


<b>MANUAL CHANGE TRANSMITTAL</b>		NO. 21-8
TITLE: Department of Transportation <i>Construction Manual</i>	APPROVED BY:  Ramon Hopkins, Chief Division of Construction	DATE ISSUED: <b>07-25-2021</b>
SUBJECT AREA Sections 3-4, 5-3	ISSUING UNIT Division of Construction	
SUPERSEDES Sections 3-4 of August 2019, and 5-3 of October 2020	DISTRIBUTION All Requested Manual Holders	

The purpose of this manual change transmittal is to announce updates and corrections to the Caltrans *Construction Manual*. Please note the updates, and print new sections for your manual as needed. Updated sections are published on <http://www.dot.ca.gov/hq/construc/constmanual/> and are indicated by the date listed in the right-hand column on that page. Content changes, not including edits for clarity, are summarized:

**Section 3-4, “Scope of Work”**

Section 3-405, “Value Engineering,” adds guidance for Section 4-1.07C, “Preconstruction Value Engineering Meeting,” of the *Standard Specifications*. Updated guidance includes new form requirements and formation of district or region management review committees to evaluate certain value engineering cost proposals.

**Section 5-3, “Change Orders”**

Guidance is updated or corrected throughout. Section 5-307B, “Change Order Category Codes,” adds language on coding innovative change orders. Guidance in Section 5-314, “Value Engineering Change Proposals,” also is updated.

### **Section 4 Scope of Work**

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### 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 **from** 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 **from** 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. Assure that the contractor accurately understands all the elements of the change.

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, "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, "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, "Differing Site Conditions," 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. Example change orders are available at:

<https://dot.ca.gov/programs/construction/change-order-information>

Also refer to Section 9-1.15, "Work-Character Changes," of the *Standard Specifications* and Section 3-904C, "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 Code of Federal Regulations, Title 23, Section 635.109 (23 CFR 635.109), “Standardized Changed Condition Clauses.”

When a differing site condition occurs, Section 4-1.06, “Differing Site Conditions (23 CFR 635.109),” 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 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: 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; and 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 to determine whether 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: archaeological finds, hazardous materials, endangered species, unusual buried human-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 condition 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 under Section 2-1.07, “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:

1. 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, “Control of Work,” of this manual for additional information.
2. 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 subsurface 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 situations covered in other sections of the *Standard Specifications*. For example, situations **delineated** in Section 5-1.36C, “Nonhighway Facilities,” and Section 19-1.03D, “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 because of differing site conditions in the same manner as work-character changes. To determine how compensation is made for work-character changes, 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 informed decisions and resolve differing site condition disputes.

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 receipt** 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 3-521C, “Potential Claim Records,” and 3-521E (1), “Request 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, "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, "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, "Preconstruction Value Engineering Meeting," of the *Standard Specifications* provides an opportunity for the contractor and Caltrans personnel to identify potential cost- or time-savings proposals before the start of contract time. This meeting may be requested by the contractor after contract approval, before the start of contract time for any non-cost-plus-time contract. The start of contract time may be postponed through an agreed change order if the meeting results in a viable VECP and the project's critical path method schedule is affected. Any start of contract time postponement is to be supported by a time analysis that is agreed to by both contractual parties. Section 4-1.07D, "Value Analysis 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.

#### 3-405A 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, "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 using Form CEM-4910, “Value Engineering Change Proposal Submittal.” This form is submitted by the contractor to the resident engineer and the electronic mailbox on the form. 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, assure that the proposal is complete. The resident engineer must send acknowledgement of receipt of a VECP submittal within 5 business days to the contractor.
- 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 include the Division of Construction’s field coordinator, the construction manager, and the deputy district director or region division chief of Construction.
- For a VECP that has an estimated Caltrans’ construction cost savings portion more than \$500,000, the district or region will convene a management review committee to evaluate the proposal if the response deadline on the proposal allows. The management review committee will be chaired by the deputy district director or region division chief of Construction and include the area construction manager and at least one of the following: their designated representative, deputy division chief of Structure Design, deputy division chief of Structure Construction, or deputy district or region division chief of Design. For VECPs evaluated in this manner that are denied, the chairperson will issue a written denial with reasoning that is provided to the contractor.
- Consider the following factors to determine whether a proposal is acceptable; do not include any cost benefit resulting from these factors in the actual computation of net savings in construction costs:
  - Any engineering, environmental, legal, or administrative considerations making the proposal impractical or unacceptable
  - The relationship of net savings to the cost of evaluating and implementing the proposal
  - Any total benefit to the public including construction savings or reduced engineering costs
  - Improved operations
  - Reduced maintenance

- Improved safety and traffic service or other values that favor the proposal
- Compute the VECP net savings because of the changed work in accordance with the methods detailed in Section 4-1.05B, “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. **The contractor will absorb these costs unless otherwise agreed to in advance by written agreement.** 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 **pay for** 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 **Caltrans’** engineering costs from progress payments **up to the stipulated amount.** To record **and track** 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, “Value Engineering Change Proposal,” of the *Standard Specifications*, you may deduct **the stipulated** portion of Caltrans’ engineering costs for evaluating the VECP **from progress payments.**
- 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 be written as an engineer-requested change order **rather than a change order for a VECP.**
- In accordance with Section 4-1.07B, prepare a change order to authorize the VECP. For guidance in preparing a change order for a VECP, refer to Section 5-314, “Value Engineering Change Proposals,” of 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 **C**onstruction deputy director.

- Upon the execution of the VECP change order or when notifying the contractor of a nonacceptable proposal, complete Form CEM-4911, “Value Engineering Change Proposal Acceptance / Rejection,” that documents the VECP result. Submit the completed form to the email address on this form to allow for programmatic tracking and reporting on VECPs. File the original form in Category 49, “Change Orders,” of the project records.

### **3-406 Cleanup**

Section 4-1.13, “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, verify that the contractor meets all the requirements for cleaning up the site. Section 4-1.13 of the *Standard Specifications* allows 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.

## Section 3 Change Orders

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Table 5-3.2. Specification or Physical Asset (Character 2) (2 of 2)

Table 5-3.3. Source Document (Characters 3 and 4) (1 of 2) (Use **Table 5-3.3** only when the first character code is *C* or *D* from **Table 5-3.1**)

Table 5-3.3. Source Document (Characters 3 and 4) (2 of 2)

Table 5-3.4. Dispute Disposition (Characters 3 and 4) (Use **Table 5-3.4** only when the first character code is *E*, *F*, *G*, or *H*, from **Table 5-3.1**, representing a Dispute Resolution)

Table 5-3.5 Other Supplemental Work (Characters 3 and 4) (Use **Table 5-3.5** only when the first character code is *A* from

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### Section 3 Change Orders

#### 5-301 General

A change order is a legally binding document used to make changes to the contract. Form CEM-4900, "Change Order," is used for change orders. Form CEM-4903, "Change Order Memorandum," must be prepared for each change order.

This section describes the use of Forms CEM-4900 and CEM-4903, describes California Department of Transportation (Caltrans) policies for change orders, and provides guidelines for writing change orders and memorandums.

#### 5-302 Change Order Policy

The authority for Caltrans to make changes to a contract is in Section 3-403, "Changes and Extra Work," of this manual. Work that is outside the scope of an existing contract should be done in a separate contract. However, in special situations it may be added to an existing contract if:

- A director's order has been approved for the new work in accordance with Deputy Directive 26-R2, "Use of Director's Orders," dated July 2009, available [on the Onramp Deputy Directives page](#).
- The Division of Construction chief concurs with adding new work to the existing contract by co-signing the director's order.
- On Projects of Division Interest (PoDI) for which the major contract change order approval has been retained by the Federal Highway Administration (FHWA), the FHWA transportation engineer approves the change as outlined in Section 5-308, "Federal Highway Administration Change Order Requirements," of this manual.
- On locally funded state highway projects, the contributing agency agrees to the change as outlined in Section 5-310, "Locally Funded State Highway Projects," of this manual.
- The contractor proposes a safety enhancement involving a positive protection measure that the Division of Construction accepts in accordance with the procedure outlined in Section 3-405, "Value Engineering," of this manual.
- The contractor agrees to the change.

District Construction personnel should consider the following in determining if the proposed change is within the scope of the original contract. Answering "yes" to any of the following questions indicates that the new work may be outside the scope of the original contract:

- Is the type of work for the proposed change significantly different from other types of work within the original contract?
- Is it necessary for the prime contractor or a subcontractor to mobilize specialized forces and equipment to perform the work of the proposed change?

- Will the estimated cost of the proposed work, when combined with all other changes, be outside the approved contract allotment?
- Does the proposed change represent a significant deletion to the original contract?
- Does the proposed change significantly delay completion of the contract when compared to the number of original contract working days?
- Is the proposed change outside the original contract limits?
- Can the project be completed as contemplated at the time of bid without the proposed change?

Answering the previous questions assists in determining if a proposal is within the scope of the existing contract. However, analysis of all the facts and circumstances of the proposed change or new work is required to make a final determination. When district Construction is uncertain if the new work is within the scope of the original contract, the district Construction deputy director must consult the appropriate Division of Construction field coordinator for determination.

When new work resulting from a director's order may be accomplished best by adding to an existing contract, the district submits a request to the Division of Construction chief to co-sign the order. After the director's order is approved, district personnel may process a change order incorporating the new work, in accordance with the procedures described in Section 5-311, "Change Order Approval Process," of this manual.

Increased change order delegation applies only to districts with a Division of Construction approved district change order quality control plan. Any district without the approved district quality control plan, must comply with the following delegation:

District Construction personnel may approve all change orders, except those requiring Division of Construction approval. Division of Construction approval is required on the following types of change orders:

- Any change order that has a total absolute value exceeding \$200,000.

Example:

A change order containing a \$50,000 decrease of items, a \$20,000 increase of items, and \$150,000 of extra work at force account would require Division of Construction approval:

$$|-\$50,000| + |\$20,000| + |\$150,000| = |\$220,000|$$

- Any change order that increases the cost of anticipated supplemental work listed in the detail estimate by more than \$200,000.
- Once any of the above cost thresholds is reached, each associated supplemental change order will also require Division of Construction approval.
- Any change in the following:
  - Method of payment
  - Method of materials processing



- Type or quality of materials to be furnished, excluding those for minor changes to building facilities contracts
- Proprietary material for which specific or blanket approval has not been previously received
- Specifications, except as follows:
  - “Lane Requirements and Hours of Work” charts
  - Addition of approved standard special provisions
  - Any editing of an approved standard special provision, in accordance with its instructions.
- Any change resulting in a time adjustment of more than 10 percent of original working days or more than 19 working days, whichever is greater.
- Any change order that compensates the contractor for field or home office overhead costs as the result of a final audit report issued by the Independent Office of Audits and Investigations.

With increased change order delegation, the Division of Construction takes on the role of performing quality assurance on all change orders.

### **5-303 Purpose of Change Orders**

Use change orders to change any part of the original contract. In addition, change orders are used for administrative and other purposes. The following are some of the reasons for writing change orders:

- To change contract plans, specifications, or both.
- To describe the work and method of payment for work stipulated in the contract to be paid as extra work.
- To authorize an increase in extra work funds necessary to complete a previously authorized change.
- To make payment adjustments.
- To implement a value engineering change proposal or a construction evaluated research proposal. Refer to Section 3-5, “Control of Work,” of this manual for a discussion of value engineering change proposals.
- To clarify terms of the contract.
- To resolve disputes or potential claims before the proposed final estimate, or exceptions (claims) after the proposed final estimate, and to pay for contract claim determinations. For the use of change orders in the dispute resolution process, refer to Section 5-4, “Disputes,” of this manual.

### **5-304 Initiation of Change Orders**

The resident engineer usually determines the need for and initiates a change order. However, the contractor, other Caltrans units, or outside agencies or individuals may request changes. Other Caltrans units requesting a change order must clearly document

the need for the change and provide information sufficient to demonstrate that the requested change meets Caltrans policy for making changes to the contract. For all changes requested by any person except the contractor, indicate "Change Requested by Engineer" on Form CEM-4900, "Change Order."

### **5-305 Preliminary Considerations**

When preparing to write a change order, consider the following:

- Is the proposed change order necessary to complete the work as contemplated at the time the plans and specifications were approved?
- What is the overall effect on the planned work?
- Are there sufficient unobligated contingency funds? If additional funds are required, can they be obtained soon enough to prevent delays? Refer to Section 5-2, "Funds," of this manual for the procedure for obtaining additional funds.
- Will the contract time be affected?
- What are the effects of adjusting contract time?
- When a project is nearing completion, give careful consideration to the effect the change will have on the time of completion. Changes near the end of a contract tend to extend the time of completion more than changes made earlier. Late changes may adversely affect the contractor's schedule, delay public use of the facility, and disrupt the planned use of Caltrans personnel.
- If the adjustment of time of completion is deferred, how will the adjustment be determined?
- Will the proposed change order affect or change the contractor's planned method of performing the work?
- Is the proposed work already covered in the contract?
- Will the ordered change cause a work-character change?
- If a payment adjustment resulting from a work-character change is deferred, how will the adjustment be determined?
- Is timely coordination with other affected Caltrans units possible? Does the proposed change adhere to existing permit conditions, environmental mitigation requirements, local agency and utility obligations, and right-of-way agreements? Does the proposed change require new coordination, permits, or agreements?
- Will the proposed change affect maintenance operations? Does the maintenance superintendent have concerns with the proposed change?
- Will the contractor cooperate in providing timely cost estimates for extra work at agreed price and cost information for payment adjustments? Should you make cost estimates and determinations and present them to the contractor?

- Will the ordered change require a Cost Effectiveness/Public Interest Finding for the use of patented or proprietary materials or equipment, or mandatory use of a borrow or disposal site?
- What methods of payment should be used?

To avoid misunderstanding and obtain full agreement, discuss with the contractor all elements of a change, including the method of compensation and the effect on time. Failure to identify elements requiring consideration may lead to protest.

### **5-306 Change Order Content**

The change order must be clear, concise, and explicit. When appropriate, it must include the following:

- What is to be done
- Location and limits of proposed work
- Applicable specification changes and references to specifications
- The proposed change order's effect on time of completion
- Method and amount of compensation

#### 5-306A Specifications

The specifications for bid item work already included in the contract will apply to added bid item work. You do not need to repeat or reference specifications for added work that is clearly shown to be bid item work.

In the change order, completely describe extra work. Include directly or by reference the specifications for extra work, whether paid for at agreed price or at force account. The contractor must complete this extra work exactly as it is specified in the change order.

The contract may include some supplemental work specifically designated as extra work. For an example, refer to Sections 12-1.01, "General"; 12-1.03, "Construction"; and 12-1.04, "Payment," of the *Standard Specifications*.

#### 5-306B Description of Work

The change order must clearly describe added work or other changes to the contract. Include appropriate references to special provisions, contract plans, *Standard Plans*, or *Standard Specifications*. Decide whether a written statement clearly defines the proposed change or if plans or drawings need to be included.

The contractor normally chooses the method of performing extra work, subject to the resident engineer's approval for labor, equipment, and materials for force account work. If, for any reason, the engineer wants to control the method of performing the work, the method must be specified in the change order.

On plans attached to a change order, show pertinent dimensions and the scale or label the plans "not to scale." Plainly mark reduced reproductions "Reduced Plans, Scales Reduced Accordingly." When using existing plan sheets, clearly show the difference between new work, work already included in the contract, and changed or eliminated

work. A simple sketch on a letter-sized sheet will more clearly depict the change than a hard-to-spot revision to an existing sheet of the original plans. An 8.5- by 11-inch attachment is always preferable to a full-size contract plan sheet.

Section 6735, "Preparation, signing, and sealing of civil engineering documents," of California's Professional Engineers Act, requires that all civil engineering plans and specifications that are permitted or that are to be released for construction shall bear the signature and seal or stamp of the licensee and the date of signing and sealing or stamping. All final civil engineering calculations and reports shall bear the signature and seal or stamp of the licensee, and the date of signing and sealing or stamping. Plans or specifications attached to a proposed change order must meet this requirement, with the exception that a licensed civil engineer does not need to sign revisions already covered by *Standard Plans*, *Standard Specifications*, standard special provisions, previously engineered drawings, or minor changes not requiring calculations or determinations by a licensed engineer.

Show the Caltrans contract number, sheet number, and change order number on plans or other documents made a part of a change order. Include all attachments with each distributed copy of a change order.

#### 5-306C Methods of Payment

When writing a change order, the resident engineer often can choose the payment method for added or changed work. The following lists, in order of preference, the payment methods:

1. Bid item unit prices: refer to Section 5-306G, "Change Order Format," of this manual.
2. Bid item unit prices with a payment adjustment at agreed unit price or lump sum: refer to Sections 5-306C (2), "Payment Adjustment"; 5-306C (2a), "Adjustments for Increased or Decreased Quantities"; and 5-306C (2b), "Deferred Bid Item Adjustments," of this manual.
3. Payment at agreed unit price or lump sum: refer to Sections 5-306C (2d), "Adjustments for Work-Character Changes"; 5-306C (3), "Extra Work"; and 5-306C (3a), "Extra Work at Agreed Prices," of this manual.
4. Force account: refer to Section 5-306C (3b), "Extra Work at Force Account," of this manual.

When a bid item has a work-character change, the resident engineer may delete the entire bid item, or the portion of it affected by the change, and pay for the entire work at force account. A preferred choice is to determine a correct and equitable payment adjustment to the bid item unit price. A payment adjustment providing for increased or decreased costs because of the work-character change allows the contract price to remain unchanged. Before resorting to force account payment, resident engineers must make every effort to make payment adjustments or negotiate agreed prices.

Refer to Section 3-901, "General," of this manual for methods of payment. Section 3-904, "Payment Adjustments," of this manual describes how the various methods of payment are used in change orders.

### 5-306C (1) *Increases and Decreases in Bid Items at Bid Item Unit Prices*

Changes in planned work or adding or decreasing work will often result in increases or decreases in bid item quantities. Except for bid items designated in the Bid Item List as final pay quantities, show changes in bid item quantities as estimates on a change order. Calculate the estimated increases or decreases that will result from the work as changed by the change order. The actual quantity paid for each bid item will be determined by the method specified for measuring each bid item quantity. For guidelines on measuring bid item quantities, refer to Section 3-9, "Payment," of this manual.

Show changes in the quantity of bid items that are designated as final pay quantities as fixed amounts added to the quantity shown in the Bid Item List. If a portion of a final pay item quantity is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work quantity. For a standard clause for revised final pay quantities, refer to "Change Order Standard Clauses" at:

<https://dot.ca.gov/programs/construction/change-order-information>

For the method of indicating changes in bid item quantities, refer to Section 5-306G, "Change Order Format," of this manual and the change order examples at:

<https://dot.ca.gov/programs/construction/change-order-information>

Increases and decreases or estimated increases or decreases in bid items at contract prices may be executed unilaterally or with the contractor's agreement.

### 5-306C (2) *Payment Adjustment*

For the definition of payment adjustments, refer to Section 3-904, "Payment Adjustments," of this manual. Section 3-4, "Scope of Work," of this manual discusses payment adjustments for increased or decreased quantities and for work-character changes.

Payment adjustments usually involve estimating the cost of work or determining the actual cost of work performed. The following explains how to estimate or determine such costs.

Verify the contractor's records of item cost by comparing labor and equipment charged to the item by the contractor to the labor and equipment shown on the daily reports. Charge equipment to the item cost in accordance with the force account method. Exclude downtime and apply the correct force account rental rates. Exclude any overhead costs and any items that should be charged to other work.

Sometimes a contractor may submit cost estimates based on the billing from a specialist plus a markup. When the work is of such a nature that it would qualify under Section 9-1.05, "Extra Work Performed by Specialists," of the *Standard Specifications*, calculate the adjustment on this basis. Check that the specialist rate or billing is in line with the firm's usual charges.

For bid item overrun and underrun adjustments, when the contractor does not furnish sufficient and timely cost information, issue a unilaterally approved change order adjusting the item. Base the adjustment on your cost determination. This approved change order establishes the time allowed for protest and helps avoid delays.

Even though the contractor may have agreed to pay a fixed price to others for an item of work, use a force account-based adjustment of the item price. Use a force account cost determination even when the work is subcontracted, unless the item of work was performed by a specialist, as defined in Section 9-1.05, “Extra Work Performed by Specialists,” of the *Standard Specifications*.

For large and complex adjustments, request auditing assistance from the Independent Office of Audits and Investigations through the Division of Construction. Refer to procedures in Section 5-411, “Audits,” of this manual.

#### 5-306C (2a) Adjustments for Increased or Decreased Quantities

As soon as it is known that a bid item quantity will vary from the Bid Item List by more than 25 percent, consider the method of adjustment that will be used. Make daily reports for the item with the same degree of detail used in force account daily reports. Doing so will identify any necessary adjustment. When required, make payment adjustments for increased or decreased quantities as soon as the contractor completes work on a bid item. Refer to Section 3-904, “Payment Adjustments,” of this manual.

You may calculate adjustments by analyzing the performance of a portion of an item, provided the portion is typical of the item as a whole.

Verify a contractor’s records by comparing them with Caltrans records. Where more extensive auditing is required, request the assistance of the Independent Office of Audits and Investigations. When examining the contractor’s records to determine the cost of equipment used, consider only the hours worked. Force account equipment rental rates must be used regardless of what rate the contractor may have used. When verifying the contractor’s records, eliminate supervision and overhead costs and any costs properly chargeable to other work.

When making adjustments, use Caltrans records to determine the amounts of labor, equipment, and materials. The verified contractor’s records may supplement the Caltrans records, or in some instances, you may need to use only the verified contractor’s records. The resident engineer must use good judgment when reconciling differences between the contractor’s and the engineer’s records to arrive at a reasonable and equitable adjustment.

An item that has been adjusted under the provisions of Section 4-1.05B, “Work-Character Changes,” of the *Standard Specifications*, may later become eligible for further adjustment under Section 9-1.06, “Changed Quantity Payment Adjustments,” of the *Standard Specifications*. In making the quantity payment adjustment, deduct or add payments made for work-character change adjustment to determine the contractor’s total cost of the work.

#### 5-306C (2b) Deferred Bid Item Adjustments

Upon completion of the changed work, promptly resolve all deferred item adjustments.

If a bid item adjustment will not be made, you do not need to write a supplemental change order. In this case, a letter from the contractor is sufficient. File a copy of the contractor's letter with the original change order that deferred the adjustment.

#### 5-306C (2c) Exemption from Adjustment

Unless requested in writing by the contractor, do not adjust a bid item when the total pay quantity is less than 75 percent of the Bid Item List. You also do not need to adjust, unless requested in writing by the contractor, if the value based on the contract price for the units of work in excess of 125 percent is less than \$5,000, as shown in Section 9-1.06B, "Increases of More than 25 Percent," of the *Standard Specifications*. As soon as a final bid item quantity is known, decide whether to make the adjustment. Unless an obvious imbalance exists between the bid item unit price and actual cost, do not make the adjustment. Inform the contractor in writing whether Caltrans will adjust the bid item price.

#### 5-306C (2d) Adjustments for Work-Character Changes

Section 3-403A, "Work-Character Changes" of this manual defines work-character changes.

Payment adjustments for work-character changes may be unit or lump sum adjustments. Normally, a lump sum adjustment is only applied to a lump sum bid item.

A work-character change payment adjustment requires a force account determination of the cost of an entire item as changed and a force account estimate of the cost of the work as planned.

When only a portion of the work has changed, separate the changed portion of the work from the unchanged portion. Perform a force account analysis of the cost of the changed portion, and make payment at the contract price plus a separate payment for the added work or credit for any deleted work.

Do not eliminate a bid item and pay for the work at agreed price or force account unless the change is so extensive that the original item no longer applies.

There can be no work-character change unless there was an executed change order. At times, it will not be possible to come to an immediate agreement with the contractor regarding an adjustment in compensation. You may need to complete the entire item before adjusted costs can be determined. In such cases, provide for payment at bid item prices, and defer adjustment in the initial change order. Include an appropriate deferment clause.

#### 5-306C (3) Extra Work

For the definition of extra work and guidelines for using extra work in change orders, refer to Section 3-4, "Scope of Work," of this manual. Before designating additional work as extra work, make sure that it cannot be paid for as a bid item, a combination of bid items, or a bid item with a payment adjustment.

### 5-306C (3a) Extra Work at Agreed Prices

For guidelines for determining and paying for extra work at agreed price, refer to Section 3-9, "Payment" of this manual.

File with the contract records any calculations made to determine extra work at agreed price. These calculations are subject to audit and must be in such a form that they clearly substantiate and justify the amount paid for extra work. Instead of showing all the calculations necessary to substantiate extra work at agreed price in the change order memorandum, you may include a statement that such calculations are on file in the project records.

When a subcontractor is to perform extra work at agreed price, include the subcontractor markup in the agreed price calculations. For subcontractor markup guidelines, refer to Section 3-9.

Agreed prices may be unit prices or lump sum. Before an agreed price may be used to pay for extra work, the resident engineer and the contractor must agree on compensation. The contractor must execute the change order providing for extra work at agreed price.

After the extent of extra work has been determined, ask the contractor to submit a proposed agreed price. Analyze the contractor's proposed price using the force account method. You may also initially determine a proposed agreed price based on a force account analysis and present it to the contractor. When you have reached agreement, process the change order and retain in the project files the records fully justifying the agreed price.

Verify that payments of agreed lump sum prices do not exceed the amount authorized on the change order. Agreed unit prices can be applied to an estimated number of units in the change order. Although the unit price remains fixed, the number of units paid may vary from the estimated number.

When extra work consists entirely of work that neither the contractor nor any of the subcontractors would normally perform, the work is considered "specialist work," and the contractor should obtain three bids for the extra work. Determine the agreed price by taking the lowest bid and adding the markup, as described in Section 9-1.05, "Extra Work Performed by Specialists," of the *Standard Specifications*.

When this method is used, verify that the work is accurately and completely described when bids are solicited. The same description of the work must be used in the change order. If the contractor or a subcontractor includes a bid along with independent firms, you must make an analysis using the force account method. The contractor's or subcontractor's bid will be acceptable only if the analysis can justify it. If the contractor or a subcontractor is capable of performing the extra work, the work is not considered "specialist work."

For examples of change orders with extra work at agreed price, refer to the change order examples at:

<https://dot.ca.gov/programs/construction/change-order-information>



### 5-306C (3b) Extra Work at Force Account

Pay for extra work at force account under the following conditions:

- When the work cannot be estimated within reasonable limits of accuracy
- When the resident engineer and the contractor are unable to agree on a unit or lump sum price for the work
- When the contractor refuses to sign a change order

For guidelines for paying for extra work at force account, refer to Section 3-9, “Payment,” of this manual. For examples of change orders with extra work paid for on a force account basis, refer to the change order templates at:

<https://dot.ca.gov/programs/construction/change-order-information>

### 5-306D Adjustments to Time of Completion

For a discussion of time of completion and adjustments to time, refer to Section 3-804, “Time,” of this manual.

A change order may specify a positive, negative, or no adjustment to time of completion.

Whenever you can estimate an adjustment to time with reasonable accuracy, try to reach agreement with the contractor. Enter the amount of the time adjustment on the change order, including when there is no adjustment. Regardless of the amount of time actually required to perform the changed work, the agreed adjustment becomes binding on both parties. File with the contract records the calculations and other data used to determine adjustments to time.

If you cannot determine or agree on an adjustment of time in the initial change order, you may defer the adjustment. When doing so, write “deferred” on the time adjustment line and include a time adjustment deferred clause in the change order.

As soon as the change order work is completed, determine the appropriate time adjustment. If you cannot reach agreement with the contractor, issue a unilaterally approved supplemental change order adjusting time.

On contracts with internal time limits or multiple time limits, make sure that any change order that includes a time adjustment contains a statement that identifies the applicable time limits of the adjustment. If an internal milestone date will change, but total time remains unaffected, specify the new date in the change order and indicate there is no time adjustment because of the change.

Periodically during the progress of the change order work, resolve deferred time adjustments. Do so by issuing a supplemental change order covering time allowable. If it is an extensive deferment, resolve the time allowed to a current date, with part of the deferment continued for subsequent work. Your objective is to resolve deferred time adjustments as soon possible. Timely resolution of time deferments allows the contractor to efficiently schedule remaining work to complete the project within the time limits.

The resident engineer may not unilaterally decrease time unless this is permitted by the specifications. Otherwise, the contractor must agree to changes that reduce time. Without this agreement, you can do one of two things:

1. Do not recommend approval of the change if no benefit exists for Caltrans.
2. If substantial benefits exist for Caltrans, issue a unilaterally approved change order with no time adjustment.

#### 5-306E Change Order Standard Clauses

Information on change order standard clauses is available at:

<https://dot.ca.gov/programs/construction/change-order-information>

The examples show standard clauses for situations found in change orders. Customize standard clauses to reflect what is appropriate for the change order being written.

#### 5-306F Work Designated as Extra Work in the Specifications

The *Standard Specifications* and the special provisions describe certain work and specify that it is to be paid for as extra work. In some cases, supplemental funds are set aside to pay for this extra work. Make an independent cost estimate of the work for which the supplemental funds were provided. This estimate must be as accurate as possible.

Refer to the specific section of the specifications that identifies the extra work for the change order. Also, describe the exact work to be performed.

Traditionally, Change Order No. 1 provides for extra work specified for public traffic and public convenience. This change order must be limited to the following:

- Work designated as extra work in the specifications
- Work related to the needs of public traffic or for public convenience

Refer to the change order template “Maintain Traffic” at:

<https://dot.ca.gov/programs/construction/change-order-information/change-order-templates>

This change order indicates the method for incorporating specified extra work into a change order. Note that the change order template is written as extra work at force account. You may also pay for specified extra work as extra work at agreed price if the extent of the work can be accurately determined. This approach is illustrated in the change order template, “Flagger,” which provides for payment for flaggers at an agreed unit price. Payment for flaggers at an agreed price may be written as a separate change order or combined with the other traffic-related work paid for as extra work at force account.

#### 5-306G Change Order Format

The example change orders at the Division of Construction’s website follow the generally accepted format for writing change orders. The following describes the format:

- Describe the work or change that will cause increases and decreases to bid item quantities. Refer to any attached drawings or documents (sheets \_\_ and \_\_ of \_\_). If the bid item work cannot be described separately from other work, describe the entire

work at this stage. Describe work paid for by other methods in the appropriate sections of the change order. The intent is that the change order clearly specifies the work paid for by each payment method.

- Show the increases and decreases in bid item quantities. Include the percent of the Bid Item List represented by this change. Also show the accumulated percent change to date from the original quantity in the Bid Item List.
- Write clauses for situations resulting from increases or decreases or estimated increases or decreases in bid item quantities, including deferred adjustments or actual payment adjustments for overruns or underruns.
- Write clauses for adjustments or deferred payment adjustments because of any cause. Describe the work or change causing the adjustment or deferred adjustment. Show the amounts of adjustments if not deferred.
- Describe work to be paid for as extra work at agreed price. Show the price as agreed. Agreed prices may be fixed unit prices and an estimated or actual number of units, or agreed prices may be fixed lump sums.
- Describe the work to be paid for as extra work at force account. Show the estimated cost of the extra work.
- Write time deferment or time adjustment clauses.

### **5-307 Change Order Memorandum**

Include with all change orders sufficient documentation of the scope and reasons for the change. For this purpose, use Form CEM-4903, "Change Order Memorandum," with any necessary attachments. The memorandum is intended for interdepartmental use only. Do not send the memorandum to the contractor.

The memorandum must be sufficiently complete to enable a person unfamiliar with the details of the project to review the change order and understand the justification for the work, the reasonableness of the compensation, and the time adjustment provisions.

#### 5-307A Contents of the Memorandum

The memorandum must:

- State what the change order provides. Supplemental change orders should also include a description of the original change order.
- Explain the need for the change, including the contractual basis of the change. When a different Caltrans unit requests a change, the correspondence requesting the change should also justify the need for the change. Attach supporting letters to the memorandum.
- State the reasons a particular method of payment was chosen. Include a complete cost analysis, or state that the cost analysis is on file with the project records. The statement should include the method used in making the cost analysis.

- Explain the reasons the ordered change causes any change in the character of the work. To substantiate any additional compensation due, you may need to provide a summary of events leading to the change.
- State the extent of coordination and concurrence. If agreement with any district unit cannot be obtained, indicate specific discussions that would influence a decision for approval. Refer to Section 5-307C, “Coordination and Concurrence by Others,” of this manual.
- If prior approval of the change order has been obtained, state the name of the person who granted prior approval and the date.
- Show the unobligated balance of funds available to finance the change order. The resident engineer must verify that available funds are not exceeded. For obtaining additional funds, refer to Section 5-2, “Funds,” of this manual.
- Show the total authorized funds to date, as well as the dollar amount of a supplemental change order.
- Indicate when funds for supplemental work shown in the detail estimate of job cost are used in the change order.
- For major changes on federal PoDI, indicate the name and date of discussion and concurrence, if any, by the FHWA transportation engineer. Refer to Section 5-308, “Federal Highway Administration Change Order Requirements,” of this manual. For details relating to federal funding to be shown on the change order memorandum, refer to Section 5-309, “Federal Segregation Determination on Change Orders,” of this manual.
- For change orders involving participation by local agencies, identify the portion of the work that is applicable to the contributing agency.
- For a change order that is to be unilaterally approved, explain why the contractor will not sign or why the contractor’s signature is not required. Attach a copy of any correspondence from the contractor regarding the change order.
- Include justification for a time adjustment. Describe the method used to determine time adjustments. State the controlling activity during the delay period. Whenever possible, and when resolving a previously deferred time adjustment, indicate the specific working days in which there were delays **that** represent the period of the time adjustment. By indicating the specific working days, you make sure other time adjustments do not cover the same time period.
- Indicate the cumulative time adjustments and total number of change orders with unreconciled deferred time.

#### 5-307B Change Order Category Codes

The resident engineer is responsible for assigning a four-letter code to every change order to indicate the main reason for the change. Preferably, there should only be one issue per change order. For change orders with multiple distinct issues, assign the coding based on the one issue that has the greatest effect on the project. Assign the coding

according to the reason for the change, not according to how the problem was corrected. To determine the code, the resident engineer may use the change order code generator from:

<https://dot.ca.gov/programs/construction/change-order-information/caltrans-cco-code-generator>

The resident engineer should enter this code on Forms CEM-4903, “Change Order Memorandum,” and CEM-4901, “Change Order Input.”

The change order code will identify one or more discrete pieces of information about the change:

1. The type of change order (first character)
2. The specification that authorizes the change, or the physical asset affected by the change (second character)
3. The source document that led to the need for a change (third and fourth characters)
4. The disposition of a dispute resolution (third and fourth characters)

Administrative change orders, such as accelerations, and changes that are anticipated and authorized by existing administrative specifications require only minimal coding information. Consequently, extra coding positions will be assigned a default character placeholder, the letter Z. Assign characters from left to right, as subsequent character code selection is dependent on the preceding characters.

For innovation change orders initiated by Caltrans that result in construction cost savings that do not reduce the delivered project’s original function or performance, the resident engineer is to use “INOV” coding on Forms CEM-4903 and CEM-4901.

**Character 1:** Change Order Type:

Use the codes in Table 5-3.1, “Change Order Type (Character 1),” to categorize the change order according to its general type; for example, administrative or dispute resolution. Coding for dispute resolution takes precedence over coding for any other potential scenario. After selecting the first character code, use the corresponding directions on Table 5-3.1 to complete the coding for the remaining three characters.

**Character 2:** Specification or Physical Asset:

Next, based on your selection for the first character code, and using the directions within Table 5-3.2, “Specification or Physical Asset (Character 2),” select the code that most accurately identifies the appropriate administrative specification, or the affected physical asset. Enter this code as the second character. In the case of a change order that is strictly for acceleration, with no physical change in the planned work (the first character code is a B); then the second character code is defaulted to a placeholder Z character.

**Characters 3 and 4:** Source Document or Dispute Disposition:

If the change order is needed to bring about a plan or specification change (the first character code is C or D), use Table 5-3.3, “Source Document (Characters 3 and 4),” to identify the pair of character codes that together best describe the original document that created the need for the change order. The reason for the change may be from:

- Constructability issues, errors, conflicts, or inconsistencies.
- The introduction of improved products, means, or methods.
- Any other reason, provided that the change will affect some physical aspect of the planned work.

If the change order is for a dispute resolution (first character code from Table 5-3.1 is E, F, G, or H), use Table 5-3.4, “Dispute Disposition (Characters 3 and 4),” to assign the third and fourth characters. Begin by selecting the code for the third character that most closely identifies the time frame before the dispute was resolved. The milestones for the third character are listed chronologically. For the fourth character, choose a code from Table 5-3.4 that most accurately explains how the dispute was resolved, such as entitlement, negotiated settlement, and arbitration award, full or partial resolution.

If the change order type was administrative (first character code is either A or B), then the third and fourth character codes are defaulted to Zs. However, when the first character code is A and the second character code is W, choose the third and fourth character codes from Table 5-3.5 “Other Supplemental Work.”

#### General Examples:

Change orders that are strictly for constructive accelerations when there is no change to the final configuration of a planned permanent physical asset are all coded “BZZZ.” No additional coding information is necessary.

When a change order resolves a dispute based on contract administration, and there was no change to the planned work on some permanent physical asset:

1. The first character will be either E or G (refer to Table 5-3.1).
2. The second character represents the disputed administrative specification. Choose this character from the upper portion of Table 5-3.2.
3. The third and fourth coding characters are selected depending on when and how the dispute was resolved. Choose these characters from Table 5-3.4, “Dispute Disposition.”

When a change order is authorized by an administrative specification and there is no formalized dispute involved:

1. The first character will be A (refer to Table 5-3.1).
2. Select the second character from the upper portion of Table 5-3.2.
3. If the second character is W, select the third and fourth characters from Table 5-3.5, otherwise the third and fourth characters will both default to the placeholder letter Z. No other coding information is necessary in this example.

Table 5-3.1. Change Order Type (Character 1) (1 of 2)

Reason for Change Order	Type of Change Order	Code	Description
Administrative	Contract or Supplemental Work	A	<p>Change order used to pay for work or adjustments already authorized by specifications (supplemental work, quantity adjustments, and other).</p> <p>(Use only the specification codes from the upper portion of Table 5-3.2 for the second character, and Zs for the third and fourth characters. However, when the second character is W, use Table 5-3.5 for the third and fourth characters.)</p>
Administrative	Acceleration	B	<p>Change order used to accelerate certain planned work. Describe the reason for acceleration in the transmittal memo, such as public convenience, staging coordination, or delay mitigation.</p> <p>(Use only Zs for subsequent code characters 2, 3, and 4.)</p>
Plan or Specification Change	Non-VECP	C	<p>Change order needed to change plans or specifications for reasons unrelated to a value engineering change proposal (VECP).</p> <p>(Use only the physical asset codes from Table 5-3.2 for the second character, and Table 5-3.3 for the third and fourth characters.)</p>
Plan or Specification Change	VECP-Related	D	<p>Change order needed to change plans or specifications because of a VECP.</p> <p>(Use only the physical asset codes from Table 5-3.2 for the second character, and Table 5-3.3 for the third and fourth characters.)</p>
Dispute Resolution	Potential Claim	E	<p>Change order either fully or partially resolves certain potential claim records because of a dispute over contract administration.</p> <p>(Use the specification codes from the upper portion of Table 5-3.2 for the second character, and Table 5-3.4 for the third and fourth characters.)</p>

Table 5-3.1. Change Order Type (Character 1) (2 of 2)

Reason for Change Order	Type of Change Order	Code	Description
Dispute Resolution	Potential Claim	F	<p>Change order either fully or partially resolves certain potential claim records because of a dispute over an ordered change that affected some physical asset.</p> <p>(Use either the physical asset codes from the lower portion of Table 5-3.2 for the second character, and Table 5-3.4 for the third and fourth characters.)</p>
Dispute Resolution	Claim	G	<p>Change order either fully or partially resolves certain contract claims because of a dispute over contract administration.</p> <p>(Use the specification codes from the upper portion of Table 5-3.2 for the second character, and Table 5-3.4 for the third and fourth characters.)</p>
Dispute Resolution	Claim	H	<p>Change order either fully or partially resolves certain contract claims because of a dispute over an ordered change that affected some physical asset.</p> <p>(Use the physical asset codes from the lower portion of Table 5-3.2 for the second character, and Table 5-3.4 for the third and fourth characters.)</p>



Table 5-3.2. Specification or Physical Asset (Character 2) (1 of 2)

<b>Code</b>	<b>Section (only when the first character code is A, E, or G)</b>	<b>Standard Specifications Section Name</b>
A	9-1.06	Changed Quantity Payment Adjustments
B	7-1.04	Public Safety
C	4-1.06	Differing Site Conditions (23 CFR 635.109)
D	7-1.02K	Labor Code
E	7-1.03	Public Convenience
F	8-1.10	Liquidated Damages
G	8-1.07	Delays
H	5-1.36C	Nonhighway Facilities
I	9-1.17C	Proposed Final Estimate
J	12-1	Temporary Traffic Control—General
K	80-15.02,83-11.03B	Reconstruct Fences, Reconstruct Metal Bridge Railings
L	4-1.05B	Work-Character Changes
M	19-1.03B	Unsuitable Material
N	19-2.03F	Slides and Slipouts
O	20-1.03C	Roadside Clearing
P	10-6, 87-21.03B	Watering, Maintaining Existing Electrical Systems
Q	9-1.07	Payment Adjustments for Price Index Fluctuations
R	5-1.43E(1)	Alternative Dispute Resolution—General
S	9-1.03	Payment Scope
T	4-1.07C	Value Analysis Workshop
U	5-1.09	Partnering
V	6-2 and 6-2.02	Quality Assurance, Quality Control
W	Various	Other listed Supplemental Work (Describe in transmittal memo) (Use only if no other code describes this supplemental work and use Table 5-3.5 when the first character is A and the second character is W)
X	Other	Other (Describe the “other” specification in transmittal memo)
Z	Default	(Use only when the first character is B)

Table 5-3.2. Specification or Physical Asset (Character 2) (2 of 2)

<b>Code</b>	<b>Affected Permanent Physical Asset (use this portion of Table 5-3.2 only when the first character code is C, D, F, or H)</b>
A	Building (such as maintenance facilities, pump stations)
B	Electrical (such as signals, lighting, communications, electrical systems)
C	Drainage (such as culvert, subsurface, roadway drainage, gutters, lined ditches)
D	Earthwork (such as excavation, embankment, soil stabilization, slope protection, erosion control)
E	Landscaping (such as plants, irrigation)
F	Materials (such as borrow or disposal sites, surplus, salvage)
G	Property (such as fence, survey monument, easements, right-of-way obligations)
H	Structure (vehicle or pedestrian)
I	Base, subbase, shoulder backing
J	Surfacing (pavement, pavement reinforcing, shoulders, sidewalks)
K	Traffic control devices (such as barriers, railing, signing, delineation)
L	Utility
M	Wall (such as retaining, sound, aesthetic)
X	Other (Describe the "other" affected permanent physical asset in transmittal memo)
Z	Default (Use only when the first character is B)

Table 5-3.3. Source Document (Characters 3 and 4) (1 of 2)  
 (Use **Table 5-3.3** only when the first character code is *C* or *D* from **Table 5-3.1**)

<b>Characters 3 and 4</b>	<b>Type</b>	<b>Purpose</b>
AA	Agreement	Cooperative
AB	Agreement	Permit
AC	Agreement	Right-of-way obligation
CA	Certificate	Environmental clearance
CB	Certificate	Right-of-way clearance
GA	Survey	Data/control
GB	Survey	Detailed cross-sections
MA	Materials	Log of test borings
MB	Materials	Information handout, brochure
PA	Plan	Construction detail
PB	Plan	Contour grading
PC	Plan	Electrical
PD	Plan	Elevation view
PE	Plan	Environmental mitigation
PF	Plan	Erosion control
PG	Plan	Foundation
PH	Plan	General cross-sections
PI	Plan	Irrigation
PJ	Plan	Layout/plan view
PK	Plan	Mechanical
PL	Plan	Pavement delineation
PM	Plan	Planting
PN	Plan	Profile
PO	Plan	Schedule of materials
PP	Plan	Signage
PQ	Plan	Standard Plans
PR	Plan	Substructure
PS	Plan	Superelevation
PT	Plan	Superstructure

Table 5-3.3. Source Document (Characters 3 and 4) (2 of 2)

<b>Characters 3 and 4</b>	<b>Type</b>	<b>Purpose</b>
PU	Plan	Typical section
PV	Plan	Utilities
SA	Specification	Special Provision
SB	Specification	Standard Specifications
TA	Temporary Plan	Construction area signs
TB	Temporary Plan	Construction easements
TC	Temporary Plan	Construction staging
TD	Temporary Plan	Electrical
TE	Temporary Plan	Erosion control
TF	Temporary Plan	Environmentally sensitive area
TG	Temporary Plan	Lane closure chart
TH	Temporary Plan	Standard Plans
TI	Temporary Plan	Water pollution control or prevention
TJ	Temporary Plan	Traffic handling
TK	Temporary Plan	Traffic management plan
AX	Any of Above	Other specific document (describe in transmittal memo)
CX	Any of Above	Other specific document (describe in transmittal memo)
GX	Any of Above	Other specific document (describe in transmittal memo)
MX	Any of Above	Other specific document (describe in transmittal memo)
PX	Any of Above	Other specific document (describe in transmittal memo)
SX	Any of Above	Other specific document (describe in transmittal memo)
TX	Any of Above	Other specific document (describe in transmittal memo)
XX	Other	Other (describe in transmittal memo)
ZZ	Default	When the first character is either A or B

Table 5-3.4. Dispute Disposition (Characters 3 and 4)  
 (Use **Table 5-3.4** only when the first character code is *E, F, G, or H*, from **Table 5-3.1**, representing a Dispute Resolution)

<b>Character 3 Potential Claims, Claims</b>	<b>When Character 1 is</b>	<b>Chronological Milestone</b>
A	E or F	Before a Differing Site Condition Management Review Committee hearing
B	E or F	Before a Dispute Resolution Board hearing
C	E or F	Before the Construction Contract Acceptance date
D	E or F	Before the Proposed Final Estimate date
E	G or H	Before a Board of Review hearing
F	G or H	Before an Arbitration Filing
G	G or H	Before the Arbitration Hearing
H	G or H	Before the Arbitrator's Decision
I	G or H	After the Arbitrator's Decision

<b>Character 4 Resolution Authority</b>	<b>Description</b>
A	Entitlement, Partial Resolution (Describe unresolved issues in transmittal memo)
B	Entitlement, Full Resolution
C	Negotiated Settlement, Partial Resolution (Describe unresolved issues in transmittal memo)
D	Negotiated Settlement, Full Resolution
E	Arbitration Award, Partial Resolution (Describe unresolved issues in transmittal memo) (Use only when first character code from <b>Table 5-3.1</b> is <i>G or H</i> )
F	Arbitration Award, Full Resolution (Use only when first character code from <b>Table 5-3.1</b> is <i>G or H</i> )
X	Other (Describe in transmittal memo)

Table 5-3.5 Other Supplemental Work (Characters 3 and 4)  
 (Use **Table 5-3.5** only when the first character code is A from **Table 5-3.1** and the second character code is W from Table 5-3.2)

<b>Characters 3 and 4</b> (use only when first two characters are AW)	<b>Specification</b>	<b>Purpose</b>
AB		Incentive Payment (A+B Bidding)
JT	SSP 40-1	Just-In-Time Training (JITT)
BP	SS 14-6.03	Bird Protection
WS	SS 13-5.04 and 13-6.04, 13-7.03D	Water Pollution Control Maintenance Sharing
WA	SS 13-1.03A	Additional Water Pollution Control
SS	SS 13-3.01D(4)	Stormwater Sampling and Analysis
DA	SS 5-1.43E(2)	Dispute Resolution Advisor (use ARZZ for Dispute Resolution Board Meetings)
HS	nSSPs 39-2.01A(4)(i)(iii) and 39-2.04A(4)(c)(iii)	HMA Smoothness Incentives
CS	nSSP 40-1	Concrete Smoothness Incentives
HP	nSSPs 39-2.09 and 39-2.10	HMA Statistical Pay Factors
ZZ		Other Supplemental work not listed above

### 5-307C Coordination and Concurrence by Others

Secure recommendation or concurrence from affected functional units and other agencies. Concurrence is evidence of agreement but does not constitute approval of a change order. Process all change orders for approval as described in Section 5-311, “Change Order Approval Process,” of this manual.

Use district procedures for circulating change orders for concurrence. If contacted parties are unresponsive, in the change order memorandum, state the facts of the circulation process to assure the proposed change is appropriate. Obtaining concurrence should not delay the project.

The following lists some of the Caltrans functional units and reasons for seeking their concurrence.

#### *5-307C (1) Project Development*

The project engineer must concur with all design-related change orders, including plan or specification changes and value engineering change proposals. You may obtain design assistance from the project engineer on some of the more complex design changes. Remember that the project engineer is the engineer of record, and unless the project engineer is consulted, the resident engineer may not know why some design decisions were made.

By coordinating with the project engineer on all design and specification change orders, a continuous and informal “constructability review” process develops. Cooperation between Design and Construction personnel will result in better plans and specifications and fewer change orders. Cooperation may also reduce potential for construction delays, effects on the contractor, and claims.

#### *5-307C (2) Project Management*

For change orders with the following conditions, obtain concurrence from the project manager:

- Potential for significant delays to the planned work
- Unanticipated large project cost increases, including those requiring a request for additional funds
- Changes that may be considered outside the scope or intent of the planned work
- Changes that may require a Cost Effectiveness/Public Interest Finding

The project manager’s duties relating to change orders include the following:

- Monitoring project costs
- Expediting decisions by functional units as needed, so there is no delay or other adverse effect on the contractor’s activities

### 5-307C (3) Structures

If changes are to be made that involve structures, Structure Construction determines the need for the change, the intent or content of the change order, and any methods or restrictions for doing the work. The resident engineer is responsible for administration, including processing the change order for approval. The structure construction engineer and other personnel in the Division of Engineering Services may need to concur. For procedures for obtaining concurrence for structure change orders, refer to Section 7-0.0, "Contract Change Orders," of the *Bridge Construction Records and Procedures* manual, Vol. 1.

### 5-307C (4) Materials

The district materials engineer, as well as the project engineer, must concur with all change orders that change or modify material specifications. Also, seek concurrence from the district materials engineer for proposed changes in structural section, slope rates, installation of subsurface drains, removal of unsuitable material, erosion control, and repair of slides and slipouts.

### 5-307C (5) Traffic

Obtain concurrence from the appropriate traffic engineer in the district for change orders affecting traffic management plans, hours of work, detours, signing, delineation, highway lighting, traffic signals, illuminated signs, guardrail, barriers, or any other traffic control device or facility. Clear any proposed special sign with the district traffic design engineer.

### 5-307C (6) Maintenance

Obtain written concurrence from the appropriate Maintenance region manager for changes affecting maintenance facilities, lands and buildings, and maintenance activities. Written concurrence from the appropriate maintenance engineer is required for all change orders affecting the use of Maintenance funds.

### 5-307C (7) Right of Way

Obtain concurrence from the district Right of Way Unit for any changes to right-of-way contracts or agreements, right-of-way fencing or alignment, or gates.

Contact the district Right of Way Unit for assistance with any required rights-of-entry permits, permanent or temporary construction easements, or agreements.

The district utility coordinator must concur with all changes involving utility work. The district utility coordinator must also make proposed revisions to Right of Way Form RW 13-04, "Notice to Owner." For information about coordinating utility work, refer to Section 3-518C, "Nonhighway Facilities," of this manual.

### 5-307C (8) Environmental

For environmental concerns and requirements, refer to Chapter 7, "Environmental Stewardship," of this manual. Contact the district environmental unit for assistance and concurrence with any change affecting environmental considerations or requirements or affecting obligations or commitments to other agencies.



The environmental document on any project is valid only for the work described by the document and shown on the plans submitted for environmental approval. For any work proposed in addition to or as a deviation from the approved work, consult with the district environmental unit. Significant changes may require amended or additional environmental approval or permits. The types of changes that may require additional consultation and approval include the following:

- New materials sites
- New haul or access roads
- Previously unidentified clearing and grubbing and hazardous materials
- Increases in earthwork
- Unforeseen utility relocation
- Diversion or extraction of water from a stream not covered by a Lake and Streambed Alteration Agreement, more commonly known as a “1602 permit,” from the California Department of Fish and Wildlife
- Use of disposal sites not specified in the contract
- Revision to allowable work windows

#### *5-307C (9) Locally Funded Projects*

For guidelines for processing change orders on locally funded projects, refer to Section 5-310, “Locally Funded State Highway Projects,” of this manual.

### **5-308 Federal Highway Administration Change Order Requirements**

Change orders written for projects with federal funding participation must comply with the Code of Federal Regulations and Federal Highway Administration (FHWA) contracting requirements.

#### 5-308A Projects of Division Interest

Projects of Division Interest (PoDI) are subject to FHWA oversight requirements. Oversight requirements are determined on a project-by-project basis and are documented in the Project Oversight Agreement (POA). Refer to California’s *Stewardship and Oversight Agreement*, available at:

<https://www.fhwa.dot.gov/federalaid/stewardship/>

Early and frequent communication with the FHWA transportation engineer is essential to ensure full compliance with all federal requirements.

#### *5-308A (1) Federal Highway Administration Approval Requirements – Major Change Orders*

As documented in the POA, major change orders may require FHWA approval. If required, the resident engineer must obtain approval before proceeding with a proposed change. If the total extent of the change order work cannot be determined before work begins, FHWA may give a conditional approval on Form FHWA CA-358, “Record of Prior

**Approval for Major Contract Change Order.** For additional information on the change order approval process, see Section 5-308C, “FHWA Major Change Order Approval Process,” of this manual.

Written and signed FHWA approval is required for any of the following major change orders:

- Any change order that has a total absolute value exceeding \$500,000, including supplemental work items.

Example:

A change order containing a \$150,000 decrease of items, a \$120,000 increase of items, and \$250,000 of extra work at force account would require FHWA approval:

$$|-\$150,000| + |\$120,000| + |\$250,000| = |\$520,000|$$

- Change in project limits beyond the limits set in the environmental document.
- Change that may be considered outside the scope of work or intent of the planned work (same requirement as in Section 5-302, “Change Order Policy,” and criterion requiring Project Management concurrence in Section 5-307C (2), “Project Management,” of this manual).
- Change resulting in a time adjustment of 30 or more working days. Additionally, if time is increased by more than 20 percent of the original working days, then that change and each subsequent change order that increases time must be approved.
- In addition, pursuant to Code of Federal Regulations, **Title 23, Section 635.120(f)**, “Changes and extra work,” proposed changes and extra work involved in federally non-participating operations that may affect the design or participating construction features of a project require FHWA concurrence. For a list of change order items that are, in general, federally non-participating, refer to:

<https://dot.ca.gov/programs/construction/change-order-information>

#### *5-308A (2) Federal Highway Administration Approval Requirements—Minor Change Orders*

Change orders other than those previously listed are considered minor. Approvals for all minor change orders are delegated to Caltrans, even on PoDI projects.

#### *5-308A (3) FHWA Denial*

When FHWA declines participation in a change order, the district can proceed with the change order by justifying it in the change order memorandum. The project manager must concur with the change in funding.

#### 5-308B Delegated Projects

Projects not meeting criteria for PoDI are considered delegated projects from FHWA. Caltrans is delegated the authority to administer these contracts. Resident engineers are not required to coordinate with the FHWA transportation engineer. However, discussions

for technical guidance are encouraged. For delegated projects, FHWA will verify compliance with federal regulations with program and process reviews.

### 5-308C FHWA Major Change Order Approval Process

For each criterion listed in Sections 5-308A (1), “Federal Highway Administration Approval Requirements–Major Change Orders” of this manual, the resident engineer contacts the FHWA transportation engineer and provides documents as necessary.

The resident engineer must submit Form CEM-4900, “Change Order,” and Form CEM-4903, “Change Order Memorandum,” to the FHWA transportation engineer for approval of the change order. For a change order that affects contract time, the FHWA transportation engineer may ask for the time impact analysis. The FHWA transportation engineer will indicate approval on Form CEM-4903 by signature in the appropriate box in the “Concurred By” section of the form. In the “Federal Participation” section, check the appropriate box and provide an explanation when required:

- Participating: Full federal participation
- Participating in Part: Partial federal participation; provide explanation for this decision
- None: No federal participation provided; not a federally funded project
- Nonparticipating (Maintenance): Project Funded by Caltrans Maintenance; no federal participation provided
- Nonparticipating: FHWA will not participate in the change order; provide explanation for this decision

FHWA approval is required before the change order work begins. If there is an urgent need to start the work, a two-step approval process can be used.

Step 1: Form FHWA CA-358, “Record of Prior Approval for Major Contract Change Order,” will be submitted and approved by FHWA before the work is started.

Step 2: CEM-4900 and CEM-4903 will be submitted to and approved by FHWA as soon as possible after the work has started.

### **5-309 Federal Segregation Determination on Change Orders**

The resident engineer is responsible for managing project construction costs within the current construction allotment. Funds for a project may come from more than one source, such as from state highway funds, local funds, and federal funds. For a change order, the resident engineer must identify and segregate the funds required from each source. Show the proper distribution of change order funding on Form CEM-4903, “Change Order Memorandum.” For more information on project funding, refer to Section 5-2, “Funds,” of this manual.

At the beginning of the project, the resident engineer should receive the federal detail estimate with an estimate for each category of funds and the applicable limits of federal eligibility. If you do not receive this detail estimate, contact the project manager. In some cases, the FHWA transportation engineer has a color-coded plan title sheet for more complex multiple-funded projects.

Funding sources for a change order may be different from the funding sources indicated in the detail estimate for a particular project. If the change order funding percentages are the same as the detail estimate, simply mark the “Change Order Funded Per Contract” in the “Federal Segregation” section on Form CEM-4903.

A change order may not be eligible for participation from one or more of the funding sources, depending upon the location and the work to be performed. In this case, mark the “Change Order Funded as Follows” box and indicate the percentage of each funding source’s participation in the appropriate box. If this box is left blank or is incorrect, Caltrans may lose federal funds that should have been secured on this project. For additional information on nonparticipating cost items, refer to FHWA Nonparticipating Cost Items at:

<https://dot.ca.gov/programs/construction/change-order-information>

For example, a change order written for a project funded from both federal and other sources may not be eligible for federal participation. In this case, the cost of the change order must be distributed between the other funding sources. In the box in the lower right-hand portion of Form CEM-4903, show the percentage of participation by each funding source.

### **5-310 Locally Funded State Highway Projects**

Generally, participation will be based on Caltrans’ original agreement with the contributing agency.

Before making changes that affect work for contributing agencies, verify that such changes are within the scope of the agreement. If not, take action (usually through the district local project’s unit) to have the agreement modified.

In the margin of the headquarters and district copies of change orders covering the work, obtain the signature of an authorized representative of the affected agency.

Include in the change order memorandum sufficient information to identify the portion of the work that is applicable to the contributing agency. As soon as the change order and memorandum are approved, send the Division of Accounting, Accounts Receivable and Program Accounting sections a copy.

### **5-311 Change Order Approval Process**

Caltrans must approve a change order, and whenever possible, the contractor should sign it. When the contractor signs a change order, it is referred to as “executed.” If the contractor declines to sign the change order, then Caltrans may, in some cases, approve it unilaterally.

So that the contractor will execute the change order, make every effort possible to reach agreement. However, do not delay the work by waiting for the contractor to respond. If necessary, submit the change order for unilateral approval. Receipt by the contractor of an approved change order establishes a time for protest.

When the contractor does not agree with the method or amount of the payment and time adjustment, the resident engineer processes the change order using extra work at force account.

If the contractor disagrees with extra work at unit price, extra work at lump sum, or increase in contract items with a payment adjustment, the resident engineer writes the change order using extra work at force account. If the contractor declines to accept the change order within 7 working days, draft and process it unilaterally.

If the contractor agrees with the extra work unit of measurement and method of payment but disagrees with the effect on time proposed by the resident engineer, execute the change order using deferred time.

Deferred time change orders are to be closed out within 21 working days of the completed change order work. If the contractor does not execute the change order to resolve deferred time, a unilateral change order must be processed within an additional 7 working days to close out the deferred time change order.

If the change order is not protested within the specified time, it is considered an executed change order. Refer to Section 5-1.06, "Protests," of the *Standard Specifications*, and Section 3-403, "Changes and Extra Work," of this manual.

You may routinely submit for approval without the contractor's signature any supplemental change orders written solely to increase force account funds. However, if the extent or type of work covered in the supplemental change order differs from that included in the original, consider writing a separate change order instead of a supplemental change order. If a supplemental change order is written, submit it to the contractor for acceptance.

On sensitive or complex change orders, districts are encouraged to submit a draft copy to the Division of Construction for review and recommendation before preparing the final version of the change order. In following this practice, also discuss the work with the contractor.

Before issuance of the proposed final estimate, resolving entitlement for potential claims is delegated according to Table 5-4.2, "Disputes Resolution Authority—Entitlement," of this manual.

#### 5-311A Division of Construction Approval

Construction personnel in districts with approved change order quality control plans may approve all change orders, except those requiring Division of Construction approval.

Division of Construction approval is required on:

- Any change order that has a total absolute value exceeding \$500,000.

Example:

A change order containing a \$150,000 decrease of items, a \$120,000 increase of items, and \$250,000 of extra work at force account would require Division of Construction approval:

$$|-\$150,000| + |\$120,000| + |\$250,000| = |\$520,000|$$

When the original change order plus supplements to the original change order have a total absolute value exceeding \$500,000, Division of Construction approval is required on the supplement exceeding the limit.

Before the contractor is allowed to begin work included in a nondelegated change order, the Division of Construction must approve the change order or grant authorization to proceed with the associated work.

#### *5-311A (1) Change Order Determinations*

The Division of Construction sometimes receives requests from the districts to review and approve change orders that contradict policy, delegation, and change order approval criteria. These requests are sometimes received after the district has approved the change order and the contractor has performed the work or the contract has been accepted. In each situation, the Division of Construction change order engineer issues a review determination. Additional criteria include:

1. Change order work started without the Division of Construction's authorization to proceed
2. Change order not initiated by the district before the work has been completed
3. Deferred time change orders not processed in a timely manner

The Division of Construction will track these change orders and report performance to the Division of Construction chief. This information may be used to re-evaluate the appropriate level of change order delegation of authority to the district.

These change orders are divided into two categories: "ratify post performance" and "unauthorized direction," and are shown in Table 5-3.6, "Division of Construction's Change Order Direction." This table explains scope and subsequent actions for change orders that require Division of Construction approval. This direction is communicated in a Division of Construction fax or email addressed to the district change order desk:

[CCO.Desk.HQ@dot.ca.gov](mailto:CCO.Desk.HQ@dot.ca.gov).

Table 5-3.6. Division of Construction's Change Order Direction (1 of 2)

Direction	Direction Scope	District Action
To Proceed with the Work	Division of Construction authorization to proceed is required for change order work authorized before full execution of the change order. This written work authorization by the engineer is to be used only in an extenuating circumstance. The authorization is complete and satisfactorily prepared by the district.	Authorize the change order work in writing in accordance with Section 4-1.05, "Changes and Extra Work," of the <i>Standard Specifications</i> . Prepare change order and obtain Division of Construction's issue and approve direction within 7 working days. Execute the change order as soon as possible; no later than 21 working days.
To Issue and Approve	Division of Construction approval granted on the basis of a satisfactorily prepared change order and change order transmittal memorandum.	Approve the change order in accordance with Division of Construction direction including any required minor revisions or conditions noted in a fax or email from the Division of Construction.
To Revise - Not Authorized	Changes are required before Division of Construction approval will be granted.	Revise the change order in accordance with the Division of Construction direction. Submit for reconsideration or elevate the issue for resolution to the district Construction division chief and the assistant Division of Construction chief.
To Process in the District	Division of Construction approval for this change order is not required. Authority to approve the change order has been delegated to the district.	Approve the change order in the district.
Ratify Post-Performance	District administration of the change order committed the Division of Construction to a course of action without required approvals.	Review internal change order procedures and implement measures to assure future transgressions are prevented.

Table 5-3.6. Division of Construction's Change Order Direction (2 of 2)

Direction	Direction Scope	District Action
Request for Information	Additional information is required for the Division of Construction to evaluate the change order.	Collect the requested information and transmit it to the Division of Construction. The district may elect to revise the change order and resubmit it when the additional information is provided.
Void	Changes that are authorized or executed by the district outside their delegated authority and that are fatally flawed; including provisions that violate state law or federal law.	Void the change order.
Change Order Approved in Headquarters	Division of Construction originated and approved a change order without district involvement. Often used to expedite arbitration or other payments to the contractor.	Process the change order by entering it in the contract administration system and flagging the change order for payment.
Unauthorized	The district exercised authority outside of policy or delegation. The change order contradicts policy, delegation, or approval criteria. The contractor may have performed the work without authorization to proceed. The district may not have initiated the change order before the work was completed.	Review internal change order procedures and implement measures to prevent future transgressions.
Other	Category used for all situations that cannot be classified above.	Division of Construction approval is not granted. District complies with instructions provided in the Division of Construction fax or email.



### 5-311B District Approval Limitations

Districts may not delegate below the level of region Construction division chief or district Construction deputy director the “Approval Recommended” signatures on Division of Construction-approved change orders.

Only a region Construction division chief or district Construction deputy director may approve change orders for value engineering change proposals. Approval authority is determined by considering each element of the value engineering change proposal in the context of the delegation criteria listed above. Project engineer concurrence for all revisions of standard or project specific design elements is required before approving change orders to implement all value engineering change proposals.

District approval of the following types of change orders may not be delegated below the level of a region Construction division chief or district Construction deputy director:

- Project limit modifications
- Acceleration of the contract work through a decrease of contract time
- Order of work revisions
- Revision of the contract staging requirements

District approval of the following types of change orders may not be delegated below the level of construction manager:

- Those that include deferred time
- “Lane Requirements and Hours of Work” charts
- Addition of approved standard special provisions
- Any editing of an approved standard special provision, in accordance with its instructions

District approval of other types of change orders may not be delegated below the level of senior-level resident engineer or construction engineer. Within this delegation, senior-level resident engineers or construction engineers may be given written authority to approve change orders that increase the contract cost or approved supplemental work by as much as \$50,000.

### 5-311C Prior Authorization to Proceed

A “prior authorization to proceed” with change order work should be issued only because of extenuating circumstances.

Whoever holds change order delegated authority as stated in this section must recommend approval for all change orders requiring prior authorization to proceed.

In addition to writing and dating the prior authorization to proceed, the engineer must include the following information:

- Change order number reserved for the work
- Estimated value of the work

- Proposed method of payment
- Estimated duration of the work
- Estimated contract time adjustment needed to perform the work
- Estimated time required to execute the associated change order

Document in the resident engineer's daily report the date, time, and name of the division change order engineer or person who provided authorization to proceed. The change order should be submitted to the contractor for approval within 7 working days of the date of the prior authorization to proceed. If the contractor does not execute the change order within an additional 7 working days, a unilateral change order must be processed within 21 working days.

The district should have procedures for prior authorization to proceed actions in accordance with this section. The district procedures should clearly designate the roles and responsibilities of the staff involved in preparing and approving change orders.

### **5-312 Substantiation**

Each change order must be carefully considered, analyzed, and documented in the project records. For things to consider when preparing to write a change order, refer to Section 5-305, "Preliminary Considerations," of this manual.

#### 5-312A Engineering Analysis

Conduct an engineering analysis for each change to the contract plans and specifications. Consider the effect of each change on the entire project and related facilities.

Change orders must meet all engineering and design standards unless a design exception is approved by the Division of Design. The project engineer who stamped the project plans is the engineer of record for the project and must concur with all engineering changes.

#### 5-312B Contractual Analysis

Determine the contractual basis and authority to issue each change order. Include this information in the transmittal memorandum and change order. Use Figure 5-3.1, "Change Order Decision-Making Flowchart," to assist you in this determination.

#### 5-312C Cost Analysis

Prepare an independent force account or bid item cost analysis for comparison with the contractor's estimated cost. Accept the contractor's estimated cost only if it is justified by this analysis. Do not include costs for disputed work. Include subcontractor markups in the cost estimate when a subcontractor will be performing extra work paid for by unit price, payment adjustment, or lump sum. For subcontractor markup guidelines, refer to Section 3-9, "Payment," of this manual.

File in the project records any calculations made to determine extra work at unit price, payment adjustment, or lump sum. These calculations substantiate and justify the amount

paid for extra work and are therefore subject to audit. Either show these calculations in the change order memorandum or include a statement that the calculations are on file in the project records.

### 5-312D Time Impact Analysis

A time impact analysis (TIA) illustrates the effect of each change on the scheduled completion date or an internal milestone. The contractor submits a written TIA to the resident engineer with each time adjustment request. Review the TIA for logic and duration effects to determine the time adjustment, or perform an independent TIA to determine the time adjustment. Refer to Section 8-1.02D (8), "Time Impact Analysis," of the *Standard Specifications* for more information regarding TIA submittals. For an example of a TIA reference on Form CEM-4903, "Change Order Memorandum," refer to the example "Compensation for Critical Delay (Payment Adjustment)" at:

<https://dot.ca.gov/programs/construction/change-order-information/change-order-examples>

### **5-313 Executed Change Order Copy Distribution**

For all contracts, one copy of each executed authorization to proceed, change order, and corresponding memorandum is electronically scanned and transmitted to the Division of Construction file server.

Combine each executed authorization to proceed or change order and change order memorandum for each contract change, supplemental change, and authorization to proceed into a single Adobe Acrobat file using the following filename convention:

Contract No. CCO No. or ATP No. Supplemental No. Approval Date

Examples:

04-012024 ATP 002 S00 11-20-06.pdf

04-012024 CCO 002 S02 11-27-06.pdf

Transmit the file directly to the Division of Construction file server using the centralized access provided to each district. Transmit approved change orders at least once a week. This is part of the Division of Construction Quality Assurance Plan process.

Send an email notification to the change order engineer upon transfer of any information to the Division of Construction file server.

For PoDI, districts are delegated authority to send one copy of each approved change order and corresponding change order memorandum directly to the FHWA transportation engineer assigned to the district or program administering the contract. The method of document transfer to the FHWA transportation engineer will be negotiated between the district and the FHWA transportation engineer on a case-by-case basis.

The FHWA transportation engineer:

- May issue a determination of funding ineligibility or modify the level of funding participation for any reviewed change order.

- Will communicate all funding eligibility findings and will return the change order to the district.
- Will notify districts of all changes in federal participation before issuance of a final voucher.

Districts are responsible for updating the Contract Administration System for federal participation information on change orders.

### 5-314 Value Engineering Change Proposals

For procedures for a value engineering change proposal, refer to Section 3-405, “Value Engineering,” of this manual.

Prepare value engineering change proposal (VECP) change orders as a complete package, with no deferred time or deferred cost considerations.

Give careful attention to the clauses in the change order covering payment. VECP change orders may involve any combination of bid item work, payment adjustments, and extra work at agreed price.

Prices for bid items might not represent the costs of doing either the planned or changed work as computed on a force account basis. In this case, in addition to increases and decreases at contract prices, include payment adjustments to reflect the actual force account cost of increases and decreases in bid item quantities. Also, in the analysis of cost savings, consider item adjustments based on a 25 percent quantity overrun or underrun.

VECP change orders must include a payment adjustment that will result in a 50 or 40 percent credit of the net construction cost savings to the Department. Determine the adjustment in the following manner:

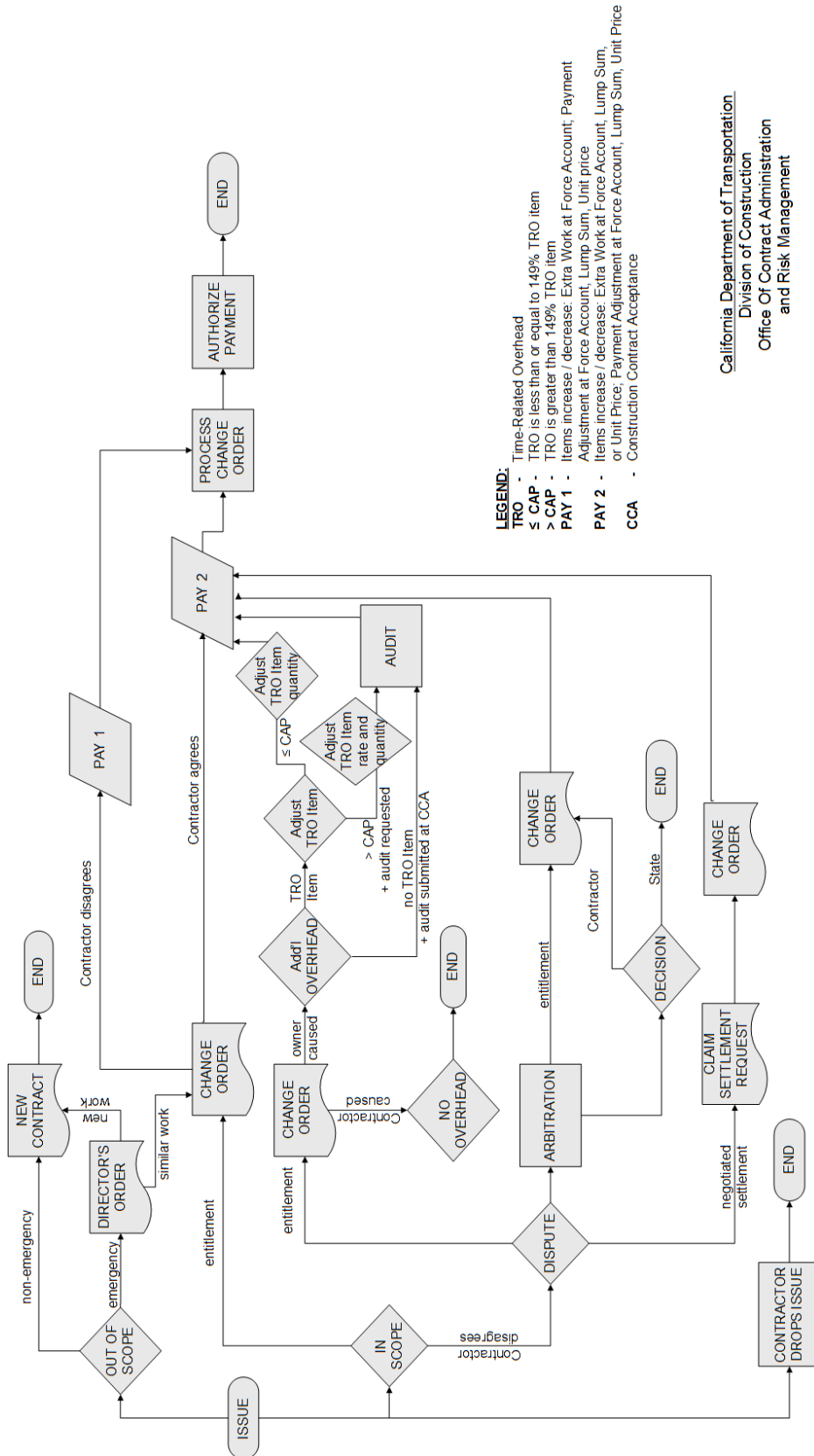
- Determine the total decrease in construction cost. This decrease will be the sum of increases and decreases in bid items at bid item unit prices, payment adjustments including work-character change adjustments, and extra work at agreed price. Exclude the time-related overhead item from the construction cost savings calculation.
- Provide for a payment adjustment that results in a credit from the contractor for either 50 or 40 percent of the net construction cost savings as required by the specifications.

Time adjustments associated with a value engineering change proposal are shared equally, including any time-related overhead item values. Include these dollar values in checking the net savings of the change order.

For examples of VECP change orders, refer to the examples at:

<https://dot.ca.gov/programs/construction/change-order-information/change-order-examples>

Figure 5-3.1 Change Order Decision-Making Flowchart



California Department of Transportation  
 Division of Construction  
 Office of Contract Administration  
 and Risk Management