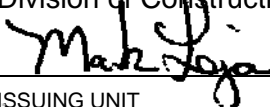


<b>MANUAL CHANGE TRANSMITTAL</b>		NO. <b>13-2</b>
TITLE: Department of Transportation <i>Construction Manual</i>	APPROVED BY: Mark Leja, Chief Division of Construction 	DATE ISSUED: March 19, 2013
SUBJECT AREA Table of Contents and various sections of the <i>Construction Manual</i>	ISSUING UNIT Division of Construction	
SUPERSEDES	DISTRIBUTION All Requested Manual Holders	

This manual change transmittal delivers the revisions of Chapter 3, Section 4 of the *Construction Manual*. The updated section may contain updated language, information, corrections, and references resulting from updates to the 2010 *Standard Specifications*, and from policy, and procedural changes. Change bars in the margins of the revised sections indicate text that was changed or added.

Please update your manual according to the table below.

Section	Incorporates	Remove Old Page(s)	Insert New/Revised Page(s)
Goldenrod, Chapter 3, Section 4, "Scope of Work"	None	3-4.i	3-4.i
Chapter 3, Section 4, "Scope of Work"	None	3-4.1 thru 3-4.6	3-4.1 thru 3-4.8

#### Section 4, "Scope of Work"

- Updates section title to align with 2010 *Standard Specifications*.
- Updates references to align with 2010 *Standard Specifications*.
- Updates terminology (e.g. change order, time adjustment, payment adjustments, start of job site activities).
- Updates cross reference within the *Construction Manual*.

### **Section 4    Scope of Work**

#### **3-401    Intent**

#### **3-402    Materials Found on the Job Site**

#### **3-403    Changes and Extra Work**

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#### **3-405    Value Engineering**

3-405A    Procedure

#### **3-406    Cleanup**

This manual is being updated to reflect changes from the 2006 to the 2010 *Standard Specifications*. Bracketed section numbers refer to the 2006 *Standard Specifications*.

### Section 4 Scope of Work

#### 3-401 Intent

The contractor must construct the project in accordance with the contract, including ordered changes. Be as familiar as the contractor is with the work to be done, and the commonly accepted practices, customs, and terminology used in the work.

Use judgment when dealing with problems arising from ambiguity or apparent conflict in the plans and specifications. Review the work from the contractor's viewpoint, as well as the design engineer's. Exercise prudence and caution; any interpretation should be one that a reasonable contractor would obtain from the contract documents. Also, avoid searching out and using pure technicalities or making unreasonable inferences.

#### 3-402 Use of Materials Found on the Job Site

Designated selected material takes precedence over the contractor's request for the use of materials found on the job site. Refer to Section 4-1903A (7), "Selected Material," of this manual for more information.

The specifications provide that the resident engineer's approval is necessary for the contractor to use materials from within the planned slopes and grade lines. Written authorization is required for the use of materials outside the planned slope and grade lines. Approval for the use of materials found on the job site will be given in writing from the resident engineer; but written authorization to use materials outside of planned slope and grade lines must be by change order.

The authorization for excavation outside the planned slopes and grade must be justified as a benefit to Caltrans. Under no circumstances should such work be authorized if it adversely affects the appearance or function of the planned project.

#### 3-403 Changes and Extra Work

Project plans, specifications, and other bid documents define the scope of the contract, and describe the details for the construction and completion of the whole work contemplated.

Limit changes to those required to complete the work as contemplated at the time the plans and specifications were approved. Otherwise, the work must be performed by a separate contract unless authorized as indicated in Section 5-302, "Change Order Policy," of this manual. If proposed changes are not required immediately, consider performing the work with a separate contract.

If a change must be made, formalize it by executing a change order. Discuss with the contractor all elements of that change, including the method of compensation and the effect on contract time. During the discussion, develop full agreement, identify elements that require negotiation, or identify elements that could lead to protest. Ensure that the contractor accurately understands all the elements of the change.

### Section 4 Scope of Work

#### 3-401 Intent

#### 3-402 Use of Materials Found on the Job Site

#### 3-403 Changes and Extra Work

### **3-404 Differing Site Conditions**

Analyze all proposed changes for environmental considerations, for obligations or commitments to other agencies, and for effects on the orderly completion of the entire contract. When a project nears completion, evaluate carefully the effects of changes on the contract's time of completion. Changes ordered near the contract's completion could disrupt the contractor's schedule and costs. They could also substantially delay the public's use of the facility and disrupt the planned use of Caltrans forces.

Extra work is any work, desired or performed, but not included in the original contract. Extra work is not a payment method. Refer to Section 3-9, "Measurement and Payment," and Section 3-5, "Control of Work," of this manual for a discussion of payment methods for extra work.

Use the specifications' definitions of the various bid items if the changed work is extra work. If the changed work is the same as items included in the contract, make payment at the bid item price.

If the changed work can be defined as bid items, but the unit cost differs materially, make payment under the provisions of Section 4-1.05B [4-1.03C], "Work-Character Changes," of the *Standard Specifications*, rather than for the entire added work as changed work.

Changed work becomes a part of the contract when added by an approved change order. The contractor bears the same responsibility for this changed work as for any other work performed under the contract.

#### **3-403A Work-Character Changes**

Before work can be considered a work-character change, an ordered change to the plans or specifications must occur. If such an ordered change materially increases or decreases the unit cost of a bid item, then a work-character change has occurred. Work-character changes are not to be confused with differing site conditions, discussed in Section 3-404 of this manual.

When calculating the adjustment for a work-character change, the original bid price bears no relation to the adjustment unless it can be demonstrated that the bid price actually represents the cost of the work. Section 5-3, "Change Orders," of this manual contains examples of calculations and sample change orders. Also refer to Section 9-1.15 [4-1.03C], "Work-Character Changes," of the *Standard Specifications* and Section 3-902D (3), "Work-Character Changes," of this manual.

#### **3-404 Differing Site Conditions**

A differing site condition clause was initially developed by the federal government in the 1920s to protect contractors from excessive risk. The inclusion of the clause benefits Caltrans by reduced bidding contingencies that may be included by contractors. The differing site condition clause is required on all federally funded projects under 23 Code of Federal Regulations 635.109.

When a differing site condition occurs, Section 4-1.06 [5-1.116], "Differing Site Conditions," of the *Standard Specifications* provides requirements for Caltrans and the contractor. When a differing site condition arises, contact the district materials unit or Geotechnical Services.

### 3-404A Types of Differing Site Conditions

Two types of differing site conditions are recognized by the contract and are described as follows:

#### *3-404A (1) Type 1*

Type 1 consists of actual subsurface or latent physical conditions materially different from those indicated or shown in any of the following:

- The contract.
- *Information Handout* or supplemental project information, including the logs of test borings.
- Other records of geotechnical data obtained by Caltrans' investigation of subsurface conditions.
- Other records of data to the extent they were available to the contractor prior to the bid opening.
- An examination of site conditions above ground.

Examples of differing site conditions that are Type 1 include the following: conditions that are unknown, shown or not shown in the plans; groundwater elevations lower or higher; quantity, strength, and sizes of rocks; soil type and contour that is difficult to excavate; as-built conditions different from the plans; inaccurate log of test borings and boring locations.

The following are examples that are not differing site conditions: changes that occur after bidding or contract award such as flooding, normal water table variations, landslides, illegal dumping, and weather-related events.

Consider the following when determining if a differing site condition is Type 1:

- Contract documents must have affirmatively indicated the conditions forming the basis of the differing site condition.
- Contractor must have acted reasonably and prudently in the interpretation of the contract documents related to the differing site condition.
- Contractor must have reasonably relied on the indications in developing its bid at bid time.
- Conditions actually encountered must have differed materially from those indicated for contracts located in the same area.
- Conditions actually encountered must have been reasonably unforeseeable.
- Additional claimed cost must be solely attributable to the materially different conditions by comparative analysis.

#### *3-404A (2) Type 2*

Type 2 differing site conditions consist of unknown physical conditions of an unusual nature that are materially different from those ordinarily encountered and generally recognized as not inherent in the work provided for in the contract.

Examples of Type 2 differing site conditions include the following: archaeological finds, hazardous materials, endangered species, unusual buried man-made objects, or a subsurface boulder found between soil borings showing dune sands only.

Type 2 differing site conditions are more difficult to prove and are most frequently asserted by the contractor when there is no soils report data available for comparative analysis. Consider the plans and specifications when evaluating a Type 2 differing site condition. Certain designs imply expected conditions; for example, a spread footing foundation may mean that groundwater will not be present at the footing.

Consider the following three elements when analyzing a Type 2 differing site condition:

1. Unknown physical condition encountered not inherent in the area.
2. Physical condition at the site is unusual in nature.
3. Materially different than ordinarily encountered in the type of work required by the contract.

#### 3-404B Procedure

The contractor is required to investigate the site and carefully examine the bid documents by Section 2-1.30 [2-1.03], “Job Site and Document Examination,” of the *Standard Specifications*. For the contractor to recover damages for a differing site condition claim, the following steps must be taken:

- Before disturbing the conditions, the contractor must provide to the resident engineer written notice in the form of a request for information. Refer to Section 3-5 of this manual for additional information.
- The resident engineer or structure representative must investigate the conditions and determine if they differ materially and cause an increase or decrease in the cost or time to do the work. Compare the encountered conditions with the contract documents as well as the following: the log of test borings; any other records of geotechnical data obtained by Caltrans’ investigation of sub-surface conditions; the materials *Information Handout*; the site conditions above ground; and other available records of data. The conditions encountered must either be materially different from those represented by the bid documents or be materially different from those normally encountered or inherent in the industry.

The resident engineer must remain alert to the possibility that a differing site condition may result in a credit to the state. If such a condition is encountered, the resident engineer must promptly notify the contractor in writing.

The specifications for differing site conditions do not apply to those situations covered in other sections of the *Standard Specifications*. For example, those situations found in Section 5-1.36D [8-1.10], “Non-Highway Facilities,” and Section 19-1.03D [19-1.04], “Buried Man-Made Objects,” are not differing site conditions.

Differing site conditions are not considered work-character changes because the conditions do not result from ordered changes. However, determine and give compensation or credit due to differing site conditions in the same manner as work-character changes. To determine how compensation is made for work-character changes and for a sample change order, refer to Section 5-3, “Change Orders,” of this manual.

### 3-404C Management Review Committee

If the resident engineer disagrees with the contractor's claim of a differing site condition, a management review committee is formed to clarify Caltrans' position on the dispute. The management review committee was created to help resident engineers make an informed decision and resolve differing site condition disputes timely.

The management review committee is composed of the deputy district director of construction as the chairperson, the structure construction area manager, and the Division of Construction's field coordinator. Also involve the structure designer on record, Geotechnical Services, area construction managers, and other subject matter experts that have expertise with differing site condition disputes.

The process involving the management review committee consists of three steps:

1. Within 5 days of receipt of a supplemental potential claim record pertaining to a differing site condition dispute, the resident engineer prepares a draft response to the potential claim record and submits the response to the deputy district director of construction.
2. The management review committee reviews the resident engineer's draft response and provides any comments within 10 days of receipt of the supplemental potential claim record. The committee or the contractor can initiate further communication with the other party during this period to clarify information related to the differing site condition dispute.
3. Within 20 days of the supplemental potential claim record, the resident engineer will incorporate any response from the management review committee into the supplemental potential claim record response and submit it to the contractor.

In addition, follow Sections 3-520C, "Potential Claim Records," and 3-520E(1), "Requests for Information for Notification of a Possible Differing Site Condition," of this manual for detailed guidelines and format of potential claim record responses.

### 3-405 Value Engineering

Caltrans encourages contractors to develop and implement innovative approaches to construction projects. When new approaches result in construction cost savings, Caltrans and the contractor may share the savings in construction cost. Section 4-1.07 [5-1.14], "Value Engineering," of the *Standard Specifications* identifies the method and procedure for sharing construction cost savings. A contractor's proposal made in accordance with this section of the *Standard Specifications* is called a value engineering change proposal (VECP).

Section 4-1.07B [5-1.14], "Value Engineering Change Proposal," of the *Standard Specifications* applies only to the actual cost of construction. Savings in construction engineering, maintenance, operations, safety, and traffic services, among other items, are not eligible for sharing with the contractor. Section 4-1.07C, "Value Engineering Workshop," of the *Standard Specifications* describes the requirements for a contractor-requested workshop. The workshop's purpose is to identify value-enhancing opportunities that will reduce the total project cost, time of construction, or traffic congestion. Items identified in the workshop can be developed into a VECP.

### 3-405 Value Engineering



### 3-405A Procedure

Following is the VECP procedure:

- After discussing the merits of a potential VECP with the resident engineer, the contractor may submit a written proposal for approval. The initial written proposal may be preliminary in nature; but for Caltrans to evaluate the anticipated cost savings or other value enhancement, the proposal must provide enough of the information required by Section 4-1.07B [5-1.14], “Value Engineering Change Proposal,” of the *Standard Specifications*. Thus, the proposal must include information regarding the following:
  1. Any construction effects related to staging, right-of-way, or environment.
  2. Any required permits or permit modifications.
  3. Maintenance or enhancement of essential functions or characteristics of the project such as service life; reliability; economy of operation; ease of maintenance; desired appearance; conformity to design, safety, and other applicable standards; and what the deadline is that the contractor requires a decision be made on the proposal.
- Get concurrence from the construction manager that the preliminary written proposal is acceptable. If acceptable, notify the contractor to submit a complete proposal. The proposal must have sufficient detail to enable a final review and approval. The information provided should answer all questions that arose from Caltrans’ review of the preliminary proposal. It must also include applicable calculations, revised plans, and revised specifications. To resolve issues, the contractor and the resident engineer may need to have additional meetings and discussions. Before forwarding the proposal for final review by the appropriate units, ensure the proposal is complete.
- With assistance from the resident engineer, the construction engineer coordinates Caltrans’ evaluation of the VECP to meet the deadline requested. The review includes the designer and the project manager. It may be necessary to consult with additional subject matter experts to aid in the evaluation, such as the structure designer on record and Geotechnical Services. In addition to the subject matter experts, the evaluation may also include the Division of Construction’s field coordinator, the construction manager, and the deputy district director or region division chief of construction.
- Consider the following factors in determining whether or not a proposal is acceptable (do not include any cost benefit resulting from these factors in the actual computation of net savings in construction costs):
  1. Any engineering, environmental, legal or administrative considerations making the proposal impractical or unacceptable.
  2. The relationship of net savings to the cost of evaluating and implementing the proposal.
  3. Any total benefit to the public including construction savings or reduced engineering costs.
  4. Improved operations.
  5. Reduced maintenance.



6. Improved safety and traffic service or other values that clearly favor the proposal.
- Compute the VECP net savings due to the changed work in accordance with the methods detailed in Section 4-1.05B [4-1.03C], “Work-Character Changes,” of the *Standard Specifications*. The net savings must result from the difference in the actual cost of doing the work in accordance with the contract plans and specifications as originally planned and the actual cost of doing the work based on designs, methods, labor, equipment, and materials as changed by the proposal. In determining the net savings, exclude from consideration the contractor’s engineering and other costs incurred in preparing the proposal. Also exclude Caltrans’ cost of evaluating the proposal, including any portion of this effort the contractor agreed to share.
  - If the submitted proposal appears acceptable, but Caltrans’ anticipated engineering costs are high, the contractor must stipulate in writing a willingness to share such costs before the proposal will be evaluated further. This willingness must be stipulated whether or not the proposal is ultimately adopted. Such a letter from the contractor provides the district with the authority to deduct engineering costs from progress payments. To record Caltrans’ engineering costs, proceed as follows:
    1. For the phase 3 expenditure authorization, establish a sub-job number. Establish this number regardless of the proposal’s subsequent approval or rejection. Charge all time spent evaluating the proposal to the sub-job number.
    2. To provide the means of segregating costs, the district must immediately prepare and submit for master file the sub-job number. After executing the change order for the VECP, do not charge construction engineering to the sub-job number.
    3. In conformance with Section 4-1.07B [5-1.14], “Value Engineering Change Proposal,” of the *Standard Specifications*, you may deduct from progress payments a portion of Caltrans’ engineering costs for evaluating the VECP. Use the following method to determine the deduction. If Caltrans’ engineering costs (A) exceed Caltrans’ share (B) of the total computed net savings, deduct the difference (A minus B) from progress payments. Inform the contractor of the reason for any deductions.
  - If the submitted proposal provides for a substantial benefit to the public but no net savings, a change order may be issued based on public benefit. However, the change order would not be written as a change order for a VECP but as an engineer-requested change order.
  - In accordance with Section 4-1.07B [5-1.14], “Value Engineering Change Proposal,” of the *Standard Specifications*, prepare a change order to authorize the VECP. For guidance in preparing a change order for a VECP, refer to Section 5-313, “Value Engineering Change Proposal,” in this manual. Carefully consider the change order’s clauses covering payment to the contractor. In the change order, resolve all compensation and other issues related to the proposal. Before starting the authorized work, the contractor must execute and Caltrans must approve the change order.
  - If you determine the proposal is not acceptable, you must get concurrence from the district construction deputy director.

**3-406  
Cleanup**

**3-406 Cleanup**

Section 4-1.13 [4-1.02], “Cleanup,” of the *Standard Specifications* requires the contractor to clean up the work site. In addition to this general requirement, Section 22, “Finishing Roadway,” of the *Standard Specifications*, contains more detailed requirements for cleaning the roadway. For more information, refer to Section 4-22, “Finishing Roadway,” of this manual.

Before recommending relief of maintenance or acceptance of the contract, ensure the contractor meets all the requirements for cleaning up the site. Section 4-1.13 [4-1.02] of the *Standard Specifications* permits certain construction signs to be left in place until after contract acceptance. However, before contract acceptance, require the contractor to remove all construction signs except those necessary to cover work performed on the last day of the contract.