


MANUAL CHANGE TRANSMITTAL		NO. 24-2
TITLE: Department of Transportation <i>Construction Manual</i>	APPROVED BY:  Ramon Hopkins, Chief Division of Construction	DATE ISSUED: 3-26-2024
SUBJECT AREA Section 3-9, 5-0, 5-3	ISSUING UNIT Division of Construction	
SUPERSEDES Sections 3-9 of September 2021, and 5-0 and 5-3 of September 2023	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 enumerated:

MCT 24-2 [3/26/2024]

Section 3-9, “Payment”

Changes to 3-906I, “Negative Estimates,” correct information on how negative payments are processed by the Division of Accounting. Changes to 3-907B, “Proposed Final Estimate,” clarifies such payment adjustments are not applicable on contracts that have been terminated or that contain a time-related overhead bid item. Changes to Example 3-9.2., “Form Letter for Submitting Proposed Final Estimate to the Contractor,” replace notarized certificate guidance with a signed declaration requirement.

Section 5-0, “Conduct of the Work”

Currently there is no explicit requirement for the resident engineer to review the assistant resident engineer report. Changes to Section 5-005, “Assistant Resident Engineer’s Daily Report,” make this manual consistent with existing best practices.

Section 5-3, “Change Orders”

Changes to 5-302, “Change Order Policy,” clarify conditions to be met for inclusion of out-of-scope work to existing contracts.

Section 9 Payment

3-901 General

3-902 Measurement

- 3-902A Method of Measurement
- 3-902B Accuracy
- 3-902C Source Documents
- 3-902D Audit Trail
- 3-902E Weighing Equipment and Procedures
 - 3-902E (1) Personnel
 - 3-902E (2) Responsibilities
 - 3-902E (2a) Resident Engineers
 - 3-902E (2b) District Weights and Measures Coordinator
 - 3-902E (2c) Assistant Resident Engineers
 - 3-902E (2d) Contractors
 - 3-902E (2e) Division of Construction Weights and Measures Coordinator
- 3-902F Final Pay Items

3-903 Force Account

- 3-903A Authorization for Force Account Payment
- 3-903B Force Account Records
- 3-903C Tentative Agreements
- 3-903D Markup for Subcontracted Work
- 3-903E Owner-Operated Labor and Equipment
- 3-903F Billing for Extra Work at Force Account
- 3-903G Labor
- 3-903H Material
- 3-903I Equipment Rental
 - 3-903I (1) Equipment Selection
 - 3-903I (2) Equipment Rental Rates
 - 3-903I (3) Time in Operation
 - 3-903I (4) Equipment Not on the Job Site
 - 3-903I (5) Non-Owner-Operated Dump Truck Rental
 - 3-903I (6) Standby Time
- 3-903J Extra Work Performed by Specialists

3-904 Payment Adjustments

- 3-904A Changed Quantity Payment Adjustments
 - 3-904A (1) Increases of More Than 25 Percent
 - 3-904A (2) Decreases of More Than 25 Percent
 - 3-904A (3) Eliminated Items
 - 3-904A (4) Surplus and Salvaged Material
- 3-904B Payment Adjustments for Price Index Fluctuations
- 3-904C Work-Character Changes

3-905 Time-Related Overhead

- 3-905A Audit Examination and Reports

3-905B Payment

3-906 Progress Payments

3-906A Bid Items

3-906B Schedule of Values

3-906C Extra Work

3-906D Interest

3-906E Materials on Hand

3-906E (1) Materials at the Project

3-906E (2) Materials Not at the Project

3-906F Withholds

3-906F (1) Progress Withholds

3-906F (1a) Noncompliant Progress

3-906F (1b) Plant Establishment Work

3-906F (2) Performance Failure Withholds

3-906F (3) Stop Notice Withholds

3-906F (4) Penalty Withhold

3-906G Deductions

3-906H Supplemental Progress Payments

3-906I Negative Estimates

3-907 Payment After Contract Acceptance

3-907A Payment Before Final Estimate

3-907B Proposed Final Estimate

3-907C Semifinal Estimate

3-907D Final Payment and Claims

3-907D (1) Material to Submit with the Final Estimate

3-907E Payment Offset

3-908 Arbitration

Example 3-9.1. Quantity Calculations

Example 3-9.2. Form Letter for Submitting Proposed Final Estimate to the Contractor

Example 3-9.3. Acceptance Statement Form

Example 3-9.4. Sample of the Proposed Final Estimate

Example 3-9.5. Schedule of Extra Work

Example 3-9.6. Schedule of Deductions

Section 9 Payment

3-901 General

This section covers measurement and payment of bid item work and change order work, partial payments, and payment to the contractor after contract acceptance. The contract provides the following methods to make payment for all work performed:

- Payment for bid item work at unit prices. The contractor establishes the fixed prices of the bid items included in the contract. Fixed prices of bid items should not be confused with the costs to produce the work. Loss of profit, damage, repair, cost escalation, or other unanticipated changes of item costs are the sole responsibility of the contractor unless specifically provided for in the contract.
- Adjustments to contract prices, known as payment adjustments.
- Payment for change order work. Before payment can be made for change order work, the resident engineer must issue an approved change order as described in Section 5-3, “Change Orders,” of this manual. For additional information regarding Caltrans policies on change order work, refer to Section 3-403, “Changes and Extra Work,” of this manual. The methods specified for paying for change order work are bid item prices, force account, agreed price, and specialist billing.
- Deductions and withholds are temporarily or permanently taken from monies due under the contract.

3-902 Measurement

Contract work, as bid on by the contractor, is measured and paid for as bid items. Bid items are measured for payment as units. The unit for each bid item is shown in the bid item list as “unit of measure.” Bid items may be measured by units of count, length, area, volume, weight, or lump sum. The bid item list also includes the estimated quantity of each bid item. Resident engineers and assistant resident engineers must determine, by measurement and calculation, the quantities of the various bid items actually performed by the contractor.

3-902A Method of Measurement

Check the “measurement” and “payment” clauses in the specifications for the required method of measurement for each bid item. Use the specified method to measure quantities. For more information about measuring quantities for specific bid items, refer to Chapter 4, “Construction Details,” of this manual.

A change in the unit or the method of measurement changes the contract. Do not change the unit or the method of measurement unless the change is provided for in a change order.

3-902B Accuracy

Measure and calculate bid item quantities to a degree of accuracy consistent with the unit price of the item. Give early consideration to the accuracy desired so that all personnel on a given project will measure and calculate uniformly. The general rule is to measure to a degree of accuracy that, when calculated, the resulting value will be within 0.2 percent to 0.5 percent. A \$50,000 item should be measured and calculated to result in payment within about \$100.

3-902C Source Documents

Enter measurements and calculations for bid item quantities on permanent record sheets that are commonly referred to as “source documents.” Include on each source document the appropriate bid item number, the location of installation if applicable, the necessary measurements and calculations, and the name of the person preparing the document. Check source document calculations independently, and enter the name of the checker on the document.

Check source document calculations as soon as possible, preferably before the quantity is entered on a progress pay estimate. Always check them before entry on the proposed final estimate. Whenever possible, measure, calculate, and check bid item quantities as the work on a bid item is completed. Resident engineers must assign responsibility for checking calculations to assistant resident engineers in the same manner that other project responsibilities are assigned.

Enter into the system for progress payment the quantities from the source documents. For a description of the progress payment process, refer to Section 5-1, “Project Records and Reports,” of this manual.

3-902D Audit Trail

State the source of any figure, calculation, or quantity shown on the source document. For instance, a quantity may be the result of a field measurement, scale weights, a count, or a calculation based on planned dimensions.

Create a clear and easily followed trail for the total pay quantity in the proposed final estimate back to the first measurement or calculation for each bid item.

Consider organizing source documents for each bid item so an easily followed audit trail exists. Category 47, “Drainage Systems,” in Section 5-102, “Organization of Project Documents,” of this manual, provides **guidance**, especially for large projects, for organizing source documents for drainage-related bid items. Category 48, “Bid Item Quantity Documents,” in the same manual section, describes the numbering system to be used for source documents for other bid items.

3-902E Weighing Equipment and Procedures

The following describes the duties and responsibilities of the people involved in weighing and measuring materials and the procedures for assuring accurate weighing and measuring:

3-902E (1) Personnel

The process of determining bid item quantities by weighing and measuring includes the following personnel:

- The resident engineer
- Assistant resident engineers
- The district weights and measures coordinator
- The Division of Construction weights and measures coordinator

In addition to Caltrans personnel, the following people are involved in the weighing and measuring process:

- County sealers of weighing and measuring devices
- Representatives of the California Department of Food and Agriculture, Division of Measurement Standards
- Private scale technicians performing Material Plant Quality Program (MPQP) testing

3-902E (2) Responsibilities

All Caltrans personnel must be alert for conditions that contribute to failure to obtain the accurate weight and measurement of materials. The following describes the typical duties and responsibilities for verifying compliance with the specifications for weighing and measuring:

3-902E (2a) Resident Engineers

The resident engineer must:

- Verify accurate weighing and measuring through inspection.
- Routinely determine that proper weighing procedures are used.
- Record, or verify recording of, spot-checks of weighing procedures in daily reports.
- Require the contractor to correct any malfunctioning weighing or measuring device.
- Order the resealing and retesting of scales and meters as often as necessary to assure accuracy.
- Determine when weighmaster certificates are to be used. Order the use of weighmaster certificates except when the number of loads is very small or conditions preclude proper weighing procedures. In the daily report, record the reasons for not using weighmaster certificates.

3-902E (2b) District Weights and Measures Coordinator

The district weights and measures coordinator must do the following:

- Provide technical assistance to the resident engineer and assistant resident engineers.
- Provide information to resident engineers regarding the adequacy of scales and the validity of seals.
- When requested by the resident engineer, witness the testing of scales or meters in compliance with the requirements of the MPQP.
- Furnish copies of the MPQP report to each project using material plants tested in accordance with the MPQP.
- Furnish and attach an MPQP Approval Sticker to tested scales.
- Maintain a file on the current status of all scales that are commonly used for weighing materials for Caltrans projects in the district.
- On request, provide scale status information to adjacent districts.
- Perform spot-checks of weighing and measuring devices and procedures in the district, and furnish written reports to the resident engineer.
- Determine whether any weighing or measuring problems should involve the California Department of Food and Agriculture, Division of Measurement Standards. Request any such involvement through the Division of Construction weights and measures coordinator.

3-902E (2c) Assistant Resident Engineers

Assistant resident engineers act for the resident engineer and, depending on the authority delegated to them, do the following:

- Observe the installation of scales installed primarily for use on a given project. Decide whether such scales and appurtenances meet the requirements of the specifications. When necessary, request assistance from the district weights and measures coordinator.
- Inspect and observe the general condition of all scales used on the project. If the scales are in questionable condition, request advice from the district weights and measures coordinator.
- Request a material plant approval report from the district weights and measures coordinator. If a seal or approval sticker is not valid, require the contractor to have the scales tested before use.
- Witness scale testing. Determine that the scales have been tested to the capacity for which they are being used on the project. Request that the district weights and measures coordinator observes the procedure.
- Whenever a scale is moved, overhauled, or shows obvious deficiencies, require the scale to be restored to normal operating condition and then retested.
- To observe the weighing of materials, visit the scale house or plant periodically. If necessary, request technical assistance from the district weights and measures

coordinator. Check the scale sheets and weighmaster certificates to verify that they are being used properly.

- Spot-check tare and gross weights to see that weighmasters are using the correct tare. Verify that the weighmaster is licensed for the scale location.
- Observe all meters that are required under the contract, and verify that they have been tested and sealed.
- Collect weighmaster certificates at delivery. A Caltrans employee should be present at the work site to collect weighmaster certificates. Sign or initial the weighmaster certificate to indicate that the represented material was used in the work.

When certified summary scale sheets are used, and weighmaster certificates are not used, verify that material shown on the summary sheets has been used in the work. Do this verification by using a tally sheet, a spread record, or a random check. In the daily report, record that the material has been used in the work and the type of verification method. Sign the summary scale sheets to certify that the represented material, less any material deducted from the total, was used in the work.

Return to the contractor a copy of any weighmaster certificates or scale sheets representing loads or partial loads that are not to be paid for. On the weighmaster certificate or scale sheet, indicate the quantity of material not included for payment. Retain a copy for the project records. When a determination is made to reduce the quantity, advise the contractor's foreperson or superintendent of the amount and reason for the reduction. In the daily report, note the reduction and the name of the contractor's employee whom you advised of the reduction.

3-902E (2d) Contractors

The following describes some of the duties and responsibilities of contractors and their agents in using scales and measuring devices for measuring and proportioning materials:

- The contractor and materials suppliers must maintain scales and meters within the accuracy specified.
- The owner of the scale or meter must maintain it in good operating condition at all times. If breakdowns or suspected inaccuracies occur, the owner must make repairs. After repairing a commercial device, the owner must notify in writing the county sealer of weights and measures that a repair was made. The device must be resealed before it is used to weigh materials for payment. For noncommercial devices, the contractor must verify the MPQP test is performed. The contractor must notify the resident engineer at least 24 hours before any scheduled testing so that the testing can be witnessed.

Do not directly contact the county sealer of weights and measures for the contractor. The owner of the measuring device must request the testing. The resident engineer may only inform the contractor that such testing is necessary.

The district weights and measures coordinator may contact the Division of Construction weights and measures coordinator on any question regarding the validity of a seal or the legal capacity of a scale.

3-902E (2e) Division of Construction Weights and Measures Coordinator

The Division of Construction weights and measures coordinator does the following:

- Oversees that the weights and measures program is operating satisfactorily throughout Caltrans.
- Serves as a contact between the district weights and measures coordinators and the California Department of Food and Agriculture, Division of Measurement Standards.
- Keeps the district weights and measures coordinators informed of the latest equipment and technology being developed throughout the industry.

3-902F Final Pay Items

Section 9-1.02C, “Final Pay Item Quantities,” of the *Standard Specifications*, defines and specifies the procedure for calculating pay quantities for final pay items.

3-903 Force Account

The force account method, used to determine payment for extra work, consists of adding specified markups to the actual cost of labor, equipment, and material used to perform the extra work.

Section 9-1.04, “Force Account,” of the *Standard Specifications* specifies the force account method of payment. Section 5-3, “Change Orders,” of this manual contains guidance for change orders with payment for extra work at force account. See change order examples at:

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

Normally, the contractor will use labor and equipment that is on the site and used for work in progress. The change order will usually specify materials to be used in the extra work. However, before the work begins, the resident engineer should discuss with the contractor the labor, equipment, and materials to be used. The resident engineer can avoid misunderstandings and inefficiencies by knowing the resources to be used ahead of time. After the work is performed, Caltrans must pay the contractor for material used and at the appropriate rates for the number of hours that labor and equipment was used.

3-903A Authorization for Force Account Payment

On the authorizing change order, always show the amount to be paid for extra work at force account as an estimated amount. For the format for change orders, refer to Section 5-3, “Change Orders,” of this manual. You may make payment for extra work in excess of the estimated amount shown on the contract change order up to 100 percent of the estimated amount or \$15,000, whichever is smaller. To authorize any additional payment, use a supplemental change order.

3-903B Force Account Records

On daily reports, record observations and inspections of extra work in progress in sufficient detail to provide a reasonable basis for agreement on payment. Records must be original, not a copy from other documents.

Include the following information when appropriate to the method of payment for the work:

- Description of work performed. This description must be consistent with the description of extra work authorized by the change order.
- Time and date of inspection.
- The change order number.
- Location of work.
- Types of labor, equipment, and materials used.
- Estimated hours worked.
- General measurement or amount of work accomplished.

Make entries on the day of observation. If clarifying reports are necessary to cover work not previously reported, state the facts as known and date the clarifying report as of the day it is written.

The daily report must also contain a reference to any known off-site work.

When extra work is performed at force account, decide whether the magnitude of the work warrants the full-time presence of an assistant resident engineer. An assistant resident engineer assigned full time must include in the daily report the number of hours actually worked at the site. When an assistant resident engineer is assigned only part-time, daily reports must present only known facts. On the daily report, record that inspection was “intermittent.” A typical entry might read as follows:

Hours reported on report dated 6/26/20 entry based on 1 inspection during the day. Later found out that crew and equipment worked whole shift instead of half shift (add the date of the supplemental entry and sign the entry).

Include notations concerning decisions to allow or deny payment for work that may be in dispute or not considered a legitimate part of extra work. Similarly, prepare a supplemental daily report if it is later found that the number of hours or labor and equipment was substantially different than recorded on the original daily report. Such a supplemental daily report might read as follows:

6/24/20 – 10:15 a.m. – Change Order No. 17 – Placing Riprap Lt. of Sta. 500.

Crew of 2 laborers and foreperson with a D-6 crawler tractor with side boom and operator laid about 150 sq ft of salvaged rubble riprap. Estimate crew and tractor worked about 4 hours.

3-903C Tentative Agreements

Do not give copies of daily reports to the contractor's personnel. Do not permit the contractor's personnel to sign or initial daily reports. However, at the earliest possible time, reach tentative agreement on extra work details with the contractor's foreperson. Discuss labor, equipment, and materials at the end of each shift or no later than the following shift that extra work was performed. Good communication at this time will help to prevent misunderstanding and arguments over details at a later date. Use Form CEM-4907, "Tentative Daily Extra Work Agreement," for this purpose. On this form, tentatively agree to and list hours of labor and equipment used in extra work at force account for each change order each day.

3-903D Markup for Subcontracted Work

Section 9-1.04A, "General," of the *Standard Specifications* includes an administrative markup for the prime contractor when a subcontractor performs the work.

When an engineer's cost analysis is based on force account, using rates as specified in the contract, include a markup in the calculation of the work performed by a subcontractor in the following situations:

- Changes and extra work at the agreed prices in accordance with Section 4-1.05A, "General," of the *Standard Specifications*.
- Work performed before item elimination in accordance with Section 9-1.06D, "Eliminated Items," of the *Standard Specifications*.
- Bid item adjustment because of increased or decreased quantities in accordance with Section 9-1.06B, "Increases of More Than 25 Percent," and Section 9-1.06C, "Decreases of More Than 25 Percent," of the *Standard Specifications*.
- Payment adjustments for work-character changes are made in accordance with Sections 4-1.05B, "Work-Character Changes," and 9-1.15, "Work-Character Changes," of the *Standard Specifications*.

3-903E Owner-Operated Labor and Equipment

For owner-operated labor and equipment, refer to Section 9-1.04A, "General," of the *Standard Specifications*. The method for paying for owner-operated equipment on a force account basis is at market-price invoice. Because owner-operators include labor and equipment markups and the labor surcharge in their invoice price, only apply the applicable administrative markup for the owner-operated labor and equipment invoice. The administrative markup to be applied to the invoice for projects with the time-related overhead bid item is 10 percent. The administrative markup to be applied to the invoice for projects without the time-related overhead bid item is 15 percent.

3-903F Billing for Extra Work at Force Account

The following are the procedures for billing for extra work at force account:

- The contractor must submit change order bills covering extra work under each change order each day that extra work is performed. The contractor must use the Caltrans internet change order billing system to submit change order bills. Refer to Section 5-103E, “Change Order Billing,” of this manual for additional information.
- Field Construction personnel must do the following when reviewing change order bills:
 1. Compare change order bills against assistant resident engineer’s daily reports and tentative agreements, if they are used. Make this comparison to verify the correctness of the contractor’s billing, and to avoid the possibility of a duplicate payment for the same work. For a discussion of assistant resident engineer’s daily reports and tentative agreements, refer to Sections 3-903B, “Force Account Records,” and 3-903C, “Tentative Agreements,” of this manual.
 2. The contractor must include everything to be paid for on the change order bill. Do not add any items even though you know them to be legitimate charges. Instead, call the omitted items or underbilling to the contractor’s attention and document the notification. The contractor may submit a supplemental change order bill to include omitted items or underbilling amounts. Include any notifications and support documentation in the change order billing project records.
 3. Delete items for which the contractor is not entitled to payment.
 4. You may correct hours for labor and equipment downward, but not upward. Notify the contractor of such corrections and include notification and support documentation in the change order billing project records.
 5. Do not correct wage rates that the contractor has submitted. Reject any change order bill with incorrect wage rates. Note that Caltrans must pay for extra work at the same wage rate paid by the contractor. Do not refuse to pay a particular wage rate because it is above the prevailing wage rate.
 6. Correct equipment rental codes that are obviously in error, or reject the reports. Verify that the rental codes shown are for the equipment that was actually used.
 7. The person, whether a contractor or Caltrans employee, who makes corrections to a change order bill must print out, sign rather than initial, and date the corrected change order bill.
 8. Maintain a log of change order bills received and rejected.

The resident engineer must approve the change order bill to authorize payment for extra work. The resident engineer’s approval of a change order bill for progress payment certifies that payment is in accordance with contract requirements and established administrative procedures. Maintaining documentation for extra work at force account payments is critical in supporting these payments.

3-903G Labor

The markups to be applied to the cost of labor performed on force account work are specified in Section 9-1.04B, "Labor," of the *Standard Specifications*, or as changed by the special provisions.

A "labor surcharge" is included in the cost of labor. The *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book in effect at the time the work is performed contains the labor surcharge percentage. A general rate applies to most crafts, and the book contains several higher rates for certain crafts. The resident engineer must determine the correct surcharge percentage to be used and verify that the percentage has been entered on the change order bill.

At times, a superintendent or an owner acts as a working foreperson, or an equipment operator works at some other craft. In such situations, make payment on a "value received" basis. Payment will be made for owners or supervisory personnel at the proper rate for the work performed. For example, pay for a superintendent acting as a foreperson on force account work at the normal hourly rate for a foreperson. Do not prorate the superintendent's weekly or monthly salary to an hourly rate. In paying for a superintendent on force account work, make the payment on a functional basis and not on a position or classification basis.

On some projects, a superintendent or project manager directs the activities of several forepersons or 1 or more general forepersons who directly supervise the forepersons. The general forepersons are sometimes referred to as superintendents, such as grading superintendents or paving superintendents. This change in nomenclature does not change the functional nature of these positions. They are general forepersons or forepersons and are not considered to be supervisory or overhead personnel. Make payment at the actual hourly rate paid by the contractor when such personnel function as forepersons on force account work.

When paying for salaried personnel, do not authorize force account payment for overtime hours unless the contractor has an established practice of paying overtime to salaried personnel. The usual case is that the weekly or monthly salary covers the number of hours required by the work.

The *Standard Specifications* allow for payment of the actual subsistence and travel allowances paid by the contractor.

Pay per diem and travel allowances on force account only when the contractor is paying these allowances on bid item work.

When 7-day subsistence is included in labor contracts in lieu of per diem and travel time, subsistence will be paid for the entire period involved if the workers are employed full time on force account.

When workers are employed on both force account work and bid item work in the same day, prorate subsistence payments and travel allowances between the contractor and Caltrans. Base the prorated amount on the first 8 hours worked. Do not pay per diem for time worked after the first 8 hours in any 1 day.

3-903H Material

Payment for material purchased for force account work must be supported by a copy of the vendor's invoice whenever possible. If no individual invoice is available, as in the case of materials taken from contractor's stock, a copy of the mass purchase invoice may be used as support. If no invoice is available to support unit purchase prices, submit a statement with the change order bill. In the statement, explain how the unit prices were verified. Any invoice the contractor submits must represent the material actually used.

3-903I Equipment Rental

For equipment used for extra work paid at force account, refer to Section 9-1.04D, "Equipment Rental," of the *Standard Specifications* or as modified by the special provisions. The following are guidelines for paying for equipment rental.

3-903I (1) Equipment Selection

In accordance with Section 5-1.03, "Engineer's Authority," of the *Standard Specifications*, approve equipment used on force account work. Before giving approval, determine whether available and suitable equipment is already on the job site or whether equipment not on the job site is required. For example, a piece of equipment on the job site that can perform a given operation satisfactorily may be larger than necessary. Determine if it will be economical to use oversized equipment at its rate or to obtain equipment of the proper size. Obtaining equipment not on the job site necessitates payment for move-in and move-out expenses and for minimum rental periods. The determination may also be based on other factors, such as public safety and the urgency of the work. Availability of equipment on the job site can be determined by using daily reports, progress schedule, and other contractor-provided information. When there is no contractor-owned equipment available for use and only rented equipment is available on the job site, the engineer may approve the use of the rented equipment at the rental invoice price in accordance with Section 9-1.04D, "Equipment Rental," of the *Standard Specifications*. If both contractor-owned and rented equipment on the job site are suitable and available for use, the contractor-owned equipment should be used.

Some equipment includes accessories as an integral part of the basic machine. When accessories are an integral part of the machine, the rates in the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book indicate that the accessory is included in the quoted rate. Do not make deductions for accessories on such integral equipment. For unusual situations, consult the Division of Construction. When the accessories are not integral and not necessary for the effort of the extra work, payment is only for the equipment required.

3-903I (2) Equipment Rental Rates

Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership) contains the cost of ownership rates for most of the equipment used on Caltrans projects. However, the Division of Construction has also established cost of

ownership rates for some equipment that is not in the book. These rates are available at:

<https://dot.ca.gov/programs/construction/equipment-rental-rates-and-labor-surcharge>

Establish rates that are not listed in the book or on the website, use the following procedure:

- Obtain a complete description of the equipment, including the manufacturer, model number, horsepower, size or capacity, and accessory equipment.
- If the equipment is nonstandard or unusual, request the following data from the contractor:
 1. Type of equipment, such as segmented, self-propelled, telescoping hydraulic crane, articulated, or rubber-tired roller
 2. Trade name
 3. Model and serial numbers
 4. Year manufactured
 5. Size, capacity, or both
 6. Type and amount of power
 7. Whether crawler, rubber-tire, or other
 8. Manufacturer or distributor: if local, give address
 9. Initial cost of the basic machine and attachments
 10. Operating requirements, costs, or both, if available or unusual
 11. Name of owner
- Transmit this information to the Division of Construction. The Division of Construction will establish a cost of ownership rate, codes, and effective time period and advise the district by mail, email, or fax. Use this document as the authority to pay the rate established.
- The contractor must be advised of the codes so that its billings can include them.
- For equipment not on the job site, and in special circumstances, the *Standard Specifications* permit a rate to be paid that is in excess of the rate listed in the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book. When the contractor proposes a rental rate in excess of the listed rate, verify that the equipment meets all the conditions listed in Section 9-1.04D(1), “General,” of the *Standard Specifications*. The higher rate will constitute a change to the contract and must be established by a change order. Use the following procedures to determine the rate:
 1. Obtain a written statement from the contractor. The statement must include the proposed rate and the justification that Section 9-1.04D(1), “General,” of the *Standard Specifications* requires.

2. Decide whether the conditions of use and ownership of the equipment meet all the specified criteria for payment of the higher rate.
 3. Submit a change order that provides for the proposed rate. State in the change order whether the table titled “Equipment Rental Hours” is applicable. The table appears in Section 9-1.04D(3), “Equipment Not On the Job Site and Not Required for Original-Contract Work,” of the *Standard Specifications*. If the equipment is used for bid item work, use the normally established rental rates for the entire time the equipment is used for extra work. Include in the change order a clause similar to the following: “In the event this equipment is subsequently used on bid item work, this rate is void.”
 4. Include justification for approval in the change order memorandum, and attach the contractor’s letter.
- Equipment for which the rental rate is not shown in the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book, but for which the Division of Construction established a rental rate, is eligible for the higher rate if all necessary conditions are met.

3-903I (3) *Time in Operation*

The engineer in the field must determine the rental time to pay for equipment in accordance with Section 9-1.04D(2), “Equipment on the Job Site,” of the *Standard Specifications*.

In general, consider equipment to be in operation when all of the following conditions exist:

- The equipment is at the site of the extra work or being used to perform the extra work.
- The equipment is not inoperative because of breakdown.
- The force account work being performed requires the equipment.

Use the following examples as guidelines for determining rental time to be paid for equipment.

- An air compressor is on the job site for 8 hours on a force account operation. It is actually used for only a few periods during the 8 hours, but it is impractical to use it on other work during the standby periods. Pay for the compressor and all accessories used intermittently for the entire period. The engine does not have to be running continuously during the period to qualify for payment. If the air compressor was also used on bid item work intermittently, prorate the 8 hours between the extra work and the bid item work.
- An air compressor is on the job site for 8 hours. It is used for the first 2 hours, but after those hours, it is no longer needed. Pay the rental for only 2 hours whether the contractor chooses to remove it or chooses to leave it at the site of the work. Apply the same reasoning if the time of operation occurred at any other time of the day. In this example, if a pavement breaker was needed intermittently for 2 hours and a tamper intermittently for 2 hours, pay 2 hours for each tool. If the

pavement breaker is needed for the first hour and the tamper for a second hour, pay 1 hour for each. Advise the contractor when equipment is no longer needed at the site. In the daily report, record this notice and the time.

- A skip loader is used to load dump trucks; however, the skip loader is used only intermittently during the shift because 1 of the dump trucks broke down. The resident engineer allows the operation to continue because it is critical. Make payment for the loader for the entire shift. In such a situation, the resident engineer must try to do whatever is necessary to balance the operation. When balancing cannot be achieved, decide whether suspending an operation is more economically feasible than allowing it to continue.

Sometimes 2 pieces of equipment perform extra work at force account, yet the work does not require full-time use of both. In such instances, it is appropriate to accept, but not order, the use of only 1 operator for both pieces of equipment. Determine the rental time in the same manner as if each piece of equipment had a full-time operator and was used intermittently.

On extra work at force account, pay the same time for a foreperson's pickup that you would pay for the foreperson.

3-903I (4) *Equipment Not on the Job Site*

In general, the contractor schedules extra work paid for on a force account basis and uses equipment available on the project. However, circumstances may require use of equipment not on the job site that must be brought in especially for the extra work. The resident engineer should make decisions regarding the type of equipment and its scheduled use. Sections 9-1.04D(3), "Equipment Not On the Job Site and Not Required for Original-Contract Work," and 9-1.04D(4), "Equipment Not On the Job Site and Required for Original-Contract Work," of the *Standard Specifications* specify the requirements for paying for the use of such equipment. These specifications apply when the contractor does not use or uses the equipment for bid item work. Change any previous payment as "equipment not on the job site" to payment as "equipment on the job site" when such equipment is used for bid item work.

Order the equipment removed from the project, pay move-out and possible subsequent move-in costs, or continue paying for the equipment during a suspension in extra work. Perform a cost analysis to determine the most cost-effective alternative. Temporary removal of the equipment to the contractor's shop or a storage area off the project is not removal from the project. To end payment for the equipment, the resident engineer must order its removal.

3-903I (5) *Non-Owner-Operated Dump Truck Rental*

Section 9-1.04D(5), "Non-Owner-Operated Dump Truck Rental," of the *Standard Specifications* specifies that the resident engineer must establish the hourly rate to be paid for dump truck rental. The actual hourly rate paid by the contractor or the truck broker may be the established rate if it is consistent with rates paid for the same trucks on other work. For help in establishing hourly rates, compare with rates paid for similar equipment on other Caltrans work.

3-903I (6) Standby Time

Pay standby charges for commercial delivery at the invoice rate.

3-903J Extra Work Performed by Specialists

Section 9-1.05, “Extra Work Performed by Specialists,” of the *Standard Specifications*, allows extra work to be performed by a specialist subcontractor that neither the contractor nor its current subcontractors can perform. In general, specialists are to be used only for minor portions of the work. The specifications also allow for the specialist work to be paid for by invoice if itemized billing is not the established practice of the specialist’s industry.

Do the following when considering the use of specialists:

- Before work begins, **determine** whether the work is normally done by any of the contractor’s forces. The contractor’s forces include any firms or organizations performing bid item work, including subsidiaries of such firms or organizations and subsidiaries of the contractor. Subsidiaries of a subcontractor are considered to be a part of the subcontractor’s organization. If you **determine** that the contractor’s forces can perform the work expediently, do not authorize the use of the specialist.
- Allow the contractor to hire a specialist only if an established firm with established rates would do the work.
- Districts must establish procedures to pre-approve invoiced billing. Invoiced billing must not be used to circumvent the force account method for determining payment.

3-904 Payment Adjustments

A payment adjustment is a monetary increase or decrease applied to the unit price of a bid item. The adjustment is a change to the contract and must be made by change order. Payment adjustments are either unit adjustments to the unit price of a bid item or they may be a lump sum increase or decrease applied to a bid item.

Payment adjustments are provided for in Sections 9-1.06, “Changed Quantity Payment Adjustments”; 9-1.15, “Work-Character Changes”; “9-1.17C, “Proposed Final Estimate”; and 9-1.17D(2)(b), “Overhead Claims,” of the *Standard Specifications*. Other payment adjustments may be required, depending on the bid items, such as hot mix asphalt and concrete pavement.

Do not pay for payment adjustments until change orders authorizing the adjustments have been approved.

If you anticipate that payment adjustments in accordance with Sections 9-1.06, “Changed Quantity Payment Adjustments,” or 9-1.15, “Work-Character Changes,” of the *Standard Specifications* will result in decreases in final payment, withhold an amount sufficient to cover the value of the decrease.

For more discussion about determining payment adjustments, refer to Section 5-3, “Change Orders,” of this manual.

3-904A Changed Quantity Payment Adjustments

When the total pay quantity of a bid item varies from the bid item list by more than 25 percent, the variation may be the result of more or fewer units than shown in the bid item list required to complete the planned work. The variance may also result from ordered changes or a combination of both of these factors. When the variation exceeds 25 percent, adjust the compensation in accordance with Section 9-1.06, “Changed Quantity Payment Adjustments,” of the *Standard Specifications*, or document in the contract records the reason for not making a payment adjustment. When the accumulated increase or decrease in bid item units shown on a change order exceeds 25 percent of the bid item list, the overrun or underrun must be acknowledged and provided for in the current change order. Refer to Section 5-306C, “Methods of Payment,” of this manual for more information on change orders. Provide for this overrun or underrun through 1 of the following options, whichever is applicable:

- Adjust the contract price in accordance with Section 9-1.06, “Changed Quantity Payment Adjustments,” of the *Standard Specifications*.
- Defer any payment adjustment **because of** the overrun or underrun.
- State in writing that the bid item is not subject to adjustment. Refer to Section 5-3, “Change Orders,” of this manual for a discussion and examples of change orders providing for payment adjustments resulting from increased or decreased quantities.

3-904A (1) Increases of More Than 25 Percent

It is usually appropriate to defer adjustment if work on the bid item has not been completed. Additional change orders may affect the quantity, or the number of units required to complete planned work may not be known. However, as soon as unit costs and final quantities can be reasonably determined, calculate any required unit adjustment and provide for it through a change order. When work on the bid item is completed, apply the unit adjustment to the total number of units in excess of 125 percent of the quantity shown on the bid item list.

Unless requested by the contractor in writing, the engineer does not have to adjust the contract price of an item if the bid item cost of the work in excess of 125 percent of the quantity shown on the bid item list is less than \$15,000. However, before exercising this right, verify that Caltrans will not gain any economic benefit from an adjustment. On the other hand, make an adjustment if it would decrease cost and the amount of the decrease would exceed the cost of making the adjustment.

3-904A (2) Decreases of More Than 25 Percent

If a bid item underruns the quantity shown on the bid item list by more than 25 percent, inform the contractor in writing as soon as work on the item has been completed. Unless the contractor requests an underrun adjustment in writing, no adjustment will be made.

3-904A (3) *Eliminated Items*

Section 9-1.06D, “Eliminated Items,” of the *Standard Specifications* applies only to bid items eliminated in their entirety. Advise the contractor as soon as it is known that an item will be eliminated. Caltrans will not be responsible for costs incurred for material ordered after notification.

Write the change order providing for the elimination of a bid item to include the disposition of any surplus material. Refer to Section 3-904A (4), “Surplus and Salvaged Material” of this manual for how to handle surplus material resulting from an eliminated item that cannot be returned to the vendor.

3-904A (4) *Surplus and Salvaged Material*

Minor differences between quantities of material required to complete the planned work and quantities shown in the bid item list or shown in quantity summaries on the contract plans are normal operating differences. Caltrans is not liable for a surplus of material resulting from these operating differences.

If the final quantity of an item is less than 75 percent of the quantity shown on the bid item list, include any actual loss because of excess material in the costs as computed in accordance with Section 9-1.06C, “Decreases of More Than 25 Percent,” of the *Standard Specifications*.

Do not make any allowance for material the contractor keeps.

Caltrans recognizes that certain materials or manufactured items required for the planned construction may be unique and not usable by the contractor, the supplier, or for other projects or customers. If such materials or items become surplus by reason of an ordered change, resulting in a direct and unavoidable loss to the contractor, such loss must be compensated. Determine compensation on the basis of actual cost as provided in Section 9-1.06D “Eliminated Items,” of the *Standard Specifications*. The following guidelines describe how to dispose of material that the contractor cannot economically dispose of.

A determination to salvage items made surplus by ordered changes should be based on economic benefit to Caltrans, conservation of the energy and materials required to fabricate the items, or both. Base economic benefit on the following:

- The item’s condition is adequate to perform its function satisfactorily. Damage does not necessarily make an item unsuitable for salvage. Caltrans has the capability to repair some items, so investigate this approach before deciding to dispose of a damaged item. Also consider repair costs when determining the cost-effectiveness of salvaging.
- The value equals or exceeds the difference in the cost of salvaging, including hauling, and the cost of removal and disposal.

Also, an item should be salvaged if it meets 1 or more of the following conditions:

- It is a stock item with a definite, foreseeable use. Stock items include all items that Caltrans normally uses.

- It is not a stock item but can be put to immediate use or has a definite, foreseeable use. This classification would include items that can be reinstalled in the immediate project or could be installed on future projects.
- It is part of an electrical installation owned jointly with another agency, and the other agency requests its salvage.
- It can be used immediately for some other beneficial purpose.

Most districts maintain a district salvage yard or other designated areas for receiving salvaged material. Each district also has a district recycle coordinator. Before the delivery of potentially salvageable items, make arrangements with the appropriate person. Materials should not be salvaged until such arrangements are made.

3-904B Payment Adjustments for Price Index Fluctuations

Section 9-1.07, “Payment Adjustments for Price Index Fluctuations,” of the *Standard Specifications* specifies payment adjustments for various bid items that contain paving asphalt. The payment adjustment occurs when the California statewide crude oil price index fluctuation exceeds the threshold as described in the contract specifications. Compensation is adjusted when the paving asphalt price fluctuates from the month of the bid date to the month in which the contract item containing paving asphalt was placed. Refer to the example in Section 5-3, “Change Orders,” of this manual.

It is important to make timely payments for price index fluctuations. Increases in the cost of paving asphalt may place financial burdens on contractors and can cause projects to exceed allocated supplemental and contingency funds. The resident engineer is responsible for the following:

- Initiating a change order within 30 days of contract approval.
- Verifying that monthly payment adjustments for paving asphalt are included in monthly estimates when items that contain paving asphalt are used.
- Monitoring monthly expenditures and estimating future months of expenditures of payment adjustments for paving asphalt to avoid exhausting the project supplemental funds and contingency balance.
- Notifying the construction engineer and project manager if you anticipate the project contingency balance will be depleted so that appropriate action can be taken.
- At the time of bid, the contractor has the option to opt out of payment adjustments for price index fluctuations. Form DES-OE-0102.12A, “Opt Out of Payment Adjustments for Price Index Fluctuations,” is included in the bid book. To determine if the contractor has opted out, review the bid book for the project. If the opt-out form in the bid book is not completed, then all of the requirements apply to the project. The bid book may be viewed at:

http://ppmoe.dot.ca.gov/des/oe/bidsub/post_bid_archived.php

3-904C Work-Character Changes

Before work can be considered a “work-character change,” there must have been an ordered change to the plans or specifications. 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.” For a discussion of differing site conditions, refer to Section 3-5, “Control of Work,” of this manual.

When calculating the adjustment for a change in work-character, 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.

3-905 Time-Related Overhead

Section 9-1.11, “Time Related Overhead,” of the *Standard Specifications* applies to projects that have a time-related overhead bid item. This section includes a description of time-related overhead and a description of time-related field- and home-office overhead included in the time-related overhead bid item. The contractor includes time-related overhead costs in the time-related overhead bid item. Overhead that is not related to time is included in other bid items. Any contract time adjustments made by change order will result in an equivalent adjustment to the time-related overhead bid item quantity.

The markups for force account work performed by the prime contractor on time-related overhead projects are modified in Section 9-1.04A, “General,” of the *Standard Specifications*.

Refer to Section 5-410, “Overhead Claims,” of this manual for information regarding claims for overhead for projects without a time-related overhead bid item.

3-905A Audit Examination and Reports

When the time-related overhead bid item quantity paid exceeds 149 percent of the quantity at time of bid, consult with your district management before requesting that the contractor provide an audit of its overhead costs. Refer to Section 5-411, “Audits,” of this manual for more information.

3-905B Payment

Time-related overhead (TRO) is compensated on monthly progress payments based on the number of working days charged during the pay period. Separate plant establishment period and permanent erosion control establishment period working days do not receive time-related overhead compensation. The quantity of time-related overhead is not adjusted for concurrent delays. The quantity of time-related overhead will be adjusted only because of critical delays or time saving adjustments that revise the current contract completion date. Adjustments to contract time are handled as follows:

- If contract time is adjusted by change order, and there are no revisions to working days charged to date, payments for increase time adjustments occurs when the original bid item quantity is exceeded.
- If you have charged nonworking days that you later determine to be a critical delay, write a change order to make a time adjustment and promptly pay for the revised working days charged to date.
- If contract time is decreased by change order, the corresponding reduction for time-related overhead is processed in the next progress estimate.

Whether TRO is bid by working day or lump sum within the bid item list, a 20 percent maximum limit is contractually established for progress payment purposes. Amounts more than the 20 percent limit are released in the estimate following completion of the contract work excluding plant establishment or permanent erosion control establishment work.

For contracts with a TRO lump sum quantity on the bid item list, calculate the amount to be paid for each working day charged within a progress payment period as follows:

Case 1 - TRO lump sum bid is less than or equal to 20 percent of total bid amount:

- TRO working day rate is the TRO lump sum bid amount divided by the original number of working days bid. Note: TRO is not paid on plant establishment or permanent erosion control establishment working days and such days are not included in the TRO working day rate calculation.
- For contract time adjustments, include corresponding unit TRO working day rate payment adjustments within the change order.

Case 2 - TRO lump sum bid is more than 20 percent of total bid amount:

- TRO working day rate is 20 percent of total bid amount divided by the original number of working days bid. Note: TRO is not paid on plant establishment or permanent erosion control establishment working days and such days are not included in the TRO working day rate calculation.
- Calculate an excess TRO working day rate that is equal to the difference of the TRO lump sum bid and 20 percent of the total bid amount, divided by the original number of working days bid. This excessive amount of TRO will be released after non-plant establishment and non-permanent erosion control establishment work has been completed in the subsequent payment estimate.
- Note that change orders with time adjustments will need 2 corresponding unit TRO working day rate payment adjustments of 20 percent maximum rate and excess rate.

For contracts with a TRO working day quantity on the bid item list, the amount to be paid for each working day charged within the pay period is the bid item price unless the 20 percent maximum limit has been exceeded. If the maximum limit was exceeded, provide a corresponding 20 percent unit rate on progress payments and release the corresponding excess unit rate amount after non-plant establishment

and non-permanent erosion control establishment work has been completed in the subsequent payment estimate.

Excluding terminated contracts, if the contractor completes the contract work before the expiration of allotted contract time, which is the original number of working days and time adjustments by approved contract change orders, pay any remaining TRO item quantity balances as follows:

- For contracts without plant establishment or permanent erosion control establishment work, process the corresponding remaining working day balance on the after-contract acceptance estimate. Include payment for any additional TRO compensation that was bid more than 20 percent of the total bid.
- For contracts with plant establishment or permanent erosion control establishment work, process the corresponding remaining working day balance in the first progress payment after all non-plant establishment and non-permanent erosion control establishment work is completed. Include payment for any additional TRO compensation that was bid more than 20 percent of the total bid.

If the TRO bid item quantity exceeds 149 percent of the quantity shown on the bid item list or as converted under section 9-1.11B, "Payment Quantity," of the *Standard Specifications*, and the engineer authorizes a TRO rate through audit that differs from that bid, process a payment adjustment. Calculate the payment adjustment based on the difference in the actual TRO rate and that bid. Apply the differential rate to the quantity of TRO exceeding 149 percent threshold. Include a separate payment adjustment for Caltrans' share of the contractor's audit report cost as described under section 9-1.11E, "Payment Adjustments," of the *Standard Specifications*.

TRO payments are not made during liquidated damage periods because contractors' TRO during these periods is noncompensable.

3-906 Progress Payments

Section 9-1.16, "Progress Payments," of the *Standard Specifications* requires Caltrans to make an estimate of work completed each month. Such estimates are designated as progress pay estimates. Each progress pay estimate must include payment for work completed up to and including the 20th day of the month. Include payment for change order bills that are submitted on time. Also include payment for extra work performed at agreed price and payment adjustments. Billing for this work must be submitted by the resident engineer during the pay period in which the work was performed.

Caltrans supports a collaborative progress payment process allowing contractor participation in estimating bid item quantities completed for progress payments. Contractor participation in this process is optional but should be determined at the preconstruction conference. When a contractor provides a submittal of estimated item quantities and supporting calculations for work completed up to and including the 20th day of the month, 2 working days before the progress payment cut-off date,

the resident engineer will provide Caltrans' estimate of item quantities and supporting calculations to the contractor. One working day before the progress payment schedule cut-off date, the contractor and resident engineer will attempt to resolve differences in the estimated quantities. If an agreement cannot be reached for a particular item quantity, the progress payment will be based on Caltrans' estimated quantity for the item. If modifications in estimated quantities are supported, revise the Caltrans estimated quantity and supporting calculations before processing the progress payment. Where the contractor does not submit a timely monthly estimate of item quantities, omits certain item quantities, or does not provide supporting calculations, the collaborative process cannot be used. Other collaborative process arrangements that are mutually agreeable to the contractor and Caltrans may be established.

Resident engineers must transmit to the district Construction office the documents and information required to prepare progress payment vouchers. All documents must be in the district office no later than the date established by the district, usually no later than the end of the contract time start day after the 20th of each month.

District Construction must arrange a schedule with the Division of Construction that will accommodate the Division of Accounting.

A monthly estimate and payment must be made if any amount of money is due the contractor.

Show all quantities submitted for payment on source documents. Typically, Form CEM-4801, "Quantity Calculations," is used for this purpose. Form CEM-4801 is shown in Example 3-9.1. at the end of this section. The estimate must reflect the totals on the source documents. A source document is defined as the basic document executed to record or calculate quantities, percentages of lump sums, or extra work for payment. Refer to Section 3-902C, "Source Documents," in this manual for a discussion of source documents. Example 3-9.1., "Quantity Calculations," is a sample of a source document.

The quantity shown on the estimate for a bid item must agree with the sum of the quantities to date on all of the source documents for that item.

The resident engineer is responsible for the accuracy of a progress pay estimate. By approval, the resident engineer verifies that the quantities are correct, and that data submitted conforms to the policies of Caltrans. All entries on Form CEM-6004, "Contract Transactions Input," must be checked by other Construction personnel for errors such as transposition and wrong numbers.

The resident engineer must review and approve each monthly estimate before district Construction office staff can process it for payment. To expedite handling, the resident engineer need not sign the estimate itself to indicate approval. Approval may be by telephone. Confirm telephone approval by sending a memo or a "pre-verification of pay estimate" form letter to the district Construction office.

Refer to Section 5-103, "The Contract Administration System," of this manual for technical details on the production of estimates.

3-906A Bid Items

Include all bid item work completed satisfactorily in accordance with the contract in progress payments. Do not include in progress payments preparatory or organizational work such as assembling equipment, shop work, forming, or crushing or stockpiling of aggregate unless provided for in the special provisions. Do not pay for material placed or installed for which you have not obtained the required evidence of acceptability, such as Form TL-0029, "Report of Inspection of Material"; Form TL-0624, "Inspection Release Tag"; certificates of compliance, or acceptance tests.

For items bid on a unit basis, include in progress payments work that is substantially complete. Withhold a sufficient number of units to cover the value of the incomplete incidental work. In each case, a source document must be on file showing the details of the quantity's determination.

Refer to intermediate source documents for items that are bid on a unit basis with a fixed final pay quantity, such as structural concrete and bar reinforcing steel (bridge), to show how partial payment was estimated. Withhold units of work to cover the value of incomplete incidental work. Base the withheld amount on a force account analysis of the remaining incidental work.

The following examples are listed to illustrate the procedure for partial payments:

1. Mobilization item

The Contract Administration System (CAS) will automatically calculate and enter partial payments for the item, "Mobilization."

2. Maximum value items

Handle items for which maximum payment is limited until after a time fixed in the contract as follows:

- a. Include on the estimate the quantities completed in the same manner as for any other bid item. The quantity will be extended at the bid price and added to the total of work done.
- b. The system will make a deduction for any overbid.
- c. The system will return the deduction at the time set forth in the contract.

3. Roadway excavation

In normal situations, material is excavated, hauled, placed in final position in embankment, and compacted, but slope finishing is not done. This is considered incidental work, and a quantity may be withheld to cover the value of the work remaining.

4. Aggregate for subbase and base

Material may be produced, hauled, placed, and compacted, but final trimming to tolerance has not been performed. This is incidental work, and a quantity may be withheld to cover the value.

5. Portland cement concrete pavement

Concrete may be in place and cured but not ground to meet surface tolerance. Grinding is incidental work, and units may be withheld to cover the estimated cost.

6. Sewers and irrigation systems

Pipe may be placed and backfilled but not tested. Withhold units to cover this work.

7. Fence

Posts and wire or mesh may be in place and securely fastened but bracing wires not completed. Withhold units to cover this incidental work.

8. Structural concrete, bridge, final pay quantity

Bridge construction generally requires erecting falsework to carry dead loads of concrete or steel members until they become self-supporting. When falsework supports the superstructure concrete of box girder or slab bridges, make partial payments for the bid item.

When the soffit plywood is complete in place, make a partial payment equivalent to 35 percent of the projected superstructure concrete volume.

Withhold 5 percent for removal of the falsework materials and the final surface finishing of concrete.

9. Bar reinforcing steel

Pay for bar reinforcing steel that is complete and in place in the forms. It does not have to be encased in concrete before payment is made.

10. Structural steel, final pay quantity

Steel placed is paid by units erected and in place. Withhold units to cover incidental work such as additional bolting and welding.

For work that includes an item for “furnishing,” make no payment for furnishing until all contract requirements have been met, including acceptability of the material and delivery to the project. However, payment may be made for materials on hand, as covered in Section 3-906E, “Materials on Hand,” of this manual, for items that qualify and meet specified eligibility requirements. Refer to the *Bridge Construction Records and Procedures* manual for additional instructions.

For lump sum bid items, if a schedule of values is required, refer to Section 3-906B, “Schedule of Values,” of this manual. Certain lump sum bid items may include specified payment provisions that describe payments to be made as work on the item or project is completed. Otherwise, pay a percentage of the lump sum bid price as work progresses. Use for this calculation the ratio of the number of working days an item of work has been in progress divided by the estimated total number of working days required to complete the item work. Be aware that such a simplified method might not reflect the value of the work actually completed. Reach an equitable agreement with the contractor for the basis of determining progress payments on lump sum items in such cases.

If any work or material on hand paid for on a previous monthly estimate loses value through loss, damage, or failure to function, deduct units representing the lost value

from the following monthly estimate. Another example is storm damage requiring repair or replacement in accordance with Section 5-1.39B, "Damage Caused by an Act of God," of the *Standard Specifications*.

Do not pay for item work added by change order until the change order is approved. However, payment for bid item overruns that are not the result of a change in the contract may be included in the monthly estimate.

3-906B Schedule of Values

A schedule of values is required for specific lump sum bid items such as electrical systems. Building construction will also be a lump sum bid item and will require a schedule of values as specified in the special provisions. Structure Construction will provide a technical review to verify that progress payments can be based on the value of the work in place.

3-906C Extra Work

Do not pay for change order work until the change order is approved. Refer to Section 3-403, "Changes and Extra Work," Section 3-906D, "Interest," and Section 5-3, "Change Orders" of this manual, for further information on change orders providing for extra work.

3-906D Interest

Section 9-1.03, "Payment Scope," of the *Standard Specifications* provides for interest to be paid on unpaid and undisputed progress payments, payments after acceptance, change order bills, claim payments, and awards in arbitration.

Keep a log of the dates change order bills are received, rejected, and resubmitted. In a timely manner, process all change order bills, and fully document reasons for rejecting change order bills.

Make interest payments for late payments by change order as a payment adjustment at lump sum. Refer to Section 5-3, "Change Orders," of this manual for more information.

3-906E Materials on Hand

Pay for acceptable materials on hand with individual material costs of at least \$50,000 or at least \$25,000 for requestors certified as a disabled veteran business enterprise, disadvantaged business enterprise or small business, provided that all specified conditions have been met. Do the following:

- Give the contractor Form CEM-5101, "Request for Payment for Materials on Hand."
- The contractor must initiate payment by submitting in duplicate a properly completed Form CEM-5101. Make no payment for any material if the contractor has not requested payment on the Caltrans-furnished form. The contractor must submit a request 1 week before the end of the estimate period for each estimate. Each request must represent the current status of materials on hand at the time

the request is made. Do not honor a request if it does not represent the actual amount on hand.

- Upon receipt of a request for payment for materials on hand, the resident engineer must check that it is filled out properly, meets specified eligibility requirements, and that the contractor attached evidence of purchase. Check on requestor's certification for a disabled veteran business enterprise, disadvantaged business enterprise, or small business when the material cost is \$25,000 to \$50,000. When the contractor's supporting evidence of purchase shows that a discount has been allowed, reduce the payment for materials on hand by the amount of the discount.
- Before processing a materials-on-hand request, inspect all materials for acceptability. Materials must have a certificate of compliance or Form TL-0029, "Report of Inspection of Material." Form TL-0029 is evidence that the material was inspected at the source. In general, accept only completely fabricated units, ready for installation on the project with the following exceptions:
 1. Piling—Steel plate used for steel pipe piling and driven steel shells filled with concrete and reinforcement as described in Section 49, "Piling," of the *Standard Specifications*, may be considered acceptable as raw material. However, pay for such material as raw material only until shop fabrication of the pile is 100 percent complete. After shop fabrication is complete, the estimated fabricated value may be paid, subject to other specified restrictions and administrative guidelines.
 2. Structural Steel—Structural steel used in steel structures as described in Section 55, "Steel Structures," of the *Standard Specifications*, may be considered acceptable as raw material. However, pay for such material as raw material only until shop fabrication of a usable member, such as a girder or other shape ready for shipment to the job site, is 100 percent complete. After shop fabrication is complete, the estimated fabricated value may be paid, subject to other specified restrictions and administrative guidelines.
 3. Sign Structures—Structural steel used in overhead sign structures as described in Section 56, "Overhead Sign Structures, Standards, and Poles," of the *Standard Specifications*, may be considered acceptable as raw material. However, pay for such material as raw material only until shop fabrication of a usable member, such as a sign frame or other member, is 100 percent complete. After shop fabrication is complete, pay for the estimated fabricated value, subject to other specified restrictions and administrative guidelines.
- Verify proper storage of materials listed on Form CEM-5101, "Request for Payment for Materials on Hand," in accordance with the following procedures:

3-906E (1) Materials at the Project

For all valid requests for material located at or near the project, determine whether the materials are stored in conformance with the contract. To conform to this

requirement, the contractor may have to store materials in fenced areas with locked gates, in locked warehouses, or in areas where it is improbable that materials would be lost from any cause. In addition to having controlled storage, the contractor is required by the *Standard Specifications* to provide proper storage and handling so that the materials do not become damaged or contaminated. For stored materials with water pollution potential, the contractor must establish and maintain water pollution control measures. Call any indication of improper storage to the contractor's attention. Withhold payment for materials on hand until the materials are properly stored.

Do not pay for material accepted on the basis of certificates of compliance until such certificates have been received.

The resident engineer or an assistant resident engineer must review Form CEM-5101 to verify that the request is acceptable.

3-906E (2) Materials Not at the Project

For materials not delivered to the job site, obtain evidence, and establish the fact of purchase, proper storage, acceptability, accessibility, and other factors. Materials Engineering and Testing Services (METS) maintains representatives in major industrial areas and provides inspection in all other areas for this purpose. The following is the procedure for requesting METS's assistance:

- If it is not practical for the resident engineer or assistant resident engineers to verify quantity, quality, location and proper storage, send the duplicate copy of the Form CEM-5101 to METS.
- Upon receipt of Form CEM-5101, METS will immediately notify the appropriate inspection office or offices. The METS representative will notify the resident engineer directly using Form TL-0649, "Inspector's Report of Material on Hand," or TL-6037, "Fabrication Progress Report," that the material has been inspected and that it is in acceptable condition and properly stored. METS will use Form TL-6037 for structural steel, precast prestressed concrete members, or sign structures. For other products, METS will use Form TL-0649.

METS may also indicate on its correspondence the percentage complete of shop fabrication on various structural components. This figure is given for the purpose of reporting progress on the affected items. Do not use it to increase payment for materials on hand during fabrication.

- Upon receipt of the Form CEM-5101, "Request for Payment for Materials on Hand," and percentage-complete verification, the resident engineer can approve the partial payment. The contractor must submit a new Form CEM-5101 for each estimate, and the percentage-complete procedure must be followed. However, it is possible METS may not be able to respond in time for payment on the estimate. METS gives priority to new or changed requests. Therefore, for requests that have not changed since a previous submittal, resident engineers may approve subsequent payments in the absence of any METS reports to the contrary.

On the monthly progress pay estimate, enter the total value of acceptable material as material on site regardless of storage location. Use Form CEM-5105, "Materials on Hand Summary," to summarize, authorize and document material on hand payments.

The maximum payment for materials on hand should be such that, when the estimated placing and other remaining costs of the work are added, the contract price is not exceeded. The purpose of this is to prevent payment of more than the contract price for the materials and to leave sufficient funds in the item to complete the work.

3-906F Withholds

3-906F (1) Progress Withholds

Progress withholds are usually determined by noncompliant or unsatisfactory progress. Whenever a contractor's performance is unsatisfactory, the resident engineer notifies the contractor of the apparent failure.

3-906F (1a) Noncompliant Progress

Progress is determined by comparing the contractor's actual progress with the curve on Form CEM-2601, "Construction Progress Chart (Oversight Projects)." This requires calculation of the percentage of work completed and the percentage of time elapsed. If the plot of these percentages falls on or above the curve on Form CEM-2601, progress is considered satisfactory. Otherwise, it is considered unsatisfactory except under extenuating circumstances. Refer to Section 9-1.16E(2), "Progress Withholds," of the *Standard Specifications* for noncompliant progress conditions.

After each progress estimate, update Form CEM-2601. The Contract Administration System (CAS) uses the formula contained on this form to determine progress. For a description of this process, refer to Section 5-1, "Project Records and Reports," of this manual.

The contractor's progress is usually considered unsatisfactory when the contractor's progress curve falls below the curve of the contract progress chart or when successive points on the contractor's progress curve indicate the contractor's progress rate will soon fall below the curve.

The percentage of work completed is determined by dividing the amount on the line titled "Total Work Completed" on the "Project Record Estimate" by the "Authorized Final Cost" on the "Project Status." CAS calculates this percentage. Calculations for percentage of work completed for Type 1 plant establishment projects is an exception. Calculations are shown in Section 3-906F (1b), "Plant Establishment Work," of this manual.

CAS computes the percentage of contract time elapsed by dividing the number of working days elapsed to the date of the progress estimate, by the original working days specified in the contract plus "Total time extension days approved to date," on Form CEM-2701, "Weekly Statement of Working Days."

Whenever the contractor fails to **prosecute** the work adequately, **determined by the plot of actual progress and your concurrence**, you must notify the contractor of the apparent lack of progress. If you judge that the work on the remaining work activities will not be completed by the “computed date for completion” as defined in Section 3-804, “Time,” of this manual, you must request that the contractor submit a revised schedule showing how the balance of the work will be carried out.

Occasionally, the resident engineer has information indicating that the percentage of time elapsed is different from that which CAS will calculate. The usual reason for this is that pending time extensions have not yet been approved and entered into the system. The percentage of time elapsed can be calculated using the anticipated time extension in the formula described previously. The resident engineer must document the calculated percentage of time elapsed as well as the reasons therefore. Enter the calculated percentage of time elapsed in the appropriate place on Form CEM-6101, “Project Record—Estimate Request.” CAS will calculate satisfactory or unsatisfactory progress based on this figure.

Whenever the district believes the contractor’s bonding company should be notified of unsatisfactory progress, advise the Division of Construction of the reasons supporting such an action. If appropriate, the district will initiate the notification.

If the district believes the lack of progress on a contract justifies a meeting, the district arranges a conference to be attended by the contractor’s representatives, the bonding company, and Caltrans. If appropriate, the Division of Construction will arrange the conference. For more information, refer to Section 3-808, “Contractor’s Control Termination,” of this manual.

3-906F (1b) Plant Establishment Work

For specifications and administrative guidelines for plant establishment time requirements refer to Section 20-4, “Plant Establishment Work,” of the *Standard Specifications*, and Section 4-2002C (8), “Plant Establishment Work,” of this manual. In general, a withhold for unsatisfactory progress should be waived only for landscape projects or on other projects only after a corrected entry has been made for “percent time elapsed” as covered for Type 1 and Type 2 plant establishment.

For projects with Type 2 plant establishment, the percentage of time elapsed and percentage of work completed is determined as described in Section 3-906F (1a), “Noncompliant Progress,” of this manual.

For projects with Type 1 plant establishment, compute the percentage of time elapsed and the percentage of work completed for the periods before the start of plant establishment. After the start of Type 1 plant establishment, the resident engineer will decide if the progress is satisfactory. In general, consider progress satisfactory if the contractor entered the plant establishment period on time and carries out plant-establishment work on time. Progress will be considered unsatisfactory if there will be an overrun in contract time because of a delayed start of Type 1 plant establishment.

Determine the percentage of work completed by dividing the value of work accomplished by the authorized contract amount minus the authorized plant establishment work.

$$\% \text{ Complete} = \frac{\$ \text{ Value Completed Work}}{(\$ \text{ Total Auth. Contract Amt.} - \$ \text{ Plant Estab. Work})}$$

Determine the percentage of time elapsed by dividing the number of working days elapsed to the time of the estimate on Form CEM-2701, "Weekly Statement of Working Days," by the total contract time limit plus "Total change order days approved to date" on Form CEM-2701 and minus the length of the plant establishment period.

$$\% \text{ Time} = \frac{\text{Working Days Elapsed}}{(\text{Orig. Contract Time} + \text{Time Ext. to date} - \text{Plant Estab. Period})}$$

Compare these 2 percentages to the curve on Form CEM-2601, "Construction Progress Chart (Oversight Projects)." If progress is satisfactory, check the "Override Unsatisfactory Progress" on Form CEM-6101, "Project Record—Estimate Request."

3-906F (2) Performance Failure Withholds

Whenever the contractor fails to comply with a contract part, including timely submittal of a required document, the resident engineer notifies the contractor of the apparent performance failure. For example, performance failure withholds may be taken if any of the following required documents are late or missing:

- Quality control plan
- Baseline schedule
- Updated schedules
- Revised schedules
- Time impact analyses
- Final schedule
- Traffic control plans
- Traffic contingency plan
- Water pollution control plan
- Storm water pollution prevention plan

The resident engineer gives the contractor 7 days from this notification to either provide the submittal or a request for information. If neither is provided on time, the resident engineer should take the performance failure withhold in the next progress pay estimate. If the contractor submits a request for information, the resident engineer should allow another 7 days from the time the request for information is

answered in full before taking the performance failure withhold. Refer to Section 9-1.16E(3), “Performance Failure Withholds,” of the *Standard Specifications*. Other withholds, such as progress withholds, stop notice withholds, and penalty withholds, are separate and may be taken simultaneously if justified.

3-906F (3) Stop Notice Withholds

Refer to the Division of Accounting all inquiries regarding bills for labor, material, or equipment rental not paid by Caltrans’ contractor. Detailed information for construction payments, legal withholds, labor compliance withholds, levies and liens, including stop notice contacts can be found on the Division of Accounting “Major Construction Payment & Information” website:

<https://misc-external.dot.ca.gov/pets/>

3-906F (4) Penalty Withhold

For penalty withholds, refer to Sections 7-1.02, “Laws,” and 9-1.16E(5), “Penalty Withholds,” of the *Standard Specifications*. Penalty withholds may become a deduction if appropriate. Withholds may be required in accordance with Sections 7-104, “Air, Water, and Noise Pollution Control”; 7-105, “Permits, Licenses, Agreements, and Certifications”; and 8-102, “Labor Compliance Responsibilities,” of this manual.

3-906G Deductions

Deductions, as opposed to withholds, are amounts held back for specific purposes. The resident engineer must identify, initiate, and control all deductions. Refer to Section 5-103F (1c), “Deductions,” of this manual for information on administering deductions.

Make a deduction from payment to the contractor as soon as the liability for the event requiring a deduction has been determined. It is preferable to base deductions on known amounts resulting from agreements or actual billings, but, if necessary, they can be estimated.

Resident engineers must keep source documents and summary sheets in the appropriate contract records to cover all deductions. In the absence of any information to the contrary, CAS will carry deductions forward from the previous month.

Whenever the contractor’s progress is unsatisfactory and the project has progressed to a point where a reasonably accurate estimate of probable liquidated damages can be made, the resident engineer must deduct an amount sufficient to cover probable liquidated damages. Make the deduction instead of any withhold for unsatisfactory progress. Enter the amount and description of deductions on Form CEM-6101, “Project Record–Estimate Request,” and check “Override Unsatisfactory Progress,” to prevent the withhold.

3-906H Supplemental Progress Payments

Resident engineers are responsible for the completeness and accuracy of each progress payment. Supplemental progress payments are used to correct omissions or make adjustments to a previously processed progress payment estimate for work performed within that pay estimate period. Supplemental progress payments may be run only between the completion of the original monthly progress payment and the 15th of the following month.

Refer to Section 5-103F, "Generating Estimates," of this manual for the process of generating a supplemental progress payment.

3-906I Negative Estimates

The resident engineer is responsible for the accuracy of all payment estimates, including progress payment, after acceptance, semifinal, and final estimates. Negative estimates reflect an overpayment made to the contractor. When a negative estimate is necessary, you must prepare a brief justification and submit it with the estimate request to the district Construction office. The district Construction office must obtain concurrence from the deputy district director of Construction or delegate, and the Division of Construction's field coordinator before running the negative estimate.

When a negative estimate is approved for processing, the Division of Accounting **creates an accounts receivable and directly bills the contractor for the amount due. Accounting provides a monthly listing of all pending accounts receivable and their status to the progress pay coordinators and expects that further action is taken by district Construction and the Division of Construction. For specific instruction on billing, contact the Division of Accounting.**

Section 3-907E, "Payment Offset," of this manual describes another method available to the resident engineer and the Division of Accounting to resolve overpayment to the contractor.

3-907 Payment After Contract Acceptance

Caltrans makes final payment as soon as possible after the contract is accepted and the contractor submits the required documents requested by the resident engineer. Any estimate covering a payment after contract acceptance is identified either as "after acceptance," "semifinal," or "final."

Soon after the contract is accepted, meet with the contractor to discuss submitting required information to complete the contract. If the contractor does not submit required data within 4 weeks after acceptance, you must notify the contractor in writing that Caltrans will issue the proposed final estimate and deduct the appropriate amount. Section 5-406, "Claims Resolution Process," of this manual lists the timeline for completing payment steps after the acceptance process.

3-907A Payment Before Final Estimate

A payment after acceptance but before the proposed final estimate must adhere to Section 9-1.17B, "Payment Before Final Estimate," of the *Standard Specifications*. The purpose of this type of progress payment is to release all money due the contractor that exceeds any amounts withheld under the contract. When determining amounts to be paid or deducted for this type of estimate, do the following:

1. Include payment for the following:
 - a. Any work completed since the previous estimate
 - b. Any errors that may have been discovered and corrected
 - c. Any labor compliance deficiencies that have been cleared
2. Include payment for any overbids on maximum value items, including the mobilization item. You do not need to take any additional action for this step.
3. When delinquent or inadequate payrolls exist, make a deduction from the payment.
4. When the contractor has failed to correct deficiencies in its equal employment opportunity program, make a deduction from the payment. These deficiencies include failure to submit Form CEM-2402F, "Final Report—Utilization of Disadvantaged Business Enterprises First-Tier Subcontractors."

The deductions will be in the same amount as for any progress estimate. Refer to Section 8-1, "Labor Compliance"; Section 8-2, "Equal Employment Opportunity"; Section 8-3, "Disadvantaged Business Enterprises," and Section 8-4, "Disabled Veteran Business Enterprises," of this manual.

5. To cover any outstanding documents required under this contract, make a deduction from the payment. These outstanding documents include the following:
 - a. Reduced prints of working drawings
 - b. Outstanding payrolls that are not yet delinquent
 - c. Any information upon which to base the proposed final estimate, such as payment adjustments of contract unit prices

The deduction, regardless of the number of outstanding items, will be the lesser of 10 percent of the "Subtotal Amount Earned Without Mobilization," or \$10,000, and at least \$1,000.

In addition to the steps listed for determining amounts to be paid or deducted for an estimate after contract acceptance, the resident engineer must also do the following:

1. Notify the district of what deductions are applicable.
2. Compound the deductions when a combination of the situations outlined previously occurs:
 - a. The contractor has delinquent or inadequate payrolls

- b. The contractor failed to correct deficiencies in its equal employment opportunity program
 - c. The contractor failed to honor requirements related to disadvantaged business enterprises
3. Also compound permanent deductions. Permanent deductions include items such as material royalties, railroad flagging charges, material testing, out-of-specification material, or restaking charges.

Also considered permanent are deductions for anticipated liquidated damages. When warranted, anticipated liquidated damages can be made on progress estimates. However, anticipated liquidated deductions will need to be made permanent on the after-acceptance estimate. To do so, release anticipated liquidated damages; then take actual liquidated damages under liquidated damages on the after-acceptance estimate.

4. When you make deductions for outstanding items, advise the contractor in writing of the specific missing items.
5. Before processing an after-acceptance estimate, run the following 2 reports, "Status of CCO," and "CCO master listing." These reports will show any contract change order adjustment of compensation credit or deferred time not yet taken.

3-907B Proposed Final Estimate

The purpose of the proposed final estimate is to obtain formal agreement regarding final payment. For this type of estimate, follow these guidelines:

- Submit the proposed final estimate to the contractor within the time frame outlined in Section 5-406, "Claims Resolution Process," of this manual.
- Before processing the proposed final estimate, check that all change order bills submitted by the contractor are processed and ready for payment. Make sure the estimate's issuance is not delayed for change order bills that remain outstanding.
- If the contractor has not submitted required information, the proposed final estimate must still be issued on time, and the following guidelines apply:
 1. Any time before a proposed final estimate is issued, the district may exercise an option described in Section 9-1.04C, "Materials," of the *Standard Specifications*. This section identifies the conditions under which Caltrans may establish the cost of materials when valid copies of vendors' invoices are not forthcoming. When the district decides to establish such costs, use the following procedure:
 - a. If the established cost is necessary to determine compensation, complete the pending change order, and have it unilaterally approved. To determine compensation, refer to Sections 9-1.06, "Changed Quantity Payment Adjustments," or 9-1.15, "Work-Character Changes," of the *Standard Specifications*.

- b. If the established cost is necessary to make force account payment on an existing change order, include this established cost as a lump sum payment on a supplemental change order. Also, unilaterally approve this supplemental change order.
2. On the proposed final estimate, you may list, in the amount the district determines to be payable, any force account billings that have not been paid because of a dispute. Upon return of the proposed final estimate, the contractor must reiterate the disputed extra work, which must be handled like any other claim. Do not list in the proposed final estimate any force account billings the contractor has not yet submitted. It is the contractor's responsibility to either submit these bills before the proposed final estimate or list them as exceptions to the proposed final estimate.
3. The district will show the required deduction on the proposed final estimate in the same manner as for any other deduction when the contractor has the following outstanding items:
 - a. Delinquent or inadequate payrolls
 - b. Deficiencies in its equal employment opportunity program
 - c. Violations of requirements related to disadvantaged business enterprises

These items are also described in Section 3-907A, "Payment Before Final Estimate," of this manual. When such deductions are shown, include a statement similar to the following on the letter that accompanies the proposed final estimate: "The amount of \$ _____, which has been deducted for nonsubmission of documents required by the contract, will be paid when all such documents have been received."

- Submit Form CEM-6101, "Project Record—Estimate Request," to the district office with the proposed final estimate box checked to initiate the proposed final estimate.
- The proposed final estimate is to be prepared and sent to the contractor by the district Construction office. It should include the following:
 1. A letter transmitting the proposed final estimate to the contractor. This letter should include the statements shown in Example 3-9.2., "Form Letter for Submitting Proposed Final Estimate to the Contractor."
 2. A form for the contractor's acceptance of the amounts listed in this estimate. Verify that the form contains wording similar to the wording in Example 3-9.3., "Acceptance Statement Form."
 3. The proposed final estimate report showing the status of item payments generated by CAS along with the "schedule of extra work" and "schedule of deductions" reports. Samples of these reports are shown in Examples 3-9.4. through 3-9.6.
 4. If deductions for items such as staking charges, laboratory charges, railroad flagging charges, and overruns of contract time are not finalized and shown on the reports, a list of their estimated maximum amounts must be attached.

- Use separate correspondence, not the proposed final estimate, for funds deducted for labor violations and wage restitution as opposed to outstanding or inadequate payrolls.
- When money is due on the proposed final estimate, make sure the semifinal estimate processed immediately after reflects the same “totals” as the proposed final estimate. If you follow this approach, the contractor will submit claims based on the “statement of total amount earned,” rather than a “revised” number.
- To establish the beginning of the 30 days during which the contractor may submit written claims, send the proposed final estimate by certified mail, “return receipt requested,” or overnight delivery.
- From the issuance of the proposed final estimate to the receipt of the contractor’s response, do not enter into any negotiations, written or verbal, concerning the proposed final estimate or potential claims, except as described in the following paragraph. During this time, negotiating or communicating with the contractor, or issuing change orders, may negate the finality of the proposed final estimate. If the finality is negated, the contractor may have 30 days from the most recent communication to respond.
- If you discover an error that requires a decrease in a quantity, send a letter to the contractor stating the discovery of an error, and specify the item and amount of the change. Also, state that the error will be addressed after the contractor returns the proposed final estimate. If the contractor discovers and brings to your attention any errors or discrepancies, handle this situation through separate correspondence covering only the affected items. For example, if the contractor disputes the quantity of an item, send a letter to the contractor stating that the item must be listed as an exception to the proposed final estimate. In the letter, also state that the item will be analyzed after the return of the proposed final estimate and exceptions, also known as the “Acceptance Statement.”
- When the contractor returns the Acceptance Statement, proceed in accordance with 1 of the following appropriate options:
 1. If the returned Acceptance Statement has no exceptions, such as administrative claims or contract claims, and all documents required under the contract have been received, prepare the final estimate. Refer to Section 3-907D, “Final Payment and Claims,” of this manual for more information.
 2. If the returned Acceptance Statement has no exceptions, but some documents are still outstanding, continue pressing the contractor, in writing, for the missing documents. If amounts due the contractor exceed the deductions by more than \$300, prepare and process a semifinal estimate.
 3. If the documents have not been received in approximately 60 days, request advice from the Division of Construction field coordinator about further action.
 4. If the Acceptance Statement is returned with exceptions, initiate the claims procedure as outlined in Section 5-4, “Disputes,” of this manual.

5. If the Acceptance Statement is returned requesting a payment adjustment in accordance with Section 9-1.17C, "Proposed Final Estimate," of the *Standard Specifications*, determine if the payment adjustment is warranted. **Contracts that have been terminated or those with time-related overhead bid items are not subject to this payment adjustment.** If the payment adjustment is warranted, make the payment in the same manner as for any other adjustment and unilaterally approve in the district. The following is an example of a calculation to determine this payment adjustment:

Example:

Contractor's original bid, including mobilization	\$100,000
90 percent of contractor's bid	\$ 90,000
Final estimate of total work, including mobilization, extra work, and minus permanent deductions	\$ 85,000
Difference	\$ 5,000
Adjustment of overhead costs (10 percent of difference)	\$ 500

6. When the Acceptance Statement is not returned within the specified 30 days, verify it has not been lost in transit and then proceed in accordance with 1 of the following options:
 - a. If all documents have been received, prepare and process the final estimate.
 - b. If some documents are still outstanding, request advice from the Division of Construction's field coordinator about further action.
 - c. If the contractor includes in the Acceptance Statement any claim that is postmarked or hand-delivered more than 30 days after the date the contractor received the proposed final estimate, the claim is considered late and will not be processed. On a hand-delivered claim, record the date the claim arrived, who delivered it, and who received it. Retain the envelope for a claim that arrived through the mail to establish the date the claim was sent. Inform the contractor of the late filing by using a letter worded in a similar way to the following letter. This notification will constitute the final administrative action on a late claim.

Notification to Inform the Contractor of a Late Filing:

Contractor _____,

The statement of claim included in your letter dated _____, was submitted to us more than 30 days after you received copies of the proposed final estimate for Contract No. _____, (County Route and Postmile).

A final estimate is, therefore, being processed for issuance to you as provided in Section 9-1.17C, "Proposed Final Estimate," of the *Standard Specifications*.

Sincerely,

District Construction Office

- d. If the contractor includes claims with the return of the proposed final estimate, the district should immediately acknowledge the receipt of the claims by sending a written statement similar to the following:

Acknowledgment of the Receipt of Claims:

Your written statement of claims has been received. The engineer will base the determination of your claims upon the investigation of your statement.

The investigation of your claim statement will begin immediately. If it is determined that additional information is required, you must furnish it within 15 days of the request in accordance with Section 9-1.17D(2), "Claim Statement," of the *Standard Specifications*. You may request in writing an extension of time to a specific date. Our purpose is to provide you with the engineer's final determination on claims in the minimum possible time, consistent with the assurance that all the facts are available for consideration.

- e. If the initially submitted claim statement is obviously deficient in information, instead of stating the timeline for investigation, use a paragraph similar to the following example:

Notification of Deficiency of Information:

Your initial submission appears to be deficient as to the following:

[Select appropriate item or items.]

- 1) Statement of contractual basis for claim

- 2) Information as to compliance with Section 4-1.05A, “General”; or Section 5-1.43, “Potential Claims and Dispute Resolution,” or both of the *Standard Specifications*
- 3) Breakdown of amount claimed due
- 4) Other, as applicable

Please submit any further information you wish to have considered by [date, approximately 15 days after the contractor will receive the letter]. If you will require additional time to prepare your supplementary statement, please request an extension in writing specifying the date to which the extension is requested. The engineer intends to make the final determination on claim matters in the minimum possible time, consistent with the assurance that all the facts are available for consideration.

- f. Examine claims expeditiously. For detailed instructions, refer to Section 5-4, “Disputes,” of this manual.

3-907C Semifinal Estimate

A semifinal estimate is any estimate prepared after issuing the proposed final estimate and before preparing the final estimate. The primary purpose of a semifinal estimate is to make timely payment for all nondisputed items that have not been paid on a previous estimate. However, semifinal estimates can also be issued to make payment if some, but not all claims, have been resolved.

The proposed final estimate need not show a zero balance for money owed to the contractor. If the proposed final estimate does identify money owed to the contractor, immediately run a semifinal estimate after the proposed final estimate. Do not wait for any response from the contractor to the proposed final estimate. Do not issue any other estimates until 30 days after issuing the proposed final estimate.

Normally, use the same procedures to issue a semifinal estimate as those to issue a progress estimate.

3-907D Final Payment and Claims

Submit a final estimate only after 1 of the following conditions has been met:

- The contractor has submitted all required documents, and complete agreement on payment has been reached.
- The district director’s **final** determination of claim has been issued.
- The contractor does not respond to the proposed final estimate in the specified time but has submitted all required documents.

- The district has been advised by the Division of Construction field coordinator to proceed.

Refer to Section 5-406, "Claims Resolution Process," of this manual for more information. As soon as the district approves the final estimate, it must use a transmittal letter. The letter must state the following: "Submitted herewith in accordance with Section 9-1.17D(3), 'Final Determination of Claims,' of the *Standard Specifications* is a copy of the final estimate for your Contract No. X."

A copy of the transmittal letter is to be sent to the resident engineer to be retained in the project files.

The district transmits only the final estimate because the disbursing office of the Division of Accounting will mail to the contractor the corresponding copy of the progress payment voucher.

3-907D (1) Material to Submit with the Final Estimate

Before payment of a final estimate, the Division of Construction progress pay staff must make sure that administrative details have been completed. For this purpose, the district must forward the following data before or with all final estimates:

- Submit the proposed final estimate as originally submitted to the contractor, including transmittal letters.
- Submit the Acceptance Statement returned by the contractor. If the contractor has refused to sign the statement, submit it with an explanation of the contractor's refusal.
- Submit a transmittal letter containing, but not limited to, the following:
 1. A list of the forms and attachments being transmitted or an explanation as to why a form or attachment is missing. Include letters from the Division of Construction authorizing the submittal of the final estimate without certain documents and stating the action taken or to be taken as a result of the missing documents.
 2. A statement about the use of materials agreements. If there are no materials agreements, state this.
 3. A statement that reduced prints of all shop drawings for highway bridges and railroad bridges have been received from the contractor. If such drawings are not required, please state so.
 4. Correspondence or documents explaining or authorizing the differences between the proposed final estimate and the final estimate.
 5. Form CEM-2402F, "Final Report—Utilization of Disadvantaged Business Enterprises, First-Tier Subcontractors."

3-907E Payment Offset

A payment offset is a method of obtaining monies due to Caltrans on 1 contract by levying against future payments being made to a contractor on another Caltrans

contract. Offsets may be taken to obtain adequate funds for any amount due and for determinations made by an arbitrator. The offset process should be completed within 90 calendar days of contract acceptance except when an offset for a determination by an arbitrator is required.

Many stakeholders are involved in the payment offset process. The following should be considered when choosing an active contract to apply an offset against:

- There should be sufficient payments pending.
- It should be bonded by the same bonding company if possible.
- It should be administrated within the same district.

To begin the payment offset process, send a letter to the contractor, bonding company, and offset bonding company. The contractor and the bonding companies have 20 calendar days from receipt of the letter to request a meeting to discuss the offset.

If the contract or bonding companies do not request a meeting, execute the offset. If a meeting is requested, a meeting will be held within 10 calendar days of receipt of the request. The meeting is conducted by the district director or as delegated to at least a supervising transportation engineer.

The resident engineer prepares a summary of the facts, minutes of the meeting, and a final determination report. If the offset is warranted, notify the district administering the contract being offset, the contractor, and bonding companies of the final determination, and the amount of the offset. If the contractor or the bonding companies do not request a hearing, execute the offset. If the hearing officer determines that an offset is not warranted, continue through the collections process administered by the Division of Accounting. The Division of Accounting executes only those offsets authorized by the Division of Construction.

3-908 Arbitration

If the contractor has diligently pursued and exhausted the administrative procedures specified in the contract for Minor A projects and major projects, the contractor is entitled to file for arbitration of its claims 240 days after contract acceptance even if the district director **final** determination of claims has not been issued.

The Caltrans Legal Division handles all construction contract arbitrations. Refer to Section 5-412, "Arbitration," of this manual for more information.

Example 3-9.1. Quantity Calculations

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
QUANTITY CALCULATIONS
 CEM-4801 (REV 11/1992) CT# 7541-3520-0

<p style="text-align: center;">JOB STAMP</p> 07-1381U4 07-LA-210-47.5/57.3 Fed. No. (NONE)	<p>ITEM 8 - Temp Railing (Type K)</p> <p>LOCATION Ramp 3</p> <p>CALC. BY A. Sistantre</p> <p>CHK. BY R. Engineer</p>	<p>FILE NO. 48-8-2</p> <p>SEGREGATION YES <input type="checkbox"/></p> <p style="text-align: right;">NO <input checked="" type="checkbox"/></p> <p>DATE 09/17/2012</p> <p>DATE 09/18/2012</p>
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Field Measurement:	X	Estimated Quantity:	1,500
Field Counted:	NO	Unit of Measure:	feet
Final Pay Item	NO	Unit Price:	\$8.00/foot
		75% of item:	1,125 feet
		125% of item:	1,875 feet
Remarks or other calculations:			
500 feet placed on September 10, 2012 at Maple Street offramp, Station 3+00 RT			
Material Inspection/Release: Certificate of compliance obtained on September 5, 2012.			
		Pay this estimate:	500 feet
		Previously paid:	250 feet
		Total to date:	750 feet

POSTED BY O.E. Ngindeer	DATE 09/20/2012	POSTED TO CEM 6004, page 4 line 5
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ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814. CEM4801

Example 3-9.2. Form Letter for Submitting Proposed Final Estimate to the Contractor

Subject: Proposed Final Estimate

In accordance with the provisions of Section 9-1.17D(1), "General" of the *Standard Specifications*, attached (in triplicate) is a proposed final estimate for

_____ (Contract)

_____ (District County Route Milepost)

Please review the proposed final estimate and, if satisfactory, indicate your approval in the space provided on the attached Acceptance Statement. Return 3 copies of the Acceptance Statement to this office. Keep 1 copy on your files.

Please note the following portion of Section 9-1.17D(1), "General" of the *Standard Specifications*, which states:

"If you accept the proposed final estimate or do not submit a claim statement within 30 days of receiving the estimate, the Engineer provides you the final estimate and the Department pays the amount due within 30 days. This final estimate and payment is conclusive except as specified in (*Standard Specifications*) sections 5-1.27, ("Records"), 5-1.47, ("Guarantee"), and 9-1.21, ("Clerical Errors")."

"If you submit a claim statement within 30 days of receiving the Engineer's proposed final estimate, the Engineer provides you a semifinal estimate and the Department pays the amount due within 30 days. The semifinal estimate is conclusive as to the amount of work completed and the amount payable except as affected by any claims or as specified in sections 5-1.27, 5-1.47, and 9-1.21."

Your promptness in returning the signed copies, indicating your approval, will expedite payment of the final estimate. Alternatively, a signed qualified approval by reason of a written statement of claims will expedite payment of a semifinal estimate. A statement of claims must include a **signed declaration** containing the language required in Section 9-1.17D(2)(c), "Declaration," of the *Standard Specifications*.

If claims are submitted in connection with this contract, you will be expected to comply fully with Section 9-1.17D(2), "Claim Statement," of the *Standard Specifications*. The Engineer will base their determination of claims upon the investigation of your statement, in which you are expected to present your position fully as to the contractual basis of the claim; compliance with contract requirements such as Sections 5-1.43, "Potential Claims and Dispute Resolution," subsections A through D; **and** 9-1.17D, "Final Payment and Claims," of the *Standard Specifications*, if applicable; a breakdown of the total amount claimed; and all other information you consider to be in support of your claim.

As further provided in Section 9-1.17D(1), "General," of the *Standard Specifications*, in case neither approval nor a statement of claims is received, postmarked or hand delivered, before the 31st day, a final estimate in the amount of this proposed final estimate will be issued. Your date of receipt of this proposed final estimate establishes the beginning of the specified 30 days.

You are reminded that failure to comply with the contractual claim procedures, including specified timeframes thereto, is a bar to arbitration under Public Contract Code Section 10240.2.

Sincerely,

District Construction Office

Example 3-9.3. Acceptance Statement Form

Subject: Acceptance Statement
Attachment to **Proposed Final Estimate** transmittal letter

Dated _____ Contract Identification _____

I have examined the quantities of bid items and amounts indicated as payment for extra work and the deductions on the proposed final estimate dated _____. I agree to accept the total of \$_____ as indicated, as the total amount earned for all work performed on this contract, unless described as an exception.

_____ Contractor

Exceptions (check 1)

By _____

None

As indicated in **the** attached letter dated _____

_____ Title

_____ Date

Example 3-9.4. Sample of the Proposed Final Estimate

PROGRAM CAS145
 DATE 06/13/12
 TIME 10:46 AM
 BID OPENING 11/10/09
 R.E. NAME: MAYA, TYKE
 LOCATION
 04-SON-128-41.8/44.7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 PROJECT RECORD - ESTIMATE
 PROPOSED FINAL ESTIMATE

PAGE 1
 04-888884
 ESTIMATE NO. 29
 WORK PERFORMED THROUGH 05/21/12
 DATE OF THIS ESTIMATE 06/13/12

COASTAL MOUNTAIN CONSTRUCTORS, INC.
 8884 GOLDENEYE COURT
 SANTA ROSA, CA 95402

IN SONOMA COUNTY ABOUT 9 KM EAST OF
 PETALUMA FROM ADOBE ROAD TO 0.2 KM
 WEST OF ARNOLD DRIVE

FED. AID NO. ACHS-P128(42)E ,STP-P128(42)E

ITEM NO.	ITEM DESCRIPTION	UNIT	CONTRACT PRICES	ORIGINAL AUTH. AMT	THIS ESTIMATE		TOTAL ESTIMATE	
					QUANTITY	\$ AMOUNT	QUANTITY	\$ AMOUNT
001	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	2,500.0000	2,500.00		0.900	2,250.00	
002	SMALL BUSINESS UTILIZATION REPORT	EA	250.0000	2,250.00		6.000	1,500.00	
003	TIME-RELATED OVERHEAD	WDAY	410.0000	180,400.00		440.000	180,400.00	
004	TEMPORARY FENCE (TYPE BW)	M	8.2000	30,094.00		3,844.860	31,527.85	
005	TEMPORARY FENCE (TYPE ESA)	M	6.2000	11,718.00		1,986.150	12,314.13	
006	TEMPORARY SHORING	M2	137.0000	104,120.00		44.400	6,082.80	
007	TEMPORARY CREEK DIVERSION SYSTEM (LOCATION 1)	LS	16,000.0000	16,000.00		1.000	16,000.00	
008	TEMPORARY CREEK DIVERSION SYSTEM (LOCATION 2)	LS	18,500.0000	18,500.00		1.000	18,500.00	
009	TEMPORARY CREEK DIVERSION SYSTEM (LOCATION 3)	LS	16,000.0000	16,000.00		1.000	16,000.00	
010	TEMPORARY CREEK DIVERSION SYSTEM (LOCATION 4)	LS	23,000.0000	23,000.00		1.000	23,000.00	
011	TEMPORARY CREEK DIVERSION SYSTEM (LOCATION 5)	LS	16,000.0000	16,000.00		1.000	16,000.00	
012	TEMPORARY CREEK DIVERSION SYSTEM (LOCATION 6)	LS	23,000.0000	23,000.00		1.000	23,000.00	
013	CONSTRUCTION SITE MANAGEMENT	LS	2,500.0000	2,500.00		1.000	2,500.00	
014	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	2,500.0000	2,500.00		0.905	2,262.50	
015	TEMPORARY SILT FENCE	M	8.0000	35,040.00		4,507.200	36,057.60	
016	TEMPORARY GRAVEL BAG BERM	M	5.5000	14,080.00		295.000	1,622.50	
017	TEMPORARY CONSTRUCTION ENTRANCE	EA	1,700.0000	10,200.00		15.000	25,500.00	
018	TEMPORARY COVER	M2	3.1000	7,967.00		988.000	3,062.80	
019	TEMPORARY CHECK DAM	M	6.4000	832.00		1,457.000	9,324.80	
020	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	825.0000	4,950.00		9.000	7,425.00	
021	TEMPORARY DRAINAGE INLET PROTECTION	EA	118.0000	7,080.00		70.000	8,260.00	
022	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	M2	0.7500	12,900.00		48,149.850	36,112.39	

Example 3-9.5. Schedule of Extra Work

```

PROGRAM CAS145  S C H E D U L E   O F   E X T R A   W O R K   PAGE NO.  1
DATE 06/13/12                                     EST. NO.29
TIME 10:46 AM
R.E. NAME: MAYA, TYKE                               04-888884
-----
CCO REPORT      REPORT TYPE OF WORK(+) WORK BR CONTR
NO. NUMBER      AMOUNT PERFORMED  (-) DATE  WK RPT.NO C O M M E N T S
-----
001 0583         299.24 E.W. @ F.A. (+) 050312 N 1039.0
      0584         1,040.25                050312 N 1040.0
      0585         2,005.32                051512 N 1045.0
010 0103        16,640.84 A.C. @ U.P. (+) 123111 N 100RS0
035 0003         5,742.24 E.W. @ F.A. (+) 061411 N 0662.0
054 0005        21,651.92 E.W. @ F.A. (+) 121911 N ABL2 0
058 0003         629.20 E.W. @ F.A. (+) 050112 N 1041.0
      48,009.01 TOTAL THIS ESTIMATE
      2,518,826.34 TOTAL PREVIOUS ESTIMATE
      2,566,835.35 TOTAL TO DATE
  
```

Example 3-9.6. Schedule of Deductions

```

PROGRAM CAS145  S C H E D U L E   O F   D E D U C T I O N S   PAGE NO.  1
DATE 06/13/12                                     EST. NO.29
TIME 10:46 AM
R.E. NAME: MAYA, TYKE                               04-888884
-----
DEDUCTION DESCRIPTION      AMOUNT  EST      THIS      TOTAL
                               NO.      ESTIMATE  ESTIMATE
-----
ADMINISTRATIVE
RESTAKING CHARGE REQ 62    -1,065.00  18
RESTAKING CHARGE REQ 65    -1,065.00  22
                               0.00      -2,130.00
LABOR COMPLIANCE VIOLATION
MISSING PAYROLLS           -10,000.00  20
RETURN PAYROLL DEDUCTION    10,000.00  21
MISSING PAYROLLS           -10,000.00  29
                               -10,000.00 -10,000.00
TOTAL DEDUCTIONS           -10,000.00 -12,130.00
  
```

Chapter 5

Contract Administration

Section 0 Conduct of the Work

5-001 Resident Engineer's Pending File

5-002 Preconstruction Conference With Caltrans Personnel

5-003 Preconstruction Conference With the Contractor

5-004 Resident Engineer's Daily Report

5-005 Assistant Resident Engineer's Daily Report

5-006 Maintenance Reviews

5-006A Start of Work Review

5-006B 50 Percent Review

5-006C 90 Percent Review

5-006D Final Inspection Review

5-007 Federal Highway Administration Involvement in Contract Administration

5-007A Federal Highway Administration Involvement on Delegated Projects—E

Section 0 Conduct of the Work

5-001 Resident Engineer's Pending File

For guidance and information, the project engineer assembles and forwards to the resident engineer a set of letters, memorandums, and other data titled "resident engineer's pending file." This file must contain all pertinent information, comments, and advice that may be useful on the specific project to which the resident engineer is assigned. A detailed list of the information that should be included in the resident engineer's pending file is contained in Chapter 15, "Final Project Development Procedures," of the *Project Development Procedures Manual*. The file typically includes the following:

- Memorandums between programs, service centers, and districts, especially comments about preliminary reports and dummy special provisions.
- Special requirements that are enumerated in the freeway agreement and that may require action by the resident engineer. For instance, a special requirement may be notification of the date work begins on locally owned facilities.
- Memorandums about materials from the Materials Engineering and Testing Services (METS) or the district Materials Unit.
- Copies of right-of-way agreements that require work to be done under the contract or that affect the project's construction.
- Copies of Form RW 13-04, "Notice to Owner," which covers utilities and their completion status.
- Copies of the partially completed Form FA-2134, "Utility Account Action Request," which the resident engineer will use for the installation and coordination of utility services. Forward this form to the Division of Accounting and the district signals and lighting coordinator. If there is no form, and the plans have utilities, contact the district signals and lighting coordinator to assure proper procedures are followed. This form is available at:
<http://cefs2.dot.ca.gov/jsp/forms.jsp>
- Copies of correspondence giving the background of any unusual project features.
- All pertinent engineering data previously prepared in connection with the project. This data should include the project engineer's quantity calculations.
- Copies of the project report, preliminary report, and materials reports.
- A copy of the "materials information" as given to prospective bidders.
- A copy of the environmental document, including any permits, agreements, and commitments.

- A separate summary of all environmental commitments, as well as any special instructions or explanations for meeting permit and other legal requirements and commitments to other agencies.
- A copy of the risk register that documents potential construction problems. More information can be obtained from the *Project Risk Management Handbook: A Scalable Approach*, at the Risk Management link on the Project Management web page.

The resident engineer must consult with the project engineer who forwarded the file, if the file has any of the following problems:

1. Information appears to conflict
2. Information appears to be incomplete
3. Additional details or explanations are required

5-002 Preconstruction Conference With Caltrans Personnel

Before the start of construction, the resident engineer should review the job with relevant staff and stakeholders such as:

- Project manager
- Project engineer
- Right-of-way agent
- Hydraulics engineer
- Traffic engineer
- Materials engineer
- Maintenance superintendent
- Maintenance engineer
- Environmental construction liaison
- Construction stormwater coordinator
- Environmental planner
- Public information officer
- Landscape architect
- Local agencies and communities
- Affected utility companies
- Others who may have a direct interest in the project

At this preconstruction stage, such a review will significantly aid in explaining the reasons for certain design features such as the following:

- Right-of-way obligations
- Signs and traffic handling difficulties

- Materials sites
- Selected material
- Foundation treatment
- Potential slides
- Environmental commitments
- Potential drainage and maintenance problems, including erosion control and water pollution

The resident engineer must verify implementation of environmental mitigation measures included in the project approval. To be fully informed of the environmental mitigation measures, commitments, or concerns on projects that are related to environmental commitments, the resident engineer must review the environmental commitment record and meet with the assigned environmental staff. At the same time, the resident engineer can reach agreement on both the assistance required from environmental specialists, and the tentative schedule and plan for environmental monitoring.

On projects involving Structure Construction personnel, preconstruction conferences are mandatory and should be held as soon as possible after bids are opened. The conferences should include structure and construction engineers, the resident engineer, and the structure representative. These personnel should reach agreement regarding the following items:

- Office facilities. The district must provide suitable office space and furniture for both district and structure field personnel. When the office facilities are trailers, the resident engineer and structure representative should occupy the same trailer. When the office facilities are in a building, the engineer and the representative should occupy adjacent rooms. This arrangement facilitates the assignment of the structure representative as acting resident engineer during extended absences of the assigned resident engineer.
- Personnel for the total work. Conference participants must discuss the total work, including road work and structure work, and take advantage of instances in which people could be used interchangeably to reduce the number of people on the project. When the contractor's schedule is available, meeting participants must review the personnel required.
- Division of the work. The items should be categorized as road work and structure work. In some cases, the item may be divided by portions of items or by phases of the work. Before the start of work, Structure Construction requires from the structure representative a written report on this categorization of the work.

5-003 Preconstruction Conference With the Contractor

Before the start of work, a conference must be held. Depending on the project's complexity, more than one conference may be desirable to limit the scope and the number of individuals attending. The conferences must include the resident engineer and structure representative and may include principal assistants, the construction

engineer, the district Construction deputy director, the contractor's superintendent, and other key personnel. Specialists should be included, too, such as the district Labor Compliance officer and the district safety coordinator. Alternatively, the resident engineer may cover the respective responsibilities.

When environmental commitments have been made that affect or constrain the contractor's operations, the environmental-construction liaison and other appropriate environmental specialists should attend the preconstruction conference with the contractor.

Meeting participants should discuss, among other items, the following:

- Work plans
- Contingency plans
- Equipment to be used
- Progress schedule
- Layout of job
- Labor compliance
- Equal employment opportunity
- Safety requirements
- Temporary pedestrian access routes
- Americans with Disabilities Act (ADA) requirements for permanent pedestrian facilities
- Environmental commitments and permits
- Water pollution control requirements
- Job-produced materials quality control and acceptance testing
- Buy America requirements
- Buy Clean California Act requirements
- Progress payment process

This discussion affords both parties a common understanding of the proposed work and the problems and possible solutions that may be expected during the life of the contract.

The contractor should receive notice of the items that will be discussed. Among other documents, the contractor must bring a copy of the contractor's Code of Safe Practices and a water pollution control plan. The project file must contain a record of the conferences or the reason for omitting a conference. Depending on the conference's complexity, the record can be a relatively complete set of minutes or a copy of the resident engineer's daily report.

The police, fire department, public transportation agency, schools, and other affected agencies should receive any information developed from the meetings that will affect these agencies' operations.

The following list presents guidelines for the preconstruction conference. These are reminders only. Items will be included if applicable to a specific project. Also consider any previous experience of a particular contractor with Caltrans projects when providing details on these topics. Further, the district Construction office may have completed some of the items; therefore, those items need not be included at the conference.

- Introduce all participants, including in your introduction statements about each person's responsibilities for the project.
- Discuss superintendence as well as lines of authority for both contractors and California Department of Transportation (Caltrans) personnel. If you have not yet received it, request the written information required by Section 5-1.16 "Representative," of the *Standard Specifications*.
- Discuss the subcontracting requirements covered in Section 5-1.13, "Subcontracting," of the *Standard Specifications*.
- When required by the special provisions, discuss railroad insurance.
- Discuss requirements related to labor compliance and equal employment opportunity. Advise the contractor of the deadlines for submitting payrolls and other required documents. Also advise the contractor of the contractual and administrative deductions that will be applied for noncompliance. Provide the necessary Caltrans-furnished forms and posters.
- Review the contract's safety requirements.
- Discuss the requirements that pedestrian access must be provided when construction activities require the closure of an existing pedestrian route. The contractor must provide notice 5 business days before closing an existing pedestrian route, and the temporary pedestrian access route must be inspected for compliance with ADA standards before allowing use. If the contract does not have a bid item for a temporary pedestrian access route, and existing pedestrian routes must be closed to perform the work, the contractor must submit a work plan for a temporary pedestrian access route.
- For pedestrian facilities, discuss that every pedestrian facility constructed on the project will be inspected and that dimensions and slopes of the completed facilities must meet those specified or the work may have to be removed and replaced. Also discuss the pre- and post-construction survey requirements for pedestrian facilities when identified in the contract by a survey bid item.
- Advise the contractor that contract administration forms are available on the Division of Construction website.
- Discuss the procedure for inspecting materials, particularly the early submittal of Form CEM-3101, "Notice of Materials to Be Used."
- When the contract requires, discuss the contractor's quality control plans.
- Discuss the communication of job-produced materials quality-control testing and acceptance testing, including identification of high-priority tests, shipping of

samples, lines of communication for test results, timeframes for reporting quality control and acceptance test results, and any contractual testing dispute resolution processes.

- Discuss the requirements for submitting working drawings.
- Discuss the progress schedule requirements including provisions for submitting, reviewing, updating, and revising schedules. Refer to Section 3-801, “Schedule,” of this manual.
- Discuss weighing procedures, weight limitations, and the Caltrans policy on overloads. For more information, refer to Section 3-519B, “Load Limits,” of this manual.
- Discuss the progress payment process. Advise the contractor of administrative procedures and deadlines for payment for material on hand, which must be submitted on Form CEM-5101, “Request for Payment for Materials on Hand.” Discuss specification requirements for force account, contractor force account work report documentation, and submittal of change order bills on or before the 15th day of the month. Discuss the resident engineer’s role in (1) submitting change order bills for extra work at agreed price and payment adjustments, (2) reviewing contractor’s submitted change order bills, (3) revision of bills to match Caltrans records, if necessary, and (4) approval of both undisputed and revised bills by the 20th of the month. Also discuss withholds for progress, performance failure, stop notice, or penalty and deductions for administrative, equal employment opportunity, labor compliance violation, or liquidated damages.
- Discuss the optional collaborative progress payment process in Section 3-906, “Progress Payments,” of this manual, and determine if the contractor will participate. Share the location of the progress payment schedule cut-off date table at:
<http://www.dot.ca.gov/accounting/paysch.html>
- Discuss the requirements for submitting survey requests and any significant survey issues.
- Review the contract provisions about water pollution control. Discuss the contractor’s water pollution control plan.
- Review the contract provisions and the environmental commitments record for environmental permits and agreements. Discuss the contractor’s plan for implementing environmental commitments and environmental work windows.
- Remind the contractor to submit a program to control water pollution before beginning work.
- Discuss the requirements for handling public traffic.
- Discuss any unusual project features, including safety issues such as public health conditions you or the contractor may be aware of.
- Remind the contractor of the contractual procedures to follow in the event of disagreements. Emphasize the necessity for timely written notices and required

submittal of completed CEM-6201D, “Initial Potential Claim Record”; CEM-6201E, “Supplemental Potential Claim Record”; and CEM-6201F, “Full and Final Potential Claim Record.”

- Discuss the scheduling of utility work. For a discussion of utility preconstruction conferences, refer to Section 3-518C, “Nonhighway Facilities,” of this manual.

5-004 Resident Engineer’s Daily Report

The following instructions are directed to the resident engineer:

- For each day during the project’s life, make a daily report on Form CEM-4501, “Resident Engineer’s Daily Report or Assistant Resident Engineer’s Daily Report.”
- Include any information that may be pertinent even though no activity may have occurred. For example, such information could include support for determining working or nonworking days. Include the following in the daily report:
 1. Important discussions and agreements with the contractor. Record these on the day discussed. Give the names of specific persons to whom instructions were given or with whom agreements were made. If the contractor objects or comments, note these items, too. Actual quotations on significant discussion points can be useful. Through letters to the contractor, confirm important verbal instructions. Also refer to Section 5-4, “Disputes,” of this manual.
 2. A general statement about the type of work done. Include the controlling operation and any facts concerning the work’s progress.
 3. Weather conditions such as maximum and minimum temperatures and precipitation, among other items. Expand on exceptional weather conditions.
 4. Statements of any other important facts pertaining to the contract that are not specifically covered elsewhere in the contract records.
- Keep the report concise, yet include any important information. The report should not contain routine matters, such as quantities placed, that can be found in other records.

Promptly send 1 copy of the daily report to the construction engineer, who will review. After the review, the construction engineer may discard the copy or file it until the project’s completion, in accordance with district policy. Distribute and store the daily report as follows:

- Store reports electronically in FalconDMS, according to Section 5-102, “Organization of Project Documents,” of this manual.
- For projects initiated before July 1, 2021, and not using FalconDMS, retain the original of all reports in the project files in the field office.
- Adhere to district policy for any specific distribution requirements outside the electronic filing system.

5-005 Assistant Resident Engineer's Daily Report

To report the activity for a contract item, assistant resident engineers must submit a report for each contract day. Complete the report on Form CEM-4601, "Assistant Resident Engineer's Daily Report." Also, use this form for reporting extra work and for labor compliance. The form contains a narrative portion and a tabular portion.

The narrative portion of the assistant resident engineer's report should include statements about the contractor's operation and the activities of the individual preparing the report. The description of the contractor's operation should include the following:

- The location of the work performed
- A brief description of the operation
- The quantities placed or the amount of work completed for the day
- Significant statements by the contractor

The statement of the assistant resident engineer's activities should be sufficient to demonstrate the performance of duties such as those outlined in Chapter 4, "Construction Details," of this manual. Record observations of contractor compliance or noncompliance, actions taken, statements made to the contractor, and approvals given.

Use the tabular portion of Form CEM-4601, to report the following:

- Extra work. For details, refer to Section 3-906C, "Extra Work," of this manual.
- Hours worked by labor and equipment. Provide sufficient detail to permit a review of the contractor's costs in a manner similar to force account. Using the publication titled *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)*, sufficiently identify equipment to enable the determination of applicable rental rates. Sufficiently identify the labor classification to enable determination of the appropriate wage rate. Also record the equipment's arrival and departure dates, as well as idle time for breakdowns or other reasons. This information can be used to make a possible adjustment of compensation because of an overrun or an underrun of quantities, a change in character, a protest, or a potential claim. The *Labor Surcharge and Equipment Rental Rates* book is available at:

<https://dot.ca.gov/programs/construction/equipment-rental-rates-and-labor-surcharge>

- The name of the contractor or subcontractor performing the work. When the report will be used to determine compliance with the contract's labor provisions, you must include the names or identification numbers of the contractor's personnel or report these separately. However, if the report is not for determining compliance with the contract's labor provisions, you only need to include in the tabular portion of the daily report the respective classifications of the work being performed and the number of hours worked on the date the report covers.

Promptly send the assistant resident engineer daily report to the resident engineer, who will review. After the review, distribute and store the assistant resident engineer's reports as follows:

- Store reports electronically in FalconDMS, according to Section 5-102, "Organization of Project Documents," of this manual.
- For projects initiated before July 1, 2021, and not using FalconDMS, retain the original of all reports in the project files in the field office.
- Adhere to district policy for any specific distribution requirements outside the electronic filing system.

Refer to Section 5-102 for details to consider when establishing a system for filing assistant resident engineer's reports on a specific project.

5-006 Maintenance Reviews

The resident engineer must conduct reviews with Maintenance during a project. The reviews should be scheduled at the start of work, at 50 percent completion, at 90 percent completion, and at final inspection. Document these reviews in the resident engineer's daily report.

5-006A Start of Work Review

Before the start of construction, send a copy of Form CEM-0101, "Resident Engineer's Report of Assignment," to the Maintenance superintendent. Provide the Maintenance superintendent an opportunity to review the contract with the resident engineer within the first 2 weeks of construction. The intent of this field review is to:

- Review the "Resident Engineer's Report of Assignment"
- Review the site
- Discuss the scope of the project
- Identify locations of existing Caltrans irrigation, electrical and other underground facilities
- Discuss contingency planning for traffic management
- Discuss Caltrans' maintenance responsibility as described in Section 3-519, "Maintenance and Protection," of this manual
- Discuss construction activities that could affect adjacent maintenance operations
 - Discuss possible winter or long-term suspensions and the conditions under which Caltrans Maintenance forces will assume responsibility. For more information, refer to Section 3-805, "Suspensions," of this manual.

5-006B 50 Percent Review

When the contract work is about 50 percent complete, schedule a maintenance review, unless both Construction and Maintenance representatives agree the review is unnecessary.

5-006C 90 Percent Review

When the contract work is about 90 percent complete, invite the Maintenance superintendent for a complete field review of the project. The intent of this field review is to:

- Identify items that are not complete or changes that Maintenance requests. The resident engineer should work closely with the district Maintenance personnel to make minor field adjustments to the project. The project manager must approve any changes to the contract plans or specifications that significantly affect project cost, scope, or schedule.
- Identify items necessary to comply with the construction National Pollutant Discharge Elimination System permit. A copy of the permit is available at the State Water Resources Control Board website:

https://www.waterboards.ca.gov/water_issues/programs/npdes/

- Complete Form MTCE-0023, “Construction to Maintenance 90% BMP Completion Walkthrough,” with the Maintenance superintendent or the district Maintenance stormwater coordinator. Using this form will assist in identifying, discussing, and documenting the project elements such as structural treatment best management practices (BMP), drainage systems, and permanent erosion and sediment controls, while noting their functionality and communicating any specific instruction related to maintaining them. Form MTCE-0023 is available on Caltrans’ Electronic Forms System website:

<http://cefs2.dot.ca.gov/jsp/forms.jsp>

This review should provide the resident engineer sufficient time to correct deficiencies before contract acceptance and verify that elements such as structural treatment BMP, drainage systems, and permanent erosion and sediment controls are constructed in accordance with the project’s plans and specifications.

5-006D Final Inspection Review

Just before construction contract acceptance and in accordance with Section 3-523, “Final Inspection and Contract Acceptance,” of this manual, the resident engineer must schedule a final inspection with Maintenance.

The intent of this review is to:

- Make sure that issues identified in the 90 percent review are complete.
- Update Form MTCE-0023 to reflect changes and corrective actions implemented since the 90 percent review.
- Facilitate the transfer of maintenance responsibility from the contractor to Caltrans Maintenance forces.
- Discuss new or modified maintenance requirements.
- Discuss features requiring special attention.
- Discuss manufacturers’ warranties and service instructions.

- Discuss guarantee provisions of the contract. See Section 3-524, “Guarantee,” of this manual.
- Discuss the transfer of utility service payment to maintenance.

Both the resident engineer and the Maintenance representative must sign Form MTCE-0023 when they have completed their final inspection. File a copy of the form in Category 63, “Project Completion Documents,” and send copies to the district pollutant discharge coordinator, district Design stormwater coordinator, and district Construction stormwater coordinator. The Maintenance representative will maintain the original and is responsible for sending a copy to the Maintenance region manager.

5-007 Federal Highway Administration Involvement in Contract Administration

The FHWA risk-based project involvement process identifies certain federal-aid projects for which FHWA’s involvement will be defined and documented in the project stewardship and oversight plans.

When assigned the responsibility for a construction contract, the resident engineer first must determine if it is a federal-aid contract and, if so, the federal-aid classification for the contract. The resident engineer should review the construction contract and the resident engineer’s pending file, and talk to the project manager to determine the project’s federal-aid classification.

FHWA-funded projects are classified as delegated projects to indicate their involvement in the project as stated in the *Stewardship and Oversight Agreement* between FHWA and Caltrans. Information on this stewardship agreement can be found on the Division of Budgets FHWA Oversight webpage.

Caltrans assigns project numbers to federally funded projects, and Caltrans and FHWA jointly determine project classifications. Caltrans then adds a suffix “E” to the end of the project number. Projects with the suffix “E” are delegated projects.

5-007A Federal Highway Administration Involvement on Delegated Projects— E

Caltrans is responsible for all federal approvals and oversight requirements on delegated projects. Resident engineers are not formally required to communicate with the FHWA transportation engineer except for Buy America changes. Information on Buy America requirements and FHWA involvement can be found in Section 3-604, “Buy America,” of this manual. FHWA has delegated to Caltrans some of FHWA’s authority and responsibility for compliance with National Environmental Policy Act and other environmental laws. Resident engineers should review the project environmental documents and discuss with the district environmental-construction liaison to determine if FHWA involvement is necessary when there are changes to the environmental requirements for the project. Informal discussions with FHWA for technical guidance are encouraged.

Caltrans receives federal-aid funds indirectly from the California Office of Traffic Safety. Construction projects with a federal-aid number and Office of Traffic Safety

designation contain the same special provisions as delegated projects. The same procedures apply to traffic safety projects as delegated projects.

Section 3 Change Orders

5-301 General

5-302 Change Order Policy

5-303 Purpose of Change Orders

5-304 Initiation of Change Orders

5-305 Preliminary Considerations

5-306 Change Order Content

5-306A Specifications

5-306B Description of Work

5-306C Methods of Payment

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

5-306C (2) Payment Adjustment

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

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

5-306C (2c) Exemption from Adjustment

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

5-306C (3) Extra Work

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

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

5-306D Adjustments to Time of Completion

5-306E Change Order Standard Clauses

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

5-306G Change Order Format

5-307 Change Order Memorandum

5-307A Contents of the Memorandum

5-307B Change Order Category Codes

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

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

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

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

Table 5-3.1. and the second character code is W from Table 5-3.2.)

5-307C Coordination and Concurrence by Others

5-307C (1) Project Development

5-307C (2) Project Management

5-307C (3) Structures

5-307C (4) Materials

5-307C (5) Traffic

5-307C (6) Maintenance

5-307C (7) Right of Way

5-307C (8) Environmental

5-307C (9) Locally Funded Projects

5-308 Federal Highway Administration Change Order Requirements

5-308A FHWA Risk-Based Project Involvement

5-308B Delegated Projects

5-308C FHWA Major Change Order Approval Process

5-309 Federal Segregation Determination on Change Orders

5-310 Locally Funded State Highway Projects

5-311 Change Order Approval Process

5-311A Division of Construction Approval

5-311A (1) Change Order Determinations

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

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

5-311B District Approval Limitations

5-311C Authorization to Proceed

5-312 Substantiation

5-312A Engineering Analysis

5-312B Contractual Analysis

5-312C Cost Analysis

5-312D Time Impact Analysis

5-313 Executed Change Order Copy Distribution

5-314 Value Engineering Change Proposals

Figure 5-3.1. Change Order Decision-Making Flowchart

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 guidance 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 **all of the following conditions are satisfied**:

- 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.
- **The contractor agrees to the change.**
- 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.

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 a 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 director's 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.

Contractor proposed safety enhancements involving positive protection measures are within the scope of the original contract. Consider these proposals under the procedure outlined in Section 3-405, "Value Engineering," of this manual.

Increased change order delegation applies only to districts with a Division of Construction approved district change order quality control plan. Refer to the requirements in Section 5-311A, "Division of Construction Approval," of this manual. 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 as follows:

- Any change order that has a total absolute value exceeding \$200,000, except change orders for supplemental work funds until the allocated funds are exceeded by \$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:

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

- Example:

A change order containing \$255,000 of extra work at force account for "Maintain Traffic" with \$50,000 supplemental work funds provided.

Once either of the above cost thresholds is reached, each associated supplemental change order will also require Division of Construction approval.

- Example:

A previous change order containing \$255,000 of extra work at force account for "Maintain Traffic." A supplemental change order contains \$5,000 for additional funds for "Maintain Traffic." The supplemental change order requires 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 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 and each associated supplemental 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 must 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 must 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 the *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 agreed 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.

Provide supporting documents to the Division of Construction upon request.

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 adjustments 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 \$15,000, 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 file **calculations** in the project records **and note the location on the memorandum**.

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 paid as 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 the 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 contract time of completion.

Whenever you can estimate an adjustment to time for future work 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 within one month or sooner. 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 work funds are set aside to pay for this extra work. Make an independent cost estimate of the work for which the supplemental work 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 the latest version of Form CEM-4903, "Change Order Memorandum," with any necessary attachments including previous change order supplements and Division of Construction approvals. 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 if the change order was a result of a risk identified in the project risk register. Include the term “risk register” and a brief description on Form CEM-4901, “Change Order Input.
- 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 approval of the change order already has been obtained, state the name of the person who granted the 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 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. 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.
- State if the time adjustment will negatively affect the project; for example, whether the time adjustment would affect the environmental permit conditions and extend the project to another construction season, or the time adjustment would cause the project to miss the delivery schedule.
- 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. Category codes for supplemental change orders should not change. 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. Do not use the “INOV” category code on cost-saving changes that reduce the project’s function or performance. Changes that reduce material quality, service life or functional scope may result in construction cost savings but are not considered innovations.

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, and if 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, and if 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, or arbitration award, and whether fully or partially resolved.

If the change order type was administrative, and if the 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, from 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, from 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., “Other Supplemental Work,” 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, such as supplemental work or quantity adjustments.</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	Change order either fully or partially resolves certain potential claim records because of a dispute over an ordered change that affected some physical asset. (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.)
Dispute Resolution	Claim	G	Change order either fully or partially resolves certain contract claims because of a dispute over contract administration. (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.)
Dispute Resolution	Claim	H	Change order either fully or partially resolves certain contract claims because of a dispute over an ordered change that affected some physical asset. (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.)
Innovation	Cost Savings	I	Change order initiated by Caltrans that creates savings through efficiencies in the work by modification of contract staging, means and methods, or materials; and that provide equivalent function and service life at lesser construction cost. (Use only N, O, V for subsequent code characters 2, 3, and 4 respectively.) Do not use the "INOV" category code on cost-saving changes that reduce the project's function or performance. Changes that reduce material quality, service life or functional scope may result in cost savings but are not considered innovations.

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

Code	Section (only when the first character code is A, E, or G)	Standard Specifications Section Name
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	4-1.07D	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 specification in transmittal memo
Z	Default	Use only when the first character is B

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

Code	Affected Permanent Physical Asset (use this portion of Table 5-3.2. only when the first character code is C, D, F, or H)
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, such as 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.**)

Characters 3 and 4	Type	Purpose
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)

Characters 3 and 4	Type	Purpose
PU	Plan	Typical section
PV	Plan	Utilities
SA	Specification	Special Provision
SB	Specification	<i>Standard Specifications</i>
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)

Character 3 Potential Claims, Claims	When Character 1 is	Chronological Milestone
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

Character 4 Resolution Authority	Description
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 Table 5-3.1. is <i>G or H</i>)
F	Arbitration Award, Full Resolution (Use only when first character code from Table 5-3.1. 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.)

Characters 3 and 4 (use only when first two characters are AW)	Specification	Purpose
AB		Incentive Payment (A+B Bidding)
JT	SSP 40-1	Just-In-Time Training
BP	SS 14-6.03B	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	SS 39-2.01A(4)(i)(iii)(B), 39-2.01A(4)(i)(iii)(C), 39-2.04A(4)(c)(iii)(D)	HMA Smoothness Incentives
CS	SS 40-1.01D(8)(c)(iii)	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 a recommendation or the 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 the *Bridge Construction Records and Procedures* manual.

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
- Any work outside the contract limits

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 FHWA Risk-Based Project Involvement

The FHWA risk-based project involvement process identifies certain federal-aid projects for which FHWA’s involvement will be defined and documented in the project stewardship and oversight plans. The resident engineer must be aware of these customized project stewardship and oversight plans and adhere to their terms.

5-308B Delegated Projects

All former Projects of Division Interest (PoDI) and Project Oversight Agreements (POA) have been retired and the PoDI term is no longer being used. Therefore, for all former PoDI, all discretionary approval actions that FHWA retained on those projects are now delegated to Caltrans. Discretionary approval actions are identified in Appendix A of the *Stewardship and Oversight Agreement*.

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

5-308C Federal Participation on Change Orders

In the “Federal Participation” section of Form CEM-4903, 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: There is federal participation on the project, but FHWA will not participate in the change order; provide explanation for this decision

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 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.

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.

Funding sources for a change order may be different from the funding sources indicated in the detail estimate for a particular project. 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 federal segregation box in the lower right-hand portion of Form CEM-4903, show the percentage of participation by each funding source if there is federal funding on the project but not on

the particular change order. If there is no federal funding on the project, there can be no federal segregation so leave the boxes blank.

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, after the contractor has performed the work, or after 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 email addressed to the district change order desk:

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 direction to issue and approve 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 an 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 change orders 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 in a previous scope.	Division of Construction approval is not granted. District complies with instructions provided in the Division of Construction 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 (VECP). Approval authority is determined by considering each element of the VECP 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 VECPs.

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 Authorization to Proceed

An 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 an authorization to proceed.

In addition to writing and dating the 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 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 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 the calculations in the project records **and note that on the memorandum.**

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 analysis to the resident engineer with each time adjustment request. Review the analysis for logic and duration effects to determine the time adjustment, or perform an independent analysis to determine the time adjustment. Refer to Section 8-1.02C(8)(b), "Time Impact Analysis Submittal," of the *Standard Specifications* for more information. For an example of a time impact analysis 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>

5-313 Executed Change Order Copy Distribution

For all project records for construction projects awarded on or after July 1, 2021, one copy of each executed authorization to proceed, change order, and corresponding memorandum is to be electronically stored in the Caltrans electronic document management system (FalconDMS).

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 **.PDF** file using the following filename convention:

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

Examples:

04-012024_ATP002_S00_231120.pdf

04-012024_CCO002_S02_231127.pdf

Construction projects awarded before July 1, 2021, may be filed in the FalconDMS system, if practical, or maintained as hard copies. Otherwise, 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's Quality Assurance Plan process.

5-314 Value Engineering Change Proposals

For procedures for a value engineering change proposal (VECP), refer to Section 3-405, "Value Engineering," of this manual.

Prepare 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 item 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 either a 50 or 40 percent credit of the net construction cost savings to Caltrans. Determine the adjustment in the following manner:

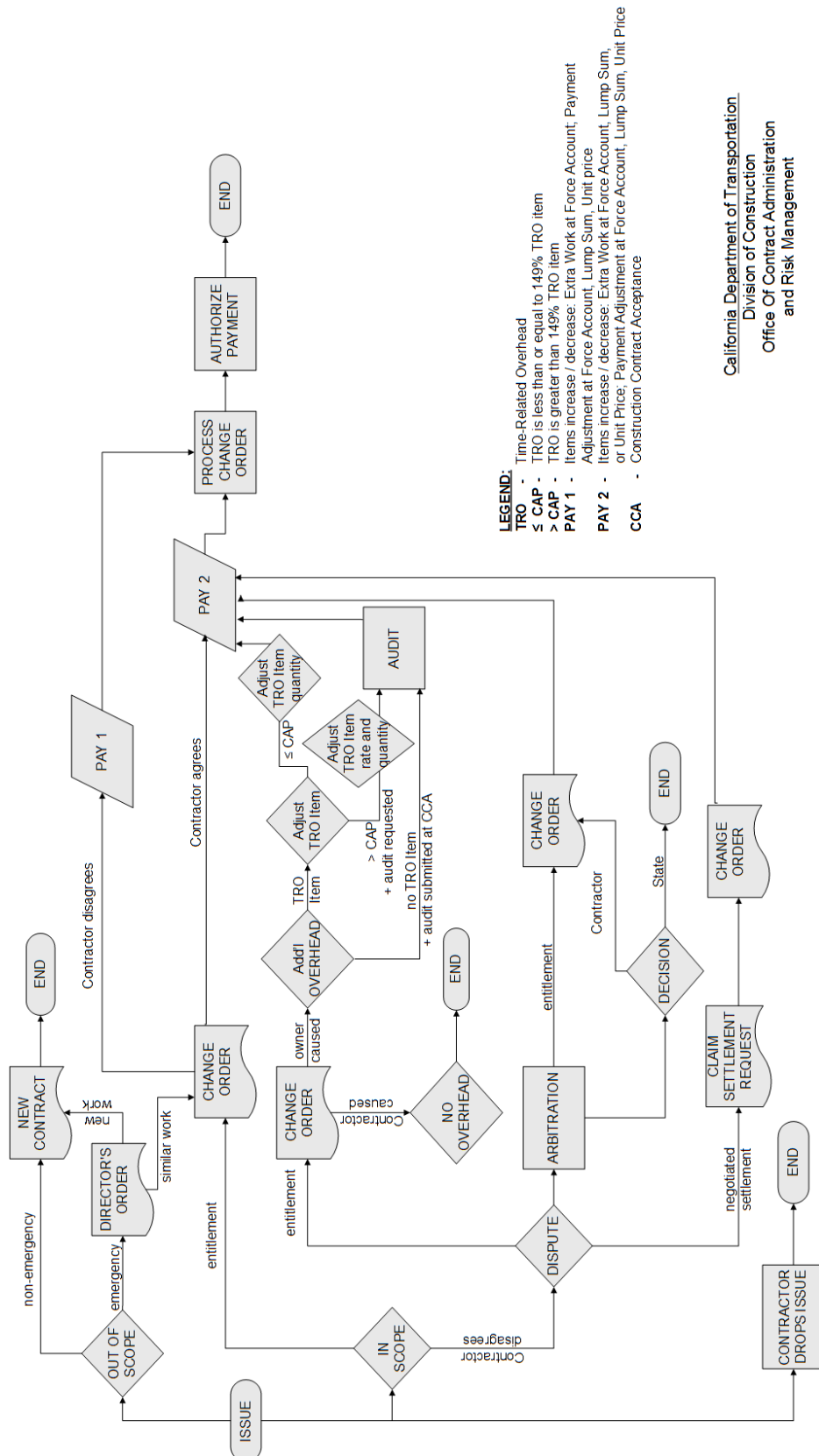
- Determine the total decrease in construction cost. This decrease will be the sum of increases and decreases in bid items at bid item unit prices, payment adjustments including work-character change adjustments, and extra work at agreed price. Exclude the time-related overhead item from the construction 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 VECP 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:

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

Figure 5-3.1. Change Order Decision-Making Flowchart



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