STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

| MANUAL CHANGE TRANSMITTAL | | NO. 18-4 |
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| TITLE: Department of Transportation *Construction Manual* | APPROVED BY: FOR Rachel Falsetti Chief, Division of Construction | DATE ISSUED: **6-20-18** |
| SUBJECT AREA Sections 2-102D, 4-7303, 5-003, 5-101B, 5-102C, 5-102D, 5-102E, 5-104C, 7-102B (2) of the *Construction Manual* | ISSUING UNIT Division of Construction | |
| SUPERSEDES Construction Policy Bulletins 17-1, 17-5, 17-9, and 17-10 | 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. Updates 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. Make sure to include references and background. Specific changes are enumerated below:

**Section 2-1, "Safety"**

• Section 2-102D, "Resident Engineer," adds guidance for preconstruction conference discussions, including the contractor's obligation to contact the local public health service department, as well as confirming that the contractor submits their project *Code of Safe Practices* and an Illness and Injury Prevention Program to the resident engineer. The change addresses review, discussion, and responsibilities concerning public health conditions such as Valley Fever, in accordance with Sections 7-1.02K(6)(a), "General," 7-1.05C, "Other," and 8-1.03, "Preconstruction Conference," of the *Revised Standard Specifications* and the California Code of Regulations, Title 8, Section 1509 (8 CCR 1509), "Injury and Illness Prevention Program."

**Section 4-73, "Concrete Curbs and Sidewalks"**

• Section 4-7303, "During the Course of Work," adds guidance for smart level use and completion of compliance inspection reports. Requires completion of ADA project certification form prior to construction contract acceptance. Incorporates reference to the *Permanent Pedestrian Facilities ADA Compliance Handbook.*

• The following Construction Policy Bulletins have been incorporated into this section and Section 5-1, "Project Records and Reports," of the *Construction Manual*:

- CPB 17-1, "Permanent Pedestrian Facilities Construction Inspection Documentation"
- CPB 17-5, "Permanent Pedestrian Facilities Inspection Form Updates"
- CPB 17-9, "Americans with Disabilities Act (ADA) Construction Compliance Certification"

**Section 5-0, "Conduct of the Work"**

• Section 5-003, "Preconstruction Conference With the Contractor," adds guidance to discuss during preconstruction conferences any unusual project features including safety issues such as public health conditions. The change addresses notice of public health conditions such as Valley Fever, in accordance with Sections 7-1.02K(6)(a), "General," 7-1.05C, "Other," and 8-1.03, "Preconstruction Conference," of the *Revised Standard Specifications* and the California Code of Regulations, Title 8, Section 1509 (8 CCR 1509), "Injury and Illness Prevention Program."

**Section 5-1, "Project Records and Reports"**

• Section 5-101B, "Construction Forms," updates the list of forms to include Forms TL-0624, "Inspection Release Tag," and TL-0625, "Materials Suitability Tag," from Materials and Engineering Services collected by resident engineers to show that materials have been deemed suitable for a project.

• Section 5-101B, the following forms were added to the list:

- Form CEM-2301, "Temporary Pedestrian Access Route Compliance Inspection Report," which the resident engineer uses to document initial inspection and Americans with Disabilities Act (ADA) compliance
- Form CEM-2302, "Temporary Pedestrian Access Route Weekly Inspection Report," which the resident engineer uses to document weekly inspection and ADA compliance
- Form CEM-2311, "Temporary Pedestrian Access Route Contractor Compliance Report," which the resident engineer uses to initially document that a temporary pedestrian access route is ADA compliant
- Form CEM-2312, "Temporary Pedestrian Access Route Contractor Weekly Report," which the contractor uses to document ADA compliance
- Form CEM 5773, "Americans with Disabilities Act (ADA) Project Compliance Certification," which the resident engineer uses to certify compliance of a project's pedestrian facilities
- Form CEM 5773CH, "Curb Ramp (Case CH) Americans with Disabilities Act (ADA) Compliance Inspection Report," documents inspection and compliance of Case CH curb ramps
- Form CEM-5773CM, "Curb Ramp (Case CM) Americans with Disabilities Act (ADA) Compliance Inspection Report," documents inspection and compliance of Case CM curb ramps
- Form CEM-5773FG, "Curb Ramp (Case F or G) Americans with Disabilities Act (ADA) Compliance Inspection Report," documents inspection and compliance of Case F or G curb ramps
- Form CEM-5773NSPL, "Curb Ramp Non-Standard Plan - Parallel) Americans with Disabilities Act (ADA) Compliance Inspection Report," documents inspection and compliance of non-standard plan, parallel curb ramps
- Form CEM-5773NSPP, "Curb Ramp Non-Standard Plan - Perpendicular) Americans with Disabilities Act (ADA) Compliance Inspection Report," documents inspection and compliance of non-standard plan, perpendicular curb ramps
- Form CEM-5773P, "Parking Americans with Disabilities Act (ADA) Compliance Inspection Report," documents inspection and compliance of accessible parking spaces
- Form CEM-5773PW, "Passageway Americans with Disabilities Act (ADA) Compliance Inspection Report," documents inspection and compliance of pedestrian passageways

• In Section 5-101B, the following form was deleted:

- Form CEM-2510, "Truck Owner Operator Certification of Ownership," to certify ownership of a vehicle used on a project, is no longer used

• In Section 5-101B, the following forms, for which guidance is listed in Section 4-73, "Concrete Curbs and Sidewalks," of the *Construction Manual*, were renumbered:

- Form CEM-5773ADE, "Curb Ramp (Case A, D, or E) Americans with Disabilities Act (ADA) Compliance Inspection Report," documents compliance of Case A, D, or E curb ramps. Form CEM-3673C previously was Case A only
- Form CEM-5773B, "Curb Ramps (Case B) Americans with Disabilities Act (ADA) Compliance Inspection Report," which documents inspection and compliance of Case B curb ramps, was initially Form CEM-3673D
- Form CEM-5773C, "Curb Ramp (Case C) Americans with Disabilities Act (ADA) Compliance Inspection Report," which documents inspection and compliance of Case C curb ramps, was initially Form CEM-3673E
- Form CEM-5773DW, "Sidewalk at Driveway Americans with Disabilities Act (ADA) Compliance Inspection Report," which documents inspection and compliance of sidewalks at driveways, was initially Form CEM-3673B
- Form CEM-5773SW, "Sidewalk Americans with Disabilities Act (ADA) Compliance Inspection Report," which documents inspection and compliance of sidewalks, was initially Form CEM-3673A

• Section 5-102C, "Description of Categories," changes resident engineers' files:

- In Category 6, "Safety," file a copy of the contractor's Illness and Injury Preventions Program and any documents required by the California Code of Regulations, Title 8, Section 1509 (8 CCR 1509), "Injury and Illness Prevention Program."
- In Category 19, "Hazardous Waste and Hazardous Materials," delete "6 year minimum" for record retention requirements for aerially deposited lead
- In Category 23, "Temporary Pedestrian Access Routes," file inspection and compliance records on temporary pedestrian access routes and facilities
- In Category 54, "Deductions From Payment to Contractor," delete reference to Section 3-512, "Construction Surveys," of the *Construction Manual*
- In Category 57, "Permanent Pedestrian Facilities," file Americans with Disabilities Act compliance inspection forms, pre- and post-construction surveys, and ADA project compliance certification

• Sections 5-102D and 5-102E updated list of categories by name, specifically Category 23 and 57
• Section 5-104C, Table 5-1.1, "Construction Records Retention Schedule," adds a project record category for temporary pedestrian access routes and one for permanent pedestrian access routes
• New terms include:

- temporary pedestrian access routes
- permanent pedestrian facilities

• The following Construction Policy Bulletins have been incorporated into Section 5-1, "Project Records and Reports," of the *Construction Manual*:

- CPB 17-1, "Permanent Pedestrian Facilities Construction Inspection Documentation"
- CPB 17-5, "Permanent Pedestrian Facilities Inspection Form Updates"
- CPB 17-9, "Americans with Disabilities Act (ADA) Construction Compliance Certification"
- CPB 17-10, "Temporary Pedestrian Access Routes Inspection Documentation"

**Section 7-1, "Environmental Rules and Requirements"**
• Section 7-107B (2), "Hazardous Waste Concentrations," removes from the last paragraph guidance to retain aerially deposited lead records for "(6 years minimum)" to conform to Table 5-1.1, "Construction Records Retention Schedule," which calls for permanent retention.

| Section(s) | Remove Old Page(s) | Insert New/Revised Page(s) |
|---|---|---|
| Chapter 2, Section 102D "Resident Engineer" preconstruction conference should include discussion of public health conditions | 2-1.i-2-1.10 | 2-1.i-2-1.10 |
| Chapter 4, Section 7303, "During the Course of Work," adds details for inspection and compliance with permanent pedestrian facilities and notes new *Permanent Pedestrian Facilities ADA Compliance Handbook* | 4-73.i-4-73.5 | 4-73.i-4-73.5 |
| Chapter 5, Section 003, "Preconstruction Conference With the Contractor," address public health in safety issues discussion with contractor | 5-0.i-5-0.10 | 5-0.i-5-0.10 |

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| Chapter 5, Section 101B, "Construction Forms," added forms for inspection and compliance of temporary pedestrian access routes; renumbered and added forms for permanent pedestrian facilities;<br>in Section 102C, updated descriptions in Categories 6, 19, 23, 54, 57; update Table 5-1.1 to show permanent retention of hazardous waste records<br>in Section 102D and 102E, updated lists of category names<br>in Section 104C, Table 5-1.1, added categories for temporary pedestrian access routes and permanent pedestrian facilities | 5-1.i-5-1.81 | 5-1.i-5-1.81 |
| In Chapter 7, Section 107B (2), delete require to retain aerially deposited lead records for 6 years (requirement is permanent) | 7-1.i-7-1.39 | 7-1.i-7-1.39 |

# Chapter 2 Safety and Traffic

## Section 1 Safety

# Section 1 Safety



## 2-101 General



Employers must comply with occupational safety and health standards established by federal and state laws. State laws require all employers to provide a safe place of employment, reasonably free from danger to life or health and to maintain a written Injury and Illness Prevention Program (IIPP).

The *Caltrans Safety Manual*, Chapter 1, is the official Caltrans IIPP. The *Caltrans Safety Manual* lists safety policies and procedures, provides a centralized reference to operational safety advisories, and standardizes procedures for reporting employee occupational injuries, vehicular accidents, and claims against Caltrans. The construction *Code of Safe Practices* (COSP), along with the *Caltrans Safety Manual*, defines standard safety practices for employees involved with inspecting construction activities and operations. The construction COSP is applicable only to Caltrans personnel performing duties in accordance with their job description. The contractor is responsible for means and methods to complete the work, is required to provide for public safety, and to provide safe access to Caltrans employees. Contractors and subcontractors follow the prime contractor's IIPP and COSP. If a subcontractor's IIPP and COSP are more stringent, the subcontractor must follow its own IIPP and COSP.

Federal Highway Administration requirements, the *Standard Specifications*, and contract standard special provisions establish compliance with safety regulations as a contract requirement.

## 2-102 Duties and Responsibilities



Districts are responsible for safety on Caltrans construction projects.

### 2-102A District Deputy Director for Construction

The district deputy director for construction should confirm that funding is adequate to maintain a training program to acquaint Caltrans construction personnel with the basics of construction safety. This training should take place a minimum of 4 hours per employee per year and be included in the district's annual training plan. Safety training includes orientation for employees when they receive their first construction assignment. Employees returning to construction following an absence of 5 years or more should also receive the safety orientation.

Recent California laws have added a responsibility requiring supervisors to ensure that subordinates are implementing all safety requirements and are provided with the tools and the training necessary to protect them from being exposed to any potentially unsafe condition.

### 2-102B District Construction Safety Coordinator

The district's construction safety coordinator (CSC) should act as a technical advisor to construction field personnel. The CSC should also do the following:

- Understand Caltrans safety policies; contract specifications; and the California Department of Industrial Relations, Division of Occupational Safety and Health

(Cal/OSHA), California Code of Regulations, Title 8 (CCR Title 8), "Industrial Relations." Cal/OSHA is the state enforcing agency for safety regulations.

- Make unannounced site visits to ongoing construction projects on a routine and rotating basis. The CSC should also respond promptly to requests from the resident engineer or other Caltrans staff to visit projects to review project safety concerns.
- Collaborate with the resident engineer about specialized contract work, such as full freeway closures and unusual or complex operations including blasting and confined space operations. The CSC should visit the project periodically to observe the contractor's overall efforts, answer questions, or look at specific areas when the engineer requests it. The frequency of the visits will depend upon the type and complexity of the work.
- Write a safety audit of each visit to the project site, giving the resident engineer the original safety audit and copies to the construction engineer and the construction manager for review and follow-up.
- Be the district's primary contact with the Division of Construction safety engineer and the local Cal/OSHA representative, except for emergencies involving imminent hazards. Refer to Section 2-103A, "Imminent Hazards," of this manual for more information. Maintain regular communication with local Cal/OSHA representatives.
- Administer the district's construction safety training program, structured to meet district needs as mentioned in Section 2-102A, "District Deputy Director for Construction," of this manual, including the mandatory heat illness prevention training required annually for all field staff and the mandatory hazard communication training offered every 2 years.
- Serve as advisor for the construction safety portion of the preconstruction conference.

### 2-102C Construction Engineer

The construction engineer should review construction projects to verify that the resident engineer is monitoring the contractor's construction safety program. The construction engineer should review the CSC's safety audit and confirm that the resident engineer addresses, adequately closes, and documents closure of items mentioned in the safety audit. The construction engineer confirms that all deficiencies in the field are abated, signs the safety audit, and sends it to the construction manager for review and signature.

Construction engineers are responsible for the performance of employees under their supervision. They provide them with the training, personal protective equipment, and tools necessary to protect themselves from hazards. As part of the training, construction engineers should stress that under no circumstances should any Caltrans employees instruct the contractor how to correct a deficiency, either orally or in writing. They advise, correct, and reprimand employees for safety violations and should document their reviews of employee safety programs.

### 2-102D Resident Engineer

The resident engineer verifies that the contractor complies with all aspects of the contract, including applicable safety orders found in the CCR Title 8. To accomplish this, do the following:

- Identify unsafe conditions and the specific contract provisions or CCR Title 8 regulations involved.

- Assign a project safety coordinator if needed.
- Involve the district CSC in specialized contract work such as full freeway closures, blasting operations, confined space operations, multi-crane picks of large loads, or other unusual or complex contractor operations. Consult with the CSC to interpret Cal/OSHA regulations.
- Inform the CSC how unsafe conditions identified in the safety audit were resolved. Complete written documentation of the review and abatement results and file it with other project documents.
- In a special safety audit using Form CEM-4601, "Assistant Resident Engineer's Daily Report," document the construction safety activities of both the contractor and Caltrans project personnel.
- At least weekly, complete a project safety audit and file it in Category 6, "Safety," of the project records. Use Form CEM-0606, "Construction Safety Checklists," to support the project safety audit.
- Using normal contract administration procedures, verify that the contractor complies with Caltrans contract requirements and CCR Title 8.
- Develop a project-specific COSP document for Caltrans employees addressing all operations in the project for each contract and all contractor operations. Make it accessible to workers in the field, and confirm all project personnel have read and signed it. Keep the COSP in a conspicuous location at the job site office. Refer to Section 2-106A, "Caltrans Division of Construction Code Safe Practices," of this manual for additional guidance on developing a COSP. A baseline COSP document is on the Division of Construction website:

  http://www.dot.ca.gov/hq/construc/safety/

- Discuss project safety at the preconstruction conferences and document safety discussions in the project files throughout the duration of the project. Cover at least the following items:

  1. Address new Cal/OSHA regulations that might be applicable to the contract.
  2. Discuss requirements for contractors to make available the safety data sheets (SDS) for chemicals or construction materials used on the construction site so that Caltrans employees can determine their potential risk from contractor use of products requiring SDS and verify that Caltrans employees have safe access. The SDS may require provisions for eyewash stations, respirators, and other devices.
  3. Discuss other safety items that may pertain to the contract, such as blasting operations, work in confined spaces, personal protective equipment, backup alarms, traffic control, shoring and tunneling, and access to elevated work.
  4. Discuss known public health issues and the contractor's obligation to contact the local public health service department pursuant to Section 7-1.02K(6), "Occupational Safety and Health Standards," of the *Standard Specifications*.

- Before starting work, confirm that contractors do the following:

1. Submit an IIPP and the project Code of Safe Practices to the resident engineer, as required by the California Code of Regulations, Title 8, Section 1509 (8 CCR 1509), "Injury and Illness Prevention Program."
2. Submit permits required before starting certain work, such as: trenches or excavations 5 feet or deeper in which any person is required to descend; demolition over 36 feet in height; falsework erection and scaffolding in excess of 36 feet in height; confined spaces; or mining and tunneling.
3. Notify the regional Underground Service Alert. Refer to Section 4-1902A, "Roadway Excavation," of this manual.

- During the course of work, verify that contractors do the following:

1. Report to the resident engineer any disabling or fatal accidents.
2. Notify the resident engineer immediately if Cal/OSHA arrives on the project for a site visit. As the site owner, Caltrans staff needs to participate in all Cal/OSHA site visits.

2-102E Project Safety Coordinator

The resident engineer may delegate safety responsibilities to an assistant resident engineer who will act as the project safety coordinator. This delegated work will usually be in addition to other assigned duties, but may be full time on large contracts. If there is significant structures work, the resident engineer may need to coordinate with the structures representative to have a structures project safety coordinator assigned for the structures specialty work.

The project safety coordinator acts as a safety advisor to Caltrans project personnel. The project safety coordinator should monitor and document contractor compliance with safety requirements, keep the resident engineer informed, and do the following:

- Monitor ongoing operations on the job site daily.
- Inform the contractor, verbally and in writing, of any operation or activity that does not comply with Caltrans contract requirements or Cal/OSHA regulations. Provide reference to the *Standard Specifications* or the specific regulation violated. Use Form CEM-0606, "Construction Safety Checklists," to find the appropriate reference. These checklists are on the Division of Construction website:

  http://www.dot.ca.gov/hq/construc/forms.htm

- Prepare a weekly project safety audit and file it in Category 6, "Safety," of the project records.

2-102F Project Staff

Caltrans does not intend that the resident engineer and the project safety coordinator do all monitoring of the contractor's construction safety activities. All construction personnel should consider the safety of the operations in conjunction with their normal inspections and to confirm that they have safe access to perform their duties. Inspectors—closest to and most familiar with the field operations—should do the following:

- Be familiar with construction zone traffic management, Cal/OSHA regulations, Caltrans safety policies, and specifications. Use Form CEM-0606 to monitor the contractor's compliance with safety regulations and specifications.

- Routinely monitor, document, and discuss contract safety requirements with the contractor.
- Request assistance from the project safety coordinator or the district CSC if uncertain about a regulation's requirements.

## 2-103 Managing Safety Hazards



In carrying out Caltrans' responsibilities for verifying safety compliance as a contract requirement, use the following guidelines.

### 2-103A Imminent Hazards

Imminent hazards are work conditions that, if not corrected, could result in an accident causing severe or permanently disabling injury or death. When an imminent hazard is found or the contractor permits repeated occurrences of a hazardous condition, the Caltrans representative should take the following steps:

- Advise the contractor verbally of the condition and the need for correction.
- Remove all Caltrans employees from the hazardous exposure.
- If the contractor complies, document the incident in the project's safety audit with appropriate references in Form CEM-4501, "Resident Engineer's Daily Report." Document the unsafe work condition, discussions with the contractor, and how and when the unsafe condition was corrected.
- If the contractor does not comply, temporarily suspend the affected operation. Confirm the suspension order in writing to the contractor.
- Document the incident and the action taken in the resident engineer's daily report. Document the unsafe work condition, discussions with the contractor, and how and when the unsafe condition was corrected.

Whenever it is necessary to suspend a contractor's operation, notify the CSC, resident engineer, and the construction engineer of the hazardous condition and the actions taken. Verify that all contractual remedies to address the contractor's safety issues have been exhausted and documentation fully prepared and filed before considering notifying Cal/OSHA. Involve the CSC as a checker in the process to verify nothing was overlooked. Get permission from the construction manager before calling Cal/OSHA. These actions will limit potential multi-employer liability against Caltrans. Notify the Division of Construction safety engineer about the actions taken. Place safety audits, including all details leading up to the suspension and copies of orders, in Category 6, "Safety," of the contract files.

### 2-103B Serious Hazards

Serious hazards are work conditions that, if not corrected, could result in a disabling injury and possibly death or develop into an imminent hazard. When a serious hazard is found to exist, the Caltrans representative should take the following steps:

- Advise the contractor orally of the condition and the need for timely correction. If appropriate, set a compliance deadline.
- Remove all Caltrans and consultant employees from the hazardous exposure.
- If the contractor fails to provide timely correction, consider ordering a temporary suspension of the affected operation. Confirm the suspension order in writing to the contractor.

- Document the incident in the project's safety audit with appropriate references in the resident engineer's daily report. Document the unsafe work condition, discussions with the contractor, and how and when the unsafe condition was corrected.

2-103C Minor or Nonserious Conditions

Minor or nonserious conditions are ones that could result in minor injuries or might be classified as minor threats to health. When a nonserious or minor condition is found to exist, the Caltrans representative should take the following steps:

- Advise the contractor orally of the condition and the need for correction.
- Remove all Caltrans and consultant employees from the hazardous exposure.
- Document the incident in the project's safety audit. Document the unsafe work condition, discussions with the contractor, and how and when the unsafe condition was corrected.
- If the contractor fails to correct the condition or permits a repeated occurrence, notify the resident engineer and CSC.

**2-104 Division of Occupational Safety and Health**

## 2-104 Division of Occupational Safety and Health

This section provides information about the organization of Department of Industrial Relations, Cal/OSHA, its enforcement powers, and its inspections.

2-104A Authority and Responsibility

Caltrans enforces contract requirements, not safety orders. The law requires Cal/OSHA to enforce safety orders and promote safe workplaces and practices. Cal/OSHA achieves this function through three separate agencies—a rule-making function, an enforcement function, and an independent appeals board, described as follows:

- The Occupational Safety and Health Standards Board (Standards Board) adopts, amends, and repeals safety orders. Both state and federal law require that the safety orders be no less restrictive than federal Occupational Safety and Health safety orders.
- Cal/OSHA has a number of branches responsible for administering the safety orders as adopted by the Standards Board.
- Citations issued by Cal/OSHA for violations may be appealed to the Occupational Safety and Health Appeals Board for a hearing and, in rare instances, appealed to a superior court.

To allow Cal/OSHA to accomplish its mission, the California Labor Code gives Cal/OSHA the authority to enter and inspect any place of employment to ensure that the contractor is observing safe conditions and practices. If necessary, this right of entry can be enforced with a warrant.

2-104B Citations and Civil Penalties

If Cal/OSHA uncovers and documents unsafe conditions or work practices, it may issue citations. The severity of the violations cited determines the civil penalties, and the penalty amount is based on procedures established in the regulations. Public agencies are not exempt from these penalties.

Violations—classified as regulatory, general, serious, willful, or repeat—result in monetary penalties. Failing to abate hazards or making false statements also mandates penalties.

Under the multi-employer liability clause, Cal/OSHA has authority to cite all employers who are observed as having employees exposed to a hazard at a multi-employer worksite. Cal/OSHA identifies an exposing, creating, controlling, or correcting employer (defined in next subsection) for each unsafe condition found. It bases employers' degree of responsibility on their awareness of the condition, the foreseeability of the condition, and reasonable steps they take to protect employees.

In addition to receiving civil penalties, both Caltrans and contractor managers can be held criminally responsible. To be held criminally responsible, the manager must knowingly or negligently allow a serious violation, repeatedly violate safety orders, or directly refuse to correct a known unsafe condition. Criminal penalties can be as severe as 6 months to 1 year in jail and may include fines.

Occasionally, Cal/OSHA will issue an informational memorandum when it encounters a condition or potential condition to which no employee has been exposed, but if an employee were to be exposed, a safety violation would exist. Cal/OSHA always classifies a violation of an informational memorandum as a willful violation.

### 2-104C Classes of Employers

California recognizes four different types of employers, any of which can be cited by Cal/OSHA for safety violations. The classification can result in more than one employer cited for the same violation. The California Labor Code identifies these employer categories:

***Exposing employer***—the employer whose employees were exposed to the hazard.

***Creating employer***—the employer who actually created the hazard.

***Controlling employer***—the employer who was responsible by contract or through actual practice for the safety and health conditions on the worksite, the one who had the authority for ensuring the hazardous condition was corrected.

***Correcting employer***—the employer responsible for correcting the hazard.

On a standard contract put out to bid with plans and specifications, the prime contractor is the controlling employer in accordance with Section 7-1.02K(6)(a), "General," of the *Standard Specifications*.

Caltrans may be the exposing employer if Cal/OSHA observes that Caltrans employees were exposed to a hazard and the employees failed to remove themselves from exposure to the hazard or ask the contractor for correction to provide safe access to the work. Taking a proactive role in addressing and documenting safety and communicating it to the contractor would help create a common understanding, emphasize Caltrans' priority, and help in protecting the state from being cited under any of the above categories.

### 2-104D Procedures During Division of Occupational Safety and Health Inspections

This section describes what takes place during a Cal/OSHA inspection and what resident engineers and their assistants should do while it is carried out.

#### *2-104D (1) Elements of a Cal/OSHA Inspection*

Every Cal/OSHA inspection has three elements: the opening conference, the walk-through inspection, and the closing conference.

Opening conference—The Cal/OSHA inspector requests the highest level of onsite management, makes introductions, and states the reason and purpose of the inspection. The inspector asks questions about the employer, such as the size of the organization,

number of employees on site, addresses, and phone numbers. The inspector may also ask about the employer's IIPP, emergency contact numbers, and the addresses of the medical facilities closest to the job site. The inspector asks the employer for permission to make a walk-through site inspection and invites the employer to join the inspection.

Walk-through inspection—The inspector will tour the site observing the work in progress, condition of the site, and work practices followed. The inspector may interview employees about their training, work procedures, and protective equipment. During the inspection, the inspector may take photographs and measurements. If it is a post-accident investigation, the inspector identifies and interviews witnesses and may request contact information such as name, address, and phone number. The inspector notes violations observed, findings that will probably result in a citation during the closing conference.

Closing conference—After completing the walk-through inspection, the inspector meets with managers, supervisors, and employee representatives to discuss the violations and proposed citations. The inspector bases citations on the observations and on manager, supervisor, and employee statements. The inspector may hold this conference immediately after the walk-through inspection or defer it. Although the conference is usually conducted in person, the inspector may conduct it on the phone.

*2-104D (2) Participation in the Inspection*

As a matter of policy, Caltrans cooperates and participates with Cal/OSHA. Caltrans employees are not required to make any statement that may be harmful to their interests or those of Caltrans. If uncomfortable with answering any questions, politely decline. In the event of an inspection, do the following:

Opening conference—Notify the CSC that Cal/OSHA is planning to inspect. If the CSC is not available, notify the district safety officer and construction engineer of the pending inspection. If the CSC or safety officer can arrive in a reasonable length of time, request a delay of the walk-through inspection until their arrival. The resident engineer or representative should participate in the inspection, and the construction engineer should also participate.

Walk-through inspection—Participate in and document the inspection. Record what areas were inspected, who was interviewed, and what violations the Cal/OSHA inspector mentioned. For Caltrans records, take the same photographs and make the same measurements as the Cal/OSHA inspector.

Closing conference— Participate in the closing conference. The construction engineer or another representative should also participate. If the district safety officer or CSC is not present, insist that the closing conference be delayed until one of them can attend. If the inspector proposes citations, remain open and noncommittal.

*2-104D (3) Procedures if Citations are Received*

If you receive citations by personal delivery or mail, take the following actions:

- Notify the district safety officer, CSC, and construction engineer that a citation has been served.
- Fax a copy of the citation to the Office of Health and Safety in the Division of Safety and Management Services at (916) 227-2639 or email a copy of the citation to:

  Safety.Suggestions.HQ@dot.ca.gov
- For citations related to structure work, confirm structure representatives notify Structure Construction.

Work with the district safety officer, CSC, and the Office of Health and Safety in the Division of Safety and Management Services to resolve citations. If necessary, arrange for legal support.

## 2-105 Emergency Contracts

2-105 Emergency Contracts

Emergency contracts (refer to Section 5-501, "General," of this manual) present additional safety concerns for Caltrans. Cal/OSHA could consider Caltrans as the controlling employer for this type of work because Caltrans is defining the work and agreeing to the means and methods to complete the work.

Section 5-506, "Initial Stages of the Project," of this manual discusses documenting all discussions regarding safety.

Section 5-508, "Prosecution of the Work," of this manual discusses prosecution of the work and requires verification that the proposed means and methods are safe and effective.

## 2-106 Caltrans-Specific Safe Practices

2-106 Caltrans-Specific Safe Practices

Every employee has the responsibility to be informed of and follow the specific policies and practices discussed in the *Caltrans Safety Manual*.

### 2-106A Caltrans Division of Construction Code of Safe Practices

California Code of Regulations, Title 8, Section 1509, "Injury and Illness Prevention Program," requires that every employer adopt a written COSP. Verify that one is prepared for every project. Verify that it includes project-specific items. If unique contract safety items are not addressed in the COSP, consult with the CSC to have additional COSPs prepared for the project and included in the project file. If the contractor has developed a project-specific COSP item that they request Caltrans amend into the Caltrans COSP, consult with the CSC. The project file should contain documentation that all employees have read and understood the COSP.

### 2-106B Tailgate Safety Meetings

Cal/OSHA safety orders require tailgate or toolbox safety meetings. As stated in 8 CCR 1509, the meetings must be held at least once every 10 working days.

Construction engineers or resident engineers should conduct a tailgate safety meeting with all employees who are new to the project to discuss the project and potential safety issues that might arise because of contractor operations.

Tailgate safety meetings should be project-specific. Topics to discuss might include: upcoming work; specialty work, such as crane critical picks and confined space entry; review of incidents; or the most recent project safety audit.

Under Cal/OSHA safety orders, contractors and subcontractors are required to hold their own tailgate safety meetings for the benefit of their own employees.

Section 2-05, "Tailgate Safety Meetings for Field Personnel," of the *Caltrans Safety Manual* contains instructions for tailgate meetings. Follow that section and district policy.

### 2-106C High-Visibility Garment

The following are required for all Caltrans staff during field operations:

- For daytime use, a minimum of a Class 2 garment is required. Its attached label must identify the garment as Class 2 and should clearly state that it is an ANSI 107-2010

garment (ANSI 107-2004 garments are also compliant in this and requirements below).

- For nighttime use, a Class 3 garment is required. A Class 3 garment may be used in the daytime. The following options meet Class 3 requirements:
  1. A Class 3 "sleeved" vest with the ANSI 107-2010 Class 3 label.
  2. A newer Caltrans rain jacket with an attached ANSI 107-2010 Class 3 label.
  3. A Class 3-equivalent garment—a Class 2 vest with the ANSI 107-2010 label worn with Class E pants.

2-107 Safety Precautions for the Public in Construction Areas

## 2-107 Safety Precautions for the Public in Construction Areas

Construction sites receive many visitors, including nonconstruction staff from Caltrans; personnel from federal, state, and local agencies such as the Department of Water Resources, Department of Fish and Wildlife, and Air Quality Management District; property or business owners; and members from the media. All visitors not associated with the contractor should follow Caltrans personal protection equipment requirements and construction *Code of Safe Practices* requirements unless their agency's is more stringent. Resident engineers and assistant resident engineers should monitor for potential hazards to the general public and work with the contractor to take reasonable precautions to exclude the public from the construction area. Provide fencing, if practical, and "no trespassing" signs at sites that have potential dangers.

2-108 Hazardous Materials

## 2-108 Hazardous Materials

If unanticipated hazardous materials are encountered on the project, notify the district hazardous waste coordinator who will advise you and may assist in the disposal procedures. The coordinator may also suggest extra safety measures to take to protect the public and workers.

Refer to Chapter 7, "Environmental Stewardship," of this manual for additional guidelines for dealing with hazardous waste.

# Section 73 Concrete Curbs and Sidewalks

Section 73
Concrete Curbs
and Sidewalks

## 4-7301 General

4-7301
General

This section provides guidelines for inspecting concrete curbs, sidewalks, and their appurtenances, such as gutter depressions, island paving, curb ramps, and driveways. For specifications about the construction of concrete curbs and sidewalks, refer to Section 73, "Concrete Curbs and Sidewalks," of the *Standard Specifications*.

For information on the production and transportation of concrete, refer to Section 4-90, "Concrete," of this manual.

## 4-7302 Before Work Begins

4-7302
Before Work
Begins

During this preliminary review, take the following steps:

- Review the contract for details about the project's concrete curbs and sidewalks, and compare these details with conditions in the field. As appropriate, review sheets A87A, A88A, and A88B of the *Standard Plans*.
- Before constructing any curbs, gutters, or sidewalks other than those shown on the plans, review the *Highway Design Manual* to determine the policy. Note that Design Information Bulletin (DIB) 82, "Pedestrian Accessibility Guidelines for Highway Projects," includes Americans with Disabilities Act (ADA) design guidance on these facilities. Make sure curbs, gutters, or sidewalks:
  1. Conform to the current policy of replacing existing facilities.
  2. Comply with agreements such as Maintenance Agreements.
  3. Provide proper drainage.
- During the preconstruction conference, include a discussion on temporary and permanent pedestrian access facilities such as sidewalks and curb ramps, stressing contract compliance of these features (such as dimensioning, slopes) to ensure conformance with ADA design and legal requirements. Discuss the importance for contractor quality control on construction operations for these elements during forming and concrete placement operations to ensure compliance. Note that the contractor is required to check forms prior to placing concrete to verify that dimensioning and slope requirements will be met. Remind the contractor that failure to achieve compliance will require corrective action or removal and replacement, refer to Section 5-1.30, "Noncompliant and Unauthorized Work," of the *Standard Specifications*.
- Discuss the construction operation with the contractor. Review any project-specific traffic handling plans. Determine whether the contractor has considered the public's convenience, a consideration required by Section 7-1.03, "Public Convenience," of the *Standard Specifications* and by applicable sections of the special provisions. For information on public convenience, refer to Section 3-702A, "Convenience of the

Public and Public Traffic," of this manual. Advise the contractor of any necessary modifications to the operation.

- Discuss survey staking requests with the district Survey Unit, including the positional accuracy of stakes necessary to construct these facilities and any special staking needs. Make a general check of the layout as staked, including the location of gutter depressions, curb ramps, and driveways. Also review the stakes for accuracy. Verify grades will accommodate finished slope requirements. If layout and grades will not meet requirements, process a change order to correct the problem in consultation with the designer and district ADA engineer as needed to ensure ADA compliance.
- Where the contract includes a preconstruction and post-construction survey bid item, make sure the contractor's licensed preconstruction survey has been completed and that no conflicts in achieving design dimensioning and slope requirements have been identified. If layout or grades will not meet requirements, process a change order to correct the problem in consultation with the designer and district ADA engineer as needed to ensure ADA compliance.
- Make sure an approved gradation for the combined aggregate for minor concrete is on file in the project records. Note that any testing of minor concrete is at the resident engineer's discretion. Normally, testing is not necessary for minor concrete produced at a plant with a good history of producing concrete for Caltrans work. For minor concrete from a source that has not been previously used on the project, require the contractor to submit a certificate of compliance.
- Examine the subgrade to confirm the following:
    1. The subgrade has been constructed to the proper elevation and cross section. As specified, require the contractor to check the subgrade with a template.
    2. The foundation has been watered and compacted. When the subgrade is constructed in a structural layer, the compaction required in such a layer usually applies. When the subgrade is original ground outside of those areas where 95 percent compaction is required, no specific compaction value is required; however, to obtain a stable foundation, a watering and compacting operation is required. Unless the contractor chooses to allow soft or spongy areas to dry before placing concrete, order their removal.
    3. The subgrade is wet immediately before placing concrete.
- Ensure the contractor has implemented appropriate best management practices for washing out concrete mixer trucks.

**4-7303 During the Course of Work**

## 4-7303 During the Course of Work

Once work begins, take these steps:

- Examine the forms to confirm the following:
    1. They are smooth on the side next to the concrete.
    2. They have a true, smooth upper edge.
    3. They are rigid enough to withstand the pressure of fresh concrete without distortion. Order the replacement of forms that will not produce an end product within specified tolerances.

4. They are coated with form oil as specified.
5. They have the specified full depth.
6. They are placed to the lines and grades shown on the control stakes. Also, verify that correction adjustments of any unsightly changes in vertical or horizontal alignment are made. Adjustment from staked grades is sometimes necessary near joints with existing curbs or sidewalks provided dimensions and slope requirements are achieved. In some limited instances, constraints may prevent strict compliance in the conforming area, for example, areas joining new curb ramp landings to existing sidewalks. In these instances, the conforming area is to meet ADA requirements to the extent practical within the scope of the project.

- Verify that gutters will drain. When new curbs are to be joined with existing facilities, check the existing elevations against the planned grades.
- Make sure that curb and sidewalk construction conforms to any construction staging specified in the contract.
- Finished appearance is important and is noticeable by the public. Existing edges of pavement and sidewalks or existing pavement surfaces should not be used directly to establish a grade line for curbs.
- Check that all dowels and reinforcements are in place.
- In fixed-form construction, the contractor may choose to use anchor bolts instead of dowels. When the bolts are equivalent to the dowels, approve the use of the bolts.
- Verify that joints are sawed as specified.
- For extruded-form construction, the contractor may choose to use an adhesive instead of dowels. When this option is chosen, make sure the contractor cleans the pavement as specified and uses the required adhesive. Inspect the slipform machine to ensure it meets specifications.
- Make sure the contractor does not place concrete on frozen or ice-coated material.
- Inspect the placement of weakened plane and expansion joints to verify that they are constructed as specified.
- During the placement of minor concrete, check temperatures, mixing time, elapsed time, number of revolutions, and penetration. Verify that weighmaster certificates, with the required information, are delivered with each load of minor concrete.
- Observe concrete as it is placed. In the daily report, record the reasons for rejecting any concrete and the approximate amount rejected. Make sure the contractor does not allow concrete to segregate while being placed and being compacted in the forms. Stop the operation if the concrete requires patching with grout or mortar. Insist the contractor correct the placing operation.
- Before the forms are removed, make sure the contractor uses the required 10-foot float to finish the surface.
- Note whether the forms are being removed within the specified time limits. When corrective measures are necessary, advise the contractor, and note such advice in the daily report.
- Verify that the curing complies with one of the specified methods.

- Check that the contractor protects the concrete after placement according to the specifications.
- Verify that detectable warning surfaces are on the Authorized Material List and comply with required color. Make sure that prefabricated detectable warning surfaces are installed according to manufacturer recommendations and obtain the 5-year manufacturer warranty of replacement for defects.
- Verify that the finishing meets specifications and measure the finished product to ensure it conforms to contract requirements for slope and dimensions.
- Verify that the contractor complies with temporary pedestrian facility requirements under Sections 7-1.02A, "General"; 7-1.04, "Public Safety"; 12, "Temporary Traffic Control"; and 16-2.02 "Temporary Pedestrian Facilities," of the *Standard Specifications*. Also, refer to Sections 2-216D, "Temporary Facilities," and 4-12, "Temporary Traffic Control," of this manual for additional guidance.
- For slope checks of pedestrian facilities, use smart levels with a minimum sensor accuracy of 0.1 degree for measuring slopes parallel and perpendicular to the pedestrian travelled way. Make sure that the smart level is calibrated in accordance with the manufacturer's recommendations prior to taking measurements. A 4-foot smart level should be used on dimensions greater than 4 feet. Use a 2-foot smart level at other locations. Make sure the measured surface is free of grit and other substances prior to placing the smart level. For each slope check, take three readings equally dispersed across the surface to be measured. Do not average the readings. Record all slope measurements to the nearest 0.1 percent. Because of smart level accuracies, measured slopes may exceed maximum slopes by 0.2 percent for acceptance. Note that for parallel travelled way slope checks on curved ramps, smart levels should not be used for determining compliance and alternative means must be employed.
- For dimensional checks of pedestrian facilities, use a standard measuring tape. For each dimensional check, take three readings equally dispersed across the surface to be measured. Do not average the readings. Record reading to the nearest 1/8 inch. Because of measuring tape accuracies, measured dimensions may be less than minimum dimensions by 1/4 inch for acceptance.
- Record slope and dimensional checks of a pedestrian facility on an applicable compliance inspection report (for example, Form CEM-5773ADE, "Curb Ramp (Case A, D, or E) Americans with Disabilities Act (ADA) Compliance Inspection Report."). Refer to Section 5-101, "Forms Used for Contract Administration," of this manual for a listing of compliance inspection reports. File completed compliance inspection reports in Category 57, "Permanent Pedestrian Facilities," of the project records.
- Record latitude and longitude measurements on inspection forms for each permanent pedestrian facility using a free GPS application for smart phones, tablets, or computers. Record these values to a minimum of six decimal degrees for asset management use. These will be used to differentiate the asset from other assets; therefore, a high-level of accuracy is not required.
- Where the contract includes a post-construction survey requirement, verify the contractor's licensed post-construction survey has been completed and shows dimensional and slope requirements have been achieved for the facility. Special

provisions may also require that the contractor submit these measurements on the applicable facility compliance inspection report. Verify that the survey itself meets specified requirements. Spot check the contractor's licensed post-construction survey for verification of dimensions and slopes when completing an applicable compliance inspection report. File documentation in Category 57, "Permanent Pedestrian Facilities," of the project records.

- In the event dimensions and or slopes of the completed pedestrian facilities are noncompliant with contract requirements, contact the designer and district ADA engineer to determine if ADA compliance has been achieved. Any noncompliant work should be corrected or removed and replaced.
- Payment, acceptance, and certification of completed elements should only occur after verifying compliance.
- Contact the district ADA engineer in the event any of the project's planned pedestrian facilities are being considered for removal from the project's scope of work. The district ADA engineer helps manage the district's ADA transition plan and tracks delivery of pedestrian facilities.
- Prior to construction contract acceptance, complete the ADA project compliance certification (Form CEM-5773, "Americans with Disabilities Act (ADA) Project Compliance Certification"). Complete this form for all projects whether or not the project includes permanent pedestrian facilities. Transmit the completed ADA project compliance certification form, and for each location, the first page of the compliance inspection report to ADA.Compliance.Office@dot.ca.gov. File the completed certification in Category 57, "Permanent Pedestrian Facilities," of the project records.
- For detailed information concerning inspection of permanent pedestrian facilities by type, see the "Permanent Pedestrian Facilities ADA Compliance Handbook" at:

  http://www.dot.ca.gov/construction/index.html .

## 4-7304 Level of Inspection

4-7304 Level of Inspection

Suggested levels of inspection for typical concrete curbs and sidewalks work activities are:

- Benchmark inspection of layout once survey staking has been placed.
- Benchmark inspection of subgrade compaction and grades beneath the facilities to be constructed.
- Benchmark inspection of forms for line and grade prior to concrete placement.
- Intermittent inspection of concrete placement operations.
- Intermittent inspection of completed facilities prior to payment and acceptance.

## 4-7305 Quality Control

4-7305 ity Control

When the contract includes an item for preconstruction and post-construction surveys of a pedestrian facility, such as a curb ramp, verify that the contractor's surveys are submitted under seal of a properly licensed individual.

Prior to concrete placement, check that the contractor verifies that the finished surface of the subgrade does not project into the concrete section.

Prior to concrete placement for sidewalks, gutter depressions, island paving, curb ramps, and driveways, check that the contractor verifies that forms and site constraints will allow the required dimensioning and slopes shown in the contract documents.

When textured concrete or colored concrete surfaces are specified, make sure the contractor constructs test panels under Section 51-1.01D(2)(c), "Test Panels," of the *Standard Specifications*.

## 4-7306 Payment

4-7306 Payment

Measure concrete curbs and sidewalks by the cubic yard from the dimensions shown on the plans or by longitudinal field measurement.

To determine pay quantities for curb when minor concrete is paid for by the cubic yard, you may use the table for curb quantity factors (cubic yards/foot) in the *Standard Plans*.

# Section 0 Conduct of the Work

# Section 0 Conduct of the Work

Section 0
Conduct of the Work

## 5-001 Resident Engineer's Pending File

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 usually 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 "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 ensure 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 possible construction issues. More information can be obtained from the *Project Risk Management Handbook: A*

*Scalable Approach*, located at:

http://www.dot.ca.gov/hq/projmgmt/guidance_prmhb.htm

- 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 missing.
  3. Additional information or explanations are required.

**5-002 Preconstruction Conference With Caltrans Personnel**

## 5-002 Preconstruction Conference With Caltrans Personnel

Before the start of construction, the resident engineer should review the job with the following people:

- Project manager
- Project engineer
- Right-of-way agent
- Hydraulics engineer
- Traffic engineer
- Materials engineer
- Maintenance superintendent
- Environmental construction liaison
- Construction stormwater coordinator
- Environmental planner
- Public information officer
- Landscape architect (if landscape work is included in the project)
- Local agencies and communities
- Affected utility companies
- Federal Highway Administration (FHWA) transportation engineer (only for projects of division interest)
- 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
- Signing 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 ensure 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 engineer as acting resident engineer during extended absences of the assigned resident engineer.
- Personnel for the total work. Conference participants must discuss the total work (both road work and structure work) and take full 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

**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 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
- 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 list below 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. 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 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 Department-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 prior to closing an existing pedestrian route, and the temporary pedestrian access route must be inspected for compliance with ADA standards prior to allowing use. If the contact does not have a bid item for 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 (if the contract requires). If the contract requires a critical path method schedule, discuss the provisions for submitting, reviewing, updating, and revising it. 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 (progress, performance failure, stop notice, penalty) and deductions (administrative, equal employment opportunity, labor compliance violation, 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 (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**

## 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 one copy of the daily report to the construction engineer, who will review the copy. After the review, the construction engineer may discard the copy or file it until the project's completion, in accordance with district policy. Retain the original document with the project records.

## 5-005 Assistant Resident Engineer's Daily Report

**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 where the work was 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 on the Caltrans website at:

  http://www.dot.ca.gov/hq/construc/equipmnt.html

- 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.

Distribute the assistant resident engineer's reports as follows:

- Retain the original of all reports in the project files in the field office.

- File reports covering extra work according to the procedure in Section 5-102, "Organization of Project Documents," of this manual.
- Distribute all other copies in accordance with district policy.

Refer to Section 5-102, "Organization of Project Documents," of this manual for details to consider when establishing a system for handling assistant resident engineer's reports on a specific project.

5-006 Maintenance Reviews

## 5-006 Maintenance Reviews

Keep maintenance superintendents and supervisors informed of the start of work and job progress for all construction projects within the superintendents' and supervisors' maintenance areas. Before the start of construction, send a copy of Form CEM-0101, "Resident Engineer's Report of Assignment," to the maintenance region manager.

Provide the maintenance superintendents and supervisors an opportunity to review the contract with the resident engineer and to conduct a joint field review of the job site within the first 2 weeks of construction. The intent of this field review is to accomplish the following:

- Discuss the scope of the project.
- Coordinate contingency planning for traffic management.
- Discuss Caltrans' maintenance responsibility as described in Section 3-519, "Maintenance and Protection," of this manual.
- Discuss complex construction activities that could affect adjacent maintenance operations.
- Discuss features requiring special attention.
- Discuss manufacturers' warranties and service instructions.
- Schedule regular reviews. When the contract work is 50 percent complete, schedule at least one review, unless both construction and maintenance representatives agree the review is unnecessary.

When the project nears 90 percent completion, invite the maintenance superintendent, supervisor, or both, for a final field review of the project. Ensure this review includes identifying all 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:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml

During the 90 percent field review meeting, the resident engineer and maintenance superintendent or supervisor, or the district maintenance storm water coordinator will complete Form MTCE-0023, "Construction to Maintenance 90% BMP Completion Walkthrough." Form MTCE-0023 is available on Caltrans' Electronic Forms Management website:

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

Using this form will assist in identifying, discussing, and documenting the project elements such as structural treatment best management practices (BMPs), drainage systems, and permanent erosion and sediment controls, while noting their functionality and communicating any specific instruction related to maintaining them. This review should provide the resident engineer sufficient time to correct deficiencies prior to contract acceptance, and verify that elements such as structural treatment BMPs drainage

systems, and permanent erosion and sediment controls are constructed in accordance with the project plans and specifications.

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 amendments to the contract plans or specifications that significantly affect project cost, scope, or schedule.

Prior to 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. During the final inspection, update Form MTCE-0023 to reflect changes and corrective actions implemented since the 90 percent walkthrough. Both the resident engineer and the maintenance representative must sign the form 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 regional manager.

When the work is complete or nearly complete and just before construction contract acceptance, the resident engineer must notify the maintenance superintendent or supervisor to facilitate the transfer of maintenance and responsibility from the contractor to Caltrans forces.

## 5-007 Federal Highway Administration Involvement in Contract Administration

**5-007 Federal Highway Administration Involvement in Contract Administration**

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 either projects of division interest or delegated projects to indicate their involvement in the project as stated in the stewardship agreement between FHWA and Caltrans. Information on this stewardship agreement can be found on the Division of Budgets website:

http://budgets.onramp.dot.ca.gov/fhwa-oversight

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

### 5-007A Federal Highway Administration Involvement on Projects of Division Interest—N

Caltrans and FHWA will jointly determine projects of division interest responsibilities on a project-by-project basis and usually as part of the project development team process. They will establish which project responsibilities will be retained by FHWA and which will be delegated to Caltrans in a project of division interest agreement. The resident engineer should receive a copy of the project of division interest agreement in the resident engineer's pending file or from the project manager. Before the start of construction, the construction senior engineer must review the agreement with the FHWA transportation engineer and discuss FHWA's involvement on the project.

The resident engineer is required to submit a copy of the CEM-6303, "Final Acceptance Checklist for Federal-Aid Projects of Division Interest (PODI)," to the FHWA transportation engineer along with a copy of the proposed final estimate. FHWA will document the project status and final voucher the project with these documents.

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

Caltrans is responsible for most 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 requirements and when there are changes to the federal environmental requirements. 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. Information on Buy America requirements and FHWA involvement can be found in Section 3-604, "Buy America," of this manual. Informal discussions with FHWA for technical guidance are encouraged.

Caltrans receives federal-aid funds indirectly from the California Office of Traffic Safety (OTS). Construction projects with a federal-aid number and OTS designation contain the same special provisions as delegated projects. The same procedures apply to OTS projects as delegated projects.

# Chapter 5 Contract Administration

## Section 1 Project Records and Reports

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Section 1
Project Records and Reports

## 5-101 Forms Used for Contract Administration

5-101
Forms Used for Contract Administration

### 5-101A General

One of the duties of the resident engineer is to keep accurate and complete records of the work. This section includes a list of forms used in administering a construction project and maintaining records. Use forms not related directly to contract administration, such as personnel documents and accounting forms, in accordance with instructions contained in other Caltrans manuals.

The Division of Construction issues new or revised construction forms. All Division of Construction forms have a prefix of CEM (Construction Engineering Management) and a number that is related to the form's uniform filing system category. If an existing form no longer meets its intended purpose, refer to Section 1-004, "Changes," of this manual.

Complete Form CEM-9001, "Construction Manual Proposed Change," and send it to the Division of Construction Publications Unit. Explain the reason for the proposed change and attach a draft of the proposed revised form.

The Division of Construction will review the proposed change and make a decision regarding any future revision. Not all forms issued by the Materials Engineering and Testing Services (METS) are listed in this manual. If a test method includes a specific form, contact METS. A list of forms issued by Structure Construction is shown in Section 16, "Bridge Construction Forms," of the *Bridge Construction Records and Procedures* manual, Vol. 1.

### 5-101B Construction Forms

All Division of Construction forms are available online at:

http://www.dot.ca.gov/hq/construc/forms.htm

Following is a list and descriptions of the Division of Construction forms:

*Form CEM-0101 Resident Engineer's Report of Assignment*

When assigned to a new project, the resident engineer will use this form to provide contact information. Distribute copies of the report according to instructions on the form and any district instructions.

It is not necessary or desirable to hold the form until all information is available. Submit partial information with a note that a supplemental form will follow.

*Form CEM-0501 Relief from Maintenance*

The resident engineer uses this form to recommend that the contractor be relieved from maintenance and responsibility in accordance with Section 5-1.38, "Maintenance and Protection Relief," of the *Standard Specifications*. For more information refer to Section 3-520, "Maintenance and Protection Relief," of this manual.

*Form CEM-0601 Construction Safety Report*

The resident engineer or the project safety coordinator uses this form to document periodic project safety reviews.

*Form CEM-0602 Project Safety Program Statement*

The resident engineer uses this form to list the sections of the *Code of Safe Practices* that apply to the project. This form may also be used to designate an employee as the project safety coordinator.

*Form CEM-0603 Major Construction Incident Notification*

The resident engineer uses this form to report major construction incidents. Instructions for completion are included on the last page of the form.

*Form CEM-0606 Construction Safety Checklists*

The resident engineer uses this form to document the contractor's attention to safety procedures while performing the work. Choose the appropriate section of the form for the work being performed.

*Form CEM-1201 Subcontracting Request*

The contractor submits this form and the resident engineer uses the form to calculate the percentage of work to be performed by the contractor. Section 3-5, "Control of Work," of this manual describes the procedures. The resident engineer must sign this form before the contractor can begin on the applicable subcontracted work. Before approval, verify that subcontractors are not on the debarred contractors list on the California Department of Industrial Relations website:

http://www.dir.ca.gov/dlse/debar.html

*Form CEM-1202A Contractor Action Request—Change of Name/Address*

The contractor submits this form to the resident engineer to request a change in the contractor's name or address under the contract in accordance with Section 5-1.12, "Assignment," of the *Standard Specifications.*

*Form CEM-1202B Contractor Action Request—Assignment of Contract Monies, Assignee Change of Name/Address*

The contractor submits this form to the resident engineer to request an assignment of monies, or an assignee's change of name or address under the contract in accordance with Section 5-1.12, "Assignment," of the *Standard Specifications.*

*Form CEM-1203 Contractor Action Request—Assignment of Contract Performance*

The original contractor or the contractor's surety submits this form to the resident engineer in accordance with Section 5-1.12, "Assignment," of the *Standard Specifications.*

*Form CEM-1901 Burial Location of Soil Containing Aerially Deposited Lead*

The contractor submits this form to the resident engineer at ADL@dot.ca.gov within 5 business days of completing placement of the material. The resident engineer reviews the information and retains the form in the construction project records.

*Form CEM-1902* *Burial Location of Soil Containing Naturally Occurring Asbestos*

The contractor submits this form to the resident engineer at NOA@dot.ca.gov within 5 business days of completing placement of the material. The resident engineer reviews the information and retains the form in the construction project records.

*Form CEM-1903* *Burial Location of Soil Containing Aerially Deposited Lead (Topographic Survey)*

The contractor submits this form to the resident engineer and by email to ADL@dot.ca.gov within 5 business days after topographic survey of the top at each location. The resident engineer reviews the information, retains the form in the construction project records and forwards the form to the District ADL Coordinator.

*Form CEM-2006* *Legally Responsible Person Authorization of Approved Signatory*

The district director submits this form and the resident engineer reviews the information for completeness and accuracy. File the form in the construction project records. Instructions are included on the last page of the form.

*Form CEM-2006T* *Legally Responsible Person Authorization of Approved Signatory—Lake Tahoe Hydrologic Unit*

The district director submits this form to the California Regional Water Quality Control Board, as required by the Caltrans National Pollutant Discharge Elimination System (NPDES) permit. Instructions are included on the last page of the form.

*Form CEM-2008* *SWPPP/WPCP Amendment Certification and Acceptance*

The resident engineer reviews this form for completeness and accuracy as submitted by the contractor, and files it in the construction project records. Instructions are included on the last page of the form.

*Form CEM-2009* *SWPPP/WPCP Amendments Log*

The resident engineer reviews this form for completeness and accuracy as submitted by the contractor, and files it in the project files. Instructions are included on the last page of the form.

*Form CEM-2023* *Stormwater Training Record*

The resident engineer reviews this form as submitted by the contractor, and files it in the project files. Instructions are included on the last page of the form.

*Form CEM-2024* *Stormwater Training Log—Optional*

The resident engineer files this form, as filled out by the contractor, in the project files. Instructions are included on the last page of the form.

*Form CEM-2030* *Stormwater Site Inspection Report*

The resident engineer fills out and files this form in the project records. Instructions are included on the last page of the form.

*Form CEM-2031T* *Daily Stormwater Site Inspection Report - Lake Tahoe Hydrologic Unit*

The water pollution control manager submits this form to the resident engineer as

required by the Lake Tahoe Hydrologic Unit Construction General Permit. Instructions are included on the last page of the form.

*Form CEM-2032 Permanent Erosion Control Establishment (PECE) Report*

The water pollution control manager submits this form to the resident engineer when a contract has a bid item for Permanent Erosion Control Establishment. The resident engineer reviews work descriptions, schedules, and associated change orders for compliance and payment. The resident engineer retains the form in the construction project records under the Storm Water Pollution Prevention Plan files.

*Form CEM-2034 Monthly Stormwater Best Management Practices & Materials Inventory Report—Optional*

The resident engineer files this form as filled out by the contractor, in the project files. Instructions are included on the form.

*Form CEM-2035 Stormwater Corrective Actions Summary*

The resident engineer files this form as filled out by the contractor, in the project files. Instructions are included on the last page of the form.

*Form CEM-2035T Stormwater Corrective Actions Summary – Lake Tahoe Hydrologic Unit*

The water pollution control manager submits this form to the resident engineer as required by the Lake Tahoe Hydrologic Unit Construction General Permit. Instructions are included on the last page of the form.

*Form CEM-2045 Rain Event Action Plan*

The resident engineer files this form, as filled out by the contractor, in the project files. Instructions are included within the pages of the form.

*Form CEM-2045T Rain Event Action Plan—Lake Tahoe Hydrologic Unit*

The resident engineer files this form, as filled out by the contractor, in the project files. Instructions are included within the pages of the form.

*Form CEM-2051 Stormwater Sampling and Analysis Log–Optional*

The resident engineer files this form, as filled out by the contractor, in the project files. Instructions are included on the last page of the form.

*Form CEM-2052 Stormwater Sample Field Test Report/Receiving Water Monitoring Report*

The resident engineer files this form, as filled out by the contractor, in the project files. Instructions are included on the last page of the form.

*Form CEM-2058 Stormwater Meter Calibration Record—Specialty Meters*

The resident engineer files this form, as filled out by the contractor, in the project files. Instructions are included on the last page of the form.

*Form CEM-2061 Notice of Discharge Report*

The resident engineer submits this form to the California Regional Water Quality Control Board, as required by the Caltrans NPDES permit. Instructions are included on the last page of the form.

*Form CEM-2061T* *Notice of Discharge Report—Lake Tahoe Hydrologic Unit Stormwater Sample Field Test Report/Receiving Water Monitoring Report*

This form is to be completed when the contractor, Caltrans, State Water Resources Control Board, or Regional Water Quality Control Board staff determines that stormwater discharges, authorized nonstormwater discharges, or nonauthorized, nonstormwater discharges will violate an applicable water quality standard. This form is submitted to the resident engineer. Instructions are included on the last page of the form.

*Form CEM-2062* *Numeric Action Level Exceedance Report*

The resident engineer submits this form to the California Regional Water Quality Control Board, as required by the Caltrans NPDES permit. Instructions are included on the last page of the form.

*Form CEM-2062T* *Numeric Action Level Exceedance Report—Lake Tahoe Hydrologic Unit*

The resident engineer submits this form to the California Regional Water Quality Control Board, as required by the Caltrans NPDES permit. Instructions are included on the last page of the form.

*Form CEM-2063* *Numeric Effluent Limitation Violation Report—ATS Discharges*

The resident engineer submits this form to the California Regional Water Quality Control Board, as required by the Caltrans NPDES permit. Instructions are included on the last page of the form.

*Form CEM-2063T* *Numeric Effluent Limitation Violation Report—Lake Tahoe Hydrologic Unit*

The resident engineer submits this form to the California Regional Water Quality Control Board, as required by the Caltrans NPDES permit. Instructions are included on the last page of the form.

*Form CEM-2070* *SWPPP/WPCP Annual Certification of Compliance*

The resident engineer submits this form to the California Regional Water Quality Control Board, as required by the Caltrans NPDES permit. Instructions are included on the last page of the form.

*Form CEM-2075* *Project Stormwater Annual Report*

This form is completed by the contractor and submitted to the resident engineer to document stormwater monitoring and training information required to prepare a Stormwater Annual Report each year for all SWPPP projects for more than three consecutive months. Instructions are included on the last page of the form.

*Form CEM-2075T* *Project Stormwater Annual Report–Lake Tahoe Hydrologic Unit*

This form is completed by the contractor and submitted to the resident engineer to document stormwater monitoring and training information required to prepare a Stormwater Annual Report each year for all enrolled projects in the Lake Tahoe Hydrologic Unit for the period of October 16 of the previous year through October 15 of the current year. Instructions are included on the last page of the form.

*Form CEM-20CC* *Attachment CC, Water Pollution Control Best Management Practices List*

The contractor's water pollution control manager completes the form at different phases of the construction project to document the type and quantity of best management practices planned to be implemented in the field to prevent water pollution. Information in this form helps the water pollution control manager mobilize labor and coordinate necessary supplies in an orderly and efficient manner. In addition, information in this form allows the stormwater inspector to fully understand the construction stage and anticipated quantity of best management practices in the field during the site visit.

*Form CEM-20DAPP* *Appendix D, Notification Log*

Subcontractors and material suppliers must be notified of their responsibilities on the construction job site related to stormwater runoff pollution prevention. This form documents the stormwater pollution prevention notifications given to each subcontractor and material supplier.

*Form CEM-20DCON* *SWPPP/WPCP Attachment D, Contractor Personnel Training Record*

Contractor personnel responsible for implementation of stormwater pollution prevention practices are required to be adequately trained in this field. Attachment D documents the training record of the contractor's personnel. This form is included in the stormwater pollution prevention plan (SWPPP) and is updated as necessary.

*Form CEM-20DSUB* *SWPPP/WPCP Attachment D, Subcontractor Personnel Stormwater Training Record*

Subcontractor personnel responsible for implementation of stormwater pollution prevention practices are required to be adequately trained in this field. Attachment D documents the training record of the subcontractor's personnel. This form is included in the SWPPP and is updated as necessary.

*Form CEM-20EE* *SWPPP Attachment EE, Stormwater Sampling Locations*

This form lists all potential water quality sampling locations within a project site during the course of construction. This form is prepared by the qualified SWPPP developer at the start of the project and is included in the SWPPP. During the course of construction, depending on the stage of construction and areas of disturbed soil activities, appropriate sampling locations from this list are selected for sampling of the stormwater runoff or discharge.

*Form CEM-2101* *COZEEP Daily Report*

The California Highway Patrol and Caltrans jointly use this form to report highway patrol resources used for the Construction Zone Enhanced Enforcement Program (COZEEP). Chapter 2, "Safety and Traffic," of this manual further describes the use of the form.

*Form CEM-2102* *COZEEP/MAZEEP Task Order*

The resident engineer uses this form to request highway patrol support for the Construction Zone Enhanced Enforcement Program. Additional use of this form is described in Chapter 2, "Safety and Traffic," of this manual.

*Form CEM-2103* *COZEEP/MAZEEP Cancellation Form*

The resident engineer uses this form to cancel any previously requested highway patrol support for the Construction Zone Enhanced Enforcement Program. Additional use of this form is described in Chapter 2, "Safety and Traffic," of this manual.

*Form CEM-2301* *Temporary Pedestrian Access Route Compliance Inspection Report*

The resident engineer uses this form to document initial inspection and ADA compliance of a temporary pedestrian access route. For details, refer to Section 4-12, "Temporary Traffic Control," of this manual.

*Form CEM-2302* *Temporary Pedestrian Access Route Weekly Inspection Report*

The resident engineer uses this form to document weekly inspection and ADA compliance of a temporary pedestrian access route. For details, refer to Section 4-12, "Temporary Traffic Control," of this manual.

*Form CEM-2311* *Temporary Pedestrian Access Route Contractor Compliance Report*

The contractor uses this form to initially document that a temporary pedestrian access route is ADA compliant. For details, refer to Section 4-12, "Temporary Traffic Control," of this manual.

*Form CEM-2312* *Temporary Pedestrian Access Route Contractor Weekly Report*

The contractor uses this form to document weekly that a temporary pedestrian access route is ADA compliant. For details, refer to Section 4-12, "Temporary Traffic Control," of this manual.

*Form CEM-2401* *Substitution Report for Disadvantaged Business Enterprise (DBE) or Underutilized Disadvantaged Business Enterprise (UDBE)*

The contractor fills out and provides this form to the resident engineer who uses the information to authorize DBE subcontractor substitutions. Sections 3-8, "Prosecution and Progress," and 8-3, "Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises," of this manual contain additional information on substituting subcontractors.

*Form CEM-2402(F)* *Final Report—Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors*

The contractor completes this form. The resident engineer certifies the form. It describes work performed and materials provided by disadvantaged business enterprise firms. Refer to Section 8-3, "Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises," of this manual for details.

*Form CEM-2402(S)* *Final Report—Utilization of Disabled Veteran Business Enterprises (DVBE), State Funded Projects Only*

The contractor fills out and certifies this form which describes work performed and materials provided by disabled veteran business enterprise firms. The resident engineer

verifies the form. Refer to Section 8-3, "Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises," of this manual for details.

*Form CEM-2403(F) Disadvantaged Business Enterprises (DBE) Certification Status Change*

The contractor fills out and certifies this form. The resident engineer uses the form to verify the actual dollar amount paid to DBE subcontractors on federally funded projects that have a change in certification status during the course of the contract. Refer to Section 8-3, "Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises," of this manual for details.

*Form CEM-2404(F) Monthly DBE /UDBE Trucking Verification*

The contractor must submit this form before the 15th of each month. It lists the dollar amount paid to the DBE trucking companies for truck work performed by DBE certified truckers and for any fees or commissions for non-DBE truckers used each month on the project. Instructions for filling out this form are on the last page of the form.

*Form CEM-2405 Disabled Veteran Business Enterprise (DVBE) Substitution Request to the Department of General Services (DGS)*

The resident engineer completes this form, attaches all DVBE substitution request documentation from the contractor, and sends to the headquarters Division of Construction labor compliance program manager. Instructions for filling out this form are on the last page of the form.

*Form CEM-2406 Monthly Disadvantaged Business Enterprises (DBE) Payment*

The contractor completes this form for labor compliance purposes on federally funded projects only. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2501 Fringe Benefit Statement*

The contractor completes this form for labor compliance purposes. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2502 Contractor or Subcontractor Payroll*

When it is requested, furnish this form to the contractor. It is used to fulfill the payroll submittal requirements of the contract. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2503 Statement of Compliance*

The contractor may use this form for the required statement of compliance with payroll submittals. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2504 Employee Interview: Labor Compliance/EEO*

Use this form to record information from interviews of contractors' employees. Directions for the interviewer are on the back of the form. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2504* *(Spanish), Entrevista de Empleado: Cumplimiento Laboral/IOE*

Same as previous form, printed in Spanish.

*Form CEM-2505* *Owner-Operator Listing*

If they do not include this data on their certified payrolls, contractors may use this form to report payments made to owner-operators. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2506* *Labor Compliance—Wage Violation*

The district labor compliance officer uses this form to document labor compliance wage violations. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2507* *Labor Violation: Case Summary*

The district labor compliance officer uses this form in conjunction with Form CEM-2506 to summarize labor violation cases. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2508* *Contractor Payroll Source Document Audit Summary*

The district labor compliance officer uses this form to document the verification of the contractor's payroll source document audit. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2509* *Checklist—Source Document Audit*

The district labor compliance officer uses this form during the contractor's payroll source document audit. Refer to Section 8-1, "Labor Compliance," of this manual for more information.

*Form CEM-2601* *Construction Progress Chart*

The resident engineer maintains this form for each project. Refer to Section 3-8, "Prosecution and Progress," of this manual for details.

*Form CEM-2701* *Weekly Statement of Working Days*

The resident engineer uses this form to track contract time on construction contracts. The last page of the form and Section 3-8, "Prosecution and Progress," of this manual contain instructions for filling out the Weekly Statement of Working Days.

*Form CEM-2702* *Overrun in Contract Time*

The Division of Construction may use this form to grant time adjustments after contract time has elapsed. For more information refer to Section 3-8, "Prosecution and Progress," of this manual.

*Form CEM-3101* *Notice of Materials to Be Used*

The contractor must use this form to list all materials to be used on the project. Refer to Section 6-2, "Acceptance of Manufactured or Fabricated Material and Products," of this manual for details on the use of the form. Instructions to the contractor are on the last page of the form.

*Form CEM-3501 Hot Mix Asphalt Production Report*

The plant inspector uses this form to document daily hot mix asphalt production processes and report any plant, material, and production deficiency to the resident engineer.

*Form CEM-3502 Hot Mix Asphalt Placement Report*

The paving inspector uses this form to document daily hot mix asphalt placement processes and report any material and construction deficiencies to the resident engineer.

*Form CEM-3511 Contractor Job Mix Formula Proposal*

The contractor uses this form to submit to the resident engineer, before the work begins, the hot mix asphalt mix formula tested for intended use on the project. The form states job mix formula target values for aggregate sieves and the percent of asphalt binder, as well as source information for all materials.

*Form CEM-3512 Contractor Hot Mix Asphalt Design Data*

The contractor uses this form to document the testing data developed by the mix design laboratory. Refer to Section 4-39, "Asphalt Concrete," of this manual for more information.

*Form CEM-3513 Caltrans Hot Mix Asphalt Verification*

Caltrans verifies that the proposed job mix formula complies with the specifications on this form. The resident engineer signs and returns the form to the contractor. Refer to Section 4-39, "Asphalt Concrete," of this manual for more information.

*Form CEM-3514 Contractor Job Mix Formula Renewal*

The contractor submits test results for renewal of hot mix asphalt job mix formula on this form to the resident engineer. When the test results indicate that the sampled and tested hot mix asphalt complies with the specifications, the resident engineer requests the district materials laboratory perform hot mix asphalt verification testing. Refer to Section 4-39, "Asphalt Concrete," of this manual for more information.

*Form CEM-3701 Test Result Summary*

The resident engineer must use this form to summarize acceptance tests frequency and results on each material. The form is also used to record dates for sampling, date shipped to laboratory, test result transmission to the resident engineer, and contractor notification of test result. Refer to Category 37, "Initial Tests and Acceptance Tests," in Section 5-102, "Organization of Project Documents," of this manual for details.

*Form CEM-3702 Relative Compaction Summary*

The resident engineer may use this form to summarize compaction test results in the same manner that Form CEM-3701 is used for other tests.

*Form CEM-3703 Caltrans Production Start-Up Evaluation*

The resident engineer uses this form to record the testing results at the beginning of production. Refer to Section 4-39, "Asphalt Concrete," of this manual for more information.

*Form CEM-3736 Pavement Smoothness Inertial Profiler Submittal Record*

The quality control manager submits this form to the resident engineer and the Caltrans secure file sharing system along with specified profiling information within 2 business days of profiling. The resident engineer reviews the information and retains the form in the construction project records.

*Form CEM-3736AC Asphalt Concrete Pavement Smoothness Corrections Information*

The contractor submits this form to the resident engineer and the Caltrans secure file sharing system along with their final profiling information within 5 business days of profiling. The resident engineer reviews the information and retains the form in the construction project records.

*Form CEM-3736C Concrete Pavement Smoothness Corrections Information*

The contractor submits this form to the resident engineer and the Caltrans secure file sharing system along with their final profiling information within 5 business days of profiling. The resident engineer reviews the information and retains the form in the construction project records.

*Form CEM-3801 Request for Assignment of Inspectors, Samplers, and Testers*

The contractor uses this form to submit the names of quality control staff for hot mix asphalt projects using the quality control/quality assurance (QCQA) process. Refer to the *Quality Control Manual for Hot Mix Asphalt* for more information.

*Form CEM-3802 Quality Control Inspector Affidavit of Proficiency*

The contractor uses this form to document the hot mix asphalt experience and training of proposed hot mix asphalt quality control inspectors for projects using the QCQA process. Refer to the *Quality Control Manual for Hot Mix Asphalt* for additional information.

*Form CEM-3803 Daily Summary of Quality Control Testing*

The contractor uses this form to provide a summary of quality control test results for each day that hot mix asphalt is placed on a QCQA process project. Refer to the *Quality Control Manual for Hot Mix Asphalt* for more information.

*Form CEM-3804 Hot Mix Asphalt Inspection and Testing Summary*

The contractor uses this form to provide a checklist that shows the inspections and testing for each day that hot mix asphalt is placed on a QCQA process project. The contractor's quality control manager must document on this form deviations from the specifications or regular practices and certify that the information, tests, or calculations, comply with the contract specifications. Refer to the *Quality Control Manual for Hot Mix Asphalt* for more information.

*Form CEM-4101 Materials Release Summary*

The resident engineer uses this form to summarize the materials released by METS and materials inspected at the job site.

*Form CEM-4102 Material Inspected and Released on Job*

The resident engineer uses this form to list certain materials that may arrive on the job site without a Form TL-0029, "Report of Inspection of Material." Refer to Section 6-3, "Field Tests," of this manual for details.

*Form CEM-4202 Material Plant Safety Checklist*

The materials plant inspector uses this form when checking a materials plant for safety.

*Form CEM-4401 Solid Waste Disposal and Recycling Report*

The contractor completes and certifies the information reported on this form. The resident engineer reviews then submits the authorized form to the district recycling coordinator with a copy to the statewide recycling coordinator in headquarters Division of Design. The use of this form is described in Section 7-109, "Solid Waste Disposal and Recycling Reporting," of this manual.

*Form CEM-4410 Crumb Rubber Usage Report*

The contractor submits this form monthly to the resident engineer and email address CRM@dot.ca.gov. The resident engineer reviews the information and verifies paid quantities and contractor submittal of form to email address. Instructions to the contractor and resident engineer are on the last pages of the form. Refer to Section 7-108, "Crumb Rubber Usage Reporting," of this manual for more information.

*Form CEM-4501 Resident Engineer's Daily Report/Assistant Resident Engineer's Daily Report*

The resident engineer and assistant resident engineers use this form to record project activities daily. For more information, refer to Section 5-0, "Conduct of the Work," of this manual.

*Form CEM-4601 Assistant Resident Engineer's Daily Report*

Assistant resident engineers use this form to record daily individual contract item activity. It is also used to record extra work activity and to verify contractor's personnel listed on payrolls. For more information refer to Section 5-0, "Conduct of the Work," of this manual.

*Form CEM-4701 Drainage System Summary*

The resident engineer and assistant resident engineers use this form to record progress and summarize activity on drainage contract items. Refer to Category 47, "Drainage Systems," in Section 5-102, "Organization of Project Documents," of this manual for details.

*Form CEM-4801 Quantity Calculations*

The resident engineer and assistant resident engineers use this form for the basic source document for most contract item quantity calculations.

*Form CEM-4900 Change Order*

The resident engineer uses this form for change orders. Refer to Section 5-3, "Change Orders," of this manual for information about change orders.

*Form CEM-4901 Change Order Input*

The resident engineer and assistant resident engineers use this form to input change orders for the project record and estimate data. Refer to Section 5-103D, "Change Orders," of this manual for details.

*Form CEM-4902 Extra Work Bill (Short Form)*

The contractor uses this form for billing extra work. Details for use are on the last page of the form and are included in Section 5-103E, "Change Order Billing," of this manual. The resident engineer may authorize contractor-designed forms. With prior approval from the Division of Construction, the contractor may submit change order bill data on a computer report identical to this form for all Caltrans projects.

*Form CEM-4902A Extra Work Bill—Title Page*

The contractor uses this form for billing extra work. It is the first page of the four-part changer order bill. It identifies the project, change order number, method of payment, and performer of work. This form also provides for manual calculation of the bill. Details for use are on the last page of the form and are included in Section 5-103E, "Change Order Billing," of this manual. The resident engineer may authorize contractor-designed forms. With prior approval from the Division of Construction, the contractor may submit change order bill data on a computer report identical to this form for all Caltrans projects.

*Form CEM-4902B Extra Work Bill—Labor Charges*

Contractors use this form for billing extra work. It is used to enter labor charges and other expense subject to labor markup. Details for use are on the last page of the form and are included in Section 5-103E, "Change Order Billing," of this manual. The resident engineer may authorize contractor-designed forms. With prior approval from the Division of Construction, the contractor may submit change order bill data on a computer report identical to this form for all Caltrans projects. This form is used with Form CEM-4902A, "Extra Work Bill—Title Page."

*Form CEM-4902C Extra Work Bill—Equipment Charges*

The contractor uses this form to enter equipment charges to the change order bill. Instructions for use are on the second page of the form and are included in Section 5-103E, "Change Order Billing," of this manual. The resident engineer may authorize contractor-designed forms. With prior approval from the Division of Construction, the contractor may submit change order bill data on a computer report identical to this form for all Caltrans projects. This form is used with Form CEM-4902A, "Extra Work Bill—Title Page."

*Form CEM-4902D Extra Work Bill—Material Charges*

The contractor uses this form for billing extra work. It is used to enter material charges to the change order bill. Details for use are on the last page of the form and are included in Section 5-103E, "Change Order Billing," of this manual. The resident engineer may authorize contractor-designed forms. With prior approval from the Division of Construction, the contractor may submit change order bill data on a computer report identical to this form for all Caltrans projects. This form is used with Form CEM-4902A, "Extra Work Bill—Title Page."

*Form CEM-4903 Change Order Memorandum*

The resident engineer uses this form in conjunction with Form CEM-4900, "Change

Order," to report the necessary engineering and administrative data relative to the change. Refer to Section 5-3, "Change Orders," of this manual for details.

*Form CEM-4904* *Caltrans Authorization for Using Internet Extra Work Bill System*

The resident engineer completes this form, outlining contract markups and change order bill roles to authorize Caltrans staff access to the Caltrans Internet Extra Work Bill (iEWB) system. The resident engineer submits the form, along with completed Form CEM-4905 from the contractor, to the appropriate iEWB district administrator.

*Form CEM-4905* *Contractor Authorization for Using Internet Extra Work Bill System*

The contractor furnishes the resident engineer with daily reports of any extra work as required in Section 5-1.27D, "Cost Accounting Records," of the *Standard Specifications*. The prime contractor completes this form for authority to use the internet to submit change order bills. The contractor submits this form, usually at the preconstruction meeting, to the resident engineer or to the managing partner if the contract is a joint venture. Required change order bill training and the iEWB website provide additional information at:

http://www.dot.ca.gov/hq/construc/iewb/

*Form CEM-5101* *Request for Payment for Materials on Hand*

The contractor uses this form to request payment for materials on hand. Instructions for the form and administrative procedures are covered in Section 3-9, "Payment," of this manual.

*Form CEM-5501* *Partnering Facilitator Evaluation—Kick-Off*

The resident engineer uses this form to gather project team evaluations of the partnering facilitator's performance following the kick-off partnering workshop when partnering is implemented on a Caltrans construction project.

*Form CEM-5502* *Partnering Facilitator Evaluation—Close-Out*

The resident engineer uses this form to gather project team evaluations of the partnering facilitator's performance following the close-out partnering workshop.

*Form CEM-5773* *Americans with Disabilities Act (ADA) Project Compliance Certification*

The resident engineer uses this form to certify ADA construction compliance of the project's pedestrian facilities. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773ADE* *Curb Ramp (Case A, D, or E) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of Case A, D or E curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773B* *Curb Ramp (Case B) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of Case B curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773C* *Curb Ramp (Case C) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of Case C curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773CH* *Curb Ramp (Case CH) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of Case CH curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773CM* *Curb Ramp (Case CM) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of Case CM curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773DW* *Sidewalk at Driveway Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of sidewalks at driveways. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773FG* *Curb Ramp (Case F or G) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of Case F or G curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773NSPL* *Curb Ramp (Non-Standard Plan - Parallel) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of non-standard plan-, parallel curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773NSPP* *Curb Ramp (Non-Standard Plan - Perpendicular) Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of non-standard plan-, perpendicular curb ramps. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773P* *Parking Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of accessible parking facilities. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773PW* *Passageway Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of passageways. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-5773SW* *Sidewalk Americans with Disabilities Act (ADA) Compliance Inspection Report*

The resident engineer uses this form to document inspection and ADA compliance of sidewalks. For details on the use of this form, refer to Section 4-73, "Concrete Curbs and Sidewalks," of this manual.

*Form CEM-6003* *Progress Pay—Estimate Project Initiation or Update*

The resident engineer uses this form to add new information or to change information in the Contract Administration System (CAS). For details refer to Section 5-103B, "Project Initiation and Update," of this manual.

*Form CEM-6004* *Contract Transactions Input*

The resident engineer uses this form to input estimate data into CAS for the project record and estimate. Refer to Section 5-103C, "Contract Transactions," of this manual for details.

*Form CEM-6101* *Project Record—Estimate Request*

The resident engineer uses this form to request that an estimate be run. Refer to Section 5-103F (1), "Procedure," of this manual for details.

*Form CEM-6201* *Notice of Potential Claim*

The contractor uses this form to submit notices of potential claims to the resident engineer. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6201A* *Initial Notice of Potential Claim*

The contractor uses this form to submit an early notice of a potential claim issue. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6201B* *Supplemental Notice of Potential Claim*

The contractor uses this form to submit a detailed description along with the necessary attachments of the nature, circumstances, and estimated costs of a potential claim as a follow up to Form CEM-6201A, "Initial Notice of Potential Claim."

*Form CEM-6201C* *Full and Final Documentation of Potential Claim*

The contractor uses this form to submit a complete documentation of a potential claim after completion of the work for which Forms CEM-6201A and CEM-6201B have been

submitted. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6201D Initial Potential Claim Record*

The contractor uses this form to detail the nature and circumstances of the potential claim. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6201E Supplemental Potential Claim Record*

The contractor uses this form to detail the potential claim and cost associated with the claim. For further details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6201F Full and Final Potential Claim Record*

The resident engineer uses this form to document the circumstances and costs associated with the potential claim. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6202 Dispute Resolution Board Establishment Report*

The resident engineer completes and submits this form to the Division of Construction after the initial Dispute Resolution Board meeting has been held. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6203 Dispute Review Board (DRB) Update Report*

The resident engineer completes and submits this form to the Division of Construction yearly beginning on the anniversary of the contract first working day. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6204 Dispute Resolution Board Dispute Meeting Report*

The resident engineer completes and submits this form to the Division of Construction when Caltrans has sent a response to DRB recommendation and the contractor's response has been received or has been accepted by default. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6205 Dispute Review Board (DRB) Completion Report*

The resident engineer completes and submits this form to the Division of Construction 30 days after receipt of the contractor's exceptions to the proposed final estimate. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6206 Dispute Resolution Advisor—Establishment Report*

The resident engineer completes and submits this form to the Division of Construction for selection of the dispute resolution advisor. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6207 Dispute Resolution Advisor—Dispute Meeting Report*

The resident engineer completes and submits this form to the Division of Construction with Caltrans' response to the dispute resolution advisor's recommendations. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6208 Dispute Resolution Ladder Establishment*

As an option, the resident engineer completes and submits this form to the Division of Construction to document the levels of authority consulted. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6209 Elevation of a Dispute*

As an option, the resident engineer completes and submits this form to the Division of Construction to assist in defining the dispute prior to elevating it to the next level. For details on the use of this form, refer to Section 5-4, "Disputes," of this manual.

*Form CEM-6301 Contract Acceptance*

The resident engineer uses this form to document acceptance and the various quantities delivered by the contract. Instructions are on the back of the form. For details on the use of this form, refer to Section 3-523B, "Contract Acceptance," of this manual.

The district does not need to fax a copy of the contract acceptance form CEM-6301 to Division of Construction. If there is a federal number on the form, the district estimate desk makes a copy of the form and, at the end of each month, collects and sends these copies to the Caltrans Office of Federal Resources, MS-23.

*Form CEM-6302 Final Materials Certification*

The resident engineer uses this form to document that tests on acceptance samples indicate the materials incorporated in the construction work, and the construction operations controlled by sampling and testing, were in conformity with the authorized plans and specifications.

*Form CEM-6303 Final Acceptance Checklist for Federal-Aid Projects of Division Interest (PODI)*

The resident engineer uses this form to document project status for FHWA and to help with the final vouchering process once the final estimate is produced.

*Form CEM-9001 Construction Manual Proposed Change*

Caltrans personnel or external stakeholders may use this form to submit a recommendation for a change to the *Construction Manual*. Completed forms with attachments, if applicable, should be sent to the Division of Construction, Publications Unit email Construction.Publications@dot.ca.gov.

*Form OFG-1 Oversight Resident Engineer's Preconstruction Checklist*

The resident engineer uses this form to document contacts within the local agency where the work is being performed. For further details on use of this form, refer to Section 3.1.7, "Oversight Resident Engineer Files," of the *Oversight Resident Engineer Guidelines*.

*Form OFG-2 Local Agency and Oversight Resident Engineer Preconstruction Conference Checklist*

The resident engineer uses this form to document general project conditions at the preconstruction meeting with the contractor. For details on use of this form, refer to Section 3.1.7, "Oversight Resident Engineer Files," of the *Oversight Resident Engineer Guidelines*.

*Form OFG-3* *Local Agency Resident Engineer Contract Provisions Checklist*

The resident engineer uses this form to document state and federal requirements with the contractor. For details on use of this form, refer to Section 3.1.7, "Oversight Resident Engineer Files," of the *Oversight Resident Engineer Guidelines*.

*Form OFG-4* *Oversight Resident Engineer's Construction Contract Administration Verification Checklist*

The resident engineer uses this form to document the contract administration activities required on the project. For details on use of this form, refer to Section 3.1.7, "Oversight Resident Engineer Files," of the *Oversight Resident Engineer Guidelines*.

*Form OFG-5* *Federal-Aid Projects of Division Interest*

The resident engineer uses this form to document federal-aid requirements for the project. For details on use of this form, refer to Section 3.1.7, "Oversight Resident Engineer Files," of the *Oversight Resident Engineer Guidelines*.

*Form OFG-6* *Final Acceptance Checklist for Caltrans Oversight Projects*

The resident engineer uses this form to document that all required procedures have been performed on the project. For details on use of this form, refer to Section 3.1.7, "Oversight Resident Engineer Files," of the *Oversight Resident Engineer Guidelines*.

## 5-101C Materials Engineering and Testing Services Forms

Structural Materials, under Materials Engineering and Testing Services (METS), is responsible for TL forms. Find some forms under Engineering Services' Testing and Technology Services link at:

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

*Form MR-0518* *Job Cement Samples Record*

The resident engineer uses this form to submit cement samples for testing. Instructions for the use of this form are found in Section 6-2, "Acceptance of Manufactured or Fabricated Material and Products," of this manual.

*Form TL-0015* *Quality Assurance—Nonconformance Report*

METS uses this form when METS personnel discover that structural material or quality control procedures do not meet specific contract requirements. METS sends a copy to the resident engineer.

*Form TL-0016* *Quality Assurance—Nonconformance Resolution*

METS uses this form to document the resolution to an outstanding Form TL-0015. METS sends a copy to the resident engineer.

*Form TL-0028* *Notice of Materials to Be Inspected at Jobsite*

METS uses this form to assign inspection duties. METS sends a copy to the resident engineer.

*Form TL-0029* *Report of Inspection of Material*

METS uses this form to confirm that material has been inspected, and the inspector has attached inspection release tags or other means of identification. METS sends a copy to the resident engineer, who compares it with inspection tags or markings on delivered materials.

*Form TL-0038 Inspection Request*

METS uses this form to document requests by the vendor or fabricator for bid items that require inspection.

*Form TL-0101 Sample Identification Card*

The resident engineer uses this form to submit samples to METS or district materials laboratories for testing materials other than field samples of concrete (compressive strength) and cement samples.

*Form TL-0502 Field Sample of Portland Cement Concrete Sample Card*

The resident engineer uses this form to submit compressive strength samples of concrete. Refer to Section 6-3, "Field Tests," of this manual for details on marking of samples.

*Form TL-0608 Notice of Materials to be Furnished*

METS uses this form to inform all parties that METS will inspect and release material before it's sent to the job site. TL-0038, "Inspection Request Form," is included with the TL-0608 that is sent to the vendor and fabricator.

*Form TL-0624 Inspection Release Tag*

When a METS inspector has inspected material, the inspector will attach this form with lot numbers, inspector's initials, and date of inspection. For materials where it is not practicable to attach tags, the METS inspector will mark lot numbers on the material in lieu of attaching tags.

*Form TL-0625 Materials Suitability Tag*

METS uses this form as part of the blue tag process to verify that a quality assurance inspector has inspected the material and released it to the job site. The blue tag attached to the material includes the contract number, state lot number, blue tag number, inspector's initials, and date of inspection. For materials where it is not practicable to attach tags, the METS inspector will mark lot numbers on the material in lieu of attaching tags.

*Form TL-0649 Report of Materials on Hand*

METS uses this form to verify that material has been inspected and is in acceptable condition. Refer to Section 3-9, "Payment," of this manual for details.

*Form TL-6013 Toll Material Suitability Documentation Report*

METS structural material representative, in consultation with the resident engineer and design staff as needed, completes this form as part of the blue tag process. The form documents the decision to release material that is tagged with TL-0625 and is listed in TL-6014.

*Form TL-6014 Material Suitability Report*

This form is completed by the METS quality assurance inspector and is used to list the material to be released with TL-0625. The report includes material description, blue tag number, and description of conformance.

*Form TL-6037 Fabrication Progress Report*

METS uses this form to notify resident engineers of progress being made on fabrication of various items. Refer to Section 3-9, "Payment," of this manual for details.

Some METS forms can be found at the Caltrans Electronic Forms System's intranet website:

http://cefs.dot.ca.gov/jsp/forms.jsp

5-101D Other State Forms

Following are state forms used in contract administration that are not issued by the Division of Construction or METS. They are available on the Caltrans Electronic Forms System's intranet website:

http://cefs.dot.ca.gov/jsp/forms.jsp

*Form DPD-3013* *Request for Construction Staking*

The contractor uses this form to request construction staking. The resident engineer and the survey party chief add information to the request. It serves as a record of construction staking and any charges to the contractor for restaking. For information on construction surveys and use of the form, refer to Chapter 12, "Construction Surveys," of the *Caltrans Surveys Manual*.

*Form LA-17* *Report of Chemical Spray Operations*

The contractor uses this form to submit the required weekly pesticide application report. Refer to Section 4-2002C (2), "Pesticides," of this manual for details.

5-101E Traffic Operations Forms

The following forms from the Division of Traffic Operations are used to change clearances or bridge weight rating, and are at:

http://www.dot.ca.gov/hq/traffops/permits/

*Form TR-0019* *Notice of Change in Clearance or Bridge Weight Rating*

The resident engineer uses this form to report permanent changes to vertical or horizontal clearance for vehicular traffic or permanent changes in bridge permit ratings on divided roadways. Refer to Section 3-703B, "Permanent Clearance and Bridge Permit Rating Changes," of this manual for details.

*Form TR-0020* *Notice of Change in Vertical or Horizontal Clearance*

The resident engineer uses this form to report permanent changes to vertical or horizontal clearance for vehicular traffic. Refer to Section 3-703B, "Permanent Clearance and Bridge Permit Rating Changes," of this manual for details.

*Form TR-0029* *Notice of Change in Clearance or Bridge Weight Rating*

The resident engineer uses this form to report permanent changes to vertical or horizontal clearance for vehicular traffic or permanent changes in bridge permit ratings on undivided roadways. Refer to Section 3-703B, "Permanent Clearance and Bridge Permit Rating Changes," of this manual for details.

*Form TR-0405* *Certification of Compliance with Americans with Disabilities Act (ADA)*

The resident engineer uses this form to certify compliance with ADA standards prior to and after construction. Refer to Design Information Bulletin 82 at the website:

http://www.dot.ca.gov/hq/oppd/dib/dibprg.htm

### 5-101F Federal Forms

Following is a list of some federal forms that are used in contract administration. Obtain the forms from the U.S. Department of Transportation, Federal Highway Administration's website:

http://www.fhwa.dot.gov/

*Form FHWA-1391* *Federal-Aid Highway Construction Contractors Annual EEO Report*

The contractor must submit this form on all federal-aid contracts over $10,000. All subcontractors on federal-aid projects whose subcontracts exceed $10,000 must also submit the form. Contractors and subcontractors report project employment data for the last full week of July on the form.

*Form DOL SF-308* *Request for Wage Determination and Response to Request*

Request wage rate determinations for federal-aid contracts by using this U.S. Department of Labor form. Obtain the form from the U.S. Department of Transportation, Federal Highway Administration's website:

http://www.dol.gov/whd/programs/dbra/sf308.htm

**5-102 Organization of Project Documents**

## 5-102 Organization of Project Documents

### 5-102A General

This section describes the uniform filing system for organizing project records and reports. The system uses numbered categories for filing project documents. Use the uniform filing system on all projects.

There are 63 categories in the filing system. There are several unassigned categories. Use them for project documents that do not fit in assigned categories. If necessary, divide a category into subcategories.

Assign the appropriate category numbers to documents filed at a separate location (such as a field office hanging file). The filing system will then be correct when records are brought together after project completion. Project records may be scanned and stored electronically. Maintain hard copy files as a backup prior to project completion.

### 5-102B Indexing

Use a category index, similar to the sample shown at the end of this section, or an index of categories that is supplied with the labels, for each project. Post the index in a prominent location.

When the location of a category is separate from the main file, indicate its location on the index under the appropriate heading.

### 5-102C Description of Categories

The following discussion describes the documents that should be included in each category and, for some categories, a recommended order of the documents in the categories.:

*Category 1 Project Personnel*

Include all personnel-related records in this category. Suggested subcategories are listed below. On smaller projects, some of the listed subcategories may be combined when the amount of detail shown is not warranted.

- Form CEM-0101, "Resident Engineer's Report of Assignment"
- Attendance Report
- Overtime Records
- Overtime Requests and Authorizations
- Absence Requests
- Personnel Transfer Records
- Personnel Roster
- Travel Expense Claims and Records
- Individual Personnel File (emergency telephone numbers, experience or training records, among other things)

*Category 2 Project Office Equipment and Supplies*

In this category, file those documents relating to equipment and supplies. Include records of equipment and supplies that have been received or returned. The subcategories listed below outline the scope of this category.

- Equipment Inventory
- Shipping Records (related shipping and receiving records should be stapled together)
- Receiving Records
- Transfer Requests
- Local Requests
- Automotive Records
- Cash Expenditure Vouchers
- Purchase Orders
- Bills of Lading

*Category 3 Equipment and Personnel Cost Reports*

In this category, file construction engineering cost reports. Suggested subcategories are:

- PRSM (task management) reports
- Equipment cost reports

*Category 4 Service Contracts*

In this category, file documents related to the project office utilities and services. File requests for service with all correspondence relating to project office service contracts in an appropriate subcategory. File the receiving records for bills for utilities and services in a "date received" sequence.

It is recommended that a separate subcategory be used for each company or each service agreement. File purchase orders for supplies in Category 2, "Project Office Equipment and Supplies."

The subcategories that may be included in this category are as follows:

- Rent
- Electricity
- Gas
- Telephone
- Drinking water
- Overnight mail and shipping service
- Additional service agreements, as required

Do not confuse this category with Category 16, "Utility Agreements," Category 17, "Utility Work Performed," or a subcategory of Category 52, "Charges to Total Contract Allotment." These are part of the project's construction operations. Category 4 includes only those transactions connected with the resident engineer's office.

*Category 5 General Correspondence*

In this category, file letters that do not relate to any other category or subcategory in use. File correspondence concerning a subject that directly relates to some other category in that category. For example, file correspondence developed in connection with a change order in the change order category file.

File correspondence in any subcategory in chronological order.

When the volume of correspondence builds up, segregate and divide it into more detailed subject subcategories. When appropriate, transfer correspondence from Category 5 to a more specific category. For example, a property owner may object to certain conditions on the project. After considerable correspondence, the resident engineer writes a change order to solve the problem. At this point, the resident engineer should transfer all of the correspondence related to the change order to the change order category file.

A letter might cover subjects in multiple categories. When the letter relates directly to two subjects, file a copy in each category or cross-reference to the location of the original. Cross-referencing need be only a note describing the letter filed in a different category.

The following are examples of subcategories in Category 5. The number of subcategories will depend on the volume of correspondence. Show all subcategories in the index.

- Request for information (RFI) and responses
- Request for clarification (RFC) and responses
- To district office
- From district office
- To Project Development
- From Project Development
- To Maintenance
- From Maintenance

- To Traffic
- From Traffic
- To contractor (letters, transmittals, faxes, memos, email)
- From contractor (letters, transmittals, faxes, memos, email)
- Property owners
- Utility companies
- Form CEM-0501, "Relief From Maintenance"
- Any additional subcategories that may be required depending on the volume of the correspondence

*Category 6 Safety*

File project documents relating directly to safety in this category. Suggested subcategories are:

- Employee safety
- Form CEM-0601, "Construction Safety Report"
- Form CEM-0602, "Project Safety Program Statement"
- Contract Documents Relating to Safety
- Correspondence with the Division of Occupational Safety and Health (Cal/ OSHA)
- Form CEM-0606, "Construction Safety Checklist"
- A copy of the contractor's Injury and Illness Prevention Program
- A copy of the contractor's *Code of Safe Practices* in use for the project

*Category 7 Public Relations*

File the various documents covering the subject of public relations in this category.

*Category 8 Construction Surveys*

Use this category for filing all survey documents that do not directly or solely relate to another category.

File Form DPD-3013, "Request for Construction Staking," in this category. Create subcategories for requests on which staking has been completed and those on which staking has not been completed. Cross-file staking requests that include restaking charges in Category 54, "Deductions from Payment to Contractor."

*Category 9 Welding*

In this category, file documents relative to welding in accordance with instructions in Section 180, "Welding," of the *Bridge Construction Records and Procedures* manual.

*Category 10 Extra Category Number*

Use this extra category number for project documents that do not fit in currently established categories. When used, enter the name of the category on the index sheet.

*Category 11 Information Furnished at Start of Project*

In this category, file documents related to planning, design, contract funding, advertising, and opening bids. Do not file documents in this category that apply solely or directly to

other established categories. Create subcategories as necessary because of the volume of documents:

- Project Report
- Preliminary Report
- Project Expenditure Authorization (including Supplemental Allotments)
- Detail Estimate of Project Cost
- Notice of Award of Contract
- Bid Summary Sheets
- Federal Detail Estimate
- Executed Contract, Special Provisions, and Plans
- Notice of Approval of the Contract
- Environmental Permits
- Encroachment Permits and Cooperative Agreements
- Bidder Inquiry Information

*Category 12 Contractor*

Use this category to file the documents that the contractor is required to submit. Do not use it for general correspondence or documents appropriate to another specific category. The following subcategories suggest the scope of the category:

- Contractor's organization, including the designation of the contractor's authorized representative as required by Section 5-1.16, "Representative," of the *Standard Specifications*
- Contractor's equipment list
- Contractor's borrow agreements
- List of subcontractors and other project documents concerning subcontracting
- Shop plans, if not filed under a more appropriate category
- Falsework plans
- Insurance documents, as required in Section 7-1.05, "Indemnification," and Section 7-1.06, "Insurance," of the *Standard Specifications*

*Category 13 Signs and Striping*

In this category, file all documents related to signing, delineation, and handling public traffic during construction. Suggested subcategories are:

- Layout of Construction Signs
- Detour Design, Striping, and Signing
- Traffic Striping Diagrams

*Category 14 Photo Records*

File routine photos and their identification in this category. File photos relating to claims in Category 62, "Disputes." It is a good practice to take photos on a monthly basis to document the work during construction. Maintain video recordings and digital photo files in an organized manner. Note the location of these items in this category file.

Suggested subcategories are:

- Before Construction
- During Construction
- After Construction

*Category 15 Accidents*

In this category, file documents related to accidents. Subcategories may include:

- Caltrans Employee Accident and Injury Reports
- Caltrans Vehicle Accident Reports
- California Highway Patrol Accident Reports
- Local Police Accident Reports
- Records and Investigations of Public Traffic Accidents
- Records and Investigations of Contractor Accidents

*Category 16 Utility Agreements*

In this category, file documents that relate to work to be done to utility facilities in connection with the project.

Create subcategories for the various utility companies. Set up second-level subcategories when required by the number of documents. The following are examples of subcategories within this category:

- 16.1.1 PG&E Co.—Agreements
- 16.1.2 PG&E Co.—Relocations
- 16.1.3 PG&E Co.—Encroachment Permit
- 16.2 AT&T Co.
- 16.3 Southern Pacific RR Co.

*Category 17 Utility Work Performed*

In this category, file daily reports and other records of utility facility work. Create the same primary subcategories as those used in Category 16.

Create second level subcategories when required by the number of documents and the amount of work. For example, where the work would develop daily reports and receiving records of only one utility relocation, these documents could be kept in one subcategory in chronological order. When the same utility company has more than one relocation, a more detailed breakdown is advisable.

*Category 18 Agreements*

In this category, file agreements (except utility agreements) with third parties or other state or county agencies. The number and levels of subcategories will depend upon the agreements and the nature and extent of the work involved. A list of suggested subcategories follows:

- Right-of-Way Agreements—Without Obligations
- Right-of-Way Agreement—With Obligations
- Forest Service Agreements

- Borrow Agreements (between Caltrans and owner)
- Disposal Agreements (between Caltrans and owner)
- Service Agreements (these are utility service agreements such as for highway lighting)
- Disposal Permits
- Records of Royalty Payments
- Encroachment Permits

File an encroachment permit relating to a utility facility agreement under Category 16, "Utility Agreements." File an encroachment permit relating to a right-of-way agreement in this category.

Where there are several right-of-way agreements requiring some degree of control, such as right-of-way agreements with obligations, maintain a summary to show the status of these agreements. An example of the status summary headings:

- The agreement number
- The location of work to be performed
- A brief description of work to be done and by whom
- When the work is completed
- The change order number if the required work is being done by change order

*Category 19 Hazardous Waste and Hazardous Materials*

File any information regarding the discovery and removal of hazardous waste in this category.

To comply with the record retention requirements of the ADL Agreement, the resident engineer must retain ADL-related records as follows:

- File all ADL-related correspondence, reports, data, and records in Category 19, "Hazardous Waste and Hazardous Materials" of the project records.
- File all ADL-related documents included with the resident engineer pending file in Category 19.

*Category 20 Water Pollution Control Plan or Stormwater Pollution Prevention Plan*

File all correspondence regarding water pollution control plans (WPCP) or stormwater pollution prevention plans (SWPPP) in this category. A list of suggested subcategories:

- Authorized WPCP or SWPPP
- Amendments to WPCP or SWPPP
- Notification of Construction
- Correspondence
- Inspections by Contractor
- Inspections by Caltrans
- Notices of Noncompliance
- Annual Certification of Compliance
- Notice of Completion of Construction

*Category 21* *Construction or Maintenance Zone Enhanced Enforcement Program*

File documents relating directly to the Construction Zone Enhanced Enforcement Program (COZEEP) in this category. Suggested subcategories are shown below:

- Form CEM-2103, "COZEEP/MAZEEP Cancellation Form"
- Form CEM-2102, "COZEEP/MAZEEP Task Order"
- Form CEM-2101, "COZEEP Daily Report"

*Category 22* *Traffic Management Information*

Use this category to file information related to traffic management. Possible subcategories include:

- Contractor lane closure requests
- Lane closure requests submitted to the transportation management center
- Authorized lane closures
- Contractor contingency plans
- Traffic count data

*Category 23* *Temporary Pedestrian Access Routes*

Use this category number for the following:.

- Form CEM-2301, "Temporary Pedestrian Access Route Compliance Inspection Report"
- Form CEM-2302, "Temporary Pedestrian Access Route Weekly Inspection Report"
- Form CEM-2311, "Temporary Pedestrian Access Route Contractor Compliance Report"
- Form CEM-2312, "Temporary Pedestrian Access Route Contractor Weekly Report"

*Category 24* *Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises (DVBE)*

Use this category for the following:

- Disadvantaged business enterprises (DBE) and disabled veteran business enterprises (DVBE) correspondence
- The contractor's DBE/DVBE utilization plan
- DBE and DVBE substitution requests and approvals
- DBE and DVBE monthly reports
- Form CEM-2402(F), "Final Report—Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors"
- Form CEM-2403(F), "Disadvantaged Business Enterprises (DBE) Certification Status Change"
- Form CEM-2404(F), "Monthly DBE/UDBE Trucking Verification"
- Other DBE and DVBE related documents

*Category 25 Labor Compliance and Equal Employment Opportunity*

In this category, file required labor compliance and equal employment opportunity information. Refer to Sections 8-1, "Labor Compliance," and 8-2, "Equal Employment Opportunity," of this manual for details.

*Category 26 Progress Schedule*

In this category, file the progress schedule, critical path method submittals, and other related information.

*Category 27 Weekly Statement of Working Days*

In this category, file Form CEM-2701, "Weekly Statement of Working Days." Also file correspondence relating to contract time in a subcategory of this category.

*Category 28 Weekly Newsletter*

In this category, file periodic newsletters and reports that are prepared during the project. Include those weekly reports of a general nature pertaining to the progress of the contract.

*Category 29 Materials Information and Preliminary Tests*

In this category, file materials information and preliminary test reports. Suggested subcategories follow:

- Materials information
- Report of foundation investigation
- Report of tests on aggregate base (preliminary tests)
- Report of tests on aggregate subbase (preliminary tests)

*Category 30 Basement Soil Test Results*

In this category, file basement soil test results taken to determine structural section adequacy (taken during design phase).

*Category 31 Notice of Materials to Be Used*

In this category, file Form CEM-3101, "Notice of Materials to Be Used." Create a system for checking that notices have been received.

Make Form CEM-3101s that contain information for structure items available for use by the structure representative. Consider filing the Form CEM-3101 listing structure items in a separate subcategory of this category.

*Category 32 Notice of Materials to Be Inspected at the Job Site*

In this category, file Form TL-0028, "Notice of Materials to Be Inspected at Jobsite."

*Category 33 Notice of Materials to Be Furnished*

In this category, file Form TL-0608, "Notice of Materials to Be Furnished."

*Category 34 Treated Base*

In this category, file documents for cement-treated base, cement-treated permeable base, and asphalt-treated permeable base. Do not include those documents that are to be filed in other specific categories such as 37 and 48.

Use subcategories similar to the examples shown below. Create a numbering system that identifies the category, item, and subcategory. For example, 34.26.3 indicates: Category

34 “Treated Bases”; 26 is the contract item number of the material and identifies the subcategory; 3 is the second level subcategory identifying the particular document.

- 34.26.1 Mix design data, cement-treated base
- 34.26.2 Plant records, cement-treated base
- 34.26.3 Spread records, cement-treated base
- 34.27.1 Mix design data, cement-treated permeable base
- 34.27.2 Plant records, cement-treated permeable base
- 34.27.3 Spread records, cement-treated permeable base
- 34.28.1 Mix design data, asphalt-treated permeable base
- 34.28.2 Plant records, asphalt-treated permeable base
- 34.28.3 Spread records, asphalt-treated permeable base
- 34.4 Certificates of compliance for materials used in treated bases

*Category 35 Hot Mix Asphalt*

In this category, file documents related to hot mix asphalt, except those to be filed in other specific categories such as in 37 and 48. Following are suggested subcategories:

- Form CEM-3501, “ Hot Mix Asphalt Production Report”
- Form CEM-3502, “Hot Mix Asphalt Placement Report”
- Form CEM-3511, “Contractor Job Mix Formula Proposal”
- Form CEM-3512, “Contractor Hot Mix Asphalt Design Data”
- Form CEM-3513, “Caltrans Hot Mix Asphalt Verification”
- Certificates of compliance for materials used in hot mix asphalt

*Category 36 Concrete (other than structure items)*

In this category, file documents related to concrete. Do not include documents that are to be filed in categories such as 37, 43, and 48. For structure items, the project documents are to be filed in Category 43, “Concrete and Reinforcing Steel.” Refer to the *Bridge Construction Records and Procedures* manual for details. Following are suggested subcategories:

- 36.1 Portland cement concrete pavement
- 36.1.1 Mix Designs
- 36.1.2 Plant Records
- 36.1.3 Certificates of compliance for materials used in concrete pavement
- 36.2 Portland cement concrete, Class A structure and minor concrete
- 36.2.1 Mix Designs
- 36.2.2 Plant Records
- 36.2.3 Certificates of compliance for materials used in Class A structure concrete and minor concrete

*Category 37 Initial Tests and Acceptance Tests*

In this category, file initial tests and acceptance tests. File documents in each subcategory chronologically unless there is a specific reason for doing otherwise.

Use subcategories similar to the examples shown below. Create a numbering system that identifies the category, item, and subcategory. For example, 37.21.3 indicates: Category 37 "Initial Tests and Acceptance Tests"; 21 is the contract item number of the material and identifies the subcategory; and 3 is the second level subcategory identifying the particular test result.

- Form CEM-3701, "Test Result Summary"
- Form CEM-3702, "Relative Compaction Summary"
- Form CEM-3703, "Caltrans Production Start-Up Evaluation"
- Form CEM-3736, "Pavement Smoothness Inertial Profiler Submittal Record"
- Form CEM-3736AC, Asphalt Concrete Pavement Smoothness Corrections Information"
- Form CEM- 3736C, "Concrete Pavement Smoothness Corrections Information"
- Embankment

  37.10.1 Relative Compaction
- Structure Backfill

  37.14.1 Sand Equivalent

  37.14.2 Relative Compaction
- Aggregate Subbase

  37.21.1 Relative Compaction

  37.21.2 Moisture

  37.21.3 Sieve Analysis

  37.21.4 Sand Equivalent

  37.21.5 Record of Thickness
  (summarized in the order that the measurements are made)
- Aggregate Base

  37.22.1 Relative Compaction

  37.22.2 Moisture

  37.22.3 Sieve Analysis

  37.22.4 Sand Equivalent

  37.22.5 Record of Thickness
  (summarized in the order that the measurements are made)
- Hot Mix Asphalt

  37.31.1 Aggregate Gradation

  37.31.2 Asphalt Binder Content

  37.31.3 Maximum Theoretical Density (percent)

  37.31.4 Sand Equivalent (min)

  37.31.5 Stabilometer Value (min)

  37.31.6 Air Voids Content

  37.31.7 Crushed Particles

  37.31.8 Moisture Content

  37.31.9 Los Angeles Rattler

37.31.10 Fine Aggregate Angularity
37.31.11 Flat and Elongated Particle
37.31.12 Voids in Mineral Aggregate
37.31.13 Voids with Asphalt
37.31.14 Dust Proportion
37.31.15 Smoothness
37.31.16 Asphalt Binder
37.31.17 Asphalt Rubber Binder
37.31.18 Asphalt Modifier
37.31.19 Crumb Rubber Modifier
37.31.20 Certificates of Compliance for Materials Used in Hot Mix Asphalt

- Portland Cement Concrete Pavement

37.42.1 Sand Equivalent
37.42.2 Cleanness Value
37.42.3 Sieve Analysis
37.42.4 Modulus of Rupture
37.42.5 Penetration Values
37.42.6 Cement Content
37.42.8 Coefficient of Friction
37.42.9 Other related items

Bills of lading and copies of sample identification tags may be filed in this category temporarily and discarded when their respective test reports are filed.

File test results for items assigned to Structure Construction personnel in this category in accordance with instructions contained in the *Bridge Construction Records and Procedures* manual.

*Category 38 Quality Control*

In this category, include all documents relating to quality control. Create a subcategory system to include the following:

- Forms CEM-3801, "Request for Assignment of Inspectors, Samplers, and Testers" and Form CEM-3802, "Quality Control Inspector Affidavit of Proficiency"
- Form CEM-3803, "Daily Summary of Quality Control Testing"
- Form CEM-3804, "Hot Mix Asphalt Inspection and Testing Summary"
- Copies of related correspondence

*Category 39 Materials Testing Qualification of Employees*

In this category, file copies of certifications of the employees performing acceptance tests.

*Category 40 Field Laboratory Assistant Reports to Resident Engineer*

In this category, file chronologically any reports made by the project's materials tester. For more than one type of report, such as a report and a summary form, provide subcategories.

*Category 41 Report of Inspection of Material*

In this category, file the following forms:

- Form TL-0015, "Quality Assurance—Nonconformance Report"
- Form TL-0016, "Quality Assurance—Nonconformance Resolution"
- Form TL-0029, "Report of Inspection of Material"
- Form TL-6013, "Material Suitability Documentation Report"
- Form TL-6014, "Material Suitability Report"
- Form TL-0624, "Inspection Release Tag"
- Form TL-0625, "Material Suitability Tag"
- Form CEM-4101, "Materials Release Summary"
- Form CEM-4102, "Material Inspected and Released on Job"

Create subcategories within Category 41 for each contract item requiring inspection at the source by a METS inspector. Place a summary sheet (use Form CEM-4101, "Materials Release Summary") in each subcategory containing the date of inspection, quantity inspected, cumulative quantity, and lot numbers. The summary sheet documents that materials used in the work have been inspected.

Staple Form TL-0624, "Inspection Release Tag," removed from materials received on the project, to Form TL-0029, "Report of Inspection of Material," on a letter-size sheet of paper and file it in the appropriate subcategory. The sheet should include the name of the engineer who removed it and the date removed. When lot numbers are marked on the items, note the observed lot number on the related Form TL-0029.

Form TL-0625, "Material Suitability Tag," should be attached to the TL-6014, "Material Suitability Report," received from METS and filed.

When the Form TL-0029 includes material for more than one item, include a reference on the summary sheet showing the file location of the TL-0029.

File test reports (usually on Form CEM-4102, "Material Inspected and Released on Job") that cover material sampled on the job in lieu of source inspection in the appropriate subcategory of this category, not in Category 37, "Initial Tests and Acceptance Tests."

File reports of inspection or certificates of compliance for materials assigned to the structure representative in this category in accordance with instructions contained in *Bridge Construction Records and Procedures* manual.

*Category 42 Material Plants*

In this category, file Form CEM-4202, "Material Plant Safety Checklist," and all other project documents pertaining to material plant inspections.

*Category 43 Concrete and Reinforcing Steel*

In this category, file documents relative to concrete and reinforcing steel in accordance with instructions in the *Bridge Construction Records and Procedures* manual.

*Category 44 Recycle Materials and Diversion of Solid Waste*

In this category, file a completed copy of Form CEM-4401, "Solid Waste Disposal and Recycling Report." The contractor completes Form CEM-4401 and the resident engineer reviews the form within the reporting time constraints. The use of this form is

described in Section 7-109, "Solid Waste Disposal and Recycling Reporting," of this manual.

*Category 45 Resident Engineer's Daily Reports*

In this category, file Form CEM-4501, "Resident Engineer's Daily Report/Assistant Resident Engineer's Report," and the structure representative's daily report.

*Category 46 Assistant Resident Engineer's Daily Reports*

In this category, file Form CEM-4601, "Assistant Resident Engineer's Daily Report."

Subcategories may be used. They may vary depending on the complexity of the project and the desires of the district. The resident engineer and the structure representative must agree on the subcategories before the start of work. Follow the procedures described below to establish the subcategories.

1. Reports Covering Contract Items

   Create a subcategory for each major operation so that all items affecting the major operations are grouped together. An example of a system for a relatively large project follows.

   Modify the above breakdown to conform to the size and nature of the project. Make the breakdown narrow enough so that reports covering any particular contract item may be obtained with ease. Review the breakdown to verify that it includes all contract items.

   Make as many daily reports as necessary to cover all contract item work in the appropriate subcategories.

   As indicated in the example below, set up a separate subcategory for each structure.

| **Category and Subcategory Number** | | **Contract Items Involved in the Operation** |
|---|---|---|
| 46.1 | Chronological | All |
| 46.2 | Clearing and Grubbing | 5 |
| 46.3 | Roadway Excavation, Ditch Excavation Aggregate Subbase | 8,13,11,15,22 |
| 46.4 | Salvage Fence, Fence Gates | 2,78,79,80 |
| 46.5 | Guard Railing, Markers, Barricades | 1,4,82,83,87 |
| 46.6 | AB, CTB | 23,24 |
| 46.7 | Hot Mix Asphalt Slurry Seals, Dikes | 28,29,30,31,32 |
| 46.8 | Concrete Paving | 35,36,37 |
| 46.9 | Curbs and Sidewalks, Slope Paving, Curb Drains, Spec. Gutter Drains | 73,74,76,77 |
| 46.10 | Minor Str., Precast MH and DI, Reinf. Steel, Misc. Iron and Steel | 42,69,70,46,75 |
| 46.11 | RCP, CMP, SSP Arch, Drainage Gates, Under/Down Drain, Str Exc., Str. Backfill | 9,11,58 |
| 46.12 | Preparing Slopes, Straw | 16,17,18,19,20 |
| 46.13 | Permanent Signing | 52,53,54,55 |
| 46.14 | Hwy. Lighting and Sign Illumination | 88 |
| 46.15 | Finishing Roadway | 21 |
| 46.16 | Structure #1 | 89,90,91 |

| Category and Subcategory Number | | Contract Items Involved in the Operation |
|---|---|---|
| 46.17 | Structure #2 | 89,90,91 |

2. Reports Covering Extra Work

   Pending receipt of the contractor's billing, file chronologically the original and one copy of Form CEM-4601, "Assistant Resident Engineer's Daily Report," covering extra work in a subcategory of this category. After receiving the change order bill report and approving payment, record the change order bill number on both copies of the daily report covering the extra work. Keep one copy of the daily report in this chronological file and use it to detect future billings for the same work. File the second copy with the daily extra work report in Category 49, "Change Orders."

   Change order bills for material should show the date the material was supplied or placed and referenced to the invoice so that the particular material may be readily identified. Keep a summary of invoices paid and use it as a check against duplicate payment.

The specific system used for filing resident engineer's and assistant resident engineer's daily reports is optional (except for extra work). However, Category 45 and 46 must be used and the file index must clearly show the specific system being used.

*Category 47 Drainage Systems*

To maintain a record of contract items for drainage systems, use Form CEM-4701, "Drainage System Summary."

Use a Form CEM-4701 for each drainage system shown on the drainage quantity plan sheet. The preliminary work required to set up each system summary includes entering the contract number, the system number, planned station and description of the system, and the preliminary or planned quantities, which are entered from the drainage quantity plan sheet.

The assistant resident engineer describes progress on each drainage system in the daily report and enters estimates of work completed on the "Progress Record" portion of the drainage system summary.

Enter the quantity of work completed during an estimate period or near the end of the estimate period for each item in the "Estimate of Work Completed" portion of the drainage system summary. The quantities of work completed may then be entered on Form CEM-6004, "Contract Transactions Input," and paid on the next estimate. Use the extra column next to the item quantity column to identify the Form CEM-6004 page and line number where the quantity was entered. After all items for a particular drainage system have been calculated and checked, the final quantities are entered in the row labeled, "Actual Q."

To keep track of and reduce the number of drainage system summaries that have to be checked at the end of each estimate period, divide the category into the following subcategories:

- 47.1 Before Work Starts
- 47.2 Staked and Being Worked On

- 47.3 Drainage System Complete, Final Quantities Not Complete
- 47.4 Final Quantities Completed

Example:

47.1 Before Work Starts

Place the preliminary drainage summaries in this subcategory in numerical order. Each drainage system summary will remain in this subcategory until work starts on that system.

47.2 Staked and Being Worked On

When a drainage system is staked, transfer the drainage summary sheet from index 47.1, "Before Work Starts," to index 47.2, "Staked and Being Worked On." Transfer the individual quantity calculation sheets with the drainage summary.

47.3 Drainage System Complete, Final Quantities Not Complete

After all work is completed on a particular drainage system, transfer the summary sheet with its calculation sheets to this subcategory. Removing the summary from the preceding index (47.2, Staked and Being Worked On), precludes having to go through completed structure summaries at the end of each estimate period when making entries of work completed. Determination of pay quantities should be made as soon as possible after work on the system is complete.

47.4 Final Quantities Completed

After all quantity calculations for a drainage system are completed and the adjusted quantities entered into the project record, transfer the summary sheet and its calculation sheets to this subcategory.

Since all drainage quantity calculation sheets will remain filed in Category 47, some item-numbered folders in Category 48 may have no documents.

*Category 48 Bid Item Quantity Documents*

In this category, file source documents supporting contract item quantities. List the subcategories in Category 48 by contract item number order. Identify individual calculation sheets for the various contract items in the following manner. A quantity sheet with the number 48.14.2 indicates that it is sheet number 2 covering contract item number 14 and filed in Category 48, "Bid Item Quantity Documents." Some drainage item quantity documents may be filed in Category 47.

*Category 49 Change Orders*

In this category, file change orders and supporting documents in numerical order. Subcategories of this category are change order numbers in numerical order.

Contained within each subcategory are:

- The Form CEM-4900, "Change Order," Form CEM-4903, "Change Order Memorandum," and any accompanying correspondence.
- Form CEM-4901, "Change Order Input."
- Daily change order bills and reports matched with assistant resident engineer's daily reports.

Two additional subcategories may be:

- The *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* books applicable to the contract.
- Equipment rental rates and memos covering rates not shown in the *Labor Surcharge and Equipment Rental Rates* book.

*Category 50 Adjustment in Compensation Calculations*

In this category, file project documents and calculations to support adjustments in compensation.

After a change order is written, the supporting project documents may be transferred to the change order file or remain in this category. Provide cross references between categories 49 and 50 when the supporting documents and calculations remain in Category 50.

List the subcategories under this category by contract item numbers.

*Category 51 Materials on Hand*

In this category, file Form CEM-5101, "Request For Payment for Materials on Hand," the related evidence of purchase, and any other project documents supporting material on hand payments.

*Category 52 Charges to Total Contract Allotment*

In this category, file the documents related to and supporting charges to the contract allotment for materials and services supplied by Caltrans.

Divide the category into the subcategories indicated below:

- Department-Furnished Material and Expenses

  In this subcategory, file the contractor's letters requesting delivery of Department-furnished materials. Also, file the receiving records or other records of material furnished by Caltrans. When Department-furnished material is received as evidenced by shipping and receiving records, file the related records together.
- Service Contracts

  In this subcategory, file supporting documents and records of project related services. These are not the service contracts connected with the project office.

*Category 53 Credit to Contract*

In this category, include a subcategory to keep a record of any salvaged or surplus material. Also set up a subcategory for copies of daily extra work reports that cover any work to maintain and repair damage to state property, except damage the contractor caused (refer to Section 3-519, "Maintenance and Protection," of this manual).

Credit received for salvaged or surplus material or repair of damage is not applied to the contract allotment and the project is not given credit for any additional money to spend.

*Category 54 Deductions From Payment to Contractor*

In this category, file documents related to deductions from payments to contractors. Possible subcategories include the following:

Royalties on material.

- Materials bought for the contractor by Caltrans.

- Laboratory testing done for the contractor (refer to Section 6, "Control of Materials," of the *Standard Specifications*).
- Re-staking, engineering and inspection costs charged to the contractor.
- Costs of damaged or missing state-owned signs.
- Railroad flagging charges.
- Noncompliance with the equal employment opportunity provisions of the contract.
- Liquidated damages (refer to Section 3-906G, "Deductions," of this manual).
- Any other deductions (refer to Section 3-9, "Payment," of this manual).

*Category 55 Partnering*

This category is for filing all documents related to partnering meetings, workshops, and evaluations. Subcategories may include:

- Form CEM-5501, "Partnering Facilitator Evaluation—KICKOFF"
- Form CEM-5502, "Partnering Facilitator Evaluation—Close-Out"

*Category 56 Extra Category Numbers*

Use this extra category numbers for project documents that do not fit in currently established categories. When used, enter the name and number of the category on the index sheet.

*Category 57 Permanent Pedestrian Facilities*

This category is for filing compliance inspection reports, preconstruction and post-construction surveys, and Americans with Disabilities Act (ADA) project compliance certification documents. Subcategories may include:

- Form CEM-5773ADE, "Curb Ramp (Case A, D, or E) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773B, "Curb Ramp (Case B) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773C, "Curb Ramp (Case C) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773CH, "Curb Ramp (Case CH) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773CM, "Curb Ramp (Case CM) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773DW, "Sidewalk at Driveway Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773FG, "Curb Ramp (Case F or G) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773NSPL, "Curb Ramp (Non-Standard Plan - Parallel) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773NSPP, "Curb Ramp (Non-Standard Plan - Perpendicular) Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773P, "Parking Americans with Disabilities Act (ADA) Compliance Inspection Report"

- Form CEM-5773PW, "Passageway Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Form CEM-5773SW, "Sidewalk Americans with Disabilities Act (ADA) Compliance Inspection Report"
- Pre- and post construction surveys
- Form CEM-5773, "Americans with Disabilities Act (ADA) Project Compliance Certification"

*Category 58 Extra Category Number*

Use this extra category number for project documents that do not fit in currently established categories. When used, enter the name and number of the category on the index sheet.

*Category 59 Bridge Estimate Data*

In this category, file the bridge estimate data as covered in the *Bridge Construction Records and Procedures* manual.

*Category 60 Contract Administration System Inputs and Reports*

This category contains documents resulting from CAS. Possible subcategories are:

- Form CEM-6003, "Progress Pay—Estimate Project Initiation or Update"
- Form CEM-6004, "Contract Transactions Input"

The following CAS reports are cumulative. Only the most current results need to be retained.

- Status of Contract Items
- Project Record Item Sheets
- Status of Change Orders
- Change Order Master Listing

*Category 61 Estimate and Project Status*

In this category, file monthly Project Record-Estimate Request documents. The suggested subcategories of this category are:

- Project Contingency Fund Status
- Estimate

The following documents may be filed by estimate number in numeric order:

- Form CEM-6101, "Project Record—Estimate Request"
- Estimate Verification Form
- Progress Payment Voucher
- Estimate Processing Results
- Project Record-Estimate and Project Status

*Category 62 Disputes*

In this category, file notes, photographs, information, and other project documents that may be necessary to establish facts with respect to a dispute. Include any documents that may be related to a dispute in this category or briefly describe and cross-reference them.

Number notices of potential claims in chronological order. These numbers may then be used for subcategories.

The scope of this category may vary considerably, depending upon the nature and circumstances of the dispute. The following types of documents indicate the type of information that should be included:

- Form CEM-6201, "Notice of Potential Claim"
- Acknowledgment of the contractor's dispute
- Disputes Review Board Agreement
- Contractor's claim for a time extension (cross-reference to Category 27)
- Acknowledgment of the contractor's claim for time extension
- Other correspondence relating to disputes
- Photographs pertaining to disputes

*Category 63 Project Completion Documents*

In this category, file documents related to the completion of the project. The following are suggested subcategories:

- Form CEM-6301, "Contract Acceptance"
- Form CEM-6302, "Final Materials Certification"
- Punchlist

5-102D Category Numbers and Headings

| **Category No.** | **Heading** |
|---|---|
| 1 | Project Personnel |
| 2 | Project Office Equipment and Supplies |
| 3 | Equipment and Personnel Cost Reports |
| 4 | Service Contracts |
| 5 | General Correspondence |
| 6 | Safety |
| 7 | Public Relations |
| 8 | Construction Surveys |
| 9 | Welding |
| 10 | (Extra category number) |
| 11 | Information Furnished at Start of Project |
| 12 | Contractor |
| 13 | Signs and Striping |
| 14 | Photo Records |
| 15 | Accidents |
| 16 | Utility Agreements |
| 17 | Utility Work Performed |
| 18 | Agreements |
| 19 | Hazardous Waste and Hazardous Materials |

| Category No. | Heading |
|---|---|
| 20 | Water Pollution Control Plan or Stormwater Pollution Prevention Plan |
| 21 | Construction Zone Enhanced Enforcement Program |
| 22 | Traffic Management Information |
| 23 | Temporary Pedestrian Access Routes |
| 24 | Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises (DVBE) |
| 25 | Labor Compliance and Equal Employment Opportunity |
| 26 | Progress Schedule |
| 27 | Weekly Statement of Working Days |
| 28 | Weekly Newsletter |
| 29 | Materials Information and Preliminary Tests |
| 30 | Basement Soil Test Results |
| 31 | Notice of Materials to Be Used (CEM-3101) |
| 32 | Notice of Materials to be Inspected at Job sSite (TL-0028) |
| 33 | Notice of Materials to be Furnished (TL-0608) |
| 34 | Treated Base |
| 35 | Hot Mix Asphalt |
| 36 | Concrete (other than structure items) |
| 37 | Initial Tests and Acceptance Tests |
| 38 | Quality Control |
| 39 | Materials Testing Qualifications of Employees |
| 40 | Field Laboratory Assistant Reports to Resident Engineer |
| 41 | Report of Inspection of Material (TL-0029) |
| 42 | Material Plants |
| 43 | Concrete and Reinforcing Steel |
| 44 | Recycle Materials and Diversion of Solid Waste |
| 45 | Resident Engineer’s Daily Reports |
| 46 | Assistant Resident Engineer’s Daily Reports |
| 47 | Drainage Systems |
| 48 | Bid Item Quantity Documents |
| 49 | Change Orders |
| 50 | Adjustment in Compensation Calculations |
| 51 | Materials on Hand |
| 52 | Charges to Total Contract Allotment |
| 53 | Credit to Contract |
| 54 | Deductions from Payment to Contractor |
| 55 | Partnering |
| 56 | (Extra category number) |

| Category No. | Heading |
|---|---|
| 57 | Permanent Pedestrian Facilities |
| 58 | (Extra category number) |
| 59 | Bridge Estimate Data |
| 60 | Contract Administration System Inputs and Reports |
| 61 | Estimate and Project Status |
| 62 | Disputes |
| 63 | Project Completion Documents |

## 5-102E Alphabetical Listing of Categories

| Heading | Category No. |
|---|---|
| Accidents | 15 |
| Adjustment of Compensation Calculations | 50 |
| Agreements | 18 |
| Assistant Resident Engineer's Daily Reports | 46 |
| Basement Soil Test Results | 30 |
| Bid Item Quantity Documents | 48 |
| Bridge Estimate Data | 59 |
| Change Orders | 49 |
| Charges to Total Contract Allotment | 52 |
| Concrete and Reinforcing Steel | 43 |
| Concrete (other than structure items) | 36 |
| Construction Surveys | 8 |
| Construction Zone Enhanced Enforcement Program | 21 |
| Contract Administration System Inputs and Reports | 60 |
| Contractor | 12 |
| Credit to Contract | 53 |
| Daily Reports, Assistant Resident Engineer's | 46 |
| Daily Reports, Resident Engineer's | 45 |
| Deductions from Payment to Contractor | 54 |
| Disadvantaged Business Enterprises and Disabled Veterans Business Enterprises | 24 |
| Disputes | 62 |
| Drainage Systems | 47 |
| Estimate and Project Status | 61 |
| Equipment and Personnel Cost Reports | 3 |
| Extra Categories | 10, 23, 56, 58 |
| Field Laboratory Assistant Reports to Resident Engineer | 40 |
| General Correspondence | 5 |

| Heading | Category No. |
|---|---|
| Hazardous Waste and Hazardous Materials | 19 |
| Hot Mix Asphalt | 35 |
| Information Furnished at Start of Project | 11 |
| Initial Tests and Acceptance Tests | 37 |
| Labor Compliance and Equal Employment Opportunity | 25 |
| Materials on Hand | 51 |
| Material Plants | 42 |
| Materials Information and Preliminary Tests | 29 |
| Materials Testing Qualifications of Employees | 39 |
| Notice of Materials to be Furnished (Form TL-0608) | 33 |
| Notice of Materials to be Inspected at Jobsite (Form TL-0028) | 32 |
| Notice of Materials to Be Used (Form CEM-3101) | 31 |
| Partnering | 55 |
| Permanent Pedestrian Facilities | 57 |
| Photo Records | 14 |
| Progress Schedule | 26 |
| Project Completion Documents | 63 |
| Project Office Equipment and Supplies | 2 |
| Project Personnel | 1 |
| Public Relations | 7 |
| Quality Control Quality Assurance | 38 |
| Recycle Materials and Diversion of Solid Waste | 44 |
| Report of Inspection of Material (TL-0029) | 41 |
| Resident Engineer's Daily Reports | 45 |
| Safety | 6 |
| Service Contracts | 4 |
| Signs and Striping | 13 |
| Temporary Pedestrian Access Routes | 23 |
| Traffic Management Information | 22 |
| Treated Base | 34 |
| Utility Agreements | 16 |
| Utility Work Performed | 17 |
| Water Pollution Control Plan or Stormwater Pollution Prevention Plan | 20 |
| Weekly Newsletter | 28 |
| Weekly Statement of Working Days (Form CEM-2701) | 27 |
| Welding | 9 |

## 5-103 The Contract Administration System



### 5-103A General

This section describes the Contract Administration System (CAS), sometimes referred to as "the progress pay system." The primary purpose of this computer system is to help administer Caltrans construction projects. Various functional units within the Division of Construction update and maintain records on individual contracts in CAS from the award and approval of the contract through to the completion and final payment.

CAS is one of three subsystems of the Project Information System and Analysis (PISA). The three PISA subsystems that make up the primary computer system that Caltrans uses for tracking contract capital costs are: planning and design, bidding and award, and project construction. Each module of PISA passes data to the next module as a project progresses from conception to completion. Refer to Figure 5-1.1, "Contract Administration System, Systems Interface," for a general overview of how CAS relates to the other components of the Caltrans computer system used for tracking and paying contract capital costs.

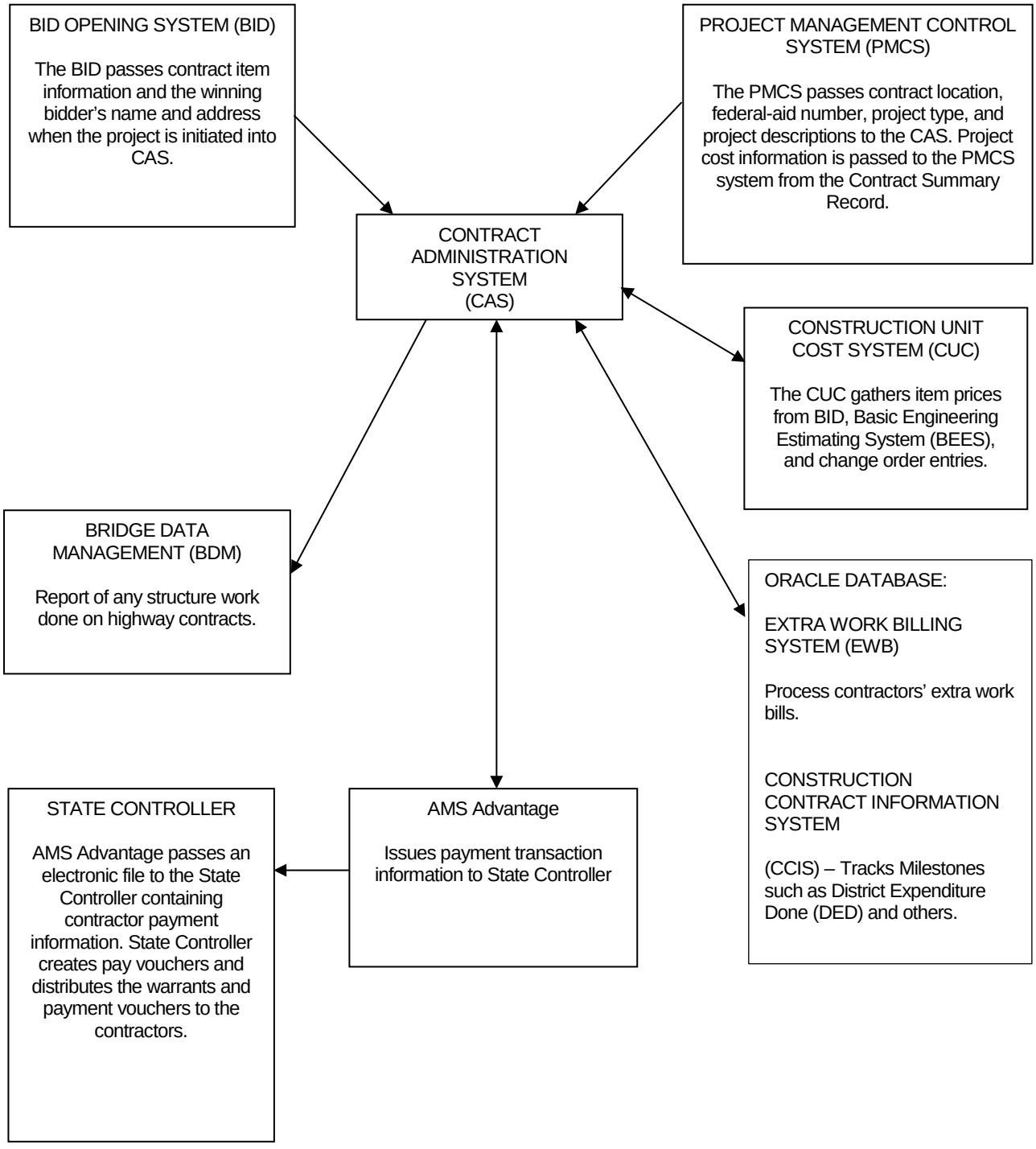
CAS is also composed of separate modules, each of which accomplishes a distinct function. The following are the most common of CAS' many modules:

- Project initiation and update
- Contract transactions
- Change order
- Daily extra work report
- Project record estimate
- Reports
- Online update and inquiry

Resident engineers use these modules to do the following:

- Account for quantities from source documents
- Account for change orders and payments for extra work
- Determine the status of the projects' financing
- Authorize payments to contractors

**Figure 5-1.1. Contract Administration System, Systems Interface**



## 5-103B Project Initiation and Update

### *5-103B (1) Major and Minor A Contracts*

When Caltrans has determined the lowest responsible bidder, the Office Engineer will transfer project data from the bid opening system to CAS. Usually, this data transfer will occur before awarding the contract and before determining the total allotment. When this information about the award and total allotment becomes available, the Division of Construction will update the computer file by adding to or changing existing information. Items of work are tracked as either federally participating or nonparticipating.

Immediately after the new contract information in the computer file has been transferred from the bid opening system, the data is available to the district for processing. The district must update the file with district information such as the resident engineer's name and address, the bridge representative's name, and the project's password. To perform the update, the district uses Form CEM-6003, "Progress Pay—Estimate Project Initiation or Update," which is explained in more detail in 5-103B (3), "Completing Form CEM-6003, 'Progress Pay—Estimate Project Initiation or Update.' "

After receipt of the contract award summary, progress pay may be initiated. Division of Construction progress pay desk verifies the contractor voucher name and address and enters project fund information into CAS from the contract award summary. The district estimate desk verifies the bid open date. Using the CAS data-entry screen, the district estimate desk enters the award, approval, completion, and acceptance dates; the number of working days; the plant establishment period; and time-related overhead information into CAS from the contract award summary, approval memo, and the form CEM-6301, "Contract Acceptance."

The result of the district's file update will be a dummy Form CEM-6101, "Project Record—Estimate Request," and a contract contents report, which lists contract items. The form and report should be checked thoroughly and any discrepancies brought immediately to the attention of the Division of Construction progress pay coordinator.

During a contract's life, the contractor may request a local address change or a legal name style address change. The district must maintain the accuracy of local address information in CAS using Form CEM-6003, "Progress Pay—Estimate Project Initiation or Update." The State Controller mails progress payment checks. Only the headquarters Division of Construction progress pay coordinator is authorized to make changes to the address from Form CEM-1202B, "Contractor Action Request—Assignment of Contract Monies, Assignee Change of Name/Address" verified by the resident engineer with the Division of Construction field coordinator's concurrence.

### *5-103B (2) Emergency Contracts in Excess of Minor B Limits*

Payment for all emergency contracts estimated at greater than the Minor B contract limit in construction cost are to be paid through CAS. The Minor B limit is evaluated and re-established every 2 years and DPAC announces the new policy by issuing a DPAC Information Bulletin:

http://dpac.onramp.dot.ca.gov/bulletins-and-memos

The district performs the initial setup of emergency contracts in CAS using the *Emergency Force Account (EFA) Contract Initiation Instructions in CAS (Contract Administration System)*. The headquarters estimate desk performs the final setup steps. Entering the emergency contract in CAS is typically performed after the "Confirmation

of Verbal Agreement" has been issued, but prior to the contract being authorized. This allows the contractor and the engineer to begin processing change order billings using the iEWB system. Progress estimates are not to be requested until confirming the contract has been authorized and the E-FIS contract document has reached the final stage.

To establish a contract in CAS, a minimum of one contract item must be used. This is typically covered by establishing the one item for the amount of the contract payment bond. In order to process change order billings, CAS requires at least one change order be issued. The change order is administrative only, and issued for the total of the construction authorization, less the value of the bid item(s), less $15,000 (example; change order amount=total allotment-item(s)-$15,000). Establishing the change order for this amount provides protections to ensure change order billings are not authorized for more than the available funds.

*5-103B (3) Completing Form CEM-6003, "Progress Pay—Estimate Project Initiation or Update"*

The purpose of Form CEM-6003 is to add new information, or to change information, in the computer file. The computer program will accept such changes only for contracts in your own district.

Except for the "Project Key," complete only the data fields that you wish to update. The computer program will ignore blank fields and will place the data from the completed fields in the file whether or not such information is already on file. Fields left blank on the input form do not change what is in the file.

Ensure the data you enter on the form conforms to these rules, listed by data field as follows:

5-103B (3a) Project Key

Enter the letter "U" under "FB," and in the remaining spaces, enter the district and contract number.

5-103B (3b) Card Type C05 (each field is independent and can be updated separately)

For the following data fields under card type C05, do the following:

- Resident engineer's phone number.
- Responsible unit: Though the current financial system (E-FIS) now uses a 4-digit source unit value, enter the prior financial system (TRAMS) 3-digit source unit value. The responsible unit may range from 501 to 545. Warning: Until this number is in the computer file, progress pay estimates cannot be processed.
- Date work started: Enter the date the contractor began work on the job site. If work has not begun, leave this field blank and submit an update when work begins.
- Estimated date for completion: Enter your best estimate, not the calculated completion date. When progress estimate requests are submitted, this date is updated.
- Password: Use of this feature is optional. Enter any combination of six characters. The characters may be alphabetic, numeric, or one of the following special characters: *, /, =, (,), +, -, @, #, %, &. Once established, this password is required when you file, among other things, contract item payments, using Form CEM-6004,

"Contract Transactions Input." The password will restrict access to the computer files.

- Suspension or reactivation: If a contract is suspended, enter the date of suspension and "S" in the "SR" column. When the suspended contract is reactivated, enter the date of reactivation and "R" in the "SR" column. You only have 30 calendar days from the suspension or reactivation date to enter this information into the computer.
- Plant establishment: If the project requires retentions be held at 5 percent for the contract's life, enter an "X" in the "PE" column. Current legislation prohibits retentions on all state and federally funded contracts through January 1, 2020.
- First Chargeable Working Day: Enter the date that contract time begins, usually 15 calendar days after the approval date. This is the date used to calculate the number of working days that determine satisfactory progress and the percent of time elapsed.

### 5-103B (3c) Card Type C06 to C08

Resident engineer's mailing address: On the first line, enter the resident engineer's last name first, followed by a comma. Then enter a space and the first name, followed by a space and middle initial (SMITH, John C.). On the second and third lines, enter the mailing address of the construction field office. Warning: The computer program treats all three lines as a single "data field." If you need to change this field, you must reenter all three lines.

### 5-103B (3d) Card Type C09 to C14

Only the headquarters Division of Construction progress pay coordinator can change the address in CAS.

To change the contractor's local address, enter the contractor's name on line C09, and as necessary, continue the name on lines C10 through C12. Leave unused lines blank.

Enter the contractor's local address on lines C13 and C14. Also enter the contractor's local phone number on line C14.

Warning: You must enter the entire name and address each time you wish to update any or all of these lines. You cannot update a single line.

### 5-103B (3e) Card Type C15

For the following data fields under card type C15, do the following:

- Structure representative's name: If the contract requires structure work, enter the structure representative's name even if it is the same name as the resident engineer's. Enter only the last name and first initial (SMITH, J.)
- Structure responsible unit: Though the current financial system (E-FIS) now uses a 4-digit source unit value, enter the prior financial system (TRAMS) 3-digit source unit value. The unit may range from 550 to 599.
- Original authorized amount for structure work: At the contract's start, the resident engineer and the structure representative must determine the initial value of the required structure work. This value should include any portion of the contract item for mobilization that will be claimed as structure work. Warning: If this amount is not on file, Structure Construction cannot obtain any reports for this contract.
- Structure mobilization percentage: Enter, to the nearest whole percent, the portion of the contract item for mobilization that will be claimed as structure work.
- Structure completion: Enter a "C" to indicate the completion of structure work.

*5-103B (4) Processing*

CAS analyzes the changes made to the computer file and does the following:

- CAS notes whether the district is updating the "Responsible Unit" field for the first time. If so, CAS prints a dummy Project Record—Estimate form and a Contract Contents Report.
- If this update is not the first update, CAS prints only the first page of the Contract Contents Report. CAS prints the dummy Project Record—Estimate form only if the contractor's name and address field has been changed.
- CAS also prints a listing of update requests, which is a summary report of all fields that have been updated in this run.

5-103C Contract Transactions

The majority of all data submitted to CAS will be contract transactions from the resident engineer on Form CEM-6004, "Contract Transactions Input." Contract transactions are divided into the following three categories:

- Contract item transactions: These consist of five types of transactions that refer to contract items.
- Miscellaneous transactions: These consist of four types of transactions to handle general project needs.
- Change order transactions: These consist of three types of transactions that refer to change orders.

The Contract Transaction Processing Module processes this total of 12 transaction types. Together with the services that the change order and Daily Extra Work Report Processing Modules perform, these modules are sufficient to generate contract records that provide control of progress payments and track the financial status of the contract.

*5-103C (1) Transaction Types*

The following describes, by category, the 12 possible transaction types:

5-103C (1a) Contract Item Transactions

CAS provides five different ways to refer to a contract item in Form CEM-6004, "Contract Transactions Input." Another way is by including the item as part of a change order. This will cause the authorized quantity to be adjusted automatically. Thus, you do not have to account for status changes due to change orders. You can reference contract items through the following contract item transactions:

- Contract item payment: Make item payments by posting line entries to Form CEM-6004 in any order. Indicate bridge items by entering "B" in the proper column. If you use the report titled *Bridge Quantities by Structure*, you will also need to enter the structure number in accordance with instructions in Section 6, "Estimates," of the *Bridge Construction Records and Procedures* manual, Vol. 1. Refer to Example 5-1.2, "Contract Transaction Input," Line 01, of this manual.
- Contract item quantity balance: You may adjust the authorized quantity, if necessary, by submitting quantity balances as line entries on Form CEM-6004, "Contract Transactions Input." You might need to make this type of transaction for various reasons. For example, a need might exist because of an incorrect engineer's estimate for a contract item that would have a major effect on the contingency balance. This transaction type adjusts the authorized final cost for your project, as

shown in the later discussion of progress pay estimates. Refer to Example 5-1.2, Line 02 of this manual.

- Contract item anticipated change: This transaction gives the engineer a method to allocate project funds to a specific contract item based on knowledge of anticipated additional or decreased work. Such transactions affect the estimated final quantity for the item and the estimated final cost for the project. The effect of these transactions is cumulative. If additional work is authorized by change order, a reversing entry is necessary. Refer to Example 5-1.2, Line 03 of this manual.
- Contract item final balance: When work is completed on a contract item, you should enter this fact into the system. This entry will mark the item in the computer file as "Complete." On all subsequent progress pay estimates, the authorized quantity and the estimated final quantity will default to the amount paid to date, thus automatically balancing out the item. Additional item payments may be made, and the system will continue to balance the contract items. Refer to Example 5-1.2, Lines 04 and 05 of this manual.
- Contract item final balance ("Reopen"): This transaction allows you to reverse the status of the contract item from "Complete" to "Active." For example, you would use "Reopen" to change an incorrect entry that showed the item was complete. Refer to Example 5-1.2, Line 06 of this manual.

### 5-103C (1b) Miscellaneous Transactions

The four transaction types listed below comprise "miscellaneous transactions," the second category of contract transactions:

- Anticipated change: Use this transaction to record anticipated additional or decreased work when it is not possible or desirable to tie the anticipated change to a specific contract item or change order. These transactions are not cumulative and will affect the project's estimated final cost only on the next progress pay estimate to be generated. Refer to Example 5-1.2, Line 07 of this manual.

  These transactions are placed in the computer file, and their sum will appear on the next progress pay estimate that generates payment. If the next estimate is a supplemental progress pay estimate, only enter material on hand payment requests if the material on hand payment request was mistakenly omitted from the previously run progress pay estimate.
- For more information about materials on hand, refer to Section 3-9, "Payment," and Example 5-1.2, Line 08 of this manual.
- Department-furnished materials allotment transfer: Use this transaction to increase or decrease the value of the Department-furnished materials allotment for your contract. The construction allotment will automatically adjust. To increase the Department-furnished materials allotment, enter a positive number. (This type of entry will decrease the contingency balance.) Refer to Example 5-1.2, Line 09 of this manual.
- Total allotment changes: Use this transaction to enter into the system any supplemental allotment that increases (or decreases) your contract's total allotment. The total allotment in the computer file will adjust automatically as will the construction allotment. The construction allotment is defined as the total allotment less the Department-furnished materials allotment. Refer to Example 5-1.2, Line 10 of this manual.

### 5-103C (1c) Change Order Transactions

The three transaction types listed below comprise "change order transactions," the final category of contract transactions:

- Change order anticipated change: This transaction has the same effect as does the contract item anticipated change except that a change order is being changed. Refer to Example 5-1.2, Line 11 of this manual.
- Change order final balance: This transaction has the same effect as does a contract item balance. When work on a change order is finished, mark it "Complete" by entering this transaction. As with contract items, additional change order bills may be paid, and the system will continue to balance the change order. Refer to Example 5-1.2, Line 12 of this manual.
- Change order final balance ("Reopen"): This transaction allows you to reverse the status of the change order from "Complete" to "Active." Refer to Example 5-1.2, Line 13 of this manual.

### *5-103C (2) Completing Form CEM-6004, "Contract Transactions Input"*

The resident engineer will use Form CEM-6004 more often than any other form in CAS. This section contains a completed sample of the form. Refer to Example 5-1.2, "Contract Transaction Input."

We cannot overemphasize the importance of legible entries. Also, because of the high volume of transactions, make your entries on Form CEM-6004 as soon as the information becomes available. Partially filled pages are acceptable.

The sample form in this section shows some transactions. Note that leading zeros are not required in the numeric fields and that the plus sign is not required in the +/columns. The following instructions are for the fields common to all transactions:

- Enter the district, contract number, password (if used), and page number. When assigning a page number, be careful because duplicate numbers will cause all transactions on the page to be rejected. You must complete these fields.
- Enter the posting date.
- Enter the source document description. If the transaction type refers to a project source document, (for example, a calculation sheet or a scale sheet), enter into the form's description column an adequate description of the source document. The source document must cross reference to Form CEM-6004. Post the page number, line number, and posting date from Form CEM-6004 to the source document. Refer to Example 5-1.1, "Quantity Calculation," for a typical source document.
- Note: The last six characters of the source document description can be the structure number if this item concerns structure work. Refer to Example 5-1.2, Line 01 of this manual.
- Mark the structure field with the character "B" if this transaction concerns "structure work." Otherwise, leave the space blank. If you use the report titled *Bridge Quantities by Structure* you will also need to enter the structure number in accordance with the instructions in Section 6, "Estimates," of the *Bridge Construction Records and Procedures* manual, Vol. 1.

The form's remaining fields are divided into two sections, "Contract Item Entries," and "All Other Entries." If you make any entry in one or more fields of one of the sections,

all fields in the other section must be left blank. A single line entry cannot serve double duty.

### 5-103C (2a) Contract Item Entries

Each type of contract item transaction has its own format on Form CEM-6004. The following are the rules for making contract item entries:

- Quantity balance transactions:
  1. Lump sum items cannot be quantity balanced. If you attempt to quantity balance them, the transaction will be rejected.
  2. If the quantity balance is greater than the bid quantity, a warning message is issued.
  3. If the value of the quantity balance exceeds $100,000, a warning message is issued.
  4. The new authorized quantity is calculated. If it is negative, the transaction will be rejected.
  5. If the new authorized quantity is less than the total payment for the next estimate, a warning message is issued. Take appropriate action on this warning, such as estimating the final quantity and inputting the increase, covering the increase by change order, or requesting the computer to final balance the item. Such action is necessary to keep the project's status of funds current.
- For item final balance and item final balance ("Reopen"), the item status is set to "Complete," or "Active," respectively. The system does not check to see if the item is a lump sum item or a final pay item.
- Item anticipated quantity change:
  1. If the anticipated quantity change is greater than the bid quantity, a warning message is issued.
  2. If the value of the anticipated quantity change exceeds $100,000, a warning message is issued.
  3. A new estimated final quantity is calculated. If this estimated final quantity is negative, a warning message is issued.
  4. If the new estimated final quantity is less than the total payment for the next estimate, a warning message is issued.
- Item payment:
  1. Any transactions for the item "Mobilization" are rejected.
  2. Any transactions for a void item will be rejected.
  3. If the payment quantity is greater than the bid quantity, a warning message is issued.
  4. If the value of the payment quantity exceeds $100,000, a warning message is issued.
  5. The new total payment for the next estimate is calculated. If the total is negative, the transaction is rejected. (Negative transactions under "This Estimate" will be accepted.)

6. If the contract item is a lump sum item and the total payment for the next estimate would exceed 100 percent, the transaction is rejected.

7. If the contract item is not a lump sum item, the new total payment for the next estimate is compared to 125 percent of the bid quantity and the authorized quantity. Warning messages are issued if the total payment is more than one or both of these.

If the system issues any warning or rejection messages while it processes transactions for a contract item, the complete status of the item will be printed on the Contract Transactions Input Edit report before the system begins processing the next contract item. Use this printout to determine the reason the system issued the message.

- Percentages for lump sum quantity payments must be expressed as decimals. Only three decimal places are available. If 5 percent is to be paid, it must be entered as 0.050; (5.00 is 500 percent).

### 5-103C (2b) Miscellaneous Transactions

The following are the rules for making miscellaneous transactions:

- Anticipated changes:
  1. If the amount anticipated exceeds $100,000, a warning message is issued.
  2. If the amount anticipated exceeds 10 percent of the construction allotment, a warning message is issued.
- Material on hand payments:
  1. If the amount exceeds $100,000, a warning message is issued.
  2. If the amount is negative, a warning message is issued. (The system assumes that this is a correcting entry to a previous transaction accepted by the system and not yet processed for payment.)
  3. A total is calculated for payment for the next estimate. This is the sum of all transactions since the last estimate. If the total is negative, a warning message is issued.
- Department-furnished materials allotment transfer:
  1. If the amount of the transfer exceeds $100,000, a warning message is issued.
  2. A new total is calculated for the Department-furnished materials allotment. If it is negative, the transaction is rejected.
- Total allotment changes:
  1. If the amount exceeds $100,000, a warning message is issued.
  2. If the amount exceeds 10 percent of the total allotment, a warning message is issued.
  3. If the amount of the change is negative, a warning message is issued.
  4. A new total allotment is calculated. If the amount is negative, the transaction is rejected.
  5. If the new total allotment is less than the total paid to date on the last estimate, a warning message is issued.

### 5-103C (2c) Change Order Transactions

The following are the rules for change order transactions:

- For the change order anticipated change, the new estimated final cost is computed for the change order and reported. The system does not do any checking.
- Change order final balance and final balance ("Reopen"):
    1. The change order status is set to "Complete," or "Active," respectively. The system does not do any checking.
    2. For a change order final balance ("Reopen"), the word "Reopen" must be left-justified.

### 5-103C (2d) General

The Contract Transactions Processing Module will sort your transactions into order, will edit each transaction for reasonableness and conformance to this manual, and will either accept or reject each transaction. From this processing, the system will issue a report titled "Contract Transactions Input Edit." This report will list the disposition of each line entry that you submitted. A comprehensive set of warning messages exists. Do not ignore warning messages on the report.

Do not use the same page and line numbers again.

You will find a summary on the last page of the Contract Transactions Input Edit report. The summary lists each Form CEM-6004, "Contract Transactions Input," page that was processed and the numbers of transactions on that page that were accepted, for which warnings were issued, or that were rejected. Any missing line numbers on the page (breaks in the sequence of line numbers) will be printed. Use this list to ensure that all the transactions were entered into the system.

Examine the remainder of the report. You must respond to rejected entries and possibly to warnings.

### 5-103C (2e) Audit Trail

In any accounting procedure, it is necessary to link transactions to the specific source documents that generate the transactions. This linking is called an audit trail. Change orders and daily extra work reports carry unique identifying numbers that CAS uses in its processing. Here, a good audit trail is automatic. However, contract transactions are different since there is no automatic reference to a unique source document.

CAS provides methods of cross-reference. You are responsible for an adequate audit trail. Note that Form CEM-6004 is an intermediate document in this respect.

**Example 5-1.1. Quantity Calculation**

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

| JOB STAMP | ITEM | FILE NO. |
|---|---|---|
| 07-1381U4<br>07-LA-210-47.5/57.3<br>Fed. No.: None | 8 Temp. Railing (Type K) | 48-8-2 |
| | LOCATION<br>Ramp 3 | SEGREGATION YES ☐ NO ☐ |
| | CALC. BY<br>I.M. Engineer | DATE |
| | CHK. BY<br>U.R. Wright | DATE |

Field Measurement:
Field Counted: ✓
Final Pay Item:

Estimated Quantity: 400
Unit of Measure: linear feet
Unit Price: $25.00
75% = 300
125% = 500

Remarks or Other Calculations:

200 linear feet placed on 5-03-01 at Maple Street onramp ✓

Material Inspection/Release: Certificates of compliance obtained on 4-29-01

PAY THIS ESTIMATE: 200 ✓
PREVIOUS PAID: 100 ✓
TOTAL TO DATE: 300 ✓

| POSTED BY | DATE | POSTED TO |
|---|---|---|
| Office Engineer | 08/08/2008 | CEM-6004, page 4, line 5 |

## Example 5-1.2. Contract Transaction Input

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
**CONTRACT TRANSACTIONS INPUT**
CEM-6004 (Rev. 10/1983) CT#7541-3515-0

DIST: 07 | CONTRACT NO.: 1381U4 | PASSWORD: | CASØAT | PAGE NO.: 004

| LINE NO. | DATE MO. | DATE DAY | SOURCE DOCUMENT DESCRIPTION | BRIDGE | CONTRACT ITEM ENTRIES ITEM NO. | + - | QUANTITY (UNITS) | | CODE | ALL OTHER ENTRIES CCO NO. | + - | AMOUNT($) | | TYPE | ENT BY | ✓ BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 05 | 19 | 48-14-17 | b | 014 | | 1,273 | 000 | | | | | | | Time | URW |
| 02 | 05 | 19 | MAIL BOX ON ELM ST | | 028 | | 15 | 000 | Q | | | | | | Time | URW |
| 03 | 05 | 19 | ANT. ELIM. AC ON FL | | 038 | - | 1,500 | 000 | A | | | | | | Time | URW |
| 04 | 05 | 19 | BAL. COMPL. ITEM 6 | | 006 | | | | F | | | | | | Time | URW |
| 05 | 05 | 19 | 48-8-2 | | 008 | | 152 | 400 | | | | | | | Time | URW |
| 06 | 05 | 19 | RESTORE STATUS | | 039 | | REOPEN | | F | | | | | | Time | URW |
| 07 | 05 | 19 | REV GRADE FR2 LINE | | | | | | | | | 15,000 | 00 | ANT | Time | URW |
| 08 | 05 | 19 | 51-4-2 | | | | | | | | | 2,174 | 37 | MHS | Time | URW |
| 09 | 05 | 19 | 52-4-1 | | | | | | | | | 2,000 | 00 | SFM | Time | URW |
| 10 | 05 | 19 | 11-3-1 | | | | | | | | | 315,000 | 00 | TAC | Time | URW |
| 11 | 05 | 19 | DELET DRAINAGE | | | | | | | 029 | | 10,000 | 00 | ACC | Time | URW |
| 12 | 05 | 19 | BAL. COMPL. CCO 18 | | | | | | | 018 | | | | BAL | Time | URW |
| 13 | 05 | 19 | RESTORE STATUS | | | | | | | 005 | | REOPEN | | BAL | Time | URW |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
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| 24 | | | | | | | | | | | | | | | | |

Refer to Section 5-103C(1) for a description of transaction types.

IN CASE OF QUESTION CONTACT: NAME _____ PHONE _____ VERIFY

93 95882 **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.

*5-103C (3) Computer Processing*

The contract item totals listed below are kept for contract work and for structure work so that the totals can be reported separately when appropriate. Records of the financial status of the contract items are maintained as follows:

- Bid quantity: This quantity cannot be changed.
- Authorized quantity: This item is the total of the bid quantity and the algebraic sum of the quantity changes due to change orders that have been filed.
- Authorized quantity: This item is the total of the authorized quantity and the algebraic sum of the quantity balances that the engineer entered.
- Anticipated final quantity: This item is the total of the authorized quantity and the algebraic sum of the anticipated quantity changes that the engineer entered.
- Item status flag: This flag is a file mark that indicates whether a contract item is "Active," "Deleted," or "Completed."

5-103D Change Orders

CAS maintains separate records for each authorized change order on a project. As each change order is authorized, it must be entered into CAS through the use of Form CEM-4901, "Change Order Input."

The method of entering each change order into the system may vary from district to district, but can be done as follows:

- The resident engineer writes a change order and completes Form CEM-4901, "Change Order Input." For approval procedures, refer to Section 5-3, "Change Orders," of this manual. The approval date must be entered on Form CEM-4901, and the Form CEM-4901 data is then entered into CAS.
- The result of entering the form data for each change order will consist of a change order report and a disposition report.
- The resident engineer should review the change order report and correct any errors. CAS automatically makes the following changes to the contract records:
    1. The authorized final cost, the estimated final cost, the authorized contingency balance, and the estimated final contingency balance are adjusted to new values.
    2. The totals for changes in extra work, adjustment of compensation, and contract items are adjusted to new values.
    3. Each affected contract item will have the authorized quantity adjusted to reflect the change.
- Immediately after Form CEM-4901 has been processed, CAS will accept change order bills and anticipated changes that refer to the change order.
- When CAS processes a supplemental change order, the daily extra work reports in the holding file (due to insufficient funds in the original change order) will be made available for payment.

*5-103D (1) Completing Form CEM-4901, "Change Order Input"*

Use Form CEM-4901 to perform the following functions:

- File a new change order in the computer file.
- Update (change existing information) a change order in the computer file.

- Replace a filed change order with another change order.
- Delete a change order from the computer file.

Completing the form depends on which of the functions is desired.

5-103D (1a) File

Enter the contract and change order numbers at the top of the form. The original change order is supplement "zero"; enter the zero on the form. Ignore the function and override boxes at the top of the form.

The remainder of the form is divided into five sections labeled "Card Type 1," "Card Type 2," "Card Type 3," "Card Type 4," and "Card Type 5." Complete only those sections that are applicable.

Card Type 1: This section is required. Complete each entry in the section. If the entry for the field "Net Money Change This CCO" is zero, enter $0.00. The field "Time Extension Days" should include the number of working days added (or deleted), zero (0), or be coded "DEF" (instead of a number) if the change order was written with a deferred time adjustment clause. Enter a category code on every change order. Left-justify this code.

Card Type 2: If extra work or adjustment of compensation is not part of your change order, leave these fields blank. Otherwise, define the payment method by making three entries for each change:

- Make the first entry by checking either the "EW" or "AC" box to indicate extra work or adjustment of compensation.
- Make the second entry by choosing one of the "FA," "LS," or "UP" boxes to indicate whether payments will be made by force account, lump sum, or unit price.
- Make the third entry by entering the dollar amount of the change (increase or decrease).

If multiple items of work in the change order are using the same pay method, they must be totaled. Also, you can enter each pay method only once per change order. If there is more than one type of extra work or adjustment of compensation on the change order, continue making successive line entries.

Card Type 3: If you have no changes for contract item prices, do not complete this section of the form. Otherwise, furnish the item number and increase or decrease the quantity for each changed item.

Card Type 4: If all or part of the work to be done under the change order is structure work, enter the net dollar amount involved. This amount will contribute to the change order changes line of the structure totals shown on the next estimate.

If this section of the form does not apply or the amount is zero, leave the section blank.

Card Type 5: This section is required.

For federal participation, enter the FHWA funding participation determination on every change order. If participation is in part, indicate the breakdown for participation-in-part funding.

For federal segregation, if more than one funding source exists, show the percentage allotted to each federal funding source.

### 5-103D (1b) Update

Use this function in the following way to replace any incorrect information in Card Type 1 or Card Type 4:

- Enter the contract and change order numbers.
- Place the letter "U" in the function box at the top right of the form.
- Enter the correct information in the appropriate fields. All information in Card Type 1 is always required.
- Leave all other fields on the form blank.
- The module for processing change orders will identify the fields that you have completed and will change this information in the computer file.

### 5-103D (1c) Replace

If a change order has been stored with incorrect information that cannot be corrected by the update function, use the replace function in the following way:

- Complete the entire form exactly as you would for the file function, using correct information.
- Place "R" in the function box at the top right of the form.

The module for processing change orders will replace the data stored in the computer file with the new change order.

If payments have already been recorded against a payment method that you are trying to eliminate, it is not possible to immediately replace an old change order with a new one. The same holds true if the payment to date exceeds the authorized amount. In these cases, the system requires that you do the following:

- Enter corrections for the change order bills that reverse payments to date to zero for the particular method of payment to be eliminated. For payments exceeding the authorized amount, enter corrections for the change order bills to reduce payments below the authorized amount.
- Submit the replace request.
- After the change order has been replaced, reenter the change order bills that were reversed. When possible, use the update function instead of the replace function.

### 5-103D (1d) Delete

You can eliminate a change order from the computer file as follows:

- Enter the contract and change order numbers.
- Place the letter "D" in the function box at the top right of the form.

As with the replace function, a change order cannot be deleted until all payments have been reduced to zero through correcting entries on the daily extra work reports.

### *5-103D (2) Edits*

The following lists some of the edits that a change order must pass through before the system will accept it:

- The change order number and the change order supplement number must be filled in or the change order will be rejected.
- The change order description cannot be blank, or the change order will be rejected.

- The net change amount cannot exceed the construction allotment. If the net change amount does exceed the construction allotment, the system will issue a warning message but will still file the change order.
- The approval date must be after the bid opening date and less than or equal to "today's" date; otherwise, the change order will be rejected.
- If the time extension days exceed 10 percent of the working days in the contract, the system issues a warning message but will still file the change order.
- If any payment method appears more than once on the input cards, the order will be rejected.
- If you enter any contract item change for a void item, the system will reject the change order.
- Lump sum items may appear on change orders only as a deletion of that item. Any increase or decrease in a lump sum item will be rejected.
- You can enter a contract item on a change order as an increase and also as a decrease. If the item appears a third time, the system will reject the change order.
- If the contract item "mobilization" appears on a change order, the change order will be rejected.
- If the quantity change entry for a contract item exceeds the bid quantity, a warning message will be issued.
- The net dollar amount for the structure work on the change order must be greater than the sum of the negative changes and less than the sum of the positive changes, or the change order will be rejected.
- The net dollar change for the change order must equal the sum of the dollar amount in Card Type 2 and the extended dollar amounts for the quantities in Card Type 3, or the change order will be rejected.
- If the change order is already on file, the system will reject this duplicate entry. Additionally, if this change order's number exceeds by five the largest change order number on file, or if the supplement's number is more than two above the latest supplement on file for this change order, the system will reject the change order. However, if you checked the override field on the input field, the system will bypass such responses.
- If the contract is completed, a warning is issued.

If you request the replace or delete function, more extensive processing is done. The system checks to see if it can maintain the payment to date under a payment method.

If the system cannot maintain the payment to date in this way, it rejects the request to replace or delete. A rejection notice is generated along with an explanation of what must be done to resolve this unacceptable situation.

The following is an example of this type of problem:

- A change order is entered for extra work at force account and accepted by the system.
- Subsequently, change order bill payments are recorded against the change order.
- A request is entered to delete the change order from the computer file. In this case, the system will reject the delete request because the payment method would be eliminated. There are no other supplements to this change order. The system requires

that entries to correct change order bills be to reverse payments to date to zero. In such a case, the system would accept a delete request. In the more complicated cases where supplements to a change order exist, the system makes similar demands.

At this point, the processing of the change order is complete. However, when a supplemental change order is processed, the daily extra work reports in the holding file (due to insufficient funds in the original change order) will be made available for payment. The system produces a report, called a "DEWR Release From the Holding File." This report shows the action the system took.

### 5-103E Change Order Billing

Change order billing is input, revised, corrected, and submitted for payment using the internet extra work billing system (iEWB) at:

http://www.dot.ca.gov/hq/construc/iewb/

Computer-based training for learning how to use the iEWB system is available at:

http://www.dot.ca.gov/hq/construc/iewb/EWB_CBT/index.html

or

http://www.dot.ca.gov/hq/construc/iewb/index.htm

The iEWB system allows authorized users to correct extra work bills that have been previously processed and paid. Change order bills or corrected approved extra work bills that need to be paid but have insufficient funds will not be rejected because of insufficient funds (subject to the limitations in Section 3-906C, "Extra Work," of this manual). Instead, the system will place these change order bills in a pending status to await the resident engineer's further action. If there are insufficient funds to pay the extra work bill, usually, the resident engineer must write a supplemental change order to provide additional funds; the supplemental change order will make the appropriate change order bills available for payment. Once additional funds are added by the supplemental change order in CAS, the iEWB system will automatically process and pay the extra work bills that have been previously approved and are in the pending funds status.

All standard contracts are required to use the iEWB system to process payments for change orders.

For contracts that are not in CAS and therefore are not using the iEWB system, the form CEM-4902, "Extra Work Bill (Short Form)," can be used. This form is only used on contracts that are not in CAS.

Use Form CEM-4902 to enter basic information related to extra work performed under a change order. The following describes the procedures for obtaining the information from the contractor, entering the information into the computer, and producing the daily extra work reports.

#### *5-103E (1) Preparing Form CEM-4902, "Extra Work Bill (Short Form)"*

The contractor may enter change order bills on the Form CEM-4902, "Extra Work Bill (Short Form)." Or, if more entries are required for equipment, labor, or material, the contractor must use the four part forms CEM-4902A, "Extra Work Bill–Title Page," CEM-4902B, "Extra Work Bill–Labor Charges," CEM-4092C, "Extra Work Bill–Equipment Charges," and CEM-4902D, "Extra Work Bill–Material Charges."

The contractor initiates forms containing force account payment and submits them to the resident engineer. The resident engineer initiates forms containing payment at agreed

prices. The backs of the forms contain the basic instructions for completing the forms. The following information supplements the instructions on the forms:

### 5-103E (1a) Basic Information (Title Page)

Do the following for the basic information:

- The change order number: Right-hand justify this three-digit number; for instance, change order 1 is 001, change order 10 is 010.
- Report number: The contractor should leave the report number blank. Duplicate numbers will be rejected (except for corrections to previous bills).
- Date performed: A separate change order bill must exist for each day on which force account work is performed (except for work done by a specialist). Enter the date the work was performed in these spaces. For change order bills covering invoices only, enter the date on which the material was used. If this entry is not practical, enter the current date. You must enter a date in this field. You may enter the acronym "VAR" in the date performed field if the pay method is lump-sum unit-price or if equipment and labor are not present on the bill.
- Date of report: Enter the date on which the report is prepared.
- Payment method: Ensure the method selected matches one of the methods authorized by the change order.
- Bridge: Place the letter "T" in this box if toll bridge work is involved and you want to apply a 10 percent markup to equipment and material and a 25 percent markup to labor.
- Fifty percent flagging: You must include on the change order bill the total hours spent on flagging because the computer will make payment of only 50 percent of the total. For flagging that is not subject to the 50 percent split, submit separate change order bills.
- Labor surcharge: The contractor should enter this surcharge as a whole number; for instance, "15 percent" is entered as "15." The contractor should obtain the applicable percent from the effective *Labor Surcharge and Equipment Rental Rates* (*Cost of Equipment Ownership*) book. This surcharge is for regular hours. The system will apply the overtime surcharge based on the regular hour surcharge.
- Work performed by: This field should contain the name of the organization (the contractor, subcontractor or other) that performed the work. If the change order bill is for an invoice only, enter the name of the organization to which the invoice was addressed. Submit a separate daily change order bill for each organization's work.

### 5-103E (1b) Equipment

Do the following for equipment:

- Equipment identification number: Enter this number (required.) It can be any number that the contractor assigned to the equipment for specific identification.
- Equipment description: Enter the description, which consists of four items: the "Class," "Make," "Code," and "Attach" (attachments). The equipment description must come from the applicable *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book. Make a copy of this publication available to the contractor. A listing of miscellaneous equipment, for equipment that is not shown in the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book is available from the Division of Construction's website.

- For equipment that is neither in *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book nor available from the website's miscellaneous listing, the contractor must request a rate from the resident engineer. The resident engineer will obtain an authorized rate from the Division of Construction's rental rate engineer.
- Equipment for which a change order has established the rental rate will not have an equipment description and must be included as a unit price payment on the material charges portion of Form CEM-4902 (Short Form), lines 24–25, or Form CEM-4902D "Extra Work Bill–Material Charges," lines 24-33, of the daily extra work report.
- The following explains the procedures for "Class," "Manufacturer," "Code," and "Attach," within equipment description:

    1. Class: This portion of the equipment description will be found in the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book under the heading for a particular class. For instance, after "Hydraulic Cranes and Excavators, Crawler Mounted," you will find the class "HCECL."
    2. Manufacturer: For the equipment listed by "Class," you will find the "Manufacturer" portion of the equipment description in the left-hand column. For instance, after "Bantam," you will find the make "[BANT]."
    3. Code: For the equipment listed by "Class" and "Manufacturer," you will find the "Code" portion of the equipment description in the "Code" column. For instance, after "Model C-266," you will find the code "0680."
    4. Attachments: You will find this portion of the equipment description in the front of the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book. The rate for the equipment under "Class," "Manufacturer," and "Code" above includes all attachments and accessories. Therefore, leave this column blank.

Enter all equipment descriptions beginning at the left of each field. Include all letters, numbers, dashes, or other symbols as they are shown in the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book.

- Regular hours for which payment is to be made: Enter the regular hours for which payment is to be made. Regular hours may not exceed 8 unless you are entering a daily rate item. If the date the work was performed is various, you may enter up to 99 in the regular hours field. Various is used for equipment at day rates.
- Overtime hours: Enter the overtime hours worked. Overtime hours may not exceed 16.

### 5-103E (1c) Other Expenses Subject to Labor Markup

This portion of the form is for travel expenses that cannot be entered as "Subsistence" under "Labor."

If the units and rate are already entered, the computer will calculate the amount. Otherwise, enter the amount, and this figure will be used.

Note: If you use the "Unit" and "Rate" fields, leave the "Amount" field blank. If you enter an amount in the "Amount" field, don't make an entry in the "Unit" and "Rate" fields.

### 5-103E (1d) Material or Work Done by Specialists, Lump Sum, or Unit Price Payments

The following explains the procedures for completing the Form CEM-4902, "Extra Work Bill (short Form)," material section:

- Material: Note that the material entry will not be processed unless there is a value in both the "Units" and the "Unit Cost or Net Pay" fields. Do the following for material:
    1. Invoice date: Preferably, enter the date of the invoice to help in checking for duplicate billing. However, if entering the invoice date is not practical, enter the date the material was used.
    2. Invoice description: Enter a brief description of material.
    3. Units: Normally, enter the unit one (1.00) for materials used.
    4. Unit cost or net pay: In this column, enter the amount for which payment is due. Normally, this amount is the cost of the material plus tax, if applicable, less any discount offered.
- Work Done by Specialists: Enter this item in the same manner as described under "Material" above.
- Lump Sum: Follow the procedures below for this entry:
    1. Vendor name and invoice number: You do not need to make any entries in the vendor column or the invoice number column.
    2. Date: Enter the date the work was performed. When entering this date is not practical, enter the current date.
    3. Invoice description: Enter "per Change Order No._____."
    4. Units: Enter the units to be paid as a percentage of the lump sum amount, expressed in decimals. For instance, express 75 percent as 0.75. This figure must never exceed a total of 1.000.
    5. Unit cost or net pay: Enter the lump sum amount from the change order.
- Unit price payments: Enter this item in the same manner as described under "Lump Sum" above.
- Units: enter the number of units to be paid.
- Unit cost or net pay: enter the unit cost from the change order.

### 5-103E (1e) Signature of Prime Contractor's Representative

For all force account payments, the contractor or contractor's authorized representative must sign the change order bill. For agreed price payments, the signature is not required.

## *5-103E (2) Processing Form CEM-4902*

The resident engineer receives Form CEM-4902, "Extra Work Bill (Short Form)," from the contractor, reviews the form, and if it is satisfactory, signs the change order bill and authorizes it for entry into CAS. When reviewing the submitted change order bill, the resident engineer must be guided by the policy contained in Section 3-9, "Payment," of this manual. The following explains how the system will process Form CEM-4902:

- Request that CAS print a copy of the change order bill after it has been entered into the system before it will be paid.
- Computer programs will perform the following processes:

1. Edit all information for acceptability. For example, numeric data must be in numeric form, or the program will issue a warning.
2. Select information from the equipment database; for example, rates, descriptions, and attachments.
3. Validate the contract number, change order number, report number, type of work (payment method), dates, corrections, labor surcharge, and equipment description.
4. Audit right-of-way delay and the hours equipment and labor are used for work.
5. Compute extensions, markups, and summaries.
6. Ensure the authorized amount (for instance, 100 percent or $15,000) is not exceeded.
7. File a validated change order bill for payment at the estimate time.
8. Produce a daily extra work report. This report will contain all the information as entered on the change order bill plus equipment descriptions, extensions, markups, total payment, and contract information.
9. Produce an edit report. This report will contain processing results. These results are tabulated by change order within a contract. If the system rejects an entry, the rejection messages will be included on the daily extra work report. If the system accepts the change order bill, all warning messages will be contained on the edit report.

- After the reports have been printed and the district construction office has received them, the district will forward copies to the resident engineer. Daily extra work reports are printed in two parts, one for the contractor and one for the resident engineer.

*5-103E (3) Corrections to Change Order Bills*

You can make corrections to the change order bill after it has been entered into the system, but there is a limit of four corrections per change order bill. Refer to the *Entry of Extra Work Bills Manual (CASEWBM).*

5-103F Generating Estimates

CAS produces five types of estimates on demand:

- Monthly progress estimate
- Progress estimate after acceptance
- Supplemental progress estimate
- Semifinal estimate
- Final estimate

The resident engineer will regularly request the monthly progress and the progress after acceptance estimates while the remaining three types of estimates usually will be requested in cooperation with, or by, the district construction office.

Supplemental progress estimates may only be run between the completion of the monthly progress estimate run and the 15th of the following month.

Producing an estimate is completely automatic, based on data previously stored in the computer.

In addition, CAS will produce two other types of estimates that do not generate payments. These estimates are simply statements of the current status of the computer files. The following are the two types:

- Status purpose only estimate
- Proposed final estimate

*5-103F (1) Procedure*

Before requesting the first monthly progress estimate, enter the date work started and the responsible unit on Form CEM-6003, "Progress Pay—Estimate Project Initiation or Update." The Division of Construction progress pay coordinator enters the approval date. If the approval date is not in the computer file, the system will reject the estimate request.

The procedure for processing an estimate includes the following steps:

- Preparing Form CEM-6101, "Project Record—Estimate Request," and verifying the estimate. Transmit these to the district office.
- Computer processes your estimate and prints the reports.
- The district construction office verifies the estimate results.
- Returning the estimate reports to the resident engineer.

The schedule for completing the pay process and making payment to the contractor is rigid. This rigid schedule means all people involved must adhere to their individual schedules. District construction offices will advise resident engineers of the schedules.

5-103F (1a) Preparing Form CEM-6101, "Project Record—Estimate Request"

To request an estimate, complete this form accurately in accordance with the following:

5-103F (1b) Estimate Parameters

For the estimate parameters, follow the instructions below.

- Enter the contract number.
- Enter the estimate number. This number must be one greater than the last estimate that was successfully processed and paid.
- Enter the work period ending date in the estimate for the form's "Work Performed Through" field. For a progress estimate or a supplemental progress estimate, enter the 20th day of the month. For all other types of estimates, use the date of completion.
- If this is a monthly progress estimate, place an "X" in the matching box on the form; otherwise, leave the box blank.
- If this is a progress estimate after acceptance, place an "X" in the matching box on the form; otherwise, leave the box blank.
- Enter the estimated date of completion. This date should be the resident engineer's best estimate, not necessarily the computed date. If this estimate is not a progress estimate, enter the date of completion.
- Enter the values as of the "date work performed through" for chargeable working days, weather nonworking days, and authorized time extension days (change order) in the three matching fields of the form. As of February 16, 2012, "Other day" time extensions are no longer allowed, therefore do not increase this value to more than

existed prior to this date. In most cases, this value should always be zero. The system will check the chargeable working days and weather nonworking days against the working days calendar and inform you of possible entry errors. However, it cannot check the two types of time extension days. These values affect the system's computation of percent time elapsed.

- If you have a landscape contract that is in the plant establishment period, check one of the two boxes to indicate whether progress is satisfactory or unsatisfactory. These boxes are not for highway contracts that contain "Type 2" plant establishment periods. If you are unsure of this status, contact the district construction office after reading the special provisions.
- The system determines whether contract progress is satisfactory or unsatisfactory. Occasionally, a situation arises where, even though progress is mathematically unsatisfactory, the resident engineer wishes to override the system and record satisfactory progress. To accomplish this override, place an "X" in the field, "Override Unsatisfactory Progress." Also refer to the following item about projects with dual time limits.
- For some contracts, the standard manual formula does not apply for computing percent time elapsed. For such contracts, interpret the special provisions, and determine this percentage. Enter the percent in the box on the form; this will override the system's calculation.
- If you have checked "Override Unsatisfactory Progress" or entered a number in percent time elapsed, enter a short explanation in the 25 spaces immediately below these fields on the form. Typical entries might be "change order days pending" or "Nonstandard time format."
- If the estimate is a supplemental progress estimate, proposed final estimate, semifinal estimate, or final estimate, check the appropriate box. Note that on a supplemental progress estimate the date for "Estimate for Work Performed Through" and all of the working day information should be the same as the date for the last estimate.
- If this estimate is a rerun (a recalculation) of a prior successful estimate, check the recalculation box. Note that, if the last estimate processed was a status purpose only estimate, you are not rerunning an estimate this month; instead, you are trying to run the estimate that did not generate payment. Normally, the district office will enter requests to rerun an estimate.

### 5-103F (1c) Deductions

If you wish to take one or more deductions or to return one or more deductions from a prior estimate, enter them on Form CEM-6101, "Project Record—Estimate Request." If you wish to rerun an estimate or to pay an estimate after a status only estimate, you still must enter the deductions again because any deduction stored in the computer file and carrying this estimate number will be erased automatically. You can enter five types of deductions on this form. Each deduction entered requires an alpha code to be placed in the form's type field and an entry in the description field. Use a minus sign to take a deduction and a plus sign to return a previous deduction. The following lists the rules by type of description:

- Administrative deductions: Enter "ADM" in the type field. Both plus and minus deductions are allowed.

- Equal employment opportunity deductions: Enter "EEO" in the type field. Both plus and minus deductions are allowed, but plus deductions should be adjustments or reversals of deductions taken on prior estimates. If you wish to take an EEO deduction on this estimate, leave the amount field blank. The system will compute the deduction amount for you. Only one "blank" EEO deduction, normally entered by the labor compliance officer, can appear on the form. Note: The system will not accept EEO deductions if the contract item payment for this estimate is zero. It may be necessary to enter the minimum amount of $1,000.
- Labor compliance violation deductions: The labor compliance officer usually makes these entries on the form. The officer will enter "LCV" in the type field. The rules for LCV deductions are identical to those for EEO deductions. Note: "LCV" deductions will not be taken if the contract item payment for this estimate is zero. It may be necessary to enter the minimum amount of $1,000.
- Liquidated damages deductions: Enter "LIQ" in the type field. Both plus and minus deductions are allowed. Plus deductions reverse earlier deductions. Only use this type of deduction when liquidated damages are being assessed. If during the course of the work, the contractor's progress is unsatisfactory and has progressed to a point where a reasonably accurate estimate of possible liquidated damages can be made, make a deduction in lieu of any retention for unsatisfactory progress using an ADM in the type field with the text "Antic.Liq.Damages." Reverse the ADM when the actual liquidated damages are being assessed by using LIQ in the type field. Refer to Sections 3-807, "Liquidated Damages," and 3-906G, "Deductions," of this manual for more detailed guidance.
- Other outstanding documents deductions: Enter "OOD" in the type field. If you wish to take this deduction, leave the amount field blank. The system will compute the amount for you. Take this deduction only once per contract. The system will maintain the correct deduction on subsequent estimates by generating "OOD" in the type field with a description, "MAINTAIN OOD DEDUCT." You can reverse the deduction at any time by entering a plus amount that exactly reverses the OOD deductions to date from the previous estimate. Negative OOD deduction amounts are never allowed on the input form.

After carefully preparing Form CEM-6101, "Project Record—Estimate Request," promptly send it to the district office. The specific deadline for submittal may vary by district.

*5-103F (2) Computer Processing*

Once you have made your entries on Form CEM-6101, "Project Record—Estimate Request," and transferred them to the computer, the system edits the estimates and then produces reports showing the results of the system's processing.

5-103F (2a) Estimate Edits

Once Form CEM-6101, "Project Record—Estimate Request," has been entered into CAS, the system will do the following:

- Edit Form CEM-6101 for consistency with previous estimates and with the working days calendar stored in the computer.
- Identify and summarize all daily extra work reports entered in the system and eligible for payment since the last estimate.

- Identify and summarize all contract transactions entered in the system since the last estimate.
- Identify and balance the change orders that require balancing.
- Identify and balance the contract items that require balancing.
- Make calculations for the item "Mobilization" (if necessary), for the various deductions and retentions, for percent time elapsed, for percent complete, and for various status totals, such as authorized final cost. The system also determines whether the contractor's progress is satisfactory.
- Edit any deduction submitted for processing on Form CEM-6101, "Project Record —Estimate Request." Special attention is given to three of the deductions as follows:

    1. If the resident engineer has submitted an EEO deduction, CAS computes the amount as 10 percent of the contract item payment on this estimate, or a minimum of $1,000 or a maximum of $10,000, and places the deduction on file.
    2. If the resident engineer has submitted an LCV deduction, the system performs the same calculation as for EEO deductions described above.
    3. If the resident engineer has submitted an OOD deduction, the system will compute the deduction under the following conditions:

        a. The contract has been completed, or retention is being reduced because the percent complete exceeds 95 percent. If one of these conditions is not met, the deduction will be rejected.

        b. The total of all OOD deductions from prior estimates must be zero, or the deduction will be rejected. An OOD deduction should be taken only once for a contract.

        c. If the first two conditions are met, the amount of the deduction is calculated as 5 percent of the total work completed to date less mobilization, or $10,000, whichever is less.

- Further deduction processing as follows:

    1. If the total to date for an OOD deduction is negative, the system will check whether the value has changed since the last estimate for total work completed to date less mobilization. If the value has changed, the system will generate a new OOD deduction with a description, "MAINTAIN OOD DEDUCT," and an amount equal to the difference between the amount demanded by the formula and the amount of the total to date for this type of deduction. Thus, an OOD deduction, once submitted, will be maintained at the formula's value unless it is exactly reversed by a positive deduction entry on Form CEM-6101, "Project Record—Estimate Request."
    2. For each type of deduction, you cannot give back more than has been taken. If you make this error, the estimate will fail. Messages are produced stating which deduction is in error.
    3. At this point in the processing, the final values are computed for total work completed and total payment to the contractor. If there are "Limitation of Payment" dates and amounts in the special provisions for this contract, the Division of Construction progress pay coordinator will have entered them in the computer. The system will check the period ending date of this estimate and

will generate or return any split-year-financing deductions that are necessary under the contract's terms.

4. If retention is being released on this estimate and the total to date for liquidated damages is zero, the system will issue a warning message.
5. The system automatically computes overbid item deductions as required. These deductions are taken and returned at the appropriate times.

- Make calculations for the progress payment voucher, including retentions and payments to escrow accounts.
- Determining the success of the estimate's processing.
- If processing is successful, CAS prints your estimate.
- If this estimate is for a zero or negative progress payment, the system prints a status purpose only estimate.
    1. If the total authorized final cost is greater than the construction allotment, CAS will issue a severe warning.
    2. If the total payment to date to the contractor on this estimate is greater than the construction allotment, the estimate will fail.

### 5-103F (2b) Estimate Output

Once CAS has processed the estimates, it produces the following reports:

- Schedule of extra work
- Schedule of deductions
- Project record estimate
- Project status
- Work done by Structures
- Progress payment voucher

Only two copies of the estimate will be sent to the field, one for the resident engineer and one for the contractor. The contractor also must receive the first three reports listed above and the last report listed above.

In addition to the estimate documents listed above, CAS also produces a report called "Estimate Processing Results." This report is the tool by which the resident engineer can check the "estimate package." This report has the following sections:

- Edit messages: The system can produce many possible messages. If the estimate is rejected, the exact reason will be found here. To assist in preventing overpayments, among other problems, warning messages have been set based on carefully chosen tolerances. Read these messages carefully.
- Transaction selection: The system will print a list of the exact pages and lines of contract transactions that were used to produce the estimate. This list enables you to verify that all the contract transactions you submitted were used to produce the estimate.
- Change order processing: This lists any balancing of change orders by the system. Occasionally, the list also contains warning messages.
- Contract item processing: This part of the report does the same things as described for change order processing, but for contract items instead of change orders.

- Contract transactions list: This list identifies all contract transactions used to generate your estimate. If you question any line item on the project record-estimate, examine the detailed records to see how the system derived its totals.
- Structure totals: This item summarizes all structure work the system found while processing the estimate.

*5-103F (3) Potential Problems*

For the unwary, several points in the estimate process can cause errors. These problems result from misunderstanding what constitutes an estimate and how the estimate number should be increased from estimate to estimate.

On the title page of the project record estimate and in the estimate processing results, the system will print the type of estimate generated. If the estimate is one of the five types listed in Section 5-103F, "Generating Estimates," of this manual a valid estimate was generated.

The progress pay system requires that the estimate number be increased only by valid estimates. Thus, if you request estimate number 3 to be processed, but the system generates a status-purpose-only estimate, a valid estimate was not generated. Request estimate number 3 again for the next estimate.

Another potential problem involves two types of contract transactions: materials on hand and anticipated changes. These transactions apply to a specific estimate period. If the estimate generated by the system is a status-purpose-only estimate, these transactions have not been "used." They will appear on the next valid estimate generated. If their appearance on the next estimate is not satisfactory, you must use reversing entries before requesting the next estimate from the system.

If the estimate has failed for any reason, the system will print, with one exception, as many of the estimate reports as possible to help you analyze the problem. The one exception, the progress payment voucher, is only printed for successful estimates that are eligible for payment according to the system's standards.

Processing the estimate is done by a series of computer programs that perform the following functions:

- Edit data input on Form CEM-6101, "Project Record—Estimate Request."
- Select from the computer file the change order bills that will be used to generate this estimate.
- Select from the computer file the contract transactions that will be used to generate this estimate.
- Process the change orders.
- Process contract items.
- Process deductions.
- Conduct miscellaneous computations.
- Generate reports.

## 5-103G Approval of Estimates

The authorization of an estimate depends on the type of estimate being run. The following is the general outline and method for approving contract estimates.

*5-103G (1) Resident Engineer*

After an estimate has been run, the resident engineer must authorize it before the process of payment is continued. To expedite payment, the resident engineer can authorize through a memo, form letter, or telephone call with subsequent written confirmation to the district office.

*5-103G (2) District Director*

At the time the estimate was produced, so was a payment voucher. If the estimate is a final estimate, an individual who has been formally delegated by the district director to do so must sign the form.

*5-103G (3) Flagging an Estimate for Payment*

Flagging an estimate in the computer system for payment indicates that a payment voucher has been verified and authorized.

For payments on after-acceptance estimates, semifinal estimates, and final estimates, the Division of Construction progress pay coordinator must flag the estimates in the computer system for payment after the district's flagging.

## 5-103H Reports Available Through the Contract Administration System

CAS online reporting through CA-View is available at:

https://gogreen1.go-online.ca.gov/CADVweb.asp

CA-View user guide and tips are available at:

http://it.onramp.dot.ca.gov/information-about-cas

*5-103H (1) District (XX) Estimate Status*

This report, which is also available statewide, provides information on the pay status of each contract in the district. For each contract, the report includes the following:

- Contract number
- Date of last estimate processed (if there was one)
- Number of the estimate
- Number of days elapsed since the estimate was processed
- Type of estimate
- Pay status and date paid (if paid)
- Date on which the payment voucher was authorized
- Resident engineer's name and phone number
- Responsible unit
- Password

*5-103H (2) Project Management*

The project management report is for use by the district office and Division of Construction managers. This report consists of the following two separate reports that are produced whenever "Project Management" is requested.

5-103H (2a) Project File Status Report

This report lists all contracts in the district (or statewide) that are on the computer's active list. For each contract, the report provides the following information:

- Contract number
- Status
- Date bids were opened
- Date of award
- Date of approval
- Date of acceptance
- Bid amount
- Name of contractor

After bid opening, projects are added to the list automatically. After the final estimate and approvals from the districts and the disbursing office, the Division of Construction removes the projects from the list.

5-103H (2b) Exceptional Contracts Report

This report lists all contracts for which the following applies:

- More than 60 days have elapsed since the bid opening.
- More than 10 days have elapsed since the completion date and the contract needs an acceptance date.
- More than 45 days have elapsed since completion, but the proposed final estimates have not been run.
- More than 180 days have elapsed since completion, but the final estimates have not been run.

*5-103H (3) District (XX) Project Status*

This report is for use by construction managers. It lists all active contracts, and for each contract, provides the following information:

- Contract number
- Contractor's name and county-route-post mile
- Date of the last estimate
- Percent complete
- Percent of time elapsed
- Construction allotment
- Total amount paid to date
- Estimated final cost
- Estimated final contingency balance

*5-103H (4) Progress Payment-Work Done by Structure Construction (Copies)*

This report is for use by Structure Construction. For details, refer to Section 6, "Estimates," of the *Bridge Construction Records and Procedures* manual, Vol. 1.

*5-103H (5) Project Record-Estimate (Copies)*

A request for estimate copies will produce all of the documents that were produced automatically during the previous estimate's run; you should not need to order copies through this program. For the estimate, the report contains the following information:

- Schedule of extra work
- Schedule of deductions
- Project record-estimate
- Project status
- Progress payment voucher

*5-103H (6) Status of Contract Items*

The district office requests this report monthly for all ongoing contracts. The report must be filed in Category 60, "Contract Administration System Inputs and Reports."

For this report, the system prints one line of information for each contract item and summarizes the net effect of all contract transactions that have been entered against the item. This report allows the resident engineer to review each item and determine whether quantity balances and anticipated changes, among other things, are necessary.

If any particular number on the report seems questionable, the project record item sheets provide supporting detail. For example, if the authorized quantity differs from the bid quantity, the project record item sheets describe, under the item number, any changes due to change orders.

When applicable, take particular care to flag an item "COMPLETE" (using the item final balance transaction on Form CEM-6101) so that an accurate project status will be produced. Remember, flagging an item "COMPLETE" does not mean that contract item transactions will no longer be accepted; it means only that you have commanded the system to keep the item in balance at all times.

*5-103H (7) Project Record Item Sheet*

The district office requests this report monthly for all ongoing contracts. The report must be filed in Category 60, "Contract Administration System Inputs and Reports."

With the following exceptions, the project record item sheets list every contract transaction entered into the system since the beginning of the contract:

- Item and change order final balance transactions will appear only on the report following the next estimate. Thereafter, they are dropped from the report.
- Miscellaneous anticipated change transactions also appear only on the report following the next estimate.

The report lists the contract transactions, first by the estimate number on which they were paid, and then by the page and line number of the input form. The total to date will be printed.

This is a cumulative report. Do not retain previous issues of this report in the project files. However, one issue of the report, usually the one requested immediately after all final quantities have been paid, must be retained in the project's files.

*5-103H (8) Status of Change Orders*

Normally, the district office requests this report monthly for all ongoing contracts. The report must be filed in Category 60, "Contract Administration System Inputs and Reports."

This report is similar to the status of contract items, which allows the engineer to review each change order.

Use the report to determine when supplemental change orders will be necessary to complete the work. The report also facilitates a review of those change orders where a credit is due Caltrans.

When applicable, flag change orders "COMPLETE" (using the change order final balance transaction) so that an accurate project status can be produced. Similar to flagging a contract item, flagging a change order "COMPLETE" means only that you have commanded the system to keep the change order in balance at all times.

*5-103H (9) Change Order Master Listing*

Normally, the district office requests this report monthly for all ongoing contracts. The report must be filed in Category 60.

This report summarizes all change orders stored in the computer file. It also contains the change order time extension and change order category code. The report lists each individual supplement with all the information the system contains. Do not retain previous issues in the project's files. However, one issue, usually the one requested immediately after final payment has been made on all change orders, must be retained in the project's files.

*5-103H (10) Bridge Quantities by Structure*

This report is for use by Structure Construction personnel. It is available on all projects for which Form CEM-6003, "Progress Pay—Estimate Project Initiation or Update," has been filed. The filing of this form indicates a structure work amount and structure numbers have been entered for the contract transaction in accordance with the instructions in Section 6, "Estimates," of the *Bridge Construction Records and Procedures* manual, Vol. 1.

*5-103H (11) District (XX) Status of Anticipated Changes*

This report is for use by the district and Division of Construction managers.

*5-103H (12) Project Record-Estimate (Dummy)*

A request for this item will produce the same form that was produced automatically when Form CEM-6003, "Progress Pay—Estimate Project Initiation or Update," was filed.

This form is identical to a project record-estimate, except that it does not contain an estimate number or dates and no entries appear under "This Estimate" or "Total Estimate." It is a blank estimate form, valuable only if it became necessary to make an estimate manually.

*5-103H (13) Contract Contents Report*

This report contains information that is currently in the file as a result of automatic entries or entries from Form CEM-6003 "Progress Pay—Estimate Project Initiation or Update."

Most of the information in this report is included already in other reports and forms that are produced automatically. Therefore, you do not need to request it routinely.

*5-103H (14) Contract Contents Report-Contract Item Records*

This report provides the following information:

- Contract item number
- Contract item index number
- Item description
- Unit of measure
- Bid price
- Bid quantity
- Bid amount
- Amount overbid
- Void items
- Plant establishment items

Most of the information in this report is included already in other reports and forms that are produced automatically. Therefore, you do not need it for routine contract administration.

*5-103H (15) Contract Contents Report-Contract Progress*

For each contract item, this report includes a detailed analysis of the current and prior quantities and payment status. It also summarizes all other payments or deductions as well as data on contract time. The information in this report is included already in other reports that are produced automatically. Therefore, you do not need it for routine contract administration.

*5-103H (16) DEWRs in Holding File*

This report lists change order bills that are in the holding file for all contracts in the district. If there are reports in the holding file, process supplemental change orders to provide additional funds. The bill must be re-approved in the iEWB system in order to be released for payment on the next estimate.

*5-103H (17) Daily Extra Work Report*

Copies of daily extra work reports are produced under the procedure outlined in Section 5-103E, "Change Order Billing," of this manual. You can obtain copies by using the second page of the report request form or receive reports directly from the iEWB system. Refer to the *iEWB User Guide* for details.

*5-103H (18) Rental Rates and Codes for Miscellaneous Equipment*

This report provides a listing of equipment codes and related descriptive information for equipment that is not included in the *Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)* book.

*5-103H (19) Reports for Structure Construction*

In addition to the reports discussed above, CAS provides reports for Structure Construction. For details, refer to Section 6, "Estimates," of the *Bridge Construction Records and Procedures* manual, Vol. 1.

5-103I Field Audits by Accounting Office

In accordance with instructions from the Division of Administrative Services, personnel from the Accounting Office will periodically review record-keeping procedures for construction projects. The accounting reviewer will prepare a report of the findings, a copy of which will be sent to the deputy district director of construction and the resident engineer.

District construction must then report back to the Accounting Office, stating what actions it took in response to the report's recommendations. If the district's actions result in a dispute, the deputy district director of construction will resolve the dispute.

5-104 Final Construction Project Records

## 5-104 Final Construction Project Records

5-104A General

Construction project records consist of all material in the construction files, whether in the field office or the district construction office. This section contains guidelines for the disposition of construction project records after Caltrans makes the final payment to the contractor. This section also provides guidelines for allowing public access to construction project records and for producing a set of as-built plans for each completed construction project. In addition to construction project records, the district keeps a project history file. When the construction project is completed, the resident engineer initiates assembly of the project history file by transmitting designated records to the district Construction Unit for compilation. The project history file is stored in a secure, central file location within the district. For information about the project history file, refer to Chapter 7, "Uniform File System," of the *Project Development Procedures Manual.* The construction records retention schedule, Form STD 73, "Records Retention Schedule," lists records that are retained by the districts and Construction headquarters. For specific records stored in the project history file, refer to Section 5-104C, "Disposition of Construction Project Records," of this manual.

5-104B Public Access to Project Records

The California Public Records Act permits anyone to obtain any written information relating to the conduct of the public's business that is prepared, owned, used, or retained by any state agency, regardless of the physical form or characteristic of the writing. Although the act includes exemptions for certain categories of records, most construction project records fall within the description of documents that must be produced upon proper demand. Except for preliminary drafts or notes that are not retained in the ordinary course of business, permanent project records that are reasonably identified are subject to inspection and copy.

Records exempt from disclosure include the following:

- Estimated project cost before bidding.
- Contract claim analysis.
- Personal information, such as home addresses, telephone numbers, medical records, and similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy.
- Accident reports. If accident reports produced by another agency are requested, such as accident reports by the California Highway Patrol, refer the requester to the other agency.

If copies of payroll records are requested, refer to Section 7-1.02K(3), "Certified Payroll Records (California Labor Code, §1776)," of the *Standard Specifications* for the procedures to follow.

Resident engineers should refer all requests for copies of any records to the district construction office and follow procedures established in the district for copying and charging for record copies.

Allow contractors and subcontractors to review records used to determine contract payment in the construction field office.

## 5-104C Disposition of Construction Project Records

District construction personnel who are responsible for the disposition of construction project records must coordinate their activities with the district records officer.

District construction offices must follow the statewide procedure for handling project records. This procedure is in accordance with the statewide records retention schedule and achieves the following objectives:

- Relieve the resident engineer of the responsibility for storing the records before or at the time final payment is made.
- Avoid unnecessary long-term storage of duplicate copies.
- Before the records are destroyed, transfer material that has historical value to the project history file.
- Retain construction project records in accordance with Table 5-1.1 of this manual and as follows:
    1. For projects that involve federal participation, retain the records for a minimum of 3 years after submission of the final federal voucher.
    2. For projects that do not involve federal participation, retain the records for a minimum of 3 years after the date on which the final estimate is scheduled for payment.
    3. For projects on which some legal question exists, such as a pending claim, a labor compliance case, or litigation, retain the records for 3 years after settlement. The district construction office must send a memorandum to the district records officer to hold these records until further notice.

After records from the resident engineer's office are sent to the district construction office, eliminate duplicate records.

The construction project records retention schedule lists the length of time certain files must be retained, as well as files that must be kept permanently in the project history files in accordance with federal requirements.

**Table 5-1.1. Construction Records Retention Schedule**

| Project Record Category | Project Records Retention Funding Type | | | |
|---|---|---|---|---|
| | Fed & State | Fed | State | Fed & State |
| | FE (See Note 1) | FFV+3 (See Notes 3 & 4) | FE+3 (See Note 2) | PHF (See Note 5) |
| 1. Project Personnel | X | | | |
| 2. Project Office Equipment and Supplies | X | | | |
| 3. Equipment and Personnel Cost Reports | X | | | |
| 4. Service Contracts | X | | | |
| 5. General Correspondence | | X | X | |
| 6. Safety | | X | X | |
| 7. Public Relations | X | | | |
| 8. Construction Surveys | | X | X | |
| 9. Welding | | X | X | |
| 10. (Extra category number) | | | | |
| 11. Information Furnished at Start of Project (except documents noted below) | | X | X | |
| a. Detail Estimate of Project Cost | | | | X |
| b. Notice of Award of Contract | | | | X |
| c. Contract Special Provisions & Addendums | | | | X |
| d. Notice of Approval of the Contract | | | | X |
| e. Executed Contract | | | | X |
| f. Bid Book | | | | X |
| 12. Contractor (except documents noted below) | | X | X | |
| a. Contractor's Borrow Agreements | | | | X |
| 13. Signs and Striping | | X | X | |
| 14. Photo Records | | | | X |
| 15. Accidents | | X | X | |
| 16. Utility Agreements | | | | X |
| 17. Utility Work Performed | | X | X | |
| 18. Agreements (except documents noted below) | | X | X | |
| a. Right of Way Agreements (with/without obligation) | | | | X |
| b. Forest Service Agreements | | | | X |
| c. Borrow Agreements (between state/owner) | | | | X |
| d. Disposal Agreements (between state/owner) | | | | X |
| e. Service Agreements (charged to contract allotment) | | | | X |
| 19. Hazardous Waste and Hazardous Materials | | | | X |

**Table 5-1.1. Construction Records Retention Schedule (continued)**

| Project Record Category | Project Records Retention Funding Type | | | |
|---|---|---|---|---|
| | Fed & State | Fed | State | Fed & State |
| | FE (See Note 1) | FFV+3 (See Notes 3 & 4) | FE+3 (See Note 2) | PHF (See Note 5) |
| 20. Water Pollution Control Plan or Stormwater Pollution Prevention Plan | | X | X | |
| 21. Construction or Maintenance Zone Enhanced Enforcement Program | | X | X | |
| 22. Traffic Management Information | | X | X | |
| 23. Temporary Pedestrian Access Routes | X | | | |
| 24. Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises | | X | X | |
| 25. Labor Compliance and Equal Employment Opportunity | | X | X | |
| 26. Progress Schedule | | X | X | |
| 27. Weekly Statement of Working Days | | X | X | |
| 28. Weekly Newsletter | X | | | |
| 29. Materials Information and Preliminary Tests | | X | X | |
| 30. Basement Soil Test Results | | X | X | |
| 31. Notice of Materials to Be Used | | X | X | |
| 32. Notice of Materials to Be Inspected at the Job Site | | X | X | |
| 33. Notice of Materials to Be Furnished | | X | X | |
| 34. Treated Base | | X | X | |
| 35. Hot Mix Asphalt | | X | X | |
| 36. Concrete (other than structure items) | | X | X | |
| 37. Initial Tests and Acceptance Tests | | X | X | |
| 38. Quality Control | | X | X | |
| 39. Materials Testing Qualifications of Employees | | X | X | |
| 40. Field Laboratory Assistant Reports to Resident Engineer | | X | X | |
| 41. Report of Inspection of Material | | X | X | |
| 42. Material Plants | | X | X | |
| 43. Concrete and Reinforcing Steel | | X | X | |
| 44. Recycle Materials and Diversion of Solid Waste | | X | X | |
| 45. Resident Engineer's Daily Reports | | X | X | |
| 46. Assistant Resident Engineer's Daily Reports | | X | X | |
| 47. Drainage Systems | | X | X | |
| 48. Bid Item Quantity Documents | | X | X | |

**Table 5-1.1. Construction Records Retention Schedule (continued)**

| Project Record Category | Project Records Retention Funding Type | | | |
|---|---|---|---|---|
| | Fed & State | Fed | State | Fed & State |
| | FE (See Note 1) | FFV+3 (See Notes 3 & 4) | FE+3 (See Note 2) | PHF (See Note 5) |
| 49. Change Orders (except documents noted below) | | X | X | |
| a. Change Orders (no drafts) | | | | X |
| b. Memorandums (no drafts) | | | | X |
| 50. Adjustment in Compensation Calculations | | X | X | |
| 51. Materials on Hand | | X | X | |
| 52. Charges to Total Contract Allotment | | X | X | |
| 53. Credit to Contract | | X | X | |
| 54. Deductions from Payment to Contractor | | X | X | |
| 55. Partnering | | X | X | |
| 56. (Extra category number) | | | | |
| 57. Permanent Pedestrian Facilities | | X | X | |
| 58. (Extra category number) | | | | |
| 59. Bridge Estimate Data | | X | X | |
| 60. Contract Administration System Inputs and Reports | | X | X | |
| 61. Estimate and Project Status (except documents noted below) | | X | X | |
| a. Final Estimate | | | | X |
| b. Invoice & Receiving Records (if applicable) | | | | X |
| 62. Disputes | | X | X | |
| 63. Project Completion Documents (except documents noted below) | | X | X | |
| a. Contract Acceptance | | | | X |
| b. Final Materials Certification | | | | X |
| c. Final Acceptance Checklist for Federal Aid High Profile Projects | | | | X |

Notes:
1. **FE:** Final Estimate for state-funded projects only
2. **FE + 3:** Final Estimate + 3 years
3. **FFV:** Federal Final Voucher for projects with some form of federal funding
4. **FFV + 3:** Final Federal Voucher + 3 years
5. **PHF:** Project History File (permanent)

Prepare a transmittal list specifying the contents of each box when records are sent from the district construction office to the State Record Center or to another district. In a separate file in the district construction office, retain a copy of the transmittal list. Files stored electronically must also be sent.

The *Bridge Construction Records and Procedures* manual should be referenced for structure-related records that are transmitted to Structure Construction at the completion of the project for permanent storage.

## 5-104D As-Built Plans

Districts are responsible for all as-built road plans, and Structure Design is responsible for all as-built structure plans. To handle as-built plans, use the following procedure:

The district Design Unit will give the resident engineer full-size prints of all road plans. Prints of structure plans will be supplied to the structure representative. The plans may also be transmitted in electronic form when field forces have the capability of computer-aided drafting and design (CADD). As-built information is recorded on the full-size drawings or recorded on a set of contract plans using CADD.

Each sheet of as-built plans must be clearly identified as such. All sheets upon which changes are made must contain the name of the resident engineer or structure representative.

### *5-104D (1) District Procedure on As-Built Plans*

The district will maintain a set of original project plan sheets. Field changes will be made on full-size prints or in a field CADD system and afterward transferred to the original CADD files in the district office. The set of plans, with changes delineated by the district Design Unit, becomes the as-built plans.

To attain uniformity in final project plans, include the following data on the as-built plans:

- Change order number.
- Revisions in alignment and right-of-way.
- Grade revisions in excess of 0.1 foot.
- Changes in length, size, flow line elevations, and station of culverts. When alternate types of culverts are permitted, show which alternate was used.
- Drainage changes.
- Location of sewers, conduits, and other features.
- Location of monuments, bench marks, freeway fences, and gates.
- Revision of typical cross sections.
- Changes in pavement lanes, tapers, ramps, frontage roads, road connections, driveways, sidewalks, islands, and median openings.
- Curb and gutter changes.
- Electrical conduits, pull boxes, and service points.
- Revision in location of utility crossings and irrigation crossovers.

Do not show the following on as-built plans:

- Construction quantities.
- Property fences.
- Miscellaneous small features, such as markers and delineators, which are readily changed by maintenance forces.

The resident engineer must complete the as-built plans as soon as possible after work is completed to ensure compliance with the archiving of as-built plans, but no later than 90 days after contract acceptance.

After the district Design Unit has completed the transfer of as-built information on the final as-built drawings, the unit will return the plans to the resident engineer for review and signature of final approval. For the processing and disposition of as-built plans after

the construction review, refer to Chapter 15, "Final Project Development Procedures," of the *Project Development Procedures Manual*.

*5-104D (2) Procedure on As-Built Plans for Bridges and Structures*

Structure Construction must handle structure as-built plans in the following manner:

- From the resident engineer, obtain full-size prints of all sheets with "Structure" signature blocks. If these prints are not available from the resident engineer, the structure representative must contact Structure Design.
- The structure representative will make the as-built corrections to these prints and forward them to Sacramento Structure Construction. These corrected prints must be forwarded to the Sacramento office as soon as possible after completion of the structures, but no later than 30 days after the completion of the project.
- For prints of projects consisting solely of roadside rests or maintenance facilities, Sacramento Structure Construction must forward the prints directly to Structure Design, Documents Unit. All other projects must be forwarded to Structure Maintenance and Investigations, which determines which sheets should be microfilmed for the structure files.
- Those prints not identified for filing by Structure Maintenance and Investigations will be forwarded to the appropriate district office for the preparation of as-built plan sheets. Structure Design will make the as-built corrections on the original plan sheets. If the original plan sheet is not currently stored in Structure Design, it may be obtained from the district.

On state projects that do not have a representative from Structure Construction, the resident engineer must make the as-built changes on the full-size prints bearing "Structure" signature blocks. As soon as possible after completion of the structures, forward the prints to Structure Construction in Sacramento. The procedure outlined above must then be followed.

On projects funded by others, where the local entity or private entity is the sponsor, follow the procedure for as-built plans for bridges and structures described in Special Funded Projects' *Information and Procedures Guide* and the *Encroachment Permits Manual*.

For additional guidelines and details for completing structure as-built plans, refer to the *Bridge Construction Records and Procedures* manual.

*5-104D (3) Projects Not on State Highways*

On all district-administered projects not on state highways, the information to be included on as-builts will remain the same as for contracts on state highways. The district will be fully responsible for completing as-built project plans and forwarding them to the local agencies. If desired, the district can make a copy of the plans for their own records before returning them to the local agencies.

The engineer responsible for structure work will place as-built corrections on structure plans of all state and federally funded projects for local roads and streets. On Caltrans administered contracts, follow normal Caltrans procedures for processing these plans. On locally administered contracts, the engineer responsible for structure work will provide Special Funded Projects, Structures Local Assistance, a set of original tracings or duplicates of reproducible quality with as-built corrections. After microfilming, return these tracings or duplicates to the local agency.

# Chapter 7 Environmental Stewardship

## Section 1 Environmental Rules and Requirements

# Chapter 7 Environmental Stewardship

## Section 1 Environmental Rules and Requirements

Section 1
Environmental
Rules and
Requirements

### 7-101 General

7-101
General

This section provides information and guidelines for administering the various environmental requirements for Caltrans construction contracts.

The district construction deputy director is responsible for ensuring that environmental permit, license, agreement, and certification (PLAC) requirements are enforced. Within district construction, stormwater coordinators are appointed. Within either the district environmental or district Construction Unit, environmental construction liaisons are appointed. The environmental construction liaisons must have appropriate training, background, and experience to facilitate effective communications necessary to carry out the responsibilities of both district construction and the district Environmental Unit. To meet legal requirements, district construction staff must coordinate and communicate with environmental staff, possess appropriate skills, receive appropriate training, and understand their role in successfully carrying out environmental commitments, including PLACs, within the contract requirements.

### 7-102 Environmental Commitments Record

7-102
Environmental
Commitments
Record

Caltrans established the Environmental Commitments Record (ECR) in a memo dated June 5, 2005, from the chief engineer to assure that Caltrans meets its environmental commitments for each project by:

- Documenting all environmental commitments including PLACs.
- Specifying how each commitment will be met.
- Documenting the completion of each commitment.

The ECR contains all relevant environmental compliance information and PLAC requirements; basic project information, including each environmental commitment, person, or unit responsible for commitment completion; timing and manner of implementation; location; and a commitment reference document and other commitment requirements. The ECR is part of the resident engineer's pending file and is necessary to oversee and track the project environmental commitments. It is used to prepare the Certificate of Environmental Compliance (CEC) during contract acceptance.

The resident engineer will review the ECR with the environmental construction liaison or district Environmental Unit during the preconstruction meeting with Caltrans personnel before meeting with the contractor. The environmental construction liaison or district Environmental Unit can assist with discussing the requirements at the preconstruction meeting. The resident engineer monitors the progress of all construction-related environmental commitments on an ongoing basis throughout the life of the contract and verifies their implementation. Commitments completed during construction should be tracked on the ECR.

The following are necessary for meeting environmental commitments during construction as required by Caltrans policy and law. Refer to Sections 7-103 through 7-108 of this manual for additional requirements specific to:

- Environmental resources
- Air, noise, and water pollution control
- Permits, licenses, agreements, and certifications (PLACs)
- Hazardous materials
- Hazardous waste and contamination
- Solid waste disposal and recycling reporting

7-102A Resident Engineer Responsibilities

The resident engineer uses all available assistance and expertise to understand and meet the commitments listed in the ECR. This assistance may come from the environmental construction liaison, stormwater coordinators, project biologist, or other functional areas in the district or region (such as design, cultural resources, hazardous waste, paleontology, hydraulics, or public information office).

Before work begins, the resident engineer must do the following:

- Verify that the resident engineer's pending file contains the ECR. An ECR is required for every project; if it is missing, contact the project engineer to obtain it.
- Review the resident engineer's pending file, ECR, PLACs, construction contract, and Sections 13, "Water Pollution Control," and 14, "Environmental Stewardship," of the *Standard Specifications* for commitments.
- Identify notices and required approvals and actions necessary to meet regulatory requirements and stewardship goals.
- Meet with the environmental construction liaison, district construction stormwater coordinator, project biologist, and appropriate environmental and engineering experts in the district to share a full understanding of the contract requirements and commitments listed in the ECR.
- Depending on the project's size and complexity, an additional preconstruction meeting may be used exclusively for discussing environmental commitments and requirements.
- Review Sections 10-1.03, "Time Constraints," 13, "Water Pollution Control," and 14 "Environmental Stewardship," of the *Standard Specifications* and the special provisions for water pollution control and environmental time constraints. Make sure those time constraints are reflected in the critical path method baseline schedule, including submittal review times.

During the course of work, the resident engineer must do the following:

- Periodically meet with the environmental construction liaison to review the ECR and confirm that environmental commitments required by the contract will be met.
- Inspect the contractor's operations for compliance with the specifications and the PLACs.
- Before submitting a change order or an authorization to proceed with change order work, review the change order work with the environmental construction liaison to

confirm that the proposed change does not adversely affect environmental commitments.

- Verify that the contractor notifies and obtains the resident engineer's approval in advance for each new activity as required. Check that the contractor's schedule is coordinated with necessary environmental activities.
- Direct the contractor to correct any identified deficiencies in environmental compliance efforts.
- Should noncompliance occur, initiate contractual enforcement procedures appropriate to the nature and severity of the situation.

Before accepting the contract, the resident engineer must do the following:

- Verify that that all environmental commitments required by the PLACs and by the contract have been met.
- Require the contractor to remove temporary best management practices (BMP) measures, such as environmentally sensitive area (ESA) fences or other measures unless the BMP measures are part of permanent measures or requested to be left in place by the district Maintenance Unit.
- Conduct a final walk-through of the project area with the environmental construction liaison.

## 7-103 Protection of Environmental Resources

**7-103 Protection of Environmental Resources**

This section contains guidelines for protecting and preserving environmental resources, such as biological, cultural, Native American, or paleontological items, and administering the contract's environmental resource requirements during construction as required by Caltrans policy and law.

### 7-103A Biological Resources and Species Protection

Both state and federal laws protect designated plant and animal species and their respective habitats. Strict prohibitions exist on certain types of work, work during certain times of the year, or work at specific locations. Even inadvertently affecting protected species can result in fines or jail sentences and may result in significant project delays. The PLACs and species protection measures in the contract will specify the necessary protection measures and restrictions, and the plans will show ESAs. However, during construction, project staff or personnel from regulatory agencies may discover protected species that were not anticipated in the contract. If such a discovery occurs, suspend work in the area and immediately notify the environmental construction liaison, project biologist, or district Environmental Unit.

The Migratory Bird Treaty Act and the California Fish and Game Code make it illegal to harm migratory birds, nongame birds, and their occupied nests. Activities that are most likely to encounter migratory birds, nongame birds, and their occupied nests include clearing and grubbing; and bridge demolition, maintenance, and retrofit work. Bird protection is a subset of species protection. Species protection responsibilities apply to bird protection. PLACs and the bird protection or species protection measures in the contract will specify the necessary protection measures and restrictions, and the plans will show any ESAs.

When occupied nests are found within the project area, the resident engineer will evaluate, with the assistance of the environmental construction liaison or project biologist, whether work in the area can continue or if suspension of work is necessary.

The resident engineer will immediately contact the environmental construction liaison or district Environmental Unit for assistance in this evaluation.

*7-103A (1) Resident Engineer Responsibilities*

The resident engineer uses all available assistance and expertise to protect natural resources. This assistance may come from the environmental construction liaison, contractor-supplied biologist, project biologist or other state-furnished biologist, or other functional areas in the district, such as design, cultural resources, stormwater, hazardous waste, paleontology, and hydraulics.

Before work begins, the resident engineer must do the following:

- When the contract specifies a contractor-supplied biologist, regulatory agency approvals may be required prior to accepting the contractor-supplied biologist. Do not accept submittals from the contractor-supplied biologist until approval is obtained. Understand that a contractor-supplied biologist works for the contractor and does not speak for Caltrans.
- Meet with the environmental construction liaison, project biologist, and appropriate environmental and engineering experts in the district to share a full understanding of the contract requirements for species and natural resource protection.
- If an ECR-required Biological Resource Information Program (BRIP) has been prepared by Caltrans, supply a copy to the contractor. If the specifications require the contractor to prepare a BRIP, coordinate a review with the environmental construction liaison or project biologist. Only accept the BRIP if it complies with the PLACs and provisions of the contract.
- If there is a bid item for Natural Resource Protection Plan, Section 14-6.03D(2), "Natural Resource Protection Plan," of the *Standard Specifications* will apply. Coordinate review of the contractor's Natural Resources Protection Plan with the environmental construction liaison or project biologist. Note that the specifications prohibit any work that has the potential to adversely affect protected species and their habitat without permission from regulatory agencies.
- Before earthwork or clearing and grubbing begins, request that required preconstruction biological surveys be completed and results be provided to understand regulatory requirements that may delay activities.
- When work occurs in water, or where vibrations or sounds from construction or other project-related activities may pass into waters, review hydroacoustic requirements for the protection of water-dependent species and assure that necessary protections, approvals, monitoring activities, and reports are complete or active as required.
- Designate appropriate staff to assist in preventing adverse effects to biological resources as needed.

During the course of work, the resident engineer must do the following:

- If required by the specifications or PLACs, maintain a copy of the BRIP on the project site and make sure that staff completes required training.
- Inspect the contractor's operations for compliance with the specifications and the PLACs, the biological provisions, and the accepted natural resource protection plan, when required.

- Verify that the contractor adheres to the monitoring or survey schedule set forth in the PLACs, the biological provisions, and the accepted natural resource protection plan, and provides written reports of these inspections on schedule.
- Verify that the contractor maintains species protection measures so that they will function as planned.
- Check that the contractor has the necessary staff and materials on hand to inspect and maintain species protection measures.
- Assure that the contractor notifies and obtains the resident engineer's approval in advance for each new activity, as required. Ensure that the contractor's schedule is forwarded to the environmental construction liaison or project biologist and coordinated with necessary resource monitoring.
- Assure that construction does not result in new barriers to aquatic species passage or create issues with maintenance of existing passages.
- Immediately notify the environmental construction liaison and project biologist when protected resources are affected or may be affected by project activities. The project biologist will determine what action is necessary and will advise the resident engineer.
- If necessary, meet with personnel from regulatory agencies, such as the U.S. Fish and Wildlife Service; U.S. Environmental Protection Agency (U.S. EPA); U.S. Army Corps of Engineers; National Oceanographic and Atmospheric Agency, National Marine Fisheries Service (NOAA Fisheries); and the California Department of Fish and Wildlife, to discuss protected natural resources and measures to protect resources. The environmental construction liaison or project biologist will assist in discussions and negotiations.

Before accepting the contract, the resident engineer must do the following:

- As required by the PLACs and by the contract, determine that all biological requirements are complete.
- Verify that the project has not maintained or created barriers to aquatic organism passage.
- Conduct a final walk-through of the project area with the project biologist.

*7-103A (2) Contractor Inspections*

The PLACs and special provisions for species protection may require the contractor to inspect the job site periodically for the proper implementation, performance, and maintenance of species protection measures. The contractor must follow the species protection measures specified in the PLACs, special provisions, and natural resource protection plan, and may be required to report on activities.

If any situation constitutes potential noncompliance with the permit, the resident engineer must conduct a verification inspection, and, if a noncompliant condition exists, report it to the environmental construction liaison or project biologist. The environmental construction liaison or project biologist will coordinate with the district environmental office to determine the actions required, including timely reporting to regulatory agencies and necessary options for compliance. The resident engineer must require the contractor to amend the natural resource protection plan, if necessary, and to install additional species protection measures to achieve compliance.

*7-103A (3) Project Files*

The resident engineer must keep copies of all applicable documents related to species protection measures as required in PLACs, special provisions, BRIP, and the natural resource protection plan, and retain copies in Category 18, "Agreements," of the project files. Retain all the required documents for at least 3 years after contract completion, or longer if required in the PLACs. Provide specific disposition instructions in Category 18 when retention beyond 3 years is required. These documents include the following:

- Periodic reports and photographs related to species protection as required.
- Take notification documentation of regulated species as required by PLACs.
- All correspondence related to species protection, including notices of noncompliance.
- Inspection, survey, and monitoring reports supplied by the contractor, environmental construction liaison or project biologist.
- Inspection reports from the resident engineer and assistant resident engineer.
- Copies of the approvals and certifications required by the specifications.

7-103B Environmentally Sensitive Area

The ESA is shown on the plans and creates a secure area within the plan boundaries enclosed by a temporary fence (Type ESA). If the area is breached, immediately secure it, stop all operations within 60 feet of the boundary, and verify that the contractor follows the directions in Section 14-1.02, "Environmentally Sensitive Area," of the *Standard Specifications*. The resident engineer will consult with the environmental construction liaison, project biologist, or project cultural specialist prior to approving entry into an ESA and when identifying or assessing damage. If the ESA is damaged, document the damage and, through consultation with the environmental construction liaison or district Environmental Unit, determine the necessary remediation including the party to perform the remediation work. Take an administrative deduction for the cost of the work when applicable, as covered by Sections 3-906G, "Deductions," and 5-103F (1c), "Deductions," of this manual.

7-103C Cultural Resources

Mitigating a project's impact on historical and archaeological sites during construction may require the recovery of artifacts. Mitigation may also require Native Americans, archeologists, architects, and historians to monitor and coordinate the recovery process. Normally, archaeological work is done in advance of construction, but occasionally finds are made during construction. If human remains or previously unknown historic and archaeological artifacts are unearthed, suspend work in the vicinity until the find can be evaluated and properly treated. Seek assistance from the project manager, environmental construction liaison, project cultural specialist, or district Environmental Unit. For more information, refer to the *Standard Environmental Reference*, Vol. 2.

7-103D Community Impacts and Environmental Justice

Mitigating project impact on communities during construction may require actions in the community. These requirements may be included as part of the contract, including change orders, but can also be listed as an item on the ECR. Also, refer to Section 8-2, "Equal Employment Opportunity," of this manual regarding Title VI and environmental justice.

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," directs federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health and environmental effects, including the interrelated social and economic effects of their programs, policies, and activities on minority and low-income populations in the United States.

### 7-103E Native American Concerns

These requirements are placed to alleviate concerns of the Native American community. If resources of concern to Native Americans, human remains, or previously unknown associated artifacts are unearthed, suspend work in the vicinity until the concern can be evaluated and properly resolved. Seek assistance from the project manager, environmental construction liaison, project cultural specialist, or district Environmental Unit. For more information, refer to the *Standard Environmental Reference*, Vol. 2.

http://www.dot.ca.gov/ser/

### 7-103F Aesthetics

Aesthetics are considered during the planning, design, and construction of transportation projects to adequately address a transportation project's visual effects and to help integrate the facility into the surrounding context. Aesthetic features included in the construction documents are the result of commitments included in the environmental document or made to the community to address scenic, aesthetic, historic, cultural, environmental, and recreational values. The integration and construction of these aesthetic features on a project is critical to fulfilling the aesthetic commitments.

Proposed changes to the plans and specifications that affect the aesthetic features must be coordinated with and approved by the district landscape architect to assure that Caltrans' aesthetic commitments are accomplished as intended.

### 7-103G Paleontological Resources

Paleontological resources are evidence of ancient life, not including human life, preserved as fossils in sediments and rock. In geologically diverse California, vertebrate, invertebrate, and plant fossils are found throughout the state. Paleontological resources have unique scientific value and as a result must be protected. Refer to Chapter 8 of the *Standard Environmental Reference* Vol. 1, for information about applicable laws.

Paleontological resources may be encountered when a project includes invasive activities such as excavation or drilling of previously undisturbed sediments and rock. If paleontological resources are anticipated, the contract should include special provisions in accordance with Section 14-7, "Paleontological Resources," of the *Standard Specifications*. Protection of paleontological resources usually includes preservation of scientific information through monitoring, and fossil and data recovery. This work is normally performed by a consultant working directly for Caltrans, not the construction contractor. In these cases, the resident engineer must assure the coordination and cooperation of the construction contractor with the paleontological consultant. This is accomplished by including the paleontological consultant in preconstruction meetings, providing the paleontological consultant with an accurate and updated schedule of subsurface disturbing activities, and, when required, ensuring that the contractor's staff attends paleontological awareness training presented by the paleontological consultant.

In most cases, paleontological monitoring and fossil and data recovery can be performed with minimal impact to construction activities. However, when large specimens or

fossil-rich areas are encountered, excavation activities may need to be temporarily diverted while the paleontological team stabilizes and removes them. In these cases, the resident engineer must facilitate coordination and cooperation between the paleontological monitoring team and the construction contractor.

If unanticipated paleontological resources are encountered, the construction contractor is directed to stop work within a 60-foot radius of the discovery and contact the resident engineer. The resident engineer must contact the environmental construction liaison who will enlist the assistance of the appropriate technical staff to investigate the discovery. Work in the area of discovery cannot resume until the find has been properly evaluated and recovery activities completed as necessary. The remaining construction activities must be evaluated in context of the discovery and monitoring may be required. If monitoring is required, it may be accomplished through either a separate contract (preferred) or a subcontract through the prime construction contractor. In either case, assistance from the environmental construction liaison or district Environmental Unit will be necessary.

After excavation is complete, a paleontological mitigation report will be prepared by the paleontological consultant. After receiving the report, the resident engineer must coordinate with the environmental construction liaison or district Environmental Unit to update the ECR. If fossils are recovered from the project, they will be properly curated. The resident engineer must coordinate with the environmental construction liaison or district Environmental Unit to verify that funding is made available to pay for reporting and curation activities performed by the consultant.

### 7-103H Disposal, Staging, and Borrow Sites

Caltrans construction projects often require contractors to make use of either state-owned or private off-site lands and facilities for the disposal of excess materials; the acquisition of necessary borrow materials; and to stage equipment, store supplies, and house their offices. Contract documents generally require the contractor to show that construction activities on these sites comply with all local, state, and federal environmental and permitted use regulations. However, in some geographic locations there have been issues regarding final compliance responsibility. To resolve these issues and to foster better cooperation with regulatory agencies, the option of designating disposal, staging, and borrow (DSB) sites has been facilitated.

Those construction projects that cannot accommodate the needs of the project within the right-of-way may have designated sites outside the project limits. However, even when such sites are made available, the contractor will continue to have the flexibility of using alternative sites. Alternative sites selected by the contractor require the contractor to prepare a submittal to the resident engineer for approval. Requirements for this submittal are outlined in the following section, and additional guidance is available at:

http://www.dot.ca.gov/hq/oppd/dib/dibprg.htm

The need for identifying and obtaining environmental approvals for a designated DSB site will generally have been made by the project engineer on a case-by-case basis, considering historical and geographical issues and practices, project design requirements, environmental concerns, economic factors, and other aspects specific to projects and their locale. During project development, the project engineer should have considered and identified sites readily available for use by the contractor. These sites would have included, but not be limited to, commercial dumpsites, recycling plants, private property, and other local sites. If it was deemed necessary that one or more DSB

sites needed to be designated, the project engineer would have proposed sites evaluated during the environmental review process and, as necessary, included them in the environmental compliance documentation. To assure their availability to the contractor, right-of-way agreements would have been obtained for private sites selected as designated DSB sites. Any necessary permits would have been included among those obtained during the plans, specifications, and estimate development. Information or documents regarding arrangements made by Caltrans to assure the availability of designated sites are provided to prospective bidders or contractors in a materials information handout.

Summaries are provided below for the minimum items expected in: (1) a DSB site submittal for a site designated by Caltrans; and (2) a summary of the minimum items expected in a DSB site submittal for a contractor to get approval for the use of an alternate site. The submittal and support documents are then filed in the project files.

*7-103H (1) Caltrans- and Contractor-Designated Disposal, Staging, and Borrow Sites*

For Caltrans-designated sites:

- Caltrans will:
  1. Provide a general site plan, including site limits and access roads.
  2. Obtain temporary property owner agreements as necessary to "reserve" property.
  3. Prepare California Environmental Quality Act or National Environmental Policy Act documentation, as needed, in consultation with the Environmental Unit.
  4. Verify the existence of or obtain the necessary PLACs to satisfy regulatory agencies and assure site availability in consultation with the Environmental Unit.
  5. Review and accept the contractor's submittal.
- The contractor will:
  1. Prepare a final grading plan in conformance with the *Standard Specifications*.
  2. Provide a release of liability.
  3. Provide final property owner agreements (refer to Section 3-603, "Local Materials," of this manual).
  4. Submit a written plan for water pollution prevention in conformance with the *Standard Specifications*.

For alternative sites selected by the contractor:

- Caltrans will review and accept the contractor's submittal.

- The contractor will:
  1. For borrow sites, demonstrate that the site is either not subject to or is in compliance with the Surface Mining and Reclamation Act (SMARA). If the borrow site is not subject to SMARA, confer with the environmental

construction liaison or district Environmental Unit to assure that the borrow site is not a potential contamination source.

2. For all DSB sites:

   - Provide a site plan, including site limits and access roads.
   - Obtain and provide property owner agreements (refer to Section 3-603, "Local Materials," of this manual).
   - Provide a release of liability.
   - Provide environmental documentation prepared by appropriately qualified environmental specialists.
   - Obtain or update all necessary PLACs.
   - Determine the final grading plan in conformance with the *Standard Specifications*.
   - Submit a written plan for water pollution prevention in conformance with the *Standard Specifications*.

*7-103H (2) Surface Mining and Reclamation Act*

Section 10295.5 of the Public Contract Code requires that Caltrans buy or accept sand, gravel, aggregates, or other mined materials (including imported borrow) from mining operations in that are compliance with or not subject to SMARA. The resident engineer can use the list of mining operations in compliance with SMARA, also called the "AB 3098 List," to verify which mining operations are in compliance. The current list may be obtained from the Department of Conservation website:

http://www.conservation.ca.gov/omr/SMARA%20Mines/ab_3098_list

Mining operations that meet the following criteria are not subject to SMARA and are not required to be on the AB 3098 List:

- A total amount of mined materials less than 1,000 cubic yards in any one location of 1 acre or less.
- Onsite excavations and onsite earth-moving activities on a Caltrans construction project that are an integral and necessary part of the project.
- Materials mined from federal lands, except for lands that the Bureau of Land Management and U.S. Forest Service regulate.
- Materials mined from tribal lands, when mined by a tribal mining operator.
- Materials mined from outside of California.

Review contractor-proposed sources and verify that the source is on the current AB 3098 List. If the contactor proposes to use mined material from a mining operation not on the AB 3098 List, obtain from the contractor proof that the operation is not subject to SMARA, in accordance with the criteria above, and confirm with the Department of Conservation. Contact the Office of Mine Reclamation, Reporting and Records Unit, at: OMR@conservation.ca.gov or (916) 323-9198.

SMARA allows the State Mining and Geology Board to exempt certain mining operations or construction projects. Caltrans can accept material from exempted sources if the contractor provides proof of the board-granted exemption.

If the proposed site is not on the AB 3098 List, and the contractor cannot demonstrate that the site is not subject to SMARA or that an exemption has been granted, the resident engineer must not accept the contractor's submittal. Refer challenges to the acceptance of materials to the Division of Construction field coordinator.

### 7-103I Other Contractor Uses of the State Right-of-Way

The contractor's use of Caltrans-owned parcels that are outside of the project limits will be contingent upon approval by the resident engineer, based on:

- The DSB site submittal
- Execution of a fair market rental agreement with Caltrans
- Execution of an encroachment permit by the district permit engineer

The resident engineer should consult with the project engineer and environmental construction liaison or district Environmental Unit before approving the DSB site submittal. For more information, refer to Section 3-516, "Areas for Use," of this manual.

## 7-104 Air, Water, and Noise Pollution Control

**7-104 Air, Water, and Noise Pollution Control**

This section contains guidelines for administering the contract's air, water, and noise requirements.

### 7-104A Air Pollution Control

#### *7-104A (1) Air Quality*

Section 7-1.02C "Emissions Reduction," of the *Standard Specifications* states that the contractor, by executing the contract, is aware of California Air Resources Board (ARB) regulations and will comply with those regulations before starting work and throughout the duration of the contract.

The resident engineer does not need to verify that the contractor's equipment complies with ARB regulations. The local air quality control district or air quality management district, commonly referred to as the "air district," is responsible for enforcing air quality regulations. If complaints are brought to the resident engineer's attention, the resident engineer should direct the complainant to file the complaint with the local air district.

If the complaining party insists that Caltrans handle the situation, the resident engineer should forward the complaint to the local air quality control district, based on project location, and send the contractor a copy of the complaint filed.

A list of local air quality control districts, contacts, and addresses is available at:

https://www.arb.ca.gov/capcoa/roster.htm

All Caltrans projects must comply with the Clean Air Act. Permits are issued by local air quality management districts and require that the project create no smoke, offensive odors, or visible dust. Contractors must take appropriate measures to make sure their equipment is properly maintained and to apply water and other dust palliatives as frequently as necessary. Violations can result in fines and sanctions against the contractor and Caltrans.

#### *7-104A (2) Dust Control*

Under the terms of the project contract, the contractor must control dust. The contractor must maintain such control whether payment is included in the prices paid for the various items of work involved or whether payment is made separately. Refer to Sections 4-10,

"General Construction," and 4-18, "Dust Palliatives," of this manual for additional guidance related to dust control.

During the preliminary inspection, before work begins, take the following steps:

- Determine whether a planned method to control dust is included in the contractor's accepted plan for water pollution prevention.
- Whenever it is proposed to handle temporary traffic changes on an unpaved roadway, anticipate the necessity for dust control. Notify and require corrective action whenever the contractor is not adequately controlling dust. In cases of neglect, work may be suspended under the resident engineer's authority, pursuant to Section 8-1.06, "Suspensions," of the *Standard Specifications*.

### 7-104B Water Pollution Control

To make sure that the control of pollutants in discharges of stormwater runoff, Caltrans construction projects may be subject to federal law under the Clean Water Act and state law under the California Water Code. All Caltrans construction projects are subject to the Caltrans National Pollutant Discharge Elimination System (NPDES) permit issued by the State Water Resources Control Board (SWRCB) and one of the following NPDES permit requirements: the statewide Construction General Permit (CGP) issued by the SWRCB, the Lake Tahoe CGP issued by the Lahonton Regional Water Quality Control Board (RWQCB), or the federal CGP issued by the U.S. EPA. The project specifications should identify which permits apply to the project.

For each construction project, the contractor must prepare either a stormwater pollution prevention plan (SWPPP) or a water pollution control program (WPCP) in accordance with Section 13, "Water Pollution Control," of the *Standard Specifications*, Caltrans' *Stormwater Quality Handbooks*, and the contract's special provisions. These documents describe the measures the contractor must implement to prevent construction activities from polluting the waters of the United States. The resident engineer must authorize all such preventive measures, and then the contractor's forces must implement and maintain the measures.

Successfully protecting water resources (streams, waterways, and other bodies of water) and protected water-dependent species from pollution is critical to the project's success. These waters must be protected from chemical pollutants, including petroleum products, paint residues, and curing compounds, and from sediment in stormwater runoff. Caltrans has developed an evaluation plan to review the contractor's water pollution control program and to evaluate construction projects for overall adequacy in implementing stormwater pollution prevention measures. The Construction Compliance Evaluation Plan provides a process for evaluating the potential threat to water quality that is sensitive to forecasted storm events and contractor preparedness. The plan also separates water quality compliance from stormwater contract administration.

For projects covered by the statewide or Lake Tahoe CGP, permit registration documents and other permit-related compliance documents must be filed electronically with the SWRCB through the Storm Water Multiple Application and Report Tracking System (SMARTS) at:

https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.xhtml

All requests to start construction, Notices of Intent, requests for termination of a project, Notices of Termination, and interim reporting are made through SMARTS.

To set up a SMARTS profile, the CGP and SMARTS require establishment of certain responsibilities, including:

- The legally responsible person (LRP).
- The approved signatory.
- A data entry person.

For Caltrans, the LRP is the district director, although as many as three backups may be designated to perform the same duties, with responsibility for permit compliance and designating the approved signatory for the project. Assignment of an approved signatory is accomplished by the linking process in SMARTS as detailed in the *SMARTS User's Manual*. The manual is posted on the Division of Construction stormwater training website:

http://www.dot.ca.gov/hq/construc/stormwater/swppp_training.html

A project can have more than one approved signatory. The resident engineer is responsible for the project data submitted in SMARTS and must be designated an approved signatory. The LRP may link other approved signatories to the project as necessary to support project delivery. Documentation for SMARTS submittals comes from various members of a project development team; however, the approved signatory is responsible for submitting permit registration documents, the Notice of Intent, discharge reports, annual reports, ad -hoc reporting, and Notice of Termination certification.

A data entry person may be any Caltrans staff member or contractor's personnel designated by the LRP or approved signatory to input information into SMARTS.

The Notice of Intent provides the RWQCBs with details about the project and is a request for coverage under the CGP. The process involves filing project-related information and the project SWPPP. Obtain information necessary to complete the SMARTS Notice of Intent from the project "Storm Water Data Report Attachment for SMARTS Input."

Reporting in SMARTS is accomplished by entering data into specific tabs or by uploading documents. For example, the Notice of Intent is created by entering data in the fields under the Notice of Intent tab, whereas the project SWPPP and its amendments are uploaded into the system. There are also screens for discharge reporting, annual reports, and other permit-related project reports. The approved signatory may certify submittals in SMARTS and, when applicable, will need to provide the qualified SWPPP developer's certification. Hard copies of these documents must be maintained in the project files.

Section II.D, "Conditions for Termination of Coverage," of the CGP details when a project is complete and a Notice of Termination is appropriate. Consult with the project engineer to verify that the conditions have been satisfied. For additional guidance, refer to:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml

*7-104B (1) District Construction Stormwater Coordinator Responsibilities*

District construction must have at least one designated district construction stormwater coordinator who will carry out necessary administrative functions to prevent water pollution. This coordinator reviews the contractor's SWPPP or WPCP, visits projects, and acts as technical advisor to the resident engineer. The coordinator evaluates projects

for potential threats to water quality and the effectiveness of stormwater contract administration. The district construction stormwater coordinator works with other functional areas in the district, assists resident engineers to verify compliance, and assures that field construction personnel are appropriately trained.

*7-104B (2) Resident Engineer Responsibilities*

The resident engineer uses all available assistance and expertise in preventing water pollution. This assistance may come from the district construction stormwater coordinator, environmental construction liaison, or other functional areas in the district, such as landscape architecture, environmental, and hydraulics.

Before work begins, the resident engineer must do the following:

- Designate appropriate staff as stormwater inspectors to assist in preventing stormwater pollution.
- Review the construction contract and the resident engineer's file for instructions and commitments.
- Verify that permit registration documents are submitted into SMARTS.
- Verify that all proper forms have been filed with the RWQCB.
- Meet with the appropriate environmental and engineering experts in the district to assure a full understanding of the contract requirements for water pollution prevention.
- Conduct a preconstruction meeting with the contractor to discuss all required stormwater measures and requirements. Depending on the project's size and complexity, this preconstruction meeting may be used exclusively for discussing water pollution prevention or the topic may be included in a general preconstruction meeting.
- Provide the contractor with a copy of the district Design Unit's conceptual SWPPP for the project, if one has been prepared.
- Review and authorize the contractor's SWPPP or WPCP as required by the specifications. The district construction stormwater coordinator may assist in the review. Note that before the resident engineer has authorized the plan, the specifications prohibit any job site activities. If a RWQCB requires review of the authorized SWPPP, job site activities are prohibited until the board reviews and comments on the authorized SWPPP.
- Before any job site activities begin, make sure the contractor deploys any stormwater measures called for in the SWPPP or WPCP.

During the course of work, the resident engineer must do the following:

- Maintain a copy of the authorized SWPPP or WPCP on the project site.
- Inspect the contractor's operations for compliance with the specifications and the authorized SWPPP or WPCP, including deployment of best management practices measures.
- Check that the contractor adheres to the inspection schedule set forth in the SWPPP or WPCP and provides written reports of these inspections.

- Verify that the contractor prepares and submits Form CEM-2045, "Rain Event Action Plan," or Form CEM-2045T "Rain Event Action Plan—Lake Tahoe Hydrologic Unit" if applicable, for risk levels 2 and 3 on SWPPP projects.
- Verify that the contractor prepares and submits project annual reports.
- Check that the contractor deploys stormwater and nonstormwater best management practices measures whenever associated construction activities are taking place.
- Check that the contractor maintains best management practices measures so that they will function as planned.
- Assure that the contractor has the necessary materials on hand to deploy any necessary additional measures in the event of a storm.
- Check that the contractor uses appropriate measures to stabilize slopes at the times specified. In accordance with the specifications, verify that the contractor submits an implementation schedule for soil stabilization and sediment control for disturbed soil areas.
- Assure that the contractor complies with any provisions that restrict the size of the contractor's disturbed soil area.
- Make sure the contractor notifies the resident engineer and obtains the resident engineer's authorization in advance for each first-time nonstormwater discharge, excluding exempted discharges.
- Monitor the contractor's active and nonactive disturbed soil areas.
- Verify that the contractor conducts soil stabilizing activities as specified.
- Check that the contractor's water pollution protection plan addresses avoiding water quality effects from removal of bird nests on bridges and other structures over or near water during pre-nesting seasons.
- Direct the contractor to correct any deficiencies in compliance efforts identified in the contractor's or district construction stormwater coordinator's project evaluation reports.
- If any pollutants are discharged into the waters of the United States, notify the district construction stormwater coordinator immediately. Review the NPDES permit and *Statewide Stormwater Management Plan* to determine the appropriate reporting timeframe, and provide a draft report of noncompliance to the district NPDES stormwater coordinator. Unless otherwise indicated in the district or regional work plans, the district NPDES stormwater coordinator will then forward the report to the RWQCB. For SWPPP projects, require the contractor to prepare Form CEM-2061, "Notice of Discharge Report," or Form CEM-2061T "Notice of Discharge Report—Lake Tahoe Hydrologic Unit Stormwater Sample Field Test Report/ Receiving Water Monitoring Report" if applicable.
- Report to the district construction stormwater coordinator any illegal discharges or illicit connections. Require the contractor to prepare Form CEM-2061, "Notice of Discharge Report," or Form CEM-2061T "Notice of Discharge Report—Lake Tahoe Hydrologic Unit Stormwater Sample Field Test Report/ Receiving Water Monitoring Report" if applicable, as specified in the SWPPP.
- Should noncompliance occur, initiate contractual enforcement procedures commensurate with the nature and severity of the noncompliance. Contract enforcement may include the following:

1. Withholding funds from contract payment as specified in the contract.
2. Suspending any work that would exacerbate the noncompliance or interfere with or prevent the contractor's efforts to correct the deficiency. For example, earthwork operations may be suspended until the contractor controls sediment or stabilizes soil as specified. Other work performed by a crew might be suspended if that crew is needed to install best management practices measures.

- Meet with personnel from regulatory agencies, such as the Environmental Protection Agency, RWQCB, or SWRCB to discuss stormwater issues and measures.
- Verify that the contractor submits an annual certification of compliance, Form CEM-2070, "SWPPP/WPCP Annual Certification of Compliance," as specified. Sign, date, and file this certification in the project files.
- At 90 percent construction completion, conduct a field review with the maintenance superintendent or supervisor, or the district maintenance stormwater coordinator, and complete Form MTCE-0023, "Construction to Maintenance 90% BMP Completion Walkthrough."

Before accepting the contract, the resident engineer must do the following:

- Determine that all slopes are stabilized, as required by the contract.
- Require the contractor to remove temporary BMP measures that are not a part of permanent erosion control or that the district Maintenance Unit has not requested to be left in place.
- Conduct a final walk-through of the project area with the maintenance superintendent or region manager. During the final inspection, update Form MTCE-0023 to reflect changes and corrective actions implemented since the 90 percent construction completion field review with maintenance.

*7-104B (3) Stormwater Inspector Responsibilities*

The resident engineer may assign an assistant resident engineer as the stormwater inspector. The stormwater inspector will assist the resident engineer in carrying out the work described above, as determined by the resident engineer. Typically, the stormwater inspector will do the following:

- Review and become familiar with the *Standard Specifications* and project special provisions pertaining to water pollution control.
- Review and become familiar with the authorized WPCP or SWPPP.
- Conduct site inspections. Verify that BMP measures are properly installed and meet the requirements in the Caltrans *Stormwater Quality Handbooks* and the contract specifications. Look for areas that may require BMP measures that are not deployed or not addressed in the WPCP or SWPPP. Observe and identify any discharges, illicit connections, and illegal discharges. Take photographs of all areas.
- Prepare daily reports on stormwater pollution prevention. Record all stormwater management activities, or inactivity, and conversations with the contractor regarding stormwater pollution prevention.
- Document site visits from regulatory agencies, such as the SWRCB, the RWQCB, or U.S. EPA, and any inspections the agencies perform.

- Monitor the weather reports of the National Weather Service for rainfall predictions. If a qualifying rain event (greater than 0.5 inch for each event) or storm event (greater than 0.1 inch in 24 hours) is predicted, make sure the contractor prepares a rain event action plan for risk levels 2 and 3 projects and deploys appropriate measures as identified in either the rain event action plan, the SWPPP, or the WPCP.
- Inform the resident engineer immediately of any problems with BMP measures during the implementation of the WPCP or SWPPP and any observed discharges.
- Identify changes in construction that may require amendments to the WPCP or SWPPP, and notify the resident engineer of these findings.
- For sites covered by permits, verify site access and the safety of representatives of regulatory agencies and local agencies when they are on site for any reason.

*7-104B (4) Contractor Inspections*

The special provisions for water pollution control require the contractor to inspect the construction site at least once a week for the proper implementation, performance, and maintenance of BMP measures identified in the WPCP or SWPPP. The contractor must follow the site inspection procedure specified in the SWPPP or WPCP, and the *Construction Site Monitoring Program Guidance Manual*. The water pollution control manager, or trained personnel under the supervision of the water pollution control manager, must conduct the site inspections using Form CEM-2030, "Stormwater Site Inspection Report."

The contractor must notify the resident engineer whenever the SWPPP, WPCP, or BMP measures may not reduce or have not reduced the discharge of sediment or other pollutants into a waterway or outside of the project limits. The contractor must follow the verbal notification with a written report using Form CEM-2061, "Notice of Discharge Report," or Form CEM-2061T "Notice of Discharge Report—Lake Tahoe Hydrologic Unit Stormwater Sample Field Test Report/ Receiving Water Monitoring Report" if applicable. The contractor's report must conform to the provisions of Section 900.3, "Discharge Reporting," of the SWPPP or those of Section 50.2, "Discharge Reporting," of the WPCP.

If the situation constitutes noncompliance with the permit, the resident engineer must conduct a verification inspection, and if a noncompliance condition exists, report it to the district construction stormwater coordinator and district NPDES stormwater coordinator. Unless otherwise indicated in the district or regional work plans, the district NPDES stormwater coordinator will report it to the appropriate RWQCB. The resident engineer must require the contractor to amend the WPCP or the SWPPP, if necessary, and to employ additional BMP measures.

*7-104B (5) Amendment Review and Processing*

During construction, conditions may occur that affect the ability of the contractor to implement the WPCP or SWPPP as initially authorized or the ability of the authorized WPCP or SWPPP to meet the objectives for water pollution control. A change in construction operations or site conditions may result in the discharge of significant quantities of pollutants to surface waters, municipal storm drain systems, or outside of the project limits. The project biologist must be notified of such releases, asked to determine the effect on protected species and their habitats, and asked to determine the need for required notices to regulatory agencies. These changes can include construction staging or schedule changes, staging area modifications, unanticipated offsite drainage

effects, and failures of BMPs. The contractor must amend the WPCP or SWPPP if either plan's effectiveness is diminished by any such changed condition.

Upon the resident engineer's authorization, the contractor must incorporate all WPCP or SWPPP amendments into the onsite documents. The contractor must prepare WPCP or SWPPP amendments in the format prescribed in the *Stormwater Quality Handbooks*.

The resident engineer must review the contractor's proposed revised WPCP or SWPPP amendment for completeness and conformance with the revised conditions, and give written authorization to the contractor if the amendments are acceptable. The authorized revised SWPPP must be uploaded into SMARTS.

*7-104B (6) Project Files*

The resident engineer must keep copies of all documents related to stormwater pollution prevention in Category 20, "Water Pollution Control Plan or Storm Water Pollution Prevention Plan," of the project files. Retain the following documents:

- SWPPP or WPCP and all amendments
- Daily reports and photographs related to the prevention of stormwater pollution
- The weekly contractor-prepared Stormwater Site Inspection Report
- The Notice of Discharge Reports
- All correspondence related to stormwater pollution prevention, including notices of noncompliance
- Inspection reports from the district construction stormwater coordinators
- Inspection reports from the resident engineer and assistant resident engineer
- Copies of the certifications required by the specifications
- The printout from SMARTS after filing the Notice of Termination

*7-104B (7) Contractor Files*

The specifications require the contractor to keep at the project site copies of the SWPPP or WPCP and all authorized amendments.

7-104C Noise Control

Construction and traffic noise may be a sensitive issue in neighborhoods and communities adjacent to state highways. Funding has been provided for highway noise reduction through the construction of sound walls and other noise attenuation. Special restrictions may be employed on night work in sensitive areas, such as residential neighborhoods, schools, and hospitals near the project site. Section 14-8, "Noise and Vibration," of the *Standard Specifications*, provides the contractor's requirements for noise control.

**7-105 Permits, Licenses, Agreements, and Certifications**

## 7-105 Permits, Licenses, Agreements, and Certifications

This section covers Permits, Licenses, Agreements, and Certifications (PLACs) that may be issued by regulatory agencies or may be part of the contract supplemental project information as described in the special provisions. For assistance regarding PLAC requirements, such as contractor submittals on reporting requirements, protocols, or information training, contact the environmental construction liaison or project biologist.

### 7-105A Special Use Permits and Other Federal Permits

The U.S. Forest Service, Bureau of Land Management, and other federal agencies issue permits to Caltrans to construct and operate highway facilities across lands under their jurisdictions. There can be special use permits, temporary use permits, U.S. Department of Transportation easements, federal land transfers, and, in the case of already existing roadways, there may be prescriptive rights of way. In addition, an Archaeological Resources Protection Act permit may be required.

### 7-105B California Fish and Game Code Sections 1602 and 5650

Section 1602 of the California Fish and Game Code requires that public agencies such as Caltrans reach an agreement with the California Department of Fish and Wildlife (CDFW) if the proposed work affects a waterway. The agreement required by this section of the code is known as the "Lake or Streambed Alteration Agreement," also known as the "1602 Agreement." The 1602 Agreement specifically prohibits polluting the waters of the state and may specifically prohibit certain activities at certain times of the year, such as working in the river during spawning season. It may also require the contractor to undertake specific measures, such as installing fish ladders. Violations of the agreement are punishable by fine, imprisonment, or both.

Section 5650 of the Fish and Game Code prohibits placing specified materials in the waters of the state. Violations are punishable by fine, imprisonment, or both. Examples of violations include the following:

- Causing dirt and sediment to enter the waters of the state
- Using creosoted timbers in the waters of the state
- Placing petroleum products, such as asphalt or diesel, into, or where they can get into, the waters of the state

Placing asphalt concrete grindings, chunks, and pieces in areas where they can pass into the waters of the state is also a violation of Section 5650 of the Fish and Game Code. A memorandum of understanding exists between CDFW and Caltrans regarding the placement of asphalt concrete pavement grindings as shoulder backing and the placement of asphalt concrete pieces and chunks in embankments. For a discussion of reusing asphalt concrete as fill material and shoulder backing and a summary of the memorandum of understanding, refer to Section 110.11, "Conservation of Materials and Energy," of the *Highway Design Manual*. If a question exists as to whether asphalt concrete grindings or chunks may get into the waters of the state, consult with the environmental construction liaison or project biologist.

### 7-105C List of Potential Permits, Licenses, Agreements, and Certifications

Table 7-1.1 may be used for determining when permits or approval of contract plans may be required from state or local governmental agencies. The first column lists the activity or a resource affected by construction activity. The second column lists the agency or agencies that may have jurisdiction in the area shown in the first column. The third column indicates the type of permit or plan approval that may be required by the agency or agencies.

Table 7-1.2 lists federal environmental statutes and regulations. The first column lists resources or activities. The second column shows the federal agency having jurisdiction in the area. The third column lists the statute or regulation that applies to the resource or activity.

Most required permits and plan approvals should be obtained during the project's design phase. However, the following tables may be used as a reminder of the types of permits and plan approvals that may be required when making changes to the original plans. Any changes to plan approvals or PLACs must be coordinated with the environmental construction liaison or Environmental Unit.

**Table 7-1.1. State and Local Agency Permits, Licenses, Agreements, and Certifications (1 of 2)**

| Resource or Activity | Agency | Permit or Approval |
|---|---|---|
| Commercial, industrial, and residential development | Local agency (county or city) | Land use, general plans, specific plan, conditional use, or subdivision |
| Conversion of timberland to nonforest uses through timber operations and immediate timberland production zone rezoning | California Department of Forestry; California Department of Fish and Wildlife | Timberland conversion permit; California Endangered Species Act (Consultation) |
| Power transmission lines, pipelines, and railroad crossings | Public Utilities Commission | Review of plans and approval |
| Solid waste disposal | Department of Resource Recycling and Recovery (CalRecycle) | Disposal requirements |
| Sewage disposal | County health department | Disposal requirements |
| Waste discharge | State Water Resources Control Board; Regional Water Quality Control Board | Waste discharge requirements |
| Re-use of soil containing regulated concentrations of aerially deposited lead (ADL) | Department of Toxic Substances Control | Soil Management Agreement for ADL-Contaminated Soils (ADL Agreement) |
| Storing, treating, or disposing of hazardous waste | Department of Toxic Substances Control | Hazardous Waste Facilities Permit required for facilities receiving hazardous waste from Caltrans |
| Right-of-way across state parkland | California Department of Parks and Recreation | Right-of-way permit, license, easement, joint agreement, or lease |
| Encroachment on or across a local street or highway | Local agency (county or city) | Encroachment permit |
| Encroachment on 100-year floodplain, intermittent streams, and desert washes | California Department of Fish and Wildlife | Lake and Streambed Alteration Agreement (1602 Agreement); California Endangered Species Act (consultation) |
| Encroachment on or across cove, bay, or inlet | California Department of Parks and Recreation, Division of Boating and Waterways | Review of plans |
| Air quality | Air Resources Board or local air pollution control district | Authority to construct and permit to operate for activities emitting stationary source pollutants into the atmosphere |
| Fish and wildlife habitat | California Department of Fish and Wildlife | Lake and Streambed Alteration Agreement for activities in lakes, streams, and channels and crossings; California Endangered Species Act |
| Coastal zone | California Coastal Commission; local government local coastal program | Coastal Development Permit; California Coastal Act |

**Table 7-1.1. State and Local Agency Permits, Licenses, Agreements, and Certifications (2 of 2)**

| Resource or Activity | Agency | Permit or Approval |
|---|---|---|
| Water | California State Lands Commission; State Water Resources Control Board; Regional Water Quality Control Board; Department of Public Health, Division of Drinking Water and Environmental Management; or local health office | Land use lease (such as for encroachments, crossings on tidelands, submerged lands); National Pollutant Discharge Elimination System Permit for stormwater discharges to surface water; waste discharge requirements for nonstorm discharges to surface water or groundwater to the waters of the state; Permit to Operate a Public Water System |
| Dredging | California Department of Fish and Wildlife; State Lands Commission | Standard or special suction dredging permit; dredging permit |
| Surface (material borrow sites, for example) | Local agency (county or city) | Surface Mining and Reclamation Act (SMARA) permit |
| Burning | Local air pollution control district; California Department of Forestry and Fire Protection; local fire control agency | Burn permit |
| Grading | Local agency (county or city) | Grading permit |
| Entering private property to gather information for temporary use | Caltrans district Right of Way Unit; Property owner right of entry approval | Property owner approval for temporary encroachment |
| Entering surface waters to gather information or for construction | Regional Water Quality Control Board | Water quality certification or waiver |
| All activities involving dams or reservoirs | California Department of Water Resources, Division of Safety of Dams | Approval of plans |

**Table 7-1.2. Federal Agency Permits, Licenses, Agreements, and Certifications**

| Resource or Activity | Agency | Federal Statute, Regulation, or Executive Order |
|---|---|---|
| Water | U.S. Army Corps of Engineers; U.S. EPA; Bureau of Reclamation; U.S. Fish and Wildlife Service; National Oceanic and Atmospheric Administration | Clean Water Act (Section 404) Regulations concerning the National Pollutant Discharge Elimination System (40 CFR); Endangered Species Act |
| Air | U.S. EPA | Clean Air Act, Title 42, Sections 7401–7414 |
| Fish and Wildlife Habitat | U.S. Fish and Wildlife Service; U.S. Forest Service; National Park Service; National Oceanic and Atmospheric Administration | Endangered Species Act (Section 7) Biological Opinion for protection of species and habitats |
| Navigable Waters | U.S. Army Corps of Engineers; U.S. Coast Guard | Rivers & Harbor Act |
| Federal Lands | U.S. Forest Service; Bureau of Land Management; National Park Service; U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; National Oceanic and Atmospheric Administration | Clean Water Act (Section 404); Endangered Species Act (Section 7) |
| Historic Properties | Advisory Council on Historic Preservation; State Historic Preservation Office | National Historic Preservation Act (Section 106) |
| Paleontological Resources | Bureau of Indian Affairs; Bureau of Land Management, U.S. Forest Service; National Park Service; U.S. Army Corps of Engineers | Antiquities Act of 1906; Paleontological Resources Preservation Act of 2009; Federal Land Policy and Management Act of 1976 |
| Coastal Zone | U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; National Oceanic and Atmospheric Administration | Biological Opinion for protection of species and habitats; Federal Endangered Species Act; Federal Coastal Zone Management Act of 1972 |
| Wild and Scenic Rivers | National Park Service; U.S. Forest Service, Bureau of Land Management | Code of Federal Regulations, Title 36, Section 297 (36 CFR 297); 43 CFR 8350 |
| Wetlands | U.S. Army Corps of Engineers; U.S. EPA | Executive Order 11990 (Protection of Wetlands) |
| Floodplains | Federal Emergency Management Agency | Executive Order 11988 (Floodplains Management) |
| Dredging | U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; National Oceanic and Atmospheric Administration; U.S. Coast Guard | Clean Water Act (Section 404); Executive Order 11990; Endangered Species Act |
| Airport Airspace | Federal Aviation Administration | Federal Aviation Regulations, Part 77 |
| Farmland | Natural Resources Conservation Service | Farmland Protection Policy Act |

## 7-106 Hazardous Materials

Many hazardous materials are used in the construction of highway facilities. Employees must take appropriate precautions to minimize their exposure and use protective clothing and equipment. Contractors must submit safety data sheets (SDS) and obtain permission from the resident engineer before bringing any hazardous material onto the job site. For instructions, guidelines, and requirements for handling hazardous materials to assure employee safety, refer to Chapter 16, "Hazardous Materials Communication Program," of the *Caltrans Safety Manual* and Chapter 2, "Safety and Traffic," of this manual. For pesticide use guidelines, refer to Section 4-20, "Landscape," of this manual.

Key sources of safety data information are available at the website listed below. The information this website provides could be critical in the event the contractor fails to provide an SDS or should additional information or clarification be required.

In using this information, keep in mind that the address may change over time and it may be necessary to search the more general website listing or call directly for assistance.

For SDS information, use the following free online database provided by MSDS Catalog Service LLC:

http://msdsdigital.com/msds-database

SDS information may also be obtained by entering the product name followed by SDS in a web search engine.

## 7-107 Hazardous Waste and Contamination

Hazardous waste may be generated as a result of construction activities. Examples of hazardous waste include the removal of stripe and pavement marking containing high levels of lead, removing lead-based paint from a bridge or other structure, and excavating soil containing aerially deposited lead. Removing hazardous waste and contamination that has been released into the environment may be part of the project activities. For example, the work may include excavating a defined area of contaminated soil at an old gas station location.

Special permits may be required when generating hazardous waste during construction. For example, demolishing a bridge, whether new, old, or temporary, requires an asbestos survey and a permit from the local air quality management district. For guidance regarding special permit and variance requirements and procedures, contact the environmental construction liaison or district Environmental Unit.

The district construction division must have a designated district hazardous waste coordinator who will carry out necessary administrative functions for hazardous waste and assist the resident engineer. The coordinator will assist the resident engineer by working with other functional areas in the district and headquarters to do the following:

- Identify hazardous waste training that might be needed.
- Make sure of proper notifications if unidentified waste is found during construction.
- Provide field personnel with procedures and other information so that the personnel may safely deal with anticipated and unanticipated hazardous waste and contamination.

The construction contractor is responsible for ensuring that hazardous waste and contamination is managed in compliance with all applicable laws and regulatory requirements. For information about the applicable laws and regulations, refer to Chapter

10 of the *Standard Environmental Reference*, Vol. 1. Additional information regarding hazardous waste management is available at the California Department of Toxic Substances Control (DTSC):

http://www.dtsc.ca.gov/

For information regarding hazardous waste transportation, refer to the DTSC:

http://www.dtsc.ca.gov/HazardousWaste/Transporters/index.cfm

Section 14-11, "Hazardous Waste and Contamination," of the *Standard Specifications* defines the contractor's responsibilities, including requirements for proper storage and handling. Guidance for managing hazardous waste during construction can be found at:

http://www.dot.ca.gov/hq/env/haz/hw_contaminants.htm

Guidance for implementing specific standard special provisions is available at:

http://www.caltrans.ca.gov/hq/env/haz/hw_sp.htm

### 7-107A Contractor-Generated Hazardous Waste Versus Department-Generated Hazardous Waste

Section 14-11, "Hazardous Waste and Contamination," of the *Standard Specifications* differentiates between contractor-generated waste and Department-generated waste.

Contractor-generated hazardous wastes are hazardous materials that the contractor brings to the job site that have no further use and must be disposed of. Examples include extra or spent chemicals and waste generated as a result of contractor spills and leaks. Caltrans does not pay for disposal of contractor-generated hazardous wastes. If the contractor-generated hazardous waste is characterized as a federal waste, often referred to as a Resource Conservation and Recovery Act (RCRA) waste, the contractor must obtain a U.S. EPA Identification Number from DTSC and sign manifests for disposal. If the contractor-generated hazardous waste is not characterized as a federal waste, it will be characterized as a California hazardous waste—also known as a non-RCRA waste—and the contractor must obtain a state identification from DTSC and sign manifests for disposal.

Department-generated hazardous wastes result from removal of materials that exist within the project limits such as stripe on the highway and soil containing aerially deposited lead. The *Standard Specifications* requires that Department-generated hazardous waste is labeled consistently, and the resident engineer obtains the U.S. EPA temporary generator identification number and signs the hazardous waste manifests. Department-generated hazardous waste is required to be disposed of within California at a facility that holds a DTSC permit to accept the waste. For more information regarding in-state disposal, refer to Chapter 18, "Environmental Contamination" of the *Project Development Procedures Manual*.

At the preconstruction meeting, have the contractor identify the permitted site for disposal of project hazardous waste. The resident engineer should follow up and confirm the disposal site's ability to dispose of the waste stream.

During the course of work, the resident engineer must do the following:

1. Retain a copy of the manifest. Send a copy to: DTSC, P.O. Box 400, Sacramento, CA, 95812-0400 within 30 days.
2. Review the manifest for accuracy before signing it as the generator. If you identify any errors at the time, line them out, correct them, and initial the correction. If you

identify an error after the waste is transported, prepare a manifest correction letter. Seek assistance from the district hazardous waste coordinator if needed. The mailing address on the manifest should be the district office and the manifest should also show the project location address.

3. Check that the load is transported by a hauler with a valid hazardous waste hauler certification.

### 7-107B Aerially Deposited Lead

Aerially deposited lead (ADL) from leaded gasoline emissions still exists in unpaved areas along California highways, and lead is ubiquitous in the environment. Sample and analysis of soil is normally performed during project development to determine whether the lead is present at concentrations requiring special management. Sample results are analyzed statistically. The sampling and analysis methods were developed and are required by the U.S. EPA and DTSC. For safety purposes, do not allow Caltrans staff and contractor staff that have not completed a lead safety training program provided by the contractor to work in areas where soil is being disturbed.

#### *7-107B (1) Nonhazardous Waste Concentrations*

If lead concentrations are nonhazardous, a lead compliance plan is required for safety precautions, but special disposal of the soil is not required. The requirements for the lead compliance plan are found in Section 7-1.02K (6)(j)(ii), "Lead Compliance Plan," of the *Standard Specifications* and project-specific information may be found in Section 7-1.02K (6)(j)(iii), "Earth Material Containing Lead," of the standard special provisions. The requirements specify whether soil must be retained on the job site or may be disposed of by the contractor.

If soil will be disposed of and Section 7-1.02K(6)(j)(iii), "Earth Material Containing Lead," indicates the average concentration of total lead exceeds 80 mg/kg, verify the additional text discussed in Section 3-510B, "Contractor-Property Owner Agreement," of this manual is included in the Contractor-Property Owner Agreement. Submit the Contractor-Property Owner Agreement to the district ADL coordinator, who will provide the agreement to DTSC. Coordinate and provide additional information to the district ADL coordinator as required by the ADL Agreement. The information needed includes the start and end dates of construction, volume of soil disposed of on the property, and bills of lading used to transport the soil. Refer to Item No. 6 on pages 10 and 11 of Exhibit A of the ADL Agreement:

http://www.dot.ca.gov/hq/construc/environmental/

The list of district ADL coordinators is available at:

http://www.dot.ca.gov/hq/construc/environmental/

The special provisions may contain handling requirements, for example, excavate to total depth, not in lifts. These requirements are included and must be followed in situations where mismanagement of the soil could result in unintended misclassification of the soil and unnecessary hazardous waste generation. For more information about these special provisions, refer to the guidance at:

www.dot.ca.gov/hq/env/haz/hw_sp.htm

*7-107B (2) Hazardous Waste Concentrations*

If lead concentrations are hazardous waste and soil will be disturbed by project activities, the contract special provisions will require worker protection and soil management and disposal at a Class I Disposal Facility, or re-use under the Transition Plan (Exhibit A) requirements of the ADL Agreement between Caltrans and the DTSC.

ADL soil that must be disposed in a Class I disposal facility is designated in the specifications and on the plans as either Z-2 or Z-3 soil. When a contract includes disposal of Z-2 or Z-3 material, within 180 days after the contract has been accepted, the resident engineer must coordinate and provide additional information to the district ADL coordinator as required by the ADL Agreement. The additional information needed includes the start and end dates of construction, landfill names, copies of hazardous waste manifests used to transport the soil, and volume of soil disposed of at the landfills. Refer to Item No. 6 on pages 10 and 11 of Exhibit A of the ADL Agreement.

Reuse of ADL soils with lead concentrations exceeding regulatory thresholds is allowed by the ADL Agreement when the project is listed in Exhibit C of the ADL Agreement and the Transition Plan (Exhibit A) requirements of the ADL Agreement are met. For reference, the transition plan requirements are the requirements originally set forth in the variance (Exhibit B) with additional reporting requirements. Soil that can be re-used is designated in the specifications and on the plans as Y-1 (can be buried under soil) or Y-2 (must be placed under pavement). When the project includes excavation or placement of Types Y-1 or Y-2 soil, the resident engineer must verify, before contract award if possible, that the district ADL coordinator has submitted the project notification to DTSC, including providing copies of the DTSC written notification to:

- The applicable RWQCBs
- The local air pollution control districts or air quality management districts
- The Certified Uniform Program Agency

The written notification to DTSC must list all projects connected to the Y-1 or Y-2 soil, including projects receiving Y-1 or Y-2 soil or furnishing Y-1 or Y-2 soil.

If the written notifications and submittals were not sent, the resident engineer must notify the district ADL coordinator immediately, who must provide the required written notifications.

The resident engineer must be aware of the requirements of the ADL Agreement, including excavating, placing, stockpiling, transporting, managing, and burying soil containing ADL. Coordinating and communicating with the district ADL coordinator before, during, and after construction is very important. The resident engineer must be familiar with the recording and reporting requirements of the ADL Agreement.

As Y-1 or Y-2 project changes require a written update notification to DTSC, all changes to Y-1 or Y-2 soil must be discussed with the district ADL coordinator. Do not proceed with Y-1 or Y-2 project changes without update correspondence letters to DTSC or written notification from the district ADL coordinator indicating concurrence with the change. All changes from the original design, including minor changes in placement locations, quantities, or protection measures, must be documented by the resident engineer on Form CEM 4501, "Resident Engineer's Daily Report or Assistant Resident Engineer's Daily Report" within 5 days of the change.

The contractor must submit Form CEM-1901, "Burial Location of Soil Containing Aerially Deposited Lead," and an electronic geospatial vector data shapefile to the

resident engineer within 5 business days of completing placement of soil containing ADL at a burial location. The resident engineer should verify the information submitted on the form and notify the contractor within 5 business days if the information must be corrected. The contractor must then submit the corrected form and electronic geospatial vector data shapefile to the resident engineer and ADL@dot.ca.gov. The resident engineer must forward Form CEM-1901 and the geospatial vector data shapefile to the district ADL coordinator.

The resident engineer is responsible for showing on the as-built plans the locations where ADL was buried. Information submitted on Form CEM-1901 should be used as the basis for the plotting locations.

The resident engineer must coordinate with and provide the following to the district ADL coordinator:

- Lead compliance plan, within 10 days of accepting the plan
- Excavation and transportation plan, within 10 days of accepting the plan
- Start of construction notification (at least 5 days before construction)
    - List of contractor and subcontractors
    - Anticipated start and end (contract acceptance) construction dates
    - Resident engineer contact information
    - Project-defined corridor if soil will be moved from one Caltrans project to another
- Completion report (within 180 days of contract acceptance)
    - Actual start and end (contract acceptance) construction dates
    - List of all U.S. EPA and State Identification Numbers, including Temporary Identification Numbers, issued by DTSC for the project. The list must include the identification numbers obtained by the contractor for contractor-generated hazardous waste.
    - Survey data at each burial location as signed by the contractor's surveyor
    - Volume of soil at each burial location
    - The historical maximum elevation of the water table underlying each burial location
    - Copies of all bills of lading used for transporting ADL soil. These must be kept on file with the project as-built plans
    - Laboratory data if soil is tested for lead during construction

To comply with the record retention requirements of the ADL Agreement, the resident engineer must retain ADL-related records in Category 19, "Hazardous Waste and Hazardous Materials" of the project records as follows:

- All ADL-related correspondence, reports, data, and records
- All ADL-related documents included with the resident engineer pending file.

### *7-107B (3) Minimal Disturbance of Material Containing Hazardous Waste Concentrations of Aerially Deposited Lead*

The U.S. EPA allows certain discrete areas of generally dispersed contamination to be considered an individual waste management unit (equivalent to a landfill). These discrete areas are defined as areas of contamination (AOCs). An AOC is equated to a single unit; therefore, movement, consolidation, or in-situ treatment of hazardous waste within the AOC does not create a new point of hazardous waste generation. For an AOC, contamination must be contiguous but can have various concentrations.

The DTSC allows Caltrans to apply the AOC approach to projects that will only cause minimal disturbances of soil containing hazardous waste concentrations of ADL. Minimal or minor disturbances include installing guardrail, fencing, sign posts, traffic operation systems, highway planting and irrigation; minor clearing and grubbing; shoulder backing, pavement, and trenches for electrical systems. All soil disturbed must remain in the immediate area of disturbance and not be transported elsewhere. Health and safety precautions and dust control for hazardous waste must be implemented.

When the AOC approach can be applied, the contract specifications under Section 14-11.09, "Minimal Disturbance of Material Containing Hazardous Waste Concentrations of Aerially Deposited Lead" of the *Standard Specifications* will require a lead compliance plan for worker safety and dust control and require that disturbed soil be placed back in the immediate area that it came from.

## 7-107C Naturally Occurring Asbestos

If naturally occurring asbestos (NOA) exists within the project area, the contract will include specifications that contain safety and management requirements. The specifications require that the contractor must, at all times, comply with the dust mitigation requirements of the local air pollution control district or the county air quality management district and the California Occupational Safety and Health Administration code of safe work practices for working with asbestos (California Code of Regulations, Title 8, Section 1529, "Asbestos" [8 CCR 1529]).

The California Air Resources Board (ARB) restricts the use of material containing detectable NOA (equal to or greater than 0.25 percent) and the DTSC regulates material containing hazardous levels of NOA (defined as equal to or greater than 1.0 percent asbestos). However, the DTSC does not require that NOA be managed as a hazardous waste for disposal purposes, and, therefore, disposal at a Class I facility is not required. Because of this determination, a generator identification number is not necessary for disposing of excess NOA material, nor are waste manifests or DTSC-registered hazardous waste transporters required. However, surplus material containing 1.0 percent or greater of NOA must be disposed of by the contractor in a Class II or Class III landfill facility permitted to receive it and may not be relinquished for reuse on a site that is not a permitted disposal facility.

Ultramafic rock that has been tested and found to contain less than 0.25 percent asbestos and all NOA material containing less than 0.25 percent asbestos may be used in a surfacing application according to 17 CCR 93106, "Asbestos Airborne Toxic Control Measure for Surfacing Applications." "Restricted Material" is defined as ultramafic rock and serpentine rock, any material extracted from a region defined on geologic maps as an ultramafic rock unit, and any material that has been tested and found to have an asbestos content of 0.25 percent or greater. Surplus material with an NOA content greater than or equal to 0.25 percent, but less than 1.0 percent NOA must be disposed of in a

licensed landfill facility if it is not relinquished to the contractor. If material containing less than 1.0 percent NOA is relinquished to the contractor for reuse in nonsurfacing applications, the contractor must provide the following warning to the entity receiving the NOA material:

W A R N I N G!

This material may contain asbestos.

It is unlawful to use this material for surfacing or any application

in which it would remain exposed and subject to possible disturbances.

Extreme care should be taken when handling this material to minimize the generation of dust.

The resident engineer must obtain written documentation from the contractor stating that the relinquished NOA material will not be reused in a surfacing application and what the final disposition of the restricted material is.

### 7-107D Department-Generated Contaminated Soil

If contaminated soil exists within the project area, the contract will include specifications that contain safety and management requirements. Depending on the depth to groundwater within the project area and the depth of construction activities, management of contaminated water may also be included. These specifications will vary depending upon the site-specific conditions and, therefore, must be reviewed carefully by the resident engineer to make sure that they are properly implemented.

### 7-107E Removing Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue

Refer to Section 14-11.12, "Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue," of the *Standard Specifications* and follow the procedures below when assessing, removing, and disposing of yellow traffic stripe and pavement marking materials on all projects.

The resident engineer must review the construction contract to determine whether yellow traffic stripe and pavement marking material must be removed. If so, the resident engineer must also determine whether special handling as a hazardous waste is specified.

If yellow traffic stripe and pavement markings are to be removed and the removal has not been addressed in the contract, the resident engineer must consult with the district hazardous waste coordinator to determine whether a change order is needed.

The resident engineer must make sure of the following:

- *Training*: The contractor must provide a safety training program that meets the requirements of 8 CCR 1532.1, "Lead." Before performing any yellow traffic stripe and pavement marking removal, personnel (including Caltrans employees) who have had no prior lead training must complete the safety training program.
- *Lead compliance plan*: Work practices and worker health and safety must conform to 8 CCR 1532.1. The contractor must submit the written compliance programs

required in Subsection (e)(2), "Compliance Program," of 8 CCR 1532.1, to the resident engineer before starting to remove yellow traffic stripes and pavement markings and at such times when a program revision is required. An industrial hygienist certified by the American Board of Industrial Hygiene must prepare the compliance program. A competent person capable of taking corrective action must monitor the program. Require that copies of all inspection reports made in accordance with 8 CCR 1532.1 are given to the resident engineer.

- *Work plan*: The contractor must submit a work plan that documents the removal equipment that will be used, removal and waste collection procedures, storage containers, storage location and security, sampling procedures, sampling personnel qualifications, certified laboratory that will run the analyses, hazardous waste hauler certifications, and receiving disposal site and requirements. Removal work may not start until the resident engineer has reviewed and accepted the work plan.
- *Storage of residue*: The contractor must store the residue from traffic stripe and pavement marking removal as follows:

  1. While waiting for any test results required by the disposal facility, store the collected residue as hazardous waste in properly labeled metal containers approved by the U.S. Department of Transportation for hazardous waste transport.
  2. Cover and handle the containers in such a manner that no spillage will occur.
  3. Enclose the stored containers with temporary chain link fencing or a lockable shipping container at a location within the project limits approved by the resident engineer.
  4. Begin disposing of the contained residue no more than 90 days after accumulating 220 pounds of residue.

- *Testing and disposal*: Before disposal, the contractor is required to test the residue collected in the containers for proper waste classification. The level of lead waste contained in the removed material will be diluted by pavement debris that has also been removed. Depending on the test results, disposal of the stored material is as follows:

  1. Dispose of the stored residue as hazardous waste when its lead content is detected to be at levels greater than 1,000 mg/kg total lead or greater than 5 mg/l soluble lead. Keep records in accordance with current requirements for hazardous waste handling and disposal, and file them in the project files. The contractor must dispose of all hazardous waste residues resulting from yellow traffic stripe and pavement marking removal at an approved DTSC-permitted Class I disposal facility in accordance with the requirements of the disposal facility operator. A transporter currently registered with the DTSC using correct manifesting procedures must haul the yellow traffic stripe and pavement marking residue.

     The contractor must make all arrangements with the disposal facility operator and perform any testing of the yellow traffic stripe and pavement marking debris required by the operator. The resident engineer must obtain the U.S. EPA or State Temporary Identification Number and sign all manifests as the generator. The resident engineer must also pay the manifest fees that may be billed several months after project completion.

2. Unless the lead removal work was already contemplated in the construction contract, pay as change order work all work performed for testing, additional removal costs, retesting, and additional disposal.

3. If the analytical test results demonstrate that the waste is actually nonhazardous, a change order must be prepared to direct the contractor to dispose of the waste at a Class II or Class III facility with no additional payment provided.

7-107F Disturbance of Existing Paint Systems on Bridge

Bridge paints contained high levels of lead, zinc, and chromium before being reformulated to reduce their toxicity. Even though the phase-out of those paints occurred many years ago, lead, zinc, and chromium are still a concern because when bridges are repainted, not all of the prior layers of paint are completely removed. In addition, lead from the paint is actually absorbed into the steel and, as a result, even steel that no longer has paint on it can be a hazard if heated because heating causes the lead to be released as a toxic fume.

When bridge paints are disturbed, the paint debris must be properly contained to protect waterways and workers. It has been determined that the grime and debris that collects on bridges also contains elevated concentrations of lead. Consider this grime and debris part of the existing paint system.

When bridge paint will be disturbed as part of the project, the contract specifications will require a lead compliance plan for worker safety, waste management, and verification sampling to document that heavy metals are not released during the work.

The resident engineer must ensure verify the following:

- *Training*: The contractor must provide a safety training program that meets the requirements in 8 CCR 1532.1, "Lead." Before performing any bridge paint removal, personnel (including Caltrans employees) who have had no prior lead training must complete the safety training program.
- *Lead compliance plan*: Work practices and worker health and safety must conform to 8 CCR 1532.1. The contractor must submit the written compliance programs required in Subsection (e)(2), "Compliance Program," of 8 CCR 1532.1, to the resident engineer before starting to remove bridge paint and at such times when a program revision is required. An industrial hygienist certified by the American Board of Industrial Hygiene must prepare the compliance program. A competent person capable of taking corrective action must monitor the program. Require that copies of all inspection reports made in accordance with 8 CCR 1532.1 are given to the resident engineer.
- *Debris Containment and Collection Plan*: The contractor must submit a plan that documents the removal equipment and containment systems that will be used, removal and waste collection procedures, certified laboratory that will run the analyses, hazardous waste hauler certifications, and receiving disposal site and requirements. Work that will disturb the paint system may not start until the resident engineer has reviewed and accepted the plan.
- *Storage of residue*: The contractor must store the residue from paint disturbance or removal as follows:

    1. While waiting for any test results required by the disposal facility, store the collected residue as hazardous waste in properly labeled metal containers

approved by the U.S. Department of Transportation for hazardous waste transport.

2. Cover and handle the containers in such a manner that no spillage will occur.
3. Enclose the stored containers with temporary chain link fencing or a lockable shipping container at a location within the project limits approved by the resident engineer.
4. Begin disposing of the contained residue no more than 90 days after accumulating 220 pounds of residue.

- *Waste testing and disposal*: Before disposal, the contractor is required to test the residue collected in the containers for proper waste classification. Depending on the test results, disposal of the stored material is as follows:

  1. Dispose of the stored residue as hazardous waste when its lead content is detected to be at levels greater than 1,000 mg/kg total lead or greater than 5 mg/l soluble lead. Keep records in accordance with current requirements for hazardous waste handling and disposal, and file them in the project files. The contractor must dispose of all hazardous waste residues at an approved DTSC-permitted Class I disposal facility in accordance with the requirements of the disposal facility operator. A transporter currently registered with the DTSC using correct manifesting procedures must haul the residue.

     The contractor must make all arrangements with the disposal facility operator and perform any testing of the residue required by the operator. The resident engineer must obtain the U.S. EPA or State Temporary Identification Number and sign all manifests as the generator. The resident engineer must also pay the manifest fees that may be billed several months after project completion.

  2. Unless the lead removal work was already contemplated in the construction contract, pay as change order work all work performed for testing, additional removal costs, retesting, and additional disposal.
  3. If the analytical test results demonstrate that the waste is actually nonhazardous, a change order must be prepared to direct the contractor to dispose of the waste at a Class II or Class III facility with no additional payment provided.

- *Work area monitoring:* The contractor must perform air monitoring to demonstrate that lead is not being released from the containment structure and perform soil sampling before and after the work to demonstrate that lead has not been released to the ground beneath the work area. Consult the hazardous waste coordinator to determine the adequacy of the reports and whether a release has occurred requiring corrective action. If the area beneath the bridge is paved soil, sampling will not be included in the specifications. In these cases, look for color changes on the pavement which indicate a release of paint residue.

### 7-107G Treated Wood Waste

Treated wood has been used to support metal beam guard railing, thrie beam barrier, piles, and roadside signs. These wood products are typically treated with preserving chemicals that protect against insect attack and fungal decay. These chemicals may be hazardous and include but are not limited to arsenic, chromium, copper, creosote, and pentachlorophenol. The DTSC requires that treated wood waste (TWW) either be disposed of as hazardous waste or, if not tested, the generator may presume that TWW

is a hazardous waste and manage the waste using DTSC's Alternative Management Standards. The standards are described in 22 CCR 67386.1–67386.12. The standards ease storage requirements, extend accumulation periods, allow shipment of TWW without manifests and use of a registered hazardous waste hauler, and permit disposal at specific nonhazardous waste landfills.

Whenever TWW will be removed as part of the project, the contract specifications will direct the contractor to follow the alternative standards, including providing training to all personnel who may come into contact with TWW.

For projects that will generate more than 10,000 pounds of TWW per calendar year, the DTSC must be notified within 30 days of exceeding this weight threshold. Notification must include the name and mailing address of the generator, generator identification number, date that the 10,000-pound limit was or is expected to be exceeded, the weight of the TWW as measured by the receiving facility, and the name and address of the receiving facility. The resident engineer requests the temporary generator identification number from the DTSC and files an electronic form available on DSTC's website for TWW. The DTSC will forward a copy to the California State Board of Equalization which, in turn, sets up an administrative record. If a project will generate more than 10,000 pounds of TWW, a Basic Engineering Estimating System item 066915, "BOE TWW Generation Fee," will be included as a department-furnished material. This item will be paid prior to or during the closeout process of the project, up to 1 year after construction contract acceptance.

TWW can be shipped off-site by a hauler with a shipping document, bill of lading, or invoice serving as documentation. If TWW is less than 10,000 pounds per calendar year per project, a generator identification number is not required. Records must be kept for 3 years from the date of the last waste shipment.

If there is limited space or no area to temporarily store TWW on the job site, it may be transferred to a remote consolidation site, such as a maintenance facility, or a location that meets all the requirements of 22 CCR 67386.7(c), "Offsite Shipments."

### 7-107H Disposal of Electrical Equipment Requiring Special Handling

California law requires special handling of electrical waste such as ballasts containing polychlorinated biphenyl (PCB), batteries, and fluorescent or mercury tubes, bulbs, and lamps. PCBs found in ballasts and thionyl chloride found in vehicle sensor node batteries are considered extremely hazardous wastes if they are released from the equipment.

PCB disposal is regulated by the U.S. EPA under the Toxic Substances Control Act and by 40 CFR Part 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions." PCB wastes are also regulated as hazardous waste by the DTSC under the California Health and Safety Code and the California Code of Regulations, Title 22, Division 4.5, "Environmental Health Standards for the Management of Hazardous Waste." All PCB wastes must be packaged in a container approved to transport PCB, marked, "Contains PCBs," and transported with a proper hazardous waste manifest by an authorized PCB or hazardous waste transporter to an appropriately permitted disposal facility. If a ballast containing PCBs is damaged, it may leak and, therefore, requires special management. Damaged ballasts containing PCBs must be contained and transported to a U.S. EPA-approved high-temperature incinerator.

Waste batteries and fluorescent or mercury tubes, bulbs, and lamps are considered universal wastes under 22 CCR 66273.1–66273.90. These are wastes generated by

everyone, hence the term "universal." The management requirements are more relaxed than those for hazardous wastes. However, universal wastes can adversely impact public health and the environment if not properly managed, and, therefore, must be disposed of at appropriately permitted facilities. Damaged vehicle sensor node batteries may leak thionyl chloride and, therefore, must be contained. Once damaged, these batteries are no longer considered universal waste and must be managed and disposed of as a hazardous waste.

When these types of electrical equipment will be removed as part of the project, the contract specifications will alert the contractor to the special management requirements for these wastes.

### 7-107I Unanticipated Discovery of Hazardous Waste and Contamination

Caltrans construction employees must follow safe practices and minimize their exposure after discovery of unanticipated and unidentified hazardous wastes and contamination. Minimize potential risks during project construction by having all construction personnel follow the general procedures below:

- After unknown and potentially hazardous wastes and contamination (including underground tanks) are discovered, cease construction work in that area. When a waste is discovered, follow the procedure described in Figure 7-1.1, "Unknown Hazards Procedure," of this manual.
- Secure the area with barriers or fences, and evacuate the vicinity.
- Prohibit construction personnel from any exploratory or investigative work that would result in further personal exposure. Such personnel are prohibited from taking samples or testing potentially hazardous waste and contamination. This prohibition includes activities such as the following:
    1. Touching, smelling, or ingesting suspected materials.
    2. Climbing into trenches or enclosed areas where contamination is suspected.
    3. Reaching, looking, or placing a foreign object (such as a stick to probe or a rock to test depth or to determine the presence of a liquid) into exposed or leaking tanks or other enclosed spaces.
    4. State law specifically prohibits the use of the prime contractor's forces (including subcontractors) to respond to an unanticipated discovery if the type of hazard was not identified in the original contract documents. The contractor must stop work in the area and Caltrans must independently hire a Class A contractor with a Hazardous Waste Substances Removal Certification to respond. To assure rapid response, Caltrans regions and districts are the contract administrators for on-call construction emergency contracts. For assistance, contact the contract manager for your specific region or district. A contact list is available at:

        http://www.dot.ca.gov/hq/construc/environmental/
- For any necessary exploratory, investigative, or cleanup work, use specialized consultants or safety workers who are fully trained, licensed, and qualified for hazardous waste work in accordance with state and federal regulations.
- Because of potentially catastrophic health effects, 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," requires that no one enter the designated exclusion zones until a complete and effective "hazardous waste worker

protection program" is established or until the consultant has determined no exposure danger exists. (The designated exclusion zones are delineated in the consultant-prepared hazardous waste site safety plans.)

7-108 Crumb Rubber Usage Reporting

## 7-108 Crumb Rubber Usage Reporting

For projects that include items of work that use crumb rubber modifier, the contractor is required to report crumb rubber usage on Form CEM-4410, "Crumb Rubber Usage Report." Crumb rubber is used in the following items of work:

- Rubberized hot mix asphalt
- Hot mix asphalt with performance grade modified asphalt binder with crumb rubber modifier
- Seal coat with crumb rubber modifier
- Vegetation control (minor concrete)

The contractor is required to track and report the weight (in pounds) of crumb rubber used throughout the duration of the contract. The contractor reports the monthly usage and total year-to-date usage information monthly on Form CEM-4410. During the preconstruction conference, the resident engineer must advise the contractor that this form is available on the Division of Construction's forms website. The requirements of the form should be explained and reiterated during the preconstruction conference held at the beginning of the project and preconstruction meetings for the various items of work that include crumb rubber.

The contractor submits the form monthly, for ongoing contracts, to the resident engineer by the 10th of the month following the reporting period, and a final report at the end of the project. If no crumb rubber was used during the reporting period, the contractor checks the "No crumb rubber was used" check box.

Form CEM-4410 must be completely filled out and certified by the contractor for it to be acceptable. The resident engineer must review for accuracy all reports submitted by the contractor. The resident engineer completes and signs the section of the form verifying that the supplier is on the Authorized Material List, quantities were paid on the monthly estimate, and that the contractor submitted the report to CRM@dot.ca.gov.

In accordance with Section 9-1.16E(3), "Performance Failure Withholds," of the *Standard Specifications*, withhold $10,000 for each failure to submit a completed report.

7-109 Solid Waste Disposal and Recycling Reporting

## 7-109 Solid Waste Disposal and Recycling Reporting

Solid waste disposal and recycling reports require the contractor to track and report landfill disposal and material recycling activity performed throughout the duration of the contract. The contractor reports this information annually on Form CEM-4401, "Solid Waste Disposal and Recycling Report." During the preconstruction conference, the resident engineer must advise the contractor that this form is available on the Division of Construction's forms website. The requirements of the form should be explained and reiterated during the preconstruction conference and other meetings.

Form CEM-4401 must include, at a minimum:

- The report calendar year.
- Amount of solid waste taken to landfills.
- Amount of solid waste diverted from landfills to recycling facilities.

- Amount of recycled material generated and then reused on a project.
- Name, title, and signature of the contractor's representative.
- Date of the report.

The contractor submits the annual report for ongoing contracts to the resident engineer by January 15, and a final annual report 5 days following contract acceptance. If no work was conducted during the reporting period, the report states that no work was performed during that period.

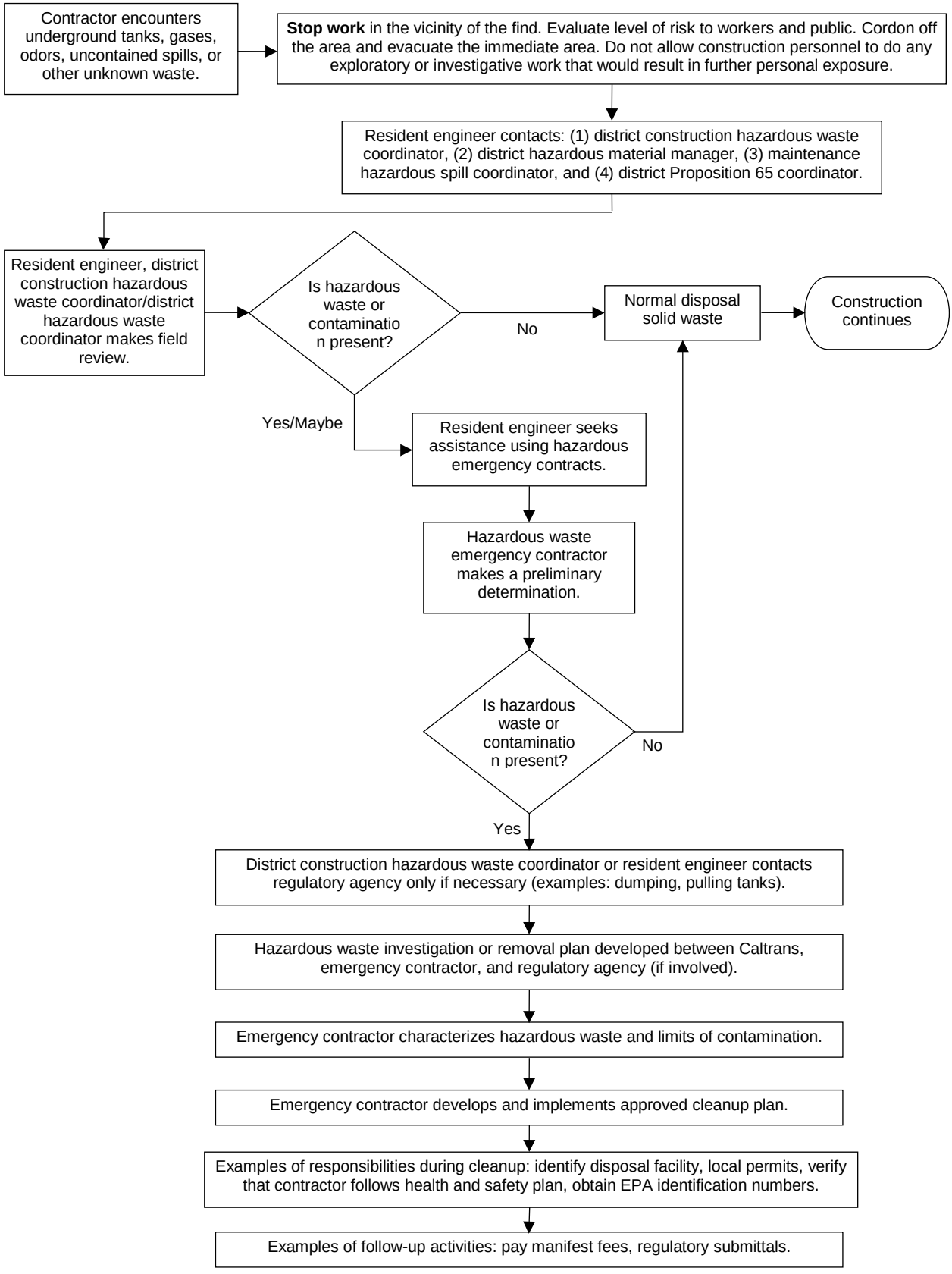
Section 14-10.02, "Solid Waste Disposal and Recycling Report," of the *Standard Specifications*, requires that the contractor submit to the resident engineer a final solid waste disposal and recycling report before the contract can be finalized.

Form CEM-4401 must be completely filled out and signed by the contractor for it to be acceptable. The resident engineer must review for accuracy all reports submitted by the contractor. Compare the total amount listed on Forms CEM-4401 of materials taken to and diverted from landfills with the approximate amount of work requiring the removal of materials. Before signing each report, resolve any discrepancies in material type or amount with the contractor. In accordance with Section 14-10.02, "Solid Waste Disposal and Recycling Report," of the *Standard Specifications*, Caltrans withholds $10,000 for each failure to submit a completed report.

The resident engineer must submit the approved Form CEM-4401 to the district recycling coordinator with a copy to the district construction office no later than February 1 of each year or within 15 days after receiving the final report. Contact information for district and statewide recycling coordinators is available at:

http://www.dot.ca.gov/hq/oppd/rescons/sb1016/coordinators.htm

**Figure 7-1.1. Unknown Hazards Procedure**



## 7-110 Certificate of Environmental Compliance



A Certificate of Environmental Compliance (CEC) is prepared at the end of construction to document and certify Caltrans' environmental compliance efforts for measures specified in final environmental (or other project) documentation, including PLACs and ECR.

For any commitments not completed by the end of construction, initiate notification to, and have ongoing communication with, appropriate staff including, but not limited to, the environmental construction liaison, project manager, and Environmental Unit chief, to discuss and document the logistics (timing, staff, resources) of when those commitments will be completed, and to identify who is responsible for tracking such completion efforts. All activities to complete post-construction commitments are identified in the CEC. The resident engineer is responsible for ensuring that the CEC is prepared and distributed. The CEC refers to the ECR to determine:

- Whether the environmental commitments were met and, if not, which measures were implemented
- Which contract specifications satisfied environmental commitments and concerns
- Whether additional environmental commitments are required as a result of project changes, and their outcomes

The updated ECR will serve as the basis for the CEC documentation.

The CEC will be signed by the environmental construction liaison, environmental branch chief, project manager, and resident engineer, and will be filed in the project files.

Provide copies of the CEC to all district or regional organizational units responsible for the project including Environmental, Design, Project Management, and Construction.

Discuss the CEC fully at the project closeout meeting. This can result in identifying the lessons learned on the project and areas of environmental compliance that may need improvement. Include district maintenance staff in the project closeout meeting if there are post-project commitments.

The CEC form is available on the Division of Environmental Analysis website:

http://www.dot.ca.gov/ser/forms.htm#cert_compliance