STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MANUAL CHANGE TRANSMITTAL		NO. **18-5**
TITLE: Department of Transportation *Construction Manual*	APPROVED BY: Rachel Falsetti Chief, Division of Construction	DATE ISSUED: **08-03-2018**
SUBJECT AREA Section 2-3, 3-8, and 4-12 of the *Construction Manual*	ISSUING UNIT Division of Construction	
SUPERSEDES Partial: CPB 17-8 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. Updated sections are published on http://www.dot.ca.gov/hq/construc/constmanual/ and are indicated by the date listed in the right-hand column on that page. Content changes, not including edits for clarity, are enumerated:

Section 2-3, "Major Construction Incidents"
• Section 2-301, "General," to update the name of the *Caltrans Safety and Health Manual*.
• Section 2-303, "Reporting Procedures," to fix the email address to Major.Incident.Report@dot.ca.gov and to require immediate notification of the Chief Engineer and Chief of the Division of Construction in the event of a fatality or major injury of Caltrans personnel, Caltrans consultants, or contractor personnel.

Section 3-8, "Prosecution and Progress"
• Updates Section 3-803A, "Work Before Contract Approval," to Section 8-1.04, "Start of Job Site Activities," of the *Standard Specifications* and reference to the Division of Engineering Services.
• In Section 3-806A, changes numbering to 5-1.36C, "Nonhighway Facilities," of the *Standard Specifications* to conform with changes to the *Project Delivery Procedures Manual*.
• Updates name of guide to *Construction Field Coordinator's Termination Desk Guide* in section 3-809.

Section 4-12, "Temporary Traffic Control"
• Section 4-1202C(2), "Pedestrian Facilities," gives guidance for preconstruction discussion with the contractor on requirements to provide design plans before work begins if the contractor's means and methods require closure of an existing pedestrian access route and to submit forms to document conformance with Americans with Disabilities Act requirements for temporary pedestrian access routes, in accordance with Section 12-4.04, "Temporary Pedestrian Access Routes," of the *Standard Specifications*. Depending on the project, the contractor may use the Revised Special Plans T30 to T34 as a baseline for designing and constructing a temporary route. The contractor also is required to file Forms CEM-2311, "Temporary Pedestrian Access Route Contractor Compliance Report," and CEM-2312, "Temporary Pedestrian Access Route Contractor Weekly Report."
• Section 4-1202D(1), "Temporary Pavement Markers," refers to Section 12-6, "Temporary Pavement Delineation." and Section 12-7, "Temporary Pavement Delineation for Seal Coats," of the *Standard Specifications* for sign requirements for no-passing zones.

• Revises Section 4-1203C(2), “Pedestrian Facilities,” to include requirements for inspection of initial construction and weekly inspections of temporary pedestrian access routes and filing of related forms in Category 23, “Temporary Pedestrian Access Routes.
• Partially incorporates CPB 17-8, “Temporary Pedestrian Access Routes Standards,” and CPB 17-10, “Temporary Pedestrian Access Routes Inspection Documentation,” to require use of compliance inspection report forms CEM-2301, CEM-2302, CEM-2311, and CEM-2312.

Section 3 Major Construction Incidents

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2-301 General

2-301 General

This section provides guidelines for reporting and dealing with accidents and major incidents on construction projects. For more detailed guidelines on reporting, refer to Chapter 19, "Special Reporting of Serious Injury, Illness, or Fatality," of the *Caltrans Safety and Health Manual*. The chapter also discusses special reporting for a serious occupational injury, illness, or fatality connected with employment activity.

2-302 Reportable Accidents and Incidents

2-302 Reportable Accidents and Incidents

Below are descriptions of accidents and construction incidents to report.

2-302A Accidents

Report accidents that:

- Have resulted in serious injury to or death of a contractor's employee.
- Have involved serious injury to or death of a state or a consultant employee.
- Have involved serious damage to equipment owned by the state, a consultant, or the contractor.
- Have resulted in the serious injury to or death of a member of the public in the construction zone or were influenced in any way by construction-related activities, conditions, equipment, or personnel.
- Were catastrophic or have received wide media coverage.
- Have involved vehicles entering the active work zone.
- Have involved vertical or horizontal clearance issues.
- Had no injuries, but had a high potential for being fatal or disabling, such as falsework or guying system failures, overturned cranes, high-voltage power line contacts, trench excavation or shoring failures, gas or fuel line fires or explosions, hazardous utility breaks, and collisions with structures under construction or their supporting falsework that caused displacement of a major member.

2-302B Unusual or Extraordinary Construction Occurrences

Unusual or extraordinary construction occurrences are reportable incidents that may not be classified as accidents, such as these:

- Disasters that result in major damage to a state facility or project work.
- Situations that result in the evacuation of the project, the immediate area, or both.
- Any other events that affect the state facility or project work and may generate media coverage.
- Encounters of previously unknown hazardous material on a construction project.

- A hazardous spill on a roadway within construction project limits.
- An incident causing major traffic delays.

2-302C Notification of Emergency Highway Closure

Immediately report to the district dispatch center or the transportation management center (TMC) any situation that requires emergency closures of traffic lanes or the highway. For information on reporting closures, refer to Section 4-1203C, "Maintaining Traffic," of this manual. Provide timely and accurate information to allow the TMC to notify the California Highway Patrol, the media, and the public of possible delays.

2-303 Reporting Procedures

2-303 Reporting Procedures

Immediately report all reportable accidents and major incidents to the district TMC, the district dispatch center, or—when TMC or the center is closed—the Caltrans Highway Information Center. Use Form CEM-0603, "Major Construction Incident Notification." Immediately report all fatalities or major injuries of Caltrans personnel, Caltrans consultants, or contractor personnel to the Chief Engineer and to Headquarters Division of Construction Chief.

Email an initial report to Major.Incident.Reports@dot.ca.gov. The Office of Health and Safety in the Division of Safety and Management Services and the Division of Construction monitor this email address. Also send copies of the report to the district construction safety coordinator and district management.

If email is unavailable, fax the form to the numbers at the top of the form, the district construction safety coordinator, and district management.

When necessary, Form CEM-0603 may also be used to email or fax an updated report providing supplementary information to the initial report.

2-304 Guidelines

2-304 Guidelines

When responding to major incidents in construction zones, do the following:

- Take appropriate action without jeopardizing public or employee safety.
- Document all incident details, paying special attention to traffic controls and the contractor's activity at the time of the incident. Take pictures of the job site along the incident location and file them with the incident details in Category 6, "Safety," of the project file.
- Provide timely and accurate information to management to document the extent of the incident and to identify major issues and current actions.
- In the event of a closure or restriction, restore the transportation facility to full operation as quickly as possible.
- Mitigate the effect on the public or the project caused by unusual or extraordinary occurrences.

The district construction deputy director activates a construction incident response team when warranted by the sensitivity and severity of a major incident. The team's principal purpose is to provide incident information to Caltrans managers and the media. The team enables the resident engineer to focus on restoring the transportation system, the project, or both. The team may also advise the resident engineer on technical matters. The construction engineer heads the team, which may also include:

- A representative of the district public relations staff.
- Technical personnel from other Caltrans functional areas such as safety, traffic, structures, design, or environmental.

Report hazardous material encounters and hazardous spills as outlined in 2-303, "Reporting Procedures," earlier in this section. For more information on procedures to follow in the event of hazardous material encounters or hazardous spills, see Figure 7-1.1, "Unknown Hazards Procedure," in Chapter 7, "Environmental Stewardship," of this manual.

As described in Section 2-214D, "Construction Contingency Plan," of this manual, the contractor must have a contingency plan for reopening closed traffic lanes.

Section 8 Prosecution and Progress

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Section 8
Prosecution and
Progress

3-801 Schedule

3-801
Schedule

Three levels of critical path method schedules are defined in Section 8-1.02, "Schedule," of the *Standard Specifications*. The level is determined by the number of working days and the total bid amount.

Make every effort to obtain a reasonable baseline schedule at the beginning of the contract. Record in a daily report any communication regarding the schedule. Notify the contractor in advance if a progress payment will be withheld for failure to submit a satisfactory schedule.

In general, schedules should:

- Separate contract items into activities to show controlling activities as well as non-controlling activities.
- Be used by the resident engineer and the contractor to monitor and evaluate progress, determine controlling activities of work, and analyze time consequences from changes or work delays.
- Be consistent with all contract time requirements.
- Display internal milestones and other time constraints, such as placing traffic on detours or new pavement, and beginning new phases of the work in staged construction.

The contractor is required to submit a revised schedule monthly to evaluate alterations to the critical path or an adjustment to the completion date. For Levels 1 and 2, the revised schedule may be used in lieu of a time impact analysis. Also refer to critical path method training publications *Advanced CPM Scheduling* and *Project Scheduling with Primavera P6* at:

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

3-802 Preconstruction Conference

3-802
Preconstruction
Conference

Schedule a preconstruction conference as soon as is practical after a contractor has been selected for a project. Be prepared to discuss with the contractor the items in Section 8-1.03, "Preconstruction Conference," of the *Standard Specifications*.

Refer to Section 5-003, "Preconstruction Conference with the Contractor," of this manual for additional guidance. Review the job with Caltrans personnel before the start of job site activities, and refer to Section 5-002, "Preconstruction Conference with Caltrans Personnel," of this manual.

3-803 Start of Job Site Activities

3-803
Start of Job Site
Activities

This section covers the subject of when the contractor begins work. Do not confuse the beginning of work with the beginning of contract time, which is specified in Section 8-1.05, "Time," of the *Standard Specifications*, and the date used on Form CEM-2701,

"Weekly Statement of Working Days." For additional information, refer to Section 3-804, "Time," of this manual.

Section 8-1.04, "Start of Job Site Activities," of the *Standard Specifications* requires the contractor to begin work on a project within 15 calendar days after receiving notice of contract approval. The special provisions may modify the 15-day requirement for some projects including:

- Flexible start
- Delayed start
- Potential budget impasse start
- Next-day start

The start of job site activities may not coincide with the first chargeable working day. The contractor is required to submit a 72-hour notice before the start of job site activities. If the project has work at more than one location, require submittal of a separate notice for each location.

Determine when to record the beginning of job site activities based on judgment and experience. For example, setting up construction area signs might be the only work underway. If conversations with the contractor indicate movement toward pursuing the work, the setting up of signs is sufficient to indicate the beginning of job site activities. Record the date the contractor begins job site activities on Form CEM-2701, "Weekly Statement of Working Days," on the resident engineer's daily report, and on the original or supplemental Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update." For more information, refer to Section 5-103B (3), "Completing Form CEM-6003, 'Progress Pay-Estimate Project Initiation or Update,' " of this manual.

Record the district's actions toward encouraging the contractor to begin work. Notes of discussions from the preconstruction conference or other conversations with the contractor provide the necessary records. If a contractor fails to begin work by the specified time, remind the contractor of this failure under "Remarks" on Form CEM-2701.

Send a separate letter with an additional reminder with notice that, according to Section 8-1.05 "Time," of the *Standard Specifications*, the contract time starts on the day specified in Section 8-1.04 "Start of Job Site Activities," of the *Standard Specifications* or on the day job site activities are started, whichever occurs first.

If you determine that the contractor's failure to begin work will result in unsatisfactory progress, discuss the situation with district management.

3-803A Work Before Contract Approval

After the contractor has executed and returned the contract to Caltrans, the contractor, after submitting the specified notice, may enter the site and begin job site activities.

When a contractor wants to start work before contract approval, call the Office Engineer, Construction Contract Awards, to determine whether Caltrans has received the executed contract documents. If the office has received the documents, proceed as set forth in Section 8-1.04, "Start of Job Site Activities," of the *Standard Specifications*. Executed contracts are listed at the Division of Engineering Services' intranet website:

http://des.onramp.dot.ca.gov/office-engineer/construction-contract-awards

If a contractor wants to begin work before contract documents have been delivered to Caltrans, the contractor must obtain an encroachment permit from the district. The permit must incorporate the same terms stated in Section 8-1.04, "Start of Job Site Activities," of the *Standard Specifications*, that apply after the contractor has returned the executed contract documents to Caltrans but before the time of the contract's approval. In addition, the permit must include the following:

- A statement that the contractor is responsible and liable for any personal injury or property damage resulting from the work.
- The requirements for cooperation contained in the special provisions and in Section 5-1.20, "Coordination with Other Entities," of the *Standard Specifications*. The terms of the permit should include notice that the contractor may be working on the site concurrently with others performing utility relocation, right-of-way clearance work, or other construction activities and that the work of the others will take precedence over the contractor's job site activities. When obvious conflicts are apparent, a permit should not be issued.
- The limits of the area in which work will be performed.
- The activity or activities to be performed.
- A statement that the contractor will comply with the requirements of the contract plans, the *Standard Specifications*, the project's special provisions, and any order of work specified in these documents.
- A statement that the contractor's job site activities will not deprive property owners of access.
- A requirement to provide an adequate bond (or cash deposit) to cover the work contemplated before starting any work. The amount should be the same as for other types of work, as covered in the *Encroachment Permits* manual:

  http://www.dot.ca.gov/trafficops/ep/manual.html
- A reference to the contract's water pollution control requirements.

When extra work must be a first order of work, it should be performed under a "prior authorization," as covered in Section 5-3, "Change Orders," of this manual. After the executed contract documents have been delivered as specified, change orders may be approved in accordance with Section 5-3. The district must not process requests for maintenance and protection relief or contract acceptance until after the contract's approval.

3-803B Flexible Start

Flexible start is a beginning-of-work specification that allows a contractor to choose the first working day based on conditions defined by the district before advertising. This section applies in cases in which the standard 15-day start has been modified to a flexible start in the special provisions.

The contractor must submit a request for authorization to establish the first working day within 10 days after contract approval. If the contractor does not submit the request for authorization to begin work within 10 days after contract approval, the first working day will be 15 days after contract approval.

3-803C Potential Budget Impasse Start

Minor A or highway maintenance program projects advertised before the fiscal year in which the project is budgeted may include additional contract language restricting the start of work date to begin after the State of California budget becomes law.

3-803D Delayed Start

This section applies in cases in which the standard 15-day start has been modified to a delayed start. For example, the special provisions may allow a 55-day delayed start.

Work should not be started at the job site until the resident engineer approves the submittals listed in the special provisions. Work may be started at the job site before the time specified in the delayed start if the submittals are approved and the resident engineer authorizes the start in writing. The beginning of work provision allows adequate time for contractors to prepare, and for the resident engineer to approve, specified submittals before job site activities begin. Review and approve satisfactory contractor submittals or return insufficient submittals within contractually required time frames.

3-803E Next-Day Start

Informal-bid contracts may be used after a catastrophic incident or after a notification of a threat of future significant damage. The special provisions for these types of projects require that the start of job site activities begin the next business day after contract approval.

3-804 Time

3-804 Time

Section 8-1.05, "Time," of the *Standard Specifications* discusses the use of the Form CEM-2701, "Weekly Statement of Working Days," as the method of tracking contract time. Issue this statement to the contractor weekly until the contract is accepted. To determine if the progress of the work may require a withholding, refer to Section 3-906F (1), "Progress Withholds," of this manual.

Section 1-1.07, "Definitions," of the *Standard Specifications*, defines the terms "day," "working day," and "controlling activity." Days during the contract are either a working day or a nonworking day. However, the contract's special provisions may modify the definition of working days.

The total time allowed for completion of a contract is a specified number of working days. The "computed date for completion" of a contract is the date of the last working day, based on the number of working days specified in the original contract. On most projects, situations arise that extend the date for completion beyond the "computed date for completion." The "computed date for completion" will be extended by either charging a nonworking day or by writing a change order that adds working days to the contract.

3-804A Weekly Statement of Working Days

Use Form CEM-2701, "Weekly Statement of Working Days," to report the status of contract time to the contractor.

As soon as possible and no later than the end of the following week, forward the original statement to the contractor. Send one copy to the district construction office for review, and file another copy with the project records. Form CEM-2701 consists of three sections.

3-804A (1) The Record Section (Upper Block)

This section is used to record all working days, nonworking days as defined in Section 1-1.07, "Definitions," of the *Standard Specifications*; and working days on which no productive work was performed on the controlling activity. In this section, tabulate each elapsed working and nonworking day during the life of the project.

Each day, determine whether to charge a working day and, if necessary, discuss the decision with the contractor. The "current controlling activity" is the basis of this determination; therefore, the resident engineer must base the decision on conditions effective on the day under consideration. If the progress schedule does not accurately represent conditions effective on that day, request that the contractor update the next progress schedule to provide an accurate representation. Note on Form CEM-2701 the activity that, in your opinion, is currently controlling. If the contractor does not concur, the entry will give the contractor an opportunity to protest formally.

If the controlling activity is not dependent upon weather, such as concrete curing or an embankment settlement period, a working day must be charged during adverse weather.

When determining nonworking days, loss of time because of adverse weather may extend beyond the period of actual adverse weather. Situations occur where there is no progress toward contract completion though the full crew might have worked the entire day. This may be due to the grade being too wet to work, access to the work needing to be reestablished, or saturated material needing to be removed from the tops of slopes.

Adverse weather can be other than wet or cold weather. For example, it may be too hot to produce concrete that meets specified temperatures. If all specified precautions have been complied with and the concrete work is the controlling activity, a weather nonworking day should be granted.

If a nonworking day is granted because of requirements in Section 12, "Temporary Traffic Control," of the *Standard Specifications*, state the reason as "traffic restriction" in the "Remarks" section of Form CEM-2701.

In the column "Working Day No Work Done on Controlling Activity," record any working day on which no work is done on the project or on the controlling activities. If the reasons are known for lack of work, note them in the "Remarks" section and on the daily report.

3-804A (2) Change Order Time Adjustments (Center Block)

This section is used for recording adjustments of time as a result of approved change orders. In the column under "Change Order Days Approved," record working days granted for approved change orders during the week. In the column under "Change Order Number," list the approved change order numbers corresponding to the working days granted during the week. In considering a time adjustment, deduct all nonworking days within the adjustment period, and ensure that the adjustment is made only for the working days charged to the contract during the adjustment period. For additional information on time adjustments after contract completion, refer to Section 3-807, "Liquidated Damages," of this manual.

3-804A (3) Computation of Extended Date for Completion (Lower Block)

In the lower section of Form CEM-2701, summarize the information the contractor will receive. The "first working day" is the calendar day specified in Section 8-1.05, "Time," of the *Standard Specifications*. This day is usually the 15th day after contract approval.

If the contractor starts job site activities before the 15th day after contract approval, the first working day is the day the contractor starts job site activities.

Several methods are used to specify the first working day. Read and understand the contract's specifications and correctly record the date of the first working day.

Use the Construction Working Days Calendar to determine the correct values to place in the "Numbered Day" column on Form CEM-2701 for the first working day, the computed date for completion, and the extended date for completion. Standard 5-day and 7-day calendars are available online:

http://www.dot.ca.gov/hq/construc/calendar/index.htm

The number shown on the calendar on a particular date is that date's numbered day.

Refer to Section 4-2002C (8), "Plant Establishment Work," of this manual for guidelines on plant establishment time requirements and computation of the extended date for completion.

3-804A (4) Final Weekly Statement of Working Days

Designate the Form CEM-2701 that is used for the week when a contract is accepted as the "Final Weekly Statement of Working Days." Prepare this statement on the day the district accepts the contract and verify that the statement reflects the "approved status of time" on this date. For revising the status of time from that shown on the final Weekly Statement of Working Days, refer to Section 3-807, "Liquidated Damages," later in this section.

3-804A (5) Examples

Examples of typical entries for Form CEM-2701, "Weekly Statement of Working Days," are available at:

http://www.dot.ca.gov/construction/contract-time/example-working-days.html

3-805 Suspensions

3-805 Suspensions

Temporary suspension of work is covered under Section 8-1.06, "Suspensions," of the *Standard Specifications* and gives the resident engineer the authority to suspend work. The two general categories of suspensions are described below.

In areas subject to adverse weather, it is permissible to suspend an entire project if this action is considered to be in the best interest of Caltrans. However, authority to suspend work is limited to the reasons stated in Section 8-1.06. When an entire project is suspended for reasons that do not fall under the scope of Section 8-1.06, the suspension must have the contractor's concurrence. Mutually agreed-upon suspensions are covered under Section 1-1.07 "Definitions," of the *Standard Specifications*.

A suspension does not always affect the entire project; it might only affect some items. Usually a suspension is used when either the work or the public will be affected adversely by continued work activity. Although a temporary suspension is an option available only to the resident engineer, consider the contractor's opinion on such a suspension.

3-805A Suspensions Related to Contractor Performance

Any letter that orders such a suspension must include references to applicable sections of the specifications and, if possible, state the conditions under which work may be

resumed. Such action is taken only after careful consideration of all aspects of the problem.

3-805B Suspensions Unrelated to Contractor Performance

A suspension may result from any condition unfavorable for the prosecution of the work, including anticipated heavy traffic because of a holiday or a special event, or a winter suspension.

During any suspension, advise the contractor of the conditions under which maintenance will be performed. Preferably use the contractor to perform work necessary to provide for public convenience or public safety. If Caltrans must perform such work, the district will request a director's order, financed from the contract allotment, which allows the district to hire a contractor to perform the work at force account.

When the reason for a suspension no longer exists, or when favorable conditions for resuming work are expected, notify the contractor in writing. The letter must state the date when working days will resume and must allow sufficient time to permit the contractor to remobilize the necessary labor and equipment. Generally speaking, a period of 10 working days is considered reasonable.

When an ordered suspension occurs without mutual agreement, the contractor may be due additional compensation, contract time, both, or neither, depending on whether the delay is a critical delay, excusable delay, or concurrent delay.

3-806 Delays

3-806A Time or Payment Adjustments and Nonworking Days

Section 8-1.07, "Delays," of the *Standard Specifications* covers provisions for delay-related time or payment adjustments. Section 1-1.07, "Definitions" of the *Standard Specifications* covers nonworking day provisions for concurrent delays under the "Working Day" definition. No time or payment adjustment is allowed for concurrent delays.

The resident engineer must monitor issues that may affect progress of the work and may result in an excusable delay or critical delay. To avoid or mitigate the effects of delays, initiate action such as the following:

- Initiate requests to the district utility coordinator to modify agreements that would allow the contractor's forces to perform work under change order. Section 5-1.36C, "Nonhighway Facilities," of the Revised *Standard Specifications* covers such work by the contractor.
- Initiate any changes in the order of work that would eliminate or mitigate an excusable delay or critical delay, provided that any cost involved would not exceed the estimated cost resulting from a delay.

If an excusable delay or critical delay occurs, take the following actions:

- Determine the length of the delay.
- Make a list of the equipment that will be affected by the delay. Attempt to get agreement from the contractor regarding the list's accuracy.
- Estimate the cost of the delay using the method specified in Section 8-1.07C, "Payment Adjustments," of the *Standard Specifications*.

- Estimate the cost of removing the affected equipment from the project and returning it when the delay is over.
- Compare the costs and choose the most cost-effective option. If the contractor removes the equipment, but the cost for doing so is higher than leaving the equipment on the project, pay only the delay cost for idle equipment.
- If the contractor does not remove the equipment, attempt to determine how the contractor intended to use the delayed equipment. Review the progress schedule to determine if the contractor intended to use the delayed equipment full time or if the contractor intended some idle time. Use this estimate of time when determining delay costs.

3-806B Material Shortage

Material shortage is defined in Section 1-1.07, "Definitions," of the *Standard Specifications*. Do not make a time adjustment for a material shortage. Days during a material shortage are considered nonworking days. Before a determination of nonworking days can be made, several conditions must be satisfied:

- A request for information for the delay exists.
- The contractor's request for information must be received no later than 15 days after the material shortage first caused the work delay.
- The delay must affect the controlling activity.
- If the delay does not affect the controlling activity, advise the contractor accordingly in writing. If the contractor asks to be allowed to substitute the unavailable material with available material, the resident engineer must seek assistance from those responsible for the design. Change orders are to be processed as contractor-requested changes.
- The materials, articles, parts, or equipment are standard items.

  Standard items are produced to meet the specifications of such industry-wide organizations as the American Association of State Highway and Transportation Officials, the American Society for Testing and Materials International, the American Wood Protection Association, the American Institute of Steel Construction (AISC), and the U.S. Department of Agriculture (USDA). The fact that Caltrans specifications refer to these standards does not alter the item's status.

  Standard items include those that are listed in a catalog and are available for immediate delivery, and items that are normally shelf items available for purchase at supply houses. Items that are manufactured only upon order are not standard items, even if included in a catalog.

  Examples of materials that are usually considered standard items:

  1. Commercial fertilizer (industry specification)
  2. Soil amendment (industry specification)
  3. Iron sulfate (USDA)
  4. Straw (USDA)
  5. Seed (USDA)
  6. Lumber (industry specification)

7. Plants (USDA)
8. Pipes and conduit, except cast-in-place (industry specification)
9. Backflow preventers (industry specification or catalog item)
10. Lime (industry specification or shelf item)
11. Asphalt (industry specification or shelf item)
12. Timber piles (industry specification)
13. Steel plates or shapes shown in the AISC handbook (shelf item)
14. Prestressing steel (industry specification)
15. Expansion joint materials (industry specification)
16. Elastomeric bearing pads (industry specification)
17. Steel bars for reinforcement—the material, not the bending and cutting (shelf or catalog item)
18. Bolts (industry specification)
19. Pumping plant equipment, components only (catalog items)
20. Miscellaneous metal, material, not fabrication (industry specification)
21. Fence posts, wire, fabric, hardware (industry specification)
22. Guide marker posts, plates, reflectors, hardware (industry specification)
23. Metal beam guard railing (industry specification)
24. Metal beam barrier (industry specification)
25. Type 1 lighting standards (industry specification)
26. Electrical conductors (industry specification)
27. Controller components (industry-wide catalogs)
28. Traffic signals and fittings (proprietary item)
29. Lamps for luminairies (proprietary item)
30. Ballasts (proprietary item)
31. Cement (industry specification or shelf item)
32. Pavement markers (proprietary item)

Items that do not fall into the above list and that are produced to meet the requirements of Caltrans plans and specifications are not standard items. The following are examples of nonstandard items:

1. Processed structure backfill material
2. Pervious backfill material
3. Aggregates for bases and subbases
4. Aggregates for cement-treated base, hot mix asphalt, concrete, rock slope protection, and screenings
5. Wood chips

6. Concrete
7. Traffic signal and lighting standards (except Type 1)
8. Controller assembly
9. All material manufactured to meet a state specification such as curing compound, paint, or epoxy
10. Concrete piling

The nonstandard items listed above may contain components that are in short supply. They may then be eligible for consideration in a material shortage situation if the component is a standard item.

- If a "physical shortage" exists.

  The term "physical shortage" means that the standard item or component of a standard item is not available at the time it is required for work on a controlling activity. However, do not consider a time adjustment if the "physical shortage" results from any of the following:

  1. Untimely ordering of material
  2. Failure to make a requested down payment
  3. Lack of credit

  Presume that a contractor, when submitting a bid, thoroughly considers all aspects of procuring materials and bids accordingly. This thorough consideration can include timely delivery commitments, price, and responsibility for meeting specifications.

  Whenever it has been determined that an industry-wide shortage exists, the Division of Construction will advise all districts.

  A "physical shortage" will not be considered to exist if either the contractor or a subcontractor has failed to perform any required fabrication or processing.

- Whether the contractor diligently tried to obtain the material.

  Require the contractor to furnish proof of dates that material was ordered and confirmed. The orders must have been placed sufficiently in advance of the desired delivery to cover a normal lapse time in the particular industry. However, you cannot expect the contractor to have placed orders before contract approval.

  If the contractor's order was timely, request proof of efforts to obtain material from alternate sources that normally supply such materials to projects in the area. Alternate sources include, when possible, production of an item using the contractor's own forces.

  If written proof is unavailable from an alternate source, the resident engineer may accept a verbal confirmation from a supplier. Record such confirmation in the daily report. When no alternate source exists or when procurement from an alternate source may delay delivery even longer than procurement from the original source, also record confirmation of this situation.

3-807 3-807 Liquidated Damages

Liquidated Damages

Section 8-1.10A, "General," of the *Standard Specifications* lists the daily rate to be charged for damages related to a contract time overrun.

3-807A Failure to Complete Work Parts Within Specified Times

If the "Extended Date for Completion" on the final "Weekly Statement of Working Days" contains a date before the date of the contract's completion, an apparent overrun has occurred. Proceed as follows:

3-807A (1) Case 1

The district intends to assess liquidated damages for the overrun shown on the final "Weekly Statement of Working Days." Enter the deduction for liquidated damages into the project records, and proceed with the proposed final estimate.

3-807A (2) Case 2

The district intends to change the status of time from that shown on the final "Weekly Statement of Working Days" by time due on change orders. Time adjustments resulting from change orders should have been resolved before the contract's acceptance in accordance with Section 5-3, "Change Orders," of this manual. For those instances where extenuating circumstances result in unresolved time for change orders after completion, complete all deferred-time change orders, enter the data into the project records, enter any remaining deductions for liquidated damages into the records, and proceed with the proposed final estimate.

3-807A (3) Case 3

The district intends to change the status of time from that shown on the final "Weekly Statement of Working Days" by changing working days to nonworking days. Obtain concurrence for making such changes from the Division of Construction. Report the recommended disposition of each item of unresolved time so clearly and completely that no interpretation or further explanation is needed. Upon receipt of the recommendations, the division will advise the district of what action to take.

Include a status of contract time in a form similar to the following:

	Calendar Date	Working Days or Numbered Day
Date attorney general approved contract	3/06/2012	744
First working day	3/21/2012	755
Working days specified in contract		40
Computed date for completion	5/15/2012	794
Total change order time adjustments, final CEM-2701		5
Nonworking days, final CEM-2701		75
Additional change order days (if applicable)		14
Additional working days recommended (if applicable)		10
Extended date for completion	10/12/2012	898
Date contract completed	10/12/2012	898
Remaining overrun		0

After the disposition of overruns has been determined, the district will advise the contractor directly. Place copies of all memorandums in the project files as the record of final disposition of overruns. For any unresolved overrun in time, show a deduction to assess liquidated damages on the proposed final estimate. If the contractor objects to this assessment, follow the claim procedures outlined in Section 5-4, "Disputes," of this manual.

3-807A (4) Case 4

When the final quantities of individual contract items have exceeded 125 percent of the engineer's estimate, not as a result of ordered changes, the district may recommend the director's approval of a commensurate time extension. Such a recommendation is subject to all of the following provisions:

- Time is allowable only to the extent that each item was considered controlling.
- Any time extension is applicable only to the excess above 125 percent of the engineer's estimate.
- The maximum allowable time extension for each item cannot exceed the amount of time determined by applying normal production rates to the increased quantity of the item involved.

3-808 Contractor's Control Termination

3-808 Contractor's Control Termination

Section 8-1.13, "Contractor's Control Termination," of the *Standard Specifications* explains the contractual requirements for terminating the contractor's control of the work. Sections 10253 through 10260 of the Public Contract Code cover defaulted contracts.

Termination of control may occur only when a contractor fails to supply an adequate work force, fails to supply material of proper quality, fails to make proper and timely payments to subcontractors, or fails in any other respect to perform the work with the diligence and force specified by the contract. Normally, when Caltrans terminates the contractor's control, the surety (bonding company) assumes responsibility for completing the contract. The following are guidelines for determining if the contractor may be failing to supply an adequate workforce:

- If the "percent completed" of the contract is more than 25 percent behind the "percent time elapsed." These percentages can be found in the project status report.
- Complete cessation of the work.
- The work has not started within a period equal to 10 percent of the original working days or 50 working days, whichever is less.

If the resident engineer suspects termination of control may be necessary, the resident engineer must immediately notify the construction engineer and construction manager.

With agreement from the construction engineer, the Division of Construction field coordinator, and the structure construction engineer (if applicable), the resident engineer sends a letter to the contractor that describes the defaults to be remedied. The letter also specifies the amount of time allowed to remedy the defaults and states that, in accordance with Section 8-1.13, "Contractor's Control Termination," of the *Standard Specifications*, Caltrans will start the termination of control process if the defaults are not remedied. A copy of this letter is sent to the contractor's surety. Typically, Caltrans allows 5 business days to remedy either failure to supply an adequate work force or failure to supply proper quality material. Generally, 15 days are allowed to remedy failure to pay subcontractors.

If the contractor fails to promptly remedy the defaults outlined in the resident engineer's letter, the district construction deputy director will send a request to the Division of Construction chief to start the termination of control process. The request must include:

- The defaults to be remedied
- Current status of the contract, including dates the contractor last performed work
- Any other information considered pertinent

To determine what action is necessary, the Division of Construction chief may call a conference with the contractor's representatives, its surety, the Division of Construction field coordinator, and the district. If terminating the contractor's control is necessary, the Division of Construction chief will send a letter to the contractor, with a copy to the surety, giving the contractor 5 business days to remedy the defaults or Caltrans will terminate the contractor's control of the work. The contractor and surety will be responsible for any costs Caltrans incurs to complete the work.

If available, the contractor must be personally served with the 5-day notice letter. If both the contractor and its representative are unavailable and their addresses are known, send the letter by registered mail. If both the contractor and its representative cannot be located and their addresses are unknown, post the 5-day notice letter in the most conspicuous place within the project limits. If the contractor does not remedy the defaults within the time required, the Division of Construction chief will send a letter to the contractor stating that the contractor's control of the work has been terminated. The Division of Construction field coordinator will notify the district of the effective starting date of the notice and will transmit any further instructions deemed necessary.

All 5-day notices and termination of control letters must include the following language:

> Your default may result in a review of your responsibility to perform future work with Caltrans.

Once the contractor's control has been terminated, the Division of Construction field coordinator will notify the arbitration engineer in the Division of Construction by forwarding a copy of the termination letter. The arbitration engineer will update and maintain the termination database.

The district will maintain a file that can be used as evidence to defend the termination or in a future responsibility hearing for the terminated contractor. The file should remain in the district for a minimum of three years.

The Division of Construction chief will send a letter to the surety requesting the surety to fulfill its obligations under the bond to complete the work with other forces. Because it is typically preferred that the surety proceed with the contractual work, the resident engineer should assist the surety in its efforts to complete the work. The resident engineer will determine and resolve with the surety the precise quantities and costs necessary to complete the work.

For additional information, refer to the *Construction Field Coordinator's Termination Desk Guide* on the Division of Construction's intranet:

http://construction.onramp.dot.ca.gov/field-coordinators

The following two sections describe the process to complete the contract after the contractor's control has been terminated.

3-808A Work Completed by the Surety

As requested by the surety, the Division of Construction field coordinator, with the assistance of the district, negotiates a takeover agreement or a tender-and-release agreement with the surety. A takeover agreement is an agreement between Caltrans and the surety outlining terms and conditions for the remaining contract work to be performed by the surety or a contractor hired by the surety. The surety is not released from contract responsibility until the contract is accepted. A tender-and-release agreement is an agreement between Caltrans and the surety outlining the terms and conditions for the remaining work to be performed by a contractor recommended by the surety. The recommended contractor agrees to do the remaining work and provides new bonds, and the surety pays the additional contract costs. The surety is then released from any further contractual responsibility.

Once the Division of Construction field coordinator has negotiated an agreement with the surety, the coordinator sends a draft copy of the appropriate agreement to the surety and requests that the surety make project specific revisions as needed. The Division of Construction field coordinator will review the agreement and forward it to the Legal Division. Both the Division of Construction field coordinator and the Legal Division recommend approval. The Division of Construction chief approves either agreement.

In the interim between the termination of the contractor's control of the work and completion by other forces, the district must take all necessary steps to preserve any completed work. The district may use a separate work order for interim maintenance work by "day labor." Day labor may be obtained by entering into a service contract with another contractor to perform the contract work. To use day labor, a director's order is necessary.

3-808B Work Not Completed by the Surety

If time or circumstance does not permit the surety to complete the work, Caltrans may elect to complete the work with its own forces. If the surety elects not to complete the contract after termination of the contractor's control over the work, the district may complete the work by day labor or by informal contract. The district will determine the amount of completed work, the amount of work remaining to be performed, materials on hand, and extra work authorized. In the interim between the termination of the contractor's control of the work and completion by other forces, the district must take all necessary steps to preserve any completed work. The district may use a separate work order for interim maintenance work by day labor.

An informal contract permits a short advertising period. If the work will be completed by informal contract, the resident engineer, with the assistance of the district office engineer, will put together plans and specifications to complete the work, select three to five bidders, and take informal bids for the work. The informal bids must be sent to the contractor and the surety 3 days before the informal contract proceeds. In some cases, additional funds will be needed to complete the work. The resident engineer must request that the surety provide these funds although, under the Public Contract Code, the surety is allowed to wait until completion of the work to make payment. If the surety does not immediately provide these funds, the resident engineer may use available contingency funds or submit a supplemental funds request, if needed.

If either the surety asks Caltrans to complete the work or Caltrans elects to complete the work, the surety and the original contractor are liable to the state for the costs to Caltrans resulting from the original contractor's failure to complete the work. These costs include:

- The sum paid to the completion contractor to complete the various items to the extent it exceeds the sum that would have been payable to the original contractor.
- The sum of all costs to protect the work during the period between the original contractor leaving and the completion contractor arriving (usually day labor costs).
- The sum of all costs related to corrective change order work required to bring the original contractor's work into contract compliance and Caltrans' engineering costs to develop a completion contract and administer it. If appropriate, liquidated damages may be used to estimate these costs.

During completion of the work, the resident engineer must maintain current contract records to expedite billing. The project files must show the following:

- Segregated quantities of work performed under the original contract and under the day labor or informal contract for completion
- Overruns and underruns greater than 25 percent requiring adjustment
- Change orders
- All other pertinent information

When the surety does not complete the work, the resident engineer must prepare a bill for the original contractor and surety and break down the billing into the following five sections.

3-808B (1) Section 1

Subsection A—This subsection lists the amount Caltrans paid for the entire contract item work. This amount would be equal to the sum of the amount paid to the original contractor for item work before the termination plus the amount paid to the completion contractor to complete the item work.

Subsection B—This subsection shows the amount that would have been paid for the item work assuming the original contractor had not defaulted on the contract.

Subsection C—This subsection lists the amount billable to the original contractor or surety under Section 1 of the billing. This amount would be the difference between Subsection A and Subsection B. If Subsection A is less than Subsection B, the original contractor must not be credited with this amount; instead, a zero balance will apply.

3-808B (2) Section 2

This section lists the costs Caltrans incurred to maintain the contract during the period between the original contractor's departure and the arrival of the completion contractor. These costs are usually day labor costs but may include costs incurred by the Caltrans maintenance forces.

3-808B (3) Section 3

This section lists the change orders and related costs to correct any defects left in the original work by the original contractor.

3-808B (4) Section 4

This section lists the engineering costs Caltrans incurred to develop, implement, and administer the completion contract. Separate the administrative costs from the development and implementation costs. Compare the total administrative engineering costs with the liquidated damages costs incurred in the original contract, assuming the original contract was not complete until the completion contractor finished its contract.

3-808B (5) Section 5

This section shows the amounts determined in Sections 1, 2, 3, and 4, and adds them together. List the penal sum of the bond, along with the bond number. The penal sum of a performance bond limits the responsibility of the surety. The original contractor may be billed for the full cost of completion even when that cost exceeds the penal sum of the bond.

3-808C Billing

The resident engineer sends the detailed billing, as described above, to the Division of Accounting abatements section, with instructions to prepare the accounts receivable bill and to mail it to the contractor. If the contractor is not available, the resident engineer should mail it to the surety. After payment is received, the abatements section will credit the payment to a specific expenditure authorization.

If payment is not received within 45 calendar days, the abatements section will inform the district construction deputy director that payment has not been received. Representatives of district construction, the Division of Construction, and the Legal Division will meet to discuss alternate courses of action and choose the appropriate one. The abatements section must not submit the billing to a collection agency unless the meeting participants have agreed to this action.

Keep backup documents in the project files and make them available to the surety upon request. To ensure special handling of defaulted contracts, identify all related internal correspondence with the words "Defaulted Contract" under the job's file reference.

3-809 Contract Termination

Section 8-1.14, "Contract Termination," of the *Standard Specifications* specifies the contractual requirements for termination when the district director determines and the deputy director of Project Delivery approves that it is not in the best interest of Caltrans to continue with the project.

When the majority of the contract work has been completed, it is preferred to delete the remaining work by change order, accept the contract, and provide additional payment to the contractor, if necessary, in accordance with Section 9-1.17C, "Proposed Final Estimate," of the *Standard Specifications*.

Termination of contracts is rare. The Division of Construction must ensure that all necessary steps are taken in handling contracts terminated for the best interests of Caltrans. To assure special handling of these types of terminated contracts, identify all internal correspondence related to them with the words "Convenience Termination" under the job's file reference.

To initiate contract termination, the district director must write a letter to the Division of Construction chief stating the reasons for requesting the termination. The letter should include:

- Reasons for the termination
- Work performed
- Work yet to be performed
- Any information pertaining to the advertisement date of the new contract

If the Division Construction chief concurs, the Division of Construction will prepare a letter to the deputy director of Project Delivery to reiterate the relevant points from the

district's letter and recommend approval for terminating the contract. If appropriate, the deputy director of Project Delivery approves the termination.

Upon approval, the Division of Construction chief will issue a letter to the contractor, signed by the deputy director of Project Delivery, notifying the contractor that Caltrans will terminate the contract as soon as any work the resident engineer requested is complete. When all work is complete, the district must accept the project.

The contractor will be paid all reasonable costs as computed in accordance with Section 8-1.14, "Contract Termination," of the *Standard Specifications*. An audit of the contractor's cost records is normally required to resolve compensation issues. After contract acceptance, payments can be made in accordance with Section 9-1.17D, "Final Payment and Claims," of the *Standard Specifications*.

For additional information, refer to the *Construction Field Coordinator's Termination Desk Guide* on the Division of Construction's intranet website.

3-809A Federal-Aid Contracts on the National Highway System

For federal-aid contracts, the resident engineer or construction engineer must contact the Division of Construction field coordinator to obtain concurrence from the Federal Highway Administration's engineer on the termination of a contract. Refer to the Code of Federal Regulations, Title 23, Section 635.125 (23 CFR 635.125), "Termination of Contract."

Section 12 Temporary Traffic Control

Section 12 Temporary Traffic Control

Section 12
Temporary
Traffic Control

4-1201 General

4-1201
General

This section provides guidelines for inspecting temporary traffic control devices in construction areas. For traffic control requirements, refer to Section 12, "Temporary Traffic Control," of the *Standard Specifications* and the *California Manual on Uniform Traffic Control Devices* (*California MUTCD*). If a discrepancy occurs between the contract plans and specifications and the *California MUTCD*, the plans and specifications govern. Also refer to Section 2-2, "Traffic," of this manual, which provides guidelines and a general overview of providing a safe and convenient passage of public traffic through the construction area and is complementary to this section.

Temporary traffic control devices are divided into categories:

- Category 1 devices include traffic cones, plastic traffic drums, portable delineators, and channelizers.
- Category 2 devices include barricades and portable sign supports.
- Category 3 devices include crash cushions, impact attenuator vehicles, temporary railing, temporary barrier, and end treatments for temporary railings and barriers.

The condition of temporary traffic control devices should comply with the most current edition of the American Traffic Safety Services Association (ATSSA) publication *Quality Guidelines for Temporary Traffic Control Devices and Features*.

4-1202 Before Work Begins

4-1202
Before Work
Begins

Take the following steps before work begins:

- Determine what construction area signs should be placed before work begins for the entire project and before each stage of the project.
- Determine the methods and equipment the contractor will use for closing lanes, ramps, and roadways, and for flagging and controlling one-way traffic.

4-1202A Flagging

Discuss any flagging operation with the contractor before the operation begins. Confirm flaggers are wearing American National Standards Institute (ANSI)-compliant garments in accordance with the Construction Safety Orders, or the prime contractor's or subcontractor's Injury and Illness Prevention Program or *Code of Safe Practices*, whichever is more stringent. Review with the contractor how flaggers will communicate with each other, with pilot cars, and with workers inside the controlled area. The contractor should develop a plan for handling emergencies and emergency vehicles in the control zone.

4-1202B Temporary Traffic Control Devices

Verify that temporary traffic control devices comply with the contract requirements.

The resident engineer may accept use of contractor-proposed devices on the Authorized Material List for Highway Safety Features.

Determine if the temporary traffic control devices to be used are on the Authorized Material List for Signing and Delineation Materials and if they require a certificate of compliance.

Obtain self-certification for crashworthiness of Category 1 temporary traffic control devices.

Request a list of Category 2 temporary traffic control devices to be used on the project and copies of their Federal Highway Administration (FHWA) acceptance letters.

Verify that Category 3 temporary traffic control devices are on the Authorized Material List for Highway Safety Features.

4-1202B (1) Traffic Cones

If the contractor plans to use cones for night work, determine the type of cone proposed. All cones should use the same type and brand of retroreflective sheeting.

4-1202B (2) Plastic Traffic Drums

All drums should use the same type and brand of retroreflective sheeting. Verify the base is shaped to prevent rolling if struck by vehicles.

4-1202B (3) Portable Delineators

Obtain a sample of the type of portable delineator to be used on the project. Verify the base is shaped to prevent delineators from rolling if stuck by vehicles.

4-1202B (4) Channelizers

Verify the channelizer's post is predominantly orange.

4-1202B (5) Barricades

Verify barricade construction complies with Section 12-3.10, "Barricades," of the *Standard Specifications* and sheet A-73C of the *Standard Plans*.

Request proof that any Type 3 barricade to be used as sign support has been crash-tested to the Transportation Research Board's *NCHRP Report 350* criteria or AASHTO's *Manual for Assessing Safety Hardware (MASH)* as a single unit with a sign panel of the size and type used on the project.

4-1202B (6) Construction Area Signs

At the preconstruction conference, remind the contractor to maintain an inventory of commonly required items at the job site and arrange for sign panels, posts, and mounting hardware or portable sign mounts to be furnished on short notice.

Verify construction area signs are from a commercial sign manufacturer and have a Type 3 or higher grade retroreflective sheeting.

Review Section 12-3.11, "Construction Area Signs," of the *Standard Specifications* for additional requirements.

4-1202B (7) Type K Temporary Railing

Determine if Type K temporary railing is to be cast on or off the project. If the temporary railing is cast off the project, obtain a certificate of compliance.

Type K temporary railing placed within 10 feet of a traffic lane requires a reflector on each rail unit.

Review sheet T3B of the *Standard Plans* for staking requirements.

4-1202B (8) Temporary Traffic Screens

Review the specification requirements and sheet T4 of the *Standard Plans.*

4-1202B (9) Temporary Crash Cushion Module

Review the project plans and sheets T1A, T1B, and T2 of the *Standard Plans*. Frequently, the plans for stage construction, detour, or traffic handling will require arrays of temporary crash cushion modules. Changes to any of these plans may alter the need for temporary crash cushion modules.

If the contractor requests usage of alternative temporary crash cushion modules, verify that their proposed modules are on the Authorized Material List for Highway Safety Features.

Verify that temporary crash cushion modules used were manufactured after March 31, 1997.

Inspect crash cushion modules to confirm they comply with the specification and manufacturer requirements.

Temporary crash cushions may be installed on wooden pallets as an option. Verify that pallet height is 4½ inches or less. Pallets that exceed this height raise the sand in the crash cushions above an acceptable level. Do not allow the use of commercial pallets that exceed the maximum height.

4-1202B (10) Impact Attenuator Vehicles

Verify that the impact attenuator vehicle complies with all specification requirements.

Check that the attenuator meets the test level requirement for the posted speed limit.

Verify that the weight of the attenuator and the weight of the support truck are within the specified limits as shown on the Authorized Material List for Highway Safety Features.

Verify the contractor conducts a meeting with all involved parties to discuss the operation of the impact attenuator vehicle.

4-1202 B (11) Flashing Arrow Signs

Verify that Type 1 and Type 2 flashing arrow signs comply with the specification requirements, including number of panel lights, display modes, power source, and devices to plumb and level the trailer.

4-1202B (12) Portable Flashing Beacons

Verify that portable flashing beacons conform to the specification requirements.

4-1202 B (13) Portable Changeable Message Signs

A certificate of compliance should be requested for each portable changeable message sign (PCMS).

Obtain a contact cell phone number for the contractor before starting activities that require a portable changeable message sign and arrange for an inspection with the contractor before the first deployment.

Verify that the sign complies with the *Standard Specifications* requirements including number of lines and characters per line, display modes, power source, and devices to plumb and level the trailer.

4-1202B (14) Temporary Signal Systems

Confirm temporary signal systems comply with the requirements in Section 12-3.33, "Temporary Signal Systems," of the *Standard Specifications*.

As early as possible, verify that all Department-furnished equipment is available at the location specified. If the equipment is not available, make other arrangements as soon as possible.

Verify that the line of sight visibility in the field meets sight distance standards. If sight distance is not adequate, contact the district traffic engineer for suggestions or recommendations.

When temporary signal systems are used in forests or grasslands, confirm adherence to all fire safety requirements. Checking fire safety requirements may require coordination with personnel from the U.S. Forest Service, U.S. Bureau of Land Management, or California Department of Forestry and Fire Protection.

4-1202B (15) Temporary Flashing Beacon Systems

Confirm temporary flashing beacon systems comply with the requirements in Section 12-3.34, "Temporary Flashing Beacon Systems," of the *Standard Specifications*.

4-1202B (16) Automated Work Zone Information Systems

Verify that automated work zone information systems comply with the general system functionality, motorist information messages, system communications, traffic data acquisition, and user interface specification requirements.

Obtain the name and contact information for the assigned onsite system coordinator.

Request the user interface software and provide it to the Transportation Management Center for installation.

4-1202C Maintaining Traffic

Before work begins, carefully review the plans, specifications, closure charts, and sheets T9 through T17 of the *Standard Plans*. It is important to plan which personnel, signage, and equipment will be required to implement the traffic control system.

Verify that the contractor has all components on hand before setting up any traffic control system and that all components meet the specifications requirements.

Verify the contractor notifies and cooperates with local authorities wherever the local authorities regulate traffic.

When multiple projects in a particular area occur at the same time, require contractors to coordinate their efforts by resolving schedule conflicts prior to submitting their schedules for closures and verify there are no closure conflicts prior to implementation. Review these requirements with the contractors before work starts.

4-1202C (1) Traffic Control Systems

Verify the contractor removes or covers any construction area signs that duplicate or contradict the signs for a project within 250 feet of another project. Refer to Section 5-

1.20 "Coordination with Other Entities," of the *Standard Specifications*, if applicable, and the special provisions.

- Inspect the signs and equipment the contractor proposes to use, at the contractor's or subcontractor's yard if possible, before their first use.
- Verify that all the necessary signs, cones, drums, and other equipment are on hand before setting up the system for the first time. If the proposed materials have already been used, check them for acceptability in the ATSSA publication *Quality Guidelines for Temporary Traffic Control Devices and Features*. Require the contractor to replace any unacceptable equipment. It is easier to correct deficiencies before the system is installed.
- If the contractor is to place the traffic control system repeatedly in the same place, the contractor can request to mark on the shoulder the locations of advance warning signs, cones, and drums. This will speed the placing of closures and allow for a more consistent taper alignment.

4-1202C (1a) Lane Closure System

Contractors are required to request closures using the Caltrans Lane Closure System (LCS) and status closures using the Lane Closure System Mobile web page.

To confirm that contractors can access LCS and LCS Mobile, do the following before work begins:

- Remind the contractor of the requirement to complete the LCS web-based training.
- Provide the contractor with the internet link to access the LCS web-based training.

  http://www.dot.ca.gov/hq/construc/training.htm
- Obtain the information of trained contractor representatives, including whether they will be requesting or statusing closures, or both.
- Set up "Requestor" or "Statuser" LCS accounts for the trained contractor's employees accordingly and provide them with their login information within 5 days after they have completed the training. The LCS will send the contractor's employees a unique password by email after the accounts are created. Create a "Requestor" LCS account and set the option in the account to status closures for those who will request and status closures.
- Contact the district traffic manager for assistance with either of these tasks.

4-1202C (2) Pedestrian Facilities

Review Sections 12-4.04, "Pedestrian Facilities," and 16-2.02, "Temporary Pedestrian Facilities," of the *Standard Specifications* for the temporary pedestrian facilities requirements.

If an existing pedestrian facility will be affected by the work activities, verify the project includes Bid Item No. 124000 and that a designed temporary pedestrian access route (TPAR) is part of the contract plans or that the TPAR *Standard Plans* are appropriate for the pedestrian facility affected by the work activities. If the bid item is not included in the project, process a change order to provide a TPAR.

During the preconstruction conference, discuss:

- TPAR requirements described in the specifications.

- The contractor's responsibility to provide 5 days' written notice before closing an existing pedestrian route.
- The contractor's responsibility to design and construct a TPAR at their expense, when the contractor's means and methods require the closure of an existing pedestrian route. Caltrans does not pay for providing the TPAR when the pedestrian route closure is the result of contractor's means and methods. The contractor must submit a work plan and obtain authorization to proceed prior to starting work.
- The contractor's responsibility to submit a Form CEM-2311, "Temporary Pedestrian Access Route Contractor Compliance Report," within 2 business days after construction of a temporary pedestrian access route, and a Form CEM-2312, "Temporary Pedestrian Access Route Contractor Weekly Report," within 2 business days of completing a weekly inspection. The contractor compliance report forms are available at:

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

Review the contractor's work plan for compliance with the requirements in Section 12-4.04, "Temporary Pedestrian Access Routes.," of the *Standard Specifications*. Depending on the project conditions, the contractor may use the RSP T30 to T34 as a baseline for designing and constructing a TPAR.

4-1202C (3) Bridge Cleaning and Painting Activities

Review Section 12-4.05, "Bridge Cleaning and Painting Activities, of the *Standard Specifications*."

Verify signs to be used comply with the specification requirements.

4-1202D Temporary Pavement Delineation

Review Sections 12-6, "Temporary Pavement Delineation" and 84-2, "Traffic Stripes and Pavement Markings," of the *Standard Specifications* for temporary pavement delineation requirements.

4-1202D (1) Temporary Pavement Markers

Verify temporary pavement markers comply with Section 81-3, "Pavement Markers," of the *Standard Specifications*, except for the waiting period before placing pavement markers on new asphalt concrete.

Verify signs to be used comply with the specification requirements.

Refer to Section 12-6, "Temporary Pavement Delineation" and "Section 12-7 "Temporary Pavement Delineation for Seal Coats," of the *Standard Specifications* for temporary signing requirements for no-passing zones.

4-1203 During the Course of Work

4-1203 During the Course of Work

Use the ATSSA publication *Quality Guidelines for Temporary Traffic Control Devices and Features* to confirm acceptability of traffic control devices.

Inspect Category 2 temporary traffic control devices to confirm they are labeled with the FHWA acceptance letter code and the name of the manufacturer.

Verify Category 3 temporary traffic control devices are the type shown on the Authorized Material List for Highway Safety Features.

Verify that traffic handling devices meet the visibility and legibility requirements.

Verify the contractor maintains all traffic control devices in good working order throughout the project's life. Verify that all traffic control devices are correctly located and functioning properly. If temporary traffic control devices are damaged, displaced, or stop operating or functioning as described from any cause during the progress of the work, have the contractor repair, repaint, or replace the components and restore them to their original locations and positions.

Do not allow the contractor to mix different types of temporary traffic control devices on the same alignment. Types include plastic traffic drums, portable delineators, channelizers, tubular markers, traffic cones, and Type 1 and Type 2 barricades.

Verify the contractor removes traffic-handling equipment and devices from the job site when they are no longer needed for controlling traffic.

4-1203A Flagging

Observe the flagging operation to verify that flaggers are using the correct procedures for directing motorists in accordance with California Code of Regulations, Title 8, Section 1599, "Flaggers," and Chapter 6E, "Flagger Control," of the *California MUTCD*. Also, verify that flagging stations are laid out correctly, are visible to approaching traffic, are illuminated during nighttime, and have correct advance warning signs. If there are questions as to flagger competency, contact your construction safety coordinator to have them come and observe the flagging operation. When pilot vehicles are used, radios are required.

4-1203B Temporary Traffic Control Devices

Inspect all traffic control devices to verify conformity with the specifications. If you authorize the devices for use, record the authorization in the daily reports.

4-1203B (1) Traffic Cones

Require the contractor to anchor bases of traffic cones that do not have enough size and weight to keep the cones in an upright position.

Prohibit the use of traffic cones that have been damaged or coated with asphalt or other substances that prevent the cones from functioning as intended.

4-1203B (2) Plastic Traffic Drums

Check the contractor's layout work. Allow only one type of plastic traffic drum on the project.

Require ballast for drums according to manufacturer specifications. Do not allow the use of sandbags.

Require proper maintenance of plastic traffic drums.

4-1203B (3) Portable Delineators

Allow only one type of portable delineator on the project.

Verify the portable delineators meet the dimension requirements.

Confirm portable delineators remain upright when unattended, otherwise require the contractor to place a ballast on the delineator's base.

4-1203B (4) Channelizers

Check the contractor's layout work.

Verify the pavement is clean and dry and the contractor places the channelizers during conditions that meet the required temperatures. Review Section 81-3, "Pavement Markers," of the *Standard Specifications*. Do not allow the contractor to use the double-stick butyl pads provided by the channelizer manufacturer; these pads do not meet Caltrans requirements.

Ask the contractor to replace channelizers that are displaced or fail to remain in an upright position. The contractor is responsible for the replacement expenses.

4-1203B (5) Barricades

Check Type 3 barricades, used as sign supports, for label with FHWA acceptance letter number showing they have been crash tested as a single unit with a sign panel of the size and type used on the project. According to the Authorized Material List for Signing and Delineation Materials, 0.5 inch Intelplast "Intelcel" or similar material is authorized and according to FHWA Work Zone Letter 85 from the FHWA's Safety Program website, this type of sign substrate is authorized for use on Type 3 barricades.

Allow the contractor to use only bags of dry sand when weighting is necessary. Verify weights are placed on the feet or lower parts of the frame or stays. Do not allow the contractor to place objects any higher, or use hard objects such as concrete or rocks for weights.

Confirm the contractor maintains barricades in good condition and keeps the reflective surfaces clean.

4-1203B (6) Construction Area Signs

Remind the contractor to notify the regional notification centers before digging for the installation of signposts. Hand digging is required unless the location is free of underground utilities.

Allow only the use of sandbags when it is necessary to weigh down sign standards to prevent the wind from overturning them. Do not permit rocks, concrete, or other hard objects to be used for this purpose.

Check construction area signs often during the course of the work. Verify visibility and legibility requirements. Require the contractor to keep signs clean and clearly visible, and repair them if damaged.

Verify construction area signs are placed outside the traveled way, do not block or protrude more than 4 inches into bicycle and pedestrian pathways, and comply with Americans with Disabilities Act requirements.

Do not allow the use of nonretroreflective portable signs during hours of darkness.

Check sign posts to confirm compliance with breakaway features.

Verify that the contractor installs, relocates, covers, and removes signs as required. Construction signs should be covered or removed whenever they no longer serve a purpose. Verify that covers placed on sign panels completely block out any messages so that the messages cannot be seen day or night. The covers should also present a workmanlike appearance.

4-1203B (7) Type K Temporary Railing

Check the exposed surfaces of Type K temporary railing to verify they have received a fresh coat of white paint before initial placement on the job. Order repainting when needed.

Verify all new and used temporary railing elements comply with requirements for end connection and surface finish. Verify Type K temporary railing is placed on a firm, stable foundation uniformly graded throughout the entire length of the railing.

Check railing alignment for any substantial offset to each other.

Verify staking of railing according to sheet T3B of the *Standard Plans*.

Verify the contractor offsets the approach end of Type K temporary railing by 15 feet minimum from the edge of an open traffic lane, according to Section 7-1.04 "Public Safety," of the *Standard Specifications*.

Verify the contractor protects Type K temporary railing blunt-ends within 15 feet of the edge of the traveled way with temporary crash cushions. If the blunt end is within 8 feet, appropriate approved crash cushion protection other than sand filled modules should be provided.

Check the installation and maintenance of Type P marker panel according to sheet A81C of the *Standard Plans*.

Confirm the contractor installs a reflector on each rail unit placed within 10 feet of a traffic lane.

Verify all threaded rods or dowels are removed and the area is restored to its previous condition or constructed to its planned condition after removal of Type K temporary railing.

4-1203B (8) Temporary Traffic Screens

After installation, review the screen placement, especially near entrance and exit ramps. If the screen blocks motorist visibility, order its removal and consult with the district traffic engineer concerning alternatives.

Confirm supporting steel pipes are placed on the traffic side of the screen so that if a panel becomes dislodged, the plywood will fall away from traffic.

The specifications require temporary traffic screen to have 3-foot-long openings spaced at 200-foot intervals. The purpose of the gaps is to allow drivers and passengers of vehicles to get behind the barrier in case of a disabled vehicle. If the opening has a drop off behind it that might present a hazard to the public, document in the resident engineer's diary an exception to the *Standard Plans* note and have the contractor close the gap for public safety purposes.

4-1203B (9) Temporary Crash Cushion Module

Verify that one type of crash cushion module is used for a single grouping or array.

Verify the crash cushion array is in place before opening traffic lanes adjacent to the protected obstacle.

Verify that crash cushion module arrays are installed according to the manufacturer's instructions. Check that all crash cushion modules are filled with the proper weight of sand. Check pallet heights when used.

Verify a minimum clearance of 8 feet between the array and the nearest traffic lane. Contact the district traffic engineer for recommendations if the clearance to the traffic lane cannot be obtained.

Verify the contractor installs Type P or Type R markers when required.

4-1203B (10) Impact Attenuator Vehicles

Verify the contractor uses an impact attenuator vehicle as a shadow vehicle in moving closures and during placement and removal of components in stationary closures. After placing components of stationary closures, the contractor may place the impact attenuator vehicle in advance of the work area to protect workers and traffic.

Verify there is enough shoulder width before allowing the use of an impact attenuator vehicle for placement and removal of components on two-lane, two-way highways.

Do not allow the use of a damaged impact attenuator vehicle.

4-1203B (11) Flashing Arrow Signs

Verify the proper types of flashing arrow signs are used.

- Verify the flashing arrow sign trailer can be leveled and plumbed.
- Verify the lights are dimmed at night and set on bright during daylight hours.
- Verify the lights are not glaring into approaching traffic, especially truck traffic.
- Confirm compliance with the minimum legibility distances.
- Verify the signs are properly aimed at approaching traffic. Pay special attention to the aiming of the sign whenever solar-powered signs are used. The special bulbs used with solar signs have much narrower beams than conventional bulbs and, therefore, require greater care while being aimed.

4-1203B (12) Portable Flashing Beacons

Confirm the contractor places portable flashing beacons according to the plans and removes them from the traveled way at the end of each night's work.

Verify portable flashing beacons operate according to the specifications.

4-1203B (13) Portable Changeable Message Signs

PCMSs are a supplement to and not a substitute for the traffic control system required by the specifications and *Standard Plans.*

Verify that the trailer bearing the sign can be leveled and that the sign operates within the required minimum and maximum heights. Verify the contractor delineates a PCMS with a taper consisting of nine traffic cones.

Confirm the sign is placed where it is most visible to approaching motorists. Check that the sign complies with the visibility and legibility requirements. Pay special attention to locations where vertical or horizontal curvature restricts the sight distance. Drivers should be able to read the entire message at least two times before passing the sign.

Confirm the signs display only pre-approved messages and that the messages conform to the *Changeable Message Sign Guidelines*, and district and Caltrans policy. The *Changeable Message Sign Guidelines* developed by the Division of Traffic Operations provide a listing of approved abbreviations for PCMSs. Prohibit messages that do not

convey real-time information to the motorist. Examples of unacceptable messages include "Drive carefully," "Have a Nice Day," and "Thank you."

PCMSs are working equipment when actively displaying a message, otherwise they are nonoperating. Ask the contractor to remove nonoperating portable message signs from the job site away from traffic or protect it in accordance with Section 7-1.04 "Public Safety," of the *Standard Specifications*. Consult with the district traffic engineer for other acceptable means to protect the sign in lieu of the Type K temporary railing required by the specifications. In many cases, placing a PCMS behind existing guard railing will protect it.

PCMSs are required only during times, places, or activities stated in the plans and specifications and are not required when the traffic control system is nonoperational or for discretionary use.

4-1203B (14) Temporary Signal Systems

Verify the planned temporary signal system includes a backup power source and automatic transfer switches.

Do not allow the use of power from private parties to power the temporary signal system.

If a system shutdown occurs, planned or unplanned, the contractor should provide flaggers to control traffic until the traffic signals are functioning correctly.

Periodically review the temporary signal system to document its maintenance. Record inspection dates and conditions observed in the project records.

4-1203B (15) Temporary Flashing Beacon Systems

Verify the temporary flashing beacon system includes a backup power source and automatic transfer switches.

Do not allow the use of power from private parties to power the temporary flashing beacon system.

Verify temporary flashing beacon systems are relocated as work progresses according to the specifications.

4-1203B (16) Automated Work Zone Information Systems

Provide the contractor with the message content and the thresholds used for triggering when the messages will be displayed. Consult with the district traffic manager for assistance with these items.

When necessary, ask the contractor to adjust placement or message content of signs based on changing project or traffic conditions.

4-1203C Maintaining Traffic

4-1203C (1) Traffic Control Systems

Do not allow the contractor to close two adjacent ramps in the same direction of travel unless necessary because of the operation or project conditions. Require the contractor to set up an off-the-highway detour before closing all ramps in both directions of travel at the same interchange.

Verify the contractor follows the notification and signing requirements before setting up any traffic control systems.

Remind the contractor of Americans with Disabilities Act requirements if the traffic control system will affect pedestrian traffic and a temporary pedestrian facility is needed.

4-1203C (1a) Closure Schedules

Confirm the contractor submits a schedule of planned closures in advance as required by Section 12-4.02A(3), "Submittals," of the *Standard Specifications*. Closures that will reduce horizontal or vertical clearances require even more notification. Inform the Transportation Permits Unit 15 days in advance of the closure. This notification affords Caltrans the opportunity to coordinate work within the highway corridor.

Confirm the contractor's closure requests comply with the closure charts. Review the requests to avoid oversights and to identify and reduce the number of unnecessary requests (overbooking).

4-1203C (1b) Contingency Plans for Closures

If the contractor fails to reopen the highway according to the closure charts, suspend work and request a detailed written construction contingency plan demonstrating that the highway will be opened in a timely manner in the future (refer to Section 2-214D, "Construction Contingency Plan," of this manual).

Do not permit any closures until the contractor submits this plan and it is authorized in accordance with the specifications.

When an operation is terminated before the time the specifications allow because of circumstances beyond the contractor's control, consider granting time, compensation, or both, within the terms of the contract. If the operation is terminated before completion of the planned work because of circumstances within the contractor's control or because of equipment breakdown, do not allow compensation and charge a working day as appropriate.

4-1203C (1c) Lane Closure System

- Confirm the contractor's employee uses the assigned user identification to submit the closure requests in the LCS. The closure requests are stored with a "SAVED" status.
- Review the closure requests for compliance with the closure requirements charts and other contract requirements. If you accept the closure request, the status will change to "PENDING." If you reject the closure request, LCS will send the contractor an email asking for a correction and resubmission.
- Verify the district traffic manager reviews the closure requests for conflicts before approving it. The status in LCS will change to "APPROVED." The LCS will notify the contractor by email of the approval or rejection.
- Confirm the contractor cancels scheduled closures that are not needed at least 2 days in advance, using the LCS. The LCS will generate email notifications to the resident engineer and the district traffic manager when the contractor cancels a closure.

4-1203C (1d) Status Updates for Authorized Closures

During the course of work, monitor the contractor's activities to verify closures are statused in LCS as follows:

- Stationary closures on a traffic lane are 10-97 before placing the first cone on the traffic lane, and 10-98 after removing all the cones from the traffic lane.

- Stationary closures on the shoulder are 10-97 before placing the first cone after the last advance warning sign, and 10-98 after removing the last cone before the advance warning signs.
- Moving closures are 10-97 before the actual start time of the closure, and 10-98 after the actual end time of the closure.
- Closures not needed on the authorized date are 10-22 within 2 hours after the authorized start time.

The LCS will notify the resident engineers and designated inspectors by email when the contractor changes the status of a closure.

If a contractor is unable to access the LCS Mobile web page, obtain the closure status from the contractor and notify the transportation management center.

Keep the project's completion dates current in the LCS. The contractor will not be able to access projects in LCS after the completion date.

4-1203C (1e) Field Adjustments

Field adjustments to the traffic handling plans are frequent occurrences. Adjustments should be made to create adequate sight distance, to avoid locations that require drivers to make multiple decisions, to accommodate expected queues, and to coordinate activities at multiple locations. The following are typical situations where field adjustments are necessary:

- T Series *Standard Plans*—Show minimum acceptable standards for traffic control. Increasing taper lengths, addition of extra signs, and increasing sign spacing to allow for traffic queuing are all acceptable measures as long as the *Standard Plans* minimum requirements are met.
- Signs—Review sign line of sight visibility and verify it complies with Section 12-3.11, "Construction Area Signs," of the *Standard Specifications*. Signs should not be placed at the apex of horizontal curves, crests of vertical curves, or where trees or bushes hinder visibility of the sign.
- Vertical and horizontal curves—Verify tapers are visible for their entire length to approaching traffic. Do not hide the taper of a traffic control system behind a vertical or horizontal curve. Extend the tangent portion of the closure to better position the taper. (Under ideal conditions, all advance warning signs and the taper would be in a tangent with the taper placed on a slight upgrade for improved visibility.)
- Ramps and connectors—Managing ramps and connectors within a closure requires additional consideration. Extend exit ramp tapers back through the closure as an extension of the ramp's shoulder line. Avoid sharply angled tapers. Extend entrance ramps through the closed lane by projecting the left shoulder line.
- Traffic queues—Contain traffic queues completely within the advance warning signs of any closure. Containment may require modestly increasing the spacing between signs or require the placing of additional signs. Some districts have adopted a practice of providing motorists additional warning by displaying information a mile or more in advance of the closure using portable or fixed changeable message signs. In metropolitan areas, this type of warning may be feasible through the cooperation of the transportation management center.
- Multiple closures and inter-project coordination—Avoid multiple closures with overlapping sign patterns. Connect closures by extending the tangents. Confirm that

the contractors are coordinating placement and pick up of the closure so that the traffic control system is maintained in accordance with the *Standard Plans* at all times.

- Length of closure—Avoid long closures with no evidence of activity. Consider placing supplemental tapers within an existing closure. When the work has safely progressed beyond the supplemental taper, remove the upstream taper and tangent. Confirm advance warning signs for the new taper are located correctly.

If long closures are unavoidable, protect the active work area by placing barricades or drums across the closed lanes, upstream of the work area. Also, when possible, use barrier vehicles or an impact attenuator vehicle between the approaching motorist and workers on foot.

4-1203C (1f) Placement Sequence and the Start of Work

Verify the contractor completely installs the traffic control system before commencing work. An impact attenuator vehicle must be used for the placement and removal of temporary traffic control devices when required by the contract. The following are some possible installation procedures that may be used by the contractor, depending on the situation in which the system will be used:

- Systems affecting traffic only in one direction—Start with the first device that the drivers will see as they enter the work zone (usually a W20-1 "Road Work Ahead" sign). Additional devices are placed in sequence, moving in the direction of the traffic flow. Move the workers and equipment onto the closed lanes only after all system components are in place.
- Systems affecting traffic in both directions—Install the first sign drivers will see traveling in the opposing direction. Then install in sequence all remaining signs and devices in the opposing direction of travel. Next install the first sign drivers will see in approaching the work area from the affected direction. Place all remaining signs and devices in sequence through the work area. If flaggers are to be used, have flaggers take their stations; then move workers and equipment onto the road.
- Removal of the traffic control system—Remove all workers and equipment from the roadway. Then remove the devices and signs in the reverse order of placement. Restore all signs and signals to normal operation.

4-1203C (1g) Drive-Through Inspection

After installation and when the inspector is available, make a drive-through inspection of the system. During the inspection, drive through the system as though you had no knowledge of the work zone. Confirm the intended vehicle path is clearly visible. Remember that the motorist has no knowledge of the traffic control plan and is entirely dependent on the system for warning and guidance. Document this inspection in the daily report; indicate weather, traffic conditions, and time of inspection.

4-1203C (1h) Maintenance

Verify contractors are assigning personnel and maintaining closures in accordance with the T Series *Standard Plans.* Maintaining such closures is a full-time assignment, and the assigned worker should have no other duty. Ideally, the assistant resident engineer should be able to communicate directly with the contractor's maintenance person by radio or cell phone. The maintenance person should have spare cones, signs, and

barricades available to replace or restore system elements displaced or damaged by traffic.

4-1203C (1i) Reverse Operations Inside Closures

Workers may operate vehicles opposite the flow of traffic inside a closed lane only with the prior authorization of the resident engineer. Certain equipment, such as dike placement machines, can only operate off one side of the equipment and may need to be operated against live traffic. Similarly, certain striping operations require the operator to operate against live traffic because of clearances.

The following practices are recommended if opposing operations are undertaken:

- During daylight operations, the vehicles facing oncoming traffic should have their headlights and their flashing amber lights turned on at all times.
- During night operations, the vehicles should have their headlights turned off and their hazard lights and flashing amber lights turned on.
- At no time should a U-turn be permitted in traffic.

4-1203C (2) Pedestrian Facilities

- Confirm the contractor provides a temporary pedestrian access route (TPAR) nearby, off the traveled way, when the construction activities require the closure of an existing pedestrian route.
- If closure of an existing pedestrian route is required because of the contractor's means and methods, remind the contractor of their responsibility to design and construct a TPAR at their expense, and obtain authorization to proceed with the work activities. Do not pay the contractor for providing the TPAR.
- Verify TPARs are constructed in compliance with the requirements in Section 12-4.04, "Temporary Pedestrian Access Routes," of the *Standard Specifications* before allowing use by pedestrians. Use Form CEM-2301, "Temporary Pedestrian Access Route Compliance Inspection Report," to document initial construction compliance of TPARs.
- Obtain from the contractor, the completed Form CEM-2311, "Temporary Pedestrian Access Route Contractor Compliance Report," within 2 business days after construction of a temporary pedestrian access route.
- Verify the contractor provides overhead covering, overhead lighting, or both when required.
- Inspect TPARs on a weekly basis to ensure that they are clean and unobstructed and comply with the Americans with Disabilities Act and the work plan required by the specifications. Use Form CEM-2302, "Temporary Pedestrian Access Route Weekly Inspection Report," to document that TPARs are maintained in compliance during the course of work.
- Obtain from the contractor, the completed Form CEM-2312, "Temporary Pedestrian Access Route Contractor Weekly Report," within 2 business days of completing a weekly inspection.
- File completed ADA compliance reports in Category 23, "Temporary Pedestrian Access Routes," of the project files.

4-1203C (3) Bridge Cleaning and Painting Activities

- Verify the required signs are placed during the cleaning and painting activities and removed at the end of each work shift.
- Verify the traveled way is free of obstructions and residue before opening the area to traffic.

4-1203D Temporary Pavement Delineation

- Verify temporary or permanent pavement delineation is in place before opening the traveled way to traffic.
- Verify temporary pavement markers are the same color as the lane line or centerline markers being replaced. Confirm the contractor uses the long-term temporary pavement marker for 180 days or less and the short-term temporary pavement marker for 14 days or less.
- Do not allow the application of temporary pavement delineation over existing pavement delineation.
- Verify removal of any temporary delineation that conflicts with any subsequent or new traffic pattern for the area.

4-1203D (1) Temporary Pavement Markers

- Do not allow the use of epoxy adhesive to place pavement markers in areas where the removal of the pavement markers is required.
- Temporary pavement markers will not adhere to a cold in-place recycling surface. Use alternate methods to delineate this type of surface.
- Use of 180-day temporary pavement markers on an open-graded surface is not advised, when removed the marker glue can peel up the open grade.

4-1203D (2) Channelizers

- Verify channelizers used for temporary edge line delineation are predominantly orange and the surface mounted type.

4-1203D (3) Temporary Lane Line and Center Delineation

- Verify pavement marker spacing.
- Verify the contractor installs the temporary no-passing zone signs if no-passing centerline pavement delineation is obliterated. Determine the exact location of the temporary signs and when they are no longer needed for the direction of traffic.
- Verify no-passing zone signs are removed when no longer required.

4-1203D (4) Temporary Edge Line Delineation

- Verify the contractor cements the bases of channelizers used for temporary edge line delineation as specified.
- Allow the use of paint only if the temporary traffic stripe is not required to be removed.

4-1203D (5) Temporary Traffic Stripe Tape

- Verify that temporary traffic stripe tape for use more than 14 days is applied according to the specifications, and temporary traffic stripe tape to remain in use 14 days or less is applied according to the manufacturer's instructions.

4-1203D (6) Temporary Traffic Stripe Paint

- Review Section 84-2.03, "Construction," of the *Standard Specifications* for the application requirements for temporary traffic stripe paint.

4-1203D (7) Temporary Pavement Marking Tape

- Verify that temporary pavement marking tape to remain in place more than 14 days is applied according to the specifications, and that temporary pavement marking tape to remain in place 14 days or less is applied according to the manufacturer's instructions.

4-1203D (8) Temporary Pavement Marking Paint

- Review Section 84-2.03, "Construction," of the *Standard Specifications* for the application requirements for temporary pavement marking paint.

4-1203E Temporary Pavement Delineation for Seal Coats

- Verify the contractor installs the temporary no-passing zone signs if no-passing centerline pavement delineation is obliterated. Determine the exact location of the temporary signs and when they are no longer needed for the direction of traffic.
- Verify temporary pavement delineation is maintained until it is replaced with the permanent pavement delineation. Direct the contractor to remove any temporary pavement delineation that conflicts with the permanent pavement delineation.

4-1204 Level of Inspection

4-1204 Level of Inspection

Conduct intermittent day and night inspections to verify compliance with visibility and legibility requirements for:

1. Retroreflective bands on portable delineators.
2. Retroreflective sheeting on channelizers.
3. Retroreflective sleeves on traffic cones.
4. Construction area signs.
5. Portable changeable message signs.
6. Flashing arrow signs.

4-1205 Quality Control

4-1205 Quality Control

While specific levels of quality control for temporary traffic control are not included in Section 12, "Temporary Traffic Control," of the *Standard Specifications*, the contractor is responsible for providing quality control under Sections 5-1.01, "General," and 6-2.02, "Quality Control," of the *Standard Specifications*.

Verify that the contractor schedules and conducts a meeting to discuss the operation of impact attenuator vehicle as required under Section 12-3.23A(4), "Quality Assurance," of the *Standard Specifications*. Verify attendance of subcontractor's and other

contractor's personnel involved with traffic control. Ensure your designated staff and other state staff involved with traffic control attend the meeting when possible.

4-1206 Payment

4-1206 Payment

The following guidelines are for measuring and paying for various traffic control devices for construction areas.

4-1206A Flagging

Section 12-1.04 "Payment," of the *Standard Specifications* requires that the cost of providing flaggers be divided equally between Caltrans and the contractor. Determine the total cost using the force account method. The contractor is to be paid one-half of the computed total amount.

The division of costs applies to all flagging required to perform the planned work except in special situations cited in the special provisions. Caltrans' share of flagging costs is to be paid only when public traffic is involved.

The cost of providing flaggers includes the cost of transporting personnel between a central point and the location of the work, or from one location to another as necessary. The cost does not include the costs of placing, maintaining, and removing construction area signs or lighting for nighttime operations during flagging operations nor does it include the cost of the pilot car or pilot car operator. That cost is paid as part of the contract item for traffic control system.

The flagging costs incurred in connection with increased or decreased work paid for at contract prices will be subject to the 50-50 split. It is assumed that the contractor's share of such costs is included in the contract item price.

When work is added and paid for as extra work, the contractor should be compensated 100 percent for flagging costs associated with the extra work.

If changes are made at the request of, and for the benefit of the contractor, the contractor must pay for the additional flagging costs unless there are also particular benefits to the state that would warrant a sharing of the costs.

Include 50 percent of flagging costs in costs calculated in accordance with Section 4-1.05 "Changes and Extra Work," of the *Standard Specifications*. Also, include the contractor's 50 percent share of flagging costs in cost calculations for computing adjustments for increased or decreased item quantities.

4-1206B Temporary Traffic Control Devices

4-1206B (1) Traffic Cones

Traffic cones are paid for as part of the contract item for the traffic control system.

4-1206B (2) Plastic Traffic Drums

Count the plastic traffic drums for payment as they are placed in the locations shown on the plans. Drums used instead of cones, barricades, or delineators as part of a traffic control system or used as specified under "Public Safety" section in the contract are not to be paid for at contract item price.

4-1206B (3) Portable Delineators

Portable delineators are paid for as part of the contract item for the traffic control system.

4-1206B (4) Channelizers

Channelizers are paid for by the unit. The contract item price includes the costs of maintaining, replacing, and repairing channelizers. The contract item price also includes the costs of work necessary to restore channelizers damaged by public traffic.

4-1206B (5) Barricades

Initial placement of each barricade is paid for as a contract item at the time of placement. Subsequent relocations of each barricade are paid for as extra work using the force account method. Damaged barricades should be repaired at the contractor's expense, regardless of the cause, including damage by public traffic.

4-1206B (6) Construction Area Signs

Construction area signs, except those used in traffic control systems for closures, are paid for as a lump sum item. The cost of the contractor's inventory of replacement sign materials is included in the contract price for construction area signs. Additional signs ordered by the resident engineer are paid for as extra work.

The cost of covering, uncovering, and removing signs (when they are no longer needed) is included in the contract price for construction area signs.

When determining how much to include on a progress pay estimate, withhold some payment sufficient to cover the cost of maintaining and removing the signs.

4-1206B (7) Type K Temporary Railing

Review the "Public Safety" section in the contract. Do not use the contract item for Type K temporary railing to pay for temporary railing that is placed to fulfill the requirements of the "Public Safety" section.

Withhold some payment from progress pay estimates to cover the cost of removing Type K temporary railing

4-1206B (8) Temporary Traffic Screens

Measure and pay for temporary traffic screen according to the specifications.

4-1206B (9) Temporary Crash Cushion Modules

Review the "Public Safety" section in the contract. Do not use the contract item for temporary crash cushion modules to pay for temporary crash cushion modules that are placed to fulfill the requirements of the "Public Safety" section.

Withhold some payment from progress pay estimates to cover the cost of removing temporary crash cushion modules.

4-1206B (10) Impact Attenuator Vehicles

Impact attenuator vehicles are paid for as part of the contract item for the traffic control system.

4-1206B (11) Flashing Arrow Signs

Flashing arrow signs are paid for as part of the contract item for the traffic control system.

4-1206B (12) Portable Flashing Beacons

Portable flashing beacons are measured and paid for at contract item price by the unit except when they are part of a traffic control system. In that case, portable flashing beacons are paid for as part of the contract item for the traffic control system.

4-1206B (13) Portable Changeable Message Signs

The contract item for PCMSs, commonly bid as "furnish-each" or "furnish-lump sum," includes all costs for placement, operation, maintenance, relocation, and removal of the signs.

Direct the contractor to provide PCMSs for use not otherwise provided for in the contract, with a minimum notice of 1 full working day. Payment is computed as extra work.

4-1206B (14) Temporary Signal Systems

The lump sum payment for this item includes all the costs of hauling Department-furnished materials between the designated pickup locations, the project, and the designated salvage location. If the pickup or salvage location is changed, then additional costs or savings to Caltrans should be recognized.

Flaggers are not a shared cost if the contractor provides them as a result of a shutdown of the signals for any reason. This provision is an exception to the general practice of sharing the cost of flaggers.

4-1206B (15) Temporary Flashing Beacon Systems

The contract item for a temporary flashing beacon system, commonly bid as "furnish-each" or "furnish-lump sum," includes all costs for placement, operation, maintenance, relocation, and removal of the system.

4-1206B (16) Automated Work Zone Information Systems

The lump sum payment for this item includes all costs for placement, operation, maintenance, relocation, and removal of the Automated Work Zone Information System.

4-1206C Traffic Control Systems

For all project work, the lump sum payment for the traffic control system includes payment for all labor, equipment, and materials to install, maintain, and remove the traffic control system as shown on the plans or *Standard Plans*. The contract item for the traffic control system includes payment for portable signs, cones, delineators, and flashing arrow signs as shown on the plans for the traffic control system and impact attenuator vehicle.

Include compensation or credit in the change order when an ordered change in the work affects the contract item for the traffic control system.

Traffic control costs in support of extra work are to be paid as part of the extra work. Compute the payment as a force account or as an adjustment of compensation based on a force account analysis. The change order that authorizes the extra work should reflect these costs.

In addition to adjustments for ordered changes, consider adjustments to the contract item for the traffic control system when the following circumstances exist and result in additional closures:

- A material change exists over or under the engineer's estimated quantity that is not caused by an ordered change for a contract item or items.
- Insufficient information exists in the contract for the contractor to verify the engineer's estimated quantity for the contract item or items. The contractor relied on

the engineer's estimated quantity or quantities to determine the number of closures required.

- The additional closures are solely for work on the contract item or items meeting the criteria for the above.

Calculate adjustments for the circumstances listed above on a force account basis.