be adjusted in accordance with the adjustment provisions of Section 4-1.03, "Changes," of the Standard Specifications. Adjustments in compensation for lump sum items will be made only for increased or decreased item work required by changes ordered by the Resident Engineer and will be made on a force account basis as provided in Section 9-1.03, "Force Account Payment," of the Standard Specifications.
- The Time-Related Overhead specification should generally be incorporated into all design-sequencing projects, since the Engineer's Estimate is usually greater than the criteria for inclusion.

Section 13 – Railroad Relations and Insurance

If a railroad is involved, the railroad clauses should be provided. To the extent possible, the final form of the railroad clauses should be included. Otherwise, the Right of Way Section should be consulted and asked if a draft of the railroad clause can be used and be modified later in the subsequent sequence(s).

.4 Engineer's Estimate

The Engineer's Estimate should list all anticipated contract items and quantities of the complete design with the understanding that some items may be deleted or quantities modified at a later date. Each contract item should have a corresponding detail on the plans and a corresponding specification. For bidding purposes, information may be assumed to complete the design details for some contract items, which can be verified in subsequent sequence(s). The estimate may include items not shown on plans. Additional items can be added later as needed in the subsequent sequences.

Assign final pay (F) to a contract item only if it is anticipated that its quantity will not change in the subsequent sequence(s). Assign (S) to all specialty items.

Lump sum (LS) items should be based only on the details shown on the plans and in the specifications included in the bid package.

Uncommon or unusual items should be avoided unless enough bid information is presented on the Plans and in the Special Provisions of the Initial Bid Package to allow the contractor to develop a realistic bid.

Supplemental Work and Contingencies should be at least 10%, but not more than 15%, for all design-sequencing projects. If a lesser amount is budgeted, a G-12 supplemental funds request may become necessary. Supplemental Work may be needed for potential overrun of contract item quantities, reserve money for right of way delays, compensation due to changes to targeted schedules in utility work by others, and unanticipated "work-arounds" or changes in the character of work.

.5 Addenda

Issuing addenda for a design-sequencing project should be limited to changes in conditions involving right of way, permits, the project site, utility locations and relocations, and agreements with locals and railroads.

3.2.3.2. Project Advertisement

Advertisement of a design-sequencing project will generally proceed in accordance with the Department's standard procedures.

3.2.3.3. Award of a Design-Sequencing Contract

Award of a design-sequencing contract will generally proceed in accordance with the Department's standard procedures, following project advertisement, contractor bid submission, and the Department's bid opening and announcement of award.

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3.2.4. Contract Administration

At this point in the project development process, construction documents for the first phase have been completed, construction documents for all subsequent sequences have been developed to at least 30 percent complete, and the Department has selected the Design-Sequencing Contractor.

This section of the *Alternative Procurement Guide* highlights the key issues to be addressed by the Department and the Design-Sequencing Contractor during construction of the project. These issues include Construction Team composition, the Teams' respective roles and responsibilities during construction, the Department's assembly and submittal of subsequent sequences, and the planning and charging practices during construction.

3.2.4.1. Composing the Construction Team

.1 The Caltrans Team

During construction, the Department must provide a fully functioning team to continue with final design of subsequent design-sequences and to administer the approved construction phase. The design-sequence contract requires the Department to provide a team capable of administering the sequenced construction phases of work, including a Resident Engineer and other staff (materials testers, inspectors, surveyors, etc.) for the purpose of ensuring that work is completed in accordance with the contract requirements.

As the sequenced construction phases start up and the design phases continue, close coordination between the Department's pre-construction and construction staff is necessary to ensure that design intent and work in progress is successfully transferred to the construction staff.

.2 The Design-Sequencing Contractor Team

The Design-Sequence Contractor should provide a Superintendent who has authority to represent the Design-Sequence Contractor. The Design-Sequence Contractor should provide a Superintendent with written authority to act on behalf of and to bind the Design-Sequence Contractor in all matters pertaining to the work.

The Design-Sequence Contractor should establish and maintain lines of authority for its company and project personnel, and provide this definition to its Superintendent and to the Department's Resident Engineer, its subcontractors, and any other stakeholders associated with the project.

The Superintendant should provide general direction for the work and manage the resources necessary to provide satisfactory progress of the various sequences of work, including satisfactory progress provided by subcontractors. The Superintendent will coordinate project activities and communicate with the Department's Resident Engineer as appropriate for the successful completion of the work.

3.2.4.2. Roles of Team Members

.1 Caltrans's Responsibility

The Resident Engineer and Project Engineer should communicate on a routine basis. It is essential that these two individuals have a close working relationship. In the event there is conflicting or overlapping work between the contract documents of the Initial Bid Package and subsequent design-sequences, the Resident Engineer will consult with the Project Engineer to verify the conflict or overlap and to determine the remedy.

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The Resident Engineer will coordinate with the Design-Sequence Contractor to ensure compliance with all contract requirements. The Resident Engineer will coordinate with all Department staff working on the project and supporting subsequent sequences of the project.

The Resident Engineer should monitor the contractor’s activities to ensure that they do not disturb occupants to be relocated or encroach on property that will be cleared in the future, prior to subsequent design-sequences.

.2 Pre-Construction Meeting

The initial pre-construction meeting after awarding the contract should include representatives of all functional units anticipated to be involved throughout all design-sequences and should cover the final design of the first sequence as well as anticipated designs of following sequences.

At the initial pre-construction meeting, the Department should notify the contractor that no early fabrication of materials anticipated to be used in subsequent design-sequences will be permitted without Department approval. Early fabrication of materials will be permitted if the materials will be incorporated into approved advanced work in later sequences, but early fabrication of materials will not be permitted for materials not to be incorporated in advanced work, unless approved in writing by the Resident Engineer.

The Resident Engineer’s review and analysis of the contract prior to the pre-construction meeting should verify that the “Order of Work” specification is complete and coordinated with the design-sequencing of the project. Stage construction within each sequence, and throughout all sequences, should be reviewed, analyzed, and verified. If significant changes are needed, the Resident Engineer should request the Project Engineer to direct re-design of the stage construction as necessary to ensure successful project completion.

The Critical Path Method (CPM) baseline schedule as developed by the contractor should also include milestones of subsequent design-sequences. The Resident Engineer should thoroughly review and analyze the baseline schedule and should request revisions and re-submittal by the contractor if any of the estimated activity milestones and/or durations are not realistic. Do not accept the baseline until it reflects an accurate sequence and flow of work.

Baseline schedule activity durations assigned to sequences other than the initial sequence that are unknown at the time of development of the baseline schedule should be included in the baseline by the contractor as estimated durations. The baseline schedule should not be changed once accepted by the Resident Engineer. If necessary, the estimated activity durations may be updated in CPM monthly updates as new information becomes available.

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3.2.4.3. Assembly and Submittal of Subsequent Sequences

.1 General

The District Office Engineer is responsible for delivering the subsequent sequence(s) to the contractor on or before the date(s) specified in the special provisions (Section 1).

The Project Engineer is responsible for the preparation of the highway portion of the project plans that will go into the next sequence(s). The Project Engineer will coordinate with the other functional units in the District and is responsible for incorporating their changes on the plans. The Project Engineer is also in charge of submitting the highway plans to the District Office Engineer.

The Project Engineer will inform the DES-Structures Office Engineer and DES-Structures Design of the upcoming sequence(s) and will request Structures to send the structure plans and specifications for the next sequence(s) to the District Office Engineer.

The District Office Engineer will generate new specifications or modify the existing specifications to go along with the highway plans submitted by the Project Engineer for the next sequence(s). Proposed changes to specifications should be made in a contract change order requiring Division of Construction approval.

The District Office Engineer is responsible for combining the highway and structures portions for the next sequence(s). The District Office Engineer will finalize the document for the next sequence(s) and will circulate the document to the appropriate District functional units, including Structures for comments.

District Office Engineer will review the project plans and ensure that all comments and changes from all the functional units involved including those from structures are incorporated.

After circulation and when all comments are resolved, the District Office Engineer should reproduce copies of the documents and deliver them to the Resident Engineer on or before the specified dates.

A letter to the contractor may accompany each subsequent sequence identifying that it includes the set of plans and specifications for the next design-sequence number (XX).

.2 Project Plans

All sheets should be marked, "Design-Sequence No. XX" as the case may be.

Tag or identify the details that are added or revised by the sequence. Use a symbol, which is unique for the sequence to tag or mark the added or revised details.

Each plan sheet must have a signature and seal, complete with printed name.

Verify that accurate district, county, route, and post kilometer designations appear in the project identification block at the upper right corner of each sheet. Make sure that it matches the original bid plans.

Ensure that the sheet identification codes are correct.

Include applicable new and revised Standard Plans, if not included in the initial bid package.

Make sure the Federal Aid Number (if applicable) is shown on the upper left corner of the Title sheet, to the left of the project identification block.

Ensure the "Plans Approval Date" has been added on all plan sheets. It should be the same date as the one in the bid package.

The District Office Engineer will print and reproduce from 20 to 50 half-sized copies of the project plans for distribution.

.3 Specifications

The District Office Engineer will combine the specifications from structures with the highway portion. The District Office Engineer will review, finalize, print, and reproduce the specifications for the subsequent sequence(s) for distribution and delivery to the contractor.

The set of specifications for the next sequence(s) will be bound and the front cover should be identified with "Design-Sequence No. XX", the appropriate next sequence for the project.

The District Office Engineer should also perform the following checks:

- Ensure that the Engineer's signature and seal is included. Verify that the contract number is correct.

- Verify that the specifications are not redundant and that they cover the new or added items or details of work shown on the plans for the sequence.
- Verify that measurement and payment clauses of each specification are correct since some items added by the sequence, may be paid as extra work.
- Carefully examine any non-standard, new, or original specifications for clarity, standard nomenclature, style, and format.
- Verify the use of "full compensation" clauses. They may not be appropriate for some work that is being revised or added by the sequence(s).
- Terminology in the Special Provisions should be consistent with that used in the Initial Bid Package.
- Ensure the Special Provisions being provided are sectioned properly and are consistent with those provided in the Initial Bid Package.

.4 Engineer's Estimate

A list of contract items that may significantly increase or decrease, or be eliminated in the next sequence(s), should be given to the Construction Resident Engineer by the District Office Engineer. The Resident Engineer should monitor these items during construction and adjust the contractor's compensation as specified in Section 4-1.03B, "Increased or Decreased Quantities" of the Standard Specifications as appropriate.

The list of items of work that will be added in the next sequences should also be given to the Resident Engineer. The Resident Engineer will compensate the contractor as specified in Section 4-1.03D, "Extra Work" of the Standard Specifications.

If the details presented in the plans and specifications of the subsequent sequence(s) materially change the character of work of a contract item in the Initial Bid Package, the Resident Engineer will adjust the contractor's compensation in accordance with Section 4-1.03C, "Changes in Character of Work" of the Standard Specifications.

.5 Submittal of Subsequent Sequences

The Project Engineer should deliver a finalized design package of each sequence prior to the start of work on that sequence to the District Office Engineer, who then will deliver the package to the Resident Engineer.

The District Office Engineer will deliver project plans and specifications for subsequent design-sequences to the Resident Engineer no later than the targeted date specified in the Special Provisions. In addition, the Resident Engineer should send a letter to the contractor accompanying each sequenced set of project plans and specifications identifying the next design-sequence number (XX).

A mini-pre-construction meeting should be held for each subsequent design-sequences as well. The mini-pre-construction meetings should only include representatives of functional units anticipated to be involved in the upcoming sequence. These meetings should be scheduled immediately after the contractor receives the project plans and specifications of the next sequence from Resident Engineer. The Resident Engineer should confirm in this meeting that there are no conflicts or overlapping work between documents of the current sequence and previous contract documents.

The contractor should submit a revised CPM schedule within 15 days after receipt of subsequent design-sequence for Resident Engineer approval for any new activities required by the design-sequence.

The Resident Engineer should send a letter to the contractor accompanying each design-sequence contract package informing the contractor of the project plans and specification for the next Design-Sequence Number (XX).

The contractor should submit a request for approval by the Resident Engineer to start work on each new sequence. The contractor may only start work on a new sequence after the Resident Engineer approves the written request from the contractor. This written request and approval may take place at the mini-pre-construction meeting.

Work may be advanced from subsequent design-sequences only by approval from the Resident Engineer and only if the following occur:

- The Resident Engineer obtains concurrence from the Right-of-Way Division to advance Right-of-Way Certification of the subsequent design-sequence.
- All work-arounds are clearly identified in the contract.
- The advanced work does not impede the on-going work.
- Satisfactory progress is maintained on entire project.
- Progress by the contractor on the current sequence is no later than 5% behind schedule.

.6 Changes

Proposed changes to specifications, including those related to subsequent design-sequences, should be made in Contract Change Orders requiring Division of Construction approval.

The Resident Engineer will authorize compensation to the contractor in accordance with Section 4-1.03D, "Extra Work" of the Standard Specification. Upon receipt of each contract package for subsequent design-sequences, the Resident Engineer will delete any contract items that were anticipated to be needed during the design phase but are found to be unnecessary during construction, due to the new information made available during construction. If details presented in the project plans and specifications for the subsequent design-sequences materially changes the character of the work of a contract item included in the initial contract, and "Changes in Character of Work," of the Standard Specifications, an adjustment in compensation will be made in accordance with Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications.

The Right-of-Way office may provide tentative railroad clauses in the initial design-sequence, so the final form of railroad clauses may not be available in the initial design-sequence. Modification of the clauses may be necessary as more design information becomes available, and if that happens, updates to the railroad clauses should be made by Contract Change Orders requiring Division of Construction approval.

.7 Delays

The Certification schedule, any specified work-arounds, detailed descriptions of work in subsequent design-sequences, as well as the dates specified in the Special Provisions for the delivery of subsequent design-sequence packages to the contractor, are all contractual. If these schedules are not met and the contractor is delayed, compensation for delay should be made pursuant to Section 8-1.09, "Right of Way Delay," of the Standard Specifications and if the controlling operation is delayed, compensation for overhead should be made pursuant to the "time-related overhead" specification. If the controlling operation is delayed, contract time should be granted by Contract Change Order. If changes in subsequent design-sequences occur and the controlling operation is delayed, a commensurate amount of contract time should be granted by Contract Change Order as well.

The calculation and justification of delay should be determined by a time impact analysis submitted by the contractor and reviewed by the Resident Engineer and accepted if approved. In the event of a delay to any of the contractor’s operations (especially the controlling operation), the Resident Engineer should consider advancing work from subsequent design-sequences in order to mitigate the delay.

Advancing work that was originally planned in subsequent design-sequences may necessitate eliminating or decreasing contract item(s).

If the District Office Engineer is late in delivering subsequent design-sequences, obtain a new target date by consulting with the Project Engineer and Resident Engineer. Consider directing removal of the contractor’s equipment and labor forces from the job site. In addition, consider removal of the contractor’s field office from the job site.

Escrowed bid documents will be made available to the Resident Engineer from the Division of Engineering Services – Office Engineer for analysis and response to notices of potential claims.

For contracts with the time-related overhead bid item and specification, the time-related overhead contract item should be modified to compensate the contractor for the number of days the controlling item of work is delayed.

For contracts without the time-related overhead item, additional overhead compensation may only be provided to the contractor after an independent CPA audit has been submitted by the contractor, after contract acceptance and the Office of Audits and Investigations has completed an audit review.

3.2.4.4. Planning and Charging Practices

Proper planning and charging is critical to managing project costs. The need is even greater when implementing new processes that have the purpose of delivering projects faster while remaining within budget and maintaining a high level of quality.

Whenever reasonably possible, State Highway project costs must be charged to specific multi-phase project expenditure authorizations (EAs). The Department has long-standing product-oriented charging rules (see Appendix 2.1-D). These are built around project phases that produce specific products, namely:

Product	E.A. phase(s) in TRAMS
Project Initiation Document (PID)	K
Project Report and Environmental Document	0
Awarded Construction Contract	1
Right of Way clearance and documentation	2 (Caltrans employees and related expenses) 9 (Planned Capital Outlay) H (Hardship Capital Outlay)
Physical Improvement to the State Highway (Construction)	3 (Caltrans employees and related expenses) 4 (Capital Outlay)

The core principle is “Plan the work, Work the plan.” Work must be planned to produce specific products, the plans must be recorded in the Project Management System, the planned work must be performed, and the actual cost of production must be recorded. As plans change, they must be updated in the Project Management System.

In the case of design-sequence projects, there is a decrease in the work needed to award a construction contract (EA Phase 1) and an increase in the work for construction support (EA Phase 3). The special designation field should be used to separate the cost of developing each sequence. Special designations should be used on timesheets, Travel Expense Claims, Local Requests, and other charging forms.

<u>Description</u>	<u>Special Designation</u>
Initial Bid Package	no special designation
Sequence 1	SEQ1
Sequence 2	SEQ2

Projects may have more sequences than shown above, but will proceed with the same designation with increasing sequence numbers. It is important to use proper WBS activities when charging to a particular sequence. Refer to the *Guide to Project Delivery Standard WBS, Release 6.2, July 2004*. These charging practices shall be applied in accordance with DD-41 “Department Charging Practices,” for the duration of the Design-Sequencing Pilot Program.

Examples of timesheet (Staff Central) entries using the Design-Sequencing Special Designations are illustrated in Appendix D.

3.2.4.5. Coordination with Federal Highway Administration (FHWA)

FHWA requires an approved environmental document/determination for the entire project prior to the award of any phase or sequence of the project. Full compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act is also required.

Right of way must be appropriately certified. There should be no hidden problems. Bid opening cannot occur until HQ R/W and FHWA approve an updated R/W Certification. Additionally, HQ R/W and FHWA must approve subsequent sequences prior to beginning work on that sequence.

FHWA will not participate in any delays due to reasons within the Department’s control. In the event that delays are related to failures in meeting project milestones (due to staffing issues or project priorities), the Department will be 100% responsible for all claims made by the contractor. FHWA will participate if delays are related to natural events such as emergencies, acts of nature, etc.

FHWA encourages close communication between their reviewers and the Districts that have design-sequencing projects. For projects with full FHWA oversight, the Operations Engineer must review each sequence package before transmitting to the contractor.

3.2.4.6. Final Payment / Contract Closure

Substantial completion and final acceptance will generally proceed in accordance with the Department’s standard procedures, with the design-sequence contractor preparing and submitting all contract-required final as-built drawings and documents.

3. PROJECT DELIVERY SYSTEMS
3.2 Design-Sequencing
3.2.4

3.3. DESIGN-BUILD

3.3.1. Introduction

The information presented in this section supplements existing Department manuals with information specific to the design-build method of project delivery. The information provided has been developed based on best practices from the design-build industry, with consideration given to how these practices can be best integrated into the Department's existing project development and project management processes. Should any requirements conflict with the content of other manuals, the information presented in this section shall take precedence for design-build projects only.

3.3.1.1. Purpose of this Section

This section provides project managers, functional managers, and other staff engaged in the delivery of capital projects for Caltrans detailed guidance on the use of design-build as an alternative project delivery method. Topics addressed include the following:

- Procedures related to project selection, preliminary engineering, the procurement process, and contract administration;
- Roles and responsibilities of all participants in the design-build process, including Department staff, the design-builder, and other key project stakeholders;
- Necessary changes to general contract provisions; and
- Content of design-build procurement and contract documents, with examples provided for illustrative purposes.

The information provided is primarily geared towards projects developed, funded, and constructed by the Department, but aspects related to contract administration apply equally to locally or privately sponsored projects for which Caltrans personnel are acting in an oversight role in accordance with a Cooperative or other Agreement.

3.3.1.2. What is Design-Build?

Design-build is an alternative project delivery system that combines both project design and construction under one contract. The design-builder performs design, construction engineering, and construction according to design parameters, performance criteria, and other requirements established by the Department. Design-Build has been implemented in the highway construction industry in a variety of ways based in part on how state statutes are written, the procurement approach used, and how much responsibility is transferred to the design-builder for the design and other aspects of project performance. This manual addresses the use of design-build using both a low bid and best-value procurement approach.

3.3.1.3. How is Design-Build Different?

Under its standard design-bid-build delivery approach, the Department prepares complete plans, specifications, and estimates (PS&E) to fully define project requirements. These design documents are then used to procure construction contractors (typically on a low-bid basis) to build the project in strict accordance with the Department's design.

In contrast, under design-build delivery, the design-builder, and not the Department or a consultant retained by the Department, is the Designer-of-Record responsible for the final project design, in addition to construction of the project in accordance with this design. (Note that if the term "Engineer-of-Record" is used instead, this must be defined separately from "Engineer", which refers to the Chief Engineer for the Department).

Use of design-build may fundamentally alter the traditional roles and responsibilities of the Department and design-builder, the contractual basis between these parties, and even some procurement and contracting terminology.

3.3.1.4. Roles and Responsibilities

With the design-builder assuming responsibility for final design, the focus of Department personnel shifts from preparing 100 percent complete plans, specifications, and estimates to preparing detailed procurement documents that communicate the Department's expectations regarding the project's physical components, basic configuration, operational requirements, and performance. After award of the design-build contract, the Department then acts in an oversight role, performing "over-the-shoulder" design reviews as the design-builder prepares its final design. Note that the design-builder's role as Designer-of-Record does not diminish the Department's responsibility for ensuring that the final design complies with the technical criteria and performance requirements outlined in the procurement documents. However, in enforcing these contract requirements, Department personnel should refrain from directing, completing, or otherwise actively controlling the design-builder's engineering and design efforts.

The manner in which the Department administers a design-build contract, particularly with regard to measurement and payment and quality assurance and quality control, may also differ from the standard approach taken on design-bid-build projects. For example, if the design-build contract were to delegate construction quality management to the design-builder, Department inspectors would then replace their traditional quality assurance responsibilities with more of a verification and acceptance role. Similarly, design-build contracts are generally awarded on a lump sum basis, which requires methods other than the standard measurement of quantities to determine progress and payment (e.g. use of cost-loaded CPM schedules).

Contractual Basis

With this change in roles and responsibilities also comes a change in the basis of the contract between the Department and the constructor. No longer are 100 percent complete plans and specifications the technical basis of the construction contract. Instead, the Department's RFP and the design-builder's proposal form the technical basis of the design-build contract, and the 100 percent complete plans and specifications are a required deliverable under this contract.

3.3.1.5. Terminology

As design-build represents a new way of delivering projects for the Department, new terminology is in order. The following definitions have been compiled based on best practices in the industry.

Adjusted Low Bid: A form of best-value selection in which technical aspects are scored on a 0 to 100 scale expressed as a decimal. The price is divided by the qualitative score to yield an "adjusted bid." Award is made to the proposer with the lowest adjusted bid.

Best Value: A procurement process in which proposals contain both price and technical components and award is based on a combination of price and technical considerations.

Design-Bid-Build: The traditional project delivery method where the Department (or, alternatively, a consulting engineer working for the Department) designs the project, solicits bids, and awards the construction contract to the lowest responsive and responsible bidder.

Design-Build: A project delivery method in which design and construction services are procured under a single contract with a design-builder.

Design-Builder: An individual, partnership, joint venture, corporation, or other legal entity that provides the necessary design services in addition to constructing the work, whether by itself or through subcontracts, including subcontracts for architectural and engineering services.

Design-Build Package: The document published by the Department that contains the public advertisement, the request for qualifications, request for proposals, general requirements, design scope of work, technical specifications, and any forms, drawings, and other supporting documents necessary to guide the proposers in the preparation and submittal of a proposal for a design-build project.

Fixed Price/Best Design: A form of best-value selection in which the contract price is established by the Department and stated in the Request for Proposals document. Design solutions and other qualitative and technical factors are evaluated and rated, with award going to the design-builder offering the best technical proposal for the established price.

Letters of Interest (LOI): The process by which design-builders interested in submitting a proposal for a design-build project set forth their qualifications and any other information required by the announcement of the project.

Low Bid Design-Build: A design-build project that is awarded to the proposer that submits the lowest-priced responsive proposal, as opposed to a best-value selection process.

Prequalification: A process for determining whether a firm is qualified to compete for a certain project. The prequalification process may consider financial, management, and other types of qualitative data. Prequalification should not be confused with short listing.

Price Proposal: The price submitted by the proposer to provide the required design and construction services.

Proposal: A proposer's written offer to perform the stated work at the quoted price. The proposal includes both technical and price components.

Proposer: An individual or legal entity submitting a statement of qualifications or a proposal for a design-build project.

Request for Proposal (RFP): Advertisement requesting proposals for work in accordance with the requirements outlined in the design-build package.

Request for Qualifications (RFQ): The document issued in Phase I of a two-phased selection process. It typically provides the minimum qualifications of the design-builder, a scope of work statement, general project requirements, and, if using a best-value procurement, the selection criteria (e.g., firm capabilities, key staff members, understanding and approach, quality and safety program) for compiling a short list of the most qualified proposers.

Short Listing: The narrowing of the field of proposers through the selection of the most qualified respondents to an RFQ (note difference as compared to prequalification).

Single-Phase Selection Process: A procurement process in which price and technical proposals are submitted in response to an RFP. Short listing (through an RFQ process) is not used.

Statement of Qualifications (SOQ): The written information submitted by the design-builder in response to the request for qualifications. The SOQ contains information about the design-builder's capabilities, team members, previous experience, and general understanding of the project.

Stipend: The fee sometimes paid to unsuccessful firms for the development of a responsive proposal.

Technical Proposal: The portion of the design-build proposal that contains design solutions and other qualitative factors that are provided in response to an RFP.

Two-Phase Selection Process: A procurement process in which the first phase consists of short listing (based on qualifications submitted in response to an RFQ) and the second phase consists of the submission of price and technical proposals in response to an RFP.

Weighted Criteria: A form of best-value procurement in which maximum point values are pre-established for technical and price components based on the level of importance assigned to each component, and award is based upon the highest total points earned.

Witness and Hold Points: Witness points are points identified in the inspection plan as points in the work where notification is required to give the Department the option to observe or visually examine a specific work operation or a test before the work can proceed. Hold points are mandatory inspection points identified in the inspection plan beyond which work cannot proceed until the Department conducts a mandatory verification and grants a written release. Hold points are generally applied to critical work items where it would be nearly impossible to determine the adequacy of materials or workmanship once the work proceeds past this point.

Work: All resources necessary to complete the design and construction of the project.

3.3.1.6. Benefits of Design-Build

Although design-build can be used to deliver almost any project, best practice suggests that it provides the greatest benefit on projects for which reduced schedule duration, increased constructability, and/or enhanced innovation offset the potential risks and associated costs of transferring design responsibility and other roles traditionally held by the Department to the design-builder.

Design-build has been used successfully on projects for which:

- A compressed schedule is needed.
- Schedule certainty is needed.
- Early cost certainty is required.
- The project scope can be adequately defined without 100 complete PS&E.
- Project quality can be defined through minimum design.
- Opportunity for innovation exists.
- Minimal third party risks exist or can be mitigated.

A low bid design-build approach would apply to projects where a compressed construction schedule is beneficial or possible but the Department must provide a high level of design definition and retain control of quality and third party coordination. A best-value design-build approach is better suited for projects where a low level of design definition is possible, there is greater opportunity for innovation, and the design-builder can assume greater responsibility for quality and third party coordination.

Reasons for not using design-build to deliver a particular project include:

- The project schedule can not be compressed or there is no benefit from compression.
- The design must be complete to obtain accurate pricing.
- The design must be complete to resolve permitting or other third party issues.
- Third party issues are better managed by the Department, not the design-builder.
- Project is too small to attract competition.

Chapter 2 of this manual provides a selection tool to choose the most appropriate delivery method for a project.

As a final consideration, the Department must have adequate staff to devote to a design-build procurement, particularly for two-step best-value. Development of the solicitation documents and evaluation of proposals require a far more intensive effort under design-build delivery than in a traditional procurement. Best practice also suggests that key personnel remain involved with the project from its inception to completion of construction.

3.3.1.7. Statutory Authority

Design-build has been implemented in the highway construction industry in a variety of ways based in part on how the state statutes are written and on how much responsibility is transferred to the design-builder for the design and other aspects of project performance.

Several statutes govern the use of design-build project delivery in California. California Government Codes provide broad requirements for state agencies, whereas California Public Contract Codes provide more specific requirements for Caltrans.

California Government Code 5956 et seq. allows design-build for revenue-generating infrastructure projects, with the caveat that operations may have to be included in the package. Design-build cannot be used by any state agency directly or indirectly to design, construct, finance, or operate a state project (including state highways).

California Government Code 6508 provides that joint powers agencies are subject to the same restrictions on contracting as the lead member agency.

California Public Contract Code 10100 et seq. provides some exemptions for the use of design-build for work under a certain amount or for emergencies. In addition, Section 10120 requires 100% design complete before advertisement for construction and Section 10122 requires competitive low bids for the award of a construction contract.

The State Contract Act in California generally requires state agencies such as the Department to award construction contracts using competitive bidding and to award design contracts to the most qualified firm. However, the California legislature has adopted a number of statutes allowing specific agencies, particularly local agencies, districts, and joint powers authorities, to use design-build under general enabling authority. This specific authority is generally limited to building projects, schools, water, and transit projects, but also includes revenue-generating highway projects where the Department provided oversight or acted as a funding and permitting agency. A number of state agencies, including the Department, have used design-build under exemptions for emergency or experimental projects where it is in the public interest to do so. The Legislative Analyst's Office authored a report in 2005 regarding projects undertaken under the specific legislative authority, recommending that the Legislature grant general authority to public agencies to use design-build for building projects. The report noted many of the previously discussed advantages in using the design-build method of delivery.

Several bills have recently been introduced to the legislature for general enabling authority to use design-build for public highway and other infrastructure projects. Based on best practices from the development of design-build statutes in other jurisdictions, it is advisable to adopt flexible general legislation for state agencies to use design-build, leaving the details of the procurement method to be determined by the agency based on the specific goals or needs of the project. The legislation must also consider various California rules or laws affecting the use of design-build, for example licensing, subcontractor listing laws, selection systems, and bonding requirements that may affect or restrict the use of design-build.

3.3.1.8. Nomination and Approval

.1 Nomination Package

A nomination fact sheet and Project Selection Criteria Sheet (Nomination Package) must be prepared and submitted to the Headquarters Division of Design, Office of Special Projects (OSP), for all candidate design-build projects. By submitting a Nomination Package, the District certifies that the decision to use design-build was discussed by the PDT and the PDT concurs with the decision.

.2 Approval Process

The approval process is initiated by the submittal of the Nomination Package to the Office of Special Projects. The Program Manager reviews and analyzes the package to ensure the candidate project is consistent with the intent of the authorizing legislation and the departmental goals for the pilot program. The Nomination Package is then forwarded to the Chief, Division of Design, and the Chief Engineer for concurrence. The next step in the process is transmittal of the package to Business, Transportation, and Housing Agency for final approval. The time frame for approval can take up to twelve weeks from submittal of the complete package.

3.3.1.9. Overview of the Design-Build Procurement Process

Figure 3.3.1 presents the general design-build procurement process, starting from early project scope development and extending through to selection of a design-builder and contract award. Although in a simplified and idealized form, this figure outlines the major steps to develop a design-build project.

Note that these steps are not necessarily sequential, with some best performed concurrently to ensure project objectives are met. Certain steps, such as risk allocation, can also be an iterative process. Others may be started by the Department, but finalized by the design-builder. For example, under design-build, the environmental permitting and ROW acquisition processes could begin and approach completion as a result of the Department's preliminary design efforts, but, responsibility for permit modifications and additional ROW acquisition may be a design-builder responsibility to accommodate its final design. This approach will alter the traditional project development workflow sequence shown in the Project Development Workflow Task Manual and the Guide to Capital Project Delivery Workplan Standards. It will also change the requirements for Ready-To-List certification.

.1 Project Scoping

The first step, project scope development, should take place as soon as possible after the project has been programmed and identified as a potential candidate for design-build project delivery.

At this preliminary stage in the project development process, the scoping effort can rely on information contained in the Project Initiation Document (PID) to identify general project characteristics, such as type of construction (e.g., emergency or repair, new construction, bridge, ITS, etc.), project location, and schedule requirements. This preliminary scope definition can be refined through subsequent engineering studies and design efforts.

.2 Goals, Preliminary Engineering, and Risks

The next steps – identification and ranking of project goals and objectives, preliminary project development, and identification and allocation of project risks – are instrumental in the final decision to use design-build and will affect the final drafting of the contract documents. These activities are not necessarily design-build specific and can be integrated into the early stages of the

Department's existing Project Report and Environmental Document stage of project development (WBS Phase 0).

In fact, for most projects, the possibility of using design-build will not substantially alter the Department's existing Project Report and Environmental Document phase. The need for the Department to perform preliminary engineering studies, obtain input from stakeholders, prepare a project report, and prepare (and, in most cases, finalize) the environmental documents, will also be required under design-build delivery.

.3 Final Project Scope/Technical Criteria and RFQ/RFP Package

The design-build approach will deviate from the Department's existing project delivery process in the preparation of the Request for Proposal (RFP) package. Unlike the Department's standard Plans, Specifications, and Estimates phase, the preparation of solicitation documents under design-build delivery, particularly for a two-step best-value procurement, does not require, or derive benefit from, the Department's completion of final plans and specifications.

Instead, if contractor innovation is a primary goal, the Department should only perform the level of engineering and design necessary to support the environmental process, advance right-of-way acquisition, and identify the full scope, needs, and technical criteria for the project in accordance with the risks to be allocated to the design-builder.

The Department can then redirect its former design efforts to the preparation of the RFQ/RFP package. These documents must clearly communicate the Department's expectations and requirements for the project, in addition to outlining a transparent process by which it will evaluate proposals and select the successful design-builder.

.4 Design-Builder Selection

The design-builder will be selected in accordance with the evaluation plan and information communicated to proposers in the RFP with respect to evaluation factors, rating guidelines, and the relative importance of the various evaluation factors. The exact selection process will vary based on the procurement method (e.g., lowest-price or some variation of best-value) chosen for a particular project.

Figure 3.3.1 Design-Build Process Overview

3.3 PROJECT DELIVERY SYSTEMS
3.3 Design-Build

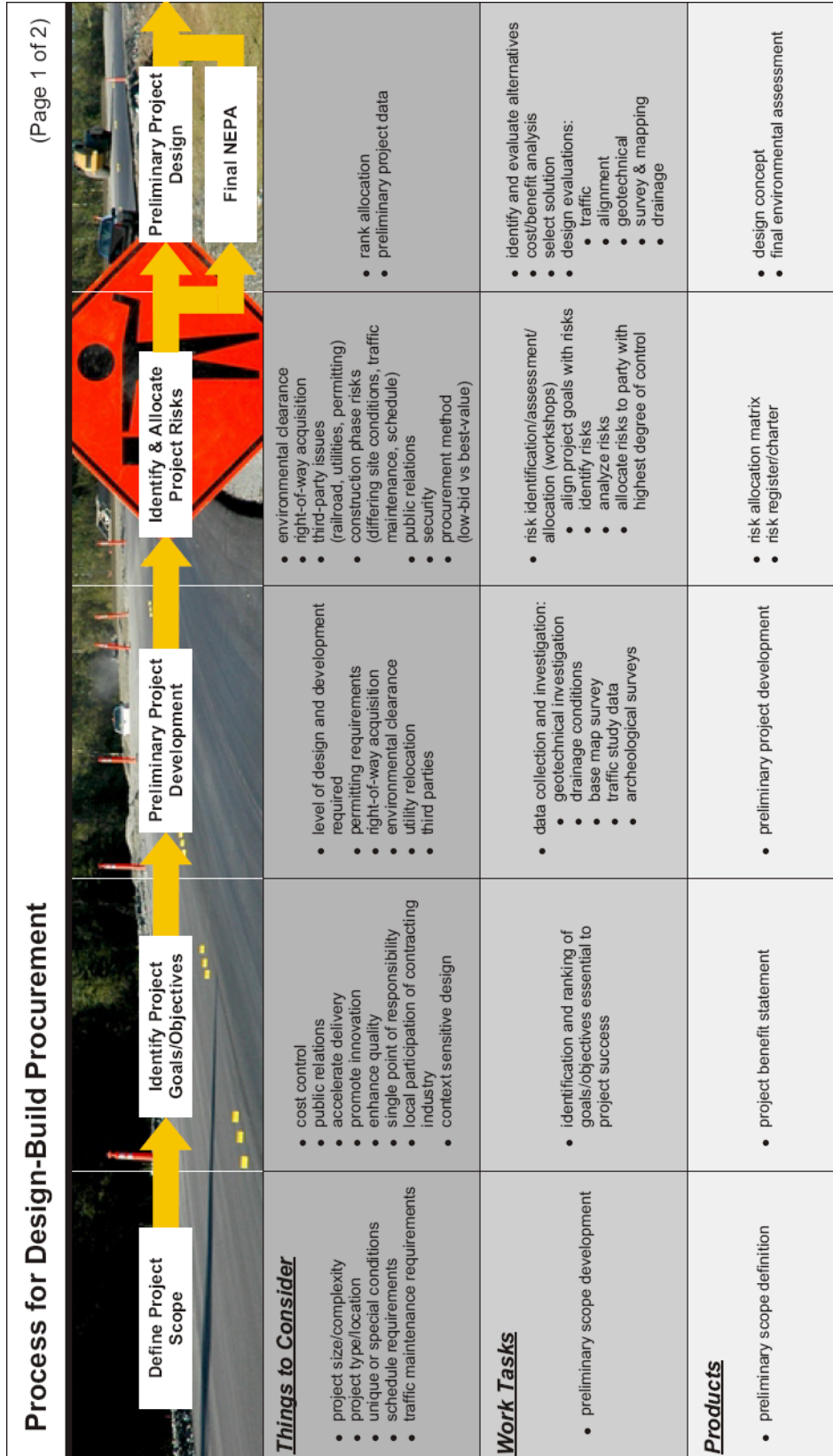


Figure 3.3.1 Design-Build Process Overview (cont.)

Process for Design-Build Procurement (Page 2 of 2)

<p>Finalize Project Scopes/Tech Criteria</p>	<p>Develop RFQ/RFP Package</p>	<p>RTL</p>	<p>Advertise/Select</p>	<p>Award</p>
<p>Things to Consider</p> <ul style="list-style-type: none"> level of design required to maximize benefit of D-B 	<ul style="list-style-type: none"> risk allocation procurement approach (one-step vs two-step) stipends goals for local industry DBE use of ATC? 	<ul style="list-style-type: none"> RTL certification for D-B <ul style="list-style-type: none"> partial ROW (Cert. 3 or 3W) preliminary plans, specifications (partial PS&E) 	<ul style="list-style-type: none"> two-phase vs one-phase process instructions to evaluation panel pre-proposal conference clarification process evaluation and selection method 	<ul style="list-style-type: none"> confirm that compliance requirements have been met bid escrow requirements stipend (if applicable) evidence of bonds and insurance QC/QA plan for design preliminary schedule & NTP date debriefing of unsuccessful proposers
<p>Work Tasks</p> <ul style="list-style-type: none"> determine design criteria and extent to which performance-based specifications can be developed select RFQ/RFP evaluation system: <ul style="list-style-type: none"> evaluation rules evaluation panel selection criteria & award method develop outline of RFQ/RFP package 	<ul style="list-style-type: none"> develop contract language <ul style="list-style-type: none"> scope of work general and special provisions technical specifications prepare/finalize RFQ/RFP package 	<ul style="list-style-type: none"> review RFQ/RFP packages clear constraints (applicable to D-B) full funding verification list in contract register 	<ul style="list-style-type: none"> advertize RFQ (if two-phase) conduct pre-proposal conference evaluate SOOs short-list proposers publish RFP to short-listed proposers issue clarifications & addendums evaluate proposals select Design-Builder 	<ul style="list-style-type: none"> confirmation of compliance requirements <ul style="list-style-type: none"> bonds and insurance escrow of proposal DBE QC/QA plan for design insurance & NTP debriefing payment of stipend (if applicable) return of proposal guarantee
<p>Products</p> <ul style="list-style-type: none"> project description performance criteria technical specifications reference documents preliminary plans evaluation system RFQ/RFP outline 	<ul style="list-style-type: none"> draft RFQ/RFP package 	<ul style="list-style-type: none"> final RFQ/RFP packages 	<ul style="list-style-type: none"> short-listing recommendation of award 	<ul style="list-style-type: none"> contract award recommendation memorandum

3. PROJECT DELIVERY SYSTEMS

3.3

Design-Build

3.3.2. Project Development

The development of a design-build project typically involves the following steps:

- Establish a project development team (PDT).
- Select a project delivery method.
- Define project goals.
- Allocate project risks.
- Perform preliminary engineering.
- Plan the proposal evaluation process.
- Select the procurement approach.
- Draft the RFQ, RFP, and related contract documents.

These steps are not necessarily sequential and will likely entail some iteration as additional project data is obtained. With the exception of drafting the procurement documents (the focus of the next section), the following discussion addresses each of these steps as part of design-build project development process.

3.3.2.1. Related Manuals

To the extent possible, the project development framework presented in this section builds upon the Department's existing processes, as defined in the following manuals:

- Project Development Procedures Manual
- The Guide to Capital Project Delivery Workplan Standards
- Project Development Workflow Task Manual
- Project Management Handbook
- Project Risk Management Handbook

Where design-build requires modifications to these standard practices, every effort has been made to either integrate these modifications into the Department's existing process or to draw the appropriate parallel to the corresponding design-bid-build task.

3.3.2.2. Project Development Team

The individuals assigned to the Project Development Team (PDT) for a design-build project should be well-versed in design-build concepts, particularly with regard to its potential benefits and how it differs from the Department's standard delivery approach.

Unlike the Department's traditional project delivery process, in which individual team members may not be active during all phases of a project's lifecycle, design-build projects benefit greatly from the continued involvement of key personnel from project inception to project completion. For example, the field construction representative, who will ultimately be overseeing construction, should participate in the RFP development process to ensure that construction-phase issues (e.g., the quality management process, inclusion of "witness-and-hold" points, long-term maintenance considerations of possible design alternates, maintenance and protection of traffic, etc.) are given the appropriate attention in both the RFP itself and in the evaluation and selection of the design-builder. Similarly, the engineers that participate in the preliminary design work and in preparation of the RFP should remain involved after contract award to oversee and review the design-builder's design submittals.

3.3.2.3. How Does Design-Build Affect Caltrans's Traditional Project Phases?

The Department's early project development phases will require minimal change to accommodate design-build. However, preparation of the required solicitation package will present a stark contrast to the Department's existing Plans, Specifications, and Estimates phase. All subsequent phases will similarly require modification to suit the nature of the design-build contract.

.1 Project Initiation Document (K-Phase)

The selection of a delivery method for a particular project will not take place until after the project has been programmed in accordance with the Department's Project Initiation Document (PID) phase; therefore, the possibility of using design-build will have no bearing on the PID itself. However, the preliminary project scope included in the PID can be used to screen for potential design-build candidate projects.

.2 Project Approval and Environmental Document (O-Phase)

To facilitate the design-build decision process, the Department's standard Project Approval and Environmental Document phase can be expanded to include a concerted effort to:

- Identify and rank the project's goals and objectives;
- Identify, evaluate, and allocate project risks; and
- Select the appropriate delivery method given the goals and risks identified for the project.

These additional activities are not necessarily sequential and will likely require some iteration as project data is refined through subsequent investigations and design efforts. The preliminary engineering performed to support the preparation of the draft Project Report and draft Environmental Document can be tailored to support these design-build activities as well. With regard to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) processes, the Department's role will likely remain unchanged under design-build delivery. Note, however, that the FHWA's Final Design-Build Rule under SAFETEA-LU (amended August 14, 2007) does allow agencies to issue RFPs, execute agreements with the selected design-builder, and issue the notice-to-proceed with *preliminary* design work prior to the completion of the NEPA process. Such early involvement of the design-builder could further accelerate the delivery process by advancing the preliminary design of the preferred alternate in parallel with the NEPA process. To avoid conflicts of interest under such a procurement strategy, the Design-Build Final Rule does preclude the design-builder from preparing the NEPA documents and from having any decision-making responsibility with respect to the NEPA process. The design-build contract under these conditions would also require appropriate provisions (e.g., through the use of contract hold points) to prevent the design-builder from proceeding with the final design and any physical construction prior to conclusion of NEPA. Similarly, the contract would have to include termination provisions in the event that the no-build alternative is ultimately selected.

Although federal regulations allow the RFP and design-builder selection to occur prior to completion of the CEQA and NEPA processes, the Department would not, at least initially, issue solicitation documents until after the NEPA process is complete and the necessary environmental clearances have been received. The preliminary engineering and preparation of the appropriate environmental documents will therefore remain the Department's responsibility, just as with the design-bid-build process.

.3 Plans, Specifications, and Estimates (1-Phase)

On a design-build project, preparation of the RFP packages replaces several of the Department’s traditional tasks during the Plans, Specifications, and Estimates phase of project development. Instead of taking design tasks to final completion and issuing 100 percent complete PS&E, the PDT will define project requirements using performance criteria and a conceptual design that will form the basis of the RFP.

In response to the RFP, prospective design-builders will then prepare proposals addressing how they would complete both the design and construction of the project.

After contract award, the selected design-builder, with oversight from Department personnel, will finalize the design.

.4 Right of Way (2-Phase)

Under traditional project delivery, the Department is responsible for obtaining all the necessary Right-of-Way including legal property rights, clearances, and Right of Way Certification for a project before advertising for bids. Under design-build the Department will similarly retain primary responsibility for acquiring and setting the Right of Way; however, there may be design-build projects where the final footprint for the project can not be fully defined until the design-builder completes the design phase and it is not practical for the Department to acquire all required ROW prior to issuing the RFP. In these cases, the design-builder must determine what additional Right of Way and temporary easements are necessary to accommodate the final design. If additional Right of Way is deemed necessary, the design-builder must submit a written request to the Department justifying the need for additional Right of Way and bear the cost and schedule impacts associated with the acquisition of additional Right of Way. The Department will review the request for additional Right of Way to determine whether it falls within the scope of the preferred alternative reflected in the Environmental Document and notify the design-builder regarding the schedule and cost implications of acquiring additional Right of Way.

Regarding temporary or construction easements, the Department may retain responsibility for negotiating and acquiring temporary easements or transfer this responsibility to the design-builder. In either case, the design-builder must identify what additional temporary easements are necessary for the construction, provide drawings showing the proposed locations and limits, and include the cost and time for acquiring additional temporary easements in its proposal for the work.

.5 Construction (3-Phase)

On a design-build project, the Department will transfer significantly more responsibility and authority to the design-builder to manage and control the work than would otherwise be the case on a standard design-bid-build project. The Department will therefore assume more of an oversight role, monitoring, verifying, and auditing the design-builder’s progress with regard to design submittals and construction of the work in accordance with the design.

Design-build also offers opportunities to “fast-track” certain elements of construction by releasing subcomponents of the project design prior to the entire project being designed.

3.3.2.4. Deciding to Use Design-Build

Design-build is not appropriate for every project, but, given the right circumstances, design-build may offer significant benefits to both the Department and the public.

Many considerations should factor into a decision to use design-build. The project selection tool provided in Chapter 2 can facilitate the decision-making process, but it is difficult to define a cut-off score that automatically dictates or eliminates the use of design-build to deliver a project. Given

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specific project conditions or objectives, a single factor can override all others in determining the most appropriate delivery method for a specific project.

Typical considerations for using design-build are identified and described below.

Shorter Schedule – The overall project schedule is typically a driving consideration for selecting the design-build delivery approach. The ability offered under design-build to overlap (“fast-track”) design and construction activities can be used to accelerate the overall project delivery schedule, even if actual construction time remains similar to that of a traditional project. In addition, allocating design and construction responsibilities to one entity should improve communication and coordination efforts between the designer and contractor, and thus minimize the potential for project delays associated with requests for information and design-related errors and omissions.

Innovation – If the project provides flexibility with regard to design and engineering solutions, the use of design-build can promote innovation. Innovation can also extend to management techniques and other elements of the project, such as public information and community relations, staging and phasing of maintenance and protection of traffic (MPT) activities, and schedule.

Early Cost Certainty – Design-build cost is often established earlier in the project development process, particularly for a best-value, fixed-price contract. With low bid design-build or design-build using a Guaranteed Maximum Price (GMP), costs would be established later in the project development cycle, but possibly reduce the contingency cost..

Less Cost Growth – Assigning control over design and construction to one entity should minimize cost growth due to errors and omissions in the plans. Furthermore, the lump-sum nature of the design-build contract eliminates cost increases due to variation in unit quantities.

Reduction in Claims – Having a single point of responsibility for design and construction services promotes a non-adversarial relationship between the designer and contractor. Improved communication and increased constructability should also minimize claims associated with errors and omissions in the plans.

Considerations for possibly not using design build include the following:

Current Status of the Design – If design has progressed to the point where major design decisions have already been made, the ability for a design-builder to offer innovative solutions is significantly diminished.

Third Party Risks – Environmental and other third-party issues may require design to be taken to a high level of completion or eliminate the ability to shorten the schedule, which negates the benefits of design-build.

Available Design Builders – There must be a sufficient pool of available engineering design and construction firms capable of handling a design-build project.

Funding – Design-build requires that funding for the entire project (design, ROW, and construction) be committed and available as the project progresses.

3.3.2.5. Project Goals

Clear and concise project goals are critical to the success of any project. However, when the Department decides to use an alternative delivery method such as design-build, articulation of these goals takes on even greater importance as they set the foundation for the entire project development process. Decisions made with respect to risk allocation, procurement method (low-bid vs. best-value), RFQ/RFP development, and the proposal evaluation and design-builder selection process, all stem from the goals established at project inception.

Early in the project development process, the PDT, with input from other key stakeholders as necessary, should develop and refine a list of project goals. As described below, identification of these goals is just an initial step in a process that extends the life of the project. Adherence to these steps will help ensure that the initial reasons for selecting the design-build approach drive subsequent decision-making processes.

1. **Establish project goals.** Project goals typically address time, quality, and cost considerations. In this respect, they should correlate to the perceived benefits of using design-build. For example, the most frequently cited benefit of design-build is shorter overall project duration. This potential benefit can be directly translated into a project goal of minimizing project delivery time or meeting a prescribed completion date.

In expressing project goals, use clear, concise language that is not open to multiple interpretations. Example project goals could include the following:

Schedule Issues:

- Substantial Completion (Final Acceptance) by (date/event)
- Substantial Completion (Final Acceptance) within ____ days of Notice to Proceed

Cost:

- Cost not to exceed \$_____
- Maintenance costs not to exceed \$_____

Quality/Innovation:

- Design life of ____ years
- Warranty of ____ years
- Minimize disruption to residents, businesses, and the traveling public during construction
- Provide aesthetic solution to minimize visual impact

2. **Rank goals in order of importance.** Optimizing time, cost, and quality goals is rarely possible on a single project. Tradeoffs are often necessary to ensure that the primary goal is achievable. For example, if meeting a scheduled completion date takes precedence over cost, the Department may have to pay a premium for multiple shifts or overtime. Similarly, funding constraints may require the Department to scale back its expectations regarding quality enhancements. But it might be possible to realize multiple goals for cost and time, if for example the cost of time savings is factored into the equation.

Reaching a consensus on the relative importance of individual project goals will help the PDT make informed decisions regarding risk management strategies intended to increase the likelihood of achieving the primary project goal (e.g. time savings), even if at the expense of secondary goals (e.g., cost).

3. **Communicate Goals.** Developing and ranking project goals will help focus the efforts of the PDT in developing solicitation documents that clearly communicate the Department's expectations to interested proposers. Announcing these goals in the solicitation documents then allows proposers to respond with designs and technical concepts tailored to meet or exceed these expectations.

The best manner in which to reward proposers for meeting the expressed goals in the RFP is through the use of a best-value procurement process. Best-value procurement allows consideration of both price and other key non-price factors in the evaluation and selection process. The project goals would correspond directly to the non-price factors, creating a transparent, albeit still somewhat subjective, way to consider goals in the design-builder selection process. Under a

more traditional, low-bid procurement, goals could be addressed by linking proposal responsiveness to meeting certain minimum prescribed requirements.

4. **Adhere to Goals.** Once set, project goals should not change, except in response to unusual conditions. Holding to these goals means that once the design-builder has been selected and the project is underway, the Department should administer the contract in a manner consistent with these goals. For example, if a project goal is to enhance innovation, the design-builder should be given enough freedom during the design phase to incorporate innovative solutions to the performance criteria established in the RFP.

3.3.2.6. Risk Allocation

Risk management is important to the success of any project. The Department has therefore incorporated into its standard project delivery process a systematic approach for identifying, analyzing, responding to, and monitoring project risks. This process, as outlined in the Project Risk Management Handbook, allows the PDT to make informed decisions regarding the relative risk of alternative approaches, and the potential effect of these alternatives on the likelihood of achieving project goals.

According to the Department's risk management process, the PDT is to develop a risk register during the Project Initiation Document phase. Once the project is programmed, the PDT is to then amend and refine this register if subsequent engineering studies eliminate (or reduce the likelihood of) previously identified risks or, conversely, identify previously unknown risks. Risk management is therefore an inherently iterative process, and one which, particularly under design-build delivery, can take on the added complexity of allocating risks traditionally held by the Department to other parties.

In general, risk should be allocated to the party best able to manage and mitigate the adverse impacts of the risk. Whether this party is the Department, the design-builder, or others is entirely dependent upon project-specific conditions and the willingness of the Department to potentially pay for the design-builder to assume responsibility for a high-risk item.

As part of the Risk Response Planning process described in the Department's Project Risk Management Handbook, the PDT should therefore make a concerted effort to identify which, if any, of the possible project risks can be transferred to the design-builder.

Note that when allocating risk, every attempt should be made to clearly assign responsibility to either the Department or the design-builder, as the concept of shared risk, although valid, can lead to disputes regarding responsibility.

If a risk cannot clearly be assigned to one party, an attempt should be made to subdivide the risk category into more discrete components that can be assigned to individual parties. For example, on the whole, local agency permitting is a risk area that will likely be shared between the Department and the design-builder. Better practice would be to refine this risk area into the components of initial permitting, assignable to the Department, and permit modifications, assignable to the design-builder. Breaking down risk areas in this manner will help the PDT define design-builder responsibilities when drafting the RFP package.

The risks described below are examples of those that are often considered transferable to the design-builder. As inappropriate risk transfer will result in higher costs to the Department, every effort should be made to carefully evaluate the party that is in the best position to manage such issues.

.1 Design Issues

Under traditional design-bid-build delivery, the Department acts as both the owner and the designer. In this role, the Department in effect guarantees the completeness and accuracy of the design and retains most, if not all, of the risk for the success of the design.

In design-build, several design-related risks shift to the design-builder. Although the Department will continue to retain responsibility for defining the project scope, design criteria, and general site conditions (e.g., initial geotechnical investigation), the design-builder, as Designer-of-Record, has ultimate responsibility for the accuracy of the plans, conformance with established standards, and constructability.

Determining the appropriate level of design by the Department therefore requires a careful balancing of the needs, goals, and risks identified for the project. Providing too much design can restrict innovation and increase design liability for the Department, whereas providing too little may result in the Department not receiving what it wants or placing undue risk upon the design-builder.

Agencies experienced in design-build often report higher levels of project satisfaction with lower levels of preliminary design (with 30 percent often cited as a benchmark). However, this is not to say that the same level of preliminary design should be applied to every design-build project, or that every element within a single project should be taken to the same level of design. Each project, as well as each component of a single project, must be examined to determine the extent of preliminary or conceptual design needed to clearly convey the Department's performance expectations. For certain project elements, defining performance requirements could require close to 100 percent design, whereas for others, very little design may suffice.

.2 Environmental Studies, Permitting, and Compliance

Under design-build delivery, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The preliminary engineering and environmental studies, definition of major project features, selection of the preferred alternative, and preparation of the appropriate environmental documents will therefore remain the Department's responsibility, requiring little change to the Project Report and Environmental Document phase of the Department's traditional design-bid-build process.

Where there may be some deviation from the Department's traditional handling of environmental issues rests with permit modifications or amendments necessitated by subsequent changes to, or refinement of, the original design by the design-builder. Responsibility for any such amendments should be transferred to the design-builder, including responsibility for any schedule and/or cost impacts incurred in awaiting a final approval by the sponsoring or regulatory agency.

In addition, responsibility for obtaining any other environmental clearances required outside of the NEPA/CEQA process can also be shifted to the design-builder, particularly if they relate to more construction-specific permits and approvals, such as those required for soil disturbing operations. However, prior to shifting this risk to the design-builder, the Department should carefully consider the appropriate level of conceptual design needed to convey environmental conditions and mitigation requirements to the design-builder.

Typically, taking preliminary highway design to 15 to 30 percent is sufficient to provide enough detail to complete early action permit processes, demonstrate constructability, identify impacts and alternates, and minimize risk to both the Department and design-builder. If, however, the initial Environmental Assessment or Environmental Impact Statement suggests some high-risk elements (e.g., wetland mitigation), the Department should consider securing the necessary permits itself, in

advance of the RFP, or providing a higher level of preliminary design and/or environmental studies to offset some of the risk to the design-builder.

3 Right of Way (ROW)

The Department will retain responsibility for obtaining ROW for most design-build projects. However, under certain circumstances (e.g., areas with high real estate costs), it may be advantageous for the Department to delay acquisition until the design-builder has selected a final alignment. In such cases, the Department should, at a minimum, delineate the existing ROW as part of its base data collection. Acquisition of any additional ROW deemed beneficial or necessary as a result of the design-builder's final design could then be requested by the design-builder. The Department would be responsible for assessing whether the additional ROW remained within the scope of the environmental permits, acquire the additional property, and determine the cost and lead-time impacts to be borne by the design-builder. The Department would also handle the acquisition of temporary construction easements identified by the design-builder but might transfer responsibility for acquiring additional temporary easements to the design-builder if it is practical to do so. In either case, the design-builder would be responsible for any schedule or cost impacts associated with the acquisition of additional temporary easements.

4 Local Agencies, Utilities, and Railroads

The Department has a long-standing relationship with most local agencies, Utilities, and railroads. As such, the Department will likely be in the best position to influence and obtain the required cooperation from these third party entities.

In most cases, the Department will obtain the required agreements with these parties prior to its issuance of the RFP to avoid schedule impacts. If these have not been secured by the time of advertisement, the RFP should indicate the status of any outstanding agreements.

If the relocation of third party facilities requires extensive coordination between the Utility or railroad and the design-builder's own construction forces, it may be beneficial to make these agreements and coordination part of the design-builder's scope of work. In such cases, the RFP should clearly indicate any related design criteria and requirements, and the timelines and schedule constraints related to railroad/utility design reviews and construction inspections.

5 Construction

Similar to traditional design-bid-build projects, the design-builder will have responsibility for actual construction. However, under design-build delivery, construction responsibilities may extend to quality assurance, surveying, maintenance of traffic, and similar activities traditionally performed by Department personnel. If such responsibilities are transferred to the design-builder, the Department should still maintain an active oversight role. The Department may also consider the use of warranties on certain products to help ensure that the design-builder upholds quality standards.

6 Unforeseen Conditions

Unexpected conditions (e.g., differing site conditions, hazardous materials, endangered species, etc.) that may arise during construction will usually remain the Department's responsibility and will be treated as changed conditions. In some design-build procurements, the Department may consider transferring responsibility for certain unforeseen conditions to the design-builder by compensating short-listed proposers for additional investigations before the submission of their proposals.

In retaining this risk, the Department should continue to conduct initial site investigations, providing sufficient detail in the RFP to establish baseline conditions from which design-builders can develop their proposals.

.7 Public Relations

Gaining the public's initial acceptance or endorsement of a project will remain the Department's responsibility. In conducting the initial public hearings, the Department should discuss any implications of using the design-build delivery method, particularly if selection of the final project alignment will remain open until after contract award and the design-builder's completion of the design phase of the project.

Once the project has gained the public's favor, it may be appropriate for the design-builder to assume more of a direct role in addressing public concerns regarding final design selections, maintenance of traffic, local business impacts, budget, schedule, and similar construction-related issues. If the Department does anticipate allocating such responsibility to the design-builder, the RFP should outline the minimum requirements for staff that will be engaged on the design-builder's public outreach program.

Design-builder responsibilities for a public outreach might include the development of a community relations program; responding to inquiries or comments from residents, businesses, or other members of the public; public notifications of closures, shutdowns, or emergencies; and maintaining public contact records; telephone trees, websites, and signage throughout the project to keep the public informed.

Even if public outreach responsibilities are allocated to the design-builder, it is important for the Department to continue to preserve its relations with the public through an open and ongoing dialogue. Such discussions should be coordinated with those of the design-builder to minimize the potential for sending mixed messages to the public.

3.3.2.7. Preliminary Engineering

Under design-build project delivery, the design-builder assumes single point responsibility for both the design and construction of the project. The Department, however, must still include sufficient preliminary design in the solicitation documents to minimize uncertainty and reduce contingency amounts included in the proposals submitted by prospective design-builders.

To develop the basic project configuration for the solicitation documents, the Department must still perform preliminary engineering and design, similar to that required for a traditional design-bid-build project. With design-build, however, the challenge is not to progress this design to a point that precludes any innovation and flexibility on the part of the design-builder, particularly if innovation is a stated goal of the project.

To a large extent, the information needed to advance the environmental documents and ROW acquisition will drive the level of preliminary design needed. The risks identified during the risk management process will also indicate where the Department needs to focus its preliminary design efforts. For example, any risks related to utilities, ROW, railroads, and other stakeholder concerns may necessitate additional engineering to mitigate the concern or to secure the appropriate agreements with the affected third party.

Some additional guidelines to help establish the appropriate level of preliminary engineering are as follows:

- Obtain the information needed to support the NEPA process.

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- Collect base project data, but, to the extent possible, reserve the analysis of this data for the design-builder. Base data collection may include:
 - Preliminary survey and mapping to identify existing and future ROW limits and construction easements associated with the Department's conceptual design;
 - Geotechnical investigations to define project design criteria, refine the risk management plan, and establish a baseline for changed conditions;
 - Subsurface utility investigations (potholing) to locate and classify utilities;
 - Hydraulic and hydrologic analyses to determine flow requirements and any special issues of concern;
 - Traffic studies to provide the basis for traffic forecasts, noise studies, air quality studies, intersection channelization requirements, lane configurations, pavement designs, and maintenance and protection of traffic during construction;
 - Pavement and subgrade investigations for projects with existing pavement structures; and
 - Bridge condition surveys to determine adequacy of existing structures, if applicable.
- Define reasonable limits of ROW acquisition, but allow for some flexibility in the final alignment.
- Prepare and execute the appropriate agreements with local government/agencies, Utilities, and railroads to the extent possible.
- Progress roadway design to a 20% to 30% level of completion, focusing on:
 - Horizontal and vertical alignment;
 - Project limits and ROW;
 - Vertical clearances;
 - Locations of signal and Intelligent Transportation System (ITS) work; and
 - Interchange types and locations.
 (Note that if project components need to be compatible with existing systems, such as ITS facilities, a higher level of design may be necessary.)
- Progress design of structures to a point that allows specification of performance requirements. If possible, define the allowable types of structures, rather than require a specific type, which could hinder innovation.

In general, the preliminary engineering effort should identify the project's needs and objectives, but not necessarily prescribe solutions. For some projects, the preliminary engineering studies may suggest the need for additional, more detailed investigations (e.g., geotechnical, subsurface utility, or pavement subgrade investigations) to minimize contingency costs related to major risks or unknowns. In most cases, the PDT will have to continually refine its risk allocation strategy as additional information becomes available. .

3.3.2.8. Project Scope and Technical Criteria

Once the NEPA process has been finalized, the PDT can use the information gathered through the preliminary engineering effort to finalize the project scope and technical criteria package for inclusion in the RFP. In developing the scope and design criteria, the PDT should strive to use performance specifications where possible and in a manner consistent with the risk allocation strategy and goals established for the project. Rather than focusing on how to do the work, performance specifications define the required results. Using performance specifications inherently recognizes that there may be more than one way to achieve the desired result. If properly written, they provide more flexibility and encourage more innovation and creativity than prescriptive specifications. Section 3.3.3.5.6 includes further guidance for drafting performance specifications.

3.3.2.9. Evaluation System Planning

Early in the project development process, the PDT should begin to outline a plan for evaluating proposals submitted by design-build firms. Preparing the evaluation plan before the RFP, particularly when using a best-value process involving technical factors and price, ensures that the RFP itself will contain sufficient information for prospective design-builders to prepare proposals that address the Department's major concerns.

The PDT will ultimately develop the evaluation plan into a formal, internal document that details each step in the evaluation and selection process, from the receipt of proposals to the final documentation of the selection decision. The evaluation and selection plan should describe the evaluation factors and their relative importance (weighting), rating guidelines, and other information critical to maintaining the integrity and fairness of the selection process. Adherence to this plan will help the Department defend its selection decision in the event of a bid protest.

.1 Evaluation Team

Identification of the members of the evaluation team early in the project development process will allow the PDT to obtain their input on any ambiguity or inherent subjectivity in the selection criteria that may require modification prior to issuance of the RFP.

The evaluation team will typically consist of the following participants:

- A Selection Official (generally the Department's XXX);
- A Selection Committee consisting of:
 - upper-level Department design and construction personnel,
 - the Department's Design-Build Program Manager, and
 - local agency representatives (if they are a key project stakeholder);
- Other legal, financial, and technical advisors as necessary.

The Selection Official will primarily act in an oversight role, officiating over any evaluation team disputes, ensuring the integrity of the process, and making the final selection based on the recommendations of the Selection Committee.

The Selection Committee will consist of individuals involved in the evaluation of SOQs for initial shortlisting (if a two-step best-value procurement approach is used) and the evaluation of proposals for contract award. The composition of the Selection Committee will be driven by the evaluation criteria set forth in the RFQ and RFP. For example, if the RFQ or RFP requires proposers to demonstrate financial capability, the committee should include a financial advisor who is qualified to read, understand, and rate the proposers' financial statements. Similarly, highly technical projects will likely require experts who can identify the relative merits of proposals that address specialty areas (e.g., bridge construction, ITS, traffic staging, etc.).

It is possible that different committee members will participate in the evaluation process at different times and to varying degrees; however, the role of each committee member should be established well in advance of RFP completion so that they may act in an advisory role to the PDT during the final selection of the evaluation criteria that will be included in the RFP.

To promote consistency in how the committee members interpret the evaluation criteria included in the RFQ/RFP, the Department should conduct training sessions in the following topic areas:

- Key elements of the RFQ/RFP and related evaluation plans;
- Project requirements;
- Project constraints;
- Appropriate documentation of the selection decision;
- Roles and responsibilities of the evaluators; and

- Confidentiality.

This training should precede the receipt of SOQs (if applicable) and proposals, and should be mandatory for all members of the Selection Committee.

.2 Evaluation Factors – General

A key element of evaluation system planning is identifying the evaluation criteria that will be used to assess the ability of proposers to meet the needs and goals of the project. For example, although not a complete guarantee of quality and/or innovation, the experience of design consultants and subcontractors in relevant specialty areas can often serve as an indicator of the proposers' ability to successfully complete the project or a particular portion of the work. Such information could be obtained either through an RFQ or a prequalification process. The technical approach provided in the proposals could then provide further indication of the proposers' understanding of the work and ability to meet the stated performance objectives.

Risk allocation strategies may also drive evaluation criteria. For example, if the Department were to transfer construction quality assurance responsibilities to the design-builder, the RFP could require proposers to address their general approach to quality management in their technical proposals. By evaluating and rating these approaches, the Department could continue to exert some control over quality management.

The PDT should begin to think about evaluation factors soon after identifying project goals. Considering that project goals typically fall into the categories of time, budget, and quality, it is not surprising that evaluation factors generally follow suit, falling into the categories of schedule, price, and technical criteria. Evaluation factors may be set up on a pass/fail basis, in which the proposers have to meet certain minimum prescribed requirements to be responsive, or on a more qualitative, best-value basis, in which evaluators rate the proposals according to the evaluation criteria included in the RFP. Either way, to be effective, each criterion should be defined in terms of some measurable standard against which responsiveness can be measured.

Evaluation factors should be designed to solicit information that can support meaningful comparison and discrimination among competing proposals. When identifying these factors, the PDT should consider the time and effort that proposers will have to invest in preparing responsive proposals, and that of the Department in evaluating this information.

Developing a tentative list of evaluation factors will help focus the PDT's efforts as it performs preliminary engineering and begins to prepare solicitation documents. If using a two-phase (RFQ/RFP) procurement approach, the information evaluated at the RFQ/SOQ stage will differ from that evaluated at the RFP/proposal stage. Examples of typical SOQ and RFP evaluation factors follow below.

.3 Evaluation Factors – RFQ/SOQ

Development and issuance of the RFQ will likely take place sometime prior to finalization of the project requirements. Given this timing, instead of requesting specific information regarding the proposers' approach to the project, the evaluation factors should focus on the general qualifications of the proposers to perform the work, using indicators such as their experience, past performance, and bonding capacity.

Typical SOQ evaluation factors include the following:

- General pass/fail factors such as:
 - Responsiveness of the SOQ in general;
 - Provision of draft legal documents identifying the legal relationships and organizational structure of the proposers;

- Designation of authorized representative;
- Evidence that the design-build entity has the capacity to obtain all required payment and performance bonding, liability insurance, and errors and omissions insurance;
- Acceptable certification regarding debarment status and other legal compliance issues;
- Letter from Surety indicating sufficient bonding capacity of the proposer; and
- For larger projects, financial data indicating sufficient capacity to undertake and sustain a project of the size and scope contemplated.
- Experience of the proposing entity, including that of the lead design entity, major construction contractors, and any specialty design consultants and/or subcontractors as identified in the RFQ. The lead member of the design-build entity should demonstrate that it has completed a state highway project in California with a value of at least \$25,000,000 in the past ten years.
- Information that addresses the capability of the firms to perform the work, such as:
 - Manpower and equipment resources,
 - Experience with other design-build projects,
 - Experience in completing projects of similar size, scope, and complexity.
 - Experience in obtaining environmental permits, ROW, or assistance or cooperation from Utilities and railroads (as applicable based on risk allocation)
- Relevant past performance information (e.g., adherence to contract schedule, good workmanship, cost control, value of change orders and claims). Since past performance criteria can be controversial, proposers should be able to explain or qualify issues related to cost growth, delay, violations, or other issues related to change orders or claims with information submitted.
- Information concerning workers' compensation experience history and worker safety program.
- Backlog and capacity information.
- General project understanding.

4 Evaluation Factors – RFP/Proposal

Since the RFQ/SOQ (or prequalification process) focuses on the qualifications and experience of the proposers, the RFP/proposal may focus on how proposers intend to complete the project, particularly for those project components for which the Department will allow some flexibility in design and/or construction solutions.

Similar to the SOQ, evaluation factors used to assess the quality of proposals should address only what is important to the Department and other project stakeholders, and should be limited to information that will differentiate one proposer from another. The RFP must also clearly establish the relative importance of the various factors and the rating system that will be used.

Typical factors used to evaluate proposals include the following:

- General pass/fail factors such as:
 - Responsiveness of the proposal in general;
 - Provision of final legal documents identifying the legal relationships and organizational structure of the proposers;
 - Possession of, or ability to obtain, appropriate professional licenses;
 - Satisfaction of DBE requirements; and
 - Payment and performance bonds.
- Any information that has changed since the SOQ.

- Experience and qualifications of key management and technical personnel (if not already established in the SOQ).
- Management approach, including:
 - Organizational structure;
 - Project controls (schedule and budget);
 - Communication plan between design-builder and Department and other third parties;
 - Safety Plan; and
 - Quality plan and approach to quality.
- Proposed technical solutions to major project components (e.g., geotechnical design, pavements, structures, and other technical features identified in the RFP).
- Approach to construction-related issues, such as
 - Maintenance and protection of traffic;
 - Public relations; and
 - Environmental compliance.
- Price.

3.3.2.10. Procurement Options

The FHWA Final Rule on Design-Build Contracting grants agencies broad discretion in selecting a design-build procurement approach appropriate for the specific needs of a given project. In deciding upon an overall procurement strategy, the PDT must identify both a selection procedure (i.e., two-phase or single-phase) and an award method (e.g., best-value, adjusted low-bid, or fixed price/best design) through which the successful proposer will be determined.

.1 Selection Procedure (Single or Two-Phase)

The first decision facing the PDT is whether to use a single-phase or two-phase selection process.

Two-Phase Selection

For most projects, the Final Rule (at 23 CFR 636.201) encourages the use of a two-phase selection process, in which the Department first short lists design-builders on the basis of their responses to an RFQ (phase 1). The short-listed firms, in response to an RFP solicitation, may then submit price and technical proposals, which the Department evaluates for contract award (phase 2).

Single-Phase Selection

Single-phase selection does not include an initial screening and short listing step. Proposers instead develop and submit price and/or technical proposals in direct response to an RFP solicitation (i.e., no RFQ is issued).

Circumstances under which a single-phase selection process would be sufficient include the following:

- No more than three offers are anticipated.
- Proposers will not have to perform substantial design work to develop price proposals.
- Proposers will not likely incur substantial expense in preparing proposals.

Time constraints that do not allow for a separate short listing step may also be a driving factor in the decision to use a single-phase selection process. Similarly, a lack of Department resources to develop the required documents and manage a two-phase selection process may also point to a single-phase selection.

.2 Award Criteria

Regardless of whether a single- or two-phase selection process is used, several options are available for establishing a basis for contract award. Each of the approaches described below holds unique advantages and disadvantages. The challenge for the PDT is in selecting the approach best-suited to a project's particular needs, goals, and risk allocation strategies.

Lowest Price

Under a lowest-priced design-build approach, the Selection Committee will award the contract to the proposer that submits the lowest price and has a responsive technical proposal. To be responsive, the technical proposal must meet or exceed the requirements specified in the RFP.

Implementing the lowest-price procurement approach typically entails the following:

1. Develop evaluation criteria based on the goals and risks identified for the project, and whether criteria are evaluated on a pass-fail basis or scored. To the extent possible, evaluation criterion should have a measurable standard against which responsiveness will be measured on a pass/fail basis.
2. Prepare and issue the design-build solicitation package. The package should include the following items, as a minimum:
 - Scope of work, plans, and specifications.
 - Bid form.
 - Contract completion date or days.
 - Design-build evaluation plan identifying the evaluation criteria along with corresponding standards.
 - Description of what constitutes a non-responsive proposal.
3. Receive design-build technical and price proposals.
4. Evaluate technical proposals against published standards and a minimum score to determine which are responsive to the RFP evaluation criteria.
5. Include responsive proposals meeting the minimum standard. Return sealed price proposals to the authors of the non-responsive proposals.
6. Open price proposals for those competitors that are responsive.
7. Award to the lowest priced proposal within the competitive range.

This approach has also been implemented by first opening sealed proposals to determine the apparent low bid, then evaluating the low bidder's technical proposal for responsiveness. This post-qualification approach reduces the time and effort necessary to evaluate proposals. In general, this lowest-price-responsive-proposal approach is most appropriate for small-to-medium sized projects having a relatively standardized design and for which no innovation or alternatives are desired. Example projects could include resurfacing projects and bridge projects with a specified foundation type, spans lengths, and beam type.

This approach has the advantage of being the most similar to the Department's traditional low-bid approach to procuring construction contractors. Also, awarding only the basis of price and responsiveness introduces relatively little subjectivity into the evaluation and selection process. However, by precluding the consideration of factors other than cost alone (e.g., quality, innovation, schedule, etc.), it may be difficult to ensure that the Department ultimately receives the best-value, particularly for large, complex projects.

Best Value

Best-value procurement allows agencies to consider price and other key factors (e.g., cost, time, qualifications, quality, and design alternates) in the evaluation and selection process. The inclusion of such factors allows the Department to select the design-builder that best meets the project's needs and goals.

The Design-Build Final Rule recognizes several options for implementing a best-value selection process (e.g. adjusted bid, weighted criteria, tradeoff analysis, etc.). Although all are viable approaches, the adjusted bid approach is the most common approach for first time users. With all point scoring methods, maximum point values are pre-established and stipulated in the RFP for technical criteria. With weighted criteria, price is converted to a point score as well. By specifying maximum point values, in the RFP, the Department can directly convey its perceptions regarding the relative importance of the various evaluation criteria that will be used to judge proposals. Proposers can then use these relative weights as a guide to determine where best to focus their attention and resources when developing a proposal.

Evaluation of proposals will entail members of the evaluation team assigning a score for each of the criteria in the evaluation plan. Ideally, these scores should correspond to some measurable standard (e.g., schedule savings in work days, lane closures, etc.). However, for criteria that require discretionary judgment on the part of the evaluators (e.g., design solutions, quality management plan, etc.), ensuring uniform application of evaluation standards can prove to be difficult, particularly if reviewers have different perceptions regarding the value of a point. For this reason, some agencies have used descriptive adjectival ratings as the basis of their direct point scoring system, translating, for example, an *excellent* adjectival rating into a minimum point score of 90. The evaluation process typically includes a meeting of the evaluation team to achieve greater consensus or address significant outliers before scores are averaged and totaled. Comprehensive training of all evaluators is essential to promoting consistency in the interpretation of evaluation criteria.

Implementing a best-value process typically entails the following procedure:

1. Develop qualifications, technical, schedule, and cost evaluation criteria. The non-price factors and their maximum point values or weightings should align closely with the goals and the actual value that the criterion brings to the project.
2. Devise a scoring system to evaluate the proposal's responsiveness to the evaluation criteria established in the RFP. If using an adjusted bid approach, price is divided by the total score to determine the adjusted bid. If using a weighted criteria method, technical factors and price would be scored and summed to determine the total score.
3. Prepare and issue an RFQ (assuming a two-phase selection process is used). The RFQ solicitation should include the following items, as a minimum:
 - Scope of work, plans, and specifications.
 - Bid form.
 - Contract completion date or days.
 - Best-value evaluation plan identifying the evaluation criteria along with corresponding standards.
 - Design-build proposal evaluation plan listing the technical, schedule, and cost evaluation criteria with corresponding standards or maximum points.
 - Description of what constitutes a non-responsive proposal.
4. Receive SOQs.

5. Evaluate SOQs against published standards and determine which are fully responsive in meeting the qualifications criteria. Criteria are evaluated on a pass-fail basis or using a point score to determine responsiveness.

6. Announce the short list of fully responsive SOQs.

7. Publish the design-build RFP for the short listed competitors. The RFP solicitation should include the following items, as a minimum:

- Scope of work, plans, and specifications.
- Bid form.
- Contract completion date or days.
- Method to carry forward the Phase 1 qualifications ranking/scores into the final evaluation.
- Design-build proposal evaluation plan listing the technical, schedule, and cost evaluation criteria with corresponding standards.
- Description of what constitutes a non-responsive proposal.

8. Evaluate the submitted proposals against published technical, schedule, and cost standards and determine which are fully responsive. The Department may require that the proposers submit separate technical and price proposals. The technical proposal will be opened first and evaluated for responsiveness, followed by scoring the responsive proposals in each technical area. The price proposals will then be opened to determine responsiveness to required pricing requirements.

9. Eliminate any non-responsive proposals.

10. Roll-up evaluation results, and determine the total point score for each responsive proposal. At this stage, the Department may issue a request for clarification to individual proposers, schedule oral presentations or hold discussions with proposers to clarify or verify certain aspects of the proposal. The results of this communication will be factored into the evaluation.

11. Compute the final scores and select the proposer offering the best value to the Department.

For *adjusted bid*, use the following formula:

$$AB = P/T$$

Where: AB = Adjusted Bid

P = Project Price

T = Technical Score

Award to AB_{\min}

For *weighted criteria*, use the following formula:

$$TS = W_1S_1 + W_2S_2 + \dots + W_iS_i + W_{(i+1)}PS$$

Where: TS = Total Score

W_i = Weight of Factor i

S_i = Score of Factor i

PS = Price Score

Award contract to the proposer that earned highest total score. The price scores are typically normalized against the lowest price.

The adjusted score calculation is simple and easier to implement. The weighted criteria can be more complex to implement but allows greater flexibility in determining the relative importance of price versus various other evaluation criteria. For example, if innovation is a project goal, higher weights could be assigned to technical criteria than to price. Alternatively, if the Department is faced with a tight budget, price can be given the higher weight, encouraging technical approaches that will reduce costs.

Fixed Price-Best Proposal

Rather than assign a disproportionately high weight to price in a weighted criteria approach, another method of managing a tight budget is to use a fixed-price-best-proposal selection process. When using this approach (sometimes referred to as “design-to-cost”), the Department specifies a fixed price against which proposers develop design approaches that maximize the amount of scope that can be designed and constructed for that price. The evaluation process would entail some form of weighted criteria and direct point scoring (without a price component), to determine the winning proposal.

3.3.2.11. Additional Procurement Considerations

When developing a procurement approach, the PDT may also wish to incorporate the concepts described below to address some of the challenges unique to design-build projects. For example, given the time and expense proposers will incur in developing responsive proposals, how can the Department attract healthy competition? How can the Department ensure opportunities for subcontractors and DBE/WBE firms if the conceptual design included in the RFP provides insufficient detail for such firms to submit binding quotes to proposers? How can the Department promote innovation, enhance quality, or reduce cost? The PDT can minimize such concerns by tailoring the procurement documents to address the unique goals and risks associated with a given project through the use of stipends; providing subcontracting safeguards; limiting the size and scope of technical proposal requirements; and using incentive/disincentives, and alternate proposals or alternative technical concepts.

.1 Stipends

Given the amount of engineering and design work typically needed to prepare a responsive design-build proposal, the Department may consider paying a stipend to proposers who submit responsive, but unsuccessful, proposals. The intent of such stipends is to:

- Compensate unsuccessful proposers for a portion of the cost of preparing a design-build proposal (usually one-third to one-half of the estimated proposal development costs), thereby encouraging firms to participate in a lengthy and involved procurement process;
- Ensure that smaller firms are not put at a competitive disadvantage;
- Increase the quality of proposals;
- Increase the level of innovation in proposals; and
- Secure owners right to use ideas and concepts within all proposals.

The value of the stipend will vary from project to project (based on project complexity and value), but will typically fall in the range of 0.1 to 0.3 percent of the estimated contract value. The intent of the stipend is not to compensate the proposers for their full costs in preparing and submitting a proposal, but merely to provide an added monetary inducement for firms to dedicate the necessary resources to prepare a responsive proposal.

By accepting the stipend, the unsuccessful proposers grant the Department ownership of all ideas, techniques, concepts, and intellectual property set forth in their proposals, including the right to use

such ideas on the project in question. Proposers should not be obligated to accept a stipend. If a proposer declines to accept a stipend, they should sign a statement waiving the right to a receive stipend payment.

To implement stipends on a project, the PDT needs to clearly identify in the solicitation documents the minimum requirements that proposers would have to meet in order to qualify for the stipend. These requirements could include meeting minimum ratings for quality factors, passing pass/fail factors, and proposing a price within the competitive range.

2 DBE/DVBE and Subcontracting Goals

The Department typically incorporates DBE/DVBE and subcontracting requirements and goals into its standard contracts. A design-build contract can continue to accommodate such goals, but some modification to the standard requirements may be necessary to account for the difficulty proposers may face in securing binding quotes from subcontractors based on the limited design that would be available at bid time.

In a traditional design-bid-build project, this is not an issue because the availability of final design plans prior to project advertisement allows contractors to solicit and secure quotes from subcontractors in advance of bid submittal.

In contrast, under design-build delivery, proposers may not be able to secure such commitments, because many subcontractors (including DBEs/DVBEs) will not assume the risk of providing hard quotes based on incomplete or conceptual plans.

Because of this difficulty, design-build procurement documents typically require proposers to include in their proposals a satisfactory plan/program for reaching the applicable targets (as opposed to demonstrating compliance with the targets themselves). After selection and award, the Department will then require the design-builder to submit evidence that it is indeed carrying out its proposed plan. Another possibility is to outline separate DBE goals for the design portion of the contract.

3 Alternate Proposals and Alternative Technical Concepts

If project conditions do not restrict the range of possible technical approaches, the PDT may wish to consider allowing proposers to submit alternate proposals or alternative technical concepts (ATC) as a means to promote innovation. The alternate proposals or ATCs could address different configurations, different design criteria, materials not previously used on Department projects, and similar issues for which some design flexibility may exist.

Although similar in several respects, alternate proposals and ATCs must be treated and handled differently. An *alternate proposal* is an alternate submitted in addition to the baseline proposal required in the RFP; thus the proposer has to develop and submit two solutions. In comparison, under *ATCs*, a proposer can suggest an ATC during the proposal preparation period, and, if accepted, can then decide to concentrate on developing a proposal only around the accepted ATC.

Allowing alternate proposals or ATCs does not equate to automatic acceptance of the alternate approaches by the Department; however, the PDT and Selection Committee should be prepared to seriously consider them and the benefits they may offer. To consider such proposals, the PDT needs to carefully tailor evaluation factors related to technical criteria to ensure that both baseline and alternate solutions are evaluated and rated with fairness and consistency.

For both alternate proposals and ATCs, the Department will not share the details of any alternate solutions with other proposers. This stands in contrast to a procurement approach which does not explicitly include these options. Without these options, if a proposer were to suggest an alternate approach that the Department may prefer to its baseline, the Department must issue an Addendum

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to the RFP to provide all proposers the opportunity to consider the revised requirements. Under such circumstances, proposers may be less inclined to suggest innovative ideas if they are forced to share them with others.

.4 Incentives

A possible way to encourage superior performance is to tie incentives to exceeding project goals. The incentives should focus on key areas of performance that are important to the Department or other stakeholders. Such areas could include schedule, quality, environmental compliance, public relations, and public and worker safety.

In developing incentive amounts, the PDT should keep in mind that the incentive amount should be attractive enough to entice the design-builder to achieve the desired result. The determination of this amount is rarely an exact calculation, and judgment is often necessary, particularly for areas having less tangible, or less quantifiable, benefits, such as improved public relations and environmental compliance. Incentive payments for other areas, such as early completion and safety, have more established (albeit still somewhat subjective) calculation techniques. For example, road user costs typically factor heavily in the determination of an incentive program for early completion. Similarly, user costs can also be used to generate incentives related to maintenance and protection of traffic, particularly if road or lane closures are contemplated. Safety incentive fees are generally related to reduced accident costs, with appropriate indices and indicators of impacts available from the insurance industry.

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3.3.3. Procurement Documents

The previous section discussed the design-build project development process at length, focusing on the identification of project goals, allocation of project risks, planning of the evaluation and selection process, and preliminary engineering – all interrelated tasks to be performed by the PDT to advance the development of project-specific design-build procurement documents.

This section, in turn, addresses the preparation of the procurement documents themselves. Depending upon the procurement approach selected for a particular project (e.g., single-phase vs. two-phase), these documents can include:

- Request for Letters of Interest (RLOI),
- Advertisement,
- Request for Qualifications (RFQ), and
- Request for Proposals (RFP).

Critical elements of these procurement documents are discussed below. The provided guidance is intended to be comprehensive enough to facilitate the development of project-specific documents for most projects. Recent examples of requirements and special provisions developed and successfully implemented by other agencies are provided for reference purposes. By reviewing the guidance provided, and adapting the examples to meet the particular needs and conditions of a project, the PDT should have a sound basis from which to develop a job-specific procurement package.

3.3.3.1. Related Manuals

On a design-build project, preparation of the RFP packages replaces several of the Department's traditional tasks during the Plans, Specifications, and Estimates phase of project development. Instead of finalizing the design and issuing 100 percent complete PS&E with the solicitation documents, the PDT will define project requirements in the RFP using a detailed scoping statement and a set of performance criteria. To help ensure the capabilities of the design-builder to effectively deliver the project, the procurement process may also include an extensive qualifications screening process. The design-build procurement approach is therefore quite different from the Department's standard practices, as outlined in the following manuals:

- Project Development Procedures Manual
- Project Development Workflow Task Manual
- Project Management Handbook

Nevertheless, the information provided in these manuals still serves as the foundation from which to prepare design-build solicitation and contract documents. Where possible, an effort has been made to integrate design-build tasks into the Department's existing processes, as described in these manuals.

3.3.3.2. Request for Letters of Interest

As an optional step, the PDT may consider issuing a Request for Letters of Interest (RLOI). An RLOI is a public announcement soliciting letters of interest (LOI) from potential design-builders. The RLOI will typically include a description of the work and the required technical qualifications of the interested firms. The intent of the LOI step is to:

- Announce and define the project;
- Stimulate interest in the project;
- Identify the industry's interest in proposing on such a project;
- Prompt the formation of design-build teams; and

- Initiate communication with interested competitors and set the ground rules for the exchange of information.

Note that an RLOI is not necessary for every project, particularly if it appears that a sufficient number of qualified firms are already interested in the project. Timing constraints may also preclude an RLOI step.

3.3.3.3. Advertisement

The PDT should follow the Department's general processes for announcing the availability of solicitation documents. This includes describing the project (name, location, type of construction, etc.) and the terms and conditions under which the Department will release solicitation documents and receive proposals. In addition to such standard language, the advertisement should also clearly indicate the Department's intention to use a design-build delivery approach and any alternative procurement methods contemplated (e.g., best-value selection).

3.3.3.4. Request for Qualifications

An RFQ constitutes the first phase of a two-phase procurement approach. The purpose of the RFQ is to narrow down the number of interested proposers to a short list of three to five qualified and capable firms who may then respond to the RFP. The short list is determined based on an evaluation of the statements of qualifications (SOQs) that prospective design-builders submit in response to the RFQ.

The RFQ is not intended to solicit specific ideas on how each firm will design and build the project. Rather, the Department should use an RFQ process to identify firms capable of effectively delivering the project, reserving the evaluation of specific design and construction approaches for the RFP stage.

.1 RFQ Composition

At the time of RFQ issuance, it is unlikely that project requirements will be defined to a level that will allow design-builders to propose specific ideas or solutions regarding project needs and conditions. The RFQ should therefore focus on the qualifications and experience of interested design-builders to perform the design and construction work required. In this sense, the RFQ seeks information similar to that used to select a design consultant on a traditional design-bid-build project, with the addition of contractor prequalification requirements and specifics regarding the design-build team itself.

The exact contents of an RFQ will vary given the specific needs and goals established for a project; however, as a general framework, an RFQ should include the following types of information:

- Table of Contents;
- Project description;
- Statement of project goals and objectives;
- Procurement schedule;
- Discussion of the two-step procurement process and schedule;
- SOQ submittal requirements;
- Explanation of the SOQ evaluation process, including evaluation factors and their relative importance, and the short-listing process;
- General discussion of the RFP, to the extent this information is known at the time of RFQ issuance;

- Other pertinent provisions (e.g., protest procedures; State and Department rights and disclaimers; and DBE and EEO requirements); and
- Forms required for the SOQ.

Additional details regarding key RFQ elements are described below.

Project Description (See Appendix 2.2-B.1)

The project description serves to provide a summary-level introduction to the project. Topics addressed in a typical project description include the following:

- Project type, location, size, capacity, and other physical characteristics;
- Special features of the project, such as environmental constraints, community involvement, or special technical features;
- Status of the project, including the NEPA process;
- Anticipated roles and responsibilities of the design-builder and the Department;
- Preliminary estimate and method of funding; and
- Preliminary project schedule.

To help clarify the general scope and nature of the work, preliminary plans and sketches (if available at this stage in the project development process) can serve as useful visual aids to supplement the narrative description.

Status of the Project (See Appendix 2.2-B.2)

The RFQ should identify the status of any remaining work that needs to be completed by the Department to advance the project. This status update could either be provided in a standalone section or included in the project description statement.

Areas that would be of particular interest to prospective design-builders include:

- the NEPA process,
- other environmental permits and/or releases to be secured by the Department or the design-builder, and
- ROW acquisition.

Project Goals and Objectives (See Appendix 2.2-B.3)

Communicating project goals to prospective design-builders in the RFQ stage facilitates the formation of design-build teams that have the qualifications and experience to meet the Department's expectations.

As discussed in Section 3.3.2.5, project goals typically fall into the categories of:

- Cost (e.g., cost not to exceed \$ _____),
- Time (e.g., substantial completion by _____), and
- Quality (e.g., design life of _____ years).

Procurement Schedule

The inclusion of a procurement schedule in the RFQ allows prospective design-build teams to develop their own internal schedules regarding preparation of proposal documents and finalization of any teaming agreements.

Key procurement milestones to address in an RFQ include the following:

- Phase I - RFQ
 - Issue RFQ
 - Deadlines for submitting RFQ questions

- Issue date for final RFQ Addendum and/or answers to proposers' questions
- SOQ due date
- Announcement of short-listed proposers
- Phase II - RFP
 - Issue RFP
 - Pre-proposal conference, interviews, discussions, and oral presentations (as applicable)
 - Deadlines for submitting RFP questions and alternative technical concepts (if applicable)
 - Issue date for final RFP Addendum and/or answers to proposers' questions
 - Technical proposal and price proposal due dates
 - Final selection and award notification
 - Expected notice to proceed date

Dates related to the RFP phase should be included only to the extent that they can be reasonably anticipated at the time of the RFQ issuance. At a minimum, the anticipated RFP issuance date should be identified.

Procurement Process (See Appendix 2.2-B.4)

The RFQ should include a statement describing the Department's general procurement approach. Items to discuss include the following:

- The selection procedure (i.e., single-phase versus two-phase selection procedure);
- Award criteria (i.e., best-value vs. low bid); and
- The relative importance of various RFP technical evaluation factors (to the extent that it is known at the time of RFQ issuance), particularly if the PDT anticipates that certain technical factors will hold equal or more weight than price.

SOQ Submittal Requirements (See Appendix 2.2-B.5)

To facilitate and expedite the Department's review and evaluation of the SOQs submitted by prospective design-builders, the RFQ should define a specific format, including page limits and specific content requirements for each of the evaluation factors identified in the RFQ.

An SOQ package typically takes the following form:

- A cover letter identifying the name, address, business type (e.g., corporation, partnership, joint venture) and roles of the submitter and each principal participant to be involved (e.g., designer, subcontractors, subconsultants, QC engineer, public information firm, etc.). A single contact person should also be named. (See Appendix 2.2-B.6)
- Title page and table of contents.
- Submitter's experience and reference projects. (See Appendix 2.2-B.7)
- Submitter's organization (typically showing the chain of command) and key personnel. The RFQ may include descriptions of the types of personnel that must be identified in the SOQ (e.g., Contractor's Project Manager, Quality Manager, Design Manager, Construction Manager, Traffic Engineer, Environmental Compliance Manager, etc.). (See Appendix 2.2-B.8)
- Financial information (e.g., surety letters, financial statements).
- Legal documents (e.g., teaming agreement, joint venture structure, etc.).
- DBE plan.

To discourage the inclusion of extraneous information, the RFQ should instruct proposers to limit their responses to information that directly addresses the project goals and evaluation factors

established for the project. To help keep proposers on point, the RFQ should contain detailed descriptions of the type of information sought, as well as how the Department will use this information to evaluate the SOQs.

SOQ Evaluation Process (See Appendix 2.2-B.10)

Early in the project development process, the PDT should develop a general plan for evaluating plans and proposals submitted by prospective design-build teams. The Evaluation System Planning section of this manual identifies possible evaluation factors to consider including in an SOQ evaluation plan. Some of these factors (e.g., licensing information, debarment status, bonding and financial capacity, SOQ general responsiveness) can be classified as “pass/fail” (or “go/no-go”) factors in that the submitter, at a minimum, must at least meet these requirements to be considered further. If a proposer fails any single pass/fail requirement, the SOQ will receive an Unacceptable rating, the technical factors will not be evaluated, and the proposer will not be included on the short list.

The remaining technical factors are more qualitative, and typically seek information supporting the capabilities of the submitters to effectively deliver the project. While project-specific needs and goals will drive the exact technical factors included in an RFQ, such factors generally address the following:

- Proposer’s understanding of the project and issues;
- Key personnel experience and qualifications;
- Proposer’s resources and ability to handle a project of similar size and complexity; and
- Quality management and safety plans.

When composing the RFQ, the PDT must clearly communicate the various elements of the evaluation plan, providing detailed descriptions of each evaluation factor, the relative importance of each factor, and how the Department will use and rate the information to develop a short list of qualified proposers.

It may be beneficial to also identify the rationale behind including a particular evaluation factor in the selection process. For example, the experience of proposers is often used as an evaluation factor. To avoid receiving extraneous information that will not factor into the Selection Committee’s decision, the Department can clarify that the experience statement is to identify firms having experience in a particular aspect of construction (e.g., highway construction in an environmentally sensitive area; accelerated construction, etc.). The inclusion of such information in the solicitation documents increases the transparency of the selection process and allows proposers to tailor their responses to the Department’s major concerns.

RFP Summary (See Appendix 2.2-B.11)

To the extent possible given the timing of the RFQ in the overall project development process, the RFQ should summarize or outline the various elements that will be included in the RFP package. Advance knowledge of the general content of the RFP and the anticipated selection criteria will help proposers as they organize their teams and prepare their SOQs.

RFQ Forms

Including standard forms in an RFQ provides proposers with a standard format by which to submit the information requested in the RFQ. The proposers’ use of a standard format, in turn, facilitates the Department’s review of the information provided.

Standard forms can be developed to address the following types of information typically sought in an RFQ:

- Information on the proposing entity (principal participant, designer, QC engineer, etc.);
- Subcontractor information;
- Backlog information;
- Record of DBE performance;
- Past performance;
- Safety questionnaire; and
- Question request form.

.2 RFQ Issuance

RFQs should be issued to those firms that submitted LOIs (if applicable) as well as to firms requesting the RFQ in response to an advertisement.

When establishing deadlines for SOQ submittal, allow adequate time for proposers to form teams, seek clarification, and prepare a response, and for the Department to issue any necessary addenda. For smaller, less complex projects, allowing 30 days between RFQ issuance and the SOQ due date should be sufficient to accommodate such needs. For larger, more complex jobs, a timeframe of 45 days would probably be necessary.

.3 Clarifications and Addenda

Proposers may wish to seek clarification on RFQ requirements. Any questions thus received, along with the Department's response, should be made available to all firms that received the RFQ.

To answer questions received from proposers or to otherwise clarify requirements, correct errors, or to provide supplemental information, it may be necessary to issue formal addenda to the RFQ.

.4 Evaluation and Short List

In evaluating the SOQs received, the Selection Committee should adhere to the SOQ Evaluation and Selection Plan established by the PDT for the project. (See Section 3.3.2.9..3 of this manual for additional details on developing an RFQ evaluation plan).

This plan should be consistent with the information communicated to proposers in the RFQ with respect to evaluation factors, rating guidelines, and the relative importance of the various evaluation factors.

After evaluating the SOQs in the manner prescribed in the evaluation plan, the Selection Committee should produce a short list of three to five firms. Ideally, this short list should be drawn from the point at which there is an identifiable break in the ratings assigned to the SOQs.

Prior to announcing the short list, the basis of the short-list decision should be fully documented and included in the project file.

3.3.3.5. Request for Proposals

Of the various documents to be prepared and issued during the procurement process, the RFP package, which communicates the Department's expectations to proposers and serves as the basis for the design-build contract, is perhaps the most critical factor to a project's success. In this respect, the RFP is akin to the plans, specifications, and estimates prepared under traditional design-bid-build delivery.

The RFP is the second phase of a two-phase procurement process. Given that required qualifications were likely established at the RFQ stage, the RFP should focus on the approach proposers will take to complete the project. To the extent possible, the RFP should not reevaluate

factors that were already evaluated at the RFQ/SOQ stage, unless such information has undergone significant changes in the interim.

In the case of a single-phase procurement, the RFP would have to address both qualifications and the technical approach to the project.

.1 RFP Composition

The RFP is the most complex of the procurement documents, typically including, among other items:

- Instructions to proposers regarding proposal submittal requirements and the evaluation process by which the Department will select the winning proposal;
- The general requirements for the project, describing the goals, objectives, and operational constraints for the project (e.g., environmental or third party issues), in addition to contract forms and boiler plate provisions related to DBE and EEO requirements;
- A design-build criteria package (project scope, performance criteria, and preliminary design); and
- References to design manuals and standards.

Even though the Department will take design to only a conceptual level under design-build delivery, the time and resources required to draft a design-build RFP package will be similar to that needed to prepare a PS&E package on a more traditional project.

Key elements of the RFP are described below.

.2 Instructions to Proposers

The RFP can include Instructions to Proposers (ITP), a standalone document that establishes the rules and procedures prospective design-builders should follow when preparing and submitting their proposals. In addition, the ITP should define how the Department will review and evaluate the proposals received to select the successful proposer.

This document will typically include the following:

- Introduction,
- General Instructions,
- Technical Proposal Instructions,
- Price Proposal Instructions, and
- Proposal Forms.

Given its focus on proposal submittal requirements and contract award criteria, the ITP is similar in content to Section 2, Proposal Requirements and Conditions, and Section 3, Award and Execution of the Contract, of the Department's standard General Provisions (GP). Instead of preparing an ITP, the PDT could therefore choose to present such information through modifications to the applicable sections of the Standard Specifications GPs.

Introduction (See Appendix 2.2-C.1)

The ITP should include a general introduction identifying the owner and location of the project, the contents of the RFP package, and the function of the ITP.

General Instructions

The RFP should include general information and instructions to help prospective design-builders prepare responsive proposals. This information could include the following:

- Procurement schedule and process (see Appendix 2.2-C.2);
- Project goals and objectives (see Appendix 2.2-C.3);
- Summary of RFP package (see Appendix 2.2-C.4);
- Required qualifications (for a single-phase procurement);
- Changes to proposer's organization since SOQ submittal (for a two-phase procurement) (see Appendix 2.2-C.5);
- Proposal submittal requirements (see Appendix 2.2-C.6);
- Explanation of the proposal evaluation process, including evaluation factors and their relative importance, the evaluation method, and the selection process;
- DBE/DVBE and EEO requirements (see Appendix 2.2-C.7)
- Other pertinent provisions (e.g., protest procedures; State and Department rights and disclaimers); and
- Proposal forms.

Because this information is for the most part similar to comparable information contained in the RFQ, a detailed discussion of these components is not provided herein.

Technical Proposal Instructions (See Appendix 2.2-C.8)

In their technical proposals, prospective design-builders describe how they intend to design and build the project in accordance with the goals and requirements outlined in the Department's RFP. Typical elements of a design-builder's technical proposal include the following:

- Preliminary plan sheets showing typical sections;
- Horizontal and vertical alignments;
- Structure locations and identifications;
- Roadway layout concepts;
- Signing, striping, and lighting concepts; traffic control and phasing schemes, and other design features as identified in the RFP;
- Design and construction schedules;
- Organizational charts;
- Resumes of key personnel if changed from the SOQ; and
- Completed forms and certificates as required by the RFP.

To facilitate and expedite the Department's review and evaluation of the proposals submitted by prospective design-builders, the RFP should define a specific format, including page limits and specific content requirements for each of the evaluation factors identified in the RFP.

Price Proposal Instructions (See Appendix 2.2-C.9)

The RFP should include instructions on the required organization and format of the price proposal to facilitate the Department's review of the information provided. In contrast to a traditional design-bid-build project, for which a pricing document may consist of a single bid form, pricing documents for a design-build project may be more complex, including, in addition to the lump sum price,

- A proposed payment schedule;
- A cost-loaded schedule;
- A breakdown of prices or schedule of values to facilitate price evaluation and contract administration;
- Scope of lump sum priced work; and
- Contingency items or allowances.

Based on the needs of the project, it may also be necessary to address how alternate proposals and betterments will be treated in the overall price consideration (in addition to how such items will factor into the overall evaluation and selection process).

Some projects may also warrant the use of A+B bidding to compete the project schedule. If A+B bidding is used, the formula for determining each proposer's adjusted score (based on the contract price, specified completion time, and the score for the technical proposal) should be provided.

Proposal Forms

The use of standard forms provides proposers with a standard format by which to submit certain information requested in the RFP. The standard format, in turn, facilitates the Department's review of the information provided.

Standard forms can be developed to address the following types of information typically sought in an RFP:

- Proposal cover letter
- Price proposal forms
- Bond forms (proposal, performance, and payment)
- DBE Utilization Affidavit
- Key personnel (management, technical solutions, environmental, quality management, project support, etc.)
- Named subcontractors
- Stipend Agreement

3. General Requirements

In addition to outlining the procurement process and proposal submittal requirements, the design-build RFP package serves to communicate the project scope, technical requirements, performance criteria, construction and quality management requirements, and other expectations the Department may have with respect to the project. The RFP thus forms the basis of the design-build contract itself, similar to the plans and specifications on a traditional design-bid-build project. A design-build contract results in significant changes to the standard GPs.

Although specific contract provisions will vary from project to project, the nature of the design-build delivery approach requires careful revision of existing GPs or the addition of unique special provisions for design-build. Table 3.3-1 highlights potential changes to the Department's GPs for design-build. A more detailed discussion of some key provisions follows the table.

Table 3.3-1 Potential Changes to General Provisions

Existing Standard Specification Section	Considerations
Section 1 Definitions and Terms	<ul style="list-style-type: none"> • Design-build changes the traditional roles and responsibilities of the agency and contractor. For this reason, terms should be added to define the Design-Builder (in lieu of the existing definition for Contractor) and Engineer of Record. Modifications to the existing definitions for Department, Director, and Engineer may be required to define the agency’s chain of authority for a design-build project. • Existing terms may require modification due to the shifting of design responsibility to the design-builder. For example, the existing definitions for Contract, Plans, and Work should be reviewed in the context of the design-builder serving as the designer of record. • Design-build changes the traditional proposal requirements described in Section 2 of the Standard Specifications. Any new terms used in a revised Section 2 to describe the design-build proposal process (e.g., Prequalification, Proposer, Request for Qualifications, Request for Proposal, Proposal, Price Proposal, Technical Proposal, Statement of Qualifications, etc.) should be defined. Also, care should be taken to ensure consistency in terminology throughout the specifications (e.g., Bid vs. Proposal, Bidder vs. Proposer). The existing definitions for Proposal, Proposal Form, and Proposal Guaranty should also be reviewed. • If the Design-Builder will be responsible for performing quality management functions, definitions describing this process (e.g., Quality Management Plan, Quality Assurance, Quality Control, Verification Testing, etc.) should be added as necessary. Also, considering that the agency may take on more of a verification role, the existing definition for Laboratory may require modification to allow the design-builder to use other approved testing facilities.
Section 2 Proposal Requirements and Conditions	<ul style="list-style-type: none"> • Section 2 in general would be completely revised to reflect an RFP process or a two-step RFQ/RFP process replacing the standard Invitation to Bid (ITB) process. This might be handled by superseding Section 2 with an Instructions to Proposer (ITP) section or by creating separate general provisions (Sections 1 through 9) for design-build. Elements to consider incorporating into a revised Section 2 would include prequalification requirements and format and content requirements for both the technical and price components of the design-build proposal. • The provision related to examination of plans, specifications, and worksite (2-1.03) would require modification as necessary to remove language related to detailed design elements (e.g., plans, cross sections, geotechnical investigations, quantity estimates, etc.) that may not be included in a design-build RFP.
Section 3 Award and Execution of Contract	<ul style="list-style-type: none"> • Section 3 (see 3-1.01, 3-1.04) currently contemplates an ITB award and execution process, which would require modification (either by superseding Section 3 with an ITP section or developing general provisions for design-build) to include such elements as the proposal evaluation and scoring process and potential stipends.
Section 4 Scope of Work	<ul style="list-style-type: none"> • The project scope would be revised to include design as well as construction (4-1.01). • The changes clause (4-1.03) would require modification to reflect the lump sum design-build contract. This may involve deleting clauses that addresses variations in unit-priced quantities.

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Existing Standard Specification Section	Considerations
Section 5 Control of Work	<ul style="list-style-type: none"> Control of work provisions related to inspection and survey require modification to reflect the extent to which the design-builder will be performing these duties (5-1.01, 5-1.03, 5-1.07, 5-1.08). The order of precedence clause (5-1.04) requires modification to include the relevant design-build contract documents. The differing site condition clause (5-1.116) would have to be reviewed in the context of risk allocation to the design-builder.
Section 6 Control of Materials	<ul style="list-style-type: none"> Testing provisions may require modification to reflect the design-builder performing this work, with the agency assuming a verification role (6-3).
Section 7 Legal Relations and Responsibility	<ul style="list-style-type: none"> Given the responsibilities shifted to the design-builder, permit procurement and compliance requirements may require change and/or expansion (7-1.01F, 7-1.01G, 7-1.04). The insurance provisions require revision to ensure the design-builder's design and construction risk is under one policy or is incorporated under an owner umbrella policy. (7-1.12).
Section 8 Prosecution and Progress	<ul style="list-style-type: none"> Standard scheduling provisions may be superseded by a special provision requiring cost-loading. Right of Way and utility provisions (8-1.09, 8-1.10) may require modification to reflect the risk allocated to the design-builder for right-of-way and utility coordination.
Section 9 Measurement and Payment	<ul style="list-style-type: none"> Measurement and payment provisions require modification to reflect the lump sum design-build contract.

Basic Project Configuration (See Appendix 2.2-C.10)

Because the RFP does not provide the final design, it is necessary to include a basic project configuration provision to establish the physical constraints or limits within which design-builders may develop technical solutions for the design and construction of the project.

Fundamental constraints typically included in a basic project configuration provision include the following:

- Project Boundaries:
 - ROW plans that depict the limits of ROW or easements obtained or to be obtained by the Department
 - Environmental constraints (e.g., wetland protection)
 - Project limits
- Horizontal and vertical alignment;
- Vertical clearance requirements;
- Critical project components:
 - Number of lanes
 - Interchanges
 - Ramps
 - Location of major structures
- Other factors that may define the limits and constraints of the project.

The basic configuration provision will be an outgrowth of the Department's preliminary engineering efforts. The PDT can therefore follow the guidelines related to the required level of preliminary engineering to establish the appropriate balance between controlling the base design and creating opportunities for innovation (see Section 3.3.2.7)

Note that the basic configuration provision defines the design-builder's contractual obligations with respect to design and construction constraints (in contrast to a project description statement, which is provided to proposers for informational purposes). The provision should therefore also address how the design-builder can request a change to the basic configuration both before the submittal of proposals and after contract award. The Department has the sole discretion to accept or decline the changes through a proper review and approval process.

After contract execution, the basic project configuration defines the limits within which the design-builder may make changes in the information shown on the RFP plans without requesting a change order, and the limits within which the Department may order a change prior to the first design review without executing a change order.

Alternative Technical Concepts (See Appendix 2.2-C.11)

The PDT may choose to include an Alternative Technical Concepts (ATC) provision in the RFP. ATCs allow proposers to propose changes to the Department's basic project configuration, design criteria, and similar project requirements for which some design flexibility exists.

Allowing proposers to submit ATCs is intended to enhance innovation, and increase efficiency or reduce cost. ATCs are therefore similar to cost reduction incentive proposals, but are submitted as part of the proposal before contract award.

An ATC provision should address the following:

- ATC proposal submittal and review process;
- Required contents of an ATC proposal; and
- Confidentiality guidelines (in the event information is proprietary).

When addressing the submittal and review process, the PDT should consider allowing proposers to submit ATCs for pre-approval during the proposal preparation period. Pre-approval would allow proposers to concentrate on developing their proposals around the accepted ATC.

The PDT may also wish to restrict the ATC process to only those project components for which design flexibility is allowed and innovations are possible. This will help reduce the time and resources spent by the Department in reviewing ATCs that have little likelihood of acceptance.

Differing Site Conditions (See Appendix 2.2-C.12)

A differing site conditions provision applies to conditions encountered onsite that differ materially from those indicated in the contract. In traditional design-bid-build delivery, the Department typically retains full responsibility and risk for differing site conditions. Under design-build, however, the responsibility for geotechnical site investigations, and thus the risk for differing site conditions, can be assigned to the design-builder. When considering shifting responsibility for differing site conditions from the Department to the design-builder, the PDT should carefully weigh the risks involved (e.g., higher costs) against the potential benefits to be gained (e.g., time savings).

Because the site information provided in a design-build RFP may be substantially less than that which would be provided to bidders on a design-bid-build project, the design-build RFP should explicitly define the responsibilities and risks associated with site conditions.

If the Department continues to retain the risk for differing site conditions, the provision should include the following elements:

- Definition of what is considered to be a differing site condition
- Design-builder's responsibility
- Department's responsibility

If this risk is instead allocated to the design-builder, the provision should state that:

- The Department is not liable for any differing site conditions and will not grant extra costs or time extensions associated with the conditions encountered.
- Information supplied by the Department (e.g., geotechnical report and similar information) is for reference only.

For either risk allocation strategy, best practice suggests limiting the site information provided in the RFP to the data collected, leaving the actual analysis and interpretation of this data to the design-builder. If the PDT feels that the inclusion of such analytical information would be beneficial, it should be placed in the reference documents, with specific disclaimers as to the Department's liability.

Quality Management (See Appendix 2.2-C.13)

On a traditional design-bid-build project, the Department develops the design, specifies the materials to be used, and oversees the construction. Managing quality, during both the design and construction phases, has therefore traditionally been the Department's responsibility.

The design-build approach presents additional challenges and unique opportunities with regard to quality management. Use of the design-build approach does not diminish the need to perform any of the traditional quality management tasks performed on a design-bid-build project; however, the party performing these tasks may change. On a design-build project, the Department may choose to assign specific responsibilities to the design-builder, while retaining the rest for itself. It is also possible for a third party, retained by either the Department or the design-builder, to conduct some quality management tasks.

The exact quality management strategy used may therefore vary from project to project. As an extension of its risk analysis and risk allocation work, the PDT should consider which party can best meet the quality needs of a particular project. The approach suggested below has been used by other highway agencies and represents a middle ground between transferring more responsibility for quality management to the design-builder, while retaining some oversight control for the Department.

With regard to design quality management, the quality control tasks (e.g. checking of calculations and quantities, review of specifications, etc.) that were previously performed by the Department on a traditional design-bid-build project will be shifted to the design-builder. Department staff will then assume more of a quality assurance role, in accepting design deliverables, approving design progress payments, approving the final construction as-builts, and performing similar design oversight activities.

In addition to clearly defining these roles and responsibilities, the RFP should also establish when any Department review of design submittals will occur. Advance knowledge of these design review checkpoints will allow the design-builder to account for these required reviews in its proposed project schedule. Possible review points would be at the preliminary design phase (minimum 30% complete plans), final design review (100% plans), and possible intermediate points coinciding with the completion of certain design packages (e.g., roadway, bridge, drainage, etc.). Alternatively, the RFP could also allow the design-builder to propose the schedule of design reviews in its proposal or during post-award negotiations with the Department.

To increase the frequency with which the Department can provide design feedback outside of this formal review process, the RFP can also encourage the design-builder to request informal reviews to ensure that it is progressing the design in accordance with contract requirements. Such reviews are often called "over-the-shoulder" reviews to indicate that, unlike the formal review checkpoints, the design process will not stop to await comments from the Department.

In reviewing design deliverables, the Department's review will generally be limited to ensuring that the design-builder's design meets the objectives of the contract. By providing too much control over design, the Department risks assuming more design liability for the project and reducing the potential benefit of design-build to increase innovation.

A similar change to traditional roles and responsibilities will occur with respect to construction quality management, as the design-builder will assume primary responsibility for construction quality, including most sampling and testing. QC tasks will typically be performed by the design-builder's construction quality manager, with the design-builder's Designer-of-Record taking on construction QA tasks. Department personnel will perform verification sampling and testing, and independent assurance.

In developing the construction quality management provision, the PDT should clearly stipulate the following in the RFP:

- Design-builder roles and responsibilities
- Department roles and responsibilities
- Sampling and testing methods
- Inspection method and frequency
- "Witness and hold" points
- Acceptance procedures

The PDT can place additional emphasis on quality by including a quality evaluation factor in the RFQ and/or RFP, particularly if using a best-value procurement process. The RFQ may require the submittal of qualifications related to key personnel that will be performing quality management tasks. The Department could then use the RFP to compete quality management plans submitted by prospective design-build teams.

Design Submittal, Review, and Approval (See Appendix 2.2-C.14)

Either as part of a design quality management provision or as a stand-alone provision, the RFP should specify the submission, review, and approval process related to any designs prepared by the design-builder. At a minimum, the provision should describe the following:

- Review process
 - Conformance to quality management plan
 - Conformance to contract requirements
- Required design submissions
 - Preliminary
 - Milestone (e.g., 30%, 60%, 90% design)
 - Feature of the work (e.g., foundation, pavement, bridge, etc.)
 - Complete design
 - As-built

Inclusion of such a provision should:

- Provide a checkpoint for both the Department and the design-builder to discover any defects in the design;
- Enhance communication between the parties; and
- Motivate the design-builder to develop a high-quality design so as to not delay construction.

Designer of Record (See Appendix 2.2-C.15)

On a design-build project, the design-builder, and not the Department, is responsible for the details of design and coordination with construction. The design-builder's engineer should therefore act as the designer (or engineer) of record.

When the design-builder will serve as the project's designer of record, the RFP should include a provision that defines the following:

- Minimum qualifications of the designer of record (e.g., experience, certifications, registration, etc.);
- Designer responsibilities related to:
 - Design (or review of design);
 - Managing and scheduling of design work to meet the construction schedule;
 - Adequacy and efficiency of design solutions and design documents; and
 - Construction oversight (to ensure that the project is being constructed in accordance with this design)
- Requirements regarding professional liability insurance.

Environmental Permitting (See Appendix 2.2-C.16)

On a traditional design-bid-build project, the Department prepares a complete design package, which can then be used to support the environmental permitting process. As a standard practice, the Department can therefore assume most responsibility and risk associated with environmental permitting.

A similar situation does not exist with design-build delivery. Because design is incomplete at the procurement stage, the Department has limited control in obtaining any environmental permits that require a more complete design and understanding of the final project conditions. Because the design-builder has more control over the final project design, the design-build contract can be used to shift some permitting responsibilities from the Department to the design-builder. The RFP must be clear in identifying which party is responsible for acquiring which permits.

Permit conditions may also result in unexpected design and/or construction requirements that may be more costly or time consuming than anticipated in the design-builder's original proposal. The RFP must therefore provide enough detail about environmental conditions and commitments and the general status of the permitting process to clearly convey the level of risk to be absorbed by the design-builder for environmental compliance issues.

The RFP should also stipulate, regardless of the operator named on the permit (i.e., the Department or the design-builder), that all environmental violation costs are the responsibility of the design-builder.

For projects having extreme environmental sensitivity, the RFP may require the Contractor to retain a qualified onsite inspector to ensure environmental compliance and to coordinate with the Department on environmental issues as they develop. Under a best-value procurement process, the Department may also structure the evaluation criteria to reward proposers that offer approaches designed to reduce environmental impacts beyond that approved during the permitting process.

Right of Way (ROW) (See Appendix 2.2-C.17)

For a traditional design-bid-build project, the Department generally acquires all required ROW before construction begins. Under design-build, however, the conceptual design performed by the Department may not support the identification and acquisition of all ROW required for the project prior to issuance of the RFP.

When developing a ROW provision for inclusion in the RFP, the PDT should therefore address the status of ROW acquisition and whether responsibility for any subsequent ROW acquisition will fall upon the Department or the design-builder.

Although the FHWA design-build final rule does allow the Department to assign responsibility for ROW acquisition to the design-builder, given the Department's experience with this task, it is generally recommended that the Department continue to retain this responsibility.

When the Department retains responsibility for ROW, the associated provision should include:

- A statement that the ROW acquisition is complete or, if this is not yet the case, a statement that all necessary arrangements have been made for completion in the near future;
- ROW parcels that have or have not been purchased;
- Responsibilities of the Department, particularly with regard to any Department-driven changes that affect ROW;
- Responsibility of the design-builder to make every effort to design the required facilities within the available ROW and to reimburse any additional cost due to the contractor-driven changes that affect the ROW;
- Conditions for proposing and approving additional ROW purchase if the design-builder's design cannot be constrained to the available ROW; and
- Process and responsibilities related to the extra cost and time that could be associated with additional ROW purchase.

If the Department chooses to shift ROW acquisition to the design-builder, the provision should include:

- A statement that the design-builder has full risk and responsibility for ROW acquisition;
- The scope and current status of the required services (identification of any existing ROW, as well as parcels that need to be acquired by the design-builder);
- A statement requiring compliance with the Department's Right of Way Manual and all relevant laws and regulations;
- Required submittals (e.g., title certificates); and
- Payment method and schedule for acquisition cost and service fee.

Utility Location/Relocation (See Appendix 2.2-C.18)

As part of the risk identification and allocation process, the PDT should consider which party can best manage the risk associated with utility location.

When the Department decides to retain this responsibility, the RFP should define the accuracy of any information provided in the RFP related to existing utilities. Information generally used to describe existing utilities includes horizontal and vertical location, size, and type of material. The provision should also address the process for handling any unknown utilities encountered during construction.

If the Department instead decides to assign the risk of utility location and relocation to the design-builder, the provision should define:

- The design-builder's responsibilities with regard to typical utility relocation tasks, such as:
 - identifying existing utilities,
 - contacting and reaching agreements with the utility owners,
 - coordinating relocation, and

- covering all costs for such relocation;
- A list of utilities to be relocated based on the best available information, along with a “use as reference only” statement;
- Rules, regulations, and reference documents regarding utility adjustment;
- Notification requirements of each utility owner for any service interruption;
- Process and responsibility for damages due to newly discovered utility items; and
- Process of resolving conflicts with the utility owner.

If utilities are a particularly sensitive issue on a project, the PDT may consider requiring the design-builder to assign a utilities coordinator to work with the utility firms during design and construction. The coordinator would be responsible for verifying utility locations, obtaining permits, and overseeing any relocation work and adjustments.

Insurance (See Appendix B.19)

When developing a procurement strategy, the PDT should also consider the types of insurance programs available to determine an appropriate approach given a project’s specific needs, risks, and complexities.

Standard transportation construction projects typically require several types of insurance coverage, including workers’ compensation, general liability, builder’s risk, umbrella or excess liability, and other coverages related to project-specific risks (e.g., pollution liability, railroad protective liability, etc.).

On a design-build project, in addition to such coverage, the PDT must also consider the area of professional liability, or Errors and Omissions (E&O) insurance, as the design-builder, and not the Department or a design consultant, is the Designer-of-Record. The professional liability insurance policy should be held in the name of the design-build entity that enters into a contract with the Department. This means that the design-builder cannot rely on the insurance policy or policies of its designers to cover professional liability. This protects the Department from dealing with multiple insurance agencies and policies that may or may not cover the risks associated with a particular project.

The requirement to hold professional liability insurance in addition to the traditional mix of contractor’s insurance policies (e.g., workers’ compensation, general liability, umbrella or excess liability) is sufficient for most design-build projects. However, for larger, high-risk projects, some owners have successfully used Owner Controlled Insurance Programs (OCIP) and Contractor Controlled Insurance Programs (CCIP) as a means to control risk exposure and potentially realize cost savings.

With a CIP (or “wrap-up” insurance), the interests of the owner, designer, contractor, and subcontractors are all covered under one insurance arrangement. Ideally, such an arrangement should eliminate conflicting insurance provisions, remove overlapping policies, and close coverage gaps. Insurance for a typical CIP on a design-build project includes the following coverages: general liability, builder’s risk, workers’ compensation, design errors and omissions, and excess, umbrella, and any other special coverages required. Explicitly excluded from most CIPs is coverage for automobile liability and contractor’s tools and equipment - the idea being that since contractors generally move such items from project to project, they are best insured separately.

If using an OCIP on a project, the solicitation documents should specifically set forth the following:

- the coverages provided;
- limits of the coverages;
- deductible amounts;
- party responsible for deductibles; and

- duration of insurance beyond the project completion date.

If using a CCIP on a project, it is incumbent on the Department to make sure that the contractor provides and maintains adequate insurance coverages.

If available at bid time, the proposers should have access to the policies themselves to eliminate any concerns they may have regarding adequate limits and scope of coverage, and gaps in insurance.

Order of Precedence (See Appendix 2.2-C.20)

If a conflict arises on a traditional design-bid-build project with respect to the contract documents, the Department's standard document coordination clause (Section 5-1.04 of the General Provisions) applies.

Design-build contracts, however, include several additional documents (e.g., RFP, design-build proposal, etc.), some of which are prepared by the design-builder. The RFP should therefore include a specific design-build order-of-precedence clause to specify which documents take precedence over the others if a conflict exists. This clause also should clarify that the Proposal becomes the basis of the contract to the extent that it meets or exceeds the requirements of the other parts of the contract. If the Proposal offers higher quality or additional services than otherwise required in the RFP, then the Proposal standards are the benchmark or basis for contract requirements.

Stipends (See Appendix 2.2-C.21)

If the Department decides to award stipends to unsuccessful proposers, the RFP should identify the amount, conditions under which it will be paid, and the process of distribution. The stipend provision should include the following:

- Department's commitment to pay the stipend;
- The amount and timing of the stipend;
- Conditions to qualify for the stipend, such as:
 - Submission of a responsive proposal
 - A minimum technical score
 - Agreement to grant Department ownership of intellectual property included in the proposal
- Option for the design-builder to waive stipend in favor of retaining ownership of proposal concepts.

Payment Method (See Appendix 2.2-C.22)

On a design-bid-build project, the Resident Engineer determines payment for work by measuring quantities of work performed and multiplying the quantity measured by the unit price included in the contractor's bid for that item.

With a few exceptions (e.g., hazardous material removal), work on a design-build project is generally priced on a lump sum basis, which requires methods other than the standard measurement of quantities to determine progress and payment.

For smaller, less complex projects, progress can be determined by mutual agreement between the Department and the design-builder of the physical percent complete of each work item, based on a schedule of values included in the design-builder's price proposal. In this case, the schedule of values is merely a tool for determining interim payments; any change in quantities from the original assumptions would not affect the lump sum price for the project.

For larger, more complex projects, progress and payment will be determined on the basis of a periodic payment schedule developed from a cost-loaded critical path method (CPM) schedule with periodic verification of progress by the Resident Engineer.

The payment provision must clearly define the scope of the total lump sum price. The lump sum typically includes compensation for all products and services specified in the RFP, the proposal, and any changes made prior to contract award, including any ATCs or betterments accepted by the Department.

For certain types of work, unit prices and quantities may remain the most appropriate method for measuring progress and making payment, even on a design-build project. Such work would include high risk items (e.g. hazardous materials remediation) or work that is difficult to define during the procurement phase of the project (e.g., relocation of utilities whose location or extent is not well defined). The use of quantities and unit prices would be a means to minimize the risk associated with such unknowns.

Progress Schedule (See Appendix 2.2-C.23)

Design-build delivery adds complexities with regard to cost-loading and progress payments that will likely necessitate modifications to the Department's standard project scheduling provision.

For a design-build project, the scheduling provision should address how the schedule will be used as a basis for measuring progress for payment. For contracts that have separate payment plans for contingency/allowable items, the provision should also specify the associated measurement and payment procedure for such items.

In addition, the schedule should include a detailed set of design activities, along with the required logic to associate them with related construction activities, to ensure that any disruptions to the design process can be tracked as potential delays to the completion of construction.

Project Acceptance (See Appendix 2.2-C.24)

At project completion, Department personnel will review the work to ensure that the desired quality and performance have been achieved in accordance with the RFP requirements. All work must be accepted for the design-builder to be eligible for full payment for the work performed.

In design-build, the design must also be accepted for the design-builder to be eligible for full payment related to design services. Design acceptance occurs concurrently with construction acceptance, and is based upon the design-builder's submission of the as-built plans.

The project acceptance provision should address the following:

- Conditions of substantial completion;
- Procedures and required documents to request a substantial completion inspection;
- Basis of acceptance;
- Procedures and required documents to request a final completion inspection;
- Non-conforming work;
- Notice of final acceptance; and
- Final payment.

Traffic Control (See Appendix 2.2-C.25)

Based on the needs and goals established for a project, traffic control during construction may be an important factor to the overall success of a project. For this reason, traffic control plans are often competed and evaluated as part of the design-builder selection process.

A traffic control provision should address the following:

- Submittal of a traffic management plan (or, if including a full plan with the proposal would be premature, a partial plan or an outline of the design-builder's overall approach to work zone management);
- Department's review and evaluation of the plan (e.g., reviewed for minimum requirements or scored as part of the selection decision);
- Contents of traffic management plan:
 - Plan for during-construction temporary traffic flow
 - Plan for post-construction permanent traffic flow
- Traffic control analysis
 - Worksite and detour route
 - Simulation, traffic volume forecast
- Traffic control devices (e.g., permanent and temporary signing, pavement markings, ITS devices, etc.)
- Restrictions (peak hours, holidays, etc.)
- Any incentive strategies to minimize road user costs (e.g., lane rental provision)

Public Relations (See Appendix 2.2-C.26)

Although the Department will continue to take the lead on public outreach, it may delegate certain activities to the design-builder. Such tasks may include:

- Handling neighborhood complaints;
- Dealing with business owners;
- Attending and participating in public meetings;
- Coordinating with community leaders; and
- Maintaining a project hotline.

Delegating such responsibilities will help ensure that the design-builder is sensitive to the needs of the public, both when it is considering possible design solutions and coordinating construction.

If the risk analysis step suggests that public relations will be particularly sensitive for a given project, the PDT may decide to include a public relations or involvement provision in the RFP. Such a provision would typically require the prospective design-builder's to submit a public relations plan that would be evaluated and scored as part of the design-builder selection process.

4 Design-Build Criteria Package

The RFP includes a set of technical criteria that describe the requirements of the work under the contract. This criteria package typically includes a general project description and scope, and specific sections dealing with design scope and criteria, construction requirements, and applicable performance criteria, and standards. Some design-build RFPs have incorporated the concept of a basic configuration to define the project scope. The basic configuration defines the most fundamental parameters of the facility which cannot be changed.

When developing the design scope, the PDT must clearly specify both the design services required of the design-builder, and the design criteria and requirements to which the design-builder is expected to conform.

Design services are any tasks that support the design of the facility. The services assigned to the design-builder will primarily depend on the risk allocation strategy selected for the project. Design services that may be delegated to the design-builder include:

- Geotechnical investigations,
- Surveying,
- Permitting,

- Utility coordination/relocation,
- ROW acquisition;
- Preparation of engineering drawings, plans, and construction specifications, and as-built plans, and
- Design Quality Management.

Design requirements are the standards and regulations upon which the design-builder should base its design. These may include Department standards and design manuals, AASHTO design guides, FHWA references, project reports, and similar information. The design-builder must adhere to the specific design criteria for the different elements of the project design; for example roadway design horizontal and vertical alignment criteria (design speed, clearances), and traffic management criteria (number of travel lanes), etc.

5 Construction Requirements

Design-build construction requirements are typically captured in the General Conditions and related special provisions of the RFP addressing contract administration requirements for oversight, quality management, time management, changes, payment, and final acceptance. Changes in roles and responsibilities for these topics are addressed in Section 3.3.5, Contract Administration.

6 Technical Provisions

When developing specific technical provisions for a project, particularly when using performance specifications, the PDT should keep the following general guidelines in mind.

- Contract provisions should focus on defining the problem, not the solution. For those project components for which the Department is willing to grant design flexibility to the design-builder, the PDT should develop performance specifications to the extent possible. Less prescriptive specifications will encourage innovation and will shift performance risk from the Department to the design-builder.
- For other project elements, such as those that interface with existing systems (e.g., street lighting, traffic control systems) and those that will ultimately require routine maintenance and substitution of parts (e.g., signage, median barriers, etc.), prescriptive specifications may be more appropriate.
- The level of flexibility allowed in the specifications and the degree of specificity in the plans should be consistent with the risks identified for the project and the allocation of these risks between the Department and the design-builder.

Performance specifications inherently mean that there may be more than one way to achieve the desired result. If properly written, they provide more flexibility and encourage more innovation and creativity than prescriptive specifications.

Elements of Performance Specifications

Typical Performance Specifications have the following four essential elements borrowed in part from the Construction Specifications Institute Project Resource Manual, Manual of Practice, Methods of Specifying (2005):

- 1) **Attributes:** the critical elements of the work that are of importance to the owner; the means by which the performance characteristics are identified. For example, pavement structure attributes may be measured in terms of rideability (smoothness), durability, and skid resistance;

- 2) Performance Requirements: a statement of the desired qualitative results, such as, a skid resistance of 45;
- 3) Design Requirements: definitive statements of performance for a particular requirement, usually a statement of results desired at particular times in the life of the Project component (such statements or requirements should not be repeated in Part 3); and
- 4) Substantiation/Performance: a statement of what is required and how and when actual performance/conformance will be measured or how predicted performance will be determined.

Developing Performance Specifications

In preparing Performance Specifications the writer should do the following:

- 1) Establish the attributes, requirements, criteria, and substantiation for design, construction, and long-term performance;
- 2) Allow flexibility to the extent possible;
- 3) Include prescriptive elements where necessary.

Formatting Performance Specifications

Although there is not an industry-wide format for performance specifications, the format should be consistent with the Department's current specification format. Formatting for the Department's performance specifications could include:

- 1) 1.0 - Title and Scope;
- 2) 2.0 - Applicable Standards & References (i.e., AASHTO, FHWA, Department);
- 3) 3.0 - Essential Elements, including:
 - a. Attributes,
 - b. Requirements,
 - c. Criteria, and
 - d. Substantiation/Performance.
- 4) 4.0 – Payment

The Department may "standardize" some Performance Specifications over time while others may be tailor-made for a given project. Performance specifications should not be prepared for all project components. They should be prepared where a degree of flexibility is allowed and where innovation and creativity may result in better value, higher quality, or lower cost.

.7 Reference Documents

The PDT may decide to include reference documents in the RFP that it feels may be useful or of interest to prospective design-builders. If such documents are provided, the RFP must clearly stipulate that reliance on such information is entirely at the design-builder's risk.

Reference documents may include Department manuals (e.g., PDPM, ROW Manual, Construction Manual, etc.), environmental documents and decisions, and any applicable agreements (e.g., railroad and Utility agreements) made by the Department prior to the RFP.

The Department cannot require the design-builder to comply with information contained in the reference documents. For example, environmental documents included in the reference documents may identify certain mitigation or permit requirements. If the Department expects the

design-builder to comply with such requirements, those requirements should be duplicated and included as mandatory requirements in the RFP.

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3.3.4. RFP Issuance, Proposal Evaluation, and Contract Execution

This section addresses various requirements related to RFP issuance, proposal evaluation, selection of the winning proposal, and contract execution.

3.3.4.1. RFP Issuance

If a two-phase procurement process is used, RFPs should only be issued to short-listed proposers.

When establishing deadlines for proposal submittal, the PDT should bear in mind the complexities of developing a responsive proposal. Proposal preparation could require additional engineering investigations, research into public needs, preparation of design documents, and additional tasks not normally required on a traditional design-bid-build project. Based on the needs of the project, allowing 60 to 90 days for proposal preparation may be necessary. The PDT should keep this timeframe in mind throughout the project development process when targeting an overall project completion date.

3.3.4.2. Clarifications and Addenda

Proposers may wish to seek clarification on RFP requirements. Any questions thus received, along with the Department's response, should be made available to all firms that received the RFP.

To answer questions received from proposers or to otherwise clarify requirements, correct errors, or to provide supplemental information, it may be necessary for the Department to issue formal addenda to the RFP.

3.3.4.3. Technical Concept Reviews

For complex projects, the RFP may encourage proposers to submit technical concepts for review by the Department during the proposal preparation period. For prospective design-builders, the opportunity to participate in this kind of pre-proposal review process is beneficial because the feedback received will prevent any unnecessary expenditure of resources in developing a concept that does not meet the RFP requirements.

The review may take the form of face-to-face meetings in which the proposer presents its concept to the Department and receives direct feedback, or it may be an actual submittal package delivered to the Department. In either case, the confidentiality of the proposer's concept must be protected.

3.3.4.4. Evaluation and Selection Process

In evaluating the proposals received, the Selection Committee must adhere to the Proposal Evaluation and Selection Plan established by the PDT for the project. (see Section 3.3.2.9.4 of this manual for additional details on developing an RFP evaluation plan).

This plan should be consistent with the information communicated to proposers in the RFP with respect to evaluation factors, rating guidelines, and the relative importance of the various evaluation factors.

As part of the evaluation plan, the PDT may decide that it would be beneficial to conduct interviews with the proposers. If this approach is taken, the RFP must provide detailed instructions regarding the interview process and any presentations required of the proposers. These instructions should also emphasize that no mention of price proposals will be allowed during the meetings. The meetings should focus entirely on increasing the Department's understanding of the technical proposals and how the proposers have addressed any evaluation criteria included in the RFP.

The exact evaluation process will vary based on the procurement method (e.g., lowest-price or some variation of best-value) selected for a particular project. Additional details regarding possible procurement approaches are provided in Section 3.3.2.10 of this manual.

.1 Lowest-Price

During a lowest-price procurement process, the Selection Committee will first review the technical proposals to ensure that they are fully responsive to the requirements contained in the RFP. The responsive proposals will establish the competitive range.

After establishing the competitive range and returning sealed price proposals to any competitors outside this range, the Selection Committee will open the remaining price proposals. The contract will be awarded to the proposer that submitted the lowest-priced proposal within the competitive range.

Additional details regarding this procurement approach are provided in Section 3.3.2.10..2 of this manual.

.2 Best-Value

For best-value procurement, the Selection Committee will evaluate each proposer's technical proposal according to the rating criteria established for the project.

The price proposal will be factored into the final score given to each proposer based on the best-value award algorithm (e.g., weighted criteria, adjusted bid) chosen for the project. The proposer that receives the highest total score or lowest adjusted bid will be awarded the project.

Additional details regarding this procurement approach are provided in Section 3.3.2.10..2 of this manual.

3.3.4.5. Contract Execution

When the Selection Committee has completed its evaluation of the proposals, the chair of the Selection Committee should prepare a formal memorandum to the Selection Official recommending award.

To the extent possible, the PDT should evaluate any options or alternate proposals included in the selected design-builder's proposal prior to contract execution. This will allow the incorporation of any acceptable options and alternates into the "conformed" contract documents.

Given the complexity of the documents involved for a design-build project, the Department should then assemble a conformed contract document that includes the RFP, the contract agreement, components of the design-builder's proposal designated for inclusion in the contract, and the results of any negotiations conducted after selection but prior to contract execution.

Contract execution will then generally proceed according to the Department's standard practice.

3.3.5. Contract Administration

On a design-build project, the Department will transfer significantly more responsibility and authority to the design-builder to manage and control the work than would otherwise be the case on a standard design-bid-build project.

This section addresses the necessary changes to the Department's standard contract administration practices to account for the more active role the design-builder will take in areas traditionally the sole responsibility of the Department, such as design preparation and quality assurance.

3.3.5.1. Related Manuals

The procedures outlined in the Department's Construction Manual related to both contract administration and inspection will generally apply to a design-build project, with the exception of those issues identified below.

- The design-builder will have primary responsibility for detailed record keeping. As such, some of the administrative burden traditionally borne by Department personnel will fall to the design-builder. The Department, however, will be responsible for auditing the design-builder's records to ensure that the required records are being maintained.
- The sampling and testing procedures included in the Construction Manual will primarily be performed by the design-builder, with Department personnel responsible for verification testing, conducting spot checks, and auditing of the design-builder's quality records.
- Given the lump sum nature of the design-build contract, the change order process will also differ from that used on a traditional project. Variation in quantities will not be a measure of a change in the character of the work. Instead, change orders will primarily be limited to items that modify the general definition of the project. Payment for changes will be either negotiated or based on force account.
- Given the faster pace of a design-build contract, the standard review timeframe and approval process may require adjustment to prevent delays.
- The changes in roles and responsibilities and expedited decision making in a design-build project will lend itself to the greater use of alternative dispute resolution (ADR) processes, particularly for larger, more complicated projects. The processes available to the Department include partnering, facilitated dispute resolution, and Dispute Review Boards (DRB) outlined in the Construction Manual.

The Department's Field Guide to Partnering on Caltrans Projects provides specific guidance on implementing partnering for Caltrans projects. For design-build projects, particular emphasis should be placed on team building, decision making time frames, issue escalation, and use of a dispute resolution ladder and ADR processes.

The Department's existing Project Communication Handbook outlines procedures to facilitate the PDT's outreach efforts to internal and external project stakeholders. The same methods would apply to a design-build project, but the PDT may wish to consider also inviting the design-builder to attend and participate in certain meetings, such as those involving permitting agencies, Utilities, and other stakeholders that would be affected by the design-builder's ultimate project design.

3.3.5.2. Design Quality Management

For a design-build contract, Department staff will assume new oversight responsibilities to ensure that the design prepared by the design-builder meets the intent of the contract documents.

In carrying out these responsibilities, the PDT should be careful about offering, suggesting, or ordering solutions to design problems. Any suggestions offered should be made with the express provision that the design-builder is not required to accept the suggestion. Requiring otherwise may result in the Department unintentionally assuming liability for aspects of the design that should remain with the design-builder.

The PDT should focus any review comments on whether or not the design-builder's proposed solution meets contract requirements or basic configuration. If, as a result of the review process, the PDT decides the specified contract requirements are inadequate, it may change those requirements, but, in doing so, may entitle the design-builder to an adjustment in cost and time for incorporating the change.

.1 Design Workshop

To establish lines of communication and promote a good working relationship between Department staff and the design-builder's staff, the parties should conduct a design workshop soon after notice to proceed. The workshop should focus on:

- Critical design elements;
- Design review process:
 - Timing and frequency of reviews (if unspecified in the RFP)
 - Co-location of Department and design-builder (if applicable)
 - Design submittal requirements
 - Department's oversight role
- Over-the-shoulder reviews; and
- Participation of outside parties (e.g., railroads, Utilities, etc.) in any over-the-shoulder reviews.

.2 Department's Oversight Role

On a design-build project, it is the design-builder who is responsible for managing the design process, design QC, and final design. The Department's role during the design phase therefore consists of the following oversight activities:

- Monitoring and auditing design progress;
- Interpreting contract documents; and
- Verifying compliance with contract requirements.

In performing these tasks, the Department should follow the guidelines provided below.

- To accommodate the fast-paced nature of a design-build project, the Department should remain continuously involved with the progress of the design through "over-the-shoulder" reviews. Co-location of Department staff and design-builder staff can facilitate this process. By continuously monitoring the progress of the design, the Department will encounter minimal issues or surprises during the more formal design reviews.
- The Department's role is to verify that the design meets the overall contract requirements. With the exception of audit checks as noted below, Department staff should not be performing detailed checks of plans and calculations.
- The Department should verify through audits of design QC records that the design-builder is complying with the design quality procedures contained in its Quality Plan. An audit may include detailed checks of plans and calculations.
- Design reviews should be performed in accordance with the procedures established at the design workshop.

- The Department will indicate that design submittals are considered “released for construction.” This notification does not constitute design approval. Design acceptance does not occur until the end of the project after all as-builts have been reviewed and accepted.
- The Department will be responsible for verifying design progress for payment purposes. This will normally entail verifying that design milestones have been met.

3.3.5.3. Construction Quality Management

The design-builder may perform many of the sampling and testing responsibilities traditionally performed by the Department’s inspector. If these traditional QA tasks are performed by the design-builder, Department inspectors will assume more verification and auditing duties. These inspection tasks will generally include the following:

- Verifying that the current signed and stamped design plans are onsite and being followed by the design-builder’s construction forces;
- Spot-checking construction for compliance with design plans and project specifications;
- Evaluating construction at any “witness and hold” points stipulated in the contract;
- Reviewing temporary traffic control installations;
- Verifying that members of the design-builder’s QC staff
 - Have proper qualifications
 - Are present to observe and control the work
 - Are conducting material sampling and testing
 - Are carrying out the design-builder’s quality plan
- Verifying progress and reviewing payment requests;
- Verifying force account records;
- Auditing safety records;
- Auditing environmental compliance records; and
- Conducting and managing the review of as-built plans.

The Department and the design-builder should conduct a pre-construction conference to review the Department’s quality management expectations and the oversight role its inspectors will assume. Refer to Appendix 2.2-C.13 for an example of a Quality Management Plan provision.

3.3.5.4. Department Approvals

The Department should only “approve” those submittals, activities, actions, and work that the contract specifically identifies as required for “approval.” Such items may include:

- Safety plan and updates
- Quality plan and updates
- Requests for periodic payment
- Request for release of retention
- VE change proposals
- Design (at time of approval of as-built plans)

Department approvals should be limited to those specified in the contract to avoid any inadvertent assumption of risk that should otherwise remain with the design-builder until final acceptance of the project.

3.3.5.5. Progress Payments

Most design-build projects will use a cost-loaded CPM schedule submitted by the design-builder, and reviewed and approved by the Department, as the basis for making monthly progress payments. If a cash flow schedule was submitted as part of the Price Proposal, the CPM schedule should be reviewed for compliance with the cash flow schedule.

Department inspectors should periodically verify the progress reported in the schedule.

3.3.5.6. Planning and Charging Practices

Proper planning and charging is critical to managing project costs. The need is even greater when implementing new processes that have the purpose of delivering projects faster while remaining within budget and maintaining a high level of quality.

Whenever reasonably possible, project costs must be charged to specific multi-phase project expenditure authorizations (EAs). The Department has long-standing product-oriented charging rules. Because design-build requires expenditure of resources in a less sequential manner (overlapping phases) because of the accelerated nature of design-build project delivery, the Department must carefully assess project phases to determine what level of expenditure is required for each phase. In the case of design-build, there may be an increase in the work needed to award a contract but a relative decrease in the level of construction support.

3.3.5.7. Project Completion

Substantial completion and final acceptance will generally proceed in accordance with the Department's standard procedures, with the exception of the design-builder preparing and submitting the final as-built drawings as a condition precedent for design final acceptance.

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3.4. CM-AT-RISK

3.4.1. Introduction

The information presented in this section supplements existing Caltrans manuals with information specific to the Construction Manager at-Risk (CM at-Risk) method of project delivery. The information provided has been developed based on best practices from the use of CM at-Risk in transportation, with consideration given to how these practices can be best integrated into the Department's existing project development and project management processes. Should any requirements conflict with the content of other manuals, the information presented in this section shall take precedence for CM at-Risk projects only.

This section is divided into three core parts of the project development process that include a Project Development/CM Procurement, Pre-Construction Services (GMP Negotiation), and Contract Administration/Construction Services.

3.4.1.1. Purpose of this Section

This section provides the project manager, functional manager, and other staff engaged in the delivery of capital projects for the Department detailed guidance on the use of CM at-Risk as an alternative project delivery system. Topics addressed include the following:

Project Development

Pre-Construction Services

Guaranteed Maximum Price (GMP)

Contract Administration/ Construction Services

The information provided is primarily geared towards projects developed, funded, and constructed by the Department, but aspects related to contract administration apply equally to locally or privately sponsored projects for which the Department personnel are acting in an oversight role in accordance with a Cooperative or other Agreement.

3.4.1.2. What is CM-at-Risk

CM at-Risk is a delivery system through which a Construction Manager consults for the Department during the pre-construction phase; the Construction Manager provides the Department with a Guaranteed Maximum Price (GMP); and acts as the General Contractor during the construction phase of the contract. The Construction Manager transfers some risk for project development and more risk for construction from the Department to the Contractor. This method is also known as Construction Manager/General Contractor (CMGC).

3.4.1.3. How is CM-at-Risk Different?

With CM at-Risk, the Department selects a Construction Manager (CM) to perform both pre-construction and construction management services. During the design phase, the CM acts in an advisory role, providing constructability reviews, value engineering suggestions, construction estimates, and other construction-related recommendations. At a point at or before 100% design, the CM and Department negotiate a GMP, which is typically based on a partially completed design and includes the CM's estimate of the cost for the remaining design features.

After the GMP is established, the CM begins construction, allowing for an overlap of the design and construction phases. Once construction starts, the CM assumes the role of CM at-Risk Contractor for the duration of the construction phase. The CM at-Risk Contractor holds the construction contract and the risk for any construction costs that exceed the GMP.

The GMP is the key item which makes this delivery system unique from all the others. In this type of contract, the Construction Manager promises, subject to the conditions of the contract, to complete the contract work for an amount that does not exceed the agreed-upon GMP. The GMP is an amount that typically includes a Contractor's Fee, Pre-Construction Phase Fee, Construction Phase Fee (General Conditions), and a Contingency.

The GMP is a negotiated amount (at or before 100% complete design) based on the CM's cost model, initial project estimate, and project estimate updates all performed as a pre-construction service.

3.4.1.4. Terminology

Base GMP: A part of the GMP which usually consists of a Pre-Construction Phase Fee and the projects overhead and profit amounts. The Base GMP does not include contingencies.

Construction Manager (CM): A partnership, corporation, or other legal entity that is responsible to provide the Pre-Construction Services for a transportation infrastructure project. Not to be confused with CM at-Risk Contractor (Same entity, but different function).

CM at-Risk: A delivery system in which the Construction Manager acts as a fee paid advisor to the Department during the Pre-Construction Services phase of the work, and as the contractor *at-risk* with a Guaranteed Maximum Price not-to-exceed contract for the Construction Services phase of the work.

CM at-Risk Contractor: A partnership, corporation, or other legal entity that will be responsible to provide the construction improvements for a transportation infrastructure project. The CM at-Risk Contractor must hold an appropriate contractor's license. Not to be confused with Construction Manager (CM). (Same entity, but different function).

Construction Manager's Fee: A part of the negotiated GMP which typically includes fees for all Construction Manager's services performed in the Construction Services phase of a CM at-Risk Contract.

Construction Phase Fee: A part of the negotiated GMP which typically includes general conditions such as salaries and other direct costs associated with constructing overhead to the project.

Construction Services: Work defined by the Department to be performed during construction on a project, and paid on a Guaranteed Maximum Price basis, including, but is not limited to, work performed by the Construction Manager, subcontractors, and material suppliers

Design-Bid-Build: The traditional project delivery system where the Department (or, alternatively, a consulting engineer working for the Department) designs the project, solicits bids, and awards the construction contract to the lowest responsive and responsible bidder.

General Conditions Costs: Costs included in the Guaranteed Maximum Price (GMP) which usually include all items and services

Guaranteed Maximum Price (GMP): A sum agreed upon by the CM at-Risk Contractor and the Department for a project. It represents a not-to-exceed total cost of the Construction Services phase scope of work inclusive of direct costs, general conditions, contingencies, and fees.

Pre-Construction Phase Fee: A fee for services rendered by the CM during the Pre-Construction Services phase of work only (as required by the Department). The fee includes work performed during and up to the remainder of design and Notice to Proceed to begin construction of the project.

Pre-Construction Services: Services defined by the Department for work that usually includes preliminary project evaluations and estimates, constructability reviews, reviews of reports, studies and data, procurement planning, long lead procurement, stimulation of subcontractor bidder interests, coordination and interaction with subcontractors, pre-qualification of bidders, subcontract and supplier bids and proposals, and subcontractor selection, which is performed before any construction begins on the project; paid by the Department on a fee basis.

Qualifications Based Selection (QBS): A procurement process whereby a contractor is selected based on (1) an evaluation of contractor qualifications (e.g. experience, capability, availability, project manager, project team, etc.) against factors defined by the Department, (2) an evaluation of the contractor's understanding and approach to the scope of work against factors defined by the Department, and (3) a determination that the qualifications and fee submitted by the selected contractor offer the best value to the public.

Reimbursable Costs:

Request for Qualifications (RFQ): An invitation by the Department to solicit contractors for services to be performed by a Contractor. The Contractor responds with a Statement of Qualifications (SOQ).

Statement of Qualifications (SOQ): The written information submitted by a contractor in response to the Request for Qualifications (RFQ). The SOQ contains information about the contractor's capabilities, team members, previous experience, and general understanding of the project.

Work: All resources necessary to complete the design and construction of the project.

3.4.1.5. Why Should We Use CM-at-Risk?

There are four circumstances of project scenarios where CM at-Risk Contracting may be an ideal choice for use. These project circumstances include the following:

Limited Department Management Resources: Projects where the Department has limited management resources available are ideal projects for CM at-Risk Contracts. Because these contracts transfer more of the risk to the CM at-Risk Contractor, the Department has the ability to allocate concentrated team members to essential project needs such as quality controls, invoicing, scheduling, and traffic control and less on needs that the CM at-Risk Contractor is capable of performing.

Large or Corridor Projects with Multiple Contracts: Large projects with multiple contracts require large amounts of Department resources due to increased risks. Such projects typically require coordination of multiple prime contractors, identification and mitigation of inefficiencies, and greater potential for delays. These project issues can be managed by a CM at-Risk Contractor.

Limited Time or Funding: Because the CM at-Risk Contractor performs preliminary evaluations and estimates before 100% complete design, the anticipated costs and savings are better substantiated. The Department has an ability to review and negotiate a Guaranteed Maximum Price as a means to lower the risks associated with variation in construction values or duration, making projects under critical funding or time constraints appropriate for a CM at-Risk Contract.

Fast-Tracking—Staged Construction: CM at-Risk contracts are ideal for fast-track projects. According to a CII/Penn State University comparison of delivery systems used in the U.S., CM at-Risk costs 1.5% less, completes 5% faster, and performs equal to or better than Design-Bid-Build projects in most quality measures. The study references follow: Sanvido, V. and M. Konchar. 1999. *Selecting Project Delivery Systems: Comparing Design-Bid-Build, Design-Build, and Construction Management at Risk.* The Project Delivery Institute, State College, Pennsylvania.

3.4.1.6. Statutory Authority

Although some states have enacted statutes authorizing the use of CM at-Risk Contracting in the public sector, CM at-Risk has not been commonly used on transportation projects. Approval from FHWA is necessary to use CM at-Risk Contracting on Federal-Aid highway construction projects. As an example, the Florida DOT is using CM at-Risk contracting in combination with traditional Design-Bid-Build on the \$1.349 billion Miami Intermodal Center, a large parking/transit/roadway project in Miami.

Current California statutes do not permit the use of CM at-Risk for Caltrans projects. Statutory change would be necessary to allow use of this delivery system under the FHWA Special Experimental Project No. 14 program.

California Government Code 4525 et seq. would require revision to permit the use of CM at-Risk. Also, California Public Contract Code 10100 et seq. would require revision. In particular, Section 10120 now requires 100% design complete before advertisement for construction and Section 10122 requires competitive low bids for the award of a construction contract.

3.4.1.7. Overview of the CM-at-Risk Procurement Process

In a CM at-Risk delivery system, the CM at-Risk Contractor is procured for two phases of work, Pre-Construction Services and Construction Services. The procurement occurs through a Qualifications-Based-Selection (QBS) process where the prospective CM at-Risk Contractor responds to an RFQ by submitting a SOQ and is selected by the Department based on weighted criteria applied to those qualifications identified in the RFQ.

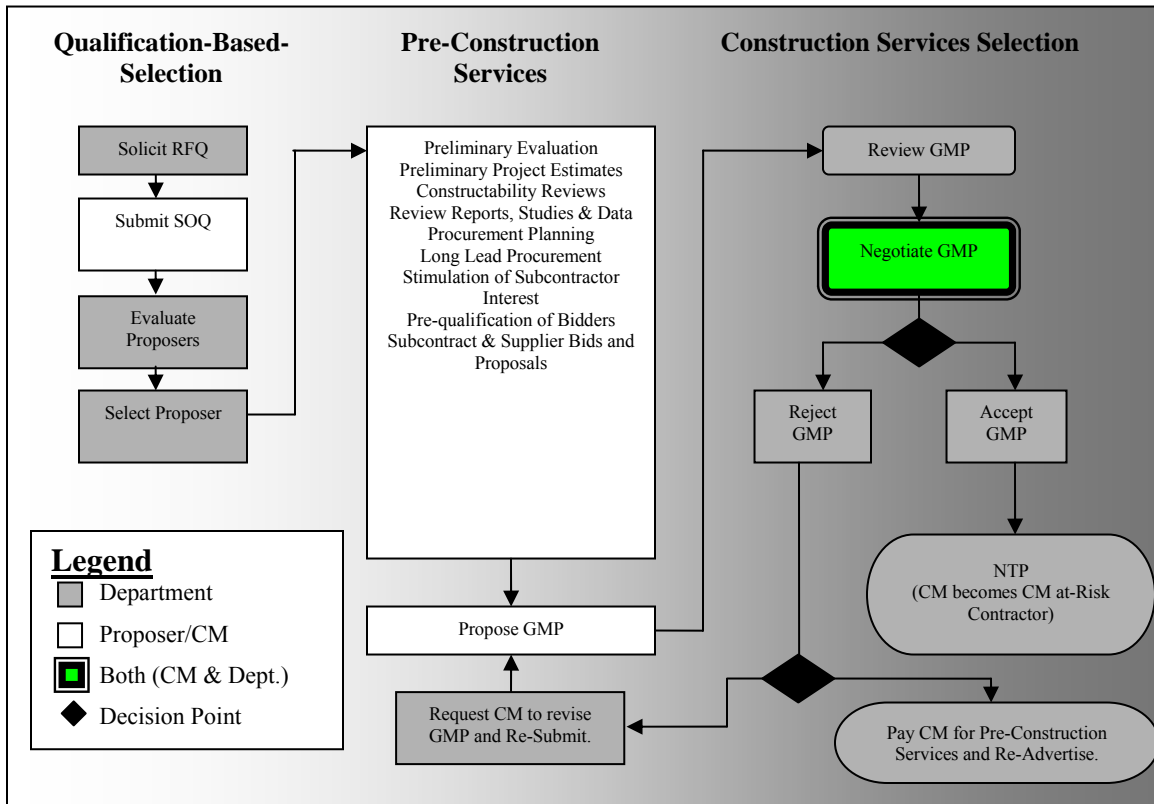
During the Pre-Construction Services phase of the project, the prospective CM at-Risk Contractor acts as a Construction Manager for the Department and performs work specified by the Department. This work typically includes preliminary evaluations, preliminary estimates, constructability reviews, long lead procurements, stimulation of subcontractor interest, and the preparation of a Guaranteed Maximum Price, or GMP.

At or before 100% design completion, the Construction Manager provides the GMP to the Department for negotiation and acceptance. At this point, the Department has the right to accept or reject the GMP. If the Department accepts the GMP, the Construction Manager becomes the CM at-Risk Contractor during the Construction Services phase of the project.

The Department may reject the GMP, and request the Construction Manager to re-submit a revised GMP or pay the Construction Manager for its Pre-Construction Services. The Department may re-advertise for the Construction Services phase of the work in a procurement method of its choice.

Figure 3.4.1 below provides a visual representation of the typical steps in the use of the CM at-Risk project delivery method and the procurement process used for each phase of project delivery. It also includes options for the Department to ensure cost effective outcomes in the use of this method.

Figure 3.4.1. Overview of CM at-Risk Procurement Process



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3.4 CM at-Risk

3.4.2. Project Development / CM Procurement

At this stage in the project development process, the Department has evaluated options and selected CM at-Risk as the appropriate delivery system for the given project. The next step identifies and allocates the potential risks, develops preliminary documentation (Environmental, Utilities and Right of Way) and considers developing design documents to a level that best utilizes the Construction Manager’s services—such as constructability reviews, preliminary evaluations, and preliminary estimates.

At this time the Department should begin to identify the goals and objectives of the project and the procurement strategy. Once complete, the final step includes the procurement of the CM at-Risk Contractor as the Construction Manager for the Pre-Construction Services phase of the project.

This section identifies the key considerations, processes and documents necessary for all of the above procedures to occur effectively.

3.4.2.1. Risk Identification and Allocation

Because the procurement of a CM at-Risk Contractor occurs at an earlier stage of project development than traditional Design-Bid-Build, the Department should identify and allocate risks earlier in the project development stage.

According to the Department’s risk management process, the Pre-Construction Team should develop a risk register during the Project Initiation Document phase. Once the project is programmed, the Pre-Construction Team should then amend and refine this register if subsequent engineering studies eliminate (or reduce the likelihood of) previously identified risks or, conversely, identify previously unknown risks. Risk management is therefore an inherently iterative process, and one which, particularly under CM at-Risk delivery, can take on the added complexity of timely allocating risks to the CM at-Risk Contractor.

For the CM at-Risk Contract delivery method, timely identification and allocation of risks as needed in the project development process may capture the benefits of this method. Knowing the risks allows both Pre-Construction Teams to effectively address and create the best solutions for the project.

3.4.2.2. Preliminary Project Development

Preliminary project development items include Environmental, Utilities, and Right of Way. These items are critical in the project development phase and set the stage for procuring the CM at-Risk Contractor. As these items occur closer to completion, the value of constructability reviews made by the CM during the Pre-Construction Services phase will diminish.

The Department should consider the following in preliminary project development processes:

.1 Environmental

Under CM at-Risk delivery, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The preliminary engineering and environmental studies, definition of major project features, selection of the preferred alternative, and preparation of the appropriate environmental documents will therefore remain the Department’s responsibility, requiring little change to the Project Report and Environmental Document phase of the Department’s traditional design-bid-build process.

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The importance of environmental clearance to the CM at-Risk delivery method is for the Department to ensure that the Construction Manager has the ability to provide input into the scope of work and constructability that may affect the outcome of environmental process.

.2 Right of Way

The Department will retain responsibility for obtaining ROW for most CM at-Risk projects. However, under certain circumstances (e.g., areas with high real estate costs), it may be advantageous for the Department to delay acquisition until the Construction Manager has had an opportunity to review and provide input into the scope of work and constructability that may affect the Right of Way acquisition process.

.3 Utilities

Because the Department has a long-standing relationship with most local agencies, Utilities, and railroads it will likely be in the best position to influence and obtain the required cooperation from these third party entities. In most cases, the Department will obtain the required agreements with these parties prior to the negotiation of the GMP.

3.4.2.3. Project Preliminary Design Document Preparation (30% Max)

The goal of constructability reviews in a CM at-Risk Contract is to eliminate potential project issues in coordination, accuracy, and completeness of plans prior to the start of construction, minimizing change orders and optimizing scope of work. Such benefits, however, are optimized when reviews are made at an early stage of preliminary design. As plans exceed 30% complete the CM has fewer opportunities to identify potential issues and add value to the project.

It is recommended that design be no further than 30% complete and as soon after conceptual scoping as possible to allow the CM to perform the following:

- Review plans and specifications to assess the ease or difficulty of constructing the proposed design and provide recommendations for practical changes.
- Review documents for any observed inconsistencies.
- Make recommendations for the use of more cost-effective alternative materials, design details, phasing, and scope.
- Make recommendations for specification changes if the proposed specifications may limit competition or cause excessive delays in project completion.
- Review documents for completeness with comprehensive and accurate documentation which may result in more responsive and complete bids, with fewer contingencies.

3.4.2.4. Project Goals & Objectives / Procurement Strategy

At this stage of development, goals and objectives of the project should be established. Identifying these goals and objectives should assist in the development of the procurement strategy and solidify procurement documentation described in the next section, “CM at-Risk Contractor Procurement.”

In developing the goals and objectives of a CM at-Risk project, the project team should ask questions addressing timing, cost, quality and public needs. Typical questions should address the necessity of a fast-track approach. Is there an urgent need to complete the project under a certain time constraint? If so, what are the parameters of that constraint and how can the Contract Documents best identify this constraint to allow the project to tap into the benefits of a CM at-Risk Contract?

Answers to the above questions should assist in the development of the procurement strategy. The strategy includes creating a bid approach, developing documents (including technical provisions), developing advertisement procedures, creating public awareness, and stimulating CM at-Risk Contractor interest. This section identifies key document considerations required for a successful CM at-Risk project delivery.

The Department should address questions in developing project goals such as following: Is the project budget fixed? Can the scope of work be modified? Or, are there quality parameters unique to the project? Such goals should be addressed in the development of the project's Special Provisions and Plans. These provisions may include items such as:

- Incentives (Contingencies / Shared Savings)
- Timely Compensation
- Performance Related Specifications
- Construction Flexibility
- Phase Segments
- Early Plan Approval of Project Segments
- Early Construction (before acceptance of GMP)
- Early Initiation of Long Lead Procurements

3.4.2.5. Pre-Construction Services Procurement

For the Pre-Construction Services phase procurement, the Department selects the CM (who is also the prospective CM at-Risk Contractor for the Construction Services phase of the work) by issuing a Request for Qualifications (RFQ), which identifies the qualification criteria that meets the project needs.

Interested Contractors should submit a Statement of Qualifications (SOQ) or Proposal in response to the RFQ. The Department then ranks SOQs based on a technical review of qualifications and identifies the most qualified Contractor. The Department enters into negotiations with the top ranked, or most qualified proposer, to agree on a fixed fee for the Pre-Construction Services phase.

If the Department and the highest ranked Proposer fail to agree on a fee for the Pre-Construction Services phase, the Department should negotiate with the next highest ranked proposer until such an agreement is reached.

The specific details and considerations to the above procurement process are further described in the following sections.

.1 Qualifications-Based-Selection (QBS)

The Department is allowed to use the Brooks Act to procure for Construction Management services which include project management, construction management, feasibility studies, preliminary engineering, design engineering, surveying, mapping or other related services, which can be utilized in a CM at-Risk Contract. The Brooks Act can be found at the following web address: http://nauticalcharts.noaa.gov/ocs/hsrp/archive/march2005/brooksAct_92-582.pdf

The Brooks Act, or Qualifications-Based-Selection (QBS) process, requires that projects be advertised and ranked based on published weighted criteria for experience, capability availability, and qualification. Once the top companies have been rated, the Department begins negotiations with the top rated company. If the type of services required cannot be agreed upon at fair and reasonable prices, the Department can proceed to negotiate with the next highest qualified company.

2 QBS Selection Process

The QBS selection process includes three elemental processes: an advertisement of an RFQ; a submission of an SOQ from the contractor; and an evaluation of the SOQ and selection of a contractor.

The following considerations should be observed during each elemental process:

A. Request for Qualifications (RFQ)

For a CM at-Risk Contract, the RFQ should include general information that identifies the Department as the entity soliciting Statements of Qualifications (SOQs) from qualified company that may lead to the selection of a CM at-Risk Contractor for a CM at-Risk project. The RFQ should also identify the estimated contract amount, term, location of interviews and day and location of the negotiation of the contract.

The RFQ should also include the scope of work, identifying the required CM services, the percent complete of the design work, the schedule of performance, anticipated milestones, location of work, availability and work hours, personnel requirements, equipment requirements, deliverables, and standards for the project.

For constructability review purposes, the RFQ should include the goals and objectives for the delivery of the project, identifying the motivation behind the project and benefits that the Department is seeking in the development of the project (e.g. cost-savings, time-savings, etc.).

The RFQ should also identify any documents that the Department should provide (e.g. plans, specifications, preliminary research documents), as well as any work product that should be provided by the CM at-Risk Contractor.

In a CM at-Risk delivery method, include as a minimum the following information as a part of the RFQ:

- Criteria
- Weights
- Rating Descriptors

B. Statement of Qualifications (SOQ)

After review of the RFQ, the prospective CM at-Risk Contractor submits an SOQ that identifies the following items:

- Contract Information
- CM at-Risk Contractor Point of Contact
- Proposed Team
- Organization Chart
- Resumes of Proposed Key Personnel, including Project Manager
- Example Projects for Proposed Team's Qualifications for the contract.
- Key Personnel Participation in Example Projects
- Additional Information
- General Qualifications
- Work Force Analysis Chart
- Resources
- Location of Resources

C. Evaluation of Statements/Proposals

The evaluation process should be conducted by Department panels composed of members who collectively have experience in architecture, engineering, construction, government, and related acquisition matters. The evaluation panel should measure the candidates against the criteria in the RFQ.

The panel ranks the Contractor according to an identified ranking system, which may include professional qualifications, experience with CM at-Risk Contracting, performance record and review and analysis of the contractor’s workload as measurement criteria (and is included in the RFQ).

Once a thorough evaluation is conducted, the Department develops a short-list of the top ranking CM at-Risk Contractors. The Department may interview with the top ranked contractors or conduct open discussions for further information on the short listed Contractor’s qualifications. The Department selects the CM at-Risk Contractor based on the process and the scoring outcome.

.3 Pre-Construction Phase Fee Negotiation

After making its final selection, the Department may begin negotiations with the top-ranked contractor. In this process, the Department requests the contractor to submit a fee proposal for the pre-construction phase activities listing direct and indirect costs as the basis for contract negotiations. Contract negotiations follow the evaluation of the fee proposal and an audit.

If the Contractor and the Department cannot agree on a fee within a reasonable time, the contracting officer may conclude negotiations with the top-ranked CM at-Risk Contractor and initiate negotiations with the second-ranked contractor. If a satisfactory contract cannot be negotiated with this firm this procedure should continue until a mutually satisfactory contract is negotiated.

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3.4.3. Pre-Construction Services (GMP Negotiation)

At this point in the project development process, the Department has selected a CM and has negotiated a fee for Pre-Construction Services. This section of the guide highlights the key issues required by the Department and the CM at-Risk Contractor during the Pre-Construction Services phase of the project. Such issues include team composition, their respective roles and responsibilities, and payment to the CM.

3.4.3.1. Developing the Pre-Construction Services Team

Team composition may vary depending on the level of completion of project development. For Pre-Construction Services, the Department should require a combination of Construction Management members and Department members that ensure all the potential benefits of the CM at-Risk Contract are captured and optimally utilized.

The CM and the Department should work together as a team during design and through the completion of construction (if the contractor is procured for Construction Services). It is important to note that during this phase of the project the CM is not the CM at-Risk Contractor. When the Department has agreed upon the Guaranteed Maximum Price (explained later in this section) and issues a Notice-to-Proceed (NTP), the CM Contractor becomes the CM at-Risk Contractor and will begin the construction phase of the project.

The CM should provide leadership to the Pre-Construction Team on all matters relating to construction. The Department should provide leadership to the Pre-Construction Team on all matters relating to design and engineering.

.1 The Caltrans Pre-Construction Team

The Department should designate a representative (Project Manager, Functional Manager, or Project Engineer) who acts as an administrator for a CM at-Risk project and is fully acquainted with CM at-Risk Contract requirements and needs. The representative serves as the day-to-day contact with the CM. An agent for the administrator should serve as the person designated by the Department to provide direct liaison with the CM to meet the Department's responsibilities. The Department should define the lines of the administrator's authority to include approval of construction budgets and scope changes in the project. To support CM at-Risk projects and project teams, the Department should furnish information expeditiously and provide decisions promptly.

.2 The CM's Pre-Construction Team

The Construction Manager should maintain a competent staff in all required positions. The Construction Manager should submit a staffing plan for each project phase. The staffing plan should detail the Construction Manager's organization for all applicable work levels, including the superintendent level and on-site and off-site personnel. The personnel identified in the CM Contract for the Pre-Construction phase should staff key positions. For all other positions listed in the staffing plan, if applicable, the Construction Manager should provide resumes to the project administrator of the persons being proposed to staff those positions. The Department reserves the right to disapprove any person proposed, and the Construction Manager may offer substitutes.

3.4.3.2. Team Responsibilities

.1 Caltrans Pre-Construction Team

A. Department's Information:

The Department should provide full information regarding its requirements for the project. At a minimum, this should include the project's goals and scope of work, design details, subsurface investigation reports, traffic data, and status of environmental clearance, right of way acquisition, and utility relocations. It may include information about budget, schedule requirements or limitations, stakeholder issues, and political sensitivity.

B. Consultant Agreements:

The Department may retain Architect/Engineers to perform designs and prepare construction documents for this project. The Architect/Engineers' services, duties and responsibilities are described in the Agreements between the Department and the Architect/Engineers, a copy of which should be furnished to the Construction Manager. The Construction Manager should be provided written notification of changes to agreements between the Department and the Architect/Engineers.

C. Site Survey and Reports:

The Department should provide information from surveys describing the physical characteristics, soils reports, and subsurface investigations, and information on legal limitations, utility locations, and a legal description.

D. Approvals:

The Department should pay for necessary approvals, assessments and charges required for the construction phase, use, or occupancy of permanent structures or for permanent changes in existing facilities.

E. Legal/Audits Services:

The Department should provide legal services (done in-house) as may be necessary, and auditing services as may be required to administer the CM at-Risk Contract.

F. Plans and Specifications:

The Construction Manager should be furnished a reproducible set of all copies of plans and specifications reasonably necessary and print ready for use as bid documents.

G. Cost of Surveys & Reports:

The services, information, surveys and reports required by the above requirements should be furnished promptly in accordance with the approved schedule at the Department's expense, and the Construction Manager should be entitled to rely upon the accuracy and completeness of these documents.

H. Project Fault Defects:

If the Department or Project representative becomes aware of any fault or defect in any project document or non-conformance with the plans and specifications, they should give prompt written notice to the Construction Manager.

I. Funding:

The Department should furnish the Construction Manager with an established schedule, and reasonable evidence that sufficient funds should be available and committed for the cost of the project or part of the project.

J. Lines of Communication:

The Department and Project representative should communicate with potential subcontractors or suppliers only through the Construction Manager and ensure that this method of communication is effective in providing information to companies interested in participating in the CM at Risk project.

K. Lines of Authority:

The Department and Project representative should establish and maintain lines of authority for their personnel and should provide this definition to the Construction Manager and all other stakeholders involved in the development of the project. This will ensure that information flow and issue identification and resolution involves the appropriate Department staff for the effective development of scope of work and design documents.

.2 CM's Pre-Construction Team

The Construction Manager's responsibilities may include the following, as appropriate for the project scope of work and as directed by the Department:

A. Preliminary Project Evaluation:

The CM should provide a preliminary evaluation of the project and construction budget requirements, including a review of all background data made available by the Department as to requirements, criteria, priorities, feasibility, and physical and financial limitations for the Project.

The CM should become thoroughly familiar with the site and conditions surrounding the site and document the conditions observed on the site with photos or videos as may be required by the Department. The CM reviews site data with the Project representative. Site data may include items such as access, location of services, security, surveys, soils information, and other relevant information.

The CM should properly identify and locate all utilities, services and other underground facilities that may impact the project, but usually does not assume liability for damage to facilities which are not properly identified by the Department.

The CM should participate in a kick-off meeting with the project team to establish rapport and develop a common understanding of the goals of the project.

B. Preliminary Project Estimates:

The CM should provide cost modeling, initial project estimates, project estimate updates and construction document estimates. These items are further described below.

Cost Model: The CM usually prepares a cost model for estimating program costs and provides a copy of these models to the Project representative within a specified amount of time after the effective date of the CM Contract agreement. The cost models should serve as a basis for all estimates for the program including the development of proposed GMP.

Initial Project Estimate: The CM should prepare an estimate for the project within a specified amount of time after the effective date of the CM Contract agreement. The initial estimate will

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serve as the baseline for evaluating project changes and comparing options to the original scope of work.

Project Estimate Updates: The CM should prepare several levels of budgeting, estimating and pricing appropriate to established levels of design, and should continue to refine cost estimates as the project progresses through the Pre-Construction phase with input provided to the program team on clarifications needed to reduce allowances for contingencies.

The CM should continue to review and refine the project estimate as construction documents are prepared for the project and advise the Pre-Construction Services Team if the project estimate ever exceeds the planned budget or project completion exceeds the planned schedule.

The CM should provide a final estimate for the project at completion of the contract documents (plans and specifications) for the project.

Construction Document Estimates: When the project plans and specifications are complete, the CM should prepare and submit, at the time of GMP negotiation, a cost estimate on the basis of a quantitative material take-off with current local costs for each Department-established bid group and by subcontract package.

With these updated estimates, the CM should submit a report of line item variances from the previous estimate with information describing the basis for each variance.

Also, formal constructability reviews with the Project representative should be scheduled at the indicated completion milestones for bid groups and subcontract packages.

C. Constructability Reviews:

The primary purpose of constructability reviews is to validate the appropriateness of the project approach and optimize project cost and schedule for the desired scope of work.

The CM, as part of the Pre-Construction Services phase, should follow the development of design through the completion of the final Contract Documents, by reviewing the in-progress design development documents and becoming familiar with the evolving architectural, civil, mechanical, plumbing, electrical, and structural plans and specifications.

The CM should analyze the design for constructability, including construction feasibility and practicability, and alternative materials/methods. The CM should assist and advise the Pre-Construction Team in exploring alternative approaches, materials and systems including value engineering to minimize total construction and operating costs, including comparisons of first cost vs. life cycle costs.

The CM should assist the Department in preparing comparative life-cycle studies of ownership, operating, and maintenance costs for each schematic design alternative considering costs relating to efficiency, usable life, maintenance, energy and operation, as appropriate.

The CM should continuously monitor the impact of proposed design on the project schedule and recommend adjustments in the design documents or construction bid packaging to ensure completion of the project in the most expeditious timeline.

The CM should advise and assist the Department, if requested, in dealing appropriately with all applicable laws/regulations and with local utilities, communications, and other related infrastructure issues, as necessary.

The CM should review the design and phasing plans for the project with the Department's Design team and make recommendations to the team with respect to dividing the work to allow the possibility of advanced initiation of construction work while the design for the remaining elements of the project is being completed. With Department authorization, the CM could start work or award

separate construction subcontracts. Authorization of Construction phase work is addressed later in this section.

In evaluating the phasing plans for early completion of the project overall, the CM should take into consideration such factors as natural and practical lines of severability, sequencing effectiveness, access and availability constraints, total time for completion, construction market conditions, availability of labor and materials, community relations and any other factors pertinent to reducing construction time and cost by overlapping design and construction.

D. Review of Reports, Studies and Data:

Within a specified time after receiving the Construction Documents for the project, the CM should perform a specific review focused on construction feasibility and practicability and apparent defects.

Promptly after completion of the review, the CM should submit to the Project representative a written report addressing previously submitted suggestions or recommendations and making additional suggestions or recommendations, focusing on the separation of work into separate and discrete segments, use of alternative materials, and consideration of optional phasing or scheduling of the work.

E. Procurement Planning:

The CM should perform a specific review of Contract Documents focused on the availability of construction materials necessary to perform the work. The CM should also determine what optional sources exist and how they will affect delivery schedules and project costs.

F. Long Lead Procurement:

The CM should review the Contract Documents for the purpose of identifying long lead procurement items (manufactured/fabricated items, equipment, materials and supplies) for the project. When each item is identified, the CM notifies the project team of the required procurement and schedule. Such information should be included in the bid documents and be made a part of all affected subcontracts, as well as the project schedule.

As soon as the Department completes the plans and technical specifications and the CM obtains permitting approval, the CM should arrange for procurement of long-lead items, as authorized by the Department.

The CM reviews progress of the respective subcontractors or suppliers that are manufacturing or fabricating these items and advises the Project representative of any problems or prospective delays in delivery. If the Department partially or totally pays for these items and the items are not yet on the project site, the CM should require the supplier or manufacturer to provide proof of physical completion and warehousing acceptable to the Department.

The Department reserves the right to execute direct material purchases for any and all the materials provided to the Project. The CM should review the design for the purpose of identifying major equipment and/or material purchases that may be advantageous for the Department to purchase directly from suppliers as a cost saving measure. Once items have been identified and quantified by the CM, and approved by the Department for direct purchase, the Department should issue purchase orders and process payments for invoices approved by the CM.

G. Stimulation of Subcontractor Bidder Interest:

The CM should monitor conditions in the construction market to identify factors that may affect project costs and schedule for completion. As various bid scopes are prepared for bidding, the CM

submits to the Pre-Construction Team a list of potential bidders. The CM stimulates bidder interest in the local, regional and national market place in order to identify and encourage bidding competition. The CM will perform or subcontract all portions of the project, including a portion with the CM's own forces, as required by the Department.

The CM should prepare all non-technical documents for bidding procurement of long lead items, materials and services, and for subcontractor contracts. The CM, unless waived by the Department, conducts conferences with all prospective subcontractors, for the purpose of reviewing and approving awards.

For questions requiring an interpretation of the documents or otherwise indicating a need for clarification or correction, the CM should submit them to the Department, and upon receiving clarification or correction, should prepare and issue an addendum to the document to all of the prospective subcontractors.

H. Coordination and Interaction with Subcontractors:

The CM should review the design documents for clarity, consistency and coordination of documentation, and identify any apparent ambiguities or defects in the design, plans and specifications or other documents, use of inappropriate or restrictive requirements, overlap with any separate construction trade contracts, or omissions in the bid documents.

The CM should ensure that all relevant construction requirements are included in the separate contracts for procurement of long lead items and in all construction subcontracts. The CM should ensure that the scopes for all construction subcontracts do not overlap or duplicate work, and are sequenced to maintain completion of all work on schedule.

The CM should verify that the bid scope for each subcontract clearly identifies the work included in that subcontract, as well as its schedule for start and completion and its relationship to other subcontractors.

I. Pre-qualification of Bidders (if required):

The CM, in consultation with the Pre-Construction Team, should establish objective pre-qualification guidelines for pre-qualifying subcontractors and major suppliers. Financial stability, past performance, bonding capacity, safety record, and management and key project personnel should be among the guidelines used.

At the discretion of the CM, each potential subcontractor may be required to submit a completed experience questionnaire and audited financial information or show proof of previous pre-qualification with another recognized agency. This information should be made available for input into the CM's project database. The subcontractor's financial condition should demonstrate that adequate fixed and liquid assets and equipment are available to properly perform the subcontract work.

The CM advertises all anticipated subcontract work for the purpose of pre-qualifying potential subcontractors using public means (e.g. newspaper) and receives letters of interest and other data appropriate to the pre-qualification process.

Submittals by prospective subcontractors should be evaluated by the CM in accordance with the pre-qualification guidelines. Proposers meeting the CM's pre-qualification guidelines may be placed on a list of pre-qualified subcontractors. Except where a trade is represented by less than three pre-qualified subcontractors, the CM should only accept bids from the list of pre-qualified subcontractors or suppliers.

J. Subcontract and Supplier Bids and Proposals:

The CM solicits subcontract bids or proposals from the pre-qualified subcontractors and suppliers list. These solicitations should specifically state that no contractual relationship will be created with the Department.

The CM provides a summation and analysis of the apparent low subcontract bids, including the identity of any apparent low subcontract bidders that the CM does not wish to employ. Such identification and proposal of non-utilization by the CM requires specific written justification by the Department.

K. Subcontractor Selection:

In a CM at-Risk Contract, a subcontractor has a contract with the CM at-Risk Contractor to perform specified work for a project. Other than for direct purchase agreements between the Department and a manufacturer, nothing in a CM at-Risk Contract creates any contractual relation between the Department and any subcontractor. The CM at-Risk Contractor does not act as an agent of the Department with respect to any subcontractor.

The CM at-Risk Contractor provides a copy of all proposed subcontracts, including general supplementary conditions to the Department. The Department will identify in the CM at-Risk Contract the required subcontracting process and possibly elements of the project that the Department expects to be sublet. The CM at-Risk Contractor will follow the specified subcontracting process. Some subcontractor selection may be required as a part of the GMP negotiation. In addition, the Department may require a transparent public bidding and award process. The Department may require the CM at-Risk Contractor to award subcontracts to the lowest responsive and responsible bidders or proposers after the proposals are reviewed by the CM.

For each subcontract bid package, the CM at-Risk Contractor provides the Department with the proposed list of pre-qualified bidders. The Department will provide the procurement process the CM at-Risk Contractor shall use for selecting the pre-qualified bidders.

The CM at-Risk Contractor schedules pre-bid conferences for subcontractors, material suppliers, equipment suppliers and others interested in the project. For subcontracts, the CM at-Risk Contractor requests and receives bids/proposals from those subcontractors on the pre-qualified subcontractor's list.

The CM analyzes and evaluates the results of the various bids and their relationships to budgeted and estimated amounts, and prepares a bid tabulation analysis and other supporting data as necessary to document the comparison of the various bids, their responsiveness to the desired scope of work, and the basis for the CM's selection.

The CM at-Risk Contractor and the Department should review together the bid results and concur before announcing a subcontract award. The Department should include reference to a dispute resolution process in the contract documents to provide for resolution of any disagreements with the subcontractor selection.

L. Lines of Authority:

The CM at-Risk Contractor should establish and maintain lines of authority for their personnel and should provide this definition to the Department. This will ensure that information flow and issue identification and resolution involves the appropriate Department staff other stakeholder personnel.

3.4.3.3. Guaranteed Maximum Price (GMP)

The Guaranteed Maximum Price (GMP) is the key component of the CM at-Risk Contract. The CM Contractor has the responsibility of developing the GMP during the Pre-Construction phase and presenting it to the Department for review and negotiation. It should be based on information collected and analyzed during the Pre-Construction phase and justified in part by market conditions, material costs, subcontractor interest, and scope of work estimates.

The items to be included in the GMP are the Pre-Construction Phase Fee, Construction Phase Fee, Adjustments, Overhead and Profit, Direct Cost Items, Contingencies, and possibly Shared Savings.

The Department should transfer the Pre-Construction Phase Fee, negotiated as part of the QBS procurement process during the CM Contractor selection, into the GMP. The GMP should identify the remaining pre-construction services work and the remaining payments from the Pre-Construction Phase Fee.

The Pre-Construction Phase Fee and the Overhead and Profit are usually referred to as the “Base GMP.”

.1 Pre-Construction Phase Fee

The Pre-Construction Phase Fee includes profit and overhead related to Pre-Construction Services and a fixed or “not to exceed” fee for Pre-Construction Services work.

Pre-Construction Services for a Project should include all services relating to constructability review through 100% Construction Documents for the project and other services the Department may specify (e.g. estimates, bidder interest, etc.).

The Department should pay the Pre-Construction Phase Fee in installments at the completion of specified Preconstruction Phase Services or deliverables. Alternatively, the Department may pay the Pre-Construction Phase Fee by lump sum in two or more equal payments, where the first payment is at the delivery of the cost model, other payments occur at the delivery of intermediate milestones, and the last payment takes place at the time of GMP acceptance.

.2 Construction Phase Fee

The CM at-Risk Contractor’s compensation for General Conditions work or services performed during the Construction Phase should be a fixed lump sum amount negotiated as part of the Project GMP, based on a detailed schedule of General Conditions costs and services provided by the CM at-Risk Contractor.

The CM at-Risk Contractor may invoice and the Department may pay the Construction Phase Fee in monthly payments as agreed between the CM at-Risk Contractor and the Department as set forth in the project GMP. The first monthly payment should become due thirty days following the issuance of the Construction Phase Notice-to-Proceed and the final monthly payment should be paid upon final acceptance of the project.

A. Costs & Expenses

The items to be included in the Construction Phase Fee include salaries or other compensation of the CM at-Risk Contractor’s employees at its principal office and branch offices (for staff assigned to the project), and management employees at the project job site.

Job office supplies, including paper, pencils, paper clips, file folders, staples, etc., and janitorial supplies used in connection with the project should also be included.

Minor General Conditions expenses at the project site, such as telegrams, long distance telephone calls, telephone service, expressage, postage, and similar petty cash items in connection with the project should be included and billed at cost. This includes costs of all reproductions used for bidding or information purposes required by the project to directly benefit the project.

Costs for such temporary facilities required during construction of the Project, including the CM field office, temporary water, heat, power, sanitary facilities, telephones, radios and computers with software, and temporary housing for project employees should also be included.

.3 Adjustments to the Construction Phase Fee

If the duration of the construction of a project extends beyond the scheduled completion of the project as established in the project GMP, due to no fault of the CM at-Risk Contractor or its subcontractors, the CM at-Risk Contractor's Additional Construction Phase Fee can be negotiated and set as an adjustment to the project GMP on a working day basis. The project GMP should address time extensions for the CM at-Risk Contractor.

.4 Overhead & Profit for Construction Phase

For overhead and profit for services provided during and related to the construction phase of the project, the appropriate Construction Overhead and Profit Fee should be a percentage of the GMP and should be paid during the project proportionally to the approved expenditures for Direct Cost Items specified by the Department in the project GMP. The balance of the Construction Overhead and Profit Fee for a project should be paid upon substantial completion or final acceptance.

.5 Contingency

In addition to the Base GMP, a project GMP should include an agreed sum for Construction Contingency to address risks associated to the construction of that project. The Construction Contingency is composed of two elements: the CM at-Risk Contractor's Contingency and the Department's Contingency, each of which should be specified in the GMP. The CM at-Risk Contractor submits reports of utilization of the CM at-Risk Contractor's Contingency and requests use of the Department's Contingency through the Department's claim process.

The CM at-Risk Contractor's Contingency is used to compensate for the increased costs incurred by the CM at-Risk Contractor due to unforeseen circumstances encountered during construction of the project and which result in unavoidable cost increases, except for circumstances deemed the responsibility of the Department.

The Department's Contingency is an amount, determined by the Department, available to compensate for project cost increases incurred by the CM at-Risk Contractor due to changes in the work made at the discretion of the Department after issuance of a Letter of Authorization, as well as other increases in project costs which are deemed the responsibility of the Department.

The CM at-Risk Contractor is required to furnish documentation for all expenditures charged to the Construction Contingency, and should demonstrate that the costs incurred were necessary to complete the work.

The CM at-Risk Contractor should identify the requested amounts from the Construction Contingency, whether the charge is to be applied to the CM at-Risk Contractor's Contingency or the Department's Contingency, and the justification for the request from the Contingency.

Documentation for use of the Contingency should be established by the project team, included in the project manual, and entered monthly in the Project Management Information System (PMIS). The Department may verify the actual costs through the audit process discussed later in this section.

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If subcontract bids for project work include amounts below the applicable line item amounts in the project GMP, the surpluses should be added to the CM at-Risk Contractor's Contingency for the project. If subcontractor bids for project work include amounts above the applicable line item amounts in a project GMP, the deficiencies should be subtracted from the CM at-Risk Contractor's Contingency for the project. These cost accounting actions should not increase the overall agreed project GMP.

If subcontract bids are not received for a portion of the work or are received with amounts at or above the applicable line item amounts in the GMP, the CM at-Risk Contractor may perform that portion of the work for the specified line item amount as approved by the Department.

If a project GMP includes a general allowance for an item of work, but the plans or specifications do not provide a basis for measuring and paying for the work, any actual costs requested by the CM at-Risk Contractor that exceed the allowance should be charged to the Department's Contingency.

Any increased costs to construct the project and incurred by the CM at-Risk Contractor resulting from the Department's express written changes in plans, specifications or work should be charged to the Department's Contingency. The decision to make any changes, and to incur the costs from these changes, is within the authority of the Department. No other costs may be charged to the Department's Contingency.

Any increased project costs incurred by the CM at-Risk Contractor resulting from other actions of the Department should be charged to the Department's Contingency, if these costs are deemed to be a responsibility of the Department. If the Department disagrees with the cost allocation, and the CM at-Risk Contractor cannot secure written agreement that these costs are the Department's responsibility, the CM at-Risk Contractor may submit documentation establishing responsibility for these costs in its claim for appeal of the Department's initial decision.

Such costs should be deemed the responsibility of the Department if the Department subsequently agrees in writing to grant the claim and accept responsibility for the increased costs, or if the claim is granted and responsibility assigned to the Department pursuant to the claim process.

If the CM at-Risk Contractor anticipates that such costs may be incurred, it should, if feasible, provide the Department with sufficient advance notice (no less than 14 days), to allow the Department a reasonable opportunity to avoid such costs.

The Department may increase the GMP in lieu of charging the cost to the Department Contingency. For these cases, the Department should provide for budget adjustments in the procedures for CM at-Risk projects.

.6 Shared Savings

At the time of submission of a project GMP proposal, the CM should propose a schedule for the Construction Phase through substantial completion of the project. The Department and the CM may negotiate incentives for early completion of the project and sharing of cost savings resulting from early completion. The Department and the CM may also negotiate liquidated damages for failure to meet certain milestone dates or the substantial completion date for the project.

3.4.3.4. Negotiation & Award of GMP

The CM proposes a GMP amount which provides the basis for negotiation and award of the Construction Phase of the project. The Department has the option of accepting or rejecting the project GMP as presented by the CM and negotiated between the CM and the Department. If the Department accepts the GMP, the Department will issue a Notice-to-Proceed and the CM then becomes the CM at-Risk Contractor and should begin the Construction Services Phase of the

work. It is important to note that the CM and CM at-Risk Contractor (while the same entity) have differing roles and responsibilities. The CM performs Pre-Construction Services during the Pre-Construction Phase and is compensated for advice and services provided. The CM at-Risk Contractor constructs the project during the Construction Services Phase of the work and is compensated within the terms of the GMP.

After each negotiation session, the Department should determine if further negotiations are necessary to reach an acceptable GMP. If not, the Department may declare the negotiations unsuccessful and take possession and ownership of all documents produced for the Pre-Construction Phase, pay the CM any remaining undisputed CM Fee, and may proceed as follows:

1.) Reject the GMP and direct the CM to investigate or develop for the Department's approval, other value engineering options, and other areas of potential cost savings, and re-submit a new, reduced amount GMP proposal. This may, at the Department's option, include reduction in scope;

Or,

2.) Reject the GMP and take possession of all CM work product, then select a new CM for the project using CM at-Risk delivery, or advertise the project using design-bid-build delivery, or otherwise complete the project with other forces or take such action that the Department may determine is in the public's best interest.

3.4.3.5. Timing of GMP Negotiations

The timing of negotiations for the project GMP is flexible and may occur at or before 100% complete design. Factors that the Department should consider in determining the timing of the negotiation include the project's goals, scope, CM relationship, risks, and quality of the contract documents. Negotiating a GMP at 100% design provides for reduced risks and a more definitive scope of work, but may not capture the intent of a project goal for expediting project completion or taking advantage of a certain market condition that may produce project savings. This timing will reduce the need for project Contingency.

Negotiating a GMP at less than 100% design provides for the ability to consider early acquisition of materials or lock in a better project price because of certain market conditions. It may also allow the early start of certain elements of work before completion of all design. This timing (recommend between 70%-100%) will require a greater project Contingency to cover unanticipated project needs.

.1 Goals

GMP negotiation may proceed following 100% design completion; however there are other options available to address certain goals for a specific project.

For example, if the goals of the project include scheduling constraints, GMP negotiations may take place before 100% complete design. In addition, if design is completed for a part of the project, the Department may direct the CM to begin portions of the Construction Phase while the remainder of the project is still under design.

Another example could address budget constraints. If interim CM estimates reflect higher than the allotted project budget, the Department may choose to complete 100% design in order to reduce contingencies associated with risk variations.

.2 Scope of Project

If the scope of work for the project is complex and requires significant design completion to avoid any potential risks and allow lower contingency amounts, consider negotiations nearer to design

completion (90%-100%). This will provide more certainty about requirements of the project and will enhance the basis for the CM's GMP proposal.

If the goal of the project is to minimize the estimated project completion time, consider earlier negotiations. Negotiating the GMP at a point closer to 100% design completion may yield lower contingency amounts, but will prevent the CM from starting construction work sooner.

.3 Relationship Between Department & CM

If the Department finds that the established relationship with the CM is productive, the Department may want to consider early start of the construction phase. If this is the case, the Department may consider two options. 1.) The Department may negotiate the GMP at less than 100% design complete, and 2.) The Department may direct the CM to start work on certain completed elements of the project with an issuance of a Notice-to-Proceed. In this case the CM will be paid on a cost plus a fee basis or as stipulated in the CM contract. The remaining work will require a negotiated GMP at a later date.

If the Department has no prior relationship with the CM, and some uncertainty exists about the CM's business performance for work accomplished, the Department may choose to negotiate the GMP at a later level of design when risks have decreased.

.4 Risk of Award Timing (70% to 100%)

As projects near the end of design completion, risks decrease as will the need for contingency amounts. If risks are a critical factor in the project, the Department may choose to begin negotiations later in the level of design completion. This timing for negotiation of the GMP ensures that lesser risks may occur on the project, but this also limits the ability to begin construction before design is 100% complete, allowing for earlier completion of the project. If the probability of risks greatly outweighs the need for completion time of the project (early completion), then negotiations should tend to take place closer to design completion.

.5 Project Documents & Plans

Incomplete documents and plans increase risks. The CM, depending on the relationship with the Department, may begin work on the project before completion of design and before acceptance of the GMP. If the relationship between the Department and the CM is not strong, the Department may choose to wait until all project documents and plans are complete.

3.4.3.6. Payment for Pre-Construction Services

Preconstruction services include all the items specified in the roles and responsibilities of the CM in section 3.4.3.2, *Team Responsibilities* for the CM Pre-Construction Team. These include the development of the GMP. These services are compensated by a fixed, or "not to exceed" fee. The Department should negotiate the Pre-Construction Phase Fee as part of its QBS procurement process when selecting the CM Contractor. The fee should be paid in installments at completion of specified Pre-Construction Services phase work or deliverables. Deliverables may include cost models and completion of GMP.

The Department should establish the final payment for the Pre-Construction Phase Fee at the time the GMP is negotiated if design is at 100% complete. If less than 100% complete, the Department should establish final payment in the GMP for the Pre-Construction Phase Fee when 100% design complete.

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3.4.4. Contract Administration / Construction Services

At this point in the project development process, the Department has negotiated the GMP for Construction Services, construction documents have been sufficiently completed (or portions designated by the Department) and the Construction Manager now becomes the Construction Manager at-Risk Contractor for the Construction Services Phase of the project.

This section highlights the key issues to be addressed by the Department and the CM at-Risk Contractor during the Construction Services Phase of the project. These issues include Construction Services Team composition, the Team’s respective roles and responsibilities during construction, project controls, subcontractor performance and communications, quality control, contract changes, invoicing, payment to the CM at-Risk Contractor and project close-out.

3.4.4.1. Composing the Construction Team

.1 The Caltrans Team

During construction there is less need for the design staff involved in the Pre-Construction Phase, allowing the Department to redirect this staff to other projects. The CM at-Risk Contract requires the Department to provide a team capable of administering the Construction Phase of the work, including a Resident Engineer and other staff (materials testers, inspectors, surveyors, etc.) for the purpose of ensuring that work is completed in accordance with the contract requirements.

If the Construction Phase has started before the completion of the Pre-Construction Phase work, close coordination between the Department’s Pre-Construction and Construction Teams is necessary to ensure that design intent and work in progress is successfully transferred to the Construction Team.

With a GMP in place, much of the Construction Phase work focuses on the CM at-Risk Contractor’s Team, since the financial risks have been transferred to the Construction Manager at-Risk Contractor through the GMP Contract.

.2 The CM at-Risk Contractor’s Team

The CM at-Risk Contractor should provide a Superintendent who has authority to represent the CM at-Risk Contractor. Upon the Department’s written request, the CM at-Risk Contractor should give the Department a written document describing the delegation of complete project authority to its Superintendent to act on behalf of and to bind the CM at-Risk Contractor in all matters pertaining to the work.

The CM at-Risk Contractor should establish and maintain lines of authority for its company and project personnel, and provide this definition to its Superintendent and to the Department’s Resident Engineer (RE), its subcontractors, and any other stakeholders associated with the project.

The Superintendant should provide general direction for the work and manage the resources necessary to provide satisfactory progress of the various phases of the work, including satisfactory progress provided by subcontractors. The Superintendent will coordinate project activities and communicate with the Department’s Resident Engineer as appropriate for the successful completion of the work.

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3.4.4.2. Team Members Roles

.1 Caltrans's Responsibility

The Department's Resident Engineer should be responsible to administer the construction phase of the project in accordance with the Caltrans Construction Manual guidelines. In addition, they should timely review and respond to construction issues compatible with the GMP Contract requirements.

Also, unique to CM at-Risk Contracts, the Department Resident Engineer should also maintain an accounting system that support the review of contractor invoices and justifications and make timely payments to the contractor.

3.4.4.3. Project Controls

.1 Contract Administration System (CAS)

The Department uses CAS as the basic project controls system for all projects. Because this is an internal system, its use by the CM at-Risk Contractor may be difficult. To allow flexibility in the use of the CM at-Risk delivery system, the Department should make alternate project controls available to the CM at-Risk Contractor. If allowed by the Department, these alternate project controls may be used by the CM at-Risk Contractor.

However, if required by the Department, the CM at-Risk Contractor should implement and utilize all subsystems of the Contract Administration System (CAS) as identified in the Caltrans Construction Manual. The reports, documents and data provided through CAS represent an accurate assessment of the current status of each phase of the project, and it provides a sound basis for identifying variances and problems and for making management decisions. It should be prepared and furnished to the Department monthly and accompany each pay request.

For the CM at-Risk delivery method the Contractor should also include narrative reporting, schedule control, work by others, cost control and project accounting in the CAS.

.2 Subcontractors

The CM at-Risk Contractor provides subcontractors information in pay requests and should manage all work performed by the subcontractors.

.3 Communications

The CM at-Risk Contractor's Superintendant acts as the single point of contact for the Contractor with the Department. Communication with the Department's Resident Engineer should occur regularly and at a frequency that timely addresses issues and conveys information to the Department.

The CM at-Risk Contractor's Superintendant acts as the single point of contact with all of its subcontractors and suppliers. The CM at-Risk Contract does not create any unique requirement for the Department or any of its agents or representatives to communicate with subcontractors and suppliers any differently than is the case with design-bid-build delivery.

If applicable, the CM at-Risk Contractor should ensure that any long lead procurements initiated before the GMP was negotiated are fabricated and delivered in accordance with the contract requirements. The CM at-Risk Contractor should ensure that all contract requirements are included in all contracts for subcontractors including general conditions items that do not create duplication or overlaps. Subcontracts should be sequenced to ensure completion of all work on schedule. Particular attention should be given to each bid package to ensure that each clearly identifies the

work included in that subcontract, the schedule for start and completion, and its relationship to the other subcontractors and their work.

The CM at-Risk Contractor negotiates all contract changes with the Department in accordance with the Contract requirements (see .5 Contract Changes for more detail). The CM at-Risk Contractor reviews and verifies all requests for change and advises the Department of their validity and reasonableness.

.4 Quality Control

The CM at-Risk Contractor is responsible and accountable for the quality control of the work including quality control testing and inspection. The CM at-Risk Contractor should supervise the work of all subcontractors, reviewing construction means, methods, techniques, sequences and procedures to ensure that the work is performed in accordance with the Contract requirements.

The Department may consider shifting some or all of the quality assurance function to the CM at-Risk Contractor within the CM at-Risk delivery method. Other standard special provisions should address this requirement and be reflected in the GMP Contract.

.5 Contract Changes (Adjustments)

Contract changes should be processed in accordance with the requirements of the standard specifications using procedures found in the Construction Manual. For CM at-Risk Contracts, the Department should determine the validity of the change, the value or cost of the change, and the funding for the change. The Department should ensure internal processes are compatible with review and decisions for change requests.

The Department may order changes in a project within the general scope of the contract, including deletions or other revisions. Contract modifications may be issued by the Department on its own initiative or in response to a proposal by the CM at-Risk Contractor, and is subject to the change order process. These changes may require adjustments of the project GMP and the project construction completion date. All changes in the project, not covered by an authorized contingency, should be authorized by contract change order signed by the Department before the change is implemented.

The increase or decrease in the cost of the project resulting from a change in the project may be determined using a properly itemized and supported lump sum amount, unit prices, or by time and materials costs with a fixed or percentage sufficient to permit evaluation by the Department.

If unit prices are used in a project GMP or are subsequently negotiated, and if the quantities originally planned change due to a contract modification to the extent that they cause substantial inequity to the Department or the CM at-Risk Contractor, the applicable unit prices and the project GMP should be equitably adjusted.

Increases in the cost of the project due to a change in the project attributable to the Department should be applied against (reduce) the Department's Contingency or should cause an increase to the GMP Contract amount at the discretion of the Department.

Decreases in the cost of the project due to a change in the project attributable to the Department should either decrease the GMP Contract amount and decrease the project budget or increase the Department's Contingency. Removal of funds from the project budget is at the discretion of the Department.

Increases in the cost of the project due to a change in the project attributable to the CM at-Risk Contractor should be applied against the Contractor's Contingency or cause an increase to the GMP Contract amount, at the discretion of the Department.

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Decreases in the cost of the project due to a change in the project attributable to the CM at-Risk Contractor should be applied to the Contractor's Contingency or be removed from the project budget with a corresponding reduction to the GMP Contract amount, at the discretion of the Department.

The Department may consider the use of incentives to award cost effective actions on the project. The Contingency accounts may be used to fund this approach.

.6 Invoicing

The CM at-Risk Contractor should submit monthly invoices to the Department with justification for the amounts requested in accordance with the contract requirements. The CM at-Risk Contractor should make these documents available to the Department for subsequent audits.

3.4.4.4. Payment for Construction Services

.1 Construction Manager's Fee

The CM at-Risk Contractor should include the following elements in the Construction Manager's fee for General Conditions during the Construction Services Phase of a project and may not otherwise be reimbursable:

- Salaries and other compensation of the CM at-Risk Contractor's staff located at its principal office and branch offices provided the personnel are assigned to the project.
- Salaries and other compensation of the CM at-Risk Contractor's staff assigned to the project during the Construction Services Phase, with duties and responsibilities to the project and the duration of their assignments shown in the project GMP.
- Salaries and other compensation of the CM at-Risk Contractor's management and administrative staff located at the project site. The CM at-Risk Contractor's should identify staff to be assigned to the project during the Construction Services Phase and their responsibilities and the duration of their assignment as established and included in the project GMP.
- Job office supplies, including paper, pencils, paper clips, file folders, staples, etc., and janitorial supplies used during the project.
- Minor General Conditions expenses at the project site, such as telegrams, long distance telephone calls, telephone service, expressage, postage, and similar petty cash items used during the project and billed at cost.
- Costs of all reproductions used for bidding or information purposes required by the project and directly benefiting the project.
- Costs for temporary facilities used during construction of the project, including the CM at-Risk Contractor's trailer, temporary water, heat, power, sanitary facilities, telephones, radios, and computers with software.
- Temporary housing for CM at-Risk Contractor's project staff.
- Record retention/storage.

.2 Construction Phase Fee (General Conditions)

The CM at-Risk Contractor's compensation for General Conditions work or services performed during the Construction Services Phase should be a fixed lump sum amount negotiated as part of the project GMP, based on a detailed schedule of General Conditions costs and services provided by the CM at-Risk Contractor. The Department retains the right to review the need and effectiveness of any employee assigned by the CM at-Risk Contractor or any costs and services included in the Construction Phase Fee, and renegotiate the fee if the Resident Engineer

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determines that the employee, costs, or services are not necessary for the successful completion of the work.

The Construction Phase Fee should be invoiced and paid monthly as agreed in the project GMP. The first monthly payment should become due at a specified date following the issuance of the first Notice-to-Proceed by the Department and the final monthly payment should be paid only when construction of the project is completed and accepted by the Department. If construction is authorized for only a part of the project, the Construction Phase Fee paid should be proportionate to the amount of work authorized by the Department.

A. Overhead and Profit for Construction Phase

For overhead, profit and general expenses, the applicable Construction Overhead and Profit Fee should be a percentage of the GMP and the Department should pay this fee in an amount proportional to approved expenditures for Direct Cost Items. The balance of the Construction Overhead and Profit Fee for a Project should be paid upon substantial completion of the project.

.3 Direct Cost Items

Direct Cost Items should include the following:

- Wages paid for labor not included in the Construction Management Fee, but that is in the direct employ of the CM at-Risk Contractor in the performance of the construction work for the project, times a fixed multiplier for salaried and hourly staff to cover benefits, payroll taxes, and payroll insurance.
- Cost of all materials, supplies, and equipment incorporated in the Project, including costs of transportation and storage.
- Payments due to subcontractors from the CM at-Risk Contractor or made by the CM at-Risk Contractor to subcontractors for work performed in accordance with subcontracts issued by the CM at-Risk Contractor.
- Cost, including transportation and maintenance, of all materials, supplies, equipment, temporary facilities, and hand tools not owned by the workmen, which are employed or consumed in the performance of the work.
- Cost of materials, supplies, equipment, and temporary facilities used but not consumed in the performance of the work and which will be provided to the Department at the end of the project.
- Cost less salvage value on materials, supplies, equipment, and temporary facilities used but not consumed and which remains the property of the CM at-Risk Contractor.
- Rental charges consistent with those prevailing in the area on all necessary machinery and equipment, exclusive of hand tools used on the project, regardless of source. Rental charges include installation, repairs and replacements, dismantling, removal, costs of lubrication, transportation and delivery costs, which are used to support performance of the work.
- Cost of the premiums for all insurance and for all bonds specifically required for the project. Casualty Insurance (including general liability) should include a fixed billing rate at a specified percentage of the GMP. The bond premium for the CM at-Risk Contractor should include a fixed billing rate at a percentage of the GMP.
- Sales, use, gross receipts or similar taxes paid by the CM at-Risk Contractor or its subcontractors related to allowable direct costs for the project imposed by any governmental authority.
- The cost of corrective work directed and authorized by the Department. The cost of any corrective work made necessary because of defective workmanship or other

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causes created by the CM at-Risk Contractor or its subcontractors or suppliers should not be paid by the Department. Nor should the Department pay the CM at-Risk Contractor for any costs to correct defective workmanship or to correct any work not in conformance with the Plans and Specifications or to meet applicable construction-related codes or to correct any deficiency or damage caused by negligent acts by the CM at-Risk Contractor.

- Costs for trash and debris control and removal from the project site.
- Costs incurred due to an emergency affecting the safety of persons and property.
- Legal costs reasonably and properly resulting from prosecution of the project for the Department, including handling claims for changes by subcontractors and vendors, subject to the following limitations:
 - the Department approved incurring such costs in advance, which approval should not be unreasonably denied; and
 - The legal costs and claims were not incurred as result of the CM at-Risk Contractor's own negligence or misconduct.
- Costs for security services and temporary fencing for the project.
- Costs for efficient logistical control of the project site, including horizontal and vertical transportation of materials and staff, adequate storage, temporary roads and parking for the project.
- Costs for any project items not otherwise included in this list, but should be provided by the CM at-Risk Contractor as required to complete the work.
- Cost of providing one set of as-constructed documents to the Department. Information required on these as-constructed documents should be described in the GMP Contract.
- The costs of data processing (information technology support) for the project, at a fixed billing rate at a percentage of the GMP.

4 Shared Savings

The CM at-Risk Contractor Fee may include a share of the cost savings, if any, realized during construction of a project completed by a CM at-Risk Contractor. The potential cost savings is calculated as follows:

The amount by which a project GMP, minus the unused Department's Contingency, exceeds the Cost of the Project plus the CM at-Risk Contractor's fees.

The Department should calculate potential cost savings in accordance with the following equation:

Shared Savings Equation
$\text{If } (A - B) > (C + D), \text{ then } E = (A - B) - (C + D),$ <p style="text-align: center;">or</p> $\text{If } (A - B) \leq (C + D), \text{ then } E = 0,$ <p style="text-align: center;">Where,</p> <p style="text-align: center;">A = GMP amount for project,</p> <p style="text-align: center;">B = Unused Department's contingency,</p>

C = Cost of project,
 D = CM at-Risk Contractor's fee, and
 E = Shared savings.
 If $E > 0$ the Department will share savings with the Contractor.

.5 Monthly Invoices

The CM at-Risk Contractor should submit to the Department monthly invoices along with the cost reports required in the GMP Contract showing in detail all monies paid out, all releases of liens and waivers for subcontractors and suppliers who have been paid, and the amount of the CM at-Risk Contractor's fees due for each monthly invoice for the project.

The Estimate and Requisition for Payment form should list individually, each instrument of change to the work in the GMP or Contingency, its approved value, the amount previously requisitioned, the amount sought in the current requisition, the total value of completed work and, if requested by the Department, the Estimate and Requisition for Payment form should, for each instrument of change to the work in the GMP or Contingency, be further detailed to provide a breakdown, by trade, of the values and requisition amounts for each trade, for each change instrument.

The Department should withhold retainage on all payments at a rate specified in the GMP Contract and as established in the Standard Specifications. Additional retainage should not be withheld on services or fees.

The CM at-Risk Contractor's Pre-Construction Services Fee or Construction Phase Fee and Overhead & Profit for the Project should be shown as separate line items on the Schedule of Contract Values for the project. Payment of the CM at-Risk Contractor's Overhead and Profit should be calculated based on approved invoiced amounts for Direct Cost Items.

The Construction Phase Fee for the project should be paid in equal monthly installments. The calculation and justification should be attached to the monthly invoice. The Department should pay the CM at-Risk Contractor after receipt of evidence of satisfactory performance that is in conformance with applicable GMP Contract provisions governing testing, inspection and acceptance.

.6 Final Payment

Final payment consisting of the unpaid balance of the GMP for the project, retainage and the CM at-Risk Contractor's fee should be due and payable upon substantial completion of the project. Final Payment should not relieve CM at-Risk Contractor of any obligation under Contract warranty, guaranty and indemnification provisions and any other provisions that remain in effect after termination of the Contract.

Retainage should be paid and should be issued in the final payment after acceptance by the Department of the work on each Phase.

.7 Payments for Materials and Equipment

The CM at-Risk Contractor may invoice the Department, and the Department should pay for materials and equipment received on the project site or another location before being used during construction or incorporated into the work, if the equipment and materials are in conformance with the Contract requirements, are received, inventoried and stored properly, the Department

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approves, accepts, and acquires title upon payment for them. CM at-Risk Contractor retains responsibility for the care, custody and control of these materials and equipment.

.8 Approval of Payments

When a monthly invoice is received and after review of the invoice, the Department should either indicate its approval of payment or return the application to the CM at-Risk Contractor identifying in writing the reason for refusing to approve payment. If approval is refused, the CM at-Risk Contractor may make the necessary corrections and re-submit the application. This process should be followed until the Department can indicate its approval of payment for the entire invoice submitted by the CM at-Risk Contractor.

The CM at-Risk Contractor should timely pay each subcontractor upon receipt of payment from the Department. The CM at-Risk Contractor should pay each Subcontractor in accordance with the terms of the CM at-Risk Contractor’s contract with such Subcontractor.

.9 Final Inspection

The Department should make a final inspection on all completed phases of the project with the CM at-Risk Contractor.

.10 Final Payment

The Final Application for Payment should be accompanied by final releases of all waivers or liens from the CM at-Risk Contractor and all subcontractors for work performed and services provided to the project.

.11 Approval of Final Payment

If the Department, on the basis of observations and review of the work during construction, the final inspection and review of the final estimate and requisition for payment, as required by the GMP Contract, finds that the work has been completed in accordance with the GMP Contract, and that the CM at-Risk Contractor has fulfilled all obligations under the GMP Contract, the Department should approve the final payment to the CM at-Risk Contractor.

The Department should require that the CM at-Risk Contractor submit with final payment documents a DBE and DVBE participation certification, indicating all DBE sub-contractor(s) and amount(s) utilized on the project. The Department will also require an annual EEO report and a Form- FHWA 47 (statement of materials and labor used by the contractor).

.12 Final Accounting Costs

Final accounting of costs of the work should be provided by the CM at-Risk Contractor in the form of a detailed cost report showing vendor, invoice number and date of invoice for all costs, all sorted by trade division cost code as is maintained in the CM at-Risk Contractor accounting system. The Department should require access to all accounting records at the CM at-Risk Contractor’s place of business for review and reporting purposes by the Department accountant.

.13 Close-Out

A. Audit

The Department should require a final external audit of the project within a specified period of time. The CM at-Risk Contractor should retain all project cost records for the specified period of time. This should be included in the GMP Contract.

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CHAPTER 4

PROCUREMENT METHODS & CONTRACT MANAGEMENT METHODS

THIS SECTION:

- Identifies and describes the following alternative procurement and contracting practices:
 - Alternate Bid/Alternate Design
 - Additive Alternates
 - Flexible Notice to Proceed
 - No Excuse Incentives
 - Shared Risk Contingency
 - Warranties
- Presents guidance to help staff develop a consistent approach to applying these methods on individual projects.
- Provides sample special provisions for the various options.

4. PROCUREMENT & CONTRACT MANAGEMENT METHODS

4.1. INTRODUCTION

4.1.1. Procurement

Procurement methods refer to alternative methods used to modify or enhance the Department's standard General Provisions for awarding construction projects.

4.1.2. Contract Management

Contract management methods refer to special provisions that modify the standard General Provisions and administrative procedures used to manage construction projects on a daily basis to ensure control of costs, timely completion, and quality of construction.

4.1.3. Traditional Approach

Traditionally, the Department has used method specifications and standard administrative procedures to achieve its cost, schedule, and quality objectives. In doing so, the Department retains significant responsibility for overall project performance.

4.1.4. Why Use Alternative Methods?

By using the following alternative methods, either alone or in combination, the Department may achieve specific performance goals related to cost or time savings, or quality enhancement, and shift more of the responsibility for performance to the Contractor: The Department has decided to add to or enhance the available methods in its procurement and contracting toolbox. Brief definitions of these tools are as follows:

- **Alternate Design/Alternate Bids** – Alternate Design is a bidding technique in which contractors may propose and submit a bid on an alternate design that is equivalent to, or better than, the design specified by the agency. Typically, alternates involve pre-engineered features or products. Alternate bids allow the agency to competitively bid comparable products or materials with equal expectations of performance and service life.
- **Additive Alternates** – A bidding technique that specifies base bid items and alternates that may be selected if the base-plus-alternates price is within the budget. The contract is awarded to the lowest responsive bidder considering the sum of base items and additive alternates in a specified priority.
- **Flexible Notice to Proceed (NTP)** – A time-related clause allowing contractor discretion in establishing when contract working days will start. The flexible NTP allows the contractor flexibility in scheduling work within a construction season to optimize its resources.
- **No Excuse Incentive** – An incentive provision motivating contractors to complete the entire project, or a specified portion of the project, by a specific drop-dead date. The entire incentive will be paid if the work is completed on or before the completion date. Short of a natural disaster, the contractor has no excuses for failing to meet the completion date.
- **Shared Risk Contingency** – A contingency fund set up for a project in addition to the bid price to motivate a contractor to manage project risks that may result in cost overruns or delays. As an incentive to manage risks and limit cost and time growth, the contractor will share the savings from the unused contingency fund.

- Warranties – A guarantee of the integrity of a product and the contractor’s responsibility to repair or replace defects for a defined period and under certain conditions.

4.1.5. Purpose of this Section

This section provides project managers, functional managers, and other staff engaged in the delivery of capital projects for Caltrans detailed guidance on the use of alternative procurements and contract management methods. These methods can be used in conjunction with the Department’s standard design-bid-build process or as an add-on to one of the alternative delivery methods (e.g., design-build) discussed in Section 3 of this guide.

Topics addressed include the following:

- Application guidelines and risk considerations related to the use of these methods;
- Special administrative procedures associated with the use of these methods; and
- Content of special provisions, with samples provided for illustrative purposes.

The information provided is primarily geared towards projects developed, funded, and constructed by Caltrans, but aspects related to contract administration apply equally to locally or privately sponsored projects for which Caltrans personnel are acting in an oversight role in accordance with a Cooperative or other Agreement.

4.1.6. Relation to Other Department Manuals

Existing Department manuals, such as the *Project Development Procedures Manual* and the *Ready To List and Construction Contract Award Guide (RTL Guide)*, assume contract management will be performed using the Department’s standard administrative procedures. The information presented in this section supplements such existing manuals with information specific to the alternative procurement methods of alternate designs/alternate bids and additive alternates; and alternative contract management methods of flexible notice to proceed, no excuse incentive, shared risk contingency, and warranties.

The guidance provided has been developed based on industry best practices, with consideration given to how these practices can be best integrated into the Department’s existing project management process.

4.2. ALTERNATE DESIGN AND ALTERNATE BIDS

4.2.1. Description

Alternate Designs or Design Alternates

Alternate Design is a bidding technique where contractors may submit a bid for an alternate design that is equivalent in function to the design item or items specified by the Department. Typically, design alternates involve pre-engineered features or products that may not entail significant design effort but may require that the design be signed and sealed by a Professional Engineer registered in the state of California. Design alternates are more commonly used in a design-build framework, but have also been applied within a low-bid design-bid-build contract for highway construction for structural components such as culverts and retaining walls, bridges, traffic devices, or other pre-engineered features. In these applications, the Department can select an alternate design, which, as in the case of a Cost Reduction Incentive Proposal, does not impair the essential function or characteristics of the project including service life, maintainability, operation, safety, among other considerations.

Alternate Bids

This is a bidding technique where the Department specifies bid alternates (typically on two competing designs) and asks for alternate bids. The Department will evaluate the alternates and select the low bidder in terms of initial and life cycle costs.

4.2.2. Benefits

Stimulate innovation, promote competition based on current market rates, provide equal or improved performance at lower cost (considering initial and life-cycle costs of alternates).

4.2.3. When Used

These provisions may be useful for the following circumstances:

Alternate Designs or Design Alternates:

- Projects involving the construction of alternate structures or devices (where contractors may have more experience than the agency) are good candidates for alternate design.
- Standardized projects that do not require a large design effort. Examples include retaining walls, bridges or other structural components, and traffic signs or traffic control devices.

Alternate Bids:

- Projects where the competition will drive the most cost effective material choice or design (e.g. asphalt vs. concrete pavements, steel vs. concrete structures).
- Projects having a well-defined scope, for which viable alternates exist (e.g. asphalt vs. concrete pavements, steel vs. concrete bridges).
- Projects that are small enough to attract a sufficient pool of bidders, and have potential cost savings that are significant enough to justify the additional costs to develop bids for multiple design alternates.

4.2.4. Related Provisions

5-1.14, Cost Reduction Incentive Proposal

4.2.5. Information Required

Alternate Designs (structures or other pre-engineered items)

- If an alternate design is bid, for example an alternate bridge structure, the Department will require the submission of design calculations and drawings completed by a Professional Engineer in the state of California. The alternate design must be equivalent to the specified design and meet the applicable design criteria for strength, serviceability, or other key criteria.
- The Department may preclude the use of experimental designs, or products, structures, or elements not from approved Department standards or pre-approved lists in the alternate design.
- The alternate design should comply with the design requirements in Caltrans' Design Manual, AASHTO standards, and other applicable Caltrans material or product requirements.
- The contractor must provide a tabulation identifying the differences between the specified design and the alternate design to aid in establishing the equivalency of the design.
- The special provisions should state that a delay in review and acceptance of alternate design submissions or a delay in revisions to required permits or any other delays related to alternate design will not extend the contract duration.
- If an alternate design is bid and the design is not accepted by the Department within 30 calendar days, the special provision should state that the contractor must construct the specified design at no additional cost to the Department.

Alternate Bids (pavements)

- Examine issues that make only one type of pavement desirable to determine the feasibility of using alternate bids. These may include circumstances such as:
 - Compatibility with existing pavements or total amount of new pavement compared to existing pavement.
 - Safety and durability issues of differing pavement types in the driving lanes on urban construction.
 - Consideration of how the pavement type effects the major item of work for the project (e.g. if a major item of work for the project is bridge work, the life cycle costs may be insignificant to the total project cost).
 - Project staging and project scoping with regard to long-range transportation goals.
- For projects less than XX lane miles (e.g. 2 lane miles), alternate pavement bidding is not recommended because the life cycle cost differential is insignificant, but the project development team should look at pavement options that bring the best value to the project. A lane-mile is defined as pavement 12 ± 2 feet (3.6 ± 0.6 m) wide and 1 mile (1.6 km) in length. Full depth paved shoulder widths that have the same pavement type as the mainline should be proportionally (compared to 12 ft. (3.6 m) wide lane) included when calculating lane lane-miles. Consideration should also be given to impacts to local residents and businesses along the route.
- The application of alternate bids for pavements requires the development of scenarios for future pavement rehabilitation for the project type and a Life Cycle Cost differential to be included as a cost element to the alternate which has the lesser design life. The additive cost is determined by the Department's *Life Cycle Cost Analysis Procedures Manual* for pavements and is reflected in the appropriate bid schedule as a lump sum cost increase to the bid amount currently set at 4 percent.

- The alternate bid schedule concept requires full plan and specification development for both alternatives. The Summary of Approximate Quantities and subsequent plan sheets contain details and tabulations for both alternates. Project provisions may also differ for each alternate dependent on the needs.
- Designers should consider the following in the plans for projects with alternative pavements:
 - Plans should contain typical sections for both alternates, including station limits and all side road connections.
 - All pay items for full depth alternate pavements should be based on the area (e.g. yd²) of the entire pavement surface.
 - Provide separate sheets for the items associated with each alternate.
 - If the design results in different base quantities to maintain the profile grade, include the appropriate quantities in the respective sections for each pavement alternate.
 - For shoulder rumble strips, include the bituminous rumble strip pay item with the asphalt alternate, and the concrete rumble strip pay item with the concrete alternate.
 - Crossroad structures should be designed to accommodate a minimum cover based on the thicker pavement design.

4.2.6. Other Considerations

If the project meets the criteria for using an A+B provision to shorten the project duration, the Department may decide to use the A+B Bidding provision in combination with an alternate bid provision. The bid form would then reflect a multi-parameter or A+B+C bid model, where A represents the base bid for the selected alternate, B represents the bidder's estimate of contract time multiplied by the daily road user cost determined by the Department, and C represents the Life Cycle Cost adjustment factor determined by the Department.

In the event that the Department decides to evaluate bids using an A+B provision for time or an Incentive/Disincentive in addition to alternate bids, refer to the *Guidelines for Use of Cost/Time (A+B) Bidding* and *Conceptual Guidelines for Use of Incentive/Disincentive Provisions* for guidance in project selection, PS&E submittals, evaluation of bids for contract award, and for contract administration guidance in addition to the Department's manuals.

Depending on the chosen alternate, refer to the guidelines for inspection, measurement, and payment in the applicable sections of the *Caltrans Construction Manual*.

4.2.7. Sample Provisions

Missouri DOT, ALTERNATES FOR PAVEMENTS - JSP-96-04

1.0 Description. This work shall consist of a pavement composed of either Portland cement concrete or asphaltic concrete, constructed on a prepared subgrade in accordance with the standard specifications and in conformity with the lines, grades, thickness and typical cross sections shown on the plans or established by the engineer.

2.0 Alternates. To exercise this option, separate pay items, descriptions and quantities are included in the itemized proposal for each of the two alternates. The bidder shall bid only one of the two alternates and either enter "0" or leave blank in the contract unit price column for any pay item listed for the other alternate.

2.1 A sum of \$_____ (*amount to be inserted by Central Office*) will be added by the Commission to the total bid using the asphalt alternate for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.2 The quantities shown for each alternate reflect the total square yards [meters] of pavement surface designated for alternate pavement types as computed and shown on the plans. No additional payment will be made for asphaltic concrete mix quantities to construct the required 1:1 slope along the edge of the pavement.

2.3 The grading shown on the plans was designed for the (thicker/thinner) pavement alternate. (The designer should note in the JSP (Job Special Provision) submittal whether the grading is designed for the thicker or thinner pavement alternate.) Note: This process reference is unique to Missouri DOT, but Caltrans should consider a similar process.

3.0 Method of Measurement. The quantities of concrete pavement will be measured in accordance with Section 502.14. The quantities of asphaltic concrete pavement will be measured in accordance with Section 403.22.

4.0 Basis of Payment. The accepted quantity of the chosen alternate and other associated items will be paid for at the unit price for each of the appropriate pay items included in the contract.

4.1 For projects with previously graded roadbeds, any additional quantities required to bring the roadway subgrade to the proper elevation will be considered completely covered by the pay item for Subgrading and Shouldering.

4.2 For projects with grading in the contract, there will be no adjustment of the earthwork quantities due to adjusting the roadway subgrade for alternate pavements.

LADOTD 2004, Scenarios for Future Pavement Rehabilitation

Project Type	Alternate	Year 0	Year 15	Year 20	Year 30
Interstate Overlay	Rigid	New Bonded PCC Overlay	No Action	Clean/Seal Joints 3 Patches/Mile	N/A
	Flexible	New AC Overlay	Cold Plane & Overlay	No Action	N/A
Interstate New Construction	Rigid	New JPC Pavement	No Action	Clean/Seal Joints Patch 1% of Joints	Retexture Patch 3% of Joints
	Flexible	New AC Pavement	Cold Plane & Overlay	No Action	Cold Plane & Overlay
Other Arterial New Construction	Rigid	New JPC Pavement	No Action	Clean/Seal Joints Patch 1% of Joints	Retexture Patch 2% of Joints
	Flexible	New AC Pavement	Cold Plane & Overlay	No Action	Cold Plane & Overlay

PennDOT - ITEM 8 - ALTERNATE WALLS

I. DESCRIPTION - This work is designing and constructing retaining walls and/or wingwalls as specified herein and in accordance with the specifications for the retaining wall and/or wingwall selected.

II. DESIGN -

(a) General. If alternate designs are bid, furnish to the Department, preliminary conceptual design calculations and drawings for the retaining walls and/or wingwalls, on reproducible tracing cloth or drafting film. Submit the design to the District Office for acceptance within 6 calendar days from the award date.

On the design plans include the type of wall, location, length, top elevation(s), proposed bottom of footing/leveling pad elevation(s), cross-sections including backfill material type and limits, and quantities. Also show, as required, details for parapets, copings, barriers, conduit, or other attachments to precast wall panels/units. Show complete layout plans and fabrication details for precast wall panels/units and footings/leveling pads including reinforcement and attachments, and step-by-step erection instructions. Include details for strip or wire mesh reinforcement and attachments, for anchoring panels into the soil. Any fabrication done prior to acceptance of the plans will be at the Contractor's risk.

Any delay in submission and acceptance of a proposed design will not extend the contract time.

Experimental or demonstration-type design concepts; or products, structures, or elements not preapproved by the Department for general usage, will not be permitted in the design.

Have the design of retaining walls and/or wingwalls completed by a Professional Engineer (P.E.) registered in the Commonwealth of Pennsylvania.

Show, on the design, the seal of a P.E. registered in the Commonwealth of Pennsylvania, a valid signature in ink, the date signed, a business name, and a business address.

Complete original plans entirely in either ink or pencil. Make changes in the same medium.

Ink reproductions on tracing cloth may be furnished, if made by the "contact negative process".

(b) Design Computations and Design Specifications. On the first sheet of the computations show the seal of a P.E. registered in the Commonwealth of Pennsylvania, a valid signature, and the date signed.

Perform required design of retaining walls and/or wingwalls in accordance with current Department practice, unless otherwise indicated or specified. Current design practice includes the use of all applicable codes and Department design specifications, publications, policies, and procedures in effect on the date bids are opened.

4.3. ADDITIVE ALTERNATES

4.3.1. Description

Additive Alternates, also known as Additive Bidding, is a bidding technique that may be used when it is necessary to keep the contract amount within a budget limit and let the industry compete on the largest scope that fits within the budget. With this procedure, the Department will include most of the project scope in base-bid items, while also specifying additive alternates that may be selected if the base-plus-alternates price is within a defined target cost or budget. The bid documents should specify the priority in which the additive alternates will be considered. The contract is awarded to the lowest responsive bidder that is within budget, considering the sum of the base bid and additive alternates in the priority specified.

The Department must limit its use of additive items to a maximum of 10% of the total contract amount. However, even with this limitation, Additive Alternates can provide the Department with an option that ensures project awards with optimum scopes of work.

4.3.2. Benefits

Promote competition, maximize or enhance the work within a defined budget, and minimize work (cost) added through the change order process.

4.3.3. When Used

These provisions may be useful for the following circumstances:

- To maximize the scope for projects within limited or tight budgets.
- If there is some uncertainty regarding the cost of the project and features can be incrementally scoped to maximize use of available funds.
- If the project scope can be tailored to include add-ons in priority of importance.
- To obtain the best options for the available funds where substitutions are specified that improve quality or performance within the defined budget.

4.3.4. Related Provisions

Pilot Program Decision Document, Public Contract Code Section 10126

4.3.5. Project Development /Procurement Considerations

- The decision to use this type of procurement method should be made early enough in the design process to allow for the development of additional items with the associated quantities, plans, specifications and details. Each additive package must be developed and placed separately within the Engineers estimate. Deciding to resort to this method too late may result in additional design costs and undesirable delays.
- The summary sheets should clearly distinguish between the base work items with associated quantities and the items and quantities associated with each additive package. There should be unique items for each segment. Each additive segment should include an item for general work requirements such as traffic control, mobilization, erosion control, etc. The Department is currently limited to a single lump sum item in its estimating and bidding software so a workaround would be needed to address this limitation.
- The base package must fulfill the basic purpose and need for the project.

- This procurement method requires that the Department publish in the specifications (special provisions) the amount of money that the Department has budgeted for the construction contract. (Note: the Department provides a call-out number on all projects) The construction budget is the amount available for contracting after all design, utility, right-of-way, construction engineering, incentives, and contingency costs have been deducted from the project budgeted amount.
- The intent is to design a project scope that is well within the project budget while providing for additional desired work items to be awarded if the budget allows. The number of additive packages should be reasonably limited to no more than three. The dollar value of each additive segment should be small enough to increase the likelihood of including one or more of the additives in the award.
- To avoid subjectivity in the evaluation of bids, the additive alternate special provision will clearly specify the bidding procedure and the basis for contract award.
- The proposal form will list which sections are the Base Set of Items that shall be bid. It will also list the sections which contain one (or more) added Options that may be bid (e.g. a bidder must bid the Base Set of Items and the Added Options to be considered responsive). The Added Options will be listed in order of preference and will be added by priority to the Base Set of Items if the sum of the bids does not exceed the Contract Award Limit. The added Options will only be considered by their alpha priority.
- The first basis for award is the bidder submitting a bid with the most Added Options (in order of preference) not exceeding the Contract Award Limit. If more than one bidder submits a bid under the Contract Award Limit for the same number of Added Options, the bidder with the lowest total bid for the Base Set of Items and those Added Options will be the bidder considered for award.
- If all bids exceed the Contract Award Limit, then the bidder with the lowest bid for the Base Set of Items will be considered for award. The Contracting Authority may award a contract to the bidder with the lowest bid for the Base Set that exceeds the Contract Award Limit. The Contracting Authority will not award a contract for a bid with Added Options exceeding the Contract Award Limit.
- The Department objective is to award the maximum amount of work (base and options) within the budget. The Department will not seek additional funding beyond the identified amount if the additional funding changes the apparent low bidder.
- The contract should clearly identify the contract time for the base work and the additional time allocated for each additive segment. The actual contract time is determined by adding the base time to each additive segment time included in the contract.
- If considering the use of cost-plus-time or lane rental provisions with additive alternates, the contractor may be required to bid a separate time or lane rental component for each additional segment. The determination of contract time would include the base bid plus the selected alternates. This could result in a somewhat complicated bid analysis if there are multiple alternates and the cost of time is factored into the award decision.

4.3.6. Sample Provisions

Iowa DOT - 01085.06 Example

The Contracting Authority desires to maximize the \$2,000,000 that it has available for this project. The proposal form has defined a Base Set of Items, Added Option A, Added Option B, Added Option C, and designated \$2,000,000 as Contract Award Limit.

Bidder	\$ Bid on Base Set of Items	\$ Bid on Added Option A	\$ Bid on Added Option B	\$ Bid on Added Option C
AAAA	\$1,500,000	\$300,000	\$150,000	\$300,000
BBBB	\$1,600,000	\$250,000	\$ 50,000	\$300,000
CCCC	\$1,700,000	\$200,000	\$ 80,000	\$200,000
DDDD	\$1,800,000	\$150,000	\$150,000	\$ 50,000

The first basis for award is the bidder submitting a bid with the most Added Options (in order of preference) not exceeding the Contract Award Limit (\$2,000,000). Bidders AAAA, BBBB, and CCCC submitted bids for the Base Set of Items and Options A and B which do not exceed \$2,000,000. Bidder DDDD will not be further considered because they submitted a bid where the Base Set of Items and only Option A is less than \$2,000,000 (i.e. Bidder DDDD submitted a bid with fewer options not exceeding the Contract Award Limit).

The next basis for award is the lowest bid submitted (not exceeding the Contract Award Limit) with the Base Set of Items and the same Added Options. In this example, Bidder BBBB's bid of \$1,900,000 for the Base Set of Items with Options A and B is the low bid. Bidder AAAA's bid for the Base Set of Items and Options A and B is \$1,950,000. Bidder CCCC's bid for the Base Set of Items and Options A and B is \$1,980,000.

It makes no difference that:

Bidder AAAA is the low bidder on only the Base Set of Items (because options could be added to the contract that would not exceed the Contract Award Limit).

Bidder CCCC is the low bidder on the Base Set of Items and Option A (because Option B could be added to the contract and not exceed the Contract Award Limit).

Bidder DDDD is the low bidder on the Base Set of Items and all Added Options (because Bidder DDDD's bid would exceed the Contract Award Limit).

Utah DOT - SPECIAL PROVISION

PROJECT # SECTION 00515M

AWARD AND EXECUTION OF CONTRACTS

Add the following to Section 00515, Part 1, Article 1.3:

1.3 AWARD OF CONTRACT

E. The Department has a budget of \$XXXXXX for this project and shall award the maximum amount of work within that budget.

1. Work is divided into segments for bidding purposes.

a. The segments consist of:

- 1) Base bid (bid items 1-xx)
- 2) Additive #1 (bid items xx-xx)
- 3) Additive #2 (bid items #xx-xx)

2. Provide prices for all bid items.

3. Any bid submitted without prices for each item will be considered non responsive.

F. In the event that all bids for the base and all Additives are greater than available project funds the segments are evaluated in the following order:

1. Base
2. Additive #1
3. Additive #2

G. The low bid is the one that includes the base work plus the most Additives for a cost that is less than or equal to the project budget.

1. In the event that multiple contractors propose to accomplish the same amount of work for a cost that is less than the project funding, the low bid is the bid with the lowest overall cost for proposed work.

2. The table below provides an example of the determination of low bid. Assume that the amount of available funds is \$2,200,000.

Contractor	Base bid	Additive #1	Additive #2	Total
A	\$2,000,000	\$ 300,000	\$ 180,000	\$ 2,480,000
B	\$1,900,000	\$ 200,000	\$ 210,000	\$ 2,310,000
C	\$1,800,000	\$ 320,000	\$ 120,000	\$ 2,240,000

Award and Execution of Contracts 00515 – Page 2 of 2.

a. All total bids exceed the available funds so Additive #2 will be excluded from further computation.

b. Contractor A bid \$2,000,000 for base plus \$300,000 for Additive #1 for a total of \$2,300,000.

c. Contractor B bid \$1,900,000 for base plus \$200,000 for Additive #1 for a total of \$2,100,000.

d. Contractor C bid \$1,800,000 for base plus \$320,000 for Additive #1 for a total of \$2,120,000.

e. In the example the contract would be awarded to Contractor B for base work plus Additive #1. The contract amount would be \$2,100,000.

H. The Department may seek additional funding for the project.

1. The Department will not seek additional funding if the additive of work changes the determination of low bidder.
2. In the example above, additional funding would not be sought because adding funds to accommodate Additive #2 would result in a different low bid contractor.

Utah DOT - SPECIAL PROVISION

PROJECT # SECTION 00555M

PROSECUTION AND PROGRESS

Add the following to Section 00555, Part 1, Article 1.12:

G. Contract is determined by the adding the time for the base bid and all additives that are awarded as shown in the table below:

Base	Xx working days
Additive #1	Yy working days
Additive #2	Zz working days
Additive #3	z working days

4.4. FLEXIBLE NOTICE TO PROCEED

4.4.1. Description

A Flexible Notice to Proceed Date or “Flextime” start provision allows contractor discretion in establishing when the project’s working days are going to start, within specified limits (e.g. the latest allowable start date to ensure project completion within the scheduled construction season). The contractor can use this flexibility to mobilize subcontractors, coordinate with utilities, submit shop drawings, acquire materials and equipment, and optimize its resources for the project.

For projects where construction will have significant user impacts with or without high traffic volume (e.g. closing a rural bridge, or implementing lane closures during construction), the Department should establish the number of calendar days to complete the project once construction starts. This variation, commonly called a “Window Contract”, allows for a flexible start date but requires that construction work proceed without interruption from start to finish. If used with A+B bidding, the Contractor will bid the number of days, with the provision that once work starts, it must continue without interruption to project completion.

The Department has developed similar “Delayed Start” SSP options (S4-035) for small single-season or larger (>\$5M) multi-season projects. The “Delayed Start” fixes a maximum number of days from contract approval to commencement of work at the job site but allows the contractor to begin work before the fixed start date if approved by the Engineer.

4.4.2. Benefits

Flexible Notice to Proceed provisions allow the contractor flexibility in scheduling the start time to make more efficient use of resources, procure front-end material and equipment, and/or minimize disruption to the public caused by construction.

4.4.3. When Used

A Flexible Notice to Proceed Date provision may be useful for the following circumstances:

- Projects requiring extensive offsite preparatory work; or material procurements with long lead times before construction.
- Small single-season projects. For example, non-critical projects such as rural bridge replacement projects and guardrail projects.
- Projects where the use of an I/D or No Excuse provision is not justified based on daily road user costs but impacts to users or the local communities may be significant.
- Projects without complex issues related to utility relocation or right-of-way unless these issues can be resolved before construction starts.
- Projects where there is no significant public impact associated with delaying the start date of construction.

4.4.4. Related Provisions

“A+B Bidding”, “Baseline Progress Schedule (Critical Path Method)”, “Beginning of Work, Time of Completion and Liquidated Damages” Contract Considerations

In addition to the Department’s standard contracting requirements, the following guidance will aid the Department in implementing these special provisions:

1. **Time Requirements.** The provision should include a description of the must start of construction time charges, or how many days will be allowed for completion of onsite work impacting highway users. Time requirements for the work may be based on a working day, calendar day, or a completion date contract.
2. **Notice.** If using a flexible start date, the Department must be notified within a reasonable time frame before the start of site work to mobilize its construction resources. For “Delayed Start” provisions, the Department has extended the advance notice in the “Beginning of Work” clause in the standard specifications from 72 hours to 5 days. For a Flexible Notice to Proceed provision, the Department may require the contractor to provide advance notification ranging from 10 to 30 days depending on the size and complexity of the project. The notification requirements may also extend to local officials, utilities, police, affected business owners, and the local community.
3. **Prebid Meeting.** The Department or District may conduct a prebid meeting to describe the project requirements, schedule and notice requirements, public commitments, and any restrictions or unusual features. For example, the public commitments may include periodic public information updates, completion of the project by a certain date or prohibiting work during weekends. The contractor must be aware of such commitments prior to bid.
4. **Scheduling.** To complete the work affecting traffic within a discrete window or time duration, the contract must incorporate the Department’s CPM Progress schedule (Critical Path Method) Standard Special Provision 08-012 or 08-015 for the project. This CPM scheduling provision will be the basic document to gauge and analyze the contractor’s progress. Time limits for certain Department actions should be specified in the contract and incorporated into the schedule. For example, allow 7 days for review and approval of shop drawings. The use of contractual time limits for both parties for submittal and review activities and other administrative issues will allow the contractor to develop a realistic schedule and require both parties to follow the schedule to achieve the completion date.

4.4.5. Sample Provisions

Washington State DOT - Flexible Start Date Special Provision

Section 1-08.4 is modified as follows:

The Contractor shall begin onsite work on or before *** MM/DD/YYYY *** and shall notify the Engineer in writing a minimum of 10 calendar days in advance of the date on which the Contractor intends to begin work. The Contractor shall diligently pursue the work to completion within the time specified in the contract. Voluntary shutdown or slowing of operations by the Contractor shall not relieve the Contractor of the responsibility to complete the work within the time specified in the contract.

Section 1-08.5 is supplemented with the following:

This project shall be physically completed within *** ##### *** working days. Contract time shall begin on the latter of: the first working day following the 10th working day after the date the Contracting Agency executes the contract or the first day the Contractor starts onsite work. On site work is defined as work within the physical limits of the contract. In no case shall the beginning of contract time be later than *** MM/DD/YYYY ***

Florida DOT – Prosecution of Work – Flexible Start Time

(REV 2-24-04) (FA 4-23-04) (1-05)

SUBARTICLE 8-3.3 (Page 80) is deleted and the following substituted:

8-3.3 Beginning Work: The notice to proceed will be issued within 30 days after execution of the Contract by the Department. For this Contract, a period of ___ calendar days will be allowed after the notice to proceed is issued. This period allows time for the Contractor to adjust work forces, equipment, schedules, and the procurement of materials, to proceed in a manner to minimize disruption to the public. Charging of Contract Time will begin when this time period ends or on the actual day that work begins at the site, whichever is the earlier. Notify the Engineer in writing at least 30 days prior to beginning work on the project.

Ohio DOT - Window Contract

PN 129 - 01/20/2006

The Contractor has the number of calendar days designated in the Window Contract Table located on plan page _____ in which to complete all items of critical work. The Contractor may begin anytime after the notice to proceed date and must complete the critical work within the calendar days designated in the Window Contract Table or by the completion date listed in the proposal, which ever comes first. Critical work is shown in the Window Contract Table. Critical work is defined as having the designated section of work open to unrestricted traffic as shown in the table, or the entire project if not otherwise listed. Unrestricted traffic is defined as all traffic lanes being available for use at their final design width with all markings, RPM's, and safety features installed, along with no restrictions within 2 feet of the edge line on the shoulders.

Extensions of time will be for calendar days and calculated in accordance with C&MS 108.06.

Window Contract Table	
Description of Critical Work	Calendar Days to Complete
All 448 paving and guardrail work	20
All work on project (including work listed above)	30

4.5. NO EXCUSE INCENTIVES

4.5.1. Description

A No Excuse Incentive provision uses a monetary incentive to motivate contractors to complete the contract work on time or sooner than stipulated in the contract. The contractor is given a “drop-dead date” for completion of a phase of work or for the entire project. If the work is completed on or in advance of this date, the contractor will receive an incentive payment. If the work is not completed on time, the contractor will forfeit the incentive payment. There are no excuses for adjusting this date including utilities, permitting, change orders, weather, differing site conditions, or any other cause short of a natural catastrophe.

The No Excuse Incentive concept is intended to shorten the construction time that would normally be required to perform the work by providing the contractor with a substantial incentive to complete a project within a specified time frame regardless of any problems or unforeseen conditions that might arise. An additional advantage of the use of this technique is that it serves as a tool to motivate efficient construction as it encourages the contractor to keep projects on schedule. It motivates the contractor to dedicate sufficient resources to the project or phase of a project and favors time-efficient contractors. Contractors able to plan and perform the work in this manner are able to reduce unit bid prices, thereby gaining a competitive advantage, and recover compensation through earning the incentive.

Florida DOT developed this approach, coined the term “No Excuse Bonus” to describe it, and has used it extensively. From the FHWA’s perspective, the term incentive is preferred. The term bonus implies something paid in addition to what is expected. Other states have implemented similar versions of a “no excuse incentive” (NEI) clause, and in some cases have also applied a disincentive. Incentives are intended to reward a contractor for early completion, thereby reducing disruption and inconvenience to the public. As in the case of an Incentive/Disincentive provision, the incentive amount may be based on road user costs and other costs reflecting the value to the public for finishing the project by a certain date.

4.5.2. Benefits

Motivate the contractor to complete the project work on time (not necessarily ahead of time), develop a more detailed well thought out plan, maximize efficiency, and take responsibility for proactively anticipating and mitigating delays to completion.

4.5.3. When Used

The No Excuse Incentive provision may be applied to any project where “time is of the essence” and the project, or a specific phase of the project, must be completed by a certain date or within a certain timeframe. Projects or conditions where No Excuse Incentives may be appropriate are described below.

1. **Fixed Date or Sequential Contracts.** A no excuse incentive provision can be applied where it is extremely beneficial to finish a project by a certain date but not as beneficial to finish early. One example might be the sequencing of multiple construction contracts within a larger project or program. If the preceding contractor finishes early, it may not be practicable to accelerate the start date or traffic phasing of the follow-on contractors, but finishing late would cause collateral impacts to succeeding contractors and the overall project completion. Another example may involve the opening of a bridge or a roadway to accommodate holiday traffic or a major event. Finishing early would provide some benefit, but finishing late would cause severe impacts to the traveling public.
2. **High User Impacts.** No Excuse Incentives would benefit projects requiring traffic restrictions, lane closures, or detours that would otherwise result in high user impacts. The Department maintains applicable guidelines for Incentive/Disincentive provisions that define selection criteria based on project size and a road user delay costs. Applicable criteria may include:

Construction on major roadways, bridges, or interchanges having an average daily traffic (ADT) resulting in significant road user delay costs (at least \$5000 per day). Also refer to the Department's guidelines for calculating road user delay costs.

Major projects with road user impacts involving temporary lanes, ramps, bridge closures, or emergency repair work.

3. Impact to Local Community. Construction can cause severe impacts to the local residential or business community. Conditions include:

Projects adjacent to residential neighborhoods, where the noise, dust, traffic, and parking restrictions that may be associated with construction are community concerns.

Projects on urban routes that could restrict access to retail businesses.

4. Public/Political Interests. Public or political interests may demand project completion by a certain date to minimize user impact. For example, construction on routes affecting major events, or access to sports facilities or convention centers may generate high public and political interest.

4.5.4. Related Provisions

The following special provisions are recommended if considering the use of No Excuse Incentive provisions for a project: A+B Bidding, Baseline Progress Schedule (Critical Path Method), Daily Road User Costs, Partnering. Incorporating these special provisions into contract documents with No Excuse Incentive provisions will ensure optimal outcomes because they will define the Department's expectations and require the contractor to provide information to adequately manage the project.

4.5.5. Information Required

With each project submitted as a candidate for a No Excuse Incentive, compile the following information:

1. Scope of Work. An accurate description of the work subject to the No Excuse Incentive provision, along with clearly defined critical start and completion dates. The time limits are typically based on a calendar day or a milestone completion date contract.

2. Public Feedback. Information and feedback from local officials, utilities, police, affected business owners, local traffic engineers, and construction engineers obtained from public hearings and meetings during the early phases of project development.

3. Road User Costs. Information needed to calculate road user costs, such as:

Traffic counts for trucks and autos during construction.

Local accident rates.

Preliminary traffic control plans.

4. Time Estimate. An estimate of the time using a Critical Path Method (CPM) construction schedule meeting the following requirements:

The CPM schedule should be based on the performance of a time-efficient contractor working extended shifts or with extra resources.

Information should be included with the schedule showing the basis for the activity durations in the schedule. This information should include the quantities of critical work items and the production rates for the stated quantities. The production rates should be taken from the past performance of contract work performed under circumstances similar to the planned project. For more complex projects, consult with contractors to determine the reasonableness of production rates.

The schedule should allow for weather, submittal review time, and any special work restrictions in the schedule. An explanation should be included for extraordinary production rates or innovative construction methods assumed in the development of the schedule.

5. **Field Reviews.** Any meeting minutes from pre-design field reviews. These reviews are essential since “as-built” plans or old construction plans may not be reliable due to maintenance operations or field changes not being recorded on the plans.

6. **Incentive Determination.** For No Excuse Incentive provisions to be cost effective, the benefit, as described below, must be greater than the contractor’s cost to meet the No Excuse completion date.

Estimate the contractor’s extra costs to meet the No-Excuse completion date and minimize the impact to the public and the project should the project not complete on time. Develop normal and accelerated daily production rates based on the available manpower and resources in the region, the physical limitations of the project, the extent of third party coordination, and other factors. Use the CPM schedule to determine the manner in which the project may be constructed in both a normal and an accelerated mode using additional shifts, night work, and added equipment and other resources. Estimate the contractor’s additional daily cost to accelerate and finish by the No Excuse completion date.

The Incentive amount may be based on calculating daily road user impact costs plus adding the daily construction engineering (CE) costs incurred during construction based on the Department’s procedures for calculating these costs. If the additional road user costs and the Department’s construction engineering daily benefit costs are greater than the contractor’s acceleration costs, a No Excuse Incentive provision will be cost-effective for the project. If the benefit amount is much greater than the contractor’s extra cost, the Incentive should be adjusted downward to more closely approximate the contractor’s costs.

If the contractor’s costs to accelerate exceed the benefit amount, a No Excuse Incentive provision is not cost-effective based on road user impact costs. The Department, however, may still decide to use a No Excuse provision, based on criteria such as public safety, impairment of services, or impacts to local businesses or the local community. These factors are not typically used to quantify an incentive amount, but they still may be a valid reason to implement a No Excuse Incentive provision.

A total No Excuse incentive amount may be computed based on the difference between the No Excuse completion date in an accelerated production mode and a project completion date in a normal production mode. Given that not opening the project on or before the No Excuse completion date may result in a significant added road user or public impacts, also consider the added impact costs caused by not opening the project on the No Excuse completion date.

4.5.6. Contracting Considerations

The use of No Excuse Incentive provisions places an increased risk on the contractor and the Department. The following guidelines concerning the contract documents and administration of the project will reduce the Department’s and the contractor’s risk in implementing these provisions:

- The plans and specifications must be as complete, accurate, and without conflicts as possible to permit a common and clear understanding of what is to be constructed. If utility work must be performed along with the critical construction work, carefully review and coordinate the utility plans with the related construction plans to avoid conflicts. If the No Excuse Incentive project is to be coordinated with adjacent work on other projects, carefully review the plans and schedule for the adjacent work to avoid conflicts.

- The plans and specifications should indicate any unusual condition or any restriction under which the contractor may be required to work. For example, prohibiting work during certain times of the day or weekends, or prohibiting jack-hammering or pile-driving during the night would limit the contractor's options in accelerating the work. The contractor must be aware of such limitations prior to bid.
- The Department must ensure that the project budget can support payment of the incentive.
- The No Excuse provision must clearly define the incentive amount, the relevant work items, and the basis for the incentive completion date. The contract time associated with the No Excuse provision should ideally be based on calendar days, or a specific completion date. It is possible to base contract time on working days but not advisable because with working day contracts the completion date is typically adjusted for weather or other excusable causes that diminish the effectiveness of a No Excuse provision.
- The concept of a no excuse completion date is identified more with fixed start and completion dates, but it might be possible to use it in conjunction with a flexible start date where the Department may specify a Flexible Notice to Proceed date (See Section 4.4 Section 4 of this manual) and the work to be performed must be completed within a discrete window or fixed number of days during the construction season for the contractor to earn the incentive. This Flexible Notice to Proceed approach, based on working days or calendar days, is typically used for relatively uncomplicated projects (<\$5M) with short durations (<100 calendar days) where the impact to the highway user is high; for example, a full closure of a bridge or roadway is needed to perform the work.
- The bid advertisement should include a pre-bid meeting to review and explain the No Excuse Incentive and any unusual features of the project.
- In accordance with standard practice, the contract must incorporate the Department's CPM Progress schedule (Critical Path Method) Standard Special Provision 08-015 or 08-012 for the project. This CPM scheduling provision will be the basic document to gauge and analyze the contractor's progress. Regularly scheduled job site progress meetings should be held for the purpose of reviewing the updated CPM schedule, assessing whether the project is on schedule, and making adjustments in the work sequence or resources to meet the No Excuse completion date.
- The schedules for No Excuse Incentive projects tend to be aggressive, with extended shifts or little float, and therefore, are more sensitive to delay. District construction must have advance notice of No Excuse Incentive projects expected to use these provisions. More construction engineering resources may be needed to meet Department responsibilities during construction.
- Cooperation and coordination between the contractor and the agency are essential. Partnering is strongly recommended. The delay in approval of a field change or working drawings by the Department can be costly. Decision making and approval authority should be promptly provided at all times that work is in progress. If nighttime or weekend work is allowed, all offices that have decision-making and approval authority should designate a contact person with authority to make decisions for the Department.
- Time limits for certain Department actions should be specified in the contract and incorporated into the schedule. For example, allow 7 days for review and approval of shop drawings. The use of contractual time limits for both parties for submittal and review activities and other administrative issues will allow the contractor to develop a realistic schedule and encourage both parties to follow the schedule to achieve the No Excuse Incentive completion date.

- Extensions of time for a No Excuse Incentive contract will not be granted for any events or circumstances encountered during the performance construction causing critical delay, except for a catastrophe or emergency. The No Excuse Incentive provision supersedes the Department's standard provisions found in Section 8 and special provisions in the contract addressing the time of completion and basis for time extensions.
- If a catastrophic event causes a critical time impact to the project, the contractor must submit a Time Impact Analysis in accordance with SSP 08-015 or 08-012 to support an adjustment to contract time. If the Department and the contractor fail to reach an agreement on a time extension, the Department will unilaterally determine the number of calendar days to extend the No Excuse completion date. The contractor may decide to submit a notice of potential claim for review and schedule a non-binding Disputes Review Board hearing or other alternative dispute resolution process in accordance with the Department's standard disputes process.
- To be eligible to receive a No Excuse Incentive, the contractor must:
 - Complete the project or that portion of the project subject to the No Excuse Incentive and obtain verification of substantial completion and acceptance by the Engineer.
 - Notify the Department that it elects to be paid the No Excuse Incentive, which waives its right to make any claim related to the work except for a claim related to catastrophe or emergency.

4.5.7. Sample Provisions

Florida DOT 8-13.1 "Bonus" Payment and Waiver of Contractor Claims.

(REV 7-27-04) (FA 7-28-04) (1-05)

The Department will pay the Contractor a "Bonus" in the amount of \$ _____, if the work in the Contract is completed in accordance with 5-11, as determined by the Engineer, on or before _____ calendar days from commencement of Contract Time ("Bonus Completion Date") and subject to the conditions precedent set forth below. The term "calendar day" as used in this Article shall mean every day shown on the calendar. Calendar days will be consecutively counted from commencement of Contract Time regardless of weather, weekends, holidays, suspensions of Contractor's operations, delays or other events as described herein. For purposes of the calculation and the determination of entitlement to the "Bonus" stated above, the "Bonus" Completion Date will not be adjusted for any reason, cause or circumstance whatsoever, regardless of fault, save and except in the instance of a catastrophic event (i.e., hurricanes or a declared state of emergency).

The parties anticipate that delays may be caused by or arise from any number of events during the course of the Contract, including, but not limited to, work performed, work deleted, change orders, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right of way issues, permitting issues, actions of Suppliers, Subcontractors or other Contractors, actions by third parties, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, suspensions of Contractor's operations, or other such events, forces or factors sometimes experienced in highway construction work. Such delays or events and their potential impacts on performance by the Contractor are specifically contemplated and acknowledged by the parties in entering into this Contract, and shall not extend the "Bonus Completion Date" set forth above. Further, any and all costs or impacts whatsoever incurred by the Contractor in accelerating the Contractor's work to overcome or absorb such delays or events in an effort to complete the Contract by the "Bonus Completion Date", regardless of whether the

Contractor successfully does so or not, shall be the sole responsibility of the Contractor in every instance.

In the event of a catastrophic event (i.e., hurricane or a declared state of emergency) directly and substantially affecting the Contractor's operations on the Contract, the Contractor and the Department shall agree as to the number of calendar days to extend the "Bonus Completion Date". In the event the Contractor and Department are unable to agree to the number of calendar days to extend the "Bonus Completion Date", the Department shall unilaterally determine the number of calendar days to extend the "Bonus" Completion Date reasonably necessary and due solely to such catastrophic event and the Contractor shall have no right whatsoever to contest such determination, save and except that the Contractor establishes that the number of calendar days determined by the Department were arbitrary or without any reasonable basis.

However, notwithstanding anything above to the contrary, upon the Contractor's written request being made directly to the Chief Engineer, with copies provided to both the Resident Construction Engineer and the District Construction Engineer, the Department reserves unto the Chief Engineer, in his sole and absolute discretion, according to the parameters set forth below, the authority to make a determination to either fully enforce the above provisions with no modification, modify the "Bonus Completion Date" by moving it, or both modify the "Bonus Completion Date" by moving it and also modify the "Bonus" amount by reducing it.

No modification of a "Bonus" provision will be considered by the Chief Engineer for any impacts whatsoever, beyond the reasonable control of the Contractor, for which the effect results in a time extension of less than 15% of the time remaining in the period from the first day of occurrence of such impact to the "Bonus Completion Date". Furthermore, as to any such impact, for which the effect results in a time extension of 15% or more of the time remaining in the period from the first day of occurrence of such impact to the "Bonus Completion Date", no modification of a "Bonus" provision will be considered by the Chief Engineer unless the contractor clearly establishes that it has continuously from the beginning of the project aggressively, efficiently and effectively pursued the achievement of the "Bonus". This would include the utilization of any and all reasonably available means and methods to overcome all impacts and accelerate the work so as to still achieve the "Bonus", and that, but for this impact, the Contractor would have otherwise earned the "Bonus" provided in the original Contract. Also, to the extent the request is not submitted in writing to the Chief Engineer within not less than twenty (20) calendar days prior to the original "Bonus Completion Date", the Contractor must also continue to aggressively, efficiently, and effectively pursue the completion of the "Bonus" work. This would include the utilization of any and all reasonably available means and methods to overcome all impacts and accelerate the work, until a determination is made by the Chief Engineer or twenty (20) calendar days has expired since such written request was received by the Chief Engineer. There shall be no right of any kind on behalf of the Contractor to challenge or otherwise seek review or appeal, in any forum, any determination made by the Chief Engineer under this provision.

The Contractor shall have no rights under the Contract to make any claim arising out of this "Bonus" provision except as is expressly set forth in this Article.

As conditions precedent to the Contractor's entitlement to any "Bonus" the Contractor must:

(1) Deliver in-hand to the Department any and all claims, in full accordance with 5-12.3 and subject to the limitations therein, no later than 60 calendar days after completion of the work on which such claim is based and tentatively schedule a Disputes Review Board hearing while awaiting Department review and response to any such claim. Furthermore, as to any such 5-12.3 claims for which the Disputes Review Board has determined entitlement but both parties have not reached an agreement on monetary compensation prior to final acceptance, and also as to those 5-12.3 claims pending at or submitted after final acceptance, tentatively schedule a Disputes Review Board

hearing within 60 calendar days after the final acceptance date while awaiting Department review and response to any such claim. The sole forum for final determination as to both entitlement and amount of monetary compensation, if not otherwise mutually resolved or otherwise agreed, shall be the Disputes Review Board.

(2) Actually complete the Contract and obtain final acceptance by the Department, as determined by the Engineer in accordance with 5-11, on or before the “Bonus Completion Date”.

(3) No later than 60 days after final acceptance by the Department, the Contractor must either (a) elect to be paid the “Bonus” pursuant to (4) below, or (b) notify the Department in writing that the Contractor is electing to be paid the “Bonus” and is reserving one or more outstanding 5-12.3 claims for final and fully binding determination by the Disputes Review Board. The determinations of the Disputes Review Board as to any such 5-12.3 claims will be fully binding on both the Department and the Contractor, with no right of any kind of challenge, review or appeal, in any forum, by either party. Further, under (b) herein, any previous Disputes Review Board determinations on any such 5-12.3 claims issues shall then be fully binding and not subject to reconsideration by the Disputes Review Board, regardless of whether either party has previously rejected or otherwise not accepted one or more such recommendations at the time such were rendered.

(4) The Contractor shall notify the Department in writing, within 60 days of the final acceptance of the work in the Contract by the Department, that the Contractor elects to be paid the “Bonus” which the Contractor is eligible to be paid based on the actual final acceptance date, and such written notice shall constitute a full and complete waiver, release and acknowledgment of satisfaction by the Contractor of any and all claims, causes of action, issues, demands, disputes, matters or controversies, of any nature or kind whatsoever, known or unknown, against the Department, its employees, officers, agents, representatives, consultants, and their respective employees, officers and representatives, the Contractor has or may have as to work performed, work deleted, change orders, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right of way issues, permitting issues, actions of suppliers or subcontractors or other Contractors, actions by third parties, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, suspensions of the Contractor’s operations, extended or unabsorbed home office or job site overhead, lump sum maintenance of traffic adjustments, lost profits, prime mark-up on subcontractor work, acceleration costs, any and all direct and indirect costs, any other adverse impacts, events, conditions, circumstances or potential damages, on or pertaining to, or as to or arising out of the Contract. This waiver, release and acknowledgment of satisfaction shall be all-inclusive and absolute, save and except any routine Department final estimating quantity adjustments.

Should the Contractor fail to actually complete the Contract and obtain final acceptance by the Department as determined by the Engineer in accordance with 5-11, on or before the “Bonus Completion Date”, or should the Contractor, having done so, fail to timely request the “Bonus” for any reason, and including but not limited to the Contractor choosing not to either reserve one or more outstanding 5-12.3 claims for final and fully binding determination by the Disputes Review Board as set forth in (3)(b) above, or to fully waive, release and acknowledge satisfaction as set forth in (4) above, the Contractor shall have no right to any payment whatsoever under this Article.

In the event the Contractor elects to exercise the “Bonus Payment” provision, should this provision conflict with any other provision of the Contract, the Contract shall be interpreted in accordance with this provision.

Texas DOT - SPECIAL PROVISION 008--026

Prosecution and Progress

For this project, Item 008, "Prosecution and Progress," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

This Item is supplemented by the following:

Article 8.11. No Excuse Incentive for Early Contract Completion. The Department will pay the Contractor an incentive for early completion of the project. Completion shall be considered the final acceptance date unless performance, establishment and maintenance periods occur. In the case of performance, establishment and maintenance periods, completion shall be considered when all work is complete and accepted except for performance, establishment and maintenance periods, with time computed to the suspension of time charges for said periods. The daily incentive rate the Department will pay will be the daily contract administration liquidated damages as provided elsewhere in the contract. The incentive will be paid for each working day the project is completed prior to the original working days allowed in the contract with the exceptions for the allowances of adjustments as provided below. A maximum of 30 days will be paid unless otherwise shown on the plans.

Time charges for the completion incentive will not be adjusted for weather, weekends, holidays, suspension of contract time; unforeseen utility, right of way, or railroad issues; or any other unforeseeable event not under the control of the Department.

Time charges for the completion incentive may be adjusted by the Engineer when work, under the control of the Department such as extension of limits or changes in scope not related to the issues in the previous paragraph, is added that changes the duration of the project as submitted in accordance with the schedule required to meet Article 8.1, "Prosecution of Work." Time charges for the completion incentive will also be adjusted for catastrophic events such as a declared state of emergency or natural disaster, if the event directly affects the Contractor's operations. When archeological sites are discovered during the course of construction, time charges may be adjusted when they impede the clearance process and affect the completion of the project.

4.6. SHARED RISK CONTINGENCY

4.6.1. Description

A shared risk contingency pool can be used as an innovative technique to manage possible project risks that have the potential to result in unrealistic estimates, cost overruns, and scope and schedule growth, and can also be used as a mechanism for assuring cost certainty. Some contractors favor use of a contingency pool to “even the playing field” during a procurement, since it allows proposers to price the job based on its estimated costs of performing the work, so that the selection decision is based on the contractor’s ability to do the work efficiently instead of on its willingness to assume risk without charging for it.

All projects involve the risk of cost growth due to unknowns, and it is therefore necessary for the project budget to set aside money to cover the unknowns. The owner will set aside a certain amount of contingency to provide a cushion for situations where it bears the risk of cost increases. In like manner, the contractor will have a certain amount in his proposal costs to cover risks that it bears under the contract terms. One way to reduce the value of these contingency amounts and incentivize the parties to reduce the cost of managing the impact of risks is through an arrangement to have a shared contingency, where the funds that remain unused at the end of the project are shared by the parties. This provides assurance to the contractor that unknown costs will be covered, allowing it to reduce amount of risk money in its proposal. If the contingency is not needed, it can be returned to each of the parties as agreed in the contract. This gives the contractor an interest in the unused portion of the shared risk contingency pool, which can motivate contractors to minimize the cost and time impact of changes. In this way the contingency serves a dual function of protection against unforeseen complications and an incentive for all members of the team to excel.

The primary function of a shared risk contingency pool is to reduce the amount of contingency included in the underlying contract price, and to provide assurance to both the contractor and owner that sufficient funds are available for project costs not covered in the lump sum price. On one end of the spectrum, the pool could be set up to be available only for limited contractor costs that are not otherwise covered by the contract price. At the other end of the spectrum, the pool can be made available to a broad range of costs, accessible by either party to pay for unanticipated costs. Moreover, with appropriate contract language, the pool can serve as a limitation of the owner’s liability for identified exposures.

The concept of shared savings is frequently used in contracts with a guaranteed maximum price (GMP), and can be used in lump sum price contracts as well. As discussed in Section 3.4 of this manual, a GMP is a not-to-exceed price for construction negotiated and agreed upon by the contractor and the Department consisting of direct costs, general conditions, contingencies, and fees.

4.6.2. When Used

Almost every project is a candidate for some sort of shared risk contingency pool, but shared risk contingency pools are especially beneficial for major or mega-projects, particularly those using design-build delivery, due to (a) the level of uncertainty associated with estimating construction costs and time before completion of design, (b) the ability of design-build contractors to manage the impact of risks since the scope of their work includes design as well as construction, and (c) the limited number of firms that have the financial capability to undertake such projects, resulting in fewer proposals to affirm the accuracy of the owner’s estimates.

Shared risk contingency pools can be available for all contract costs or just certain defined risks on the project. Sometimes the shared risk contingency pool is used for those costs that a contractor would not otherwise be able to recover. For instance, where a contract would allow a time extension but no compensation for a risk event, the shared risk contingency pool could be used to compensate the contractor.

Certain types of projects or risks are more conducive to the use of shared risk contingency pools. Projects involving environmental mitigation, utility or other third party issues, or that otherwise have a high likelihood of scope changes for reasons unrelated to owner directed changes are good examples of the kind of risks amenable to a shared risk contingency pool. Other examples of appropriate risks to cover are increased labor and materials costs due to inflation; costs of repair or replacement due to force majeure events; increased costs caused by a change in law; increase in energy rates or certain increases in consumption (for instance on transit projects); delays in issuance of a notice to proceed; and excusable but otherwise not compensable delays.

Underground issues are among the biggest unknowns in project development, and are particularly well-suited for shared risk contingency pools. For design-build projects, the risk is increased since the design is not yet final on the date price is determined, and the potential usefulness of a contingency pool is increased. A shared risk contingency pool can be used to address risk of differing site conditions or hazardous materials removal costs. This is especially useful on complex tunneling projects or brownfields projects where the extent of prior construction, site conditions, and contamination is unknown and not easily ascertainable. In the design-build context, the efficacy of a shared risk contingency pool is amply illustrated when applied to these risks, because the design-build contractor may be able to take mitigation steps to design around the potentially costly subsurface conditions, and then share in the savings at the end of the project. It should be noted that contractors are highly averse to taking on the risk of differing site conditions, and that some contractors will not take on responsibility for hazardous materials remediation work.

Utility relocations represent a significant risk for transportation projects for a number of reasons, including the need to avoid disruption of utility service, the unwillingness of utility owners to do any work that does not increase their profitability, uncertainties regarding the precise placement of facilities, and the need to address issues of real property ownership. Transportation projects also typically require adjustment of local agency facilities as well. The local agency projects are typically less of a concern but involve some of the same issues. With traditional design-bid-build projects, owners often try to perform as much relocation/adjustment work as possible, in advance of contract award. For design-build projects, due to the level of design at contract award, it is difficult to clear the corridor in advance of contract award. Owners usually elect to include the relocation/adjustment work in the scope of the design-build project, requiring the design-builder to coordinate with utility owners and local agencies, and sometimes requiring the design-builder to pay utility owners and local agencies for the work they perform. As a result, relocations/adjustments often require a higher level of attention in design-build contracts than might be expected based on the percentage of the total job represented for such work. A shared risk contingency pool can be a useful tool to provide cost certainty to the owner while also providing assurance to the design-builder that it will be paid for its design and construction services relating to utilities and local agency facilities.

4.6.3. Information Required

The key to determining whether to use a contingency pool is to perform a risk assessment to determine the type and nature of risks that may affect the project, and to determine the potential impact of those risks. The owner will also need to have access to information regarding the amount of funding available for the project, as well as additional funding sources for the shared risk contingency pool. If the procurement includes an industry review period, the concept of a

contingency pool should be explored with industry representatives before a final decision is made whether to use it or not.

4.6.4. Determination of the Contingency Amount and Distribution on Completion

The decision as to the amount of the shared risk contingency pool is subject to a number of factors, with some set by standard contracting practices and with others set based on project specific risk assessments or grounded in economics.

The Federal Highway Administration (FHWA) has developed guidance for estimating costs, assessing risk, and managing contingency funds for major projects. This information can be found on the FHWA Office of Program Management website (<http://www.fhwa.dot.gov/programadmin/mega/contingency.cfm>) and serves as a good starting point. Similarly, many owners may traditionally budget or set aside a certain percentage of the construction cost as a contingency. Ten percent is an often cited figure when discussing a project contingency fund.

A risk assessment during the planning stages of the project can also establish the size of the shared risk contingency pool. For the Minnesota Department of Transportation's Hiawatha Light Rail Transit Project, the shared risk contingency pool for the design-build contract was determined based on an analysis of over 200 risk items. The owner developed a risk matrix and tracked those risks on a monthly basis. Similarly, for the Washington State Department of Transportation's Tacoma Narrows bridge project, the design-build contract included a 7% shared risk contingency pool based on the owner's risk assessment exercise.

Where the owner is confident risk is limited by a well developed contract, it may elect to reduce the size of the shared risk contingency pool from the traditional 10%. The Colorado Department of Transportation set aside a 5% contingency for the T-REX design-build project in Denver, based on its risk assessment.

The availability of funding and plan of finance may also dictate the size, and even the existence, of a risk contingency. The Las Vegas Monorail shared risk contingency pool was set as part of the financing for the project. As another example, as of the date of award of the Utah Department of Transportation's I-15 reconstruction project, the Department did not have access to funds allowing a contingency to be established. UDOT was willing to enter into the contract without an owner's contingency in part because of the thoughtful efforts that occurred in allocating contract risk. Ultimately, through value engineering and an underrun in the owner's management budget, the owner realized a \$38 million savings that was then available to pay for project completion costs.

The owner has wide latitude in determining how the shared risk contingency pool is distributed at the end of the project. Keeping in mind part of the rationale for the pool is to give the contractor an incentive to control costs, a common arrangement is to divide the pool 50/50 between the owner and the contractor, but there is no requirement for this division. The amount should be enough to provide appropriate incentives to the contractor while at the same avoiding a windfall.

The amount the contractor will receive need not be static. For instance, it is possible to tie the contractor's share to other events or occurrences on the project, for instance by decreasing the contractor's share if substantial completion is not reached within a certain time (in addition to or in lieu of liquidated damages) or by applying the unused contingency first to a contractor's otherwise unrecoverable costs (for instance, overhead costs that were to be borne by the contractor in the event of a delay attributable to a third party could be recovered out of any remainder of the shared risk contingency pool at the end of the project, before the proceeds are distributed).

4.6.5. Contracting Considerations

When assessing whether to include and to what extent to include a shared risk contingency pool, it is important to bear in mind that the underlying functions of the shared risk contingency pool are to reduce the risk included in the original contract price and to provide an incentive for the contractor to keep costs within that contingency. Accordingly, the following questions need to be addressed

4.6.6. Treatment of Overruns

Is the pool a cap on the owner's exposure to cost increases or must the fund be increased?

The contract could provide that the contractor is solely liable for all costs associated with the project after the exhaustion of the shared risk contingency pool. In other words, the contingency pool represents a cap on total payment. In this context, the current California statutes (California Government Code § 4215 and California Public Contract Code § 7105) must be reviewed to determine whether public owners must retain responsibility for certain risks in public works contracts.

The contractor would undoubtedly prefer an approach that allows additional compensation if costs overrun the shared risk contingency pool or that allows it to stop work in the event there is an overrun and the shared risk contingency pool is not replenished. The advantage to this latter approach is that it should result in a lower original price. The disadvantage, of course, is that it increases the owner's exposure.

4.6.7. Eligible Costs

What kinds of costs are eligible for reimbursement out of the pool?

If the shared risk contingency pool is set up as a cap on payments to the contractor, the owner will have greater upfront cost certainty, but it is likely the initial contract price will include some contingency for cost overruns. In order to keep the initial price down, if this approach is adopted, the owner may want to allow broad access to the shared risk contingency pool, including payment of delay costs and the like.

Alternatively, if the shared risk contingency pool is set up more as a budgeted contingency, with the owner still liable for eligible costs if the share risk contingency pool is exhausted, the types of costs payable from the shared risk contingency pool should be subject to strict limitations. Also, if this approach is adopted, the contract could provide for certain owner costs to be paid from the shared risk contingency pool.

4.6.8. Savings Sharing

What happens if there are funds left over in the pool at the time of completion?

Typically, where a shared risk contingency pool is established, the contract will include a formula by which the parties can share in any portion of the pool that is left over at project completion. Such provisions provide an added incentive to the parties to control costs. For guaranteed maximum price contracts, it is common to see a 50-50 sharing of excess contingency. If the design-builder receives a higher share, it will have a greater incentive to keep costs down. If it receives a lower share, the converse is true.

4.6.9. Process for Accessing Funds

Can the design-builder invoice against the fund directly, or is a change order required to access the pool?

Usually where the contract contains a lump sum contract price, a price change (i.e. change order) is required in order to access the shared risk contingency pool. Where the contract uses a guaranteed maximum price, the contractor would be allowed to invoice directly against the shared risk contingency pool.

4.6.10. Sample Provisions

Atlantic City/Brigantine Connector Contract, § 12.1.2.1

The Contingency is intended to be available to cover any and all unanticipated costs incurred by Contractor in completing the Work directly attributable to the following (and only the following) events (“Contingency Events”) and for no other purpose: [eligible items listed]

If upon achievement of Final Acceptance and resolution of all Claims of Contractor and all claims, Liens and stop notices of Subcontractors and laborers, funds remain available in the Contingency, the Contract Price shall be increased by an amount equal to xx% of such remaining Contingency amount, and the Contingency shall thereupon be reduced to zero; provided, however, that if Contractor fails to achieve Substantial Completion on or before the Guaranteed Completion Date, Contractor’s share of such remaining Contingency amount shall be reduced as follows: if Substantial Completion is late by one week or less, Contractor’s share shall be reduced by 5% to equal xx%, and for each week (or portion of a week) of delay thereafter, Contractor’s share shall be reduced by an additional 5%.

4.7. WARRANTIES

4.7.1. Description

A warranty is generally defined as a guarantee of the integrity of a product and the contractor's responsibility to repair or replace defects for a defined period and under certain conditions.

Under a longer-term performance warranty, the contractor has greater latitude in the specifications and guarantees that the work will perform at the desired quality level during a longer-term warranty period (5 to 10 years), measuring actual against expected performance over time. For performance warranties, greater responsibility for design, construction oversight, and quality management shifts to the contractor. Innovative designs or construction techniques may be used to ensure performance throughout the warranty period.

Caltrans has included warranties in construction contracts since 1993. A pilot warranty program was initiated in 2000 to implement and evaluate one-year warranties on pavement preventative maintenance strategies. A final report documenting this pilot program evaluation, including guidelines and lessons-learned, was produced by the Divisions of Construction and Maintenance in 2006.

FHWA has recognized the use of warranties in construction in its *Final Rule on Warranty Contracting, 23 CFR 635.413, The Federal Register, Volume 61: 191-192, April, 1996 (allows states to use without SEP-14 approval)*.

4.7.2. Benefits

Commonly cited benefits from DOTs using warranties include increased quality, lower life-cycle cost, reduced Departmental inspection and maintenance cost, and greater contractor responsibility for performance. Listed specifically, potential benefits for state highway projects include:

- a. Enhanced performance through improved materials and workmanship.
- b. Redistribution of responsibility for product performance to the contractor, who has effective control of it.
- c. Reduction of agency personnel time required for testing and inspection.
- d. Encouragement of contractor innovation.
- e. Reduced maintenance exposure when desirable performance is not achieved.
- f. Fewer cycles of rehabilitation by practicing preventive maintenance and delaying the need for rehabilitation.

4.7.3. When Used

Warranty provisions have been applied to flexible and rigid pavements. They are applied to pavement surface course preservation, overlays, rehabilitation, and new alignments or widening projects, but rarely to the entire structural pavement cross-section (surface course, base, subbase, etc.). Project selection is a key to risk-sharing and the successful implementation of a warranty program. The screening process should take into account the existing roadway condition (pavement surface, base, subbase, etc.), design options to address the existing conditions, and whether the underlying conditions can or must be improved before implementing a warranty. The Department has developed a screening process for pavement preservation that defines appropriate treatment strategies for warranted projects based on existing conditions. It also defines distress thresholds and defective areas, which if exceeded, will exclude using a warranty

unless the underlying conditions are addressed in advance. A separate selection guide takes into account climate, traffic, and other parameters. See Sample Provision “Caltrans Warranty Selection Guide” below.

4.7.4. Related Guidelines / Reports / SSPs

Caltrans Maintenance Technical Advisory Guide (TAG), Roadway Maintenance Surface Treatment Strategies (Recommended Guidelines), Pilot Warranty Program Evaluation Progress Reports and Final Report (2006), Warranty Guidelines for Selection of a Warranty Project, ARCS Task Force Report (2005), Warranty Standard Special Provisions (SSPs) for Asphalt Concrete, Rubberized Asphalt Concrete, Microsurfacing, and Slurry Seal, and Partnering.

4.7.5. Project Development Considerations

The decision to use a warranty should be made early enough in the project development process to allow for the development of warranty provisions with the associated plans, specifications and details. Warranted items must be developed separately within the Engineers estimate. Deciding to resort to this method too late may result in additional design costs and undesirable delays.

Key technical and management elements must be considered in warranty provisions as part of implementation regardless of objectives for use or type of warranty. These elements include selecting appropriate performance indicators and distress thresholds, warranty durations, bonding requirements, risk allocation (responsibility and exclusions), monitoring, corrective or remedial action, conflict resolution, and payment. These key elements are addressed in the sections that follow.

4.7.6. Setting Performance Indicators and Distress Levels

Performance Indicators

Historical information and experience are most often used to identify performance parameters for indicators that are routinely measured to assess pavement performance over time. Performance indicators are distresses, properties, or characteristics of the pavement that can be monitored and measured over time and are linked to the performance of the pavement.

For flexible or Hot Mix Asphalt (HMA) pavements, the industry most frequently measures deformation (rutting), cracking (transverse and longitudinal), and surface deterioration (raveling), and less frequently for skid resistance and ride quality or IRI (International Roughness Index). The Department TAG broadly categorizes distresses in the pavement surface layer in terms of cracking, deformation, deterioration, and mat or segregation problems. The performance indicators currently used for the Department’s one year warranty provisions are:

- rutting (longitudinal surface depression in the wheel path)
- raveling (separation of aggregate from the binder)
- flushing or bleeding (film of bituminous material on surface)
- cracking (narrow breaks or fissures)
- delamination and potholes (loss of bond between pavement layers and loss of AC material)

A key issue to consider when selecting performance indicators is whether the monitoring process for selected indicators is consistent with established state practices for pavement management. For example, distresses routinely monitored for a pavement management program may include smoothness in addition to rutting, cracking, and other distress indicators. These can be

administered under a warranty using similar equipment and procedures. If a warranty performance indicator is not something that is routinely measured, the Department must decide whether the benefit will outweigh the burden of a separate monitoring process.

If using performance warranties with longer durations for pavement rehabilitation and for greater numbers of projects, move towards aligning the warranty criteria with those collected under current network-based pavement management systems (PMS) using high speed automated data collection. For example, inertial profilers or laser profiler systems are becoming the standard for pavement condition surveys incorporating roughness and rutting, and texture. A roughness index is a general indicator of other surface distresses. If the data indicates that a more detailed inspection is necessary for a warranted roadway segment, then a more intensive inspection can be performed considering other distresses such as raveling, cracking, and flushing.

A second issue to consider is whether causes of premature failures are easily identifiable through inspection or forensic study. For example, rutting is the most commonly measured distress characteristic for flexible pavement. It is identifiable and measurable, and the cause of failure is often easier to pinpoint. Distresses such as raveling or cracking may be more difficult to measure or pinpoint the cause of the failure.

Distress Threshold Values

Factors that affect setting thresholds include the type of warranty, the warranty duration, the availability of reliable historical data, and the level of industry cooperation. Agencies have used statistical methods to set thresholds based on data from pavement management surveys. If the goal is to establish consistent quality of the pavement by strict adherence to the specification, then thresholds should be based on statistical analysis of historic performance data (for example two standard deviations from the mean) such that the majority of pavements (90% or more) would meet the threshold factoring in design life, traffic, climate, and maintenance requirements. If the goal is to improve quality on a project, then thresholds may be set such that a smaller percentage of the population (70%) would meet the threshold during the life of the warranty. Most practitioners report that threshold establishment begins with a review and statistical analysis of historical pavement management data.

The Department defines the following distress thresholds for its one-year AC warranties:

- rutting
- raveling, flushing/bleeding, or delamination
- cracking

The Department currently uses a rating system to determine the level of severity and an overall condition rating based on the summation of defects. Threshold values can be structured several different ways. Some provisions specify a single, minimum threshold value, while others specify ranges of thresholds with different remedial procedures that correspond to the severity of the distress. Other thresholds are expressed in terms of percentages of the overall segment or a predetermined length or surface area of the warranted component. Algorithms have been developed, for example the Mississippi DEDUCT program that translates different distress thresholds for pavement performance measures into a common point system for pavement distress. The program asks the user to select a severity level for the distress based on the severity levels defined in the *Distress Identification Manual for the Long-Term Pavement Performance Program*. The program also asks for the extent of the distress in percentage, length, surface area, or number to relate it to the historical performance for that distress. The program then applies a point value for the distress based on the comparison of the extent of distress to the historical. Table 10 from the Mississippi DOT illustrates how thresholds for the same HMA pavement distresses can be defined differently.

Table 10 – Performance Thresholds			
Indicators	Measurement Basis and Thresholds		
	DEDUCT Points	Segment = 0.1 mi	Segment = 500 ft
Rutting	> 5.0 points > 7.0 points	≥ 0.25 in < 0.50 in ≥ 0.50 in	≥ 0.375 in (25 ft of the segment length)
Transverse Cracking	> 3.0 points > 5.0 points	> 25 cracks that average 0.5 in wide per segment (granular base)	3 cracks per segment with minimum length of 6 ft (med. severity)
Longitudinal Cracking	> 4.0 points > 6.0 points	> 1,000 linear feet of cracks that average 0.5 in wide	None allowed

When moving to the use of longer-term performance warranties, consider simplifying and automating the survey process to reduce monitoring effort. Also consider whether to specify a discrete minimum threshold or a graduated scale during the longer-term warranty period. In other words, if the warranty period is 5 years, the Department must determine whether the threshold should be set at the anticipated 5-year level or graduated with differing values for years 1 through 5. The procedure for remedial action must specify the threshold level that repairs must meet.

The manner in which performance data is tracked and evaluated should be considered when setting threshold values. Selecting distress similar to distresses tracked under the standard pavement management system is useful for developing comparative performance data; however, if ride quality is a parameter, consideration should be given to the length of the segment over which data points are measured when setting thresholds. Distresses on warranty projects are typically measured over shorter segment lengths than the segment lengths measured during typical pavement network condition surveys. The effect of differences in segment length should be evaluated when considering thresholds or comparing data points.

Lastly, when implementing a performance warranty, collaborate with industry throughout the developmental processes and establish threshold levels and monitoring and remedial action requirements that will promote quality and risk-sharing between the Department and the industry.

4.7.7. Warranty Durations

The duration of a warranty reflects the Department's goal for warranty use, the type of warranty provision implemented, and the ability of the industry to provide coverage for the warranty duration. A performance warranty hand extends for a longer term, five years or longer for AC pavements, covering a larger percentage of the design life of the warranted pavement, or in some cases, the entire expected life of the pavement. For projects that do not include planned, future maintenance a warranty typically covers 10 to 30 percent of the overall design life of the component being warranted. Durations, however, are also constrained by bonding limitations. The Department has noted that if a pavement preservation project does not show distress within the first year after construction, it has a greater potential for maintaining performance during the expected life of the surface treatment and the added warranty cost was not justified.

The project goals for quality and the industry's capacity to provide warranty coverage will drive setting the duration. If the project goal is to ensure pavement performance with minimal or no planned maintenance, then set a performance duration representing 10% to 30% of the design life

(e.g. one to three years for a pavement with projected 10-year design life). If the goal is to enhance performance, then consider setting the warranty duration at a higher percent of design life (50% or more) and work with the industry to achieve warranty durations that enhance performance and reduce maintenance while promoting competition and providing for a reasonable level of bonding or an equivalent form of security.

4.7.8. Bonding

The Department currently uses a one-year guarantee, extending the standard Contract Bonds to cover defects in materials and workmanship. This guarantee or extension of the 100% performance bond defines exclusions for damage caused by events outside the contractor's control and corrective action for non-compliant contract work or defects. The Department uses this guarantee in lieu of requiring a warranty or maintenance bond for warranted pavements. It also states that when warranty provisions are used, they take precedence over the guarantee requirements.

For longer-term warranties, owners typically require a bond to cover contractor warranty obligations during the warranty period. A warranty bond is secured through a surety, which guarantees contractor performance throughout the warranty term. Should the contractor fail to perform, the surety is responsible for the cost of remedial work to the limits of the bond. The bond limits are usually based on the estimated cost to perform remedial work or a percentage of the construction cost for the pavement work representing the reasonable cost of remedial work.

Because sureties are often reluctant to take on the risk of a longer-term bond, particularly for smaller or first-time contractors, they use higher premiums or set limits on bond durations that may have the effect of reducing or eliminating competition. To overcome such obstacles, several strategies can be considered to lessen the risk to the surety and contractor. These have included 1) obtaining a warranty bond for a shorter period (1 to 2 years) and then using renewable options up to the term of the warranty, 2) using a pay-for-performance system in lieu of a bond where the contractor is paid periodically on a graduated scale during the life of the warranty based on expected performance 3) using a prequalification system tying performance of required remedial work to qualification for future work. A sample pay-for-performance special provision for pavement markings is provided below. See Sample Provision "Minnesota Pay-for Performance Pavement Marking Warranty" below.

4.7.9. Responsibility and Exclusions

When transitioning to longer-term performance warranties, performance criteria may exceed the minimum standards, and contractor has greater control over material selection and mix design. The contractor may or may not be restricted to a list of state-approved materials. Performance warranty provisions typically shift greater responsibility for the materials and the methods used to construct the work, which may extend to design responsibility under a design-build type contract.

The warranty provisions must clearly define the scope of the warranty work and the performance standards (criteria and thresholds) that the contractor must meet. The warranty provisions should also define the roles and responsibilities of each party for inspection and testing during construction. See Sample Provision "Michigan Material and Workmanship Pavement Warranty" below.

Understanding liabilities during the warranty period is a key factor in risk allocation within the warranty provision. Limitations in liability should be addressed in the exclusion section of the warranty provision. Warranty provisions limit the contractor's liability for features or conditions beyond the scope of the warranty or outside the contractor's control. A warranty for an AC pavement may exclude areas with defects caused by existing conditions. The Department currently

defines excluded areas on the project plans based on pre-existing conditions (cracking and rutting) that exceed its criteria for applying a preservation warranty.

Exclusions should consider damage caused by accidents, natural disasters or other force majeure events, and Department maintenance or testing activities. To the extent possible it should also define limits on liability related to third party claims arising from accidents or force majeure events during the warranty period. The contractor's coverage may name the Department as an additional insured party in third party general liability and automotive liability insurance policies.

When implementing longer-term Performance warranties, provisions should provide exclusion for excessive loading and specify a maximum estimated cumulative single axle load (ESAL) for the project that, if exceeded by a certain percentage, will void the warranty. Also, if incorporating weigh-in-motion devices, the Department may define exclusion for exceeding a one-time heavy load value.

4.7.10. Monitoring and Remedial Action

Warranty clauses must provide for condition surveys of warranted items, either at periodic intervals (e.g. annually) or at the end of the warranty for short-term items such as 1-year pavement preservation. This survey may be conducted in concert with the DOT's annual pavement condition survey or through an independent warranty monitoring program. This survey may also be conducted jointly with the contractor or unilaterally. The provisions should specify the notification requirements, survey intervals and where and how measurements will be taken for each pavement section. As an option consider using automated testing devices in concert with a network pavement management survey (e.g. an inertial profilometer to collect IRI and rutting data on the longitudinal wheel path) for warranted pavement sections and follow up with in depth distress surveys as needed.

If the survey indicates that the threshold criteria established in the warranty provision are exceeded at any time during the warranty period and the cause does not fall under a defined exclusion, then the Department must direct the contractor to perform remedial action. The provision should specify time frames necessary for providing the results of the survey, resolving disputes, and performing remedial action. The remedial action should define fixes for specific defects. The contract should provide direction on requirements for completing identified remedial action.

The scope of the remedial action may vary based on the extent of the distress or defective areas. For example, if more than a defined percentage (30%) of segments requires remedial action, then the entire warranted project may be subject to remedial action. For example, the Department specifies that if the total length of repairs for its one-year warranted Asphalt Concrete (AC) exceeds 500 feet for any one-half mile length for a lane or shoulder, then an additional 0.10 foot layer of AC should be applied to the entire one-half mile length on lanes and shoulders. State agencies that are very active in the use of warranties and have a wealth of experience with performance indicators and their measurement include Wisconsin DOT and Michigan DOT.

Emergency or temporary repairs of defects may also be necessary to protect against conditions hazardous to traffic. The provisions should specify the timeframes for temporary repairs and consequences for failing to meet these timeframes including back charging the contractor for the cost of Department-made repairs. See Sample Provision "Mississippi Maintained HMA" below.

4.7.11. Dispute Resolution

Warranty provisions must establish measures for settling potential disputes over remedial action. In addition to its standard administrative procedures, the Department currently uses partnering as a conflict resolution tool. For longer-term warranties, responsibility for settling disputes related to a

warranty is often delegated to a conflict resolution team (CRT) or a dispute review board (DRB). CRTs are typically set up on a project-by-project basis. They consist of an equal number of representatives from the contractor and the DOT who may or may not be directly involved in the project, plus one outside representative mutually agreed on by the contractor and the DOT. Costs associated with the outside representative are shared by the contractor and the DOT. CRTs have also been called dispute resolution teams and pavement evaluation teams. See Sample Provision “Illinois Warranty for Concrete Pavements” below.

DRBs are formal committees set up to resolve disagreements before they can delay or disrupt construction projects. DRBs typically consist of one to three members, and can be set up for specific projects or on a district or statewide basis. DRBs can be responsible for settling all project-related disputes or only disputes related to warranties. A DRB can also be established on a statewide basis dedicated to settling pavement warranty disputes that cannot be resolved at the project level.

4.7.12. Basis of Payment

Payment for warranted pavements can be made on a unit price item basis for construction and warranty work using actual verified quantities installed or using estimated plan quantities. The payments should include all materials, equipment, labor, incidentals, bonds, sampling and testing, monitoring, maintenance, and traffic control necessary to construct and maintain the pavement. If the Department is using quality assurance specifications with pay adjustments for quality, payment adjustment should apply to parameters that are not included in the warranty distress evaluations. See Sample Provision “Caltrans Traffic Control Payment Provision” below.

Payments may also be structured on a lump sum basis for warranty work with 100% payment for the warranted bid item at the commencement of the warranty period or based on periodic or graduated payments over the life of the warranty. Structuring periodic payments over the life of the warranty will provide an additional assurance that the contractor will meet its performance obligations during the warranty. See Sample Provision “Caltrans Asphalt Concrete Warranty Payment Provision” below.

4.7.13. Sample Provisions

Caltrans Warranty Selection Guide

Form 1 – Selection Criteria	
CALTRANS GUIDELINES FOR SELECTION OF A WARRANTY PROJECT	
(Circle either YES or NO)	
The proposed project is one of the following	
Preventative Maintenance Strategies (30mm or less):	YES / NO
Chip Seals (hot and cold applied)	
Microsurfacing	
Slurry Seals	

Total combined cracking less than 10%	YES / NO
Transverse cracks and Longitudinal cracking outside the wheel path are less than 6mm	YES / NO
Rutting less than 9mm in depth	YES / NO
Has bleeding occurred less than 10% of overall project	YES / NO
Are exclusion areas identified and are they less than 15%	YES / NO
Discussed project with Maintenance Reviewer	YES / NO
<p><i>If all yes's were circled above, then this project is a good candidate for the Warranty Pilot. If one or more no's were selected, then have a discussion with your Maintenance reviewer. Work with Project Management to move CCA date out the length of the Warranty period. This will provide appropriate resources to the RE. Verify that the exclusion areas are identified on the plan sheets.</i></p>	
<p>Source: Caltrans Pilot Warranty Evaluation Program, June 2006</p>	

Minnesota Pay-for Performance Pavement Marking Warranty

16.2.5 Pay for Performance Pavement Markings

“Pay for performance” is the payment for a product’s performance relative to a performance period. Pavement striping performance will require a product’s retro-reflectivity and color to meet or exceed established durability and quality standards, as specified by the warranted values. The performance period shall be five years.

16.2.5.1 Payment Provisions

Payment to the Contractor shall be made in accordance with the following table:

(%) Initial	(%) 1 st Year	(%) 2 nd Year	(%) 3 rd Year	(%) 4 th Year	(%) 5 th Year
25	15	15	15	15	15

The initial payment shall be made after all of the permanent striping included in the pay for performance pavement markings has been completed. The date of this completion shall be the beginning of the five-year performance period.

Michigan Material and Workmanship Pavement Warranty

Rights and Responsibilities of the Contractor. The Contractor:

1. Shall warrant to the Department that the warranted work will be free of defects in materials and workmanship. The warranty bond shall be described on a form furnished by the Department. The completed form shall be submitted to the Department prior to award of contract.
2. Is responsible for performing all warranty work including, but not limited to, maintaining traffic and restoring all associated pavement features, at the Contractor's expense.
3. Is responsible for performing all temporary or emergency repairs, resulting from being in non-compliance with the warranty requirements, using Department approved materials and methods.
4. Shall notify the Department and submit a written course of action for performing the needed warranty work a minimum of ten calendar days prior to commencement of warranty work, except in the case of emergency repairs as detailed in this special provision. The submittal must propose a schedule for performing the warranty work and the materials and methods to be used.
5. Shall follow a Department approved maintaining traffic plan when performing warranty work. All warranty work shall be performed under permit issued by the Region Utilities & Permits Engineer. The permit fee and an individual permit performance bond shall not be required. The permit insurance requirements, however, shall apply.
6. May be responsible for reimbursing the Department a portion of any incentive payments paid to the Contractor for early completion of the original work. Reimbursements will be required if the proposed maintaining traffic plan for corrective action requires lane closures during peak hour traffic. Peak hours will be determined by the Region Traffic and Safety Engineer. The daily reimbursement amount shall not exceed twenty five percent of the original daily earned incentive payment. The Department shall determine the actual percentage on a project by project basis. 03SP502(H) C&T:SCB 4 of 10 09-29-03
7. Shall furnish to the Department, in addition to the regular performance and lien bond for the contract, supplemental performance and lien bonds covering any warranty work being performed. These supplemental bonds shall be furnished prior to beginning any warranty work, using Department approved forms. These supplemental bonds shall be in the amount required by the Department to cover the costs of warranty work.
8. Shall complete all warranty work prior to conclusion of the warranty period, or as otherwise agreed to by the Department.
9. Shall be liable during the warranty period in the same manner as Contractors currently are liable for their construction related activities with the Department pursuant to the standard specifications, including, but not limited to subsections 103.06, 107.10 and 107.11. This liability shall arise and continue only during the period when the Contractor is performing warranty work. This liability is in addition to the Contractor performing and/or paying for any required warranty work, and shall include liability for injuries and/ or damages and any expenses resulting therefrom which are not attributable to normal wear and tear of traffic and weather, but are due to non-compliant materials, faulty workmanship, and to the operations of the Contractor as set forth more fully in subsections 103.06, 107.10 and 107.11 of the standard specifications.

Mississippi Maintained HMA

907-403.01.5.1--Pavement Distress Indicators, Thresholds and Remedial Action. The *Distress Identification Manual for the Long-Term pavement Performance Program* (U.S.

Department of Transportation Federal Highway Administration Publication No. FHWA-RD-03-031) will be used as the basis for identifying the type, quantity and severity level for each applicable pavement distress. After each distress has been identified and quantified, MDOT will utilize DEDUCT CURVE VIEWER v2.0 software application to determine the amount of deduct points produced by each quantified pavement distress. Both publication FHWA-RD-03-031 and the DEDUCT CURVE VIEWER v2.0 software application are available for distribution upon request by contacting the Department's Research Division. MDOT will conduct pavement distress surveys on the mainline and/or ramps by dividing the project into nominal one (1) mile sections. Each section will be divided into ten approximately 500-foot long segments. Two 500-foot segments in each section will be evaluated for pavement distress at the approximate third points of the section.

As a minimum, MDOT will conduct the distress surveys annually. The Contractor will be advised prior to conducting the survey. The results will be made available to the Contractor, District, Central Office (Construction), and FHWA within 30 days. If the Contractor disputes the survey findings, written notification of the dispute will be made to the Department within 15 days from the date the Contractor received the results.

If any of the threshold levels are met or exceeded and the Contractor agrees to the validity of the pavement distress survey, the Contractor will remedy the distress. If the Contractor does not agree with the pavement distress survey results, the Conflict Resolution Team will resolve the dispute within 30 days from the date the Contractor received the results.

Remedial action will be taken in all segments of the project where the threshold is met or exceeded. If areas outside the survey segments are suspected of meeting or exceeding a threshold level, the Department will conduct the distress survey in other randomly located 500-foot sections to see if a threshold level has been met or exceeded. Unless disputed, remedial action will be taken within 45 days of the survey that indicated the threshold is met or exceeded provided that conditions and weather are acceptable as determined by the Department. Remedial action will be applied to the entire segment(s) in which the threshold is met or exceeded unless otherwise noted under remedial action. If anytime during the maintenance period, 30 percent or more of the total project segments require or have received any remedial action, then the entire project will receive a remedial action as determined by the Contractor and the Department. If an impasse develops, the Conflict Resolution Team will make a final determination. -4- S. P. No. 907-403-1 - Cont'd.

The Contractor will perform the remedial work. If, in the opinion of the Department, the problem requires immediate attention for the safety of the traveling public, and the Contractor cannot commence the remedial work within eight hours after notification, the Department can have the remedial work performed by other forces and bill the Contractor accordingly. Remedial work performed by other forces will not alter the requirements, responsibilities, or obligations of the Contractor.

If remedial work or elective/preventive action work performed by the Contractor necessitates a corrective action within the project limits to the pavement or pavement markings, then such corrective action will be the responsibility of the Contractor. The Contractor will also be responsible for any and all damage to any highway feature resulting from such action. The Contractor will not be held responsible for distresses which are caused by factors beyond the control of the Contractor. Repairs of distresses caused by such factors will be the responsibility of MDOT.

Illinois Warranty for Concrete Pavements

Conflict Resolution Team. The responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding the pavement distress experienced, the extent and severity thereof, and the warranty work required to be

performed in accordance with the warranty requirements. The CRT will also mediate disputes related to unanticipated significant increases in traffic. It is the intention of the parties that the CRT be assembled with the full cooperation of both parties, and that the Contractor and Department will devote their full attention to the prompt consideration of the matter by the CRT. Neither party shall neglect its obligation of good faith hereunder nor shall unreasonable delay be imposed that would hinder the prompt decision of the CRT. The decision of the CRT shall be final and binding on the Contractor and Department. The CRT will consist of three members:

- a. One selected, provided, and compensated by the Department.
- b. One selected, provided, and compensated by the Contractor.
- c. One qualified third party, mutually selected by the Department and the Contractor.

Compensation for the third party member will be equally shared by the Department and the Contractor.

Caltrans Asphalt Concrete Warranty Payment Provision

Warranty will be paid for on a lump sum basis. The contract lump sum price paid for warranty shall include full compensation for providing a warranty for asphalt concrete and for furnishing labor, materials, tools, equipment, and incidentals, and doing the work involved in repairing defective areas in the asphalt concrete, including job site inspection, placement and removal of temporary patches, cold planing, repair of defective areas, sealing cracks and replacement of traffic stripes, pavement markings and pavement markers obliterated by patches and repairs, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer. Payment for the warranty item will be made in 10 equal payments. The first payment will be made on the third progress payment date after the warranty period begins, and subsequent payments will be made monthly thereafter.

Caltrans Traffic Control Payment Provision

Full compensation for furnishing construction area signs required for the direction of public traffic through or around the work during the warranty period and for erecting or placing, maintaining (including covering and uncovering as needed) and, when no longer required, removing construction area signs at locations shown on the plans, during the warranty period, shall be considered as included in the contract lump sum price paid for warranty and no separate payment will be made therefore

Except for flagging costs, full compensation for providing the traffic control system shown on the plans (including signs), during the warranty period, shall be considered as included in the contract lump sum price paid for warranty and no separate payment will be made therefore

Flagging costs will be paid for as provided in Section 12-2.02, "Flagging Costs," of the Standard Specifications.

APPENDIX

APPENDIX 1 – PROJECT SELECTION TOOL WORKSHEETS

- 1-A – WORKSHEET INSTRUCTIONS
- 1-B – PROJECT SUMMARY WORKSHEET
- 1-C – EVALUATION OF PROJECT SCOPE AND CHARACTERISTICS
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APPENDIX 2 – DELIVERY SYSTEMS

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APPENDIX 1 – PROJECT SELECTION TOOL WORKSHEETS

1-A – WORKSHEET INSTRUCTIONS

Instructions

1. On the Project Summary Worksheet, complete the date of the review, project name, and selection committee members.
2. Answer all questions on Worksheet 1. Record the score for each delivery method on the form as indicated.

Note: if any one of the answers is "No-Go," the delivery method need not be considered further for that project.

3. After all the questions are answered, total the score for each delivery system and transfer the totals to the Scoring Summary section on the Project Summary Worksheet.
4. Repeat steps 2 and 3 for Worksheet 2.
5. Total the scores from Worksheets 1 and 2 the in Scoring Summary section of the Project Summary Worksheet.
6. Select the project delivery method with the highest score and record any important selection committee comments in the space provided.

Note: Complete one project delivery selection questionnaire for each unique project. If multiple project alternatives or subprojects are being considered, complete one questionnaire for each unique variation.

1-B – PROJECT SUMMARY WORKSHEET

Project Name	_____				

Date of Review	_____				
Selection Committee	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
Scoring Summary					
	Design- Bid-Build	Design- Sequencing	CM-at-Risk	Design-Build/ Low-Bid	Design-Build/ Best-Value
Project Scope and Characteristic Score (Worksheet 1)	_____	_____	_____	_____	_____
Success Criteria Score (Worksheet 2)	_____	_____	_____	_____	_____
Total Score	_____	_____	_____	_____	_____
Final Selection					
	<input type="checkbox"/> Design-Bid-Build <input type="checkbox"/> Design-Sequencing <input type="checkbox"/> Construction Manager-at-Risk				
	<input type="checkbox"/> Design-Build/Low-Bid <input type="checkbox"/> Design-Build/Best-Value				
Comments:	_____				

1-C – WORKSHEET 1 – EVALUATION OF PROJECT SCOPE AND CHARACTERISTICS

Project Scope and Characteristic Criteria	Design-Bid-Build	Design Sequencing	CM-at-Risk	Design-Build/Low Bid	Design-Build/Best-Value
<p>1a) <i>Where is the project in the project development process?</i></p> <p><input type="checkbox"/> A. Detailed or final engineering stage</p> <p><input type="checkbox"/> B. Preliminary design</p> <p><input type="checkbox"/> C. Conceptual engineering stage</p>	<p>1a)_____</p> <p>A. 10 pts B. 5 pts C. 0 pts</p>	<p>1a)_____</p> <p>A. No-Go B. 5 pts C. 10 pts</p>	<p>1a)_____</p> <p>A. No-Go B. 5 pts C. 10 pts</p>	<p>1a)_____</p> <p>A. No-Go B. 5 pts C. 10 pts</p>	<p>1a)_____</p> <p>A. No-Go B. 5 pts C. 10 pts</p>
<p>1b) <i>What is the size/complexity of the project?</i></p> <p><input type="checkbox"/> A. Relatively simple, smaller project with no need for specialized outside expertise</p> <p><input type="checkbox"/> B. Medium size project with more technically complex components and schedule complexity</p> <p><input type="checkbox"/> C. Large, complex project with significant schedule complexity (e.g. multiple phases, extensive third-party issues, specialized expertise needed)</p>	<p>1b)_____</p> <p>A. 10 pts B. 5 pts C. 0 pts</p>	<p>1b)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1b)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1b)_____</p> <p>A. 10 pts B. 5 pts C. 0 pts</p>	<p>1b)_____</p> <p>A. No-Go B. 5 pts C. 10 pts</p>
<p>1c) <i>Does the project involve significant impacts to highway users and local businesses/community during construction?</i></p> <p><input type="checkbox"/> A. No more than typical</p> <p><input type="checkbox"/> B. More than typical</p> <p><input type="checkbox"/> C. Much more than typical</p>	<p>1c)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>1c)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1c)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1c)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1c)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>
<p>1d) <i>Does the project present right-of-way limitations that would benefit from the construction manager or design-builder's assistance?</i></p> <p><input type="checkbox"/> A. No more than typical</p> <p><input type="checkbox"/> B. More than typical</p> <p><input type="checkbox"/> C. Much more than typical</p>	<p>1d)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>1d)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1d)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1d)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1d)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>
<p>1e) <i>Does the project present environmental permitting issues that would benefit from the construction manager or design-builder's assistance?</i></p> <p><input type="checkbox"/> A. No more than typical</p> <p><input type="checkbox"/> B. More than typical</p> <p><input type="checkbox"/> C. Much more than typical</p>	<p>1e)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>1e)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1e)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1e)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1e)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>
<p>1f) <i>Does the project present utility or third-party issues that would benefit from the construction manager or design-builder's assistance?</i></p> <p><input type="checkbox"/> A. No more than typical</p> <p><input type="checkbox"/> B. More than typical</p> <p><input type="checkbox"/> C. Much more than typical</p>	<p>1f)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>1f)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1f)_____</p> <p>A. 5 pts B. 5 pts C. 10 pts</p>	<p>1f)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1f)_____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>

Project Scope and Characteristic Criteria	Design-Bid-Build	Design Sequencing	CM-at-Risk	Design-Build/Low Bid	Design-Build/Best-Value
<p>1g) <i>Does the project present unique work restrictions or traffic maintenance requirements that would benefit from the construction manager or design-builder's assistance?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>1g) _____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>1g) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1g) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1g) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1g) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>
<p>1h) <i>Would the project benefit by packaging features of work to allow early lock-in of construction materials/labor pricing?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>1h) _____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>1h) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1h) _____</p> <p>A. 5 pts B. 10 pts C. 10 pts</p>	<p>1h) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1h) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>
<p>1i) <i>Would the project benefit by raising quality standards/benchmarks to minimize maintenance and achieve lower life-cycle cost?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>1i) _____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>1i) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>1i) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1i) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>	<p>1i) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p>
<p>Project Characteristics Subtotal (Total questions 1a-1g)</p>	<p>Score _____</p>	<p>Score _____</p>	<p>Score _____</p>	<p>Score _____</p>	<p>Score _____</p>

1-D – WORKSHEET 2 – EVALUATION OF SUCCESS CRITERIA

Success Criteria	Design-Bid-Build	Design Sequencing	CM-at-Risk	Design-Build/Low Bid	Design-Build/Best-Value
2a) Schedule Issues					
<p>1. <i>Can time-savings be realized through concurrent design and construction activities (fast-tracking)?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>2a-1)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2a-1)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2a-1)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2a-1)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2a-1)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>
<p>2. <i>Can the schedule be compressed?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>2a-2)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2a-2)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2a-2)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2a-2)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2a-2)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>
2b) Opportunity for Innovation					
<p>1. <i>Will the project scope allow for innovation (e.g., alternate designs, traffic management, construction means and methods, etc.)</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>2b-1)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2b-1)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2b-1)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2b-1)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2b-1)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>
<p>2. <i>Must the project scope be primarily defined in terms of prescriptive specifications (i.e., predetermined materials and methods), or can performance specifications (expressing desired end results) be used, or a combination of both?</i></p> <p><input type="checkbox"/> A. Primarily prescriptive specifications <input type="checkbox"/> B. Combination of prescriptive and performance specifications <input type="checkbox"/> C. Performance specifications for significant elements</p>	<p>2b-2)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2b-2)_____</p> <p>A. 2 pts B. 2 pts C. 0 pts</p>	<p>2b-2)_____</p> <p>A. 5 pts B. 5 pts C. 2 pts</p>	<p>2b-2)_____</p> <p>A. 2 pts B. 5 pts C. 2 pts</p>	<p>2b-2)_____</p> <p>A. 2 pts B. 5 pts C. 5 pts</p>
2c) Quality Enhancement					
<p>1. <i>Will there be opportunities for contractors to provide materials or methods that provide greater value than normally specified by the state on similar projects?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>2c-1)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2c-1)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2c-1)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>2c-1)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2c-1)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>

Success Criteria	Design-Bid-Build	Design Sequencing	CM-at-Risk	Design-Build/Low Bid	Design-Build/Best-Value
<p>2. <i>Will there be the opportunity for realization of greater value due to designs tailored to contractor's area of expertise?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>2c-2)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2c-2)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2c-2)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2c-2)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2c-2)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>
<p>3. <i>Will warranties or maintenance agreements be used?</i></p> <p><input type="checkbox"/> A. No <input type="checkbox"/> B. Limited to short-term workmanship and materials <input type="checkbox"/> C. Much more than typical</p>	<p>2c-3)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2c-3)_____</p> <p>A. 0 pts B. 0 pts C. 0 pts</p>	<p>2c-3)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>2c-3)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2c-3)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>
2d) Cost Issues					
<p>1. <i>Will there be opportunities for contractors to provide designs with lower initial construction costs than those typically specified by the state?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>2d-1)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2d-1)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2d-1)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2d-1)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2d-1)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>
<p>2. <i>Will there be opportunities for contractors/subcontractors to provide alternate design concepts with lower lifecycle costs than those typically specified by the state?</i></p> <p><input type="checkbox"/> A. No more than typical <input type="checkbox"/> B. More than typical <input type="checkbox"/> C. Much more than typical</p>	<p>2d-2)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2d-2)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2d-2)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>	<p>2d-2)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2d-2)_____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p>
<p>3. <i>Is funding for the project committed and available?</i></p> <p><input type="checkbox"/> A. Secured for design phase only or cannot support accelerated construction <input type="checkbox"/> B. Funding can accommodate fast-tracking to some extent <input type="checkbox"/> C. Funding will accommodate compressed schedule/fast-tracking</p>	<p>2d-3)_____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p>	<p>2d-3)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2d-3)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>	<p>2d-3)_____</p> <p>A. 0 pts B. 2 pts C. 2 pts</p>	<p>2d-3)_____</p> <p>A. 0 pts B. 2 pts C. 5 pts</p>

Success Criteria	Design-Bid-Build	Design Sequencing	CM-at-Risk	Design-Build/Low Bid	Design-Build/Best-Value
<p>4. <i>Will the cost of procurement affect the number of bidders?</i></p> <p><input type="checkbox"/> A. Procurement cost would significantly limit competition</p> <p><input type="checkbox"/> B. Procurement cost could affect the number of bidders</p> <p><input type="checkbox"/> C. Procurement cost would not be a significant issue given the size or complexity of the project</p>	<p>2d-4)_____</p> <p>A. 0 pts</p> <p>B. 2 pts</p> <p>C. 5 pts</p>	<p>2d-4)_____</p> <p>A. 2 pts</p> <p>B. 2 pts</p> <p>C. 0 pts</p>	<p>2d-4)_____</p> <p>A. 5 pts</p> <p>B. 2 pts</p> <p>C. 0 pts</p>	<p>2d-4)_____</p> <p>A. 2 pts</p> <p>B. 2 pts</p> <p>C. 0 pts</p>	<p>2d-4)_____</p> <p>A. 5 pts</p> <p>B. 2 pts</p> <p>C. 0 pts</p>
<p>5. <i>Will project budget control benefit from the use of formal contingencies?</i></p> <p><input type="checkbox"/> A. No benefit</p> <p><input type="checkbox"/> B. A formal contingency may permit the Department to add project scope or enhance quality within the constraints of its published budget</p> <p><input type="checkbox"/> C. A formal contingency is required to allow the Department to maximize project scope and quality within the constraints of its published budget.</p>	<p>2d-5)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. 0 pts</p>	<p>2d-5)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. 0 pts</p>	<p>2d-5)_____</p> <p>A. 0 pts</p> <p>B. 2 pts</p> <p>C. 5 pts</p>	<p>2d-5)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. 0 pts</p>	<p>2d-5)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. 0 pts</p>
2e) Staffing Issues					
<p>1. <i>Does the Department have the expertise and resources necessary for a complicated procurement process?</i></p> <p><input type="checkbox"/> A. Inadequate resources or expertise</p> <p><input type="checkbox"/> B. Limited resources or expertise</p> <p><input type="checkbox"/> C. Adequate resources and expertise</p>	<p>2e-1)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. 0 pts</p>	<p>2e-1)_____</p> <p>A. 2 pts</p> <p>B. 0 pts</p> <p>C. 0 pts</p>	<p>2c-1)_____</p> <p>A. 0 pts</p> <p>B. 2 pts</p> <p>C. 5 pts</p>	<p>2e-1)_____</p> <p>A. 0 pts</p> <p>B. 2 pts</p> <p>C. 2 pts</p>	<p>2c-1)_____</p> <p>A. 0 pts</p> <p>B. 2 pts</p> <p>C. 5 pts</p>
<p>2. <i>Are resources available to complete the design?</i></p> <p><input type="checkbox"/> A. Resources are available to complete design</p> <p><input type="checkbox"/> B. Resources are available for partial design</p> <p><input type="checkbox"/> C. Specialized expertise, not available in-house, is required</p>	<p>2e-2)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. No-Go</p>	<p>2e-2)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. No-Go</p>	<p>2c-2)_____</p> <p>A. 5 pts</p> <p>B. 0 pts</p> <p>C. 0 pts</p>	<p>2e-2)_____</p> <p>A. 2 pts</p> <p>B. 2 pts</p> <p>C. 5 pts</p>	<p>2c-2)_____</p> <p>A. 2 pts</p> <p>B. 5 pts</p> <p>C. 5 pts</p>
<p>3. <i>Are resources available to provide construction oversight?</i></p> <p><input type="checkbox"/> A. Resources are available</p> <p><input type="checkbox"/> B. Full-time construction oversight could strain staff resources</p> <p><input type="checkbox"/> C. Resources are unavailable</p>	<p>2e-3)_____</p> <p>A. 5 pts</p> <p>B. 2 pts</p> <p>C. No-Go</p>	<p>2e-3)_____</p> <p>A. 5 pts</p> <p>B. 2 pts</p> <p>C. No-Go</p>	<p>2e-3)_____</p> <p>A. 2 pts</p> <p>B. 5 pts</p> <p>C. 5 pts</p>	<p>2e-3)_____</p> <p>A. 2 pts</p> <p>B. 2 pts</p> <p>C. 5 pts</p>	<p>2e-3)_____</p> <p>A. 2 pts</p> <p>B. 5 pts</p> <p>C. 5 pts</p>
<p>Success Criteria Subtotal (Total questions 2a-2e)</p>	<p>Score _____</p>	<p>Score _____</p>	<p>Score _____</p>	<p>Score _____</p>	<p>Score _____</p>

APPENDIX 2 – DELIVERY SYSTEMS

2.1 Design-Sequencing

2.1-A – LEGISLATION

Assembly Bill No. 405

CHAPTER 378

An act to add and repeal Article 6.5 (commencing with Section 217) of Chapter 1 of Division 1 of the Streets and Highways Code, relating to highways, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor September 15, 1999. Filed with Secretary of State September 15, 1999.]

LEGISLATIVE COUNSEL'S DIGEST

AB 405, Knox. Highways: construction: contracts.

Existing law authorizes the Department of Transportation to make and enter into, in the manner provided by law, any contracts required for the performance of its duties.

This bill would authorize the department to conduct a pilot project to let design-sequencing contracts, as defined, for the design and construction of no more than 6 transportation projects, to be selected by the Director of Transportation. The bill would require the department to prepare a yearly status report on its contracting methods, procedures, costs, and delivery schedules and, upon completion of all design-sequencing contracts, to establish a peer review committee for preparation of a report for submittal to the Legislature that describes and evaluates the pilot project. The bill would require the design-sequencing contracts to be awarded in accordance with specified procedures.

The bill would specify that its provisions shall become inoperative on July 1, 2004, and as of January 1, 2005, would be repealed.

The bill would declare that it is to take effect immediately as an urgency statute.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) Under the traditional means of contracting for the construction of highway improvements, construction of any portion of the project cannot be commenced until the Department of Transportation has developed complete plans and specifications for the project, placed the contract out for bid, and awarded the contract.

(b) Recent construction practices have shown that there is potential for faster performance and cost savings if commencement of construction is not dependent upon completion of plans and specification for the entire project, but only completion of plans and specifications for each construction phase. This form of contracting is commonly known as design-sequencing

contracting.

(c) To test whether the design-sequencing form of contracting would be beneficial to California in the administration of its highway improvement program, the Director of Transportation should be authorized to implement a pilot program of no more than six highway improvement projects using design-sequencing design to permit concurrent construction activities.

SEC. 2. Article 6.5. (commencing with Section 217) is added to Chapter 1 of Division 1 of the Streets and Highways Code, to read:

ARTICLE 6.5. DESIGN-SEQUENCING DEMONSTRATION AND EVALUATION PROGRAM

217. For purposes of this article, the following terms have the following meanings:

(a) "Design-sequencing" is a method of contracting that enables the sequencing of design activities to permit each construction phase to commence when design for that phase is complete, instead of requiring design for the entire project to be completed before commencing construction.

(b) A "design-sequencing contract" is a contract between the department and a contractor that requires the department to prepare a design and permits construction of a project to commence upon completion of design for a construction phase.

(c) "Design" is a plan completed to a level of 30 percent.

217.2. (a) Notwithstanding Chapter 1 (commencing with Section 10100) of Part 2 of Division 2 of the Public Contract Code, except Section 10128 of that code, and Chapter 10 (commencing with Section 4525) of Division 5 of Title 1 of the Government Code, the department may conduct a pilot program to let design-sequencing contracts for the design and construction of no more than six transportation projects, to be selected by the director. For the purpose of this article, these projects shall be deemed public works.

(b) In selecting projects for the pilot program authorized under subdivision (a), the director shall attempt to balance geographical areas among test projects as well as pursue diversity in the types of projects undertaken.

(c) To the extent available, the department shall seek to incorporate existing knowledge and experience on design-sequencing contracts in carrying out its responsibilities under subdivision (a).

217.4. Not later than July 1 of each year for which the design-sequencing contracts are underway, the department shall prepare a status report on its contracting methods, procedures, costs, and delivery schedules. Upon completion of all design-sequencing contracts, notwithstanding Section 7550.5 of the Government Code, the department shall establish a peer review committee to prepare a report for submittal to the Legislature that describes and evaluates the outcome of the contracts provided for in this article, stating the positive and negative aspects of using design-sequencing as a contracting method.

217.6. Design-sequencing contracts shall be awarded in accordance with all of the following:

(a) The department shall advertise design-sequencing projects by special public notice to contractors.

(b) Contractors shall be required to provide prequalification information establishing appropriate licensure and successful past experience with the proposed work.

217.8. This article shall become inoperative on July 1, 2004, and, as of January 1, 2005, is repealed, unless a later enacted statute, that is enacted before January 1, 2005, deletes or extends the date on which it becomes inoperative and is repealed.

SEC. 3. This act is an urgency statute necessary for the immediate preservation of the public

peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to assist in alleviating, as soon as possible, the loss of productivity caused by the continuing traffic gridlock and delay on the state's system of highways, it is necessary that this act take effect immediately.

Assembly Bill No. 2607

CHAPTER 340

An act to amend and repeal Sections 217, 217.2, 217.4, and 217.6 of, and to repeal Section 217.8 of, the Streets and Highways Code, relating to highways.

[Approved by Governor September 6, 2000. Filed
with Secretary of State September 8, 2000.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2607, Knox. Highways: pilot project: contracts.

Existing law authorizes the Department of Transportation to conduct a pilot project to let design-sequencing contracts, as defined, for the design and construction of no more than 6 transportation projects, to be selected by the Director of Transportation.

This bill would increase the number of permissible transportation projects to 12.

Existing law provides that these provisions shall become inoperative on July 1, 2004, and as of January 1, 2005, are repealed.

This bill would delete the July 1, 2004, inoperative date of these provisions and would continue the January 1, 2005, repeal date.

The people of the State of California do enact as follows:

SECTION 1. Section 217 of the Streets and Highways Code is amended to read:

For purposes of this article, the following terms have the following meanings:

(a) "Design-sequencing" is a method of contracting that enables the sequencing of design activities to permit each construction phase to commence when design for that phase is complete, instead of requiring design for the entire project to be completed before commencing construction.

(b) A "design-sequencing contract" is a contract between the department and a contractor that requires the department to prepare a design and permits construction of a project to commence upon completion of design for a construction phase.

(c) "Design" is a plan completed to a level of 30 percent.

(d) This section shall remain in effect only until January 1, 2005, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2005, deletes or extends that date.

SEC. 2. Section 217.2 of the Streets and Highways Code is amended to read:

217.2. (a) Notwithstanding Chapter 1 (commencing with Section 10100) of Part 2 of Division 2 of the Public Contract Code, except Section 10128 of that code, and Chapter 10 (commencing with Section 4525) of Division 5 of Title 1 of the Government Code, the department may conduct a pilot program to let design-sequencing contracts for the design and construction of no more than 12 transportation projects, to be selected by the director. For the purpose of this article, these projects shall be deemed public works.

(b) In selecting projects for the pilot program authorized under subdivision (a), the director

shall attempt to balance geographical areas among test projects as well as pursue diversity in the types of projects undertaken.

(c) To the extent available, the department shall seek to incorporate existing knowledge and experience on design-sequencing contracts in carrying out its responsibilities under subdivision (a).

(d) This section shall remain in effect only until January 1, 2005, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2005, deletes or extends that date.

SEC. 3. Section 217.4 of the Streets and Highways Code is amended to read:

217.4. (a) Not later than July 1 of each year for which the design-sequencing contracts are underway, the department shall prepare a status report on its contracting methods, procedures, costs, and delivery schedules. Upon completion of all design-sequencing contracts, notwithstanding Section 7550.5 of the Government Code, the department shall establish a peer review committee to prepare a report for submittal to the Legislature that describes and evaluates the outcome of the contracts provided for in this article, stating the positive and negative aspects of using design-sequencing as a contracting method.

(b) This section shall remain in effect only until January 1, 2005, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2005, deletes or extends that date.

SEC. 4. Section 217.6 of the Streets and Highways Code is amended to read:

217.6. Design-sequencing contracts shall be awarded in accordance with all of the following:

(a) The department shall advertise design-sequencing projects by special public notice to contractors.

(b) Contractors shall be required to provide prequalification information establishing appropriate licensure and successful past experience with the proposed work.

(c) This section shall remain in effect only until January 1, 2005, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2005, deletes or extends that date.

SEC. 5. Section 217.8 of the Streets and Highways Code is repealed.

Senate Bill No. 1210

CHAPTER 795

An act to amend Section 217 of, and to add and repeal Sections 217.7, 217.8, and 217.9 of, the Streets and Highways Code, relating to highways.

[Approved by Governor September 27, 2004. Filed with Secretary of State September 27, 2004.]

LEGISLATIVE COUNSEL'S DIGEST

SB 1210, Torlakson. Design-sequencing contracts.

Existing law authorizes the Department of Transportation until January 1, 2005, to conduct a pilot project to let design-sequencing contracts, as defined, for the design and construction of not more than 12 transportation projects, to be selected by the Director of Transportation.

This bill would establish a phase 2 of this pilot project that would be in effect until January 1, 2010. The bill would require the director to consider selecting projects that improve interregional and intercounty routes. The bill would require the department to prepare an annual status report each year a contract is in effect under the project and would require a peer review committee to report to the Legislature on using design-sequencing as a contracting method.

The people of the State of California do enact as follows:

SECTION 1. Section 217 of the Streets and Highways Code is amended to read:

217. The following definitions apply for the purposes of this article:

(a) "Design" is a plan completed to a level of 30 percent.

(b) "Design-sequencing" is a method of contracting that enables the sequencing of design activities to permit each construction phase to commence when design for that phase is complete, instead of requiring design for the entire project to be completed before commencing construction.

(c) A "design-sequencing contract" is a contract between the department and a contractor that requires the department to prepare a design and permits construction of a project to commence upon completion of design for a construction phase.

(d) This section shall remain in effect only until January 1, 2010, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2010, deletes or extends that date.

SEC. 2. Section 217.7 is added to the Streets and Highways Code, to read:

217.7. (a) Notwithstanding Chapter 1 (commencing with Section 10100) of Part 2 of Division 2 of the Public Contract Code, except Section 10128 of that code, and Chapter 10 (commencing with Section 4525) of Division 5 of Title 1 of the Government Code, the department may conduct a phase two pilot program to let design-sequencing contracts for the design and construction of not more than 12 transportation projects, to be selected based on criteria established by the director. For the purpose of this article, these projects shall be deemed public works.

(b) In selecting projects for the pilot program authorized under subdivision (a), the director shall attempt to balance geographical areas among test projects as well as pursue diversity in the

types of projects undertaken. In this process, the director shall consider selecting projects that improve interregional and intercounty routes.

(c) To the extent available, the department shall seek to incorporate existing knowledge and experience on design-sequencing contracts in carrying out its responsibilities under subdivision (a).

(d) This section shall remain in effect only until January 1, 2010, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2010, deletes or extends that date.

SEC. 3. Section 217.8 is added to the Streets and Highways Code, to read:

217.8. (a) Not later than July 1, 2006, and July 1 of each subsequent year during which a contract under the phase two pilot program, as described in Section 217.7, is in effect, the department shall prepare a status report on its contracting methods, procedures, costs, and delivery schedules. Upon completion of all design-sequencing contracts, but in no event later than January 1, 2010, the department shall establish a peer review committee or continue in existence the peer review committee created pursuant to former Section 217.4, which was added by Chapter 378 of the Statutes of 1999, and direct that committee to prepare a report for submittal to the Legislature that describes and evaluates the outcome of the contracts provided for in Section 217.7, stating the positive and negative aspects of using design-sequencing as a contracting method.

(b) This section shall remain in effect only until January 1, 2010, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2010, deletes or extends that date.

SEC. 4. Section 217.9 is added to the Streets and Highways Code, to read:

217.9. Design-sequencing contracts under the phase two pilot program, as described in Section 217.7, shall be awarded in accordance with all of the following:

(a) The department shall advertise design-sequencing projects by special public notice to contractors.

(b) Contractors shall be required to provide prequalification information establishing appropriate licensure and successful past experience with the proposed work.

(c) This section shall remain in effect only until January 1, 2010, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2010, deletes or extends that date.

2.1-B – NOMINATION PACKAGE (PROJECT SELECTION)

Design-Sequencing Nomination Fact Sheet
Dist-Co-Rte-KP (PM)
Project EA

Project Description

Include project features, purpose and need. Multiple EAs under a single environmental document/determination or corridor study can be considered as one project under the Design-Sequencing Pilot Program.

Include project location map

Project Proposal

Include information on the status of the overall project, environmental document/determination and right of way. Any potential issues should be identified with a discussion of the risks involved.

Schedule

Compare current project schedule with the proposed design-sequenced schedule. Is the project currently on schedule?

Cost/Funding

Discuss project cost and funding sources.

Permits/Agreements

Discuss anticipated permits and agreements (Railroad Agreements, Cooperative Agreements, etc.).

Utilities

Discuss status of utilities.

Transportation Benefit

List potential benefit(s) of using design-sequencing for the project.

Public/Political Support of Project

Does the project have wide public/political support?

Why is this project a good design-sequencing candidate?

Discuss the benefits of delivering this project as a design-sequencing candidate. Discuss the proposed sequencing plan for the project.

Design-Sequencing Project Selection Criteria					
<p>The following information is required for each project submittal in order to be considered. The criteria should be evaluated by the project team with input from the appropriate functional units.</p> <p>In applying the following criteria, some items will require a simple yes or no answer. In those cases mark either 1 (Yes) or 5 (No). Other criteria will need to be evaluated using a more subjective range. In those cases, mark between 1 and 5. A narrative explanation may be attached to help explain.</p> <p style="text-align: right;">Date: _____</p>					
SELECTION CRITERIA	YES 1	2	3	4	NO 5
Minimal public/environmental controversy					
Project approval obtained prior to advertising (PA&ED)					
Environmental approval for entire project?					
All major decisions made?					
Project footprint established					
Right of Way parcels have been identified					
No condemnations expected					
Utility conflicts identified					
Relocations have been identified and responsibility and time frame for relocation has been agreed upon					
Environmental permits identified and readily obtainable					
List of permits provided					
Schedule for obtaining permits included					
Endangered species					
Hazardous Material Site Assessment completed					

Bridge Site Data complete and submitted					
Permits to enter for foundation investigation have been obtained					
Cooperative Agreements					
Funding commitments obtained					
Project lends itself to concurrent design and construction					
Minimum 30% design					
Significant time savings anticipated by using Design-Sequencing					

2.1-C – PLANS PREPARATION GUIDANCE

Plans Preparation Guidance

The information contained below is intended to supplement the Plans Preparation Manual dated June 2001. Design-Sequencing will require numerous changes to the initial bid plans as well as new plans altogether. The following is a suggested method for providing plans in subsequent sequences. The Project Engineer and Resident Engineer should agree on the procedure and format of plan changes early in the process.

Procedure:

- (1) Each licensed engineer (Engineer) will receive their own final Design-Sequencing plans in dgn format. These files shall be used as the basis for any revisions prepared and submitted. The Engineer is responsible for protecting access to their electronic dgn files and any release of these files to other individuals shall comply with the requirements of the January 30, 1995 memo signed by R. P. Weaver subject title, "Electronic Signatures."
- (2) All plan sheet revisions shall follow one of the formats described below and shall be submitted to District Office Engineer for circulation and review prior to forwarding to Construction with an attached memorandum to document the submittal and the revision number.
- (3) Electronic dgn files for all revisions shall be placed in a rights protected folder for archive purposes. These files will be available for preparation of final as-builts.

Minor Revisions (Redlined Sheet):

A minor revision is a change that can be clearly made to an existing plan sheet while leaving all previous information on the sheet. An example would be a change in elevation or other text. Changes in an alignment or pavement edge may be difficult to show clearly over the previous information and discretion needs to be used to determine the appropriate revision procedure.

Minor revisions shall follow standard practice utilized for electronic as-built revisions (Section 2-3.2 of the Plans Preparation Manual). All information on the original file shall remain and be protected on their current levels. All new information, including striking through text, shall be placed on level 62. If it is not clear what has been added to the plan sheet, consider using "clouding" to designate new information. Added text shall conform to the following requirements:

- a. Level 62
- b. Color Red (color=3)
- c. Weight 3
- d. Font 23 height 2.25 width 2.25

A Design-Sequencing revision block should be placed on the plan near the sheet title. A bullet list describing the revisions shall also be provided within the block. The "Preliminary For Bidding Purposes Only" note should be replaced with "Design-Sequence xx" where "xx" represents the Sequence number.

The date to the right of the Engineer's signature should be struck through and the date of the revision placed beside it. The Plans Approval Date shall remain the same as the date shown on all other plan sheets. If sheet TH-5 (sheet number 121) is being revised for the first time, then the new revised sheet will be sheet TH-5R1 (sheet number 121R1). The original sheet number 121 should be crossed out with note "Superseded by mm/dd/yyyy revision – See Sheet 121R1". See *Suggested Naming Convention for Plans below for further details.*

Hard copies of revised plans should be plotted in color so that everything on level 62 plots red and all other levels plot black. Your CADD Coordinator can provide guidance on this procedure.

Refer to the Sample Redlined Sheets below.

Major Revision (Replacement Sheet):

A major revision is a change that cannot be shown clearly on an existing plan sheet as described above. This type of revision will require submittal of a new sheet to replace the previous sheet. Previous conflicting information shall be deleted and all new information shall be placed on the proper levels and conform to the requirements in the Plans Preparation Manual. This is critical because these will become the final as-built plans and no additional quality assurance will be provided such as is provided by Drafting Services for the original plan sheets.

The Engineer's signature and seal information shall be placed on the sheet. The date to the right of the signature shall be the date the revisions are made. The Plans Approval Date shall remain the same as the date shown on all other plan sheets.

The Design-Sequencing revision block and related revision numbers in triangles shall be removed from the sheet. A separate block shall be placed in the bottom center of the sheet, or as close as possible, with the text, "This revision supersedes Sequence xx, Sheet No. xxx, dated mm/dd/yyyy." A bullet list describing the revisions shall also be provided within the block. The "Preliminary For Bidding Purposes Only" note should be replaced with "Design-Sequence xx" where "xx" represents the Sequence number.

The revised sheet shall be titled and numbered in sequence with the plan sheet it is replacing. For example, if sheet L-22 (sheet number 45) is being replaced, then the new sheet will be sheet L-22A (sheet number 45A). See *Suggested Naming Convention for Plans below for further details.*

The sheet number 45 which has been replaced should be crossed out with note "Superseded by mm/dd/yyyy revision – See Sheet 45A".

Refer to the Sample Replacement Sheets below.

Additional Information (New Sheet):

When additional information is needed that is not currently shown on the plans, a new sheet shall be submitted.

All information on new sheets shall be placed on the proper levels and conform to the requirements in the Plans Preparation Manual. This is critical because these will become the final as-built plans and no additional quality assurance will be provided such as is provided by Drafting Services for the original plan sheets.

The Engineer's signature and seal information shall be placed on the sheet. The date to the right of the signature shall be the date the new sheet is created. The Plans Approval Date shall remain the same as the date shown on all other plan sheets.

A separate block shall be placed in the bottom center of the sheet, or as close as possible, with the text, "New Sheet in Sequence xx". The new sheet shall be titled and numbered in sequence with related plan sheets. For example, new sheet SW-9E will follow a similar detail sheet SW- 9D and will be numbered 723E if sheet SW-9D is numbered 723D. A note indicating Sequence number should also be placed on the sheet. *See Suggested Naming Convention for Plans below for further details.*

Refer to the Sample New Sheets below.

Suggested Naming Convention for Plans

What constitutes a Change/Revision? – Any change or revision that requires either the Contractor or Caltrans field personnel to take action.

Procedure:

- (1) In general, the same plan sheet numbers should be carried throughout the life of the project. Only newly added sheets should bear a letter suffix.
- (2) If a plan sheet is superseded by a new revision, then the original plan sheet should be crossed out with the note "Superseded by mm/dd/yyyy revision". The revised sheet should contain the note "This revision supersedes Sequence xx, Sheet No. xxx, dated mm/dd/yyyy."). The same note and sheet numbers should be carried through the life of project. For example:
 - a. If on 5/5/2005 a revised sheet is issued in Sequence 2 to replace Sheet No. 500, dated 12/1/2004, then the original Sheet No. 500 should be crossed out with note "Superseded by 5/5/2005 revision".
 - b. The revised sheet should be numbered as No. 500A.
 - c. The revised sheet should contain the note, "This revision supersedes Sequence 2, Sheet No. 500, dated 12/1/2004."
 - d. Both the sheet number and the note should be carried throughout the life of the project.
 - e. Revisions and CCOs, and all changes are handled the same in regards to Plan Sheet Naming Convention.
- (3) For newly added sheets:
 - a. Use cascading method to number the new sheets. For example:
 - i. To add 3 sheets to the end of the project plans, with the last sheet number being 2500, the new sheets should be numbered as 2500A, 2500B, and 2500C.
 - ii. To insert 3 sheets between 1000 and 1001, the new sheets should be numbered as 1000A, 1000B, and 1000C.

- iii. To insert 3 sheets between 1000A and 1000B, the new sheets should be numbered as 1000A1, 1000A2, and 1000A3.
- iv. To insert 3 sheets between 1000A1 and 1000A2, the new sheets should be numbered as 1000A1a, 1000A1b, and 1000A1c.
- v. To insert 3 sheets between 1000C and 1001, and there is no 1000D, 1000E, or 1000F, the new sheets should be numbered as 1000D, 1000E, and 1000F.
- b. Each new sheet should contain the note, “New Sheet in Sequence xx”. For example, if the new sheet is added in Sequence 2 and does not exist in Sequence 1, then the note should say, “New sheet in Sequence 2.”
- c. The same sheet number and note should be carried throughout the life of project regardless of sequence plans issued.

Design Sequencing Naming Examples:

It should be noted that in addition to the naming convention, the District will be required to maintain a log of the files to maintain complete active plan sheet list.

Original Plan Sheet numbering	1000 1001 1002
Issuance of revised plans	1000 crossed out 1000R1 for 1 st revision (crossed out) 1000R2 for 2 nd revision 1001 1002
Insertion of additional plans	1000 1000A Inserted Sheet 1000B Inserted Sheet 1000C Inserted Sheet 1001 1002
Sequence 2 Plan Sheet numbering	1000 1000A (if no changes were made since 1 st insertion) 1000B crossed out 1000B1 assumes revision made 1000B1a Inserted Sheet 1000C 1001 1002

Total Plan Sheet number will remain the same.

The policy is to provide a unique name for every plan sheet created or modified. This naming

convention should also be used in the CCO process as well. As a Change Order is processed and drafted which causes a change to a plan sheet, the same naming convention should be used and all plan holders notified in the same manner described in Document Control Process.

For identifying changes on the plan sheet, the clouding envelope should be used to circle the change. For multiple changes in a small area the cloud should cover the entire area. For changes that affect the entire sheet and clouding is insufficient the plan shall be stamped at top of sheet “Numerous changes on entire sheet”.

Deletion of work should be identified by crossing that portion of the drawing as well as clouding the area. Under no circumstances should the drawing be removed from the sheet.

Most importantly, the block description shall be used on the sheet describing the change. The current table in use by Structures Design is acceptable.

Δ	Date of Revision	Description of Revision	Initials of Revisionist	Initials Checked by

CONTRACT CHANGE ORDER NO ____
SHEET ____ OF ____

Note: This recommendation could apply for document control beyond Plan Sheets if District determines need for Total Document Control.

Plan Sheet Document Control Process

Purpose:

Provide a coordinated process that allows all plan holders and stakeholders in the delivery of plan documents for use in the design and construction of Caltrans Design Sequence Projects. This process is to be effective from PSE to the Project Close Out.

Background:

As projects progress, numerous revisions and additions are being made to the project Plans, Specifications and Estimates (PS&E). Often times, affected functions are not aware of these changes and result in conflicts that require additional revisions/change orders.

Suggestion 1: Establish a full time Document Control Manager

This position will be established prior to the issuance of Design Sequence 1 or at the beginning of PSE and this to be determined on a case by case basis.

The responsibilities of this position are outlined in the following:

- (1) Identify all functions, internal and external, that either creates or revises any portion of the project PS&E.
- (2) Communicate with all functions continually to ensure that they are working with the most up to date version of the PS&E at any given time.
- (3) Perform an independent Quality Control of the PS&E by maintaining consistency throughout and that all guidelines are adhered to by all functions that generate plans for the project.
- (4) Maintain electronic and hardcopy set of all plan documents.
- (5) Assist in plan document availability during bidding process.
- (6) Communicate each and every revision to all PS&E holders, PS&E creators, stakeholders, etc.
- (7) Facilitate resolution of any discrepancies in the PS&E of any nature.
- (8) Coordinate during construction phase all changes with Resident Engineer as well as provide drafting support of the changes to the As-Built DGN files.
- (9) Coordinate the completion and delivery of As-Built Plans per District Policy/Process.

Suggestion 2: Establish a Document Control Process

Establish a full time Document Control Manager within the function of Design. The position will facilitate efforts and responsibilities that already exist. The position consolidates these efforts of document control from design through project close out.

The District assigns a full time staff to manage the control and process of PS&E delivery of a project.

The District will establish clear boundaries of responsibility between the Design Manager and the Document Control Manager. It is suggested that the Document Control Manager report to the Design Manager.

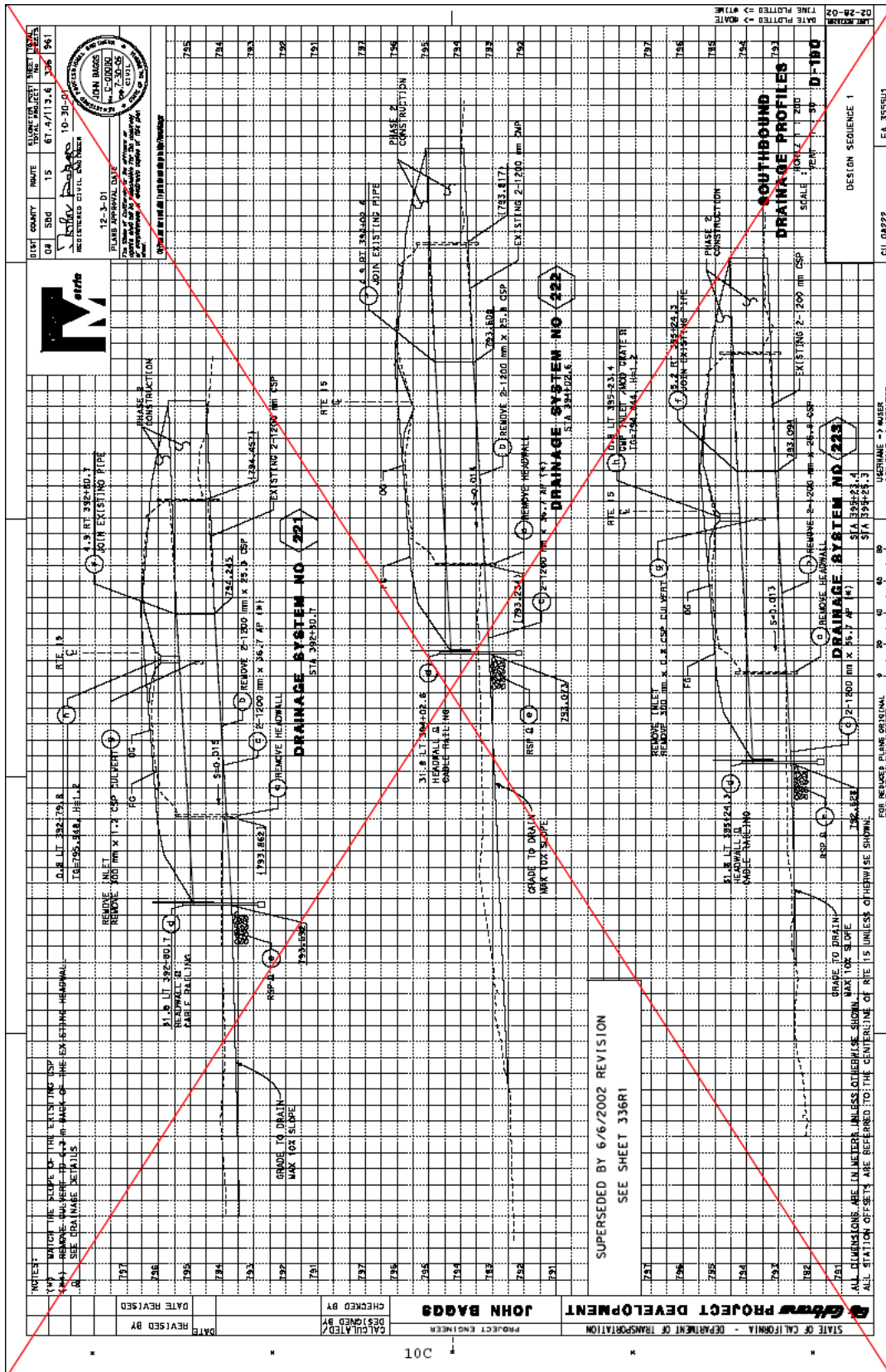
Each organization or functional group that creates or revises any portion of the project PS&E shall be identified by the Document Control Manager. The Manger shall instruct all functions of the PS&E delivery policy and ensure that the process is followed. The DCM will establish communication plan relative to all stakeholders.

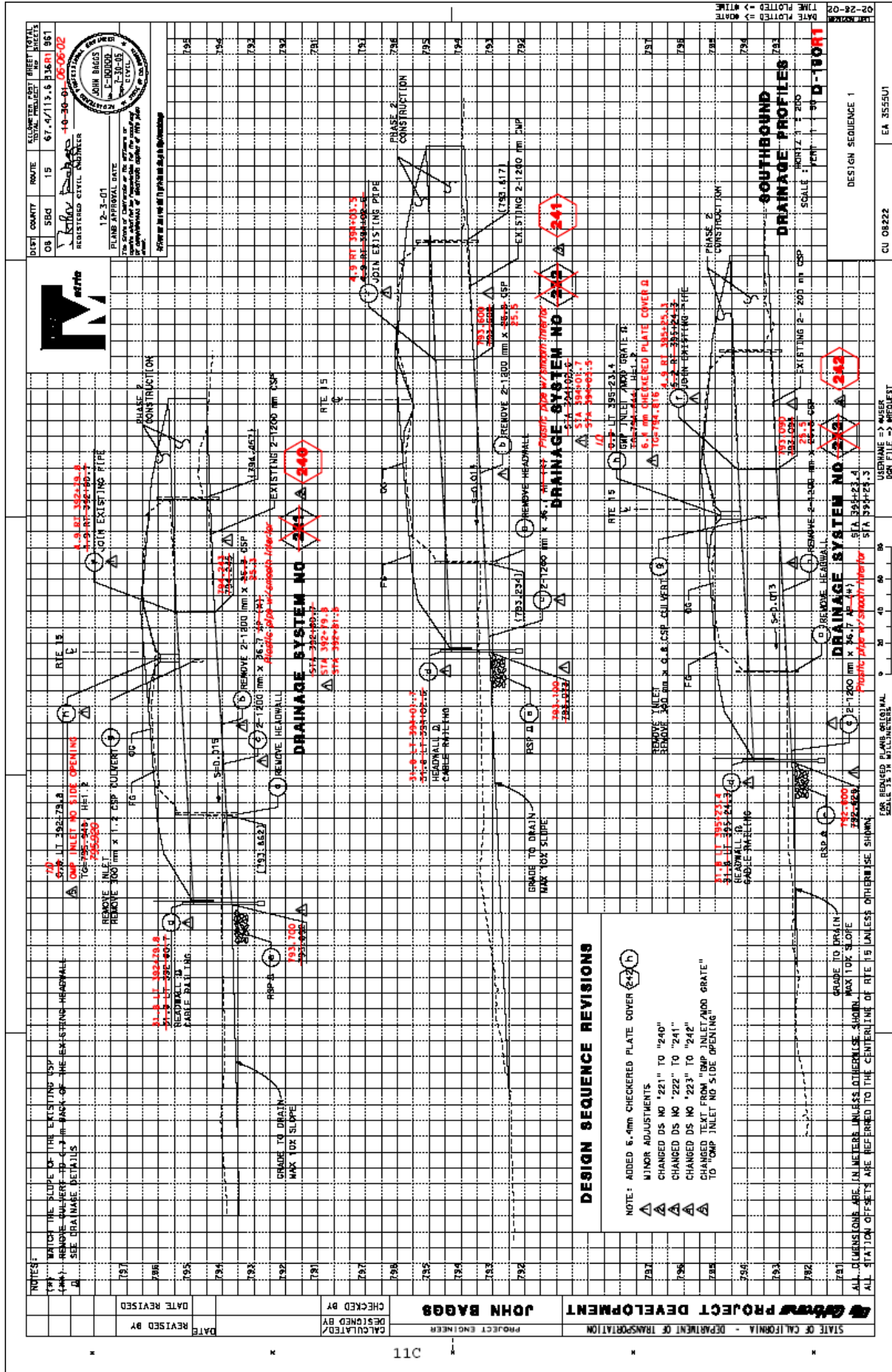
Each organization or functional group must submit all revisions of the PS&E to the DCM. The delivery of the revisions may as well be delivered directly to the specific desired recipient for expediency. The DCM will maintain control log of document delivery.

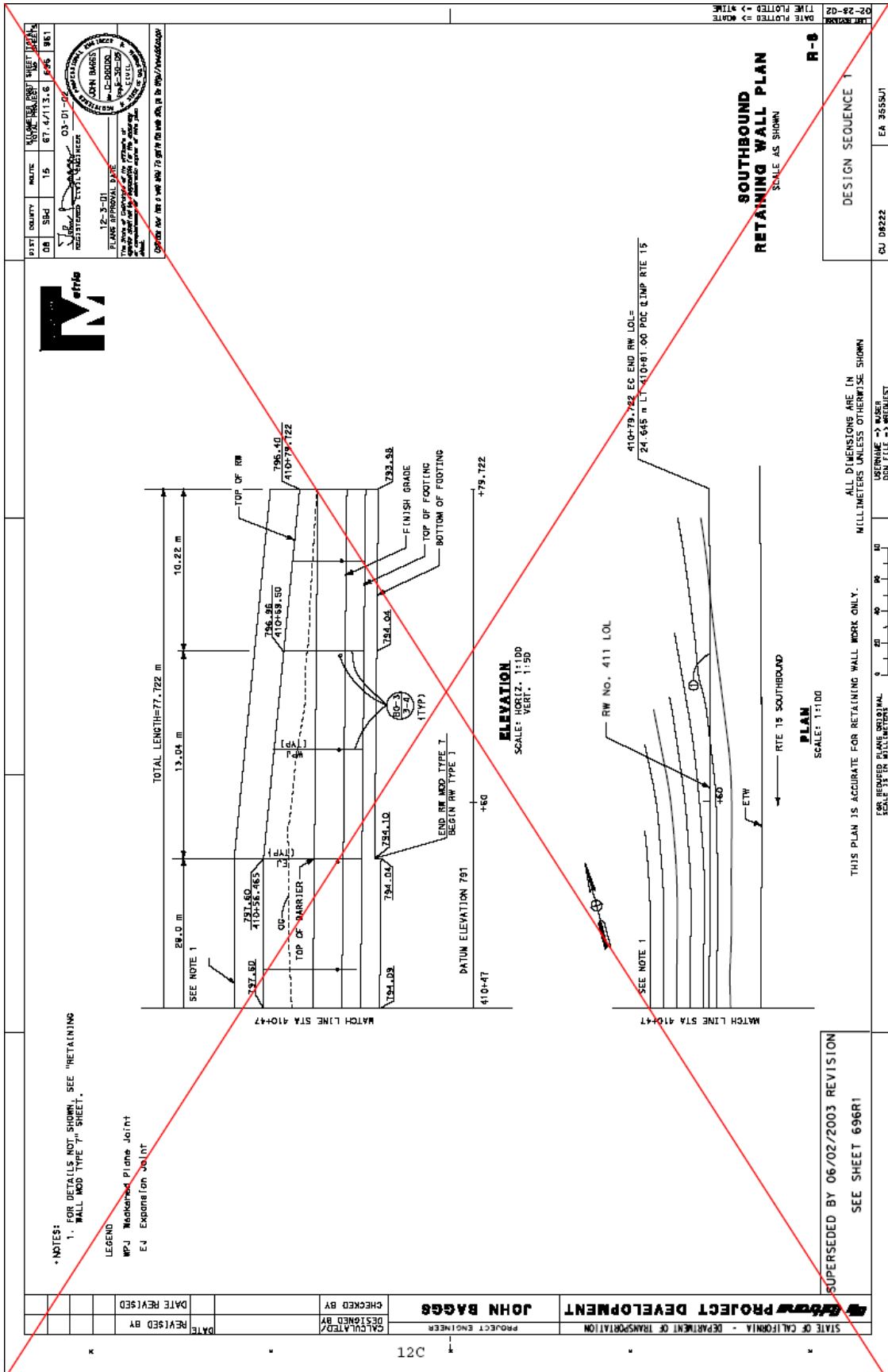
The DCM will immediately notify all stakeholders of PS&E additions, revisions, etc. Notification will include general description of plan that is being delivered and purpose of plan delivery. In addition, a TIFF image of plan will be included for viewing and printing. An electronic file of the plan will be included in web site access location as well as well as hard copy of full plan set updated.

As project moves from design to construction the role of this position should evolve into design support for construction for document control, Change Order drafting and As-Built completion. This position would follow existing policy for Change orders and As-builts.

SAMPLE REDLINED SHEETS







STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER	JOHN BAGGS
DESIGNED BY	CHECKED BY	
REVISIONS	DATE	DATE

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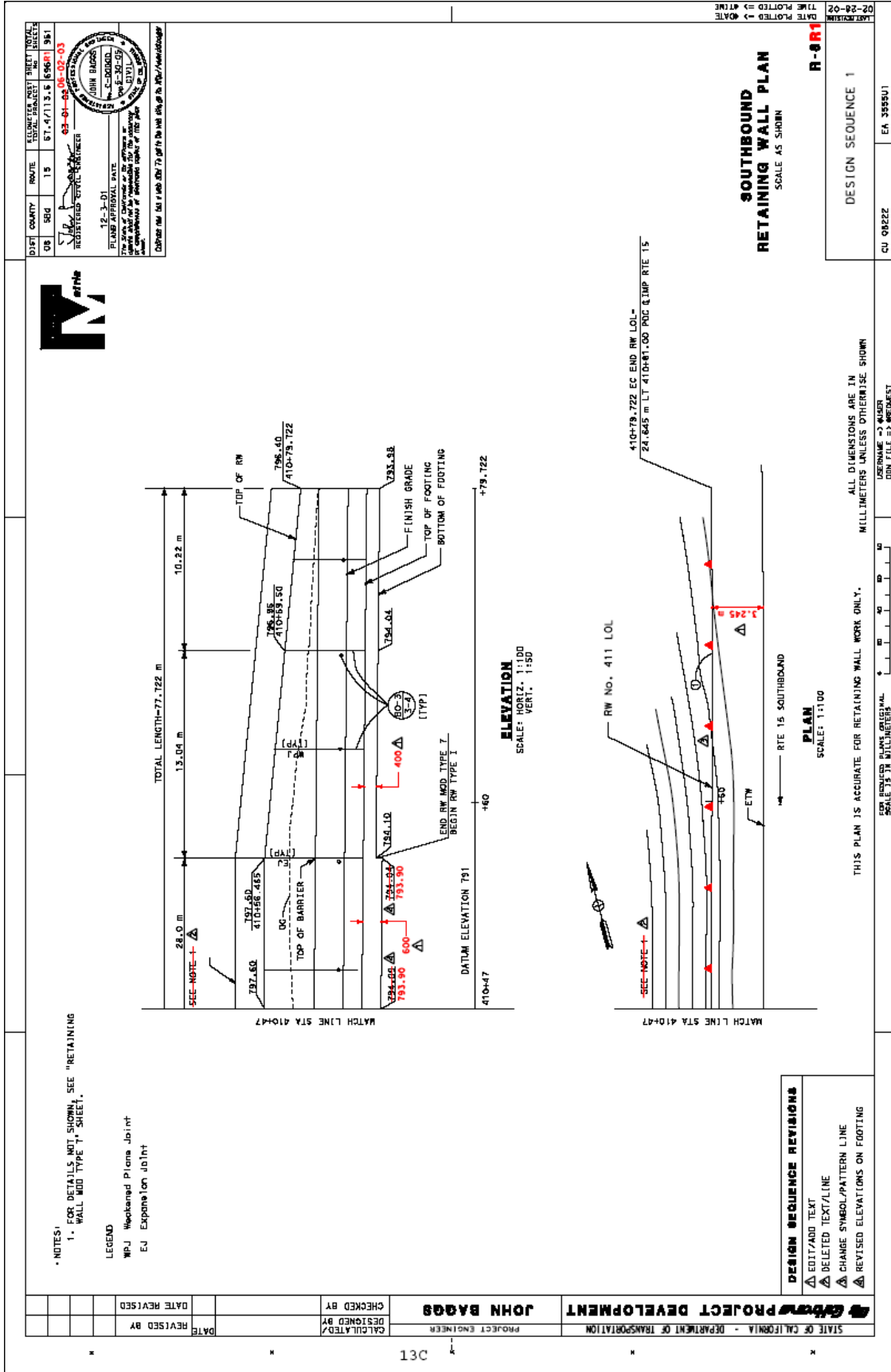
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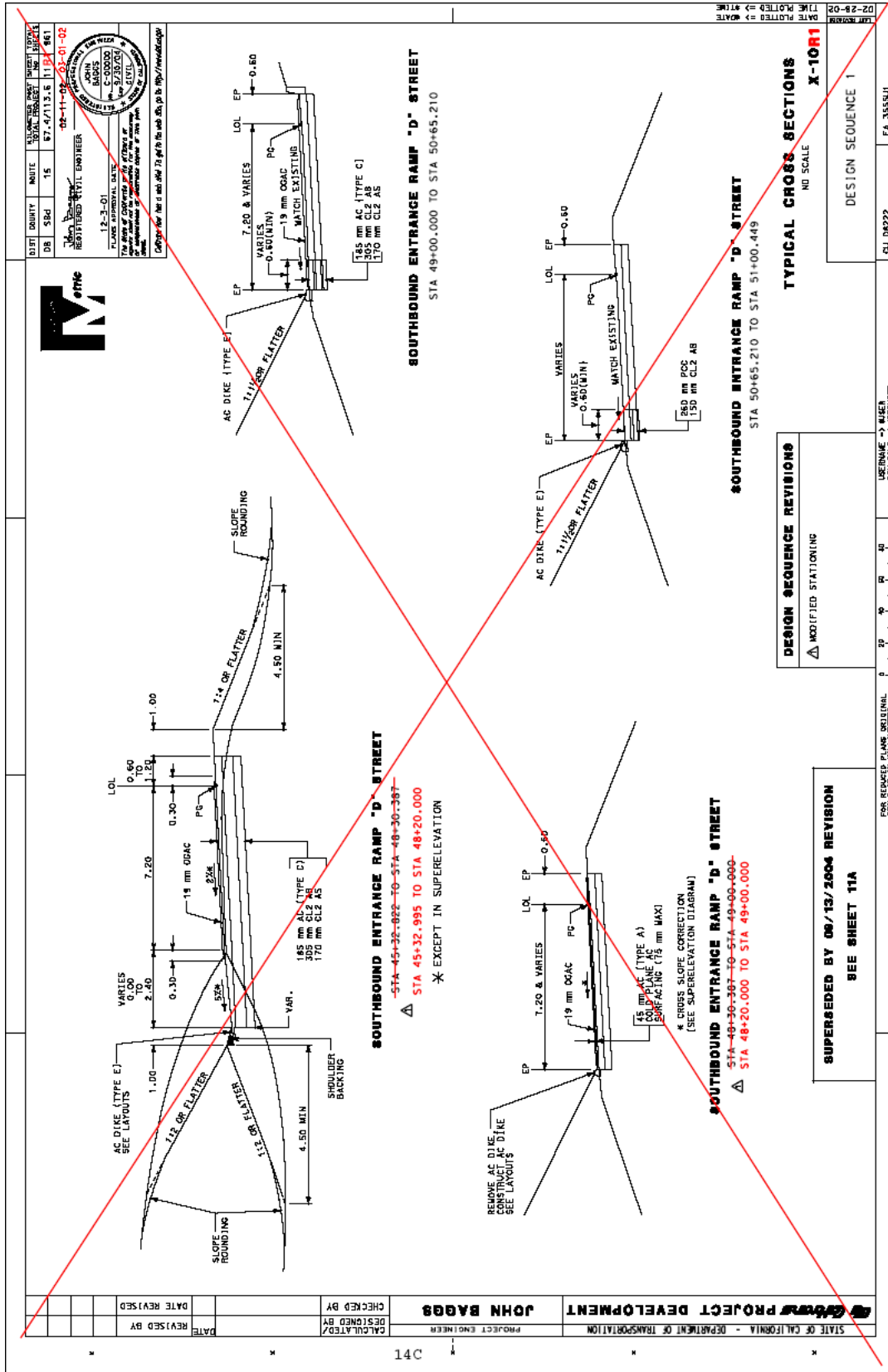
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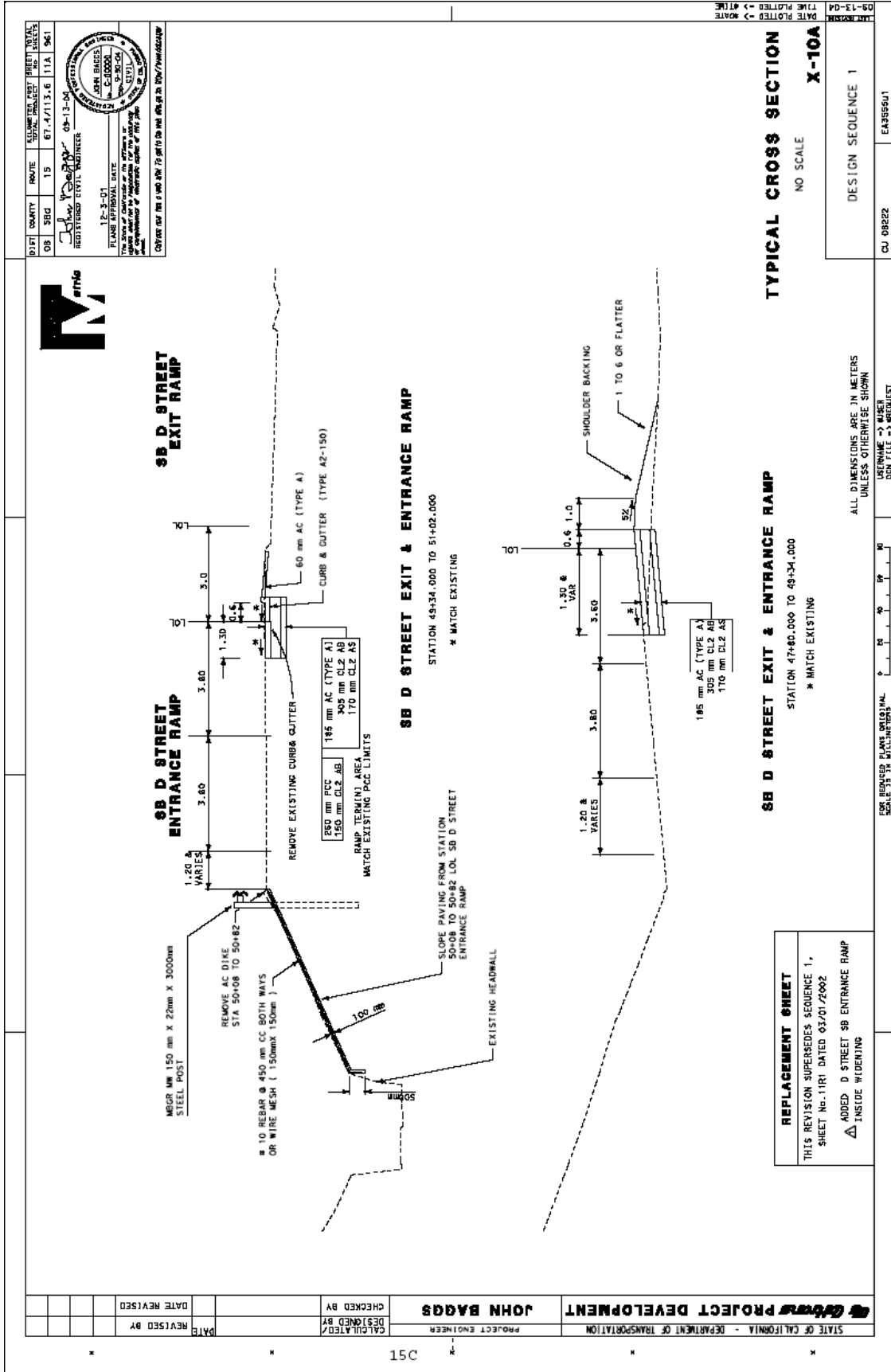
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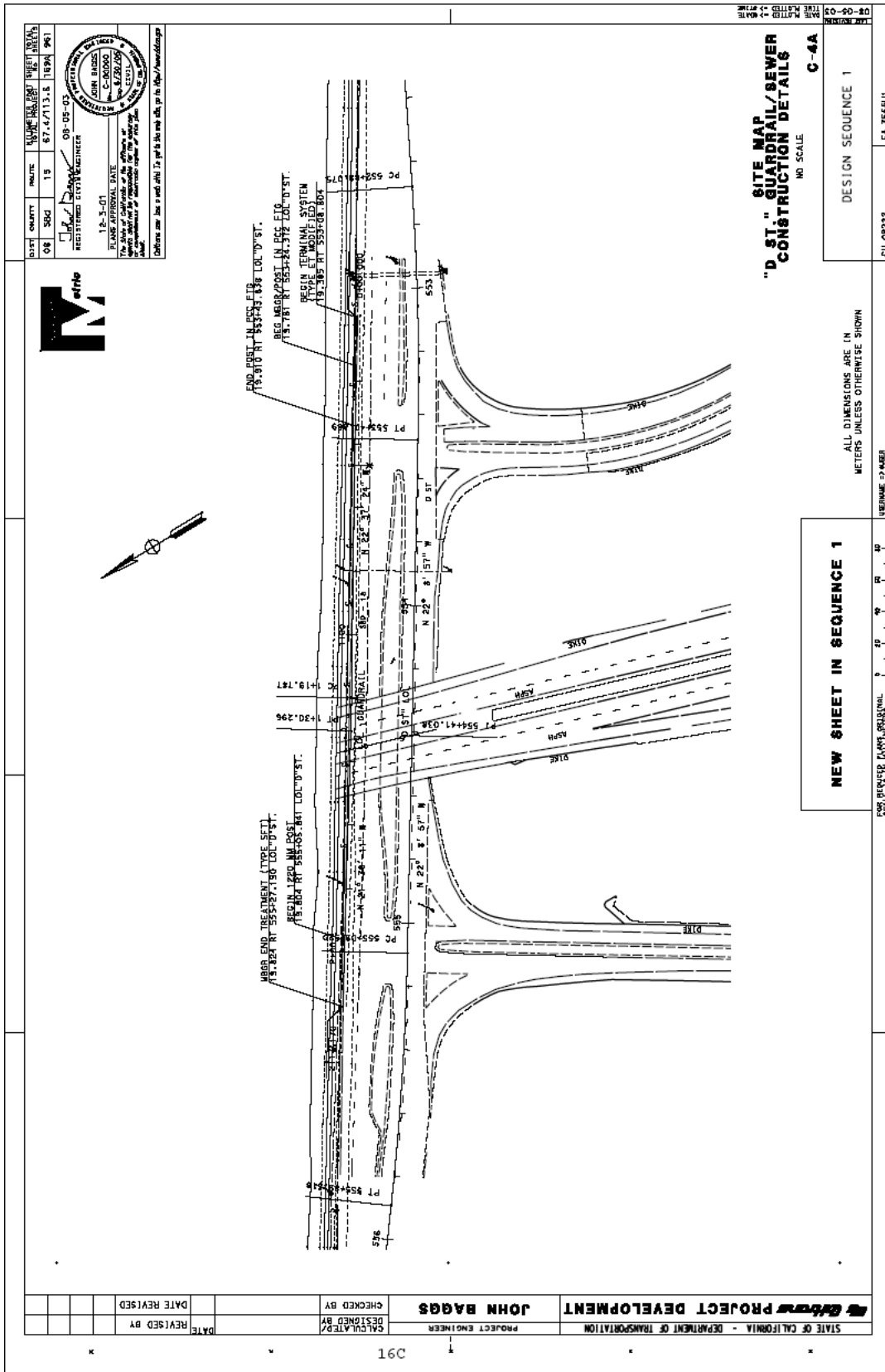


SAMPLE REPLACEMENT SHEETS





Sample New Sheets

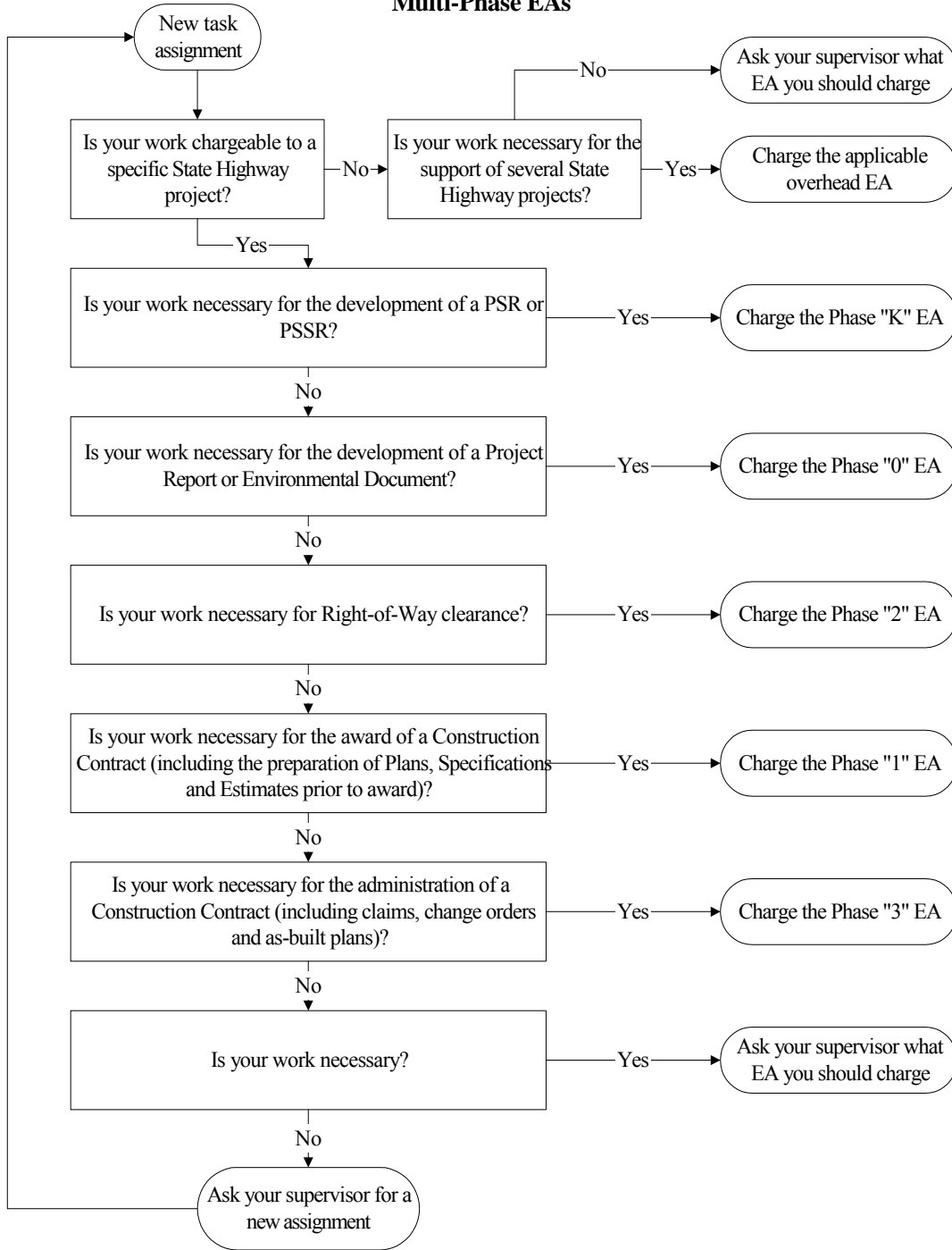


<p>STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION</p> <p>PROJECT ENGINEER JOHN BAGGS</p> <p>CALCULATED BY DESIGNED BY CHECKED BY</p>	<p>DATE REVISION BY</p> <p>DATE</p>	<p>REVISIONS</p> <p>NO. DATE BY</p>	<p>11-24-04 12-3-01 15 67-4713.6 (E) 981</p> <p>11-24-04 12-3-01</p> <p>REVISIONS</p> <p>NO. DATE BY</p>	<p>11-24-04 12-3-01</p> <p>11-24-04 12-3-01</p>	<p>11-24-04 12-3-01</p> <p>11-24-04 12-3-01</p>	<p>11-24-04 12-3-01</p> <p>11-24-04 12-3-01</p>	<p>11-24-04 12-3-01</p> <p>11-24-04 12-3-01</p>
<p>NOTES</p> <ol style="list-style-type: none"> For additional details of Terminal System (Type ET), refer to the manufacturer's installation instructions. Terminal System (Type ET) must be constructed so that the full length of the terminal system is in the "travel" zone. The Guard Rail Extruder head of the terminal system shall be offset 12 inches from the edge of traveled way. Slide Guard Rail Extruder over the end of the rail element and attach to Post No. 1 with lag screws. Do not bolt rail element to post. Guard Rail Extruder attachment brackets have 3 holes in each bracket to provide tolerance adjustment. Use the holes in the bracket closest to center of Post No. 1. Drill 5/16" pilot holes to accommodate lag screws. Attach strut to Post No. 1 and 2 foundation tubes with hex head bolts, washers and hex nuts. Bolts extend through the strut, steel foundation tube, and wood bolts. Do not bolt rail to face downward. For length and type of guard railing or barrier, the terminal system is attached to, see Project Plans. For minimum length of guard railing used with terminal system end treatments, see Standard Plans AT7D and AT7E. Attach rail element to this post and block. Payment for this post, block and hardware included in payment for the type of railing or barrier. The terminal system is attached to, not part of the payment for Terminal System (Type ET). Yellow retroreflective sheeting, as provided by Terminal System (Type ET) manufacturer, shall be adhered to the face of extruder head. The sheeting shall be consistent with the design pattern and colors of a Type P object marker panel. Attach rail to Post No. 2 (no wood block) in same manner shown in section B-B. Do not bolt rail to Post No. 1. See Note 3. Terminal System (Type ET) is an in-line end treatment for guard railing or single-faced barrier railing where there are conditions will not accommodate use of a flared end treatment. Do not use Terminal System (Type ET) where extrusion of the rail on the back side of the installation would be in the path of pedestrian or vehicular traffic. A continuous rail element section between Post Nos. 1 and 2 (no intermediate rail splice) may continue to be used in existing installations. New installations shall be constructed as shown. For details on concrete footing, see Standard Plan AT7FA. Detail. Everything will be as per Detail D except from the depth of the footing will be 185 mm. Cut steel foundation tube to a depth of 875 mm and remove soil plate. 							
<p>SECTION A-A</p> <p>SECTION B-B</p>							
<p>PLAN</p> <p>ELEVATION</p>							
<p>TERMINAL SYSTEM (TYPE ET) MODIFIED See Notes 9 and 10</p>							
<p>"D. ST. GUARDRAIL/SEWER CONSTRUCTION DETAILS" NO SCALE C-4B</p>							
<p>DESIGN SEQUENCE 2</p>							
<p>NEW SHEET IN SEQUENCE 2</p>							
<p>ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN</p>							
<p>FOR REVISIONS ONLY</p>							

2.1-D – CHARGING PRACTICES (INTERNAL)

Caltrans Standard Charging Rules

**Capital Outlay Support
Multi-Phase EAs**



TIME CHARGING EXAMPLES

Example 1:

In Example 1, a Project Manager, reporting to level 6, is splitting 13 hours between two different sequences of this pilot project, 5 hours to the Initial Bid Package and 8 hours to Sequence 1, prior to construction. All hours are charged to the “1” phase since the project is not yet in construction.

From Sunday 03/07/2004 to Saturday 03/13/2004 Find View All < 1-2 of 2 >											
Mon 9/13	Tue 9/14	Wed 9/15	Thu 9/16	Fri 9/17	Charge District	Expenditure Auth	Subjob	Special Designation	FAE	Activity Code	MSA
5.00	0.00	0.00	0.00	0.00	04	259011			2	100	P15
0.00	8.00	0.00	0.00	0.00	04	259011		SEQ1	2	100	P15

Example 2:

In Example 2, the Project Engineer, reporting down to level 7, has split time between preparing Summary of Quantities Sheets for the Initial Bid Package and preparing Construction Details for Sequence 1. Both activities are charged to the “1” phase because the project is not yet in construction.

From Sunday 07/11/2004 to Saturday 07/17/2004 Find View All < 1-2 of 2 >											
Mon 9/13	Tue 9/14	Wed 9/15	Thu 9/16	Fri 9/17	Charge District	Expenditure Auth	Subjob	Special Designation	FAE	Activity Code	MSA
4.00	0.00	0.00	0.00	0.00	04	259011			1	230	P0540
0.00	6.00	0.00	0.00	0.00	04	259011		SEQ1	1	230	P0530

Example 3:

In Example 3, the Project Engineer is splitting time between Technical Support for Sequence 1 and the Circulation and Review of the Sequence 2 package. Both entries are charged to the “3” phase since the project is now in construction.

From Sunday 10/10/2004 to Saturday 10/16/2004 Find View All < 1-2 of 2 >											
Mon 9/13	Tue 9/14	Wed 9/15	Thu 9/16	Fri 9/17	Charge District	Expenditure Auth	Subjob	Special Designation	FAE	Activity Code	MSA
7.00	0.00	0.00	0.00	0.00	04	259013		SEQ1	1	270	P200150
0.00	3.00	0.00	0.00	0.00	04	259013		SEQ2	1	255	P05

2.2 Design-Build

2.2-A – LEGISLATION

(Blank)

2.2-B – RFQ ELEMENTS

1. RFQ Project Descriptions

Owner	Maryland State Highway Agency
Project	ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29
Date of Issuance	August 14, 2007
<p>1.0 PROJECT DESCRIPTION</p> <p>The PROJECT consists of the design and construction of the third segment of the Intercounty Connector (ICC), extending from approximately 1,600 feet east of Maryland 97 to approximately 2,000 feet west of US 29, in Montgomery County, Maryland. The package (Contract B) will consist of approximately 7.0 miles of new, controlled access, six-lane, tolled roadway, and two interchanges: ICC/MD 182 and ICC/MD 650. Construction of Contract B will be in some of the most sensitive environmental areas along the alignment. The work also includes mainline, ramps, cross roads, and pavement design (pavement type to be proposed by Design-Builder); utility relocations; bridges; retaining walls; noise walls; earth berms; drainage facilities; landscaping; signing, signals, lighting and pavement markings; tolling infrastructure; maintenance of traffic; ITS devices; public relations support; and environmental compliance. Contract award is currently anticipated for mid 2008, with an anticipated contract duration of approximately three years.</p>	

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005
<p>1.1 Project Description</p> <p>The New I-64 Project will reconstruct I-64 from west of Spoede Road in St. Louis County to west of Sarah Street in the city of St. Louis and I-170 from south of Brentwood Boulevard to Eager Road in accordance with the Record of Decision and Final Environmental Impact Statement. The reconstruction includes actions to replace deteriorated pavement; replace structurally deficient and functionally obsolete bridges; improve traffic operations, geometrics, and safety; and to add mainline capacity between Spoede Road and I-170. Major improvements will be made to interchanges along I-64 and its connections to I-170. The primary purpose of this project is to replace the aging infrastructure and relieve traffic congestion of I-64.</p>	

2. RFQ Project Status Summary

Owner	Maryland State Highway Agency
Project	ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29
Date of Issuance	August 14, 2007

3.0 PROJECT STATUS

The following is a summary of the status of the work being completed for the PROJECT:

A) National Environmental Policy Act (NEPA): The FHWA signed the Final EIS/Section 4(f) on January 03, 2006. FHWA concurred on the State Preferred Alternative in the Record of Decision (ROD), which was signed on May 29, 2006.

B) Survey: Control surveys and design level photogrammetry will be provided in electronic format in the Request for Proposals (RFP). Additional miscellaneous survey information will also be provided in the RFP. Cadd topographic files are available in both Microstation V7 and V8 formats.

C) Preliminary Engineering: The conceptual horizontal alignments and vertical profiles are being established. Conceptual structural plans are also being developed. Electronic files of the concept design materials will be provided in the RFP. These cadd files will be provided in Microstation V7 format.

D) Utilities: Studies are being done to identify existing utilities, and steps undertaken to have Utility Agreements in place prior to award of the Contract. Details will be provided in the RFP. Some utilities will be designated for design and relocation by the Design-Builder and others will be the responsibility of the Design-Builder to coordinate.

E) Right-of-Way (ROW): The Administration is undertaking ROW acquisition and plans to have a majority of the parcels acquired by Contract NTP. If any parcels will remain to be acquired as of the NTP date, a schedule of the remaining ROW acquisition with Administration commitments will be provided in the RFP.

F) Environmental: The Administration will obtain major environmental approvals for the PROJECT prior to NTP. Some permits, such as the MDE General Mineral Mining Permit (for batch plants), MDE Water Appropriations Permits (for withdrawals from surface and groundwater), MDE Erosion and Sediment Control Approval, MDE Stormwater Management Approval, MDE Air Quality/Emissions permits during construction, National Pollutant Discharge Elimination System (NPDES) Notices of Intent (NOI); Administration approval for noise compliance during night and holiday construction; and MDNR Roadside Tree Permit, will be the responsibility of the Design-Builder. Permit modifications for permits obtained by the Administration and if approved by the Administration, will be coordinated by the Administration, with the Design-Builder providing the necessary supporting engineering data. All permit modification for permits obtained by the Design-Builder will be the Design-Builder's responsibility.

G) Geotechnical: Preliminary geotechnical investigations are underway and the findings will be provided in the RFP for use by the Design-Builder. The Design-Builder will be responsible for additional investigations required for support of design.

H) Traffic: Traffic Control Device (TCD) design and coordination issues are also being reviewed and additional information will be provided in the RFP. The Design-Builder will be responsible for finalizing TCD designs.

I) Tolls: Additional information regarding the system will be provided in the RFP. The Design-Builder will need to coordinate with the Administration's Toll System Integrator (TSI) contractor on toll systems/components within the project limits.

3. Project Goals

Owner	Maryland State Highway Agency
Project	ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29
Date of Issuance	August 14, 2007
<p>1.2 PROJECT GOALS</p> <p>The Administration’s goals for the PROJECT are:</p> <p>Cost:</p> <ul style="list-style-type: none"> Do not exceed the approved Financial Plan budget. <p>Quality:</p> <ul style="list-style-type: none"> Provide a safe project for workers and the traveling public Encourage design solutions that respond to environmental concerns, permits, and ROD commitments Achieve environmental and permit commitments Provide a high-quality, aesthetic, durable, and maintainable highway Minimize disruptions to existing traffic and local businesses and communities Cooperate with adjacent ICC Contracts A and C, and the on-going reconstruction of other SHA, County, or developer projects. Provide proactive public relations/maintain public trust and integrity Meet DBE and small business goals/provide an On the Job Training (OJT) program <p>Time:</p> <ul style="list-style-type: none"> Open portions of the PROJECT to revenue-generating traffic by late 2011. 	

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005
<p>1.2 Project Goals</p> <p>The following prioritized goals have been established for the project:</p> <ul style="list-style-type: none"> Deliver the project within the program budget of \$535 million. Complete the project no later than October 1, 2010. Maximize the mobility and capacity improvements in the corridor when construction is complete. Minimize and mitigate construction impacts to customers through construction staging and communication efforts. Provide a quality product that produces a long lasting transportation facility. Demonstrate a quality construction and communication effort that creates a new model for doing a design-build project. 	

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	March 18, 2005
<p>1.2 Project Goals</p> <p>The Purpose of this Project is to improve safety on TH 52 by closing at-grade intersections and replacing key intersections with grade-separated facilities. Mobility should also be maintained during construction of the proposed improvements and the Submitter should provide a solution compatible within the Project setting and within the Project budget.</p> <p>The following goals have been established for the Project:</p> <p>a) Safety</p> <ul style="list-style-type: none"> • Eliminate/minimize the type, number and severity of crashes. • Provide a safe Project area for the traveling public and workers during execution of the Project. • Provide a solution consistent with Mn/DOT Roadway Design Standards. <p>b) Mobility</p> <ul style="list-style-type: none"> • Minimize impacts to traffic on TH 52 during construction. • Provide for local and emergency vehicle access to TH 52 during project execution. • Provide a completed project that maintains a level of service consistent with the Principal Arterial functional classification and the Interregional Corridor objective of 65 miles per hour. <p>c) Quality</p> <ul style="list-style-type: none"> • Provide a Quality Management System that ensures the requirements of the Project will be met or exceeded. • Provide a high quality project that minimizes future maintenance. <p>d) Environmental Compliance</p> <ul style="list-style-type: none"> • Adhere to local, State, and Federal environmental regulations and/or permits that are required in executing and/or completing the Project. • Incorporate Best Management Practices to control sediment, stormwater runoff/discharge, water quality treatment, or other environmental parameters that are established for the Project. <p>e) Budget</p> <ul style="list-style-type: none"> • Complete the project within Mn/DOT's established budget. • Implement innovative solutions to maximize the return on taxpayer investment by reducing costs or improving quality of the transportation system. <p>f) Schedule</p> <ul style="list-style-type: none"> • Begin construction by Spring 2006. • Complete construction by November 2007. 	

4. Procurement Process

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005
<p>1.4 Procurement Process</p> <p>MoDOT will use a two-phase procurement process to select a design-build contractor to deliver The New I-64 Project. This Request for Qualifications (RFQ) is issued as part of the first phase to solicit information, in the form of SOQs, that MoDOT will evaluate to determine which Submitters are the most highly qualified to successfully deliver the Project. MoDOT will short list at least two (if any) but not more than five most highly qualified Submitters that submit SOQs. In the second phase, MoDOT will issue a Request for Proposals (RFP) for the Project to the short listed Submitters. Only the short listed Submitters will be eligible to submit proposals for the Project. Each short listed Submitter that submits a proposal in response to the RFP is referred to herein as a Proposer. MoDOT will award a design-build contract (if any) for the Project to the Proposer offering the best value, to be determined as described in the RFP.</p>	

Owner	Maryland State Highway Agency
Project	ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29
Date of Issuance	August 14, 2007
<p>3.1 OVERALL PROCUREMENT PROCESS</p> <p>The procurement process for the Contract will be in accordance with laws and rules of the State of Maryland, using the Competitive Sealed Proposals (CSP) method of procurement as set forth in COMAR 21.05.03 (also known nationally as “best value”). The intent of the Administration is to award the Contract to the Proposer that submits the Proposal that is determined to be the most advantageous to the State considering the evaluation factors set forth in the RFP.</p> <p>The procurement process will include two steps:</p> <p>Step One RFQ (determination of Reduced Candidate List); and, Step Two RFP (selection of Design-Builder from Proposers on Reduced Candidate List that submitted Proposals).</p> <p>Evaluation of the SOQs and Proposals will be based on information submitted in the SOQs and Proposals or otherwise available to the Administration, and will involve both pass/fail and technical evaluation factors.</p>	

5. General Information

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005

4 SUBMITTAL REQUIREMENTS**4.1 Page Limits**

The maximum number of pages is shown in the following table:

Item	Maximum Number of Pages
Cover Page	1
Title Page	1
Table of Contents	1
Part 1 – Submitter Experience	10
Part 2 – Key Personnel and Organization	
Part 3 – DBE Plan	
Appendix A – Major Participant Information	as needed
Appendix B – Reference Projects	24
Appendix C – Resumes	21
Appendix D – Receipt of Addenda	1

Dividers between sections of the SOQ are not counted.

4.2 Format

The SOQ must be formatted for 8.5" x 11" paper. Charts and other graphical information may be formatted for 11" x 17" paper. Use of 11" x 17" format shall be limited to a maximum of two pages. Minimum font size is 11 points. However, 10-point text may be used within graphs or tables.

4.3 Due Date and Quantities

SOQs must be submitted by 4:00 pm, Central Standard Time, on the date shown in Section 2.3. One hard copy of the SOQ is to be delivered to the Project Director as shown in Section 2.2. Submitters shall also e-mail one Adobe Acrobat format of the SOQ, in a single .pdf file, to thenewi64@modot.mo.gov by the same due date and time.

Owner	Minnesota Department of Transportation
Project	Interstate 35W Bridge
Date of Issuance	August 4, 2007
<p>The SOQ must include the following:</p> <ul style="list-style-type: none"> • Name, address, email, and phone numbers of the person whom the Department may contact with the design-build team to provide further information about the project. This person must be available by phone for questions on Wednesday, August 8, 2007 from 7 a.m to 9 p.m Central Time. • Name of all joint venture members. • Name of the lead bridge design firm. Mn/DOT will have sole discretion to approve the lead bridge design firm. • Name of the lead bridge design manager and key credentials. Mn/DOT will have sole discretion to approve the lead bridge design manager. • Provide a letter from a surety or insurance company stating that the Submitter is capable of obtaining a performance bond and payment bond covering the Project in the amount of \$200 million. This value is for bonding purposes only. It should not be considered as a project estimate. It is only intended to determine bonding capacity of potential bidders. Letters indicating "unlimited" bonding capability are not acceptable. The surety or insurance company providing such letter must be authorized to do business in the State of Minnesota with an A.M. Best Co. "Best's Rating" of A- or better and Class VIII or better. • Describe the team's experience in the following areas: <ul style="list-style-type: none"> Experience constructing Major River Crossing Projects. Experience delivering large-scale Design-Build projects. Experience with accelerated projects. <p>The SOQ must not exceed five 8.5" x 11" single-sided pages including the bonding letter. The SOQ must be provided electronically only. All printing must be Times New Roman, 12-point font.</p>	

6. Cover Letter

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005
<p>3.2 Cover Letter</p> <p>A one-page cover letter shall be included in the SOQ. The cover letter must contain the business name, business type (corporation, joint venture, partnership) and must identify one contact person. The address, phone, fax, and e-mail for the contact person must be included.</p>	

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	March 18, 2005
<p>3.1 Introduction</p> <p>Provide a letter stating the business name, address, business type (e.g., corporation, partnership, joint venture) and roles of the Submitter and each Major Participant. Identify one contact person and his or her address, telephone and fax numbers, and e-mail address. This person shall be the single point of contact on behalf of the Submitter organization, responsible for correspondence to and from the organization and Mn/DOT. Mn/DOT will send all Project-related communications to this contact person. Authorized representatives of the Submitter organization must sign the letter. If the Submitter is a joint venture, the joint venture members must sign the letter. If the Submitter is not yet a legal entity, the Major Participants must sign the letter. The letter must certify the truth and correctness of the contents of the SOQ. The Introduction must include a "Title Page" and "Table of Contents." This information will be used to identify the Submitter and its designated contact, and will be reviewed on a pass/fail basis only and not as part of the qualitative assessment of the SOQ.</p>	

7. Submitter Experience

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005
<p>3.3 Part 1 – Submitter Experience Demonstrate experience with projects similar to The New I-64 project. Identify the team member's ability to meet the goals of the reference project. At a minimum, demonstrate experiences in each of the following areas:</p> <ul style="list-style-type: none"> • Use of innovative approaches to deliver a project within budget. • Experience and approaches to delivering projects on schedule or ahead of schedule. • Design and construction of urban freeways in physically constrained corridors. • Integration of design, construction, public information, environmental activities, and safety. • Implementation of public information plans on a project to minimize and mitigate construction impacts to customers. • Meeting or exceeding project DBE goals. <p>A maximum of 12 reference projects can be described for each Submitter. Work on the reference projects must be within the past seven years.</p>	

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	March 18, 2005
<p>3.2.2 Submitter Experience</p> <p>Describe at least one but a maximum of four highway projects or design-build projects the Submitter has completed or participated in (if the Submitter is not yet existing or is newly formed, please explain) and each Major Participant has managed, designed and/or constructed. For projects in which several of the proposed Major Participants were involved, the Submitter may provide a single project description. Highlight experience relevant to the Project the Submitter/Major Participants have gained in the last 10 years. Cite projects with levels of scope comparable to that anticipated for the Project. Describe the experiences that could apply to the Project. In particular, demonstrate experiences in each of the following areas:</p> <ul style="list-style-type: none"> • Highway and highway structures; • Highway reconstruction under traffic; • Construction/reconstruction using innovative designs, methods and materials; • Construction in environmentally sensitive areas; and • Design and construction activity interaction or integration. <p>Each project description must include the following information:</p> <ol style="list-style-type: none"> (1) Name of the project and either the owner's contract number or state project number; (2) Owner's Construction Engineer and Design Engineer for this project, address and current telephone and fax numbers; (3) Dates of design, construction, management and/or warranty periods; (4) Description of the work or services provided and percentage of the overall project actually performed; and (5) Description of scheduled completion deadlines and actual completion dates. <p>Mn/DOT may elect to use the information provided above as a reference check.</p>	

8. Key Personnel

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005
<p>3.4 Part 2 – Key Personnel and Organization</p> <p>Each Submitter shall define Key Personnel and a corresponding organizational chart that demonstrates the Submitter's knowledge of the Project and approach to meeting the project goals. Each Submitter shall describe the organization style of the team and indicate how the qualifications of each Key Personnel increase the Submitter's ability to meet or exceed the Project goals.</p> <p>Submitters should define the following four positions as Key Personnel.</p> <p>Project Manager – The Project Manager is responsible for all aspects of the Project, including, but not limited to, overall design, construction, quality management, contract administration, and public information. The Project Manager should have at least ten years of recent experience managing the design and construction of major urban freeway systems. The Project Manager must be assigned to the Project full time and shall be required to be on site for the duration of the Project.</p> <p>Quality Manager – The Quality Manager's responsibilities include, but are not limited to, creation and execution of the Submitter's quality program, quality personnel, assurance activities independent of production, enforcement of quality procedures, and documentation of quality records including public information, environmental compliance and DBE/labor compliance. The Quality Manager shall report directly to the Submitter's executive management team. The Quality Manager should have at least ten years of recent experience developing, implementing, and overseeing quality programs.</p> <p>Design Manager – The Design Manager is responsible for ensuring the project design is completed and all design requirements are met. The Design Manager must be assigned to the Project full time, on site, when design activities are being performed. The Design Manager should have at least ten years of recent experience managing the design of major urban highways and must be a registered professional engineer in the State of Missouri.</p> <p>Public Information Manager – The Public Information Manager is responsible for developing and implementing a Public Information Plan. The Public Information Manager should have at least seven years of recent experience coordinating public information on public projects. At least three years of recent experience is required communicating traffic coping techniques during the construction phase of major public projects. At a minimum, the Public Information Manager should have an undergraduate degree in Communications, Journalism, or appropriate field of study.</p> <p>Additional Key Personnel with minimum requirements may be included in the RFP.</p>	

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	March 18, 2005
<p>3.3 Key Personnel The information required by this section will be used in the qualitative assessment of the SOQ.</p> <p>3.3.1 Resumes of Key Personnel Resumes of Key Personnel shall be provided as Appendix A – Resumes of Key Personnel to the SOQ. Resumes of Key Personnel shall be limited to two pages each and will not be counted towards the overall SOQ page limit. If an individual fills more than one position, only one resume is required. The listing below describes the functions for select key personnel for the Project (“Key Personnel”). Level “A” personnel to staff these key functions listed below shall be identified in the required organizational charts (as described in Section 3.2.1) within the Statement of Qualifications. Level “B” personnel will not be identified in the Statement of Qualifications; however, the Department will require that personnel to staff these positions be identified in the required organizational chart identified within the Request for Proposals.</p> <p style="padding-left: 40px;"><u>Level A Personnel</u></p> <ul style="list-style-type: none"> • Contractor’s Project Manager • Quality Manager • Design Manager • Construction Manager • Traffic Engineer • Construction Quality Assurance Manager • Environmental Compliance Manager <p style="padding-left: 80px;"><u>Level B Personnel</u></p> <ul style="list-style-type: none"> • Design Quality Assurance Manager • Utilities Design Engineering/Coordination Manager • Safety Manager • Traffic Control Supervisor • Design Lead Engineer – Structures • Design Lead Engineer – Roadway • Geotechnical Engineer • Survey Manager • Hydraulics Engineer • Public Information Consultant <p>Include the following items on each resume:</p> <ol style="list-style-type: none"> a) Relevant licensing and registration. b) Years of experience performing similar work. c) Length of employment with current employer. d) Actual work examples, including projects, project dates, duties performed and % of time on the job. <p>3.3.2 Other Information for Key Personnel In addition to resumes, provide the following information for each Key Personnel:</p> <ol style="list-style-type: none"> a) Percent of time that would be committed to the Project. Include percent of time during design, post design and construction activities. b) Percent of time that would be committed to other projects. 	

9. RFQ Evaluation and Selection Process

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	March 18, 2005
<p>4.0 EVALUATION PROCESS</p> <p>4.1 SOQ Evaluation Mn/DOT will initially review the SOQs for responsiveness to the requirements of this RFQ. The information in the SOQ will then be measured against the evaluation criteria stated in Section 4.3.</p> <p>4.2 Interview Mn/DOT reserves the right to conduct interviews with all potential Submitters prior to the development of a short list. Mn/DOT may conduct these interviews during its evaluation of the overall SOQ submittal process and scoring. If elected by Mn/DOT, Mn/DOT will determine the schedule for interviews following receipt of the SOQs.</p> <p>4.3 SOQ Evaluation and Scoring Mn/DOT will evaluate all responsive SOQs and measure each Submitter's response against the project goals and evaluation criteria set forth in this RFQ, resulting in a numerical score for each SOQ. Mn/DOT will use the following criteria and weightings:</p> <p>a) Submitter Organization and Experience (20 Points):</p> <ul style="list-style-type: none"> • Effective project management authority and structure • Effective utilization of personnel • Owner/client references • Experience on projects of similar scope and complexity • Experience with timely completion of comparable projects • Experience with on-budget completion of comparable projects • Experience with integrating design and construction activities • Experience of team members working together <p>b) Key Personnel (30 Points):</p> <ul style="list-style-type: none"> • Team members with experience and qualifications that are relevant to the Project scope • Key management/staff experience, capabilities and functions on similar projects <p>c) Project Understanding (15 Points):</p> <ul style="list-style-type: none"> • Understanding of Project scope • Understanding of safety concerns on the existing corridor • Understanding of impacts on the adjacent communities and traveling public • Understanding of required interaction with utility companies • Understanding of environmental requirements, permitting needs and strategy • Understanding of safety concerns during construction <p>d) Project Approach (15 Points):</p> <ul style="list-style-type: none"> • Ability to deliver the Project on schedule • Ability to deliver the Project within budget • Ability to develop and implement a safe and effective maintenance of traffic plan • Ability to develop and implement an effective environmental compliance plan • Ability to implement a quality management system for the Project <p>e) Project Management Approach (20 Points):</p> <ul style="list-style-type: none"> • Effective project management and interaction with Mn/DOT or other entities • Effective approach to partnering • Effective approach to coordinating design and construction activities • Effective approach to implementing a DBE/EEO plan <p>f) Legal and Financial (pass/fail)</p>	

4.5 Notification of Short listing

Upon completion of the evaluation, scoring and short-listing process, Mn/DOT will send the list of short listed Submitters (if any) to all Submitters. Mn/DOT will also publish the list on its design-build website www.dot.state.mn.us/designbuild.

4.6 Debriefing Meetings

Once Mn/DOT announces the short list (if any), Mn/DOT will offer to arrange debriefing meetings with each of the unsuccessful Submitter organizations. These debriefing meetings would give Submitters and Mn/DOT an informal setting to discuss this RFQ and the procurement process.

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project
Date of Issuance	November 4, 2005

5 EVALUATION PROCESS

5.1 SOQ Evaluation

MoDOT will evaluate all responsive SOQs to determine the most highly qualified Submitters. MoDOT will use the criteria set forth in this RFQ using the following weightings:

Item	Weight
Part 1 – Submitter Experience	50%
Part 2 – Key Personnel and Organization	50%
Part 3 – DBE Plan	pass/fail

5.2 Short Listed Submitters

MoDOT will use the SOQ Evaluation Process to determine a ranked list of Submitters. MoDOT will short-list at least two (if any) but not more than five most highly qualified Submitters.

MoDOT will publish a list of short listed Submitters on the project web site and will notify, via e-mail, all Submitters of the posting of this information.

5.3 Debriefing Meetings

After the short list is posted, Submitters may request an informal debriefing meeting with MoDOT to discuss the RFQ and the short-listing process.

10. RFQ Evaluation and Selection Process (Cont.)

Owner	Maryland State Highway Agency
Project	ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29
Date of Issuance	August 14, 2007

4.3 EVALUATION FACTORS FOR THE RFQ/SOQ

This Section 4.3, outlines the evaluation factors for the RFQ phase of the procurement. This information, as well as the tentative evaluation factors for the RFP phase of the procurement listed in Section 3.1.2, is intended to assist Proposers in organizing their teams and in the preparation of their SOQs, by highlighting matters of particular importance to the Administration.

4.3.1 Pass/Fail Factors

The pass/fail evaluation factors are:

(a) **Legal:** The Proposer has presented evidence showing its organization has the legal ability to enter into and perform the Contract to design and build the PROJECT and comply with State licensing requirements and has properly identified all Principal Participants.

(b) **Financial:** The Proposer has demonstrated its ability to provide required bonds (as described in Section 1.10), acceptable guaranties (if required as set forth below or if requested by the Administration) and meet other financial requirements of undertaking and completing the Work.

(c) **Responsiveness to RFQ:** The SOQ does not deviate from the RFQ requirements in any material respect and contains all required information.

If a Proposer passes all pass/fail evaluations, its SOQ will be further evaluated using the factors for technical rating in Section 4.3.2. If a Proposal fails any single pass/fail requirement, the SOQ will be rated as Unacceptable, the technical factors will not be rated and the Proposer will not be included on the Reduced Candidate List. The Administration may allow certain deficiencies in the SOQs relating to the above factors to be corrected through clarifications, as described below, but shall have no obligation to do so.

4.3.2 Technical Evaluation Factors

The technical evaluation factors are:

1. **Organization and Key Managers – (high level)** The proposed organization for the PROJECT, including the percent share for Principal Participants with a direct equity interest in the Proposer, with emphasis on lead design firm(s) and specialty subconsultants for quality compliance and environmental compliance; key management positions include:
 - Principal-in-Charge
 - Project Manager
 - Design Manager
 - Environmental Manager
 - Structures Design Manager
 - Construction Manager
 - Project Quality Manager
 - Landscape Architecture Manager
- **Experience of the Firms:** Demonstrated experience relevant to the size, complexity, and composition of the anticipated PROJECT and the experience of Principal Participants, Designer, QC Engineer, and other subcontractors and consultants (including Specialty Subcontractors) with emphasis on design-build, environmental and quality compliance, highway and highway structures, reconstruction using innovative designs, complex structures, methods and materials, and construction in environmentally sensitive areas.

4.3.3 Technical Evaluation Factor Ratings

The ratings assigned to the technical evaluation factors will be compiled to determine an overall quality rating for the SOQ. The ratings of each of the technical evaluation factors and the overall technical rating for the SOQ will be arrived at through a consensus process. Numerical scores will not be assigned.

Quality ratings for each technical evaluation factor and the overall technical rating for the SOQ will be based on the following quality rating criteria:

EXCEPTIONAL ~ The Proposer has provided information relative to its qualifications which is considered to significantly exceed stated objectives/requirements in a beneficial way and indicates a consistently outstanding level of quality. There are essentially no weaknesses.

GOOD ~ The Proposer has presented information relative to its qualifications which is considered to exceed stated objectives/requirements and offers a generally better than acceptable level of quality. Weaknesses, if any, are very minor.

ACCEPTABLE ~ The Proposer has presented information relative to its qualifications, which is considered to meet the stated objectives/requirements, and has an acceptable level of quality. Weaknesses are minor and can be corrected.

UNACCEPTABLE ~ The Proposer has presented information relative to its qualifications that contains significant weaknesses and/or deficiencies and/or unacceptable level of quality. The SOQ fails to meet the stated objectives and/or requirements and/or lacks essential information and is conflicting and/or unproductive. Weaknesses/deficiencies are so major and/or extensive that a major revision to the SOQ would be necessary and/or are not correctable.

The evaluators may also use a plus (+) or minus (-) suffix to further differentiate the strengths or limitations within a technical rating.

Relative Importance of the Technical Evaluation Factors

The technical evaluation factors of Organization and Key Managers, and Experience of the Firms are of equal importance.

Any SOQ that receives a rating of Unacceptable in one or more technical evaluation factors will receive an overall SOQ rating of Unacceptable and shall not be included in the Reduced Candidate List.

11. Description of RFP Package

Owner	Maryland State Highway Agency
Project	ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29
Date of Issuance	August 14, 2007
<p>3.1.2 RFP</p> <p>The purpose of the RFP is to allow the Administration to select the Design-Builder. The RFP will provide specific instructions on what to submit, the evaluation factors, the objectives and requirements for evaluation, and the evaluation rating guidelines for the RFP step of the procurement. The RFP will be posted in DRAFT form on the ICC website at www.iccproject.com.</p> <p>The following information regarding the RFP step may be relevant to the Proposers in organizing their teams and preparing their SOQs.</p> <p>(a) Evaluation Factors. Proposals will be reviewed and evaluated based on evaluation factors to be specified in the RFP. The Administration anticipates that the evaluation will address the following areas:</p> <ul style="list-style-type: none"> • Legal – (including review of the Proposer’s organizational documents) • Financial – (review of updated financial documentation, surety commitments, etc.) • DBE Compliance • Environmental • Financial Capability and Qualifications Improvement • Management Approach • Technical Solutions • Project Support • Price <p>(b) Proposal Package. Documents and information to be submitted in the Proposals are anticipated to include, but not be limited to, the following:</p> <ol style="list-style-type: none"> (1) Legal documents and financial information demonstrating the Proposer’s ability to enter into the Contract and perform its obligations thereunder; (2) Specified certificates and representations; (3) DBE Plan and evidence of good faith efforts to meet DBE goals; (4) Plans for environmental compliance, and sediment control; key environmental personnel and designers; and design concepts for drainage and stormwater facilities; (5) Management approach, with emphasis on managing and producing a quality PROJECT, involving public and environmental sensitivity and including: schedule; organization; strategies for design and construction management (including hauling and access); and plan for environmental, design and construction quality, safety, construction phasing, and subcontracting; (6) Qualifications and experience of proposed key personnel; (7) Technical concepts with emphasis on innovations, quality, durability, and maintainability, including: interchange geometrics, bridges, structures, pavement, maintenance of traffic, landscaping and aesthetics, geotechnical, and utility relocations; (8) Project support for public information and community/media relations, coordination with adjacent contracts, utility coordination, and the hub office; and, (9) Price Proposal. <p>(c) Relative Importance of the Technical Evaluation Factors. The Administration anticipates that Environmental will be more important than any other technical evaluation factor. The factors of Technical Solutions and Management Approach will be of equal importance, and more important than the factors of Financial Capability and Qualifications Improvement, and Project Support.</p> <p>While price is an important factor in the RFP phase of the procurement, quality will be equally as significant a factor in determining the success of the PROJECT. The RFP requirements and evaluation and selection procedures are being</p>	

designed, consistent with COMAR Title 21 and the regulations of the FHWA, to allow the Administration to conduct a comprehensive evaluation of quality (through the technical evaluation factors) in addition to considering the price offered, thus allowing it to determine which Proposal is the most advantageous to the Administration. The Contract Documents will incorporate performance specifications to enable innovation in the Proposal process. The evaluation process will include an adjectival rating system for technical evaluation factors, and will permit discussions and best and final offers (if deemed appropriate by the Administration). At the end of the evaluation of Proposals the Administration will perform an assessment of the price and the technical factors and select the Design-Builder that has offered the most advantageous (best value) Proposal. The evaluation process will be described in more detail in the RFP.

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	March 18, 2005

6.0 PROCUREMENT PHASE 2

This Section 6.0 is provided for informational purposes only so that each Submitter has information that describes the second phase of the Project procurement process, including a summary of certain anticipated RFP requirements. Mn/DOT reserves the right to make changes to the following, and the short listed Submitters must only rely on the actual RFP when and if it is issued. This Section 6.0 does not contain requirements related to the SOQ.

6.1 Request for Proposals

The Submitters remaining on the short list following phase 1 of the procurement process will be eligible to move to phase 2 and receive an RFP. While Mn/DOT may make the RFP available to the public for informational purposes, only short listed submitters will be allowed to submit a response to the RFP.

6.2 RFP Content

6.2.1 RFP Structure

The RFP will be structured as follows:

- a) Instructions to Proposers
- b) Contract Documents
 - Book 1 (Contract Terms and Conditions)
 - Book 2A (Project-Specific Requirements)
 - Book 2B (Program Requirements)
 - Book 3 (Standards)
- c) Reference Information Documents (RID)

6.2.2 RFP Information

The RFP will include the following information:

- a) Maximum time allowable for the Project.
- b) Mn/DOT's final cost estimate for the Project.
- c) Requirements for a proposed schedule of work.
- d) Requirements for submitting Alternative Technical Concepts (ATCs).
- e) A requirement that if the Proposer is a joint venture, each of the joint venture members will be, if awarded the design-build contract for the Project, jointly and severally liable for performance of the design-build contractor's obligations under the contract.

6.2.3 Warranties

The RFP will require the design-build contractor to provide a three-year general warranty for all elements of the project after Final Acceptance of the project.

6.3 Pre-Proposal Meeting

Mn/DOT will offer each short listed Proposer the opportunity to meet before the proposal due date to discuss the

Project and the RFP process, as well as separate meetings to discuss any ATCs being developed. In any such meeting, Mn/DOT will meet with only one Proposer at a time. Proposers would not be required to accept the meeting offers.

6.4 Proposals Submitted in Response to the RFP

Short listed Proposers that choose to continue in the procurement process must submit a two-part proposal. One part is the technical proposal. The second part is the price proposal. The RFP will specifically define formats and page limits for the proposal packaging and all proposal contents.

6.5 Proposal Evaluations

Mn/DOT has determined that award of the Project based on a “best value” determination under Minn. Stat. 161.3410 et seq. provides the opportunity to obtain the most qualified contractor to deliver the Project.

12. DBE Participation Goal

Owner	Maryland State Highway Agency
Project	ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29
Date of Issuance	August 14, 2007
<p>8.2 DBE PARTICIPATION GOAL</p> <p>By submitting a SOQ in response to this RFQ, each Proposer agrees that, if included on the RCL, it shall comply with the Disadvantaged Business Enterprise (DBE) provisions of the Contract. These provisions are consistent with the applicable portions of the Minority Business Enterprise (MBE) provisions of the State Finance and Procurement Article of the Maryland Code. In this RFQ, the terms DBE and MBE have the same meaning.</p> <p>Each Proposer on the Reduced Candidate List will be required to make a good faith effort to achieve the established DBE participation goal and provide evidence of such efforts in the Proposal. Such efforts must continue throughout the evaluation of Proposals, Contract award, and Contract performance.</p> <p>Only MDOT certified MBEs can be utilized to achieve the Contract's DBE goal. MDOT has agreed to expedite any certification requests associated with DBE utilization on this PROJECT.</p> <p>Based on preliminary estimates, it is anticipated that the overall DBE participation goal will be in the range of 17% to 22% of the total Contract B price. The final goals will be in the RFP. Additionally, because of the MDOT certification requirement for DBE's, firms are encouraged to submit paperwork for certification as soon as possible.</p> <p>It is also anticipated that the Contractor's good faith efforts to achieve this overall DBE participation goal will include efforts to achieve DBE participation in performance of professional services under the Contract (including design; supplemental geotechnical investigations, surveying and other preliminary engineering; quality control as defined in the RFQ; environmental compliance activities; utility coordination; permitting; and public information) equal to or greater than 20% of the portion of the Contract Price allocable to such services.</p>	

2.2-C – RFP ELEMENTS

1. ITP Introduction

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	May 2005
<p>1.1 General Information</p> <p>These Instructions to Proposers (ITP) are issued by the Minnesota Department of Transportation (Mn/DOT) to all firms and teams of firms (“Proposers”) that Mn/DOT has shortlisted for Mn/DOT’s Request for Proposals (RFP) for the TH 52 Oronoco Design-Build Project (the “Project”). Mn/DOT hereby invites such Proposers to submit competitive sealed proposals (“Proposals”) for design and construction of the Project as more specifically described in the RFP. Proposers should not rely on only the limited information contained in this ITP, but should review and understand the specific information and requirements in all of the RFP documents.</p> <p>The RFP consists of the following documents:</p> <p>(a) Instructions to Proposers (ITP)</p> <p>(b) Contract Documents</p> <ul style="list-style-type: none"> • Book 1 (Contract Terms and Conditions) • Book 2A (Project-Specific Requirements) • Book 2B (Program Requirements) • Book 3 (Standards) <p>(c) Reference Information Documents (RID)</p> <p>The RFP is provided as electronic files on compact disks (CD-ROMs). The Project is funded with federal aid, State, and local funds. Capitalized terms and acronyms not otherwise defined herein shall have the meaning set forth in Book 1, Exhibit A.</p>	

Owner	Maryland State Highway Agency
Project	ICC Contract A Design-Build Project – from I-270/I-370 to MD 97
Date of Issuance	July 13, 2006
<p>1.1 INTRODUCTION</p> <p>This Request for Proposals (RFP) is issued by the Maryland State Highway Administration (Administration) to seek proposals (Proposals) for the design and construction of the Intercounty Connector (ICC) Contract A Design-Build Project (the PROJECT). The ICC will be owned and operated by the Maryland Transportation Authority (MdTA or Authority), which owns toll highways, bridges, and tunnels in the State of Maryland (State). Refer to the PROJECT website at http://iccstudy.org for additional information regarding the PROJECT. The Administration, working in cooperation with and acting on behalf of the Authority, is responsible for the Environmental Approvals for the PROJECT, and will take the lead in acquiring property, preparation, and execution of contracts, and administration of design and construction of the PROJECT.</p> <p>This solicitation is the second step of a Competitive Sealed Proposal (CSP) procurement under the State Finance and Procurement Article of the Annotated Code of Maryland and Title 21 of the Code of Maryland Regulations (COMAR). Proposals are only invited from and will only be considered from those entities (Proposers) who have been notified of their inclusion on the Reduced Candidate List (RCL) based on their Statements of Qualifications (SOQ) submitted in response to the Request for Qualifications (RFQ) issued by the Administration on November 29, 2005.</p> <p>This document provides instructions to be followed by Proposers in their responses to the RFP. Proposals must comply with these Instructions to Proposers (ITP) and shall address and/or consider the PROJECT goals identified in ITP Section 1.3, below.</p>	

2. ITP – Procurement Method

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	May 2005
<p>1.3 Procurement Method</p> <p>Mn/DOT will use a two-phase process to select a design-build contractor (“Contractor”) to deliver the Project. As part of the first phase, Mn/DOT determined the shortlist for the Project based on Statements of Qualifications (“SOQs”) it received in response to Mn/DOT’s Request for Qualifications dated March 18, 2005, as amended (“RFQ”). The RFP is issued as part of the second phase. Mn/DOT will accept Proposals only from such shortlisted Submitters of SOQs. Pursuant to Minnesota Statute 161.3426, Mn/DOT will award the Contract (if at all) to the responsive and responsible Proposer offering a Proposal that meets the standards established by Mn/DOT and that is determined by Mn/DOT to provide the best value to Mn/DOT. Mn/DOT reserves the right to reject any or all Proposals.</p>	

3. ITP – Project Goals

Owner	Minnesota Department of Transportation
Project	TH 52/Oronoco Design-Build Project
Date of Issuance	May 2005
<p>1.4 Project Goals</p> <p>Mn/DOT's primary goals in connection with this procurement and the Project include:</p> <p>a) Safety</p> <ul style="list-style-type: none"> • Eliminate/minimize the type, number and severity of crashes. • Provide a safe Project area for the traveling public and workers during execution of the Project. • Provide a solution consistent with Mn/DOT design standards. <p>b) Mobility</p> <ul style="list-style-type: none"> • Minimize impacts to traffic on TH 52 during construction. • Provide for local and emergency vehicle access to and across TH 52 during Project execution. • Provide a completed project that maintains a level of service consistent with the Principal Arterial functional classification and the Interregional Corridor objective of 65 miles per hour. <p>c) Quality</p> <ul style="list-style-type: none"> • Provide a quality management system that ensures the requirements of the Project will be met or exceeded. • Provide a high quality project that minimizes future maintenance. • Comply with environmental requirements. • Incorporate Best Management Practices to control sediment, stormwater runoff/discharge, water quality treatment, or other environmental parameters established for the Project. <p>d) Budget</p> <ul style="list-style-type: none"> • Complete the Project within Mn/DOT's established budget. • Implement innovative solutions to maximize the return on taxpayer investment by reducing costs or improving quality of the transportation system. <p>e) Schedule</p> <ul style="list-style-type: none"> • Begin construction by Spring 2006. • Complete construction by November 2007. 	

4. ITP – RFP Document Summary

Owner	Maryland State Highway Agency
Project	ICC Contract A Design-Build Project – from I-270/I-370 to MD 97
Date of Issuance	July 13, 2006
<p>1.4 RFP DOCUMENTS The RFP includes the following documents (RFP Documents):</p> <p>A) Instructions to Proposers (ITP) (including Appendices); B) Contract Documents 1) Part 1 (Agreement); 2) Part 2 (DB General Provisions); 3) Part 3 (Design Requirements and Performance Specifications); 4) Part 4 (Design-Build Special Provisions); 5) Part 5 (Design-Build Utility Requirements); 6) Part 6 (Request for Proposal Plans); 7) Part 7 (Engineering Data); C) Reference Documents; and D) Addenda to the RFP issued by the Administration.</p> <p>The Contract Documents will also include portions of the Design-Builder's Proposal, which will become Part 8 of the Contract.</p> <p>The ITP and the Reference Documents will not form a part of the Contract. The Administration makes no representation or guarantee as to, and shall not be responsible for, their accuracy, completeness, or pertinence, and, in addition, shall not be responsible for the conclusions to be drawn therefrom. They are made available to the Proposer for the purpose of providing such information as is in the possession of the Administration, whether or not such information may be accurate, complete or pertinent, or of any value.</p>	

5. ITP – Changes in Proposer’s Organization

Owner	Maryland State Highway Agency
Project	ICC Contract A Design-Build Project – from I-270/I-370 to MD 97
Date of Issuance	July 13, 2006
<p>2.7 CHANGES TO THE PROPOSER’S ORGANIZATION</p> <p>Proposers are advised that, in order for a Proposer to remain qualified to submit a Proposal after it has been placed on the Reduced Candidate List, unless otherwise approved in writing by the Administration, the Proposer’s organization as identified in the SOQ must remain intact for the duration of the procurement process. This includes:</p> <ul style="list-style-type: none"> A) all Principal Participants (i.e. the Proposer; if the Proposer is a joint venture, partnership, limited liability company, or other form of association, any joint venturer, partner or member of the Proposer; and/or any Person holding (directly or indirectly) a 15% or greater interest in the Proposer); B) the Designer (the Person on the Design-Builder’s team (whether a Principal Participant, Specialty Subcontractor, or in-house designer) that leads the team furnishing or performing the design of the PROJECT); C) the Quality Control (QC) Engineer; D) all Specialty Subcontractors (i.e. those consultants or subcontractors identified to perform Work critical to the success of the PROJECT, such as subcontractors for bridges, retaining structures, environmental compliance, erosion and sediment control, pavement, landscaping, or other specialty Work); and E) all key management personnel identified in the SOQ. <p>If a Proposer wishes to change the organization represented in its SOQ by adding, deleting, or substituting a Principal Participant, Designer, QC Engineer, Specialty Subcontractor, and/or key management personnel, or by changing the role of a Principal Participant, the Proposer must submit to the Procurement Officer a written request to change its organization no later than 30 calendar days prior to the Proposal Due Date. If a request is made to allow an addition to the organization, the Proposer shall submit with its request that information specified for a Principal Participant, Designer, QC Engineer and/or Specialty Subcontractor in the RFQ, including legal and financial data as well as the information for quality evaluation. If a request is made to allow deletion of a Principal Participant, Designer, QC Engineer and/or Specialty Subcontractor, the Proposer shall submit such information as may be required by the Administration to demonstrate that the changed team meets the RFQ criteria (pass/fail and quality).</p> <p>If a request is made to change any key management personnel, the Proposer shall submit with its request that information specified for that key personnel in the RFQ, including a resume.</p> <p>The Administration shall have sole discretion to grant or withhold approval of any requested change.</p>	

Owner	Minnesota Department of Transportation
Project	St. Anthony Falls (35W) Bridge – Design-Build Project
Date of Issuance	August 23, 2007
<p>1.5 Change in Proposer’s Organization</p> <p>If a Proposer wishes to change its organization from that described in its SOQ, Proposer shall obtain written approval of the change from the Commissioner prior to submitting its Proposal. This includes any changes in the form of organization of Proposer, Key Personnel (Lead Bridge Design Manager), or Major Participants (Lead Bridge Design Firm) identified in the SOQ (including additions, deletions, and reorganization). To qualify for the Commissioner’s approval, the written request shall document that the proposed removed, replaced or added Key Personnel or Major Participant will be equal or better than the Key Personnel or Major Participant identified in the SOQ. The Commissioner will use the criteria specified in the RFQ to evaluate all requests. Any such request shall be addressed to the Project Manager at the address set forth in Section 3.3, accompanied by the information specified for such entities or individuals in the RFQ. The Commissioner is under no obligation to approve such requests and may approve or disapprove a portion of the request or the entire request at its sole discretion.</p>	

6. ITP – General Proposal Submittal Requirements

Owner	Maryland State Highway Agency
Project	ICC Contract A Design-Build Project – from I-270/I-370 to MD 97
Date of Issuance	July 13, 2006
<p>4.2 GENERAL SUBMITTAL REQUIREMENTS</p> <p>A) The Technical Proposal shall be enclosed in one or more sealed containers and shall be clearly marked with the name of the Proposer and the words “Technical Proposal – ICC Contract A.” (<i>See</i> Appendix A.) The Price Proposal shall be sealed within one or more separate containers and shall be clearly marked with the name of the Proposer and the words “Price Proposal – ICC Contract A.” (<i>See</i> Appendix B.) The Proposal Bond shall be sealed within one or more separate containers and shall be clearly marked with the name of the Proposer and the words “Proposal Bond – ICC Contract A.” The Proposal, consisting of the Technical Proposal, Price Proposal and Proposal Bond, must itself be enclosed in one or more sealed containers and shall be clearly marked with the name of the Proposer and the words “Proposal – ICC Contract A.”</p>	

Owner	Minnesota Department of Transportation
Project	St. Anthony Falls (35W) Bridge – Design-Build Project
Date of Issuance	August 23, 2007
<p>4.1.2 Format</p> <p>The Proposal shall consist of a Technical Proposal, DBE and EEO Submittal and a Price Proposal. All original signatures shall be in blue ink.</p> <p>The front cover of each copy of the Technical Proposal shall be labeled as follows:</p> <ul style="list-style-type: none"> • “St. Anthony Falls (35W) Bridge Design-Build Project, S.P. 2783-120”, E.R. MN07(300); • “Technical Proposal”; and • Proposer’s name. <p>All copies of the Technical Proposal shall be packed together in a separately sealed, clearly identified package or container for delivery to Mn/DOT as set forth in <u>Section 4.1.1</u>. The outside of the sealed package or container containing all copies of the Technical Proposal shall be labeled as follows:</p> <ul style="list-style-type: none"> • “St. Anthony Falls (35W) Bridge Design-Build Project, S.P. 2783-120”, MN07(300); • “Technical Proposal”; • The date and time of the submittal deadline; • The name of Mn/DOT’s Project Manager as specified in <u>Section 3.3</u>; and • Proposer’s name, contact person, and address. <p>All copies of the DBE and EEO Submittal shall be packed together in a separately sealed, clearly identified package or container for delivery to Mn/DOT as set forth in <u>Section 4.1.1</u>. The outside of the sealed package or container containing all copies of the DBE & EEO Submittal shall be labeled as follows:</p> <ul style="list-style-type: none"> • “St. Anthony Falls (35W) Bridge Design-Build Project, S.P. 2783-120”, MN07(300); • “DBE and EEO Submittal”; • The date and time of the submittal deadline; • The name of Mn/DOT’s Project Manager as specified in <u>Section 3.3</u>; and • Proposer’s name, contact person, and address. <p>The Price Proposal shall be packed in a separately sealed, clearly identified package or container for delivery to Mn/DOT as set forth in <u>Section 4.1.1</u>. The outside of the sealed package or container containing all copies of the Price Proposal shall be labeled as follows:</p> <ul style="list-style-type: none"> • “St. Anthony Falls (35W) Bridge Design-Build Project, S.P. 2783-120”, E.R. MN07(300); • “Price Proposal”; • The date and time of the submittal deadline; • The name of Mn/DOT’s Project Manager as specified in <u>Section 3.3</u>; and • Proposer’s name, contact person, and address. 	

7. ITP – DBE Compliance

Owner	Minnesota Department of Transportation
Project	St. Anthony Falls (35W) Bridge – Design-Build Project
Date of Issuance	August 23, 2007
<p>1.8 Disadvantaged Business Enterprise/Equal Employment Opportunity Proposer will be required to comply with the DBE Special Provisions for Design-Build Projects set forth in Book 1, Exhibit E. A DBE goal of 10 percent has been established for the Contract. The Mn/DOT Office of Civil Rights has established an On-the-Job Training (OJT) requirement for the Project of 12,500 hours, utilizing 20 trainees.</p> <p>Because the Project is at a limited level of design completion when the Contract is awarded, the level of subcontracting opportunities is not fully known. As the design progresses, the full level of subcontracting opportunities becomes known. The Contractor selected for this project will be expected to make subcontracting opportunities available to, and solicit bids and proposals from, Disadvantaged Business Enterprises (DBE's). The Contractor is encouraged to maintain regular and ongoing communications throughout the project with business associations representing DBE's. The purpose of such regular communications shall be 1) to promote awareness of additional subcontracting opportunities, 2) to provide information on the scheduling of such subcontracting opportunities, and 3) to provide summary information on the current and projected participation of DBE's in the project. The Contractor is recommended to schedule such meetings on a regular basis as frequently as design progress warrants. This is one of many activities which could count toward meeting Good Faith Efforts requirements. See Book 1, Exhibit E, Section 2.5.</p> <p>Proposer will be required to follow both State of Minnesota and Federal Equal Employment Opportunity (EEO) policies, including the requirements set forth in the EEO Special Provisions (Book 1, Exhibit D)...</p>	

Owner	Maryland State Highway Agency
Project	ICC Contract A Design-Build Project – from I-270/I-370 to MD 97
Date of Issuance	July 13, 2006
<p>1.10 DBE COMPLIANCE This solicitation is subject to federal and related State laws concerning utilization of Disadvantaged Business Enterprises (DBEs). Federal law (49 CFR, Part 26) defines a Disadvantaged Business Enterprise as a for-profit small business concern, while Maryland law refers to Minority Business Enterprises (MBEs). In this solicitation DBE and MBE have the same meaning. All federal law DBE provisions are applicable to this solicitation. All State law MBE provisions are applicable to this solicitation unless the State law provision is not consistent with federal law.</p> <p>The approved overall DBE participation goal for the PROJECT is established at 15% of the total ICC Contract A price, with a subgoal of 20% for professional services (including design; supplemental geotechnical investigations, surveying and other preliminary engineering; quality control as defined in the Contract; environmental compliance activities; utility coordination; permitting; and public information). Refer to Appendix A for Proposal submittal requirements relating to DBE compliance. Said requirements have been developed to meet the requirements of Title 9, Subtitle 3 of the State Government Article and Section 14-303 of the State Finance and Procurement Article of the Annotated Code of Maryland, and COMAR 21.11.03.09, while accounting for unique issues associated with the design-build method of project delivery.</p> <p>Only MBEs certified by the Maryland Department of Transportation (MDOT) can be utilized to achieve the Contract's DBE goal. MDOT has agreed to expedite any certification requests associated with DBE utilization on this PROJECT.</p>	

8. ITP – Technical Proposal Requirements

Owner	Minnesota Department of Transportation
Project	St. Anthony Falls (35W) Bridge – Design-Build Project
Date of Issuance	August 23, 2007
<p>4.3.2 Format</p> <p>The Technical Proposal shall be limited to 20 page limit (single sided), including the cover letter. Covers, divider pages and appendices are excluded from the 20 page limit.</p> <p>The following information (and no other information) may be included as appendices to the Technical Proposal. Appendix A (Design Plans) shall be limited to eight 11x17 sheets (single sided). Appendix A (Design Plans) shall include:</p> <p>Base Concept of the proposed structure (plan/profile showing structure type, size, location and aesthetic features necessary to meet the requirements in the RFP).</p> <p>Geometric Enhancements.</p> <p>Proposed aesthetics to enhance the requirements shown in the RFP.</p> <p>Any other information the Proposer wants to include.</p> <p>Appendix B (Forms) shall contain the information described in <u>Sections 4.3.3.2</u>. No page limited will be imposed on this Appendix.</p> <p>Appendix C (ATC) shall contain a list of the Proposer's incorporated ATC's and copies of Mn/DOT's ATC Approval letters as described in <u>Section 4.3.3.1</u>.</p> <p>The Technical Proposal shall be organized to correspond to and address the content requirements and evaluation factors listed in this <u>Section 4.3</u>. Percentages of total points available for each section are shown in parentheses for applicable sections of the Technical Proposal as identified in <u>Section 4.3.3</u>. Proposer may use tabbed dividers to separate the contents of the Technical Proposal. Tabbed dividers will not count towards the page limits.</p> <p>4.3.3 Content</p> <p>4.3.3.1 Executive Summary</p> <p>Proposer shall provide an Executive Summary, written in a non-technical style that contains sufficient information to familiarize reviewers with Proposer's Project approach and its ability to satisfy the financial, legal, and technical requirements of the Project. The Executive Summary shall clearly list the ATC's that the Proposer has incorporated into their Proposal.</p> <p>...</p> <p>The Technical Proposal shall include narratives described each of the following categories. The relative weights in the Technical Scoring are shown in parenthesis.</p> <p>4.3.3.3 Quality (50%)</p> <p><u>4.3.3.3.1 Experience and Authority of Key Individuals (20%)</u></p> <p>The Proposal shall include an organization chart showing the Project Manager, Lead Bridge Design Manager, Construction Manager, Quality Management Team and others deemed appropriate. Proposer shall provide a narrative on the experience of these individuals on similar projects and authority being proposed on the St. Anthony Falls (35W) Bridge Design-Build Project.</p> <p><u>4.3.3.3.2 Extent of Quality Control / Quality Assurance (10%)</u></p> <p>Describe the design and construction relationships necessary to meet the project goals.</p> <p><u>4.3.3.3.3 Safety (10%)</u></p> <p>The Proposal shall include the Proposer's approach and commitments towards to implementing a safety incentive program on the Project.</p> <p><u>4.3.3.3.4 Measures to Evaluate Performance in Construction (10%)</u></p> <p>Describe the objective measures that will be performed to insure the constructed product meets or exceeds the</p>	

contract requirements. For example, describe enhancements that will be made to Mn/DOT's quality templates.

4.3.3.5 Aesthetics (20%)

The Proposal shall include commitments to enhance the aesthetic requirements in the RFP. The Proposal shall also include a narrative describing the Proposer's approach and commitments to involving stakeholders into the design process and enhancements to the Aesthetic features using context sensitive design.

4.3.3.6 Enhancements (15%)

4.3.3.6.1 Geometric Enhancements (10%)

The Proposal shall include the Proposer's commitments to enhance the geometric features of the project and eliminate or minimize design exceptions. Proposer's are encouraged to develop vertical profiles to avoid an increase in elevation of University Avenue and 4th Street Interchange in the future. Proposer's are to assume that a future structure on University Avenue and 4th Street will have an additional three feet of depth.

4.3.3.6.2 Structural Enhancements (5%)

The Proposal shall include commitments that will provide innovative procedures and/or materials to minimize the life cycle costs of maintaining the corridor and to maximize the benefits to road users taking into consideration context sensitive design principals.

4.3.3.7 Public Relations (15%)

The Proposal shall include a narrative describing the qualifications and experience of the Proposer's Public Information Coordinator. The Proposal shall also provide a narrative describing the Proposer's approach and commitment to involve stakeholders, designers, and construction personnel into the public relations process. Lastly, the proposal shall provide a narrative discussing the Proposer's approach and commitments to mitigate nighttime construction noise impacts on nearby residences.

9. ITP – Price Proposal Requirements

Owner	Minnesota Department of Transportation
Project	St. Anthony Falls (35W) Bridge – Design-Build Project
Date of Issuance	August 23, 2007
<p>4.4 Price Proposal</p> <p>4.4.1 General</p> <p>The total price offered by Proposer for its Proposal for all Work is referred to herein as the “Proposal Price” and is indicated on Line 27 of Form 14 (Proposal Price). Payments to Contractor under the Contract will be made based on the Proposal Price in accordance with Book 1, Section 11. The Price Proposal shall include a separate line item cost for constructing the bridge to accommodate light rail (Line 19B of Form 14). The purpose of this separate line item is to assist Mn/DOT and the FHWA with cost participation for the light rail transit component.</p> <p>4.4.2 Content</p> <p>The Price Proposal shall be organized to correspond to the items listed in this Section 4.4.2.</p> <p>4.4.2.1 Proposal Price (A+B Method)</p> <p>The process for the consideration of Proposals for the award of this Project will take into account not only the Proposal Price for project management, engineering and construction as indicated on Line 27 of Form 14 (Price Proposal), but also the bidder's proposed number of Calendar Days to complete all Work required to satisfy the requirements of Book 1, Section 20.1.1. The number of Calendar Days proposed by the bidder includes the timeframe between Notice to Proceed 2 (NTP 2) as specified in Book 1, Section 4.2 through fulfilling the requirements of Book 1, Section 20.1.1. This method, as described below, shall be used to determine the successful bidder in accordance with Section 5.6. It shall not be used to determine the award amount nor final payment to the Contractor when the Project is completed.</p> <p>4.4.2.1.1 Definition of Terms</p> <p>The following definitions apply:</p> <p>(a) Calendar Day – As Defined in Book 1, Exhibit A.</p> <p>(b) Proposal Price -- The total price offered by Proposer for its Proposal for all Work is referred to herein as the “Proposal Price” and is indicated on Line 27 of Form 14 (Proposal Price).</p> <p>(c) Daily Road User Cost – The amount which represents the average daily cost of inconvenience to the road users. The Daily Road User Cost is \$200,000.</p> <p>(d) Completion of Work -- All Work required to satisfy the requirements of Book 1, Section 20.1.1.</p> <p>4.4.2.1.2 Preparation of Proposal</p> <p>The Proposer shall establish the number of Calendar Days to be used for the Completion of Work as defined in Section 4.4.2.1.1</p> <p>The total number of Calendar Days established by the Proposer shall be less than or equal to 437 Calendar Days but not less than 337 Calendar Days. Proposals showing the Completion of Work specified in Section 4.4.2.1.1 in excess of 437 Calendar Days, or less than 337 Calendar Days will be considered non responsive and will be rejected. Mn/DOT does not warrant that the Completion of Work can be completed within 437 Calendar Days and any decision by the Proposer is at the Proposer’s own Risk.</p> <p>The Proposer shall enter the proposed number of Calendar Days on Line 28 of Form 14. The Proposer shall enter a Lump Sum on Form 14, Line 28, which is the value of the Daily Road User Cost multiplied by the number of Calendar Days established by the bidder.</p> <p>4.4.2.2 Anticipated Pay-Out Curve</p> <p>Provide a hardcopy copy of Form 15 (Anticipated Pay-Out Curve). The Proposer shall input the anticipated payout based on an early finish and late finish. If Proposer does not anticipate receiving a payment for a particular month, Proposer shall input \$0.</p> <p>The amount indicated as the “Total Payment Amount” on Form 15 (Total Proposal Price and Present Value) must equal the Proposal Price indicated on Line 27 of Form 14 (Proposal Price). The Proposer will not be restricted by the Anticipated Pay-Out Curve. This information is being requested only to assist Mn/DOT staff with managing anticipated cash-flow during the course of the project.</p> <p>4.4.2.3 Proposal Bond</p> <p>Provide a proposal bond in the form of Form 16 (Form of Proposal Bond) by a Surety licensed as surety and qualified to do business in the State of Minnesota. The Surety shall have a “Best’s Rating” of A- or better and Financial Size</p>	

Category of VIII or better by A.M. Best Co.

4.4.2.4 Payment and Performance Bond Commitments

Provide a letter or other written documentation from a surety or insurance company meeting the requirements stated in Book 1, Section 8, committing to provide a payment and performance bond substantially in the form of Form 17 (Form of Payment and Performance Bond for State Highway Construction and Maintenance Projects) in the amount of the Proposal Price under Parts A and B and naming Proposer as obligor and committing to provide a Warranty Bond substantially in the form of Form 18 (Form of Warranty Bond). If multiple surety letters are provided, the Proposal shall identify which surety will be the lead surety. The commitment letter may not include conditions, qualifications, or reservations for underwriting or otherwise, other than a statement that the commitment is subject to award of the Contract to Proposer within 3 Days of the Public Opening Date and to reasonable approval of any material changes to the Contract Documents.

4.4.2.5 Bridge Cost Estimate

Provide Form 19 (Proposed Bridge Information) for each bridge on the Project. The Bridge Cost Total shown on Form 19 shall equal the value on Form 14, Line 19. Form 14, Line 19 should not include the additional costs for accommodating Light Rail Transit on the bridge. The costs for accommodating Light Rail Transit shall be provided on Form 14, Line 19B.

4.4.2.6 Schedule

The Proposal shall include the following a Preliminary Schedule that meets the following criteria:

- 11x17" printout depicting Activity ID, Activity Description, Duration, Early Start, Early Finish, Total Float, and Relationships.
- Submitted electronically in compressed Primavera Project Planner (P3) format (.prx) on compact disk
- Expresses activity durations in Working Days
- Utilizes critical path scheduling by depicting the sequence and interdependence of activities with no Date Constraints that are not contractual dates.
- Depicts that all Milestone dates, including NTP1 and NTP2, are understood.
- Depicts ALL work, to include but not limited to, required coordination efforts with other contractors, Utilities, Governmental Persons, engineers, architects, Mn/DOT, and suppliers for the first Thirty (30) days starting from NTP1
- Clearly identifies Holidays and other non-Working Days in the First Thirty (30) days starting from NTP1.
- Depicts the Project's Preliminary Critical Path through Substantial Completion.

10. Basic Project Configuration

Owner	Washington Department of Transportation
Project	Interstate 405 Corridor Project
Date of Issuance	2005
<p>0-02.3 BASIC CONFIGURATION</p> <p>The following design components shall be deemed Basic Configuration elements for the Project. The descriptions in this section are not intended to describe the scope of work, rather specific features and tolerances for defining the Basic Configuration.</p> <p>Horizontal and Vertical Roadway Alignments:</p> <p>The Horizontal and Vertical Roadway Alignments shall be as defined on the Alignment and Paving Plans and Profile and Superelevation Plans respectively. Horizontal Alignments may be adjusted by up to ten feet, and Vertical Alignments may be adjusted by up to two feet in any direction, providing that all of the following conditions are met: 1.) The final Cut/Fill limits remain within the Impact Area Line as shown on the Conceptual Plans, 2.) The adjustments do not result in the need to acquire additional right-of-way, 3.) The adjustments do not result in net increases to impacts of wetlands, wetland buffers, or other environmentally sensitive areas that are depicted on the Conceptual Plans, and 4.) All other design standards and criteria are met, or exceeded as described in the Contract Documents.</p> <p>Noise Walls:</p> <p>Horizontal and vertical noise wall alignments shall be as defined on the Alignment and Paving Plans, and Retaining and Noise Wall Profile Plans. At a minimum, noise walls N3, R2 and U4 must be constructed to the horizontal and vertical limits depicted on the Conceptual Plans. Noise wall alignments may be adjusted by up to four feet in offset to the roadway, but the limits and top of wall profile shall not be reduced from that shown in the Conceptual Plans. If the Design-Builder chooses to shift the roadway horizontal alignment by more than two feet, and/or the roadway vertical profile by more than one foot, a new or supplemental noise analysis report must be submitted to WSDOT for approval. The Design- Builder shall be responsible for the design and construction of all additional noise barriers that any noise study supplements indicate are necessary to meet the noise abatement standards described in the Contract Documents. In no circumstance can the basic configuration of the noise walls, as depicted on the Conceptual Plans, be reduced except that the top of wall elevations may be reduced to a minimum of 10- feet above the nearest edge line if supported by the supplemental noise analysis report.</p> <p>NE 116th Street Interchange Type:</p> <p>The interchange type selection of a ½ Single Point Urban Interchange at NE 116th Street/ I-405 is a basic configuration element. Design refinements are encouraged by the Design-Builder within the parameters of the other basic configuration elements as described in this section. An alternative interchange type may be developed and submitted for approval to WSDOT, but the following conditions must be met: 1.) Alternative designs must demonstrate forward compatibility with the I-405, SR520 to SR522 Stage 2 and Implementation Plan projects. This will require full development of a channelization plan for approval for each of the two future projects, and an interchange type selection submittal. 2.) A supplemental traffic analysis report must be submitted to WSDOT for approval as part of the interchange type selection submittal, 3.) A supplemental noise study report must be submitted for approval, and 4.) Renderings for the bridge over NE 116th Street must be developed to solicit Context Sensitive Solutions from WSDOT and the City of Kirkland Advisory Committee.</p>	

11. Alternative Technical Concepts

Owner	Minnesota Department of Transportation
Project	St. Anthony Falls (35W) Bridge – Design-Build Project
Date of Issuance	August 23, 2007
<p>3.7 Alternative Technical Concepts</p> <p>Mn/DOT realizes that the RFP Scope of Work was developed based on preliminary engineering and that each Proposer may have different approaches for accomplishing the same goals. Mn/DOT has chosen to use the ATC process set forth in this <u>Section 3.7</u> to allow innovation and flexibility, to allow the design and construction to be completed together thereby minimizing conflicts and maximizing speed and efficiency, and ultimately to obtain the best value for the motoring public.</p> <p>Mn/DOT will only entertain ATC submittals that propose alternatives to <u>Book 2, Section 8</u> and <u>Book 2, Section 13</u>.</p> <p>Proposers may propose up to eight (8) alternatives that are equal or better in quality or effect as determined by Mn/DOT in its sole discretion and that have been used elsewhere under comparable circumstances (ATCs).</p> <p>3.7.1 Submittal of ATCs</p> <p>A Proposer may include an ATC in its Proposal only if it has been received by Mn/DOT by 1:00 p.m., Central Time, on the applicable ATC Submittal Due Date (identified in <u>Section 2</u>) and it has been Approved by Mn/DOT (including conditionally Approved ATCs, if all conditions are met).</p> <p>Each ATC shall be numbered sequentially, beginning with 1. Each ATC submittal shall be either e-mailed to Mn/DOT's RFP Communication Manager or hand deliver 3 copies to Mn/DOT at the one-on-one face to face meetings.</p> <p>(a) <u>Description</u>. A detailed description and schematic drawings of the configuration of the ATC or other appropriate descriptive information (including, if appropriate, product details [i.e. specifications, construction tolerances, special provisions], and a traffic operational analysis);</p> <p>(b) <u>Usage</u>. Where and how the ATC would be used on the Project;</p> <p>(c) <u>Deviations</u>. References to all requirements of the RFP documents that are inconsistent with the proposed ATC, an explanation of the nature of the deviations from said requirements, impacts to other design elements, and a request for Approval of such deviations;</p> <p>(d) <u>Analysis</u>. An analysis justifying use of the ATC and why the deviations from the requirements of the RFP documents should be allowed;</p> <p>(e) <u>Impacts</u>. Discussion of potential impacts on vehicular traffic, environmental impacts identified on appropriate environmental documents, community impact, safety and life-cycle Project, and infrastructure costs (including impacts on the cost of repair and maintenance);</p> <p>(f) <u>History</u>. A detailed description of other projects where the ATC has been used, the success of such usage, and names and telephone numbers of project owners that can confirm such statements;</p> <p>(g) <u>Risks</u>. A description of added risks to Mn/DOT and other Persons associated with implementing the ATC (Maintenance, impacts to other design elements, etc.);</p> <p>(h) Additional Warranty Requirements (if necessary);</p> <p>(i) Additional Testing and Inspection Requirements.</p> <p>If a Proposer wishes to make any announcement or disclosure to third parties concerning any ATC, it shall first notify Mn/DOT in writing of its intent to take such action, including details as to date and participants, and obtain Mn/DOT's prior Approval to do so.</p> <p>3.7.2 Preproposal Review of ATCs</p> <p>Mn/DOT may request clarifications and additional information regarding a proposed ATC at any time. Due to the time constraints of this project, Mn/DOT will make every attempt to respond to the ATC within a timely manner. However, Mn/DOT reserves the right not to respond to any ATC. Mn/DOT and the Contractor can discuss ATC's at either one-on-one meetings or via teleconferences. Mn/DOT's ATC response times and/or the one-on-one meetings will not be</p>	

grounds for a protest.

Subject to the [Minnesota Government Data Practices Act](#), Mn/DOT will use its best efforts to keep all discussions with Proposers regarding ATCs confidential, provided that under no circumstances will Mn/DOT be responsible or liable to a Proposer or any other party as a result of disclosing any materials, whether the disclosure is deemed required by law, by an order of court, or occurs through inadvertence, mistake or negligence on the part of Mn/DOT or its respective officers, employees, contractors, or consultants. Additional information and requirements regarding any one-on-one meetings and teleconferences will be provided by Mn/DOT.

Mn/DOT will review each ATC and will respond to Proposer with one of the following determinations:

- (a) The ATC is Approved.
- (b) The ATC is not Approved.
- (c) The ATC is not Approved in its present form, but may be Approved upon satisfaction, in Mn/DOT's sole judgment, of certain identified conditions that shall be met or certain clarifications or modifications that shall be made.
- (d) The submittal does not qualify as an ATC but may be included in the Proposal without an ATC (i.e., the concept complies with the baseline RFP requirements).
- (e) The submittal does not qualify as an ATC and may not be included in the Proposal.

Proposer may incorporate zero, one, or more Approved ATCs as part of its Proposal (including conditionally Approved ATCs, if all conditions are met). The Proposal must clearly state which ATC's they are incorporating into their proposal and that all conditions of the ATC will be met. If Mn/DOT responded to an ATC by stating that it would be Approved if certain conditions were met, those conditions will become part of the Contract Documents. The Contract Documents will be conformed after award, but prior to execution of the Contract, to reflect the incorporated ATCs, including any associated Mn/DOT conditions. Copies of Mn/DOT's ATC Approval letters for each incorporated ATC shall be included in the Appendix as described in [Section 4.3.3.1](#).

If Proposer includes an ATC in their Proposal, it can only have a neutral (no impact) or positive impact on the Proposer's Technical Scoring. They can't have a negative impact on the Technical Scoring. For all unsuccessful Proposer's, if they accept the Stipend, Mn/DOT reserves the right to utilize all ATC concepts included in their Proposal.

ATC Approval or Conditional Approval by Mn/DOT on this project does not guarantee usage of the ATC concept on any other Mn/DOT projects.

If the Contractor submits an ATC based on a proprietary product, they are solely responsible for meeting the requirements referenced in 23 CFR 635.411.

The Proposal Price should reflect any incorporated ATCs. Except for incorporating Approved ATCs, the Proposal may not otherwise contain exceptions to or deviations from the requirements of the RFP.

12. Differing Site Conditions

Owner	Washington Department of Transportation
Project	Everett HOV Design-Build
Date of Issuance	May 16, 2005
<p>1-04.7 DIFFERING SITE CONDITIONS (CHANGED CONDITIONS)</p> <p>Differing Site Conditions shall mean (a) subsurface or latent physical conditions encountered at the Site differing materially from those indicated in the Geotechnical Baseline Report (RFP Appendix G1) and/or Supplemental Boring Project (RFP Appendix G4) and which are not discoverable from a reasonable investigation and analysis of the site including subsurface conditions, (b) physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the type of Work provided for in the Contract and the Work site characteristics, provided in all cases that Design-Builder had no actual or constructive knowledge of such conditions as of the Proposal Date. Unexpected objects and/or materials encountered during drilled shaft construction shall not be considered to be a Differing Site Condition. Harmful/Hazardous Materials shall not be considered to be Differing Site Conditions if they are in a category for which unit prices were provided in the Proposal Documents. Harmful/Hazardous Materials in other categories may be considered to be Differing Site Conditions only if the Work effort associated with remediation has a material adverse cost or delay impact. The party discovering such conditions shall promptly notify the other party in writing of the specific differing site conditions before they are disturbed and before the affected Work is performed. Upon written notification, WSDOT will investigate the conditions and if it determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. WSDOT will notify the Design-Builder of his/her determination whether or not an adjustment of the Contract is warranted. Notwithstanding the above, the Design-Builder shall be entitled to Change Orders adjusting the Contract Price only for the actual, reasonable cost increase resulting from Differing Site Conditions, which in the aggregate exceeds \$2,000,000.00. The responsibility for the first \$2,000,000 worth of Differing Site Conditions shall rest solely with the Design-Builder. No Contract adjustment which results in a benefit to the Design-Builder will be allowed unless the Design-Builder has provided the required written notice. The equitable adjustment will be by agreement with the Design-Builder. However, if the parties are unable to agree, WSDOT will determine the amount of the equitable adjustment in accordance with Section 1-09.4. Extensions of time will be evaluated in accordance with Section 1-08.8. If WSDOT determines that Differing Site Conditions do not exist and no adjustment in costs or time is warranted, such determination shall be final as provided in Section 1-05.1. No claim by the Design-Builder shall be allowed unless the Design-Builder has followed the procedures provided in Section 1-04.5 and 1-09.11.</p>	

13. Quality Management

Owner	Florida Department of Transportation
Project	Design/Build RFP Template
Date of Issuance	July 5, 2005
<p>W. Quality Management Plan (QMP)</p> <p>1. Design:</p> <p>The Design/Build Firm shall be responsible for the professional quality, technical accuracy and coordination of all surveys, designs, drawings, specifications, geotechnical and other services furnished by the Design/Build Firm under this contract.</p> <p>The Design/Build Firm shall provide a Design Quality Management Plan, which describes the Quality Control (QC) procedures to be utilized to verify, independently check, and review all design drawings, specifications, and other documentation prepared as a part of the contract. In addition the QMP shall establish a Quality Assurance (QA) program to confirm that the Quality Control procedures are followed. The Design/Build Firm shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The QMP may be one utilized by the Design/Build Firm, as part of their normal operation or it may be one specifically designed for this project. The Design/Build Firm shall submit a QMP within 15 working days of the written Notice to Proceed. A marked up set of prints from the Quality Control review will be sent in with each review submittal. The responsible Professional Engineers or Professional Surveyor that performed the Quality Control review, as well as the QA manager will sign a statement certifying that the review was conducted.</p> <p>The Design/Build Firm shall, without additional compensation, correct all errors or deficiencies in the surveys, designs, drawings, specifications and/or other services.</p> <p>No fabrication, casting, or construction will occur until all related design review and shop drawing review comments are resolved.</p> <p>2. Construction:</p> <p>The Design/Build Firm shall be responsible for developing and maintaining a Construction Quality Control Plan in accordance with Section 105 of Standard Specifications which describes their Quality Control procedures to verify, check, and maintain control of key construction processes and materials.</p> <p>The sampling, testing and reporting of all materials used shall be in compliance with the Sampling, Testing and Reporting Guide (STRG) provided by the Department. The Design/Build Firm will use the Department's database(s) to allow audits of materials used to assure compliance with the STRG. The Department has listed the most commonly used materials and details in the Department's database. When materials being used are not in the Department's database list, the Design/Build Firm shall use appropriate material details from the STRG to report sampling and testing. Refer to the "Access Instruction for LIMS" for more information on how to gain access to the Department's databases: http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qualitycontrol/guidelines/contractor/limsaccess.pdf</p> <p>Prepare and submit to the Engineer a Job Guide Schedule (JGS) using the Laboratory Information Management System (LIMS), 21 working days prior to commencement of Construction. Update the Job Guide Schedule and submit it to the Engineer prior to each monthly progress estimate. The Department may not authorize payment of any progress estimate not accompanied by an up-to-date Job Guide Schedule. Maintain the Job Guide Schedule throughout the project including the quantity placed since the previous submittal, and total to date quantity and any additional materials placed. Do not commence work activities that require testing until the Job Guide Schedule has been reviewed and accepted by the Engineer. At final acceptance, submit a final Job Guide Schedule that includes all materials used on the project in the same format as the monthly reports.</p>	

Owner	Missouri Department of Transportation
Project	The New I-64 Design-Build Project, Book 2 – Performance Requirements
Date of Issuance	February 27, 2006
<p>3 QUALITY MANAGEMENT</p> <p>3.1 Quality Management System</p> <p>The terms and definitions used in this Section 3, not otherwise defined shall have the meanings prescribed by the ISO 9000:2000 standard. The Contractor shall develop, implement and maintain a quality management system meeting the requirements of ISO 9001:2000 standard and the requirements below.</p> <p>The scope of the quality management system shall cover all requirements of the Work included in the Contract Documents. The Contractor's quality management system shall include a Quality Manual which shall be submitted to MoDOT for Approval. MoDOT will respond to the Contractor within 21 days of receipt of the Quality Manual.</p> <p>The Quality Manual shall indicate the frequency at which the Contractor's top management will review the quality management system. The Quality Manager and Quality Assurance staff shall have no responsibilities in the production of the Work and shall report to the Contractor's top management only. Quality Control staff shall only have responsibilities in the production of the Work and shall remain independent of the Quality Assurance staff. The Contractor shall ensure that all personnel who perform inspection, sampling or testing are certified according to a recognized technician certification program and any other required certifications, for the tasks for which they are responsible. The Contractor shall ensure that all laboratories performing testing participate in and achieve a score of three or greater in the AASHTO Materials Reference Laboratory (AMRL) and/or Cement and Concrete Reference Laboratory (CCRL) proficiency sample programs for the tests being performed by that laboratory.</p> <p>The following quality planning aspects shall be included in the Quality Manual:</p> <ul style="list-style-type: none"> • All Quality Control and Quality Assurance Activities and their standards, methods or procedures, and frequencies for product control and acceptance. • All release points at which Work shall be formally accepted by Quality Assurance personnel prior to proceeding with additional Work Activities. • The requirements to be verified by Quality Assurance staff at each release point. • The Quality Assurance staff position responsible to perform the verification responsibilities including inspection, checking and testing. • The method of performing Quality Assurance verification responsibilities including inspection, checking and testing. • The system for recording all Quality Control and Quality Assurance activities including inspection, checking and testing activities. <p>The Contractor shall include in the Quality Manual its proposed process to resolve Contractor and MoDOT identified Nonconforming Work. The Contractor shall ensure that this process is applied to all Contract Documents requirements, including design, construction/operational and management systems. The Engineer responsible for the design shall approve all resolutions of Nonconforming Work that require design changes, repairs, or rework. MoDOT shall Approve all remedies for Nonconforming Work.</p> <p>The Contractor shall include in the Quality Manual its proposed process to address corrective action requests. MoDOT will issue to the Contractor corrective action requests in areas where Nonconforming Work is found to be reoccurring. The Contractor shall be responsible to submit to MoDOT for Approval remedies to eliminate the reoccurring Nonconforming Work (corrective action). Following MoDOT Approval of the proposed corrective action, the Contractor shall advise MoDOT when the corrective action has been implemented so MoDOT may confirm the implementation, should MoDOT so choose.</p> <p>The Quality Manual shall describe how the Quality Assurance verification records/forms will clearly document conforming and Nonconforming Work. The Quality Manual shall describe how material quantities will be calculated</p>	

and documented in order to enable the Contractor and MoDOT to sample at their required frequencies.

3.2 Design Documents

Design Documents include Review Documents, Released for Construction Documents, Final Design Documents, and As-Built Documents. The Contractor shall ensure that all Design Documents are 8½" x 11" or 11" x 17" and in English units. All Design Documents shall be developed using a version of MicroStation compatible with MoDOT's and shall follow MoDOT's CADD Standards. MoDOT will provide seed files upon request. Electronic submissions shall be in original MicroStation format and in MoDOT's version of Acrobat. Each deliverable shall include an index detailing the contents and an Acrobat file of the Design Documents, created directly from the native software and organized in a manner that allows easy retrieval of any part of the Design Documents, including individual drawings.

3.2.1 Review Documents

Review Documents shall be incomplete or partial Released for Construction Documents that are being used by the Contractor during its design review process. Five hard copies and one electronic copy of all Review Documents shall be submitted to MoDOT at each stage of review. The Quality Manual shall describe MoDOT's participation in the design review process.

3.2.2 Released for Construction Documents

Released for Construction Documents shall be all drawings, specifications, shop drawings, reports, calculations, revisions thereto, and any other items necessary to construct the Work. The Contractor shall ensure that no construction Work is undertaken without Quality Assurance approved Released for Construction Documents. Five hard copies and one electronic copy of all Released for Construction Documents shall be submitted to MoDOT.

3.2.3 Final Design Documents

Final Design Documents shall be fully completed Design Documents, except for necessary field design changes, for a geographic area organized by discipline. Final Design Documents shall include design information from the most current version of Released for Construction Documents and all design back-up information, including design plans, shop drawings, calculations, reports, specifications, and electronic MicroStation data.

3.2.4 As-Built Documents

As-Built Documents shall be the final record set of documents that incorporate: any changes occurring after the Final Design Documents; all manufacturers' warranties, guarantees, instruction sheets, parts lists, and other product data; and all required evidence of conformance with Contract Documents requirements. The As-Built Documents shall be organized and indexed to facilitate easy retrieval of information and be certified by the Contractor's Project Manager to reflect the actual condition of the constructed Work.

3.3 MoDOT Quality Oversight

MoDOT's quality oversight will use an audit approach for assessing the Contractor's performance. This will entail checking on a sampling basis whether the Work is complying with the Contract Documents requirements.

Auditing will entail the collection and documentation of objective evidence to confirm whether specified requirements have been met. The results of auditing will be documented on standardized audit report forms with copies provided to the Contractor. Nonconforming Work will be tracked and communicated to the Contractor. The audit results may also be recorded in a database, and regular summary and status reports will be provided to the Contractor. The timing, frequency, and depth of auditing will be at MoDOT's discretion.

The Contractor shall provide safe access to the Work, its organization, and all Subcontractor and Supplier organizations to allow MoDOT to carry out quality oversight activities. This will include the allowing of samples for the purposes of testing, the provision of information and records, and interviews with personnel from the Contractor's organization and all Subcontractor and Supplier organizations.

The Contractor shall not use the results of MoDOT's quality oversight activities as a substitute for its own quality

Activities. The Contractor shall provide to MoDOT copies of specific records within three Days of receipt of request. When requested, the Contractor shall advise MoDOT of the time, to within four hours accuracy, that a specific Activity, scheduled within the next five Days, is scheduled to occur.

Representatives of agencies of the federal, state and local government shall have the right to inspect the Work to the same extent provided above for MoDOT. The Contractor shall notify MoDOT District Independent Assurance Sampling (IAS) prior to starting construction, through the District 6 Materials Office (314-340-4260). The IAS will be in addition to MoDOT's quality oversight.

3.4 Deliverables

At a minimum, the Contractor shall submit the following to MoDOT:

Deliverable	For Approval	Schedule	Reference Section
Quality Manual	x	Condition of NTP2	3.1
Review Documents		At each review stage	3.2.1
Released for Construction Documents		When released for construction	3.2.2
Final Design Documents		After completion of design	3.2.3
As-Built Documents		Condition of Final Acceptance	3.2.4

14. Design Submittal, Review, and Approval

Owner	Florida Department of Transportation
Project	Design/Build RFP Template
Date of Issuance	July 5, 2005
<p>A. General</p> <p>... Before construction activities can begin for a specific component, signed and sealed design plans and calculations supporting the design for that component must be reviewed by the Department. Component submittals shall be complete submittals along with all the supporting information necessary for review. Any modification to the component construction due to subsequent design changes as the result of design development is solely the Design/Build Firm's risk. Upon review by the Department, the plans will be stamped "Released for Construction" and initialed and dated by the reviewer. Any construction initiated by the Design/Build Firm prior to receiving signed and sealed plans stamped "Released for Construction" shall be at the sole risk of the Design/Build Firm. Prior to submittal to the Department, all Category level II bridge plans submittals shall have a peer review analysis by an independent engineering firm not involved with the design team, prequalified in accordance with Chapter 14-75, to assure that the submittal is in compliance with all Department requirements. The independent peer review engineer's comments shall be included with each plans submittal package and the resolution of each comment shall also be noted. The independent peer review engineer shall sign and seal a cover letter stating that all comments have been addressed. Any unresolved issues will be specifically listed in the cover letter. All design and construction documents shall be prepared using the English system.</p> <p>H. Specifications</p> <p>... The Design/Build firm shall identify, on a marked up copy of the applicable Specifications Workbook, all Division II and III Special Provisions and Supplemental Specifications which will apply to the work in the proposal. Department Specifications may not be modified or revised. The Design/Build Firm shall also include all Technical Special Provisions, which will apply to the work in the proposal. Technical Special Provisions shall be written only for items not addressed by Department Specifications, and shall not be used as a means of changing Department Specifications. Before construction activities can begin, the Design/Build Firm shall prepare and submit a signed and sealed Construction Specifications Package for the project, containing all applicable Division II and III Special Provisions and Supplement Specifications from the applicable Specifications Workbook, posted on the Department's website at the following URL address: http://www2.dot.state.fl.us/specificationspackage/. The signed and sealed Specifications Package shall also include individually signed and sealed Technical Special Provisions for any and all work not addressed by Department Specifications. Any Technical Special Provisions included in the signed and sealed Construction Specifications Package which had not been included in the proposal phase, may require a contract cost modification as a condition of approval.</p> <p>I. Shop Drawings</p> <p>... The Department shall review the Shop Drawing(s) to evaluate compliance with project requirements and provide any findings to the Design/Build Firm. The Departments procedural review of shop drawings is to assure that the Design/Build Firm and the EOR have both accepted and signed the drawing, the drawing has been independently reviewed and is in general conformance with the plans. The Departments review is not meant to be a complete and detailed review. Upon review of the shop drawing, the Department will stamp "Released for Construction" or "Released for Construction as noted" and initialed and dated by the reviewer.</p>	

15. Engineer of Record

Owner	Washington Department of Transportation
Project	Interstate 405 Corridor Project
Date of Issuance	2005
<p>The Engineer-of-Record shall be registered as a Structural Engineer in the state of Washington. The Engineer-of-Record's original signature, date of signature, original seal, registration number, and date of expiration shall appear on new and revised plan sheets. Plans shall be submitted on 11"x17" white bond paper. Computer aided drafting (CAD) files shall be prepared using AutoCAD or MicroStation in accordance with WSDOT Bridge Design Manual.</p> <p>The Design-Builder shall prepare all new and revised plan sheets in accordance with the Plans Preparation Manual, Section 440 through 460, and Division 5 and 6. A Professional Engineer's original signature, date of signature, original seal, registration number, and date of expiration shall appear on the all-new and revised plan sheets. The engineer-of-record shall be registered as a civil engineer in the state of Washington. Plans shall be submitted on 11"x17" white bond paper and in electronic format on a CDROM.</p> <p>Request for Approval of Material (RAM) - The RAM shall be used when the Design-Builder elects not to use the QPL or the material is not listed in the QPL or not shown on the sealed plans and specifications. The RAM shall be prepared by the Design-Builder and submitted to the Engineer of Record for approval before the material is incorporated into the work. Approval of the material does not constitute acceptance of the material for incorporation into the work. The Construction QA Manager shall ensure that the acceptance</p> <p>For all materials that are not addressed by WSDOT standards, material-testing specifications, testing procedures, and frequencies will be determined by the Materials Quality Assurance Team with concurrence of the Engineer of Record.</p>	

16. Environmental Permitting

Owner	Florida Department of Transportation
Project	I-4 (SR 400) SIX LANING
Date of Issuance	2001
<p>8. Environmental Services / Permits</p> <p>a. State and Federal Permits - The Florida FDOT has obtained State and Federal environmental permits required for this project based upon the preliminary design concept as defined in the RFP. The DESIGN/BUILD FIRM must ensure that the project is constructed and maintained in conformance with the conditions specified in the attached permits issued by the St. Johns River Water Management District (SJRWMD), U.S. Army Corps of Engineers (USACOE), and the U.S. Coast Guard (USCG) until time of final acceptance. If the DESIGN/BUILD FIRM proposes a concept that requires a modification of the permitted design concept, the DESIGN/BUILD FIRM shall be responsible for obtaining the required permit modifications in accordance with State and Federal regulations. This responsibility includes payment of any applicable permitting fees. The DESIGN/BUILD FIRM will be required to coordinate all permit modifications with the FDOT. The DESIGN/BUILD FIRM shall submit requests for permit modifications to State and Federal regulatory agencies only upon review and approval from the FDOT. The DESIGN/BUILD FIRM shall obtain any permits required if dredging for construction access is proposed. The DESIGN/BUILD FIRM shall be responsible for any fines and permit violations, including all noncompliance issues, related to the DESIGN/BUILD FIRM'S failure to adhere to specific conditions in the attached permits.</p> <p>b. Endangered Species - The DESIGN/BUILD FIRM must comply with conditions specified in the SJRWMD and USACOE permits regarding the protection and precautionary guidelines for the Gopher Tortoise, Florida Manatee, and Eastern Indigo Snake. The DESIGN/BUILD FIRM must coordinate on site with the FDOT'S Environmental Management Office (EMO) before initiating construction and maintain coordination throughout the project. The DESIGN/BUILD FIRM shall immediately contact the EMO Office if any federal or state-listed animal species is observed within the project limits.</p> <p>c. Archeological Resources - The DESIGN/BUILD FIRM must comply with conditions specified in Midden Site restrictions attached to this document regarding the construction methodologies and precautionary guidelines for archeological resources that may be present.</p>	

Owner	Minnesota Department of Transportation
Project	St. Anthony Falls Bridge Design-Build
Date of Issuance	April 27, 2007
<p>6.3 Environmental Compliance</p> <p>In performance of the Work, Contractor shall comply with all requirements of all applicable Environmental Laws and Governmental Approvals issued thereunder, whether obtained by Mn/DOT or Contractor. Contractor acknowledges and agrees that it will be responsible for all fines and penalties that may be assessed in connection with any failure to comply with such requirements.</p> <p>6.3.1 Mitigation Requirements</p> <p>Contractor shall perform all environmental mitigation measures (which term shall be deemed to include all requirements of the Environmental Approvals and similar Governmental Approvals, regardless of whether such requirements would be considered to fall within a strict definition of the term) for the Project. The Contract Price includes compensation for Contractor's performance of all such mitigation measures and for performance of all mitigation measures arising from New Environmental Approvals which <u>Section 6.3.2</u> designates as Contractor's responsibility as well as the cost of all activities to be performed by Contractor as described in Section 4 of Book 2.</p> <p>6.3.2 New Environmental Approvals</p> <p>6.3.2.1 Approvals To Be Obtained by Mn/DOT</p> <p>Mn/DOT shall be responsible for obtaining any New Environmental Approvals necessitated by a Mn/DOT-Directed Change, Mn/DOT-Caused Delay, change in a Governmental Rule under <u>Section 13.3.1.2(e)(v)</u>, or Force Majeure event. Contractor shall provide support services to Mn/DOT with respect to obtaining any such New Environmental Approval. Any Change Order covering a Mn/DOT-Directed Change, Force Majeure event or Necessary Basic</p>	

Configuration Change shall include compensation to Contractor for any changes in the Work (including performance of additional mitigation measures but excluding performance of such support services) resulting from such New Environmental Approvals, as well as any time extension necessitated by the Mn/DOT-Directed Change, or Force Majeure event, subject to the conditions and limitations contained in Section 13.

6.3.2.2 Approvals To Be Obtained by Contractor

If a New Environmental Approval becomes necessary for any reason other than those specified in Section 6.3.2.1, Contractor shall be fully responsible for obtaining the New Environmental Approval and any other environmental approvals that may be necessary, and for all requirements resulting there from, as well as for any litigation arising in connection therewith. Mn/DOT will reasonably assist Contractor in obtaining any New Environmental Approvals. If the New Environmental Approval is associated with a Contractor Initiated Change Proposal, the Contractor shall be responsible for obtaining the approval and the costs of obtaining and complying with the terms of the New Environmental Approval shall be considered in determining the Contract Price adjustment under Section 13.

Owner	Washington Department of Transportation
Project	Design Build General Provisions
Date of Issuance	May 16, 2005

1-08.11(2).2 Environmental Compliance

General. The portion of the incentive award allocated to Environmental Compliance is up to \$500,000. This is the maximum amount that can be earned from all environmental compliance criteria combined. The amount is divided among the six environmental compliance criteria, as shown in Table 9.

Table 9

Incentive Awards and Criteria for Environmental Compliance

<i>Criteria</i>	<i>Maximum Possible Award</i>
A. Maintaining positive relationships with resource agencies	\$50,000
B. Avoiding and minimizing impacts to sensitive areas.	\$150,000
C. Provide needed environmental clearances timely.	\$50,000
D. Wash equipment prior to bringing onto Project.	\$50,000
E. Implement and maintain Best Management Practices for temporary erosion control.	\$150,000
F. Provide additional noise reduction measures during construction	\$50,000
Total Maximum Award:	\$500,000

Evaluation of Environmental Compliance Criteria

General. The Environmental Compliance criteria will be measure monthly as Work progress.

Period Incentive Award Earned. In determining the quarterly incentive award earned, the evaluation team will consider the Monthly Evaluation Reports for that quarter.

17. Right of Way

Owner	Minnesota Department of Transportation
Project	TH 52 Oronoco Project
Date of Issuance	5/27/05
<p>7.1 General Mn/DOT will acquire all Right of Way (R/W) necessary for the Project. The R/W Work Map (attached as Exhibit A) indicates the existing R/W lines and those parcels being acquired for the Project. The Contractor shall not enter into negotiations for purchase of any property or property rights identified within the Right of Way Work Map (Exhibit A). The R/W Work Map also indicates any permanent and/or Temporary Easements being acquired by Mn/DOT for the Project. Right of possession of the Site and the improvements made thereon by the Contractor shall remain at all times with Mn/DOT. The Contractor's right to entry and use of the Site arises solely from permission granted by Mn/DOT under the Contract. The Contractor will be provided access to each parcel identified in the R/W Work Map as the parcel is cleared. Access will be provided to all parcels by March 1, 2006. Mn/DOT will provide the Contractor with monthly reports regarding the status of the acquisition process for parcels for which access has not been provided. Mn/DOT will provide written notification to the Contractor of the availability of each required parcel and notify the Contractor of any access restrictions that may be applicable. The Contractor shall not be allowed access to any parcel until written notification is provided.</p> <p>7.2-7.5 <Omitted></p> <p>7.5.1 Construction Easements The Contractor shall notify Mn/DOT in writing of all Construction Easements necessary for construction of the Project. This written notification shall identify the Construction Easements sought and shall include drawings depicting proposed construction limits and cross-sections. Mn/DOT will be responsible for the acquisition of all Construction Easements for the Project at the Contractor's cost. Acquisition of Construction Easements by Mn/DOT could take up to 16 calendar months for the first 10 parcels and 30 Days for each additional parcel from the time the written notification is submitted by the Contractor. Schedule implications associated with the acquisition of Construction Easements shall be the responsibility of the Contractor. Payment for Construction Easements shall be made by Mn/DOT and deducted from the Contractor's monthly progress payment. The cost of Construction Easements shall be included in the Contractor's Proposal Price.</p> <p>7.5.2-7.5.3 <Omitted></p> <p>7.5.4 Identification of Additional R/W The Contractor shall disregard Section 7.5.4 of Book 2B and replace with the following: If the Contractor determines that additional R/W is necessary or required by a Change Order, the Contractor shall prepare and submit a written request to Mn/DOT for consideration. This request shall identify the additional R/W sought, along with a justification for its need, and shall include drawings depicting proposed construction limits and cross-sections. Mn/DOT will review the request, determine whether the acquisition is acceptable and within the scope of the Final Environmental Impact Statement (FEIS) and the Record of Decision (ROD), and notify the Contractor in writing regarding the schedule and process required to complete the acquisition. Mn/DOT is responsible for obtaining any required Municipal Consent, if necessary, due to the additional R/W acquisition. The Contractor shall reimburse Mn/DOT for all costs associated with such acquisitions, subject to Book 1, Section 6.1.2. Mn/DOT will require up to 16 calendar months for acquisition of the first 10 parcels and 30 Days for each additional parcel from the time of the written request. Schedule implications shall be included in the Contractor's schedule.</p> <p>7.5.5-7.6.1 <Omitted></p> <p>7.6.2 Acquisition Activities Deliverables Summary The Contractor shall disregard Section 7.6.2 of Book 2B and replace with the following: For acquisition of additional R/W and/or construction easements, Mn/DOT will provide a R/W authorization map for the Contractor to approve prior to Mn/DOT's proceeding with the acquisition. The Contractor shall approve R/W prior to acquisition beginning.</p>	

18. Utility Location/Relocation

Owner	North Carolina Department of Transportation
Project	US64
Date of Issuance	2002
<p>R/W UTILITY SCOPE OF WORK:</p> <p>Overview: The Design Build Firm shall be responsible for coordinating all utility relocations. Coordination shall include any necessary utility agreements when applicable. The Firm will be responsible for nonbetterment utility relocation cost when the utility company has prior rights of way/ compensable interest. The utility company will be responsible for the relocation cost if they can not furnish evidence of prior rights of way or a compensable interest in there facilities. Preparation for relocating utilities within the existing or proposed highway Rights of Way. A. The Design Build Firm will be required to use the guide lines as set forth in the following: <Omitted></p> <p>B. NCDOT will provide the best available information pertaining to the existing utilities. The Design Build Firm will be responsible for confirming the location of the utilities, type of facility and identify the utility owner in order to coordinate the relocation of any utilities in conflict with the project.</p> <p>ARRANGEMENTS FOR PROTECTION OR ADJUSTMENTS TO EXISTING UTILITIES A. The Design Build Firm will make the necessary arrangements with the utility owners for adjustments, relocating or removals where the Firm and Utility Company determine that such work is essential for safety measures and performance of the required construction B. In the event of a utility conflict, the Design Build Firm will request that the utility company submit relocation plans (Construction Plans to be provided by the Design Firm to Utility owners) showing existing utilities and proposed utility relocation for approval by the NCDOT. C. The cost in relocating utilities due to the highway construction will be the responsibility of the Design Build Firm except when the utility company does not have compensable interest in their existing facilities. A compensable interest is identified as follows: (1) Existing or prior easement rights within the ROW of the project, either by recorded right of way or adverse possession (Utility occupying the same location for twenty (20) plus years outside the existing highway rights of way). (2) Entities covered under General Statute 136-27. 1. Statute requires the NCDOT to pay the nonbetterment cost for certain water and sewer relocations. D. If the Design Build Firm elects to make arrangements with a utility company to incorporate a new utility installation or relocation as part of the highway construction, the utility work done by the firm and the associated cost for the work will be negotiated and agreed upon between the firm and the utility company. E. The Design Build Firm will be required to utilize the NCDOT Standard Utility Encroachment Agreements as necessary in relocating utilities. The Encroachment Agreements will be used under the following conditions <Omissions></p>	

19. Insurance

Owner	Minnesota Department of Transportation
Project	TH 52 Oronoco Project
Date of Issuance	5/27/05
<p>9.2 Contractor Provided Insurance Contractor shall procure, at its own expense, insurance acceptable to Mn/DOT, as described herein, and shall maintain such insurance, as specified herein, in accordance with the requirements stated in Section 9.1, or as otherwise Approved by Mn/DOT at its sole discretion.</p> <p>9.2.1 Worker's Compensation and Employer's Liability Coverage Contractor shall provide Worker's Compensation coverage that is in compliance with all Governmental Rules (including Minn.Stat. 176) and Employer's Liability with minimum limits of \$1 million by disease each person, \$1 million by disease aggregate, and \$1 million each person by accident. The policy must be endorsed to include:</p> <ul style="list-style-type: none"> (a) Other states' coverage, except monopolistic states. (b) Voluntary Compensation Endorsement: (i) Applies to all volunteers and employees not subject to applicable worker's compensation law at the discretion of Insureds; (ii) Designated law in state of hire. Delete exclusion C.2 (Intentional Injury). Limit \$1 million. (c) Alternative Employer Endorsement. (d) Federal Employers Liability Act Coverage (WC 00 01 01A) (if any basis). <p>9.2.2 Commercial General Liability Insurance Contractor shall provide Commercial General Liability broad form coverage for Bodily Injury, Property Damage, Personal Injury and Advertising Liability written on an occurrence form that shall be no less comprehensive or more restrictive than the coverage provided by Insurance Services office (ISO) form CG 00 01.</p> <ul style="list-style-type: none"> (a) Limits of liability. General liability: \$1 million - each occurrence \$2 million - general aggregate (annually) \$1 million - personal injury/advertising liability \$2 million - products/completed operation liability The aggregate limits shall apply separately to the Project (Endorsement CC-25-03). (b) Such insurance shall include, by its terms or appropriate endorsements, Bodily Injury, Property Damage, Fire Hazard Liability, Personal Injury, Blanket Contractual Independent Contractors, Premises Operations Products and Completed Operations, for a minimum of five years following Final Acceptance. <ul style="list-style-type: none"> 1. Shall include blanket coverage of Explosion, Collapse, and Underground (XCU) hazards. 2. The following shall be additional insured(s) with respect to liability arising out of acts or omissions of any Contractor-Related Entity, whether on or off of the Site: State of Minnesota. 3. The policy shall be on an Occurrence Coverage basis. <p>9.2.3 Automobile Liability Insurance Contractor shall provide comprehensive automobile liability insurance covering the ownership, maintenance and use of all owned/leased, non-owned and hired vehicles used in the performance of Work, both on and off the Site, including loading and unloading. The following limits of liability and other requirements shall apply:</p> <ul style="list-style-type: none"> (a) \$1 million combined single limit for bodily injury and property damage liability. (b) Coverage shall be provided on ISO form number CA.00 01 or equivalent. (c) The policy will include uninsured and underinsured, and Minnesota No-Fault, in compliance with Minnesota law. (d) The policy shall be endorsed to include Motor Carrier Act endorsement – Hazardous Materials Cleanup (MCS-90). <p>9.2.4 Excess (Umbrella) Liability Insurance Contractor shall provide Umbrella or Excess Liability insurance with limits of not less than \$10 million per occurrence and \$10 million annual aggregate which will provide bodily injury, personal injury and property damage liability at least as broad as the primary coverages set forth above, including Employer's Liability, Commercial General Liability and Comprehensive Automobile Liability, as set forth in Sections 9.2.1, 9.2.2 and 9.2.3.</p>	

9.2.5 Contractor's Pollution Legal Liability Coverage

- (a) Contractor shall provide pollution legal liability coverage for the Project.
- (b) The following limits and conditions shall apply:
 - 1. The limit of liability per occurrence and aggregate shall be \$5 million.
 - 2. The State of Minnesota shall be named as an additional insured.
 - 3. A "claims made" form will be acceptable. The coverage must be in place for all claims arising from the Contract. The retroactive date will be the date of the award of the Contract and the extended reporting period must be 24 months following completion of the Work.

9.2.6 Professional Liability Insurance

Contractor, or all Contractor representatives providing professional services, shall provide Professional Liability Coverage for the project by one of the following methods:

9.2.6.1 A Practice Policy as follows:

- (a) Limits of Liability shall be \$2 million per claim and an annual aggregate of \$4 million.
- (b) The policy shall be renewed for five years after the Final Acceptance Date
- (c) The policy shall have a retroactive date of no later than May 27, 2005, and shall provide coverage for any negligent act, error or omission arising out of design or engineering activities with respect to the Project.

9.2.6.2 A Project-Specific Policy as follows:

- (a) Limit of Liability shall be \$4 million in the aggregate.
- (b) The policy shall have a five year extended reporting period from the Final Acceptance Date with respect to all events that occurred, but were not reported, during the term of the policy.
- (c) The policy shall have an effective date of no later than May 27, 2005, and shall provide coverage for any negligent act, error or omission arising out of design or engineering activities with respect to the Project.

9.2.7 Railroad Protective Insurance

Contractor shall provide Railroad Protective Liability Insurance in accordance with Standard Specification 1708.2.

20. Order of Precedence

Owner	Washington Department of Transportation
Project	Interstate 405 Corridor Project
Date of Issuance	2005
<p>1-03.2 Order of Precedence</p> <p>Should conflicts appear between any of the following parts of the Contract, a listed part shall take precedence over all those listed below it.</p> <ul style="list-style-type: none"> • Change Orders and Supplemental Agreements. • The Contract Form • WSDOT identified betterments from the design-builder's Proposal listed on the Contract Form • General Provisions – (RFP Chapter 1) • Technical Provisions – RFP Chapter 2 • Regional General Special Provisions (RFP Appendix B1) • General Special Provisions as identified in (RFP Appendix B2) • Amendments to the Standard specifications as identified in (RFP Appendix B3) • Division two through nine of the Standard Specifications for Road, Bridge, and Municipal construction (RFP Appendix B4) • All other RFP Documents listed as Contract Documents • WSDOT Standard Plans • Design-Builder's Proposal Documents <p>Notwithstanding the order of precedence listed above:</p> <ol style="list-style-type: none"> 1. Additional details and more stringent requirements contained in a lower priority document will control unless the requirements of the lower priority document present an actual conflict with the requirements of the higher level document. 2. In the event of a conflict among any Mandatory Standards, WSDOT shall have the right to determine in its sole discretion which provision applies regardless of the order of precedence of the documents in which such standards are referenced. Design-Builder shall request the WSDOT determination respecting the order of precedence involving Mandatory Standards promptly upon becoming aware of any such conflict. On plans, working drawings, and standard plans, calculated dimensions shall take precedence over scaled dimensions. 	

21. Stipends

Owner	Maryland State Highway Agency
Project	ICC Contract B- MD 200 – Instructions to Proposers
Date of Issuance	November 15, 2006
<p>6.3 STIPEND</p> <p>By submitting a Proposal in response to the RFP, the Proposer acknowledges that the Administration reserves the right to use any ideas or information contained in the Proposal in connection with any Contract awarded for the Project, or in connection with any subsequent procurement, subject to the obligation to pay a stipend as specified below. A stipend in the amount of \$700,000.00 will be paid to each Proposer meeting the following terms and conditions:</p> <p>A) Its Proposal (including any BAFO) has achieved a rating of Pass on all "Pass/Fail" evaluation factors and an overall qualitative rating of at least "Acceptable-" for all technical evaluation factors;</p> <p>B) If a Competitive Range was established, its Proposal (including any BAFO) was included in the Competitive Range; and</p> <p>C) Its Proposal (including any BAFO) was not selected for award or it was awarded the Contract but the Contract was terminated prior to issuance of a notice to proceed for the Administration's convenience.</p> <p>A stipend may also be paid to a Proposer not meeting all of the conditions specified above. If a Proposer wishes to apply for a stipend under this paragraph, it shall so notify the Administration within 10 days of its receipt of notification that it was not entitled to the stipend. In such event, the Administration reserves the right to determine the amount payable to the Proposer, not to exceed \$700,000.00, and to audit the costs incurred by the Proposer in preparing its Technical Proposal to assist in the determination. Should the Administration elect to audit, the auditors shall have access to all books, records, documents and other evidence and accounting principles and practices sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred. Failure of the Proposer or its team members to maintain and retain sufficient records to allow the auditors to verify all or a portion of the claim or to permit the auditors access to the books and records of Proposer and its team members shall constitute a waiver of the right to be paid a stipend and shall bar any recovery thereunder. Any stipend will be payable pursuant to the terms and conditions of a Stipend Agreement. (<i>See Appendix C, Form SA</i>). No stipend will be paid unless the Proposer executes and delivers the Stipend Agreement to the Administration with its Technical Proposal. In the event that the procurement is cancelled prior to the Proposal Date, Proposers will be provided the opportunity, at their option, of attending an interview and delivering to the Administration the work product of their Proposal preparations to date. There is no specific format required for such work product. Those Proposers that choose to attend the interview, deliver their work product and sign a modified Form SA to be provided by the Administration may be paid an amount that the Administration deems to be appropriate consideration for the work product. No portion of the stipend amount will be paid in the event a Proposer chooses not to attend the interview or chooses not to deliver its work product. The cost of preparing the Proposal and any costs incurred at any time before or during the Proposal process, including costs incurred for any interviews, shall be borne by the Proposer, except for any costs paid in accordance with this Section 6.3.</p>	

22. Payment Method

Owner	Florida Department of Transportation
Project	I-4 (SR 400) Six Laning
Date of Issuance	2001
<p>L. Payout Schedule/Schedule of Values</p> <p>The DESIGN/BUILD FIRM will be responsible for invoicing the FDOT based on current invoicing policy and procedure. Invoicing will be based on the completion or percent completion of major, welldefined tasks less retainage as defined in the schedule of values. Final payment will be made upon final acceptance by the FDOT of completed construction and "as-built" plans. Tracking DBE participation will be required under normal procedures according to the CPAM. The DESIGN/BUILD FIRM must submit the payout schedule/schedule of values to the FDOT for approval. No invoices shall be submitted prior to FDOT approval of the payout schedule/schedule of values. Upon receipt of the invoice, the District Interstate Resident Engineer and FDOT Project Administrator will make judgment on whether or not work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished. Major tasks to be included in the payout schedule/schedule of values are listed below. These tasks can be broken out into components, such as individual bridges, station limits of roadway, or location of retaining wall. Other costs are incidental and should be incorporated into the items listed in the schedule of values.</p> <ul style="list-style-type: none"> • Design Survey Complete • Materials Quality Tracking System Complete • Geotechnical Investigation Complete • Clearing and Grubbing Complete • Construction Mobilization Complete • Embankment/Excavation Complete • Foundation Design Complete • Foundation Construction Complete • Substructure Design Complete • Substructure Construction Complete • Superstructure Design Complete • Superstructure Construction Complete • Walls Design Complete • Walls Construction Complete • Roadway Design Complete • Roadway Construction Complete • Signing and Pavement Marking Design Complete • Signing and Pavement Marking Construction Complete • Intelligent Transportation System Design Complete • Intelligent Transportation System Construction Complete • Landscape Design Complete • Landscape Construction Complete • Maintenance of Traffic Design Complete • Service Patrol Active • Maintenance of Traffic Set-Up (per duration) • Erosion Control Complete • Additional Milestones as determined by the DESIGN/BUILD FIRM • Final Acceptance 	

23. Progress Schedule

Owner	Washington Department of Transportation
Project	Everett HOV Design-Build Project
Date of Issuance	2004
<p>1-08.3 CONTRACT SCHEDULE</p> <p>Within 14 days of the effective date of the Notice to Proceed, the Design-Builder shall submit a preliminary 90-day look-ahead schedule in order to facilitate early Project planning and mobilization. This look-ahead schedule need not be resource-loaded, but must be sufficiently detailed to facilitate an understanding of the Design-Builder's Project mobilization plans and the consistency of those plans with overall Project schedule goals.</p> <p>Within 30 days after the effective date of the Notice to Proceed, the Design-Builder shall prepare and submit for WSDOT approval a critical path method baseline Contract Schedule. The scheduling software that will be utilized by WSDOT on this project is Primavera Project Planner (P3EC) by Primavera Systems, Inc. Notwithstanding any other provision in the contract, schedules submitted for this project must be prepared using either Primavera P3EC or Primavera SureTrak files saved in Concentric P3EC format. The Design-Builder shall provide electronic files saved in a format that is compatible with WSDOT's current software version. Submission of data from another software system where data conversion techniques or software is used to import into Primavera's scheduling software is not acceptable and will be cause for rejection of the submitted schedule.</p> <p>The baseline Contract Schedule shall be cost and resource loaded, and shall include, in addition to construction activities, activities for design Work, submittal review, utility relocations, and other activities required to be performed by the Design-Builder or others in order to achieve Completion. The Design-Builder shall allocate the total Contract Price among the activities scheduled on the Contract Schedule so that each activity has a price which accurately shows the amount payable to the Design- Builder for such activity. The price for each activity shall account for any limitations relating to payment for specific activities contained herein. The sum of the prices of all activities in the Contract Schedule shall equal the total Contract Price. Once the Contract Schedule has been approved, no changes to any allocated amount may be made without WSDOT approval.</p> <p><Omitted></p>	

24. Project Acceptance

Owner	South Dakota Department of Transportation
Project	Interstate 229
Date of Issuance	2000
<p>9.9 Acceptance and Final Payment</p> <p>A. Substantial Completion. Design/Builder shall provide notice to Department when all of the following have occurred:</p> <ol style="list-style-type: none"> 1) Design/Builder has completed the Project (except for punch list items, final cleanup and other items included in the requirements for final acceptance); 2) Design/Builder has ensured that all construction associated with the Project has been performed in accordance with the requirements of the Contract Documents; 3) Design/Builder has ensured that the Project may be operated without damage to the Project or any other property on or off the site, and without injury to any person; and 4) Design/Builder has ensured that the Project is ready to be opened for public traffic. <p>B. As promptly as is practicable after receipt of Substantial Completion, and in no event later than 30 days thereafter, Department shall advise Design/Builder in writing of any of the following of which Department then has knowledge: (a) defects in the Work, and/or (b) deficiencies in the Project relating to any of the items described in clauses (1), (2), (3) or (4) above, and/or (c) deviations of any installed Equipment, Materials and workmanship from the requirements of the Contract Documents. Design/Builder shall, at its own cost and expense, promptly correct such defects, deficiencies and deviations.</p> <p>C. Substantial Completion of the Project shall be deemed to have occurred when:</p> <ol style="list-style-type: none"> 1) Design/Builder has corrected all defects, deficiencies and deviations with respect to the Project and Department has notified Design/Builder in writing of its acceptance (or waiver pending final acceptance) of such corrections; provided that final cleanup and the items described in 3, below, shall not be required to be performed as a condition to Substantial Completion; 2) Design/Builder has received all applicable governmental approvals required to be obtained by Design/Builder; 3) A punch list for the Project and a list of safety committee review comments to be performed after opening of the Project has been mutually agreed to by Department and Design/Builder; 4) The Project is ready to be opened for public traffic. <p>D. Design Acceptance</p> <p>Acceptance of design will occur essentially at the time of acceptance of construction. The Design/Builder shall submit all as-builts as well as those documents required for final design approval as a condition of acceptance of design and construction.</p>	

25. Traffic Control

Owner	Colorado Department of Transportation
Project	Southeast Corridor Multi-Model Project
Date of Issuance	2000
<p>2.0 METHOD OF HANDLING TRAFFIC REQUIREMENTS</p> <p>2.1 Scope</p> <p>The Contractor shall provide for the maintenance of traffic through the Project area and all other areas affected by construction activities to maximize the safe and efficient movement of people, goods and services while minimizing negative impacts to residents, commuters and businesses. For the purpose of this Section, the Project area is defined as:</p> <ol style="list-style-type: none"> 1. I-25 from Broadway to Lincoln Avenue and I-225 from I-25 to Parker Road. 2. Adjacent routes along which project-related construction will occur (i.e. roadways which will be disrupted by utility relocations, LRT construction, park-n-Ride construction, etc.). 3. Detour routes, diversion routes, and alternate routes marked or otherwise used for the maintenance of traffic related to the project. <p>The Contractor shall develop Traffic Management Strategy Reports (TMSRs) and Traffic Control Plans (TCPs) that shall meet the requirements of CDOT and Local Agencies. Prior to implementation of traffic management strategies and control plans, the Contractor shall submit TMSR's for Acceptance and TCP's or the review of the SEC Representative. Local Agencies shall review TMSR's and TCP's within and affecting their jurisdictions and shall approve any permits that are required by applicable ordinances of these Local agencies. Protocol, submittal, review and Acceptance procedures, practices and policies specified in the Contract Document apply. The SEC Representative may review TCP's and Accept TMSR's, but will not direct the Work of the Contractor. Acceptance by the SEC Representative will not relieve the Contractor from performing Contract obligations delineated in the Contract.</p> <p>The Contractor shall develop and furnish:</p> <ol style="list-style-type: none"> 1. Traffic Management Strategy Reports (TMSRs) to identify, address and resolve traffic impact issues within construction zones and all other areas affected by construction activities (i.e. detours). 2. Traffic Control Plans (TCPs) for Work Sites and detour routes. 3. An Incident Management Plan for the Project. 4. Courtesy Patrol for the Project. 5. Secure Internet site for information sharing among traffic and emergency management centers. 6. Access permits for permanent driveway changes. 7. Signing plans. 8. Pavement marking plans. 9. Temporary traffic signalization plans. <p>The Contractor shall construct all necessary traffic mitigation to maintain local access and circulation. In conjunction with this requirement, the Contractor shall furnish the SEC Representative, CDOT, and Local Agencies with all necessary documentation required for traffic management and control.</p>	

26. Public Relations

Owner	Maryland State Highway Agency
Project	ICC Contract A
Date of Issuance	July 13, 2006
PS 302 – PUBLIC OUTREACH PERFORMANCE SPECIFICATION	
<p>1.0 GENERAL</p> <p>This Performance Specification outlines the requirements for Public Outreach (PO) and defines the roles and responsibilities for this effort.</p> <p>The PO program includes Administration and Design-Builder activities, including the following:</p> <ul style="list-style-type: none"> A) Public Outreach; B) Community involvement and meetings; C) Communications with the public; D) Public notices; E) Media relations; and F) Maintenance of Traffic (MOT) plan. <p>Given the sensitive history of the ICC, the engagement of residents, businesses, elected officials, communities, motorists, environmentalists and other interest groups within the corridor are critical to the successful completion of the Project. The planning of the Project has evolved to its current level due in part to the extensive involvement of such parties. In support of the Administration, the Design- Builder shall commit to significant assistance of the Administration with regard to community participation and interaction activities during the development of the design and throughout the construction of the Project.</p> <p>2.0-3.0 <Omitted></p> <p>3.1 ADMINISTRATION PUBLIC OUTREACH RESPONSIBILITIES</p> <ul style="list-style-type: none"> A) Maintain QA of any approved communication efforts by the Design-Builder; and B) Liaising with and monitoring the Design-Builder's performance for compliance with the Contract's public outreach requirements. <p>3.2 DESIGN-BUILDER RESPONSIBILITIES AND REQUIREMENTS</p> <ul style="list-style-type: none"> 3.2.1 Public Outreach and Community Relations Program <Omitted> 3.2.2 Design-Builder's Response to Inquiries and Comments <Omitted> 3.2.3 Public Notifications <Omitted> 3.2.5 Emergency, Unforeseen Utility Disruptions, Hazardous Conditions, Traffic Emergencies, Security, and Loss of Access Notifications <Omitted> 3.2.6 Construction Schedule/Maintenance of Traffic and Access <Omitted> 3.2.7 Signage <Omitted> 3.2.8 Telephone Trees <Omitted> 3.2.9 Public Forums <Omitted> 3.2.10 Construction Progress Photographs <Omitted> 	

2.3 CM at-Risk

2.3-A – LEGISLATION

(Blank)

2.3-B – GMP ELEMENTS

Owner	State of Florida Department of Transportation
Project/Document	Agreement Between Owner and Construction Manager (Generic Document)
Date of Issuance	N/A
Section	6. Guaranteed Maximum Price For Construction

The initial schedule prepared by the Construction Manager for the Project shall reflect and track the design progress through the completion of design and through the presentation of the proposed GMP for the construction of the Project. The Construction Manager shall follow the process required by this Agreement for the preparation and submittal of a GMP for the Project. The Construction Manager shall propose for the Project, the amount to be included in the Project GMP for the Construction Manager’s general conditions costs and contingency. The Owner shall have the option of accepting or rejecting the Project GMP as presented by the Construction Manager. Should the Project GMP be accepted, the GMP LOA reflecting that authorization and Notice-to-Proceed shall be issued. Once accepted by Owner, any mistakes by Construction Manager in estimating costs or work in its preparation of a GMP shall not serve as the basis for a claim by Construction Manager or upward adjustment to the GMP.

Upon acceptance of a proposed GMP and execution of the relevant Contract Documents for a project, the GMP for the project will be fixed and firm for the duration of the Work and include all Construction Manager costs, expenses, taxes, overhead and profit for full and complete performance of the Work, as further described below. The GMP is not subject to price escalation or de-escalation and is not subject to increase or decrease except for changes in the Scope of Work as provided for and in accordance with the relevant provisions of the Contract Documents. The GMP shall be construed at any given point in time to include any firm fixed adjustments thereto made in accordance with the relevant provisions of the Contract Documents.

The proposed Project GMP shall form the basis of negotiations between the Construction Manager and the Owner. The Owner shall have no obligation to accept any GMP proposal of the Construction Manager regardless of that proposal’s relationship to the Owner’s Budget or the most current Estimate or for any other reason. After each negotiation session, unless agreement is reached the Owner shall determine if further negotiations are warranted. If not, the negotiations shall be declared not to be successful, and the Owner shall take possession and ownership of all documents produced for the design and bid phase, pay the Construction Manager any remaining undisputed Construction Manager’s Fee, and proceed as follows:

Reject the GMP and direct the Architect/Engineer for the Project and the Construction Manager to investigate, redesign, develop for Owner approval value engineering possibilities, and other cost savings and to re-submit a new, lesser, proposed GMP. This may, at the Owner’s option, include reduction in scope; or,

Reject the GMP, take possession of the plans and specification, and select a new construction manager for the Project, bid the work to a general contractor or otherwise complete with other forces or take such action, if any, that the Owner may determine is in its best interest. In this event, the Construction Manager shall not perform, nor be compensated for, any services at this site beyond the agreed Construction Manager’s

Preconstruction Fee for the project. In the event any option under this subparagraph is chosen by the Owner, the Construction Manager is obligated to immediately turn over to the Owner all plans, specifications and other project related documentation, and to coordinate its other work with the Owner's work pursuant to Section 2.7.7.

In addition to the Base GMP, a GMP for a Project will include an agreed upon sum as the Construction Contingency relating to construction of that Project. The Construction Contingency will be composed of two elements: the Construction Manager's Contingency and the Owner's Contingency, each of which will be specified in the GMP. The Construction Manager shall submit reports of utilization of the Construction Manager's Contingency and requests to utilize the Owner's Contingency through the claims process under Article 15.

The Construction Manager's Contingency shall be utilized to compensate for the increased Cost of the Project incurred by the Construction Manager due to unforeseen circumstances relating to construction of that Project which resulted in an unavoidable increase in costs, except when deemed the responsibility of the Owner. The Owner's Contingency shall be an amount, determined by the Owner, which will be available to compensate for the increased Cost of the Project incurred by the Construction Manager due to changes in the work made in the discretion of the Owner after issuance of a Letter of Authorization, as well as other increases in the Cost of the Project which are deemed the responsibility of Owner.

Construction Manager will be required to furnish documentation evidencing all expenditures charged to the Construction Contingency, and demonstrating that the costs incurred were necessary for the Work. Construction Manager shall identify the amount sought to be charged to the Construction Contingency, whether the charge is to be applied to the Construction Manager's Contingency or the Owner's Contingency, and the reasons why the amount should be charged to that Contingency. Documentation for use of the Contingency shall be determined by the Project Team, included in the Project Manual and displayed monthly in the PMIS. The Project Architect/Engineer shall have authority to verify the actual costs.

If bids are received below the applicable line items in the Project GMP, the surplus will be added to the Construction Manager's Contingency for that Project. If bids are received above the applicable line item in a Project GMP, the deficiency will be charged to the Construction Manager's contingency for that Project; however such events shall not be cause to increase the Base Project GMP.

If bids are not received for a portion of the work at or below the applicable line item amount in the GMP, the Construction Manager reserves the right to perform that portion of the work as approved by the Owner or negotiate for its performance for the specified line item lump sum amount or less.

If a Project GMP includes a general allowance for an item of work, and the plans or specifications do not provide a basis for estimating the cost of the work, any actual cost sought to be recovered by Construction Manager that exceeds the allowance will be charged to the Owner's contingency.

The increased Cost of the Project incurred by the Construction Manager resulting from Owner's express written changes in plans, specifications or work will be charged to the Owner's Contingency. The decision to make such changes, and to incur the costs that arise there from, shall be in the sole discretion of the

Owner. No costs may be charged to the Owner's Contingency under this subsection without express approval of Owner.

The increased Cost of the Project incurred by the Construction Manager resulting from other actions of the Owner will be charged to the Owner's Contingency if they are deemed to be Owner's responsibility. Unless Construction Manager secures Owner's written agreement that such costs are Owner's responsibility, documentation of responsibility for such costs shall be submitted with the Construction Manager's claim. When Construction Manager has reason to anticipate that such costs may be incurred, it shall be the Construction Manager's responsibility, when feasible, to provide the Owner with sufficient advance notice (of no less than 14 days), so as to provide the Owner with a reasonable opportunity to avoid such costs. Such costs shall be deemed the Owner's responsibility if Owner subsequently agrees in writing to grant the claim and accept such responsibility, or if the claim is granted and responsibility assigned to Owner pursuant to the dispute resolution process under Section 16.6 and all reviews thereof are exhausted or waived by Owner.

The grant of a claim shall not result in a charge against the Owners' Contingency unless the claim expressly requests a charge against the Owner's Contingency and the grant of the claim expressly approves the charge against the Owner's Contingency.

The Owner retains the right to increase the Base GMP in lieu of charging the cost to the Owner's Contingency.

The GMP will only include those taxes in the cost of the project that are legally enacted at the time the GMP is established. Any sales tax savings as a result of this being a state project, whether by acquisition procedure or change in sales tax laws relating to public construction projects, shall be passed to the Owner either in the form of a reduction in the GMP or in an increase in a contingency, solely in the discretion of the Owner.

At the time of submission of a Project GMP proposal for a Project, the Construction Manager will propose a schedule for substantial completion of the Project. The Owner and the Construction Manager may negotiate incentives for early completion of the Project and sharing of cost savings. The Owner and the Construction Manager may also negotiate liquidated damages for failure to meet certain milestones or substantial completion of the Project.

The term "Project GMP," as used in this Agreement is a term of convenience only and is not intended to affect how a GMP or its components are to be determined or adjusted.

Owner	Department of Public Works (Pinellas County, Florida)
Project/Document	State Road 699 (Gulf Boulevard) from Park Boulevard to Walsingham Road, Roadway and Utilities improvements
Date of Issuance	February 15 th , 2005
Section	Article 2 Guaranteed Maximum Price
<p>2.1 Construction Manager’s Guaranteed Maximum Price for the Work, including the estimated Cost of the Work as defined in Section 5 of the Agreement, the Construction Manager’s Fee as defined in Section 4 of the Agreement, and the Contingency as defined below; is _____, (\$_____)</p> <p>2.2 The Subcontract Costs as defined in Section 5. A. 2 of the Agreement, for the entire Work anticipated on this project will be based on actual Subcontractor invoices to the Construction Manager up to the established amount of _____(\$_____). Said amount is included within the above noted GMP.</p> <p>2.3 The Construction Manager’s Fee as defined in Section 4. B of the Agreement, for the entire Work anticipated on this Project is hereby established as a lump sum amount of _____ (\$_____), said lump sum amount is included within the above noted GMP.</p> <p>2.4 The General Condition expenses as defined in Section 4. B of the Agreement, for the entire Work anticipated on this Project are hereby established as a lump sum amount of _____ (\$_____), said lump sum amount is included within the above noted GMP. The items included as General Condition expenses are listed in the List of Itemized General Conditions attached hereto and incorporated herein as Attachment No. 3.</p> <p>2.5 In order to efficiently and timely address any unknown or unanticipated conditions that are within the scope of the required Work and are otherwise reimbursable without duplication as a Cost of the Work, but excluding all items that are to be reimbursed under the lump sum General Condition expense amount noted in paragraph 2.4 above, the parties have agreed to establish a Construction Manager’s Contingency within the GMP. Construction Manager’s Contingency funds may be increased by Change Order. Construction Manager shall not proceed with any portion of the Work, which it intends to charge against this contingency without first obtaining Owner’s express written authorization to proceed. The Construction Manager acknowledges and agrees that any work which is to be charged against the Construction Manager’s Contingency funds that does not receive such prior written approval from the Owner shall be deemed to be part of Construction Manager’s basic Work compensated within the GMP and not chargeable against the Construction Manager’s Contingency.</p> <p>2.5.1 The Construction Manager’s Contingency shall be utilized to compensate for the increased Cost of the Project incurred by the Construction Manager due to unforeseen circumstances relating to construction of that Project which resulted in an unavoidable increase in costs, except when deemed the responsibility of the Owner.</p> <p>2.5.2 The Construction Manager will be required to furnish documentation evidencing all expenditures charged to the Construction Manager’s Contingency, and demonstrating that the costs incurred were necessary for the Work. Construction Manager shall identify the amount sought to be charged to the Construction Manager’s Contingency and the reasons why the amount should be charged to that</p>	

Contingency.

2.5.3 The Construction Manager's Contingency shall be established as an amount of _____ (\$ _____) and is included within the above noted GMP.

2.6 Monthly installment payment of the Cost of the Work, General Conditions, the Construction Manager's Fee and the utilized Contingency; shall be paid monthly based upon the percent completion of the Work for each particular month. The percent completion shall be based on the approved updated Construction Schedule as required in Exhibit B, Supplemental Terms and Conditions, Section 3.3.9.

2.7 Construction Manager recognizes that this Contract includes work for trench excavation in excess of five feet deep. Construction Manager acknowledges the requirements set forth in Section 553.63 of the Florida Statutes titled Trench Safety Act. Construction Manager certifies that the required trench safety standards will be in effect during the period of construction of the Project and Construction Manager agrees to comply with all such required trench safety standards.

2.7.1 The amount of _____ dollars (\$ _____) has been separately identified for the cost of compliance with the required trench safety standards; said amount is included within the Article 2.1 above.

2.8 The GMP may be adjusted pursuant to the terms herein for Change Order and Construction Change Directive.

Owner	Construction Managers Association of America (CMAA)
Project/Document	Standard Form of Agreement Between Owner and Construction Manager: Construction Manager At-Risk
Date of Issuance	2004 Edition
Section	Article 12 Special Guaranteed Maximum Price Provisions

12.1 Guaranteed Maximum Price

12.1.1 As of this _____ day of _____, 20____ pursuant to this Agreement and for the Project defined in Article 2, the Owner and the CM desire to set a Guaranteed Maximum Price for the Project.

12.1.2 Documentation of the Guaranteed Maximum Price shall be developed by the CM from the design drawings and specifications and such other documents as may be specified as follows:

12.1.2.1 The documentation, attached hereto as Exhibit A and made a part hereof by reference, includes budgeted amounts for each of:

Priced divisions of the Work required for the Project and an amount of _____ designated as a contingency amount (the Contingency) for the use of the CM. The Guaranteed Maximum Price is for the total cost of the Project and not the cost for each of any division of the Project, unless other wise specified.

12.1.2.2 The documentation shall be prepared by the CM and submitted to the Owner with the Guaranteed Maximum Price. The documentation may include drawings, sketches, specifications, calculations or other data used to identify the basis of the Guaranteed Maximum Price.

12.1. 3. As the separate contracts, purchase orders or other fixed contract prices are obtained and are awarded for each of the separately priced division of the work required for the project as shown in the Project and Construction Budget, the Guaranteed Maximum price and the project and Construction Budget shall be adjusted as follows:

12.1.3.1 If the cost of any division as awarded is less than the amount shown on the Project⁶ and Construction Budget, as determined in accordance with the terms of this Agreement, the amount indicated in the Project and Construction Budget for such item shall be reduced by an amount equal to the difference between such cost and the amount shown on the Project and Construction Budget for such item and Contingency shall be increased by the same amount;

12.1.3.2 If the cost of any division is greater than the amount shown in the Project and Construction Budget to the extent that the Contingency is sufficient, the amount shown in the Project and Construction Budget for such item shall be increased by an amount equal to the difference between such cost and the amount shown in the Project and Construction Budget for such item and the Contingency shall be reduced by the same amount. The Guaranteed maximum price shall not be adjusted; and

12.1.3.3 If the Owner directs the CM to award a contract to a bidder other than the lowest responsible and responsive bidder for any portion of the Project, the Guaranteed Maximum price shall be increased by the amount of the difference between the award price and the price submitted by the lowest responsible and responsive bidder. The Contingency shall not be changed;

12.1.4 The Guaranteed maximum Price established for the Project is _____ Dollars (\$_____). This Guaranteed Maximum Price is for the work described in the documentation attached as Exhibit "A".

12.1.6 In the event that the cost of the Project exceeds the Guaranteed Maximum Price and any adjustments therein as may be due pursuant to the terms hereof, the CM shall continue to perform at no additional cost to the Owner until the Project, defined by this Agreement and all Attachments hereto complete. The CM shall be responsible for paying all costs, in accordance with the terms of this Agreement that may be necessary to complete the Project, even if such amounts are in aggregates in excess of the Guaranteed Maximum Price.

Owner	American Institute of Architects / Association of General Contractors
Project/Document	AIA Document 121/CMC – AGC Document No 565: Standard form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor
Date of Issuance	2003 Edition
Section	2.2 Guaranteed Maximum price Proposal and Contract Time
<p>2.2.1 When the Drawings and Specifications are sufficiently complete, the Construction Manager shall propose a Guaranteed Maximum Price, which shall be the sum of the estimated Cost of the Work and the Construction Manager's Fee.</p> <p>2.2.2 As the Drawings and Specifications may not be finished at the time the Guaranteed Maximum Price proposal is prepared, the Construction Manager shall provide in the Guaranteed Maximum price for further development of the Drawings and Specifications by the Architect that is consistent with the Contract Documents and reasonable inferable there from. Such further development does not include such things as changes in scope, systems, kinds and quality of materials, finishes or equipments, all of which, if required, shall be incorporated by Change Order.</p> <p>2.2.3 The estimated Cost of the Work shall include the Construction Manger's contingency, a sum established by the Construction Manager for the Construction Manager's exclusive use to cover costs arising under Section 2.2.2 and other costs which are properly reimbursable as Cost of the Work but not the basis for a Change Order.</p> <p>2.2.4 Basis of Guaranteed Maximum Price</p> <p>The Construction Manager shall include with the Guaranteed Maximum Price proposal a written statement of its basis, which shall include:</p> <p>.1 A list of the Drawings and Specifications, including all addenda thereto and the Conditions of the Contract, which were used in preparation of the Guaranteed Maximum Price proposal.</p> <p>.2 A list of allowances and a statement of their basis.</p> <p>.3 A list of the clarifications and assumptions made by the Construction Manager in the preparation of the Guaranteed Maximum Price proposal to supplement the information contained in the Drawings and Specification.</p> <p>.4 The proposed Guaranteed Maximum Price, including a statement of the estimated cost organized by trade categories, allowances, contingency, and other items and the Fee that comprise the Guaranteed Maximum Price.</p> <p>.5 The Date of Substantial Completion upon which the proposed Guaranteed Maximum Price is based, and a schedule of the Construction Documents issuance dates upon which the date of Substantial Completion is based.</p>	

Owner	American Institute of Architects / Association of General Contractors
Project/Document	AIA Document 121/CMC – AGC Document No 565: Standard form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor
Date of Issuance	2003 Edition
Section	5.2 Guaranteed Maximum Price
<p>5.2.1 The sum of the Cost of the Work and the Construction Manager's Fee are guaranteed by the Construction Manager not to exceed the amount provided in Amendment No. 1, subject to additions and deductions by changes in the Work as provided in the Contract Documents. Such maximum sum as adjusted by approved changes in the Work is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Construction Manager without reimbursement by the Owner.</p>	

Owner	Lee County Southwest Florida
Project/Document	Construction Management for Sanibel Bridge & Toll Plaza Reconstruction Along with Cape Coral Toll Plaza
Date of Issuance	November 2005
Section	4. Construction Manager's Responsibilities and Services
<p>4.03 Establishment of Guaranteed Maximum Price for Construction.</p> <p>Within 30 days of being provided with final Project Plans and Specifications for each Phase (but prior to entering into any subcontracts) or at such time thereafter designated by the Owner, the CM will establish and submit in writing to the Owner for its approval a Guaranteed Maximum Price for that Phase (the Phase GMP), guaranteeing the maximum Project Cost to the Owner, for the construction of the work covered by the final Project Plans and Specifications that are applicable to the Phase.</p> <p>It is acknowledged that the final Project Plans and Specifications may be issued in various packages to facilitate the completion of the Project. The Phase GMP shall only be subject to modification for changes in the work or as otherwise specifically provided for in this Agreement. However, the Project Cost paid by the Owner for a Phase shall either be: (1) the, actual Project Cost in performing the Phase, or (2) the Phase GMP, whichever is the lesser when the work on the Phase is finally complete. Owner may request and will be provided by CM copies of documents relating to the development of project cost and Phase GMP.</p> <p>(1) All amounts of monies resulting from actual Project Costs, as described above, totaling less than the Phase GMP shall be and accrue to the benefit of the Owner; provided however, any contingency amounts which are neither returned to Owner, pursuant to the contingency reversion schedule contemplated in Paragraph 4.03(4), nor expended by CM, may be added to any other Phase GMP, to the extent legally allowed.</p> <p>(2) The Phase GMP will include only those applicable taxes in the Project Cost which are legally enacted at the time the Phase GMP is established. Should any applicable taxes be enacted after the date a Supplemental Agreement is signed, than the Phase GMP shall be increased by the same amount.</p> <p>(3) At the time of submission of a Phase GMP, the CM will verify the time schedule for activities and work which were adopted by the Construction Team and used to determine the CM's Phase GMP. The Phase GMP will include an agreed-upon sum as the CM's construction contingency which is included for the purpose of defraying the expenses due to unforeseen circumstances relating to construction. The CM will be required to furnish documentation evidencing proposed expenditures to this contingency prior to written authorization for the release of funds by the Owner. Actual and contemplated expenditures from the contingency shall be displayed monthly in the PAIS. If bids are received below the applicable line items in the Phase GMP, the surplus will be added to the contingency.</p> <p>(4) In conjunction with the establishment of the Phase GMP for each Supplemental Agreement, the Owner and CM shall mutually agree upon a contingency reversion schedule that identifies how contingency amounts (in excess of stipulated. thresholds) will be calculated upon the completion of major milestones of the work of that Phase of the Project. The intention of such contingency reversion schedule is to correlate the remaining contingency needs of the CM with the risks remaining in the work to be completed on each Phase.</p> <p>(5) If any bid package consistent with the Project Plans and Specifications for which the lowest price submitted by a subcontractor is in excess of the amount allocated by the CM for such bid package (unless Owner through change order changes the Scope of Work and the Phase GMP), one of the following may</p>	

occur: (1) CM may negotiate the price of the bid package starting with the lowest responsible bidder, or (2) at the CM's request and expense, and, at the Owner's sole option, Owner may require the AE to make certain changes in the Project Plans and Specifications as are necessary to bring that particular package into line, consistent with Owner's program and the Project's financial feasibility, or (3) with the approval of the Owner, funds may be reallocated from the construction contingency within the Phase GMP to pay the difference between the low bid price and the amount allocated for the bid package, but in no case shall such approval serve to increase the Phase GMP of the Phase.

2.3-C – PRE-CONSTRUCTION SERVICES ELEMENTS

Owner	Department of Public Works (Pinellas County, Florida)
Project/Document	State Road 699 (Gulf Boulevard) from Park Boulevard to Walsingham Road, Roadway and Utilities improvements
Date of Issuance	February 15 th , 2005
Section	2. Scope of the Work
<p><u>Pre-Construction Phase Services.</u> Construction Manager shall review and comment upon the Construction Documents developed by Design Professional. The scope of that review shall include, but not be limited to, reviewing those various documents for value engineering and constructability. During the Pre-Construction Phase, Construction Manager agrees to attend any and all design and preconstruction conferences and to otherwise assist and cooperate with Design Professional with respect to the design of the Project.</p> <p>Construction Manager shall attend Utility Coordination meetings between Indian Shores and Florida Progress.</p> <p>Construction Manager shall attend meetings between the Owner and the Florida Department of Transportation regarding Pre-Construction aspects of this Project.</p> <p>Construction Manager shall assist the Owner with responding to inquiries from the FHWA regarding Pre-Construction aspects of this Project.</p> <p>Construction Manager shall assist the Owner with responding to questions from the Florida Department of Transportation regarding Pre-Construction aspects of this Project.</p> <p>When the Owner and Construction Manager agree that the design of the Project is sufficiently developed and documented to allow detailed pricing, Construction Manager shall develop, prepare and submit a Guaranteed Maximum Price Proposal to the Owner in accordance with Exhibit K. The Owner shall accept such Guaranteed Maximum Price within thirty days of the date of the receipt unless such time is mutually extended. If the Owner does not accept the GMP within the time period herein provided, such proposal shall be presumed to be rejected by the Owner and the Construction Manager shall be entitled to payment for all Pre-Construction Phase services in the amount indicated in Section 4, A of the Agreement.</p>	

Owner	Department of Public Works (Pinellas County, Florida)
Project/Document	State Road 699 (Gulf Boulevard) from Park Boulevard to Walsingham Road, Roadway and Utilities improvements
Date of Issuance	February 15 th , 2005
Section	8. Pre-Construction Phase Services

8. PRE-CONSTRUCTION PHASE SERVICES.

As applicable, Construction Manager shall provide the following review and commentary services, in addition to any other Pre-Construction Phase Services required by the terms of this Agreement:

8.1 Review, Recommendations and Warranty: The Construction Manager shall familiarize itself thoroughly with the roadway, drainage, utility, traffic signals, pavement markings, maintenance of traffic, and seawall plans and specifications. If applicable, the Construction Manager shall make recommendations with respect to the selection of systems and materials, and cost-reducing alternatives including assistance to the Design Professional and Owner in evaluating alternative comparisons versus long term cost effects. The evaluation shall address the benefits of the speed of erection and early completion of the Work. The Construction Manager shall furnish pertinent information as to the availability of materials and labor that will be required. The Construction Manager shall submit to the Owner and Design Professional such comments as may be appropriate concerning construction feasibility and practicality. The Construction Manager shall call to the Owner's and the Design Professional's attention any defects in the design, drawings and specifications or other documents of which it is aware. The Construction Manager shall prepare estimates of the construction cost utilizing the unit quantity survey method in the FDOT format.

8.2 Intergovernmental Coordination: The Construction Manager shall become familiar with the Federal Highway Administration (FHWA), SEP-14 process and assist the Owner with the SEP-14 as necessary. The Construction Manager shall assist the Owner as necessary with the Florida Department of Transportation, Local Agency Program (LAP) checklist.

8.3 Review Reports: If applicable, within twenty one (21) days after receiving the documents produced by the Design Professional, the Construction Manager shall perform a specific review thereof, focused upon factors of a nature encompassed in Paragraph 8.1 above and on factors set out in Paragraphs 8.4 and 8.5 below. Within the same twenty one (21) day period, the Construction Manager shall submit to the Owner, with copies to the Design Professional, a written report covering suggestions or recommendations previously submitted, additional suggestions or recommendations as the Construction Manager may deem appropriate, and all actions taken by the Design Professional with respect to same, any comments the Construction Manager may deem to be appropriate with respect to separating the Work into separate subcontracts, alternative materials, and any other appropriate or required comments.

AT THE TIME THE GMP IS MUTUALLY ESTABLISHED, EXCEPT ONLY AS TO SPECIFIC MATTERS AS MAY BE IDENTIFIED IN AMENDMENT NO. 1, THE CONSTRUCTION MANAGER SHALL BE DEEMED TO HAVE WARRANTED TO OWNER, WITHOUT ASSUMING ANY ARCHITECTURAL OR ENGINEERING RESPONSIBILITY, THAT THE CONSTRUCTION DOCUMENTS ARE CONSISTENT WITH EACH OTHER, PRACTICAL, FEASIBLE AND CONSTRUCTABLE. FURTHER, THE CONSTRUCTION MANAGER SHALL BE DEEMED TO HAVE WARRANTED TO OWNER THAT THE WORK DESCRIBED IN THE CONSTRUCTION DOCUMENTS FOR THE VARIOUS BIDDING PACKAGES IS CONSTRUCTABLE WITHIN THE CONTRACT TIME.

8.4 Long Lead Procurement: If applicable, the Construction Manager shall review the Project design for

the purpose of identifying long lead procurement items (machinery, equipment, materials and supplies) and consult with Design Professional concerning same. When each item is identified, the Construction Manager shall notify the subcontractors, Owner and the Design Professional of the required procurement and schedule. Such information shall be included in the bid documents and made a part of all affected subcontracts. The Construction Manager shall keep itself informed of the progress of the respective subcontractors or suppliers, manufacturing or fabricating such items, and advise Owner and Design Professional of any problems or possible delays in delivery.

8.5 Interfacing

8.5.1 If applicable, the Construction Manager shall take such measures as are appropriate to provide that all construction requirements will be covered in the separate procurement of long lead items, the separate construction subcontractors and the general conditions items without duplication or overlap, and sequenced to maintain completion of all Work on schedule. Particular attention shall be given to provide that each bid package clearly identifies the Work included in that particular separate subcontract, its schedule for start and completion and its relationship to the other separate subcontractors.

8.5.2 Without assuming any design responsibilities of the Design Professional, the Construction Manager shall include in the reports required under Paragraph 8.2 above, comments on overlap with any other separate subcontracts, omissions, lack of correlation between drawings, and any other deficiencies noted, in order that the Design Professional may arrange for necessary corrections.

Owner	American Institute of Architects / Association of General Contractors
Project/Document	AIA Document 121/CMC – AGC Document No 565: Standard form of Agreement Between Owner and Construction Manager Where the Construction Manager is also the Constructor
Date of Issuance	2003 Edition
Section	2.1 Preconstruction Phase
<p>2.1.1 Preliminary Evaluation</p> <p>The Construction Manager shall provide a preliminary evaluation of the Owner's program and Project Budget requirements, each in terms of the other.</p> <p>2.1.2 Consultation</p> <p>The Construction manager with the Architect shall jointly schedule and attend regular meetings with the Owner. The Construction Manager shall consult with the Owner and Architect regarding site use and improvements and the selection of materials, building systems and equipment. The Construction Manager shall provide recommendations on construction feasibility; actions designed to minimize adverse effects of labor or material shortages; time requirements for procurement, installation and construction completion; and factors related to construction cost, including estimates of alternative designs or materials, preliminary budgets and possible economies.</p> <p>2.1.3 Preliminary Project Schedule</p> <p>When Project requirements described in Section 3.1.1 have been sufficiently identified, the Construction Manager shall prepare, and periodically update, a preliminary Project schedule for the Architect's review and the Owner's approval. The Construction Manager shall obtain the Architect's approval of the portion of the preliminary Project schedule relating to the performance of the Architect's services. The Construction manager shall coordinate and integrate the preliminary Project schedule with the services and activities of the Owner, Architect and Construction Manager. As design proceeds, the preliminary Project schedule shall be updated to indicate proposed activity sequences and duration, milestone dates for receipt and approval of pertinent information, submittal of a Guaranteed Maximum Price proposal, preparation and processing of shop drawings and samples, delivery of materials or equipment requiring long-lead-time procurement, Owner's occupancy requirements showing portions of the Project having occupancy priority, and proposed date of Substantial Completion. If preliminary Project schedule updates indicate that previously approved schedules may not be met, the Construction Manager shall make appropriate recommendations to the Owner and Architect.</p> <p>2.1.4 Phased Construction</p> <p>The Construction Manager shall make recommendations to the Owner and Architect regarding the phased issuance of Drawings and Specifications to facilitate phased construction of the Work, if such phased construction is appropriate for the Project, taking into consideration such factors as economies, time of performance, availability of labor and materials, potential conflicts or coordination problems, errors or inefficiencies resulting from multiple contracts, and provisions for temporary facilities.</p> <p>2.1.5 Preliminary Cost Estimates</p> <p>2.1.5.1 When the Owner has sufficiently identified the Project requirements and Exhibits the Architect has prepared other basic design criteria, the Construction Manager shall prepare, for the review of the Architect and approval of</p>	

the Owner, a preliminary cost estimate utilizing area, volume or similar conceptual estimating techniques.

2.1.5.2 When Schematic Design Documents have been prepared by the Architect and approved by the Owner, the Construction Manager shall prepare for the review of the Architect and approval of the Owner, a more detailed cost estimate with supporting data and any modifications to the Project schedule. During the preparation of the Design Development Documents, the Construction Manager shall update and refine this estimate at appropriate intervals agreed to by the Owner, Architect and Construction Manager.

2.1.5.3 When Design Development Documents have been prepared by the Architect and approved by the Owner, the Construction Manager shall prepare a detailed cost estimate with supporting data and any modifications to the Project schedule for review by the Architect and approval by the Owner. During the preparation of the Construction Documents, the Construction Manager shall update and refine this estimate at appropriate intervals agreed to by the Owner, Architect and Construction Manager.

2.1.5.4 If any cost estimate submitted to the Owner exceeds previously approved estimates or the Owner's budget, the Construction Manager shall make appropriate recommendations to the Owner and Architect.

2.1.5.5 Estimates shall be based on quantitative takeoffs whenever possible and shall be sustained in sufficient depth and organization to be used in preparing budgets based on sub-trades, combinations of sub-trades, building systems, and bid packages. Lump sum estimates are not acceptable.

2.1.5.6 At his cost, the Owner may request that the Architect provide an independent confirming estimate at any phase or may request that an independent review of the Construction Manager's detailed estimate be made to generally confirm quantities, costs or rates shown. The Architect also may undertake his own independent, complete estimate at any phase. If the Architect's independent estimate or review of the Construction Manager's estimate significantly differ from the Construction Manager's estimate, the Architect and Construction Manager shall meet and resolve the differences, and then present one common, agreed upon cost estimate to the Owner. At Schematic Design Phase, the difference between the Architect's and Contractor's estimate shall be five percent (5%) or less. At Design Development, this difference shall be two and one-half percent (2½%) or less. At Construction Documents/Guaranteed Maximum Price Phase, the Architect and Contractor shall reconcile and agree with the Estimate of Construction Costs or Guaranteed Maximum Price as developed by the Contractor, within the amount of the Owner's Project Construction Budget (Construction Contract Award Price).

2.1.5.7 The Construction Manger shall provide value analysis studies for major construction components and systems. The results of these studies shall be in report form and distributed to the Owner and Architect.

2.1.5.8 The Construction Manager shall prepare and distribute a Cash Flow projection by the end of the schematic Design Phase and then periodically update and distribute that report with any significant changes.

2.1.5.9 The Construction Manager shall prepare and distribute a Design Phase Change Order Report that shall list all Owner-approved changes to as of the date of the report and shall state the effect of the changes on the Project and Construction Budget and Master Schedule.

2.1.6 Subcontractors and Suppliers

2.1.6.1 The Construction Manager shall seek to develop subcontractor interest in the Project, prequalify and shall furnish to the Owner and Architect for their information a list of possible subcontractors, including suppliers, who are to furnish materials or equipment fabricated to a special design, from whom proposals will be requested for each principal portion of the Work. The Architect will promptly reply in writing to the Construction Manager if the Architect or Owner know of any objection to any such subcontractor or supplier. The receipt of such list shall not require the Owner or Architect to investigate the qualifications of proposed subcontractors or suppliers, nor shall it waive the right of the Owner or Architect later to object to or reject any proposed subcontractor or supplier. The Construction Manager shall only employ subcontractors who

are properly licensed in Arizona, have adequate financial and personnel resources for the Work, and are fully committed to performing the Work consistent with the Construction Documents and with the same degree of skill, quality and competence required of the Construction Manager.

2.1.6.2 The Construction Manager shall cooperate with potential subcontractors and suppliers in processing and accepting requests for Prior Approvals and other alternate materials or construction approaches that are in compliance with the project Specifications. The Architect will review and approve/reject these requests based upon the Construction Documents and his professional judgment. Proprietary specifications must comply with the requirements of State Statutes.

2.1.6.3 The Construction Manager shall develop and use the sub-contractor and supplier prequalification process proposed during their original selection, per Arizona Revised Statutes §41-2578, and reviewed by the Owner during the Pre-Construction Phase. This plan may include items such as screening potential firms or current and future workload, material availability and cost, subcontract or purchase order conditions, insurance, safety record, available and capable tradesmen, financial condition, prior working relationship with the Construction Manager, willingness to perform the work, bonding ability, ability to meet the Project Schedule, and other factors as determined by the Construction Manager to protect its and the Owner's interests. Final selection of sub-contractors shall be through either a qualifications based selection only, with the Owner's prior consent, or pre-qualifications followed by competitive pricing. The Construction Manager shall hold pre-bid and pre-award meetings with all potential and selected subcontractors to assure that all qualifications will be met, scopes of work are proper to assure full coverage of the Work, and that there is full understanding of all issues or questions by all parties.

2.1.6.4 The Construction Manager shall name any related parties or companies being considered for procurement of any labor, material, supplies or equipment for the Work.

2.1.6.5 By mutual agreement between the Owner and Construction Manager, key subcontractors may be selected by merit plus price or by merit only early in the Work, when their early selection will provide critical support, design information, or early materials procurement for the Work. The Construction Manager shall analyze the marketplace versus project needs and make a recommendation to the Owner on the selection process and timing of subcontractors and suppliers.

2.1.6.6 For work proposed to be self performed by the Construction Manager, all materials and supplies used shall be competitively bid. Billable hourly rates and production rates, where applicable, for self performed work shall be established during the Pre-Construction phase and be competitive with similar contractors and trades providing similar work in the same geographical area.

2.1.7 Long-Lead-Time Items

The Construction Manager shall recommend to the Owner and Architect a schedule for procurement of long lead time items that will constitute part of the Work as required to meet the Project schedule. If such long-lead time items are procured by the Owner, they shall be procured on terms and conditions acceptable to the Construction Manager. Upon the Owner's acceptance of the Construction Manager's Guaranteed Maximum Price proposal, all contracts for such items shall be assigned by the Owner to the Construction Manager, who shall accept responsibility for such items as if procured by the Construction Manager. The Construction Manager shall expedite the delivery of long-lead time items. The Construction Manager shall recommend a schedule for such purchases after coordination with the Consultant regarding the schedule for preparation of construction documents, and expedite and coordinate delivery of long-lead time purchases to facilitate their delivery by the required dates.

2.1.8 Extent of Responsibility

The Construction Manager does not warrant or guarantee estimates and schedules except as may be included as part of the Guaranteed Maximum Price. The recommendations and advice of the Construction Manager concerning design alternatives shall be subject to the review and approval of the Owner and the

Owner's professional consultants. It is not the Construction Manager's responsibility to ascertain that the Drawings and Specifications are in accordance with applicable laws, statutes, and ordinances, building codes, rules and regulations. However, if the Construction Manager recognizes that portions of the Drawings and Specifications are at variance therewith, the Construction Manager shall promptly notify the Architect and Owner in writing.

2.1.8.1 The Construction Manager shall assist the Owner and Architect, monitor transmittal of documents to regulatory agencies for review, and advise the Owner and Architect of potential problems in completing such reviews.

2.1.9 Equal Employment Opportunity and Affirmative Action

The Construction Manager shall comply with applicable laws, regulations and special requirements of the Contract Documents regarding equal employment opportunity and affirmative action programs. The Construction Manager shall comply with A.R.S. Title 41, Chapter 9, Article 4, and State of Arizona Executive Order 75-5, which relate to nondiscrimination against any employee because of race, religion, color, sex or national origin and further agrees to comply with the Immigration Reform and Control Act (I.R.C.A.) of 1986, in performing under this Agreement and to permit Owner inspection of his personnel records to verify such compliance.

Owner	Lee County Southwest Florida
Project/Document	Construction Management for Sanibel Bridge & Toll Plaza Reconstruction Along with Cape Coral Toll Plaza
Date of Issuance	November 2005
Section	3. Compensation
<p>3.01 CM's Compensation. The Owner agrees to pay to the CM as compensation for its services and work provided for hereunder as follows:</p> <p>(1) Preconstruction Services. For preconstruction services only during the design phase, CM shall be paid its actual labor costs times a professional services multiplier of 2.65 plus travel reimbursement pursuant to Florida Statutes and reimbursement of miscellaneous office expenses, subject to a not-to-exceed limit of \$826,528.00. This compensation for preconstruction services will be invoiced monthly and paid by the Owner on a net 31 day basis, in accordance with Section 6.03.</p>	

2.3-D – OTHER ELEMENTS

Owner	State of Florida Department of Transportation
Project/Document	Agreement Between Owner and Construction Manager (Generic Document)
Date of Issuance	N/A
Section	7. Construction Manager's Fee

In consideration of the performance of the services specified in this Agreement with respect to the Project on which the Owner has issued a notice to proceed, the Owner agrees to pay the Construction Manager as compensation for its services relating to the Project, fees as set forth in Subsections 7.1.1, 7.1.2 and 7.1.3.

Preconstruction Phase Fee. For the performance of preconstruction services for this project including profit and overhead related to these preconstruction services, a fixed or "not to exceed" fee to be negotiated prior to the issuance of a Letter of Authorization for such Project. The Preconstruction Phase Fee shall be paid in installments at completion of specified Preconstruction Phase Services or deliverables. Pre-construction services for a Project shall include all services relating to design review through 100% Construction Documents for the Project and other services specified in Section 2.6. Pre-Construction Services for a Project may run concurrently with Construction Phase services for the Project. The fee for the Preconstruction phase shall be a fixed lump sum fee of \$XXXX, to be paid in two equal payments. The first payment will be at delivery of the cost model, the second will be at the time of GMP.

The Construction Manager's personnel to be assigned during this phase and their duties and responsibilities to this project and the duration of their assignments are shown on Exhibit C.

Construction Phase Fee (General Conditions). Prior to commencement of the Construction Phase for a Project, the Owner will issue a Letter of Authorization directing the Construction Manager to proceed into the Construction Phase. The Construction Manager's compensation for General Conditions work or services performed during the Construction Phase shall be a fixed lump sum amount fee negotiated as part of the Project GMP, based on a detailed schedule of General Conditions costs and services provided by the Construction Manager. (However, the Owner retains the right to review the need and effectiveness of any employee or employees assigned by the Construction Manager, should the Project Administrator question the need for the employee or employees). The Construction Phase Fee shall be invoiced and paid in monthly payments as agreed by the parties and set forth in the applicable Project GMP. The first monthly payment shall become due thirty days following the issuance of the first Notice-to-Proceed by the Owner and the final monthly payment shall be paid only when construction of the project is finally completed and occupancy of the project accepted by the Owner. If construction is authorized only for a part of the Project, the fee paid shall be proportionate to the amount of work authorized by the Owner.

Adjustments in Fee. For changes in a Project as provided in Article 9, the construction phase fee for the Project shall be adjusted as follows:

The Construction Manager shall be paid an additional fee subject to negotiation with the Owner if the Construction Manager is placed in charge of reconstruction of an uninsured loss excluding any condition that may have been caused from negligent acts by the Construction Manager, its employees, agents, subcontractors and others for whom Construction Manager may be responsible.

Should the duration of the construction of a Project stipulated herein for final completion of a Project extend beyond the scheduled completion of the Project as set forth in the Project GMP, due to no fault of the

Construction Manager or its subcontractors, the Construction Manager's Additional Construction Phase Fee will be negotiated and set forth as an adjustment to in the Project GMP on a per working day basis. The Construction Manager's staff during such time extensions shall be established and set forth in the Project GMP.

Construction Manager's Exclusive Remedy. In the event the construction Substantial or Final Completion date for a Project is extended, regardless of whether delay is caused by any act or neglect of the Owner or the Architect-Engineer, or is attributable to the Owner or the Architect-Engineer, the Construction Manager's sole and exclusive remedy is an extension of the construction completion date and payment of additional Construction Phase fees and Overhead and Profit for Construction Phase as provided herein.

Costs and Expenses Included in Fee. The following are included in the Construction Manager's fee for General Conditions services during the Construction Phase of a Project and not otherwise reimbursable:

Salaries or other compensation of the Construction Manager's employees at its principal office and branch offices provided the personnel are assigned to the project.

The Construction Manager's personnel to be assigned to the Project during the construction phase, whose duties and responsibilities to the Project and the duration of their assignments shall be shown in the applicable Project GMP.

c. (Delete the labor multiplier for this project.)

(Delete the cost of data processing staff, see 8.2.21).

Salaries or other compensation of the Construction Manager's employees at the Project job site. The Construction Manager's personnel to be assigned to the site during the Construction Phase under the Project job site management and supervision fee, whose duties and responsibilities and the duration of their assignment will be established and included with the Project GMP.

A labor multiplier will not be used for this project for general operating expenses.

Those services set forth in Sections 2.7 and 2.8.

Job office supplies, including paper, pencils, paper clips, file folders, staples, etc., and janitorial supplies (photo copy or blue print paper not included) used in connection with the Project.

Minor General Conditions expenses at the Project site, such as telegrams, long distance telephone calls, telephone service, expressage, postage, and similar petty cash items in connection with the Project to be billed at cost.

j. Costs of all reproductions used for bidding or information purposes required by the Project to directly benefit the Project.

Costs for such temporary facilities during construction of the Project, including Construction Manager's trailer, temporary water, heat, power, sanitary facilities, telephones, radios and computers with software.

Temporary housing for Construction Manager's project employees.

m. (Delete. See 8.2.22).

n. Record retention/storage.

7.1.3 Overhead and Profit for Construction Phase. For overhead, profit and general expenses of any kind, except as may be expressly included in Article 8 and the applicable Project GMP, for services provided during and related to the construction phase of any Project the applicable Construction Overhead and Profit Fee shall be X% of the GMP and shall be paid for any Project proportionally to approved expenditures for Direct Cost Items under Section 8.2, and less retainage (see Section 11.1), subject to the Project GMP, less the unused Owner's Contingency. The balance of the Construction Overhead and Profit Fee for a Project

shall be paid upon Substantial Completion.

Shared Savings. It is intended that the Construction Manager fee will include a share of the cost savings, if any, realized during construction of this project completed by Construction Manager. This potential cost savings is recognized as the amount by which a project GMP, less the unused Owner's Contingency, exceeds the Cost of the Project under Articles 8 and 9, plus the Construction Manager's fees under Sections 7.1.2 and 7.1.3. Construction Manager will receive fifty percent (50%) of the Project Cost Savings, as defined by Subsection 1.6.35, which shall be included in the Final Payment.

Owner	Lee County Southwest Florida
Project/Document	Construction Management for Sanibel Bridge & Toll Plaza Reconstruction Along with Cape Coral Toll Plaza
Date of Issuance	November 2005
Section	Article 4. Construction Manager's Responsibilities and Services
<p>4.05 Construction Phase; Building Permit; Code Inspection.</p> <p>(1) Building Permit. The Owner shall pay for all permits. The Owner and AE shall be required to provide such information to the Permitting Authority as is necessary to obtain approval from the Permitting Authority to commence construction prior to beginning construction. The CM (through its appropriate subcontractor) shall obtain the Building Permit, and shall be responsible for delivering and posting the Building Permit at the Project Site prior to the commencement of construction. The Owner and AE shall fully cooperate with the CM when and where necessary.</p> <p>(2) Code Inspections. A11 projects require detailed code compliance inspection during construction in disciplines determined by the Permitting Authority. These disciplines normally include, but are not necessarily limited to, structural, mechanical, electrical, plumbing and general building. The CM shall notify the appropriate inspector(s) and the AE's representative, no less than 24 hours in advance that the work is ready for inspection and before the work is covered UP. All inspection shall be made for conformance with the applicable ordinances and building codes. Costs for all re-inspections of work found defective and subsequently repaired shall be borne by the Subcontractor responsible for the defective work.</p> <p>(3) CM's Staff. The CM shall maintain sufficient off-site support staff and competent full-time staff at the Project Site authorized to act on behalf of the CM to coordinate, inspect and provide general direction of the work and progress of the subcontractors and the CM shall provide no less than those personnel during the respective phases of construction. The CM and Owner will agree upon the CM's Key Personnel and the CM shall not change any of those Key Personnel unless mutually agreed to by the Owner and CM. In such case, the Owner shall have the right to approval of the qualifications of the replacement personnel. The Owner shall have the right to request to replace the staff at the project site at any time during the construction.</p> <p>(4) Lines of Authority. The CM shall establish and maintain lines of authority for its personnel and shall provide this information to the Owner and all other affected parties, such as the code inspectors of the Permitting Authority, the Subcontractors, and the AE to provide general direction of the work and progress of the various Phases and Subcontractors. The Owner and AE may attend meetings between the CM and his Subcontractors.</p> <p>(5) Schedule Provision - Construction Phase. The CM shall continue to provide current scheduling information and provide direction and coordination regarding beginning and finishing dates, responsibilities for performance and the relationships of the CM's work to the work of its Subcontractors and suppliers to enable them to perform their respective tasks so that the development of construction progresses in a smooth and efficient manner in conformance with the Phase Schedules and the overall Project Schedule. Each Phase Schedule shall include all phases of procurement, approval of shop drawings, change orders in progress, schedules for change orders, and performance testing requirements. The CM shall advise the Owner, its representatives, and the AE of their required participation in any meeting or inspection giving each at least one week notice unless such notice is made impossible by conditions beyond its control. The</p>	

CM shall hold job-site meetings at least biweekly with the Construction Team and at least once each week with the Subcontractors and the AE's field representative, or more frequently as required b17 work progress, to review progress, discuss problems and their solutions and coordinate future work with all Subcontractors. The CM shall prepare and maintain a record of such meetings and distribute copies as necessary.

(6) Solicitation of Subcontracts.

The Owner intends for the CM to bid all portions of this Project.

(a) The CM shall prepare all non-technical documents for bidding procurement of long lead items, materials and services, and for Subcontractor contracts. The prequalification, solicitation and award process shall be consistent with the requirements of Article 6 hereof.

(b) As part of such bid preparation and without assuming any of the AE's responsibilities or liabilities for design, the CM shall review the specifications and drawings prepared by the AE. Ambiguities, conflicts or lack of clarity of language, use of illegally restrictive requirements, and any other defects in the specifications or in the drawings noted by the CM shall be brought to the attention of the Owner and AE in written form.

(c) The CM shall, unless waived by Owner, conduct conferences with all prospective Subcontractors, for the purpose of reviewing and approving awards. Invited will be the AE, Owner and Owner's representatives. In the event questions are raised which require a11 interpretation of the documents or otherwise indicate a need for clarification or correction, the CM shall transmit these to the AE and upon receiving clarification or correction in writing shall prepare an addendum to the document and issue same to all of the prospective Subcontractors -

(d) Selection and award of subcontracts shall be consistent with Article 6 hereof.

(7) Quality Assurance/Quality Control. The CM shall develop and maintain a program acceptable to the Owner and AE to assure quality control of the construction. The CM shall be responsible for and supervise the work of all Subcontractors, providing instructions to each when their work does not conform to the requirements of the Project Plans and Specifications and the CM shall continue to coordinate the work of each subcontractor to ensure that corrections are made in a timely manner so as to not affect the efficient progress of the work. Should a disagreement occur between the CM and the AE over the acceptability of the work, the Owner, at its sole discretion and in addition to any other remedies provided herein, shall have the right to determine acceptability.

(8) Subcontractor. The CM shall solely supervise the Subcontractors. The CM shall negotiate all change orders and field orders with all affected Subcontractors and shall review the costs and advise the Owner and AE of their validity and reasonableness, acting in the Owner's best interest. Before any work is begun on any change order which is to be funded through contingency, approval for use of contingency funds must be secured from Owner and a written authorization from the Owner must be issued. However, when there is an imminent threat to health and safety, and Owner's concurrence is impractical, the CM shall act immediately to remove the threats to health and safety and shall subsequently fully inform Owner of all such action taken. The CM shall also carefully review all shop drawings and then forward the same to the AE and Owner for review and actions. The AE will transmit them back to the CM who will then issue the shop drawings to the affected Subcontractor for fabrication or revision. The CM shall maintain a suspense control system to promote expeditious handling. The CM shall request the AE to make interpretations of the drawings or specifications requested of him by the Subcontractors and shall maintain a business system to promote timely response. The CM shall inform the AE which shop drawings or requests for clarification have the greatest urgency and need to be responded to first. The purpose shall be to enable the AE to prioritize requests coming from the CM. The AE shall timely respond. The CM shall advise the Owner and AE when timely response is not occurring on any of the above.

(9) Job Site Requirements.

- (a) The CM shall provide each of the following activities as a part of its services hereunder:
- (i) Maintain a log of daily activities, including manpower records, weather, delays, major decisions, etc.
 - (ii) Maintain a roster of companies on the Project with names and telephone numbers of key personnel.
 - (iii) Establish and enforce job rules governing parking, clean-up, use of facilities and work discipline.
 - (iv) Equal opportunity project.
 - (v) The Project to Provide labor relationships management and employment for a harmonious productive Provide and administer a safety program for meet OSHA requirements. Monitor for Subcontractor compliance without relieving them of responsibilities to perform work in accordance with best acceptable practice.
 - (vi) Provide quality assurance/quality control program.
 - (vii) Provide miscellaneous office supplies that support the construction efforts which are consumed by its own forces.
 - (viii) Provide for travel to and from its home office to the Project Site and to those other places within Lee County as required by the Project.
- (b) The CM shall provide personnel and equipment or shall arrange for separate Subcontractors to provide each of the following as a Project Cost:
- (i) Distribution of documents and shop drawings, including Permitting Authority's inspectors. All the required bidding sets required by the
 - (ii) The supply of office space and office facilities at a job site for use by Owner's Project Coordinator, other Owner representatives, and representatives of the Permitting Authority, all in accord with instructions of Owner's Project Coordinator conveyed to CM before the Phase GMP is established.
- (10) Job Site Administration.** The CM shall provide as part of its services, job site administrative functions during construction to assure proper documentation, including but not limited to the following:
- (a) Job Meetings. Hold progress and coordination meetings to provide for a timely completed Project. Implement procedures and assure timely submittals, expedite processing approvals and return of shop drawings, samples, etc. Coordinate and expedite critical ordering and delivery of materials, work sequences, inspection and testing's, labor allocation, etc. Review and implement revisions to Phase Schedules and the Project Schedule. Monitor and promote safety requirements. The CM shall use the job site meetings as a tool for (i) preplanning of work and enforcing schedules and for establishing procedures, responsibilities and identification of authority for all to clearly understand; (ii) identify party or parties responsible for follow up on any problems, delay items or questions, and (iii) record course for solution. The CM shall visit each pending item at each subsequent meeting until resolution is achieved and shall require all present to make known any problems or delaying event known to those present for appropriate attention and resolution.
 - (b) Material and Equipment Expediting. Provide staff to closely monitor material and equipment deliveries, critically important checking and follow-up procedures on supplier commitments of all Subcontractors and maintain a material and equipment expediting log.
 - (c) Payments to Subcontractors. Develop and implement a procedure for review, processing and payment of applications by Subcontractors for progress and final payments.
 - (d) Document Interpretation. Refer all questions for interpretation of the documents prepared by the AE to the AE and the Owner.
 - (e) Reports and Project Site Documents. Record the progress of each Phase and the Project. Submit written progress reports to the Owner and the AE, including information on Subcontractors ' work, and the percentage of completion. Keep a daily log available to the Owner, the AE and the Permitting Authority

inspectors.

(f) Subcontractors Progress. Prepare periodic punch lists for Subcontractor's work including unsatisfactory or incomplete items and schedules for their completion.

(g) Substantial Completion. The CM, AE, and Owner will conduct a pre-substantial completion inspection for each Phase. The CM will prepare the pre-substantial completion punch list from which the CM and AE will develop a completion schedule. The CM shall ascertain when the work or designated portions thereof are ready for Owner and AE substantial completion inspection. The CM shall provide a complete list of incomplete or unsatisfactory items (preliminary punch list) to the Owner and AE prior to this inspection. The Owner and AE shall add to this list additional incomplete or unsatisfactory items. For each Phase, the CM shall prepare a punch list of items to be completed and a schedule for their completion including completion dates for review and approval by the Owner and AE ("Punch List Completion Date"). (h) Final Completion. Monitor the Subcontractors' performance on the completion of each Phase and provide notice to the Owner and AE that the work is completed and ready for final inspection. Secure and transmit three (3) copies to the Owner, through the AE, all required guarantees, affidavits, releases, bonds and waivers, manuals, record drawings and maintenance books including a final completion form.

(i) Startup. With the Owner's personnel, direct the check-out of utilities, operations, systems and equipment for readiness and assist in their initial start-up and testing by the subcontractors.

(ii.) Record Drawings. The CM shall monitor the progress of its own forces or its Subcontractors on marked up field prints so as to provide completed record drawings to be turned over to the AE for preparation of As-builts as required herein.

(iii.) Administrative Records. The CM will maintain at the job site and his principal office, originals or copies of, on a current basis, files and records, such as, but not limited to the following:

- Contracts or Purchase Orders
- Shop Drawings submittal/Approval Logs
- Equipment Purchase/Delivery Logs
- Contract Drawings and Specifications with Addenda
- Warranties and Guarantees
- Cost Accounting Records
- Labor Costs
- Material Costs
- Equipment Costs
- Cost Proposal Request
- Payment Request Records
- Meeting Minutes
- Cost Estimates
- Bulletin Quotations
- Lab Test Reports
- Insurance Certificates and Bonds
- Contract Changes
- Purchase Orders
- Material Purchase Delivery Logs
- Technical Standards
- Design Handbooks
- Record Drawing Marked Prints
- Operating and Maintenance Instruction
- Daily Progress Reports

- Transmittal Records
- Inspection Reports
- Bid/Award Information
- Bid Analysis and Negotiations
- Punch Lists
- PAIS Schedule and updates
- Suspense (Tickler) Files of Outstanding Requirements
- Documentation of Good Faith Effort
- Correspondence Files

The Project records shall be available at all reasonable times to the Owner and AE for reference, review or reproduction.

(11) Shop Drawings and Samples. After checking and verifying all field measurements, the CM will submit to the AE and Owner for approval, in accordance with the acceptable schedule of Shop Drawing submission, five copies of all Shop Drawings, which shall have been checked by and stamped with the approval of the CM and identified as the AE may require. The data shown 011 the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable the AE to review the information as required. The CM will also submit to the AE for approval with such promptness as to cause no delay in the Work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of the CM, identified clearly as to material, manufacturer, any pertinent numbers and the use for which intended.

(a) At the time of each submission, the CM will in writing call the AE's attention to any deviations that the Shop Drawing or sample may have from the requirements of the Contract Documents and, in addition, shall cause a specific notation to be made 01-1 each shop drawing submitted for review and approval of each such variation.

(b) The AE will review and approve with reasonable promptness Shop Drawings and Samples, but its review and approval shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. The CM will make any corrections required by the AE and will return the required number of corrected copies of Shop Drawings and re-submit new samples until approved. All cost incurred for the resubmitted shop drawing shall be the CM responsibility. The CM's stamp of approval on any Shop Drawing or sample shall constitute a representation to the AE that the CM has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Document.

(c) No work requiring a Shop Drawing or sample submissions shall be commenced until the submission has been approved by the AE. Any related work performed prior to review and approval by the Owner of the pertinent submission will be sole expense and responsibility of the CM. A copy of each approved Shop Drawing and each approved sample shall be kept in good order by the CM at the site and shall be available to the AE.

(d) The AE approval of Shop Drawings or samples shall not relieve the CM from his responsibility for any deviations from the requirements of the Contract Documents, unless the CM has in writing called the AE's attention to such deviation at the time of submission and the Owner and the AE have given written approval to the specific deviation; or shall any approval by the AE relieve the CM from responsibility for errors or omissions in the Shop Drawings.