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Bridge Construction Records And Procedures

Department Of Transportation
Structure Construction

Volume 1

Updated May 17, 2016

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BRIDGE CONSTRUCTION MEMOS

BRIDGE CONSTRUCTION
RECORDS AND PROCEDURES

October 15, 2001

Volume I

TABLE OF CONTENTS FOR THE SECTIONS OF VOLUME NUMBER I

DOLORES M. VALLS, Deputy Division Chief
Offices of Structure Construction

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STEVE ALTMAN
Deputy Division Chief
Structure Construction
Division of Engineering Services

**Denotes the document is a Bridge Construction Bulletin*

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Introduction to the *Bridge Construction Records and Procedures Manual*

Purpose
The *Bridge Construction Records and Procedures Manual* (*BCR&P Manual*) provides Structure Construction (SC) personnel with key information and instructions to guide and assist them in performing their duties.

Background, Scope and Format
The first reported use of the *BCR&P* is by Jim Roberts in 1964. It was a time when bridge contracts were separate from the road contracts and the BCR&P Manual provided field staff with guidance for administering a field office and construction projects.

The *BCR&P Manual* provides SC specific contract administration, policies processes, general procedures, structure representative responsibilities and expectations, technical guidance and specification interpretation. The *BCR&P Manual* includes information that compliments the information in the *Construction Manual* and other SC Technical Manuals[1].

Information for the *BCRP Manual* is organized in two volumes:

- Volume I includes information and instructions related to administrative responsibilities. Included are procedures and guidance for documenting, reporting and recording construction operations.
- Volume II includes information, instructions and reference material related to technical aspects of structure construction operations.

Both volumes are divided by subject matter into numbered sections. Each section contains:

- A *Table of Contents*.
- Bridge Construction Memos which are referred to as BCMs.
- Bridge Construction Bulletins which are referred to as BCBs.
- Commentary to a section of the *Standard Specifications*.

Revisions
Revisions are accompanied by a *Change Letter* that provides instructions to delete, revise or add new content to the manual, and a description of the change made. The *Change Letter* has the following naming convention: *Change Letter Volume Number-Year-Change Number*. For example:

[1] SC Technical Manuals are located @ http://des.onramp.dot.ca.gov/structure-construction/structure-construction-technical-manuals

- *Change Letter* I-2015-#02 informs the reader that this is the second revision in the year 2015 for *BCR&P Manual*, Volume I.
- *Change Letter* II-2016-#01 will be the first revision in the year 2016 for *BCR&P Manual*, Volume II.

The *Table of Contents* for a section is revised each time a revision, addition and/or deletion is made to a section.
Bulletins are issued to revise or add information quickly that may be temporary or may need to be revised in the near future or expire. They are identified as a "BCM" with a *in the *Table of Contents* denoting that the BCM is a *Bulletin*. Beginning in 2016, as new bulletins are issued, they are identified as a "BCB". Expiration dates, and superseded memo references, if appropriate, will be included in the *Bulletin* title block area. *Bulletins* will be filed in accordance with the following procedure:

- *Bulletin*s are filed in the Manual section as indicated by the file reference location. For example, *Bulletin* BCB 4-2.1 would be filed in Section 4, *Control of Materials*, in Volume I and includes revisions or added information to Bridge Construction Memo 4-2.0. The number "1" indicates that this *Bulletin* is the first bulletin that has been distributed that supersedes or adds information to Memo 4-2.0. *Bulletin* BCB 124-1 would be filed in Section 124, *Demolition*, in Volume II and would be new information for the Section.

Beginning 2014, as sections of the *BCR&P, Volume II,* are revised the:
- Sections will be renumbered and renamed to align with the *Standard Specifications* (*SS*), providing a uniform location for information related to any given topic.
- Information included will be a commentary, adding clarity to the *SS*.
- Information will be incorporated into the other appropriate Technical Manuals.
- Sections 100 and 105, were the first sections that were renumbered and renamed, as follows:
  - Section 105, *Concrete – Place, Finish and Protect*, was renamed to Section 51, *Concrete Structures.*
  - Section 100, *Materials and Mixing*, was renamed to Section 90, *Concrete.*
- Section 51, *Concrete Structures*, is the first section to be issued as a commentary to the *SS*.

Beginning 2014, as sections of the *BCR&P, Volume II,* are revised the:
- Sections will be renumbered and renamed to align with the *Standard Specifications* (*SS*), providing a uniform location for information related to any given topic.

Distribution
All revisions are sent by email to all SC staff. Concurrent with the email notification, SC's Technical Manuals on the Intranet are updated with all changes. The intranet location for the Technical Manuals is:
http://des.onramp.dot.ca.gov/structure-construction/structure-construction-technical-manuals

A print copy can be requested by completing form SC-0105, *SC Manual Order Form* and sent to SC Manual Coordinator as specified on the form. This form is located in Section 16 of the *BCR&P Manual* and via the link:
http://dschq.dot.ca.gov/sc_manuals/construction_records_and_procedures_vol_I/16-0.0_Forms/SC-0105.pdf

The *BCR&P Manual* is also available as a reference for Division of Engineering Services (DES) personnel.

Errors or Omissions
Personnel are encouraged to report any errors or omissions discovered in the *BCR&P Manual*. Reporting errors, omissions or suggestions should be sent to the email account, SC Administration (osc.administration@dot.ca.gov).

Structure Construction Headquarters Services

Current Structure Construction (SC) organization charts, phone lists, headquarters (HQ) staff assignments, and timekeeper contact information are located on SC's intranet at the following address:

http://des.onramp.dot.ca.gov/structure-construction-headquarters-staff

Central email accounts and phone number have been established by SC HQ to efficiently facilitate communication. Documents are forwarded to the appropriate recipient(s). Each contact serves a specific function as listed below. Most accounts are monitored on a daily basis.

Services	Contacts

Transmittal (from SC Field Staff) of:
• ACM Bi-Monthly Reports.
• Parking pass requests.
• Phone Bridge Reservation requests.
• Request to change a headquarter address.
• Request to add a consultant for WEAT assignments.
• Personnel documents that do not require a "wet" signature:
  • Change of Address forms.
  • Emergency Notification forms.
  • Excess Leave Reduction plans.
  • Long Term Assignment form (form FA-1350).
  • Safety Documents – Accident Reports.
  • Training Certificates/Documents.
Transmittal (from other Caltrans staff) of:
• Type Selection Meeting invites.
	SC Administration central email account: osc.administration@dot.ca.gov

Transmittal (from SC Field Staff) of: • Constructability Review comments to the Designer. • Notification of Structure Maintenance upon Structure Completion per BCM 9-9.0. • Project records: • As-Built Plans.	*SC Office Associates* central email account: SC.Office.Associates@dot.ca.gov

• Certification of Materials. • Joint Movement Calculations.	
Services	**Contacts**
Transmittal (from SC Field Staff) of: … ***continued*** • Permanent Vertical Clearance. • Pile Driving Records. • Progress Schedule. • Report of Completion for Structures. • Shop Drawings. • Unrecoverable Final Records. Transmittal (from other Caltrans staff) of: • Constructability Review requests from the designer. • Change Order Requests • PS&E Submittals Structure RE Pending File questions.	
Transmittal (from SC Field Staff) of PRSM issues related to Task Management: • Add/Transfer ETC hours to units. • Assign and Remove units from Task 275. • Expenditure Reports. • PRSM/VISION Questions. • SCIMS login problems. • Task 275 close-out. • Task 275 Task Management edit support. • Time Charging. • Update percent complete. • Update Task 275 Start and Finish Dates.	*SC Resources* central email account: osc.resources@dot.ca.gov
Questions and Emergencies.	*SC Help Desk* phone number: (916) 227-7777
Intranet site: http://des.onramp.dot.ca.gov/structure-construction	Current webmaster listed at the bottom of the website

BCM 3-1.0 *Project Specific Documents Required to be Submitted to Structure Construction Headquarters* further details the requirements for the documents that are required to be submitted to SC Headquarters.

The *SC Help Desk* is intended to provide improved phone access for field personnel with questions. The *SC Help Desk* is continuously monitored during business hours of 0730 to 1600. Providing

this service is not intended to circumvent the normal flow of communication up the chain of command within each area. Typically, the normal flow would require the Structure Representative to contact their Bridge Construction Engineer (BCE), then the BCE would contact the Area Construction Manager (ACM). The flow keeps the BCE and the ACM aware of problems in their areas and in a position to be aware of how problems are being handled or responded to on a statewide basis. This permits SC to present a uniform position statewide. The *SC Help Desk* is for questions and emergencies from SC personnel only.

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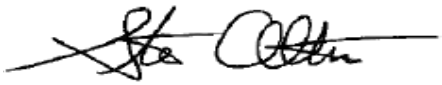


STEVE ALTMAN
Deputy Division Chief
Structure Construction
Division of Engineering Services

**Denotes the document is a Bridge Construction Bulletin*

Relationship Between Office of Structure Construction and Districts

The Districts have overall authority and responsibility for contract administration. However, technical control of structure work is the responsibility of the Office of Structure Construction, who will assign a Structure Representative to each project to be responsible for the technical control of the structure work. Additional Structure personnel will be assigned by the Office of Structure Construction as required to assist the Structure Representative in carrying out the responsibilities for the technical control of the structure work.

When requested by the District, an employee of the Office of Structure Construction, who is acceptable to the District, may be assigned to act as the Resident Engineer on a project. Such an assignment should generally be made when the project is predominantly structure work. When an employee of the Office of Structure Construction is assigned as Resident Engineer, the employee is both Resident Engineer and Structure Representative. As Resident Engineer, the employee is responsible for the contract administration and, at the option of the District, may also be given the responsibility for the technical control of the "roadwork". As Resident Engineer, the employee reports to and acts through the District. As Structure Representative, the employee is responsible for the technical control of the structure work and reports to and acts through the Office of Structure Construction.

On some occasions, if requested by a District, an Office of Structure Construction employee may be loaned to the District to act exclusively as the Resident Engineer on a project. In this event, if the project has structure work, the Office of Structure Construction will assign another Structure employee to act as Structure Representative.

Structure and District personnel will coordinate their operations so as to insure optimum use of combined manpower.

Following are guidelines concerning the details of operation to be followed by personnel at the project level.

A. Personnel

All Structure employees are carried on Office of Structure Construction payrolls, and the Office of Structure Construction will handle such matters as expenses, personnel processes, training, etc., for Structure employees:

1. Time Sheets: All Structure personnel, including those who are acting as District Resident Engineers, will use their Structure source codes.

   Structure Resident Engineers will recommend approval of the time sheets for Structure personnel assigned to them. The Structure employee's first-line supervisor will approve and sign the timesheet. Structure timesheets are to be received by the Office of Structure Construction in Sacramento three days prior to the end of the pay period.

2. Expenses: Policy for Structure personnel, including those assigned as District Resident Engineers, is based on provisions of bargaining unit contracts, Department of Personnel Administration regulations, and Caltrans policy and will be administered by the Office of Structure Construction on a uniform statewide basis.

   The first-line supervisor of the Structure employee shall approve and sign travel expense claims.

3. Performance Reports: The first-line supervisor of the Structure employee will be responsible for preparing performance reports.

4. Disciplinary Action: The Office of Structure Construction will be responsible for the discipline of Structure personnel.

5. Safety and Accident Reports: The Employee Safety Program for Structure personnel on construction projects will be administered by the Districts. Accident Reports of Structure field personnel will be evaluated by the District Safety Committees. For Structure employees, the accident reports are to be forwarded to Sacramento as soon as possible. Refer to *Bridge Construction Records and Procedures*, Volume I, Section 14 for more detailed instructions.

6. Formal Authorization for the Total Project O.T.: This will always be a District function since all projects will be District administered.

7. Authorization for Individual Structure Personnel to Work 0.T.: This will be determined by the Structure Resident Engineer after consultation with the Bridge Construction Engineer. In some instances savings may be accomplished by utilizing the same employee for both road work and structure work.

8. Training: The Office of Structure Construction will provide specialized training while also taking advantage of training offered by the Districts in areas where Structure personnel are assigned. Certain Structure training courses will be made available to the Districts when requested.

To facilitate a more useful interchange of staffing at the project level, it is vital that every opportunity be taken for cross training in those areas where interchange of personnel will keep total staffing requirements to a minimum. In making maximum use of Structure and District personnel, it is necessary that personnel be well qualified for their work assignments.

9. Assigning People at Project Level:. Project personnel will be interchanged freely when conditions require, such as when jobs are temporarily overstaffed or understaffed due to workload variations. The total project staff is a team and should be utilized as such. Before drawing on other sources for short-term staffing needs, full utilization of personnel assigned to a project is to be practiced. In making such assignments, the Resident Engineer will give due consideration to duties proper for the employee's grade, as well as the responsibilities of Structure and District personnel for technical control of work in their respective fields. However, no prolonged use of either class in the work of the other is to be made. This means that a Structure employee might be used on road work or a District employee on structure work full time for short periods, or a small portion of the time over a long period. If there is disagreement at the project level, it is imperative that the Construction Engineers and/or Managers be called in to settle the matter as early as possible.

   At the job level, employees may be exchanged for short periods by oral instructions and entries in the job diaries will be sufficient for the record.

10. Changes in Assignments of Structure Personnel: The Office of Structure Construction will staff the projects for structure work and will keep the Resident Engineer and the District Office informed of potential changes in assignments of Structure personnel on their projects. This can best be accomplished by the Structure Representative keeping the Resident Engineer informed of changes at the project level and the Area Construction Managers and/or Bridge Construction Engineers keeping their counterparts in the Districts informed of potential changes of Structure Representatives. In addition, the District will receive copies of all Structure assignment letters in that District.

B. Field Offices and Record Keeping

1. Duplication of Records is to be Avoided: The Structure Representative is responsible for the Structure records. Structure records should be kept with District records in a common file unless it is not practical to do so; for example, if the Resident Engineer's and Structure Representative’s offices are in different locations.

2. Clerical Help: Project clerical help must be utilized to the highest practical degree by both Structure and District personnel.

3. Signing Letters: The Resident Engineer's name should always appear at the bottom of all letters. The exact format and delegation of authority for signatures on letters involving Structure work will be determined by the Resident Engineer in consultation with the Structure Representative.

4. Newsletters and Daily Reports: Structures employees assigned as District Resident Engineers will conform to District instructions and send copies of whatever pertains to structure work in accordance with the instructions in Bridge Construction Memo 3-2.0.

5. Construction Photographs: The Structure Resident Engineer is responsible for taking construction photos of the bridges and other pertinent structure works. Refer to Bridge Construction Memo 3-4.0 for further instructions.

6. Material Certification Procedures: The Resident Engineer is responsible for the certification of all materials on the job. The Resident Engineer may require the Structure Representative to certify the materials used in structure construction. The Structure Representative will cooperate in providing the required certification for materials used in structure work. Refer to Bridge Construction Memo 9- 2.0 for further instructions.

7. Contract Change Orders Involving Structure Work: Where structural changes are to be made, the decision to make the change, the intent or content of the CCO, any methods or restrictions in doing the work, and in general, anything affecting the structure are responsibilities of the Office of Structure Construction. Refer to Bridge Construction Memo 7-1.0 for further instructions.

   The format and wording (providing it does not change the structural intent) of the CCO, the method of payment, the manner in which the letter of transmittal explains the CCO, etc., are all responsibilities of the District.

8. Supplies and Equipment: All expendable supplies are to be furnished by the Districts. Non-expendable equipment such as torque wrenches, Schmidt hammers, elcometers, transits, levels, calculators, computers and other specialized equipment necessary for structure work will be supplied by the Office of Structure Construction. Every effort should be made to keep the total amount of equipment on the project to a minimum by joint use where possible.

9. Claims Involving Structure Work: Interpretation of specifications involving the structural and material aspects of the structure work is the responsibility of the Office of Structure Construction.

   Claims involving structure work will be reviewed by the Office of Structure Construction and recommendations made to the Districts. The Office of Structure Construction will then assist the Districts in the handling of the claims as requested.

10. Settlement Periods for Fills Under Bridge Abutments: These are specified by the Structure Foundation Branch of the Office Structural Foundations. It will be the responsibility of the Structure Representative to determine when settlement periods are to be terminated.

11. Dealing With Agencies Such as Corps of Engineers, Reclamation Board, Flood Control Districts, or Coast Guard: This is the basic responsibility of the Resident Engineer.

F Labor Compliance and E.E.O.

The basic responsibility will belong to the District, However, the Structure Representative will help whenever requested to do so by the Resident Engineer.

Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Administration

Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Administration is the responsibility of the Resident Engineer. Office of Structure Construction personnel will assist the Resident Engineer in the administration of SWPPP/WPCP for structure related work.

Structure Representatives should:

- Discuss with the Resident Engineer methods of work involved in structure items that may affect the quality of storm water discharges associated with the project prior to the pre-job meeting with the contractor.
- Ensure that they have received and reviewed a copy of the approved SWPPP/WPCP.
- Stay informed about any critical dates or any potential changes (amendments) to the SWPPP/WPCP that may affect structure work.
- Ensure OSC staff have received SWPPP training offered to District personnel.
- Ensure that the appropriate BMPs, as indicated in the approved SWPPP/WPCP, are in place prior to the performance of the related work.
- Report noncompliance and/or violations of the SWPPP to the Resident Engineer.

Work related to structures that may affect the quality of storm water through a project might include, but not be limited to, the following:

- Operations related to concrete and grouting operations; clean out, leakage, pumping.
- Water removed from footings, cofferdams and piles.
- Water runoff from deck curing operations, especially if the flow is great enough to cause a disturbance to the surrounding ground.
- Residue from sprayed on resins, cures and coatings.
- General site clean up and trash removal.
- Potential heavy metal contamination from welding/grinding/sawing/sandblasting.
- Runoff from high pressure water wash.

Contractor proposed changes to the SWPPP will be reviewed and approved by the Resident Engineer. Structure Representatives **are not to approve changes** to the SWPPP. For more information regarding available Storm Water manuals & publications please visit the construction website at:

http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm

Pre-Job Discussion with Design, Architecture and Geology

The Structure Representative should make a detailed study of the plans, specifications and other pertinent documents, as soon as possible after assignment to the project. The Structure Representative should then discuss the proposed construction with the Area Construction Manager or Bridge Construction Engineer, preferably at the construction site. If the Area Construction Manager or the Bridge Construction Engineer considers it advisable, the Structure Representative will be instructed to visit the Sacramento office and discuss design details with the Project Designer, and/or Architect, and foundation details with Engineering Geologist. In cases when the Structure Representative does not visit the Sacramento office, discussions with the Project Designer and/or Architect and the Engineering Geologist should be held by means of telephone communication. (For projects located in Districts 07, 08, 09, 11, and 12 foundations should be discussed with the Engineering Geologist in Los Angeles).

On projects having building work, roadside rests, (Lands and Buildings projects, roadside rests, etc.) there is a need for increased communications between Structure Construction personnel and Structure Architects. In order to improve communications, arrangements shall be made by the Bridge Construction Engineer or the Structure Representative for a site review by the Structure Architect. This review shall be made either prior to the pre-construction conference, or at the time of the pre-construction conference. Attendance of the Structure Architect at the pre-construction conference shall be at the Bridge Construction Engineer's option.

It is the responsibility of the Structure Representative to clear up any-problem areas prior to start of construction, or as soon thereafter as possible.

On jobs involving cleaning and painting of structural steel, especially when lead-based paints are to be disturbed, the Structure Representative should contact the Division of Structures for current information on the problems associated with the handling of hazardous materials. Contact Dan Thomas ((916) 227-8985 or CAL NET 498-8985) in the Office of Structure Construction or Pete Whitfield ((916) 227-8120 or CAL NET 498- 8120) in the Office of Structure Maintenance and Investigations for further information.

Pre-Job Discussion Between District and Structure Personnel

Pre-job conferences are mandatory and should be held as soon as possible after bids are opened. They should include both Bridge and District Construction Engineers and the Resident Engineer and Structure Representative. Depending on the size, duration, and complexity of the contract, the Area Construction Manager may also need to be included at the pre-job conference. Agreement should be reached regarding the following items:

Office Facilities

It is the District's responsibility to provide suitable office space and furniture for both District and Structures' field personnel. The Structure Representative and the District Resident Engineer should occupy the same office, and District and Structures' personnel should be housed in the same building.

Staffing the Project for the Total Work

The total work (both road work and structure work) should be considered and full advantage taken of instances where people could be used inter-changeably to reduce the combined number of people on the project. A review of staffing requirements should be made as soon as the Contractor's schedule is available.

Division of the Work

The work should be categorized between road work and structure work. This division should not only be by item, but in some cases, by portions of items or by units of the work. If it is not practical to make this categorization at the first meeting, it should be done as soon as practicable.

Written Report

The Structure Representative shall write a confirming report to the Resident Engineer which will summarize the agreements made at the pre-job discussion between District and Structures personnel. This report will give a breakdown of the work distribution between District and Structures, including the portion of mobilization attributable to structure work, and briefly describe any other pertinent agreements between the Structure Representative and the Resident Engineer. One copy of this report is to be sent to the Office of Structure Construction in Sacramento, one copy is to be sent to the appropriate Area Construction Manager, and one copy is to be given to the Bridge Construction Engineer.

Bridge Deck Contours and Geometrics

Plans prepared by the Offices of Structure Design contain a scaled deck contour plot. Two full sized "4-scale" copies of the deck contours will be included with the RE Pending File sent from the Offices of Structure Construction Headquarters in Sacramento. Electronic copies of the contours are available by request from the Design Engineer.[1]

For jobs that do not include a scaled deck contour plot in the contract plans, it will be the Structure Representative's responsibility to prepare bridge deck contour plots. The Structure Representative may elect to use one of the following methods to prepare a plot of the bridge deck contours:

1. Hand-draw bridge deck contour plots on the job.
2. Request a plot from the Design Engineer after providing the following:
   a. A topographic survey with points recorded every 10 feet along the saw-cut line with at least one more point taken transverse to the saw cut line to approximate the existing cross-slope.
   b. A hand-plotted, profile grade along the saw-cut line, using a best-fit line or curve.
   c. Shots taken at the BB and EB.
   d. A few points taken off the structure, at either end, to help fit existing conditions.

In addition:

a. Points should be stated in relation to Station, Offset (Right or Left), and Elevation.
b. Communicate with the Design Engineer to work out the best fit for any cross-slope discrepancies. (As-built versus as-designed)

[1] A full-size plotter and appropriate software will be necessary to produce hard copies

Structure Personnel Job Assignment Information

Form DS-OS C1, Job Assignment Form

Office of Structure Construction personnel assigned as Structure Representatives will inform the Office of Materials Engineering and Testing Services of their assignment as soon as they report to the job. Form DS-OS C1 will be used for this purpose, and copies of the completed form will be distributed as noted on the form.

A supply of forms will be sent to the Structure Representative by the Office of Structure Construction in Sacramento at the beginning of each job. Additional forms may be requested from the Office of Structure Construction in Sacramento as required. (See Bridge Construction Records and Procedures, Volume I, Section 16 for sample Form DS-OS C1)

Form DS-C0017, Change of Address and Check Disbursement, Field Personnel

When Structure field personnel change either field assignment, home address, or field address, they shall submit this information on Form DS-C0017. Information should be submitted promptly to the Office of Structure Construction in Sacramento. A sample of this form may be found in Bridge Construction Records and Procedures, Volume I, Section 16 or it may be downloaded from the Office of Structure Construction BBS. This form may also be returned to the Office of Structure Construction via the BBS (send to "Mailroom" mailbox).

Assignment of Structure Representative

Assignment of a Structure Representative to a construction project is accomplished by means of an assignment letter. The letter will confirm prior oral instructions, if applicable. It is not unusual for assignment letters to be issued after the Structure Representative has reported to the new assignment.

The assignment letter is written under the direction of the appropriate Area Construction Manager or the Bridge Construction Engineer. It will include:

- Effective date of assignment.
- Designation of the Structure employee's first-line supervisor.
- Instructions relative to retaining or changing Source Code.
- Designation of Headquarters.
- Other administrative instructions, as required.

- Enclosures:

    1. RE Pending File
    2. *Form FA-0205, Authorization to use Privately-Owned Vehicles on State Business. This form should be filed annually for all Structure employees.
    3. **Form DS-OS C1, Job Assignment Form.
    4. **Form DS-C0017, Change of Address and Check Disbursement, Field Personnel.
    5. *Form STD 653, Long-Term Assignment Information and Certification of Subsistence Rates.
    6. Form DAS-CS 172, Progress Pay-Estimate Project Initiation or Update.

The Structure Representative should check to see that all instructions, information or materials listed below have been furnished. If additional information, forms, etc., are needed, they should be requested from the Office of Structure Construction in Sacramento.

Assignment of Structure Representative's Assistants

Assignment of Structure personnel to assist the Structure Representative on a construction project is also accomplished by means of an assignment letter. The letter will confirm prior oral instructions, if applicable. It is not unusual for assignment letters to be issued after the Structure Representative's assistants have reported to the new assignment.

The assignment letter is written under direction of the appropriate Area Construction Manager or the Bridge Construction Engineer. It will include:

- Effective date of assignment.
- Designation of Structure Representative.
- Designation of the Structure employee's first-line-supervisor.
- Instructions relative to retaining or changing Source Code.
- Designation of Headquarters.
- Other administrative instructions, as required,
- Enclosures:

    1. *Form FA-0205, Authorization to use Privately-Owned Vehicles on State Business. This form should be filed annually for all Structure employees.
    2. **Form DS-C0017, Change of Address and Check Disbursement, Field Personnel.
    3. *Form STD 653, Long-Term Assignment Information and Certification of Subsistence Rates.

*sent only if applicable
**available on OSC field computers

Communications Between Structure Field Personnel and Structure Headquarters

Whenever possible, questions concerning construction methods and/or details, as well as routine questions concerning administrative procedures should be taken up with the Bridge Construction Engineer (BCE) and/or the Area Construction Manager (ACM) in whose area the project is located. If an answer or decision is needed immediately and the BCE or the ACM cannot be contacted, then refer the question to the staff personnel of the Offices of Structure Construction Headquarters (HQ) in Sacramento for the area in which your project is located.

Personnel can contact the following Offices of Structure Construction HQ Office Seniors for assistance:

- Ms. Cheryl Poulin for Districts 01, 02, 03 and 07 at (916) 227-8309.
- Mr. John Drury for District 04 and Toll Bridge at (916) 227-8809.
- Mr. John Lammers for Districts 05, 06, 08, 09 and 10 at (916) 227-8445.
- Mr. Eric Olives for Districts 11 and 12 at (916) 227-8984.
- Mr. John F. Walters for Falsework, Trenching & Shoring, Railroad and CIDH at (916) 227-8060.

All of the above-noted personnel as well as the Office Associates may also be contacted at (916) 227-7777.

Additional resources for personnel statewide to consider are:

- Ms. Dolores Valls, Structure Construction Deputy Division Chief, (916) 227-8845.
- Mr. Steve Altman, HQ Office Chief for Districts 01, 02, 03, 05, 06, 07, 08, 09 and 10, (916) 227-8585.
- Mr. John Babcock, HQ Office Chief for Districts 04, 11 and 12, (916) 227-8871.

All correspondence from field personnel requiring action by the Offices of Structure Construction HQ must include the following:

- Shall be addressed to Ms. Dolores Valls, Deputy Division Chief, Offices of Structure Construction.
- Shall be dated.

- Include the project name, location, contract number and federal project identification number (if applicable) shown in the upper right-hand corner of all letters. The job stamp may be used for this purpose.
- The Structure Representative's recommendations.

Submit copies of outgoing correspondence to the Offices of Structure Construction HQ in Sacramento per Bridge Construction Memo 3-1.0.

During construction, it is permissible for field personnel to communicate directly with personnel in other Offices within Division of Engineering Services (DES). It is imperative that the Structure Representative's first-line supervisor be kept informed of any matter affecting the structure construction work. It may be necessary for field personnel to confirm discussions in writing if the discussion resulted in an appreciable change or in the preparation of a Contract Change Order. Copies of confirming memos should be sent to the Structure employee's first-line supervisor, the Offices of Structure Construction HQ in Sacramento and the appropriate ACM.

Rubber stamps to record receipt of incoming mail should be requisitioned from the District. These stamps may be used to show the date, time and whom the mail was received in the field.

Correspondence with the Contractor

All correspondence between State representatives and Contractors must be addressed to the Prime Contractor, even though the subject matter may be of direct concern only to a Subcontractor. Written instructions are given to Subcontractors by means of copies of letters to the Prime Contractor.

If the Structure Representative prepares a letter to the Contractor, it must be assured that the Resident Engineer receives a copy and that the Resident Engineer's name appears at the bottom of the letter. The exact procedure to be followed may vary from job to job. The Structure Representative should reach agreement as to form and procedure with the Resident Engineer before writing any letters to the Contractor.

On written request of the Contractor, shop drawings and/or other plans submitted by a Subcontractor for review and approval by the Engineer may be returned directly to the Subcontractor. In such instances, however, any related correspondence is still addressed to the Prime Contractor with copies to the Subcontractor.

The Structure Representative should discuss this procedure with the Resident Engineer and the Contractor, and if the Contractor wants shop plans returned directly to the Subcontractor or Fabricator involved, then a letter to this effect should be written to the District with a copy to the Office of Structure Design, Documents Unit. The Documents Unit will always return shop plans to the Prime Contractor unless written instructions to the contrary have been received from the Prime Contractor.

More detailed instructions relative to the submission and review of structural steel drawings, prestress concrete drawings, shop plans for earth retaining structures, etc., are given in Bridge Construction Records and Procedures, Volume II.

Improvement Suggestions from Construction Personnel

In order to obtain the maximum benefit from experience gained by personnel assigned to construction projects, Structure Policy & Innovation (SP&I)/Office of Structure Quality Management has developed a Lessons Learned/Quality Improvements website[1] for any structure personnel to send in suggestions or comments. Your input may help improve the construction, design, plans or specifications for future structures or building projects. Your input will aid in identifying potential policy, guidance, or procedural changes that need to be made to improve project delivery. Suggestions or comments can be submitted using the following process:

1. Submit a lesson learned/quality improvement on the website.[1.]
2. Submittals are sent to the following email address, DES Lessons Learned@dot.ca.gov and cc the SC.Office.Associates@dot.ca.gov
3. Submittals will be vetted through the Structure Construction Management to determine feasibility, practicality, and urgency.
4. Any submittal slated for denial in #3 above will be reviewed by the DES/Deputy Division Chief/Structure Construction.
5. SP&I process for handling changes to guidance material and lessons learned are on the website[1] under the *Flowchart* link.
6. Notification to the Submitter will be accomplished by providing courtesy copies (cc's) of all electronic communications to the email address provided on the submittal form.

Submittals that are not specific to Division of Engineering Services controlled operations or functions will be forwarded to the appropriate Division/Office for consideration.

The instructions in this Bridge Construction Memo are not intended to be in conflict with the State's Employee Suggestion Program[2]. An employee may at any time also present their suggestion to the Employee Suggestion Program for consideration.

In addition, Structure Construction (SC) employees are encouraged to provide input on any suggestions to improve SC operations or resource materials. This can be done through your chain of command, SC Technical Teams, or sending an email to the SC.Office.Associates@dot.ca.gov.

[1] http://des.onramp.dot.ca.gov/structure-policy-innovation
[2] http://admin.dot.ca.gov/tr/ldo/recognition/merit_awards.shtml

Structure Design Technical Committee Members

Structure Design Technical Committees have been established to develop, review, and update changes to AASHTO Specifications, Bridge Design Manuals, Standard Plans, Standard Detail Sheets, Standard Specifications, Standard Special Provisions, and items submitted by the construction engineers that affect the efficient operation of the Department and economy of structures. Individual Technical Specialists are designated for various specific areas.

Intranet links identifying the current members of the *Structure Design Technical Committees* and the *Individual Technical Specialists* are located on the Structure Design Intranet and in the Caltrans Memo to Designers at the following locations:

Structure Design Technical Committees

Structure Design Intranet:
http://onramp.dot.ca.gov/hq/esc/sd/SD_techComitee061510P.shtml

Structure Design Memo to Designers 1-2, Attachment 1:
http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-memo-to-designer/page/Section%201/1-2.1.pdf

Individual Technical Specialists

Structure Design Intranet:
http://www.dot.ca.gov/hq/esc/Structure_Design/ssi/DesignIntranetTechnicalSpecialists062110.doc

Structure Design Memo to Designers1-2, Attachment 2:
http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-memo-to-designer/page/Section%201/1-2.2.pdf

Footing and Seal Course Revisions

To eliminate any possible misunderstanding about field revision of the elevation of spread footings, the elevation of pile footings where a seal course is involved, and the revision or elimination of the seal course, a letter regarding these subjects shall be written to the Contractor before foundation excavation is started on any project. The letter will include the following points:

1. A reminder that the Standard Specifications, Section 51-1.03, provides that the "elevations of the bottoms of footings shown on the plans shall be considered as approximate only and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be necessary to secure a satisfactory foundation."

2. On jobs involving seal courses, a reminder that under the contract the Engineer determines whether seal courses shown on the plans shall be used as shown, changed in thickness, or entirely eliminated, depending upon the water conditions existing at the time. Refer to Section 51-1.10 and Section 19-3.04 of the Standard Specifications.

3. A statement that the Engineer will establish final footing elevations, and/or determine the need for seal courses at the earliest time possible consistent with progress of the work, and that the Contractor will be informed in writing of the Engineer's decision.

4. A closing statement to caution the Contractor that should they elect to do any work or order any materials before receiving the Engineer's decision regarding spread footing elevations, pile footing elevations where seal courses are involved, and revision or elimination of the seal course, they do so at their own risk and assume the responsibility for the cost of alterations to such work or materials in the event that revisions are required.

Note that the elevation of pile footings where no seal course was planned would normally not be raised or lowered to secure a satisfactory foundation. Therefore, the Contractor may logically assume that the footing will be constructed at the planned elevation. In the event that the Engineer changes the elevation of a pile footing (where no seal course is involved) after the Contractor has done work or ordered materials, then the State must assume the responsibility for the cost of the alterations.

Since the plans and Standard Specifications are worded so as to give bidders only the estimated depth of footings and the estimated thickness of seal courses, the following revisions do not constitute a change in the plans or specifications:

1. Raising the bottom of a spread footing above the elevations shown on the plans.
2. Lowering the bottom of a spread footing two feet or less below the elevation shown on the plans.
3. Increasing or decreasing the thickness, or the entire elimination of a seal course to suit water conditions actually encountered, as determined by the Engineer.

Increases and decreases in the quantity of any contract item (except seal course concrete) caused by these footing revisions must be accepted by the Contractor at contract prices, unless the 25-percent limitation is exceeded. In the case of seal course concrete, no price adjustment will be made when seal courses are omitted, regardless of the percentage of decrease. See Section 51-1.22 of the Standard Specifications.

Even though the changes listed above are contemplated by the contract, change orders will be required if any of the items involved have fixed final pay quantities. Note that change orders authorizing footing revisions must include ALL items affected by the change, not just those items having a fixed final pay quantity.

Preservation of Property

General Information

Structure construction operations frequently occur in areas where there are existing utilities or other improvements which must be protected from damage and preserved or relocated. It is general practice to show utilities or other improvements on the plans, or list them in the Special Provisions. There are occasions, however, when utilities or improvements which exist in the construction area, are not shown on the plans or in the specifications or are shown on the plans in a location other than where they are found in the field.

The Resident Engineer is responsible for the overall contract administrative duties associated with protecting and relocating utilities and improvements. However, in order to eliminate the possibility of utilities or improvements being damaged or destroyed, the Structure Representative should become familiar with the utilities and improvements shown on the plans and in the specifications. The Structure Representative should also make a special effort to determine if any utilities or facilities are existence which do not show in the plans or specifications, and the Structure Representative should be aware that such things as survey markers, bench marks, high water marks and objects of archeological or historical significance may be encountered in construction sites. All such items must be protected from damage or relocated in accordance with the following details.

Protecting Utilities and Improvements

The Standard Specifications require the Contractor to preserve and protect from damage, existing highway improvements or facilities, existing utility facilities, existing property improvements, etc., whether they are publicly or privately owned, and which are located within or adjacent to the highway right-of-way.

In connection with facilities and improvements which are identified on the plans or in the Special Provisions, the Engineer has the authority to require the Contractor to furnish and install suitable protective devices to prevent property damage, and to require the Contractor to restore or repair any facility or improvement which may have been damaged by the Contractor's operations. However, the Contractor's general responsibility includes only the installation of such devices as are actually necessary to protect against their operations. Any permanent protection which may be required, but which is not a part of the contract, must be authorized by contract change order.

In the event that the Contractor discovers underground facilities not identified on the plans or in the Special Provisions, the Contractor shall immediately give the Engineer written notification of the existence of such facilities. Such facilities shall be relocated or protected from damage, as directed by the Engineer, and the Contractor will be paid for such work as extra work.

Utility Relocation

The *Caltrans Construction Manual* covers this subject except for railroad work. All questions concerning permanent and/or temporary relocation of railroad facilities, including related utilities such as telegraph and signal communication lines, are handled through the Office of External Liaison and Support, Local Assistance and Program Branch, Agreements Section.

Salvage of Objects of Archeological Significance

Occasionally, foundation excavations will disclose objects which appear to be of archeological or historical significance. Such objects will include fossils, artifacts, ruins, buildings and building sites, and other objects of antiquity which may have significance from a scientific or historical viewpoint. When such objects are discovered, reasonable precautions must be taken to protect the object and the surrounding area until the value of the find can be determined. Reasonable precautions include stopping the operation, if necessary.

The District Heritage Resources Coordinator acts as the coordinator between Caltrans and other agencies or institutions. If structure excavations disclose hitherto unknown objects which appear to be of archeological or historical significance, the Structure Representative shall notify the Resident Engineer. The Resident Engineer will then notify the District Heritage Resources Coordinator for further instructions.

Relocation of Survey Monuments and Bench Marks

Caltrans is required by the State Contract Act to arrange for the relocation of all monuments of record belonging to other governmental agencies if highway construction would otherwise result in their destruction.

Relocation of survey monuments and government bench marks will be handled by the District. The Structure Representative should notify the Resident Engineer when survey monuments are encountered and need to be relocated.

Existing High Water Marks

Some existing structures have high water marks painted on them. If these structures are widened, repaired or replaced, the elevation of the previously painted high water mark should be taken and recorded. If these high water marks are lost during construction, they should be replaced at the completion of the work.

Traffic Control

General Information

General instructions concerning the routing of public traffic through and around construction projects are found in the Caltrans *Construction Manual*. Office of Structure Construction personnel are expected to familiarize themselves with these instructions.

All field personnel are reminded that the intent of present Caltrans policy with respect to the handling of public traffic in construction zones is that normal traffic movements be permitted to continue with as little inconvenience and delay as possible. This policy dictates an expeditious handling of traffic (both vehicular and pedestrian) at all times while construction work is underway.

Public Safety and Public Convenience

The Standard Specifications make a clear distinction between traffic control devices which are installed for the convenience of the traveling public and signs, lights, barricades and other devices which are required to ensure public safety. Note that the term "public" includes anyone passing through or affected by the construction work underway, and includes pedestrians and residents as well as vehicular traffic.

In general, the specifications leave the manner and sequence in which work is performed to the discretion of the contractor and the contractor has the responsibility of providing for public convenience and ensuring public safety. However, State personnel must at all times be aware of the effect of contract work on the traveling public, and must be satisfied that the contractor is conducting his operations in a manner which fully complies with contract requirements.

Office of Structure Construction personnel should cooperate and assist the Resident Engineer in situations involving structure construction and public traffic. The Resident Engineer should be kept informed of any unsafe conditions or problem areas.

Safety is everyone's concern and responsibility.

Opening or Closing of Road or Structure

When structures, sections of highways or detours which have an appreciable effect on traffic movement are opened or closed to traffic, the District handles all necessary notices to local agencies and to the Caltrans Headquarters office in Sacramento.

Structure Representatives will see that the Resident Engineer is kept informed of opening or closing of structures to traffic. The Office of Structure Construction is notified only by entries in diaries and weekly newsletters.

Acceptance of Structure Work

Relief from Maintenance and Responsibility

Under the provisions of the Standard Specifications, the Contractor may, under certain circumstances, be relieved of the duty of maintaining and protecting portions of the work which have been completed in all respects in accordance with the requirements of the contract.

Requests from the Contractor for relief from maintenance and responsibility must be in writing to the Resident Engineer. If structures are involved, the Resident Engineer will request that the Structure Representative provide information regarding the status of completion of the involved structures. The Structure Representative will then advise the Resident Engineer if the involved structures are complete in all respects. If the involved structures are not complete in all respects, the Structure Representative will advise the Resident Engineer of the work remaining to be done. Relief from maintenance for structures cannot be granted unless the structure is complete in all aspects. This information should be presented to the Resident Engineer in writing.

The Office of Structure Construction in Sacramento should be kept informed of the status of the structures by Daily Report entry or Weekly Newsletter.

For general discussion of Caltrans policy regarding relief from maintenance and responsibility, see Chapter 2 of the Caltrans *Construction Manual.*

Completion of Work and Acceptance of Contracts

The Resident Engineer files the notice of completion, and the work can be accepted only by the District Director in each District.

The Resident Engineer may request the recommendations of the Structure Representative prior to submitting a notice of completion The Structure Representative's recommendations should be given to the Resident Engineer in writing.

Completion of Structure Work

The Structure Representative shall advise the Office of Structure Construction in Sacramento of the date when all structure work on a contract is complete. This notification shall be in the form of a written memo and shall be submitted as soon as the structure work is complete.

Volume I

JOB COMPLETION RECORDS

Structure Representatives should review their contract Special Provisions and project documents to ensure that all final drawings and required shop drawings are sent to the DES Documents Unit prior to contract acceptance. Appropriate administrative deductions should be made in accordance with Section 3-911 "Payment of a Progress Estimate After Contract Acceptance" of the Construction Manual for all outstanding job records until the Structure Representative is assured they have been received.

Typical submittals requiring final or 'as-built' shop drawings include:
MSE Walls
Soil Anchors
Micropiles
Steel Column Casings- Flared columns only
Alternative Column Casings
Seismic Isolation Bearings
PTFE Bearings
PTFE Spherical Bearings
Viscous Dampers
Joint Seal Assemblies
Prestressing Cast-in-Place Concrete
Prestressed Girders
Structural Steel
Shock Transmission Devices
P/C P/S Concrete Deck Panels
Proprietary Systems: Alternative Retaining Wall Systems
Alternative Pile Systems
Proprietary Soundwalls (Carsonite, Port-O-Wall)

It is important that the Structure Representative check their contract documents and Special Provisions for project specific requirements. If the shop drawings are sent directly to the Structure Representative, they should review for accuracy and then forward the drawings, if complete, to the DES Documents Unit. Some items may require the Contractor to submit the final drawings directly to the Documents Unit and the Structure Representatives may have to verify that all drawings have been received. Some submittals are required within 3 weeks of working drawing approval and not structure completion.

You can verify the status of submittals for your contract by going to the OSC's website and clicking on the link to the tracker website, a database for the Documents Unit. By entering your job EA you can check: project personnel, documents received, document status, documents transmitted and project chronology. It is important to verify addresses for the Contractor and project personnel and contact the Documents Unit with any corrections.

If you have any questions concerning the DES Document Unit records on your contract, please contact Manjit Sandhu at (916) 227-8252. For further assistance regarding the submittal of final documents, please contact the OSC HQ Office Associate assigned to your District. The mailing address for the Documents Unit is:

Offices of Structure Design, Documents Unit MS 9
1801 30th Street
Sacramento, CA 95816

C: BCR&P Manual Holders
Consultant Firms
R.Pieplow, Division of Construction
R.Land, Structure Design

Labor Compliance

The basic responsibility for tracking contractor Labor Compliance will belong to the Districts. However, the Structure Representative will help whenever requested to do so by the Resident Engineer.

Disasters Affecting Bridge Work

The Office of Structure Construction has been faced many times with the necessity for taking immediate action to maintain bridges damaged or destroyed by earthquakes, flood, fire, and traffic accidents. When disasters are widespread and many bridges affected, the necessity for immediate investigation to determine the extent of damage as well as the actual restoration work involved requires an effort far beyond that which the Office of Structure Maintenance and Investigations is staffed to handle. Under these circumstances all Structure personnel are expected to assist in obtaining information as to the extent of the disaster and the damage sustained by State highway facilities, and to perform other activities as required to minimize the time between the occurrence of the disaster and restoration of highway facilities.

When disasters are widespread, regular lines of communication and transportation are often cut off; therefore, it is necessary to rely on the geographical distribution of field personnel to obtain needed information. If telephone communications have been destroyed, Office of Structure Construction personnel should use radio communications. If the Structure employee's State vehicle is not equipped with a radio, use District Maintenance radio facilities. If the Structure employee's State vehicle is equipped with a radio and no emergency exists in the immediate area, report in to the nearest District Communications Center so that available personnel may be utilized where needed. The important point is to establish communications with the Office of Structure Construction Headquarters and the District office, preferably through the Area Construction Manager, without delay, if a disaster should occur.

While field personnel will be expected to use their own judgment as to the immediate action to be taken, the following check list may be used as a guide by personnel who are in the vicinity of bridges which are damaged or destroyed as a result of a disaster:

1. After securing the safety of their home and family, and the stability of their project worksite; Structure personnel in the vicinity of the disaster will make an immediate investigation of all structures in the affected area to determine the extent of damage. See Attachment No. 1 for suggested guidelines to assist in determining the extent of damage.

2. If any structure has been destroyed or sustained damage which would render it unsafe for public traffic, immediate steps should be taken to close it to traffic. Road closures or restrictions should be reported immediately to the District office and to the California Highway Patrol. If District personnel are present, the matter of traffic control should be left to them-and Structure personnel should give whatever assistance is required.

3. As soon as possible a damage report should be made to the Office of Structure Construction in Sacramento, the District office and the Area Construction Manager by the most expeditious form of communication available.

4. When inspecting damaged bridges, sufficient data should be collected to make possible a realistic appraisal of the damage and an accurate estimate of the repair work which will be required. The data reported should be as complete as possible, including the time and day that the report was made, the bridge name and number and the exact location, (i.e. the route and post mile).

5. Take pictures and submit them as soon as possible to the Office of Structure Construction in Sacramento. If the bridge has been destroyed or closed to vehicular traffic, investigate the site to determine the feasibility of a detour crossing and include this information in this information in the report.

SUGGESTED GUIDELINES WHEN INSPECTING FOR STRUCTURAL DAMAGE AFTER A DISASTER

1. Much of the damage will be at transverse joints, hinges, abutments, etc. These areas indicate how much movement has occurred, which is an indication of how much damage to expect.
2. Misalignments at joints, particularly for skewed structures may be an indication of serious damage. Examples of where damage may have occurred include places where the face of the barrier rail does not line up, or where the deck joint has a sizeable "bump" or step.
3. Concrete spalls at barrier rail parapet joints may look bad; however, these spalls may be caused when hinge areas move more than the rail joints provide for. If the front and top face of the barrier rail lines up and the deck is without significant steps, then the bearings are probably in place and functioning,
4. In plain view, skewed bridges tend to rotate in the direction of the acute corner of the skewed deck surface. This may result in significant spalling of the rail parapet face. If at least fifty percent of the bearing area has contact, the concrete bridge probably can remain open. However, the bearings may need repair as soon as possible.
5. Diagonal shear cracks at bents and piers may not be serious if the bottom soffit/column joint appears normal.
6. It is not necessary to determine what may have caused the cracks in the concrete. Just record your observations in your report for the Office of Structure Maintenance and Investigations.
7. The conventional numbering sequence should be used to describe the damage. Conventionally, post miles increase from south to north and from west to east. Conventionally, girders are numbered from left to right as you stand on Abutment No. 1 and look upstation. Structure personnel numbering convention that is peculiar to their area. Thesedifferences are common in metropolitan areas where the NS/ E-W routing may be meaningless. If the numbering sequence is not known, assume the conventional numbering sequence and state the assumption on the report.
8. When determining damage, rough measurements may become necessary and are useful. More accurate measurements can be taken if damage appears to be critical during later analysis of your findings.
9. For steel girder bridges, look for bowed members, since the X-bracing between girders may have buckled. Welds do not normally shearcrack unless the brace members are very stiff. The carrying capacity of the steel girder may not be adversely affected unless they are out of plumb. Bearings for steel girder bridges are critical. Reduced bearing areas under steel girders may potentially cause the girders to rotate out-of-plumb.
10. During high water, note debris or log jams that may cause damage to the superstructure by lateral loading, or by directing high flows under the footings, causing undermining. Note the size of the debris or log jam in your report so that Maintenance forces will have some idea of how to remove it. After high waters recede, check steel Xbracing and girder bearings as described in Note 9 above.
11. After high waters recede, check rip/rap slope protection upstream and downstream of bridge abutments for signs of failure. Check levees at abutments for signs of piping and

failure. Look for exposed piling at footings and suggest appropriate emergency repair techniques in your report. Note approximate floodwater levels by silt marks or debris in surrounding vegetation or watermarks on structure. review.

12. Don't be forced into actions that are against your better engineering judgement. State your informed opinion and stick with it. Be conservative but not overly cautious when determining if a bridge should be temporarily closed to public traffic as it can later be reopened after further
13. Watch out for your own personal safety. Be alert for situations' that are dangerous. This may require you to get assistance when entering areas that are known to be unsafe.
14. These guidelines are written to address our response to natural disasters. However, they may be applied to any event that threatens structures.

Permanent Reference Elevations

General Information

To determine future settlements and deflection, permanent reference points will be required at designated locations on structures on the State highway system.

Instructions

Unless otherwise instructed, permanent reference points must be established along both sides of the structure at pier and abutment centerlines, at the mid-point of all spans over 50 feet in length, and at the ends of cantilevered wingwalls.

Permanent reference elevation points shall be placed so that they may be easily located, and so that a level rod may be placed on the point when making future elevation determinations.

To promote uniformity of locating permanent reference points, the following guidelines should be complied with:

1. On barrier railings having a metal rail element, use the top of the outside rail anchor bolt nearest the designated location as a permanent reference point. Bolts used as reference points shall be marked by chiseling or sawing a cross (x) in the top of the bolt.

2. Where structures have other types of rail with no vertical anchor bolts, or where the anchor bolts will be inaccessible, use special copper nails as permanent elevation points. These nails may be located in the top of sidewalk or curb, in the top of deck, or in the top of a concrete barrier rail. If located in curbs or sidewalks, place the nails about six inches from the curb face. If located in the deck surface, set the nails about six inches from the edge of deck.

Copper nails should be requisitioned from the local District office supply room.

At the completion of the job, elevations accurate to 0.005 foot must be taken on all permanent reference points. The District survey crew may be called in to elevate the permanent reference points. However, if the Structure Representative chooses to elevate the permanent reference points, the level should be peg-tested prior to taking the final elevations. Tie the level circuit to a permanent bench mark; do not use assumed elevations. A copy of the "field notes", which were recorded when establishing the "Permanent reference elevations", should be forwarded to the

Office of External Liaison and Support, Planning and Liaison Branch, Preliminary Investigations Section.

The elevation and location of all permanent reference points must be shown on the "As-Built" plans. Show on the bridge general plan if possible; otherwise, add a reference note on the general plan to indicate the sheet where the elevations may be found.

On structures where a special deflection study is required, instructions concerning the location of reference points and accuracy and frequency of reading elevations will be given to the Resident Engineer or Structure Representative at the beginning of the job. Since the purpose of these deflection studies is to provide information for the Research Section, the special instructions must be strictly followed.

Encroachment Permits

Proposals for placing any encroachments on or near bridges, whether existing or planned, are approved by the Office of Structure Maintenance and Investigations prior to the issuance of permits by the District.

At the beginning of the contract work, the Structure Representative should review the plans for encroachments, and determine that a permit has been issued for each encroachment on or near a bridge. The District Encroachment Permit Branch should be informed of any encroachments which are shown on the plans, but for which no permit has been issued. No encroachments are to be placed on or near bridges until the required permit has been obtained. The Structure Representative is to enforce the provisions of the permit for such details as supports, casings, vents, etc. Problems of a structural nature should be referred to the Office of Structure Design.

Bribes

Structure Construction personnel shall not accept bribes. They shall immediately advise their Area Construction Manager of any bribery attempts.

Constructability Review

Introduction

In a 1998 memo, the Caltrans Program Manager of Design and Local Programs called for all the districts to enact the use of a formal Constructability Review (CR) during the project initiation and design phases of the project development process. The goal of a CR is to improve overall constructability, thus reducing contract change orders, claims and traffic delays. Division of Engineering Services (DES) has developed procedures for constructability reviews on projects delivering a structures Plans, Specifications, and Estimate (PS&E) state highway system package. This BCM provides direction to OSC staff on the CR process and responsibilities.

Background

Since the 1998 memo, each district has developed a system for addressing constructability reviews. DES has developed an internal process to address these reviews. A CR is a recognized Quality Assurance (QA) element of project delivery, and is intended to supplement, not replace, the use of the Project Delivery Team (PDT) and other reviews. The purpose of the CR process is to ensure DES Structures projects have addressed all constructability issues. Coordination of the design Task Manager will be necessary to address the district constructability review milestones (30%-60%-90% of final PS&E) and the DES structures constructability checkpoints. The DES structures checkpoints include the Advance Planning Study (APS), General Plan (GP) Stage, Unchecked Details (UD) stage and draft structures Plan, Specifications, and Estimate (dsPS&E) stage. The design Task Manager (TM) will be coordinating these reviews with the district to prevent independent efforts. See the DES Structures Constructability Review Process Guidelines and Memo-To-Designers (MTD) 1-31 for more information.

Project Levels

Since projects vary in complexity, the department has established distinct project levels to be considered in the CR process. Correspondingly each level has different CR requirements.

Level 1:

- Large, complex roadway/facility or building projects.
- Complex interchange construction or modifications.
- Large structure projects with complex or high cost features.
- Large rehabilitation projects which include major replacements of structures or other features.

Level 2:

- Less complex roadway/facility or building projects.
- Less complex structure or interchange projects.

- Most rehabilitation projects which include structure rehabilitation, minor widening or safety improvements.

Level 3:

- Capital Preventative Maintenance projects (CAPM) or Minor B projects that include structural features, such as barrier upgrades, deck rehabilitation, joint seal replacement, approach slabs and similar projects.

Review Stages

The DES has established the following constructability review stages for the various project levels that have been established by the department.

Structures Constructability Review Checkpoints

Review Stage	Level 1	Level 2	Level 3	Project Phase	WBS Code	WBS Description
Advance Planning Studies	**X**	**X**	**X**	**K or 0**	**150.15.30 or 160.10.85**	**Structures Advanced Planning Study (APS)**
General Plans	**X**	**X**		**1**	**240.75**	**Draft General Plans**
Unchecked Details	**X**			**1**	**240.85**	**Draft Structure Plans**
Draft Structures PS & E	**X**	**X**	**X**	**1**	**250.50**	**Project Review**

Typically the CR will be completed in conjunction with the Type Selection meeting. For the final CR, at the dsPS&E stage, the design TM will schedule a meeting. This is the last opportunity prior to project advertising, thus an in person meeting affords the quickest avenue for finalizing project issues.

APS	=	Advance Planning Study
GP	=	General Plan- associated with Type Selection
Unchecked Details	=	Typically associated with 65% complete stage
dsPS&E	=	draft structures Plans, Specifications, and Estimate

Constructability Review Process

The DES process and desired outcomes are presented in Attachment No 1.

Constructability Review Tools

Constructability reviewers are to utilize the DES CR Feedback Form for making comments (form is located on the OSC website). Some districts have developed their own feedback form, if this is the case, the reviewer may elect to use the district form so as not to duplicate their efforts.

Checklists have been developed to assist in performing a CR for a structures project. The checklists can be accessed on the OSC website and are provided to focus attention on key issues.

Feedback During Construction

During construction, the field representative shall contact the Structures Project Engineer to discuss any structures related contract change orders addressing design issues. This feedback process is intended to reduce repeatable construction problems. During construction, the Project Engineer is encouraged to visit the jobsite with the Structure Representative as well as on a final walk-through.

Constructability Review Close Out

Many districts have integrated a close out meeting to review lessons learned. If the District does not initiate a close out meeting, the OSC Senior is to discuss conducting a close out meeting with the design TM for a Level 1 project and if warranted for a Level 2 project. Close out meetings are a tool to improve communication back to design on issues encountered during the construction phase, and look for ways to integrate lesson learned into future projects. Issues discussed at the closeout meeting with broader implications on future projects, should be raised to an ACM level for further review. Potential specification or standard plan changes should be directed to the appropriate OSC Technical Committee for pursuing changes.

Constructability Review Responsibilities

Area Construction Manager:

- Ensure area staff is aware of constructability roles and responsibilities.
- Maintain performance records on CR status for projects in their area.
- Participate as appropriate, i.e. in large complex projects.

Bridge Construction Engineers:

- Identify who the reviewer will be for a specific project.
- When a CR is requested for a project in their area, ensure timely CR input is provided on the Feedback Form and plans as needed. An ACM may elect to have their Senior Specialist conduct the CR. In this case, the specialist is responsible to obtain site specific information and provide input.
- Ensure OSC HQ Office Associate for your area receives a copy of the CR Feedback Form. Typically the OA will be the liaison between design and construction for CR distribution. However, if design/field construction distributes directly, the OA must receive a copy for tracking purposes.
- When a project field review is requested, i.e. from design prior to the Type Selection meeting, ensure appropriate staff is present to facilitate the safe field review of the project limits. Depending on the project, encourage participation by district personnel such as traffic or environmental staff.
- Ensure participation on all DES CR requests and meetings. If staff is unable to attend a Type Selection meeting in Sacramento, encourage participation by teleconference or relaying information to the OSC HQ liaison senior that will be attending the meeting.
- Discuss performing a closeout meeting with structures design personnel particularly on Level 1 projects and when applicable on Level 2 projects.

OSC Field Staff

- Be aware of the CR process employed by the district in which they work.
- Know the basic milestones of project delivery and when constructability reviews take place.
- When requested, provide input for a CR on the Feedback Form and attach any additional comments from a CR checklist or project plan document.
- Provide the OSC HQ Office Associate for your area a copy of the CR comments.
- When requested, participate in a CR related event such as a project field review meeting or Type Selection meeting.

OSC HQ Senior Liaisons

- When requested, determine responsible field staff for a given project to participate in a CR activity.
- Attend Type Selection meetings. Prior to meeting, discuss project specific construction issues with field staff. If field staff is unable to attend meeting, ensure field issues are presented by OSC representative to the meeting and addressed.
- Ensure Office Associates are documenting receipt of constructability reviews and distributing in a timely manner.
-

OSC Office Associates

- Follow duties as outlined in the Office Associate manual for constructability reviews such as tracking distribution and receipt of review.

Constructability Review Process and Desired Outcomes

Review Stage	Process	Desired Outcomes
Advance Planning Studies **Or** **PID Review For Building Projects**	**1. Design TM to identify applicable functional Offices.** **2. Each functional office to identify CR Functional Reviewer.** **3. Optional field review at discretion of Design PE.** **4. Design PE to consult with Functional Reviewers during the development of the APS and incorporate comments as applicable.** **5. Design PE to transmit completed APS to Functional Reviewers for comment.** **6. Functional Reviewers to provide comments on plans and summarize on DES CR feedback form.** **7. Design PE to complete response portion of CR feedback form, respond to Functional Reviewers and file.** **8. Comments that do not impact project programming or PA&ED will be incorporated at the next APS update or during the development of the General Plans.**	**1. Identify issues that impact project programming, specifically issues related to scope and capital costs.** **2. Identify fatal flaws.** **3. Identify proper scope.** **4. Input for project risk management plan.** **5. Identify proprietary systems or potential unusual specification issues.** **6. Identify issues that impact the development of PA&ED or the Project Report.**

Review Stage	Process	Desired Outcomes
General Plans **Or Preliminary Plans for Building Projects**	**1. Update list of Functional Reviewers, if needed.** **2. Mandatory field review at project site prior to Type Selection for Level 1 projects, evaluate for Level 2.** **3. Design PE to consult with Functional Reviewers during the development of the GP and incorporate comments as applicable.** **4. Design PE to schedule Type Selection meeting and distribute package to all Functional Reviewers.** **5. All Functional Reviewers to attend Type Selection meeting (mandatory CR review meeting).** **6. Design Project Engineer to transmit completed GP to Functional Reviewers for comment.** **7. Functional Reviewers to provide comments on plans and summarize on DES CR feedback form.** **8. Design PE to complete response portion of CR feedback form, respond to Functional Reviewers and file.** **9. Comments not incorporated prior to General Plan Distribution will be incorporated at the Unchecked Details stage.**	**1. Identify issues that impact project programming, specifically issues related to scope, schedule and capital costs.** **2. Identify fatal flaws and risks.** **3. Update project risk management plan.** **4. Assess risk for: staging, traffic control, permits, environmental, clearances, site access and utility conflicts.** **5. Evaluate foundation recommendations.** **6. Evaluate aesthetic issues.** **7. Identify potential CRIPs.** **8. Identify proprietary systems or potential unusual specification issues.** **9. Check material availability.**

Review Stage	Process	Desired Outcomes
Unchecked Details **Or** **50% Plans Complete for Building Projects**	**1. Update list of Functional reviewers, if needed.** **2. Design Project Engineer to transmit Unchecked Details to Functional Reviewers for comment.** **3. Functional Reviewers to provide comments on plans and summarize on DES CR feedback form.** **4. Design PE to complete response portion of CR feedback form, respond to Functional Reviewers and file.** **5. Comments received will be incorporated at the draft structures PS&E.**	**1. Identify issues that impact project programming, specifically issues related to scope, schedule, and capital costs.** **2. Resolve previously identified Issues.** **3. Identify proprietary systems or potential unusual specification issues.** **4. Determine status of all permits.** **5. Review non-standard details.**
Draft Structures PS&E	**1. Update list of Functional Reviewers, if needed.** **2. SOE to provide draft SPS&E package Functional Reviewers.** **3. Design TM to schedule Project Review meeting (CR review meeting).** **4. All Functional Reviewers to attend Project Review meeting (mandatory CR review meeting), review dsPS&E package and make final comments.** **5. All Functional Reviewers to incorporate recommendations into their respective functional deliverables (i.e. Hydraulic Report, Foundation Reports, Special Provisions, Type Selection Report) during Project Review.** **6. All Functional Reviewers to concur that all applicable constructability comments have been properly incorporated into the final Structures PS&E.** **7. Design TM to send final CR feedback forms and CR Check List to RE Pending File (OSC HQ).**	**1. Identify issues that impact project programming, specifically issues related to scope, schedule and capital costs.** **2. Resolve previously identified issues.** **3. Review and resolve conflicts with roadway plans: geometry, staging, permits, construction easements.** **4. Identify and resolve construction impacts on plans or specifications: working day estimates, foundation review, utilities.** **5. Final review and updating of all project documents.** **6. Concurrence by Functional Reviewer that project is ready for final SPS&E.**

Administration of Special Funded Projects

Introduction

Local Agencies, such as a city, county, or private entity, may enter into an agreement with the State of California to provide improvements to a State highway within the State right-of-way. Generally, when these projects are funded entirely by the Local Agency, the Local Agency will administer the design and construction of the project and the State will provide oversight of the work administered by the Local Agency under the terms of a cooperative agreement and/or encroachment permit. When these projects are funded with a combination of local and State funds, the responsibilities for administration of the design and construction of the project will be shared under the terms of a cooperative agreement and/or encroachment permit.

In general, projects that are special funded in the amount of $1,000,000 or more will be performed under the terms of a cooperative agreement and an encroachment permit. Projects that are special funded in the amount $1,000,000 or less will generally be performed under the terms of an encroachment permit only.

Types of Projects

Types of special funded projects include the following:

- **Local Sales Tax Measure Projects:** Includes projects with funding of 100% from local sales tax revenues with estimated construction costs greater than $1,000,000 that are in the State right-of-way, but not in a State programming document, such as the STIP or SHOPP. These projects require a cooperative agreement and an encroachment permit. State construction contract administration responsibility is usually limited to oversight, depending on the terms of the cooperative agreement and encroachment permit.
- **Locally Funded Projects:** Includes projects with funding of 100% from local funds (other than sales tax revenues) with estimated construction costs greater than $1,000,000 that are in the State right-of-way, but not in a State programming document. These projects require a cooperative agreement and an encroachment permit. State construction contract administration responsibility is usually limited to oversight, depending on the terms of the cooperative agreement and encroachment permit.
- **Privately Funded Projects:** Includes projects that are sponsored by a nonpublic agency with estimated construction costs greater than $1,000,000 that are in the State right-of-way. These projects require a cooperative agreement and an encroachment permit. State construction contract administration responsibility is usually limited to oversight, depending on the terms of the cooperative agreement and encroachment permit.

- **Toll Road Projects:** Includes projects that are sponsored by a nonpublic agency that are in the existing or future State right-of-way. These projects require a cooperative agreement and an encroachment permit. State construction contract administration responsibility is usually limited to oversight, depending on the terms of the cooperative agreement and encroachment permit.
- **Jointly Funded or Cooperative Projects:** Includes projects that involve combinations of special funds and State funds with estimated construction costs greater than $1,000,000 that are in the State right-of-way. These projects require a cooperative agreement and an encroachment permit. State construction contract administration responsibility depends on the terms of the cooperative agreement and encroachment permit.
- **Encroachment Permit Program Projects:** Includes projects that are 100% funded and constructed by either a Local Agency or private developer with estimated construction costs of $1,000,000 or less that are in the State right-of-way. These projects do not require a cooperative agreement, but do require an encroachment permit. State construction contract administration responsibility is usually limited to oversight, depending on the terms of the encroachment permit.

Responsibilities

The Headquarters Encroachment Permit Office in Sacramento is responsible for implementing policy and procedure for providing oversight of the administration of projects by local agencies that require an encroachment permit. This office develops the various encroachment permit forms and is responsible for maintenance and updating of the Caltrans *Encroachment Permit* manual. This office also maintains a Caltrans Internet website (address: http://www.dot.ca.gov/hq/traffops/developserv/permits/) that contains additional information, including the Caltrans *Encroachment Permit* Manual and various Encroachment Permit forms.

The District Encroachment Permit Engineer has overall responsibility for administration of projects that require an encroachment permit. For the purposes of administration of encroachment permits, the District Encroachment Permit Engineer is referred to as the “State’s Representative”. However, for capital projects involving structure work, the District Encroachment Permit Engineer will enlist the assistance of the Districts and the Division of Engineering Services to administer or provide oversight of the administration of the construction of these types of projects. In these cases, the District Construction Oversight Engineer represents the District Encroachment Permit Engineer and acts as the “State’s Representative” on the behalf of the District Encroachment Permit Engineer.

Generally, a design consultant under the administration of the Local Agency prepares plans and specifications for these projects. These plans are reviewed and approved by Structure Earthquake Engineering and Design Support, Office of Special Funded Projects (OSFP) prior to project advertising. The identity of the OSFP Liaison Engineer is shown on the lower left corner of the project structure plans. The Liaison Engineer has responsibility for design oversight of the structures portion of the plans. The Liaison Engineer provides oversight of the consultant’s design support during the construction of the project. Any changes to the plans made during construction must be reviewed and approved by the Liaison Engineer.

The Offices of Structure Construction participate in cooperation with the District Construction Oversight Engineer in the administration of the construction of special funded projects when the project includes structure work.

Forms

Form TR-0120, "Encroachment Permit": The Encroachment Permit is submitted to the Caltrans District Encroachment Permit Engineer by the Local Agency. Submission and approval of the encroachment permit is required by statute before a Local Agency can begin any work in the State right-of-way. Items on this form that are of interest to employees of the Offices of Structure Construction include the "Permit No." and the checkboxes for "As- Built Plans Submittal Route Slip for Locally Advertised Projects". Refer to Attachment No. 1 for a sample of this form.

Prior to advertisement, the Encroachment Permit is submitted, along with the construction contract plans and specifications, to the District Encroachment Permit Engineer for review and approval. For projects with capital improvement work involving structures, the Encroachment Permit also includes the General Provisions and the "Structure Work" special provisions. The "Structure Work" special provisions contain requirements for contract document submittal and project completion record submittal. The "Structure Work" special provisions are contained in Attachment No. 6.

The District Encroachment Permit Engineer will notify the appropriate Area Construction Manager when an Encroachment Permit for construction of projects with capital improvement work involving structures has been submitted.

Form TR-0129, "Progress Billing/Completion Notice": The Progress Billing/Completion Notice is used to report the status of the work that requires an Encroachment Permit. The District Encroachment Permit Engineer or District Construction Oversight Engineer shall fill out this form whenever the fieldwork at the site is complete, the final project completion records for structure or roadway portions of the work have been submitted, and when the completed As-Built drawings for structure or roadway portions of the work have been submitted. For projects with structure work, employees of the Offices of Structure Construction may be designated as representatives of the District Encroachment Permit Engineer. However, this is usually the responsibility of the District Construction Oversight Engineer. Refer to Attachment No. 2 for a sample of this form.

Form TR-0130, "Encroachment Permit Report (Diary)": The Encroachment Permit Report is used to report inspections of the work performed on an oversight project. Employees of the Offices of Structure Construction who perform oversight of construction contract administration shall use this form to report their observations of the work at the site. Refer to Attachment No. 3 for a sample of this form.

Structure As-Built Plans Submittal Route Slip for State-advertised, consultant designed structure projects: This form is used to track the progress of the As-Built corrections and final As-Built tracings for State advertised special funded projects. A copy of this form will be included with the RE Pending File for State-advertised, special funded projects. Responsibilities

for each party are shown on the form. Employees of the Offices of Structure Construction shall fill out the appropriate portions of the form and shall be responsible for completing the As-Built corrections and sending them to the Headquarters Office of the Offices of Structure Construction in Sacramento. Refer to Attachment No. 4 for a sample of this form.

Structure As-Built Plans Submittal Route Slip for Locally-advertised, consultant designed structure projects: This form is used to track the progress of the As-Built corrections and final As-Built tracings for locally advertised special funded projects. A copy of this form will be attached to the encroachment permit package for locally advertised special funded projects. Responsibilities for each party are shown on the form. Employees of the Offices of Structure Construction shall fill out or verify that the appropriate portions of the form have been filled out by the Local Agency's contract administrator, and shall be responsible for reviewing the As-Built corrections compiled by the consultant Structure Representative. Refer to Attachment No. 5 for a sample of this form.

Instruction of Offices of Construction Employees

The following are instructions to Offices of Structure Construction employees assigned to special funded projects. The amount and type of staffing required depends on the terms of the cooperative agreement and/or encroachment permit.

These instructions refer to portions of the Caltrans *Encroachment Permit* Manual (refer to Attachment No. 6), Encroachment Permit forms (refer to Attachment Nos. 1 and 2) and As-Built Route Slips (refer to Attachment Nos. 4 and 5) that were revised or implemented after July 1, 2001. Special Funded projects that were underway prior to July 1, 2001 utilize previous versions of the Encroachment Permit forms and Encroachment Permit procedures and did not utilize the As-Built Route Slips. For these projects, the instructions described herein regarding requirements of the Encroachment Permit pertaining to project completion records or use of As-Built Route Slips are not applicable. However, for these projects, employees of the Offices of Structure Construction are encouraged to adhere to the instructions described herein as closely as possible.

Special Funded Projects for which the Offices of Structure Construction Provides Full or Partial Staffing for Contract Administration

When the terms of a cooperative agreement require the State to provide all construction contract administration services, the Offices of Structure Construction shall provide all staffing required to administer the structure portion of the project. Types of projects that the Offices of Structure Construction generally provides full staffing for include Jointly Funded or Cooperative projects, although the Offices of Structure Construction may also provide full staffing for Local Sales Tax Measure projects, Locally Funded projects, Privately Funded projects, or Public Toll Road projects, depending on the terms of the cooperative agreement.

When the terms of a cooperative agreement require the State to provide partial construction contract administration services, the Offices of Structure Construction shall provide some of the staffing required to administer the structure portion of the project. For these projects, the State typically provides the Resident Engineer, the Structure Representative, and the Materials Engineer. The Local Agency provides the remainder of the people necessary to staff the project.

In some cases, the cooperative agreement may require the State to provide some Assistant Resident Engineers and Assistant Structure Representatives as well. Types of projects that the Offices of Structure Construction generally provides partial staffing for include Jointly Funded or Cooperative projects, although the Offices of Structure Construction may also provide partial staffing for Local Sales Tax Measure projects, Locally Funded projects, Privately Funded projects, or Public Toll Road projects, depending on the terms of the cooperative agreement.

The State usually (but not always) advertises these projects. For these types of projects, the responsibilities of Offices of Structure Construction employees are virtually the same as with typical State-funded projects. The following table addresses some of the responsibilities.

Responsibility	State-Advertised Projects	Locally Advertised Projects
Cooperative Agreement between State & Local Agency	Required. Bridge Construction Engineers shall be involved during the negotiation of the Cooperative Agreement for construction contract administration. Contact the Project Manager for additional information.	
Encroachment Permit between State & Local Agency	Required	Required. Includes the "Structure As-Built Plans Submittal Route Slip" for Locally-advertised, consultant designed projects (refer to Attachment No. 5).
Encroachment Permit between State & Project Contractor	Not Required	Required
Project advertisement	Advertised by Caltrans Office Engineer	Advertised by the Local Agency
RE Pending File	Assembled by the consultant designer, reviewed by the OSFP Liaison Engineer, and forwarded to the Structure Representative. Includes the "Structure As-Built Plans Submittal Route Slip" for State-advertised, consultant designed projects (refer to Attachment No. 4).	Assembled by the consultant designer, reviewed by the OSFP Liaison Engineer, and forwarded to the Structure Representative.
Time Charging Practices	Offices of Structure Construction employees assigned to the project shall charge to the District the project is located in and the Expenditure Authorization for the project. Refer to Bridge Construction Memos 11-4.0 through 11-8.0 for further instructions.	
Inspection	Normal process as described in the *Bridge Construction Records and Procedures* and *Construction* Manuals.	Normal process as described in the *Bridge Construction Records and Procedures* and *Construction* Manuals..
Record keeping	Normal process as described in the *Bridge Construction Records and Procedures* and *Construction* Manuals.	Normal process as described in the *Bridge Construction Records and Procedures* and *Construction* Manuals.

Responsibility	State-Advertised Projects	Locally Advertised Projects
Documentation (diaries, newsletters, etc.)	Normal process as described in the *Bridge Construction Records and Procedures* and *Construction* Manuals.	Normal process as described in the *Bridge Construction Records and Procedures* and *Construction* Manuals..
Shop Plans	Shop plans are submitted for review as described in the Caltrans Standard Specifications. Shop plan review is provided by the consultant designer, through the OSFP Liaison Engineer.	Shop plans are submitted for review as described in the contract documents. Shop plan review is provided by the consultant designer, through the OSFP Liaison Engineer.
Contract Change Orders	Normal process as described in *Bridge Construction Records and Procedures* Manual, Chapter 7, and the *Construction* Manual, Section 2-50. The OSFP Liaison Engineer approves all proposed design changes to the structure portion of the work.	The Local Agency initiates, authorizes and approves the Contract Change Order. The OSFP Liaison Engineer approves all proposed design changes to the structure portion of the work.
Notice of Potential Claim	Normal process as described in the Caltrans Standard Specifications and the *Construction* Manual, Section 2-70.	Response to Notice of Potential Claim is as described in the contract documents and the contract administration procedures of the Local Agency.
Progress Payments	Normal process as described in Bridge Construction Memo 6- 2.0 and the *Construction* Manual, Section 3-02.	Progress payments are made in conformance with the contract documents and the procedures of the Local Agency.
Final Payment and Claims	Normal process as described in the Caltrans Standard Specifications and the *Construction* Manual, Section 2-70.	Final Payment and responses to formal claims are as described in the contract documents and the contract administration procedures of the Local Agency.
Project Completion and Acceptance	Upon acceptance of the construction contract, **the Structure Representative shall notify the Resident Engineer** that the section entitled "To the best of my knowledge, field work was completed…" of Form TR-0129, "Progress Billing/Completion Notice" (refer to Attachment No. 2) can be completed and submitted to the District Encroachment Permit Engineer so the District Encroachment Permit Engineer will know that the Encroachment Permit requirement for notification of completion of the field work has been fulfilled.	
Project Completion Records: General Notes	For projects with capital improvement work involving structures, the Encroachment Permit between the State and the Local Agency includes the General Provisions and the "Structure Work" special provisions (refer to Attachment No. 6). The "Structure Work" special provisions	

Responsibility	State-Advertised Projects	Locally Advertised Projects
	contain requirements for project completion record submittal. Failure to fulfill these requirements can result in the Local Agency being required to obtain a bond for any subsequent encroachment permit until the requirements of the encroachment permit for this project have been fulfilled. **Structure Representatives shall complete all project completion records within the 60-day period following contract acceptance.**	
Project Completion Records: As-Built Corrections	The Structure Representative is responsible for completing the As-Built corrections in accordance with Bridge Construction Memo 9-1.0. The Structure Representative shall complete and attach the "Structure As-Built Plans Submittal Route Slip" for State-advertised, consultant designed structure projects (refer to Attachment No. 4) to the As-Built corrections and send the As-Built corrections to the Headquarters Office of the Offices of Structure Construction in Sacramento.	The Structure Representative is responsible for completing the As-Built corrections in accordance with Bridge Construction Memo 9-1.0. The Structure Representative shall complete and attach the "Structure As-Built Plans Submittal Route Slip" for Locally-advertised, consultant designed structure projects (refer to Attachment No. 5) to the As-Built corrections and forward the As-Built corrections to the Headquarters Office of the Offices of Structure Construction in Sacramento.
Project Completion Records other than As-Built corrections	The Structure Representative is responsible for completing the project completion records listed in Bridge Construction Memo 3- 1.0, Attachment No. 1 and forwarding them to the Headquarters Office of the Offices of Structure Construction in Sacramento. Once the project completion records have been completed, **the Structure Representative shall notify the Resident Engineer** that the section entitled "Required final project completion records for structures…" of Form TR-0129, "Progress Billing/Completion Notice" (refer to Attachment No. 2) can be completed and submitted to the District Encroachment Permit Engineer so the District Encroachment Permit Engineer will know that the Encroachment Permit requirement for the submission of project completion records for the structure portion of the project has been fulfilled.	

Special Funded projects for which the Offices of Structure Construction Provides Oversight of Local Agency Contract Administration

When the terms of a cooperative agreement require the Local Agency to provide all of the staffing for construction contract administration services, or if there is no cooperative agreement for the project, the Offices of Structure Construction shall provide oversight of the structure work administered by the Local Agency. For this type of project, the Offices of Structure

Construction provides one employee, usually the Bridge Construction Engineer or designated representative, as the OSC Oversight Engineer to oversee the structure work performed by the Local Agency in the State right-of-way. The State does not advertise these projects. For these projects, the responsibilities of employees of the Offices of Structure Construction are limited to approval of the Structure Representative provided by the Local Agency, periodic field reviews of the structure work in progress, and acquisition of the applicable completion records.

One of the most important responsibilities of the OSC Oversight Engineer is to make contact and establish a working relationship with the Local Agency's primary contact person. This person may be the Project Manager, Project Engineer or Administrator for the Local Agency.

Approval of the Local Agency consultant Structure Representative is the responsibility of the OSC Oversight Engineer. The OSC Oversight Engineer shall assist the Local Agency in assigning, reviewing, and evaluating the qualifications of possible candidates for the project. The OSC Oversight Engineer may become involved in the selection or hiring interviews conducted by the Local Agency. The major concern is that the engineer selected to be in responsible charge has the qualifications to properly administer the structure portion of the project.

The following table addresses some of the other basic responsibilities of the Local Agency and employees of the Offices of Structure Construction who act as oversight engineers.

Responsibility	**Encroachment Permit Program Projects**	**All other Special Funded Projects**
Cooperative Agreement between State & Local Agency	Not required	Required. Bridge Construction Engineers shall be involved during the negotiation of the Cooperative Agreement for construction contract administration. Contact the Project Manager for additional information.
Encroachment Permit between State & Local Agency	Required. Includes the "Structure As-Built Plans Submittal Route Slip" for Locally-advertised, consultant-designed projects (refer to Attachment No. 5).	
Encroachment Permit between State & Project Contractor	Required	
Project advertisement	Advertised by the Local Agency	
RE Pending File	Assembled by the consultant designer, reviewed by the OSFP Liaison Engineer, and forwarded to the consultant Structure Representative.	
Time Charging Practices	When the project has an Expenditure Authorization, Offices of Structure Construction employees assigned to the project shall	Offices of Structure Construction employees assigned to the project shall charge to the District the project is located in and the

	charge to the District the project is located in and the	Expenditure Authorization for the project. Refer to Bridge
Responsibility	**Encroachment Permit Program Projects**	**All other Special Funded Projects**
	Expenditure Authorization for the project. Refer to Bridge Construction Memos 11-4.0 through 11-8.0 for further instructions. When the project does not have an Expenditure Authorization, Offices of Structure Construction employees assigned to the project shall charge to the District the project is located in, Expenditure Authorization **937182**, FAE Code **2**, and Activity Code **037**.	Construction Memos 11-4.0 through 11-8.0 for further instructions.

Construction oversight will consist of periodic field reviews of the structure work in progress by the OSC Oversight Engineer. The purpose of these reviews is to verify the structure work complies with the approved plans and specifications and that the completed project will function as intended.

The following table addresses specific guidelines for field reviews.

Responsibility	**Encroachment Permit Program Projects**	**All other Special Funded Projects**
Field Reviews	As a minimum, the OSC Oversight Engineer shall perform the following field reviews. 1. The OSC Oversight Engineer shall hold an initial meeting with the consultant Resident Engineer, consultant Structure Representative, and the project field staff, prior to the usual preconstruction conference. The contract requirements and enforcement procedures shall be reviewed and special attention given to traffic control, notification of impaired clearance and other features involving public safety. Falsework review and approval, trenching and shoring review and approval, welding procedures, materials inspection, testing procedures, and unusual foundation types shall be discussed at this time. 2. The OSC Oversight Engineer shall attend the normal preconstruction conference with the construction contractor.	

Responsibility	Encroachment Permit Program Projects	All other Special Funded Projects
	3. Upon award or approval of the construction contract by the Local Agency, **the OSC Oversight Engineer shall fill out Bridge Construction Memo 6-2.1, Attachment No. 1, and submit it to the Headquarters Office of the Offices of Structure Construction.** 4. When the work actually starts, the project should be reviewed a minimum of once every two weeks. The project should also be reviewed when important items of work are starting, such as pile construction, column construction, or falsework erection and removal.	
Specific Items to Review	The following is a partial list of items to review. In cooperation with the District Construction Oversight Engineer, additional items not listed, such as enforcement of compliance with the terms of the Encroachment Permit or Cooperative Agreement and other items that are normally a District responsibility, shall be reviewed as necessary. The OSC Oversight Engineer shall perform a Project Record Review at least once per job to verify the project records are being correctly maintained. 1. Look at the work itself. Does it comply with the plans and specifications? Is the workmanship satisfactory? 2. Do the Resident Engineer, Structure Representative, and the project staff appear to know what is going on? Do they have the work under proper control? 3. Are you being kept up to date on major project problems even when you are not on the project? 4. Has the Resident Engineer developed a project-specific Code of Safe Practices for the project field staff? 5. Verify that public and project safety is being adhered to in accordance with the safety procedures of the Construction Safety Orders, Caltrans, and the Local Agency. 6. Verify that public and project safety incidents are being properly documented. 7. Review any proposed changes to the approved plans and specifications. 8. Verify that all SWPPP measures pertaining to structure work are satisfactory and that any deficiencies are corrected immediately. 9. Review the status of Shop Plan submittals and verify that the Shop Plans are approved in accordance with the terms of the encroachment permit and contract documents. 10. Verify that the falsework plans have been designed by the Contractor and reviewed and approved by the Resident Engineer or design consultant.	

Responsibility	Encroachment Permit Program Projects	All other Special Funded Projects
	11. Is the falsework or shoring built to meet approved designs, of satisfactory workmanship, and does it meet best general practice criteria? 12. Verify that there are proper materials certificates of compliance, material releases or test results for materials being used in the work and that they are being incorporated into the project records. 13. Review project records such as concrete pour records, as-built changes, pile driving records, welding records, and prestressing records and verify that they are being properly kept. 14. Review backup records for progress payments. The cooperative agreement or encroachment permit for the project may require progress payments to be approved by a State representative.	
Actions to take	1. Point out work that is not up to Caltrans standards and discuss possible remedies. 2. Point out potential safety problems. 3. Discuss pending Contract Change Orders affecting the work with the Resident Engineer and Structure Representative and indicate technical concurrence if appropriate. For pending changes that affect the design of the structure, the OSFP Liaison Engineer must authorize the change in writing and a concurrence letter issued from the Headquarters Office of the Offices of Structure Construction in Sacramento. For other changes, the OSC Oversight Engineer may use Form DS-OS C93, "Offices of Structure Construction Concurrence for Change Orders Involving Structure Work," to indicate technical concurrence with the proposed change. Documents indicating technical concurrence shall be filed in the project records. 4. If there are major problems with the structure work that are not being rectified, suspend that portion of the work affected, per the terms of the encroachment permit. Allow work to resume when agreement is reached on proper procedure to be followed and the remedial work to be performed.	
Reports	After each field review, the OSC Oversight Engineer shall write a short report on what was observed, using Form TR-0130, "Encroachment Permit Report (Diary)" (refer to Attachment No. 3). The OSC Oversight Engineer shall send the original to the District Encroachment Permit Office, one copy to the Area Construction Manager and one copy to the Headquarters Office of the Offices of Structure Construction in Sacramento.	

Responsibility	Encroachment Permit Program Projects	All other Special Funded Projects
Project Completion and Acceptance	1. At the end of the project, the OSC Oversight Engineer shall be involved in the final inspection prior to project acceptance. 2. When the OSC Oversight Engineer has verified that the project has been satisfactorily completed, the OSC Oversight Engineer shall notify the District Construction Oversight Engineer that the section entitled "To the best of my knowledge, field work was completed…" of Form TR-0129, "Progress Billing/Completion Notice" (refer to Attachment No. 2) can be completed and submitted to the District Encroachment Permit Engineer so the District Encroachment Permit Engineer will know that the Encroachment Permit requirement for notification of completion of the field work has been fulfilled. 3. When the OSC Oversight Engineer has verified that the project has been satisfactorily completed, **the OSC Oversight Engineer shall fill out Bridge Construction Memo 6-2.1, Attachment No. 2, and submit it to the Headquarters Office of the Offices of Structure Construction.**	

Completion of the fieldwork of the project does not mean that the responsibilities of the Local Agency have been fulfilled for the purposes of closeout of the encroachment permit. All project completion records must be submitted to and approved by Caltrans prior to closeout of the encroachment permit. The responsibilities for submission of project completion records of the Local Agency's contract administrator and employees of the Offices of Structure Construction are addressed in the following table.

Responsibility	Encroachment Permit Program Projects	All other Special Funded Projects
Project Completion Records: General Notes	For projects with capital improvement work involving structures, the Encroachment Permit between the State and the Local Agency includes the General Provisions and the "Structure Work" special provisions (refer to Attachment No. 6). The "Structure Work" special provisions contain requirements for project completion record submittal. Failure to fulfill these requirements can result in the Local Agency being required to obtain a bond for any subsequent encroachment permit until the requirements of the encroachment permit for this project have been fulfilled.	
Project Completion Records: Structure As-Built Plans	Structure As-Built plans shall be routed as shown on the "Structure As-Built Plans Submittal Route Slip" for Locally-advertised, consultant-designed structure projects (refer to	

Responsibility	Encroachment Permit Program Projects	All other Special Funded Projects
	Attachment No. 5). This route slip is included with the approved encroachment permit at the time the encroachment permit is issued. Offices of Structure Construction employees who act as oversight engineers shall take the following actions: 1. Review the Structure As-Built corrections with the Local Agency's contract administrator to verify that all revisions were made in accordance with Caltrans policies. 2. Review the "Structure As-Built Plans Submittal Route Slip" to verify that the Local Agency's contract administrator has completed the top portion of the route slip. 3. Verify that the Local Agency's contract administrator has sent the As-Built corrections, along with the "Structure As-Built Plans Submittal Route Slip", to the Headquarters Office of the Offices of Structure Construction in Sacramento. A memorandum from the Headquarters Office of the Offices of Structure Construction in Sacramento will be issued to the OSC Oversight Engineer acknowledging receipt of the Structure As-Built corrections. The Office of Special Funded Projects will notify the Design Consultant and the District Construction Oversight Engineer or the District Encroachment Permit Office when the Structure As- Built plans have been approved by Caltrans.	
Project Completion Records other than As-Built Plans	The Local Agency's contract administrator is responsible for completing the applicable project completion records listed in applicable project completion records for each structure shall be issued from the Headquarters Office of the Offices of Structure Construction. Offices of Structure Construction employees who act as oversight engineers shall take the following actions: 1. Review the applicable project completion records with the Local Agency's contract administrator to verify that they were completed in accordance with the requirements of the *Bridge Construction Records and Procedures* Manual. 2. Receive the completed project completion records from the Local Agency's contract administrator and transmit them to the Headquarters Office of the Offices of Structure Construction in Sacramento. A memorandum from the Headquarters Office of the Offices of Structure Construction in Sacramento shall be issued to the OSC Oversight Engineer acknowledging receipt of the project completion records.	

Responsibility	Encroachment Permit Program Projects	All other Special Funded Projects
	3. Once the OSC Oversight Engineer has received the memorandum from the Headquarters Office of the Offices of Structure Construction acknowledging receipt of the project completion records, **the OSC Oversight Engineer shall notify the District Construction Oversight Engineer** that the section entitled "Required final project completion records for structures…" of Form TR-0129, "Progress Billing/Completion Notice" (refer to Attachment No. 2) can be completed and submitted to the District Encroachment Permit Engineer so the District Encroachment Permit Engineer will know that the Encroachment Permit requirement for the submission of project completion records for the structure portion of the project has been fulfilled.	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

ENCROACHMENT PERMIT

TR-0120 (REV. 2/98)

Permit No.

Dist/Co/Rte/PM

In compliance with (Check one):

☐ Your application of

☐ Utility Notice No. _____ of _____

☐ Agreement No. _____ of _____

☐ R/W Contract No. _____ of _____

Date: **April 20, 1999**

Fee Paid	Deposit
$	$
Performance Bond Amount (1)	**Payment Bond Amount (2)**
$	$

Bond Company

Bond Number (1)	Bond Number (2)

TO: _____ _____

_____ _____

, PERMITTEE

and subject to the following, PERMISSION IS HEREBY GRANTED to:

The following attachments are also included as part of the permit (Check applicable):

Refer to Pages 3, 5, & 8

☐ Yes	☐ No	General Provisions
☐ Yes	☐ No	Utility Maintenance Provisions
☐ Yes	☐ No	Special Provisions
☐ Yes	☐ No	A Cal-OSHA permit if required Permit # _____
☐ Yes	☐ No	As-Built Plans Submittal Route Slip for Locally Advertised Projects
☐ Yes	☐ No	The information in the environmental documentation has been reviewed and is considered prior to approval of this permit.

In addition to fee, the permittee will be billed actual costs for:

☐ Yes	☐ No	Review
☐ Yes	☐ No	Inspection
☐ Yes	☐ No	Field Work

(If any Caltrans effort expended)

This permit is void unless the work is complete before _____

This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized.

No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.

APPROVED:

XX Z YYY, District Director

BY:

AA Z YXZ, Chief – Office of Encroachment Permits

FM 91 1436

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROGRESS BILLING/COMPLETION NOTICE

TR-0129 (REV. 5/99)

PERMIT NUMBER ☐ RIDER

DIST/CO/RTE/PM(KP)

WORK ORDER/REFERENCE NUMBER | RELATED PERMITS

PERMITEE NAME

DESCRIPTION OF WORK

INSPECTOR'S COMMENTS

Refer to Pages 3, 6 & 11

Refer to Pages 3, 7 & 12

ACTUAL INSPECTION HOURS BY	PERMIT INSPECTOR	CONSTRUCTION R.E.	OTHER CALTRANS UNITS

☐ To the best of my knowledge, field work was completed on (date): _____ in compliance with the permit.

☐ Y ☐ N ☐ N/A Required final project completion records for structures as noted in Permit Special Provisions have been submitted, except As-Built plans. (date):

☐ Y ☐ N ☐ N/A Required final project completion records for roadway as noted in Permit Special Provisions have been submitted, except As-Built plans. (date):

☐ Y ☐ N ☐ N/A Structure As-Builts received (date): ☐ Y ☐ N ☐ N/A Roadway As-Builts received (date):

☐ Field work is not complete ☐ Progress Bill ☐ Quarter No.: _____ ☐ Completion Notice ☐ Permit cancelled

INSPECTOR'S SIGNATURE | DATE

FOR PERMIT OFFICE USE

☐ FINAL BILL ☐ RELEASE CASH DEPOSIT ☐ PERFORMANCE BOND ATTACHED

☐ PROGRESS BILL ☐ OTHER

ACTUAL HOURS
(NOT FOR BILLING)

Review Hours

Inspection Hours

Field Work Hours

COMMENTS:

BILLING / REFUND INFORMATION

FEE TYPE: ☐ SF ☐ AS ☐ AX

Review _____ Hours @ $_____ = $

Inspection _____ Hours @ $_____ = $

Field work _____ Hours @ $_____ = $

TOTAL FEES $

FEE DEPOSIT PAID ON (Date) $

☐ Cash ☐ Credit Card ☐ Check (Check No.)

FEE DEPOSIT PAID ON (Date) $

☐ Cash ☐ Credit Card ☐ Check (Check No.)

$

BALANCE DUE ☐ Final Bill ☐ Progress Bill ☐ **REFUND** $

COPIES TO:

☐ Accounts Receivable (Billing / Refund)

☐ Local Agency (Agreement Work)

☐ Maintenance

REFUND OF CASH DEPOSIT IN LIEU OF BOND $

CASH DEPOSIT PAID ON (Date)

☐ Cash ☐ Credit Card ☐ Check (Check No.)

BILLING / REFUND ADDRESS OF PERMITEE

PERMIT ENGINEER	PHONE NUMBER	DATE

FM 94 2033 M

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

ENCROACHMENT PERMIT REPORT (DIARY)

TR-0130 (REV. 5/94)

PAGE _____ OF _____

PERMIT NO.	YR — MO — DA
DIST/CO/RTE/PM	TOTAL HOURS IN THIS REPORT

SIGNATURE OF STATE REPRESENTATIVE | DATE

FM 91 1410 M

ORIGINAL TO PERMIT OFFICE

STRUCTURE AS-BUILT PLANS SUBMITTAL ROUTE SLIP

FOR STATE-ADVERTISED CONSULTANT-DESIGNED STRUCTURE PROJECT(S)

CONTRACT EA:_____

PERMIT NO.: _____

DIST/CO/RTE/PM(KP): _____

COMPLETION & ACCEPTANCE OF PROJECT CONSTRUCTION CONTRACT FIELD WORK (DATE):_____

BRIDGE NO(S):_____

CALTRANS STRUCTURE REPRESENTATIVE/CONTRACT ADMINISTRATOR (Name & Phone):_____

CALTRANS DISTRICT RESIDENT ENGINEER (Name & Phone):_____

DISTRICT ENCROACHMENT PERMITS ENGINEER (Name & Phone) _____

CALTRANS STRUCTURES OSFP OVERSIGHT LIAISON ENGINEER (Name & Phone):_____

Refer to Pages 3 & 6

KEEP THIS MEMO WITH THE STRUCTURE AS-BUILT PLAN PACKAGE.

HAND CARRY OR EXPRESS MAIL TO THE NEXT PERSON.

Initials Date

_____ 1) CONSTRUCTION CONTRACT ADMINISTRATOR / STRUCTURE REPRESENTATIVE
- Compile all structure As-Built changes, including supplemental plan sheets due to CCO's.
- Send the field office set of red-marked As-Built prints to the Division of Structure Construction in Sacramento.

_____ 2) DIVISION OF STRUCTURE CONSTRUCTION (DSC), SACRAMENTO
- Receive and review the structure As-Built plans changes noted on the field office set of red-marked as-built prints.
- Verify that **ALL** of the As-Built structure sheets have been received and have As-Built stamp (including Log of Test Borings plan sheets).
- Update contract records.

_____ 3) DIVISION OF EARTHQUAKE ENGINEERING & DESIGN SUPPORT (DEE&DS), Office of Special Funded Projects
- Receive and review the As-Built changes
- Obtain the set of original structures **as-advertised** tracings from the Structures Documents Unit.
- Deliver the package of the field office set of red-marked as-built prints, the set of original as-advertised tracings, and the as-built route slip to the Design Consultant so that the as-built changes can be transferred onto the original as-advertised tracings.

_____ 4) DESIGN CONSULTANT
- Transfer **red-marked** As-Built changes to original **as-advertised** tracings (or to the Computer Graphics files if necessary). The original as-advertised tracings thereby become the final As-Built tracings.
- Deliver field office set of red-marked As-Built prints and final As-Built tracings by express mail or hand carry to CALTRANS ESC – OSFP, 801 12th St, Suite 400, MS 12, Sacramento, CA 95814. **

_____ 5) DIVISION OF EARTHQUAKE ENGINEERING &DESIGN SUPPORT (DEE&DS), Office of Special Funded Projects
- Verify that As-Built red-marked changes and approved CCO's are reflected on the final As-Built tracings.
- **Inform** District Resident Engineer (or District Encroachment Permit Engineer if total estimate < $1M) that the final structure As-Builts have been received and are satisfactory. The RE or the District Permit Engineer can then initiate and submit the Progress Billing/Completion Notice (TR-0129) regarding structure requirements to the District Permit Section .*
- **Inform** Design Consultant that final structure as-builts have been received and are satisfactory.
- If requested by the Local Entity or the Design Consultant the field office set of red-marked As-Built prints will be sent to them by the OSFP Liaison Engineer.

_____ 6) DIVISION OF STRUCTURES MAINTENANCE AND INVESTIGATIONS (DSM&I)
- Notify DSM&I- Encroachment Permits Section that As-Built plans received and are satisfactory.
- Scan final As-Built tracings into bridge information records system, BIRIS.
- Forward final As-Built tracings to HQ Micrographics.

_____ 7) HQ MICROGRAPHICS
- Use final structure As-Built tracings to order 3 full sets of microfilm (roadway+structures) aperture cards.
- HQ Micrographics places one set of microfilms in its file, sends one set to the Department's security file, and delivers one set to the District.
- Return the final structure As-Built tracings to Structure OSFP (for storage/disposal or return to Design Consultant or Local Entity [if requested]). Structures OSFP can then dispose of the field office set of red-marked As-Built prints or return them to the Design Consultant or Local Entity (if requested).

* Close out of permit contingent also upon submittal of other final structure project records and District Roadway As-Built Plan Package to District.

** When required by contract with Local Agency, send **copy** of red- marked prints and reproducible **copies** of final As-Built plans to Local Agency. Design Consultant keeps set of reproducible **copies** of final "As-Built " plans for own file.

Attachment: As-Built Plans

STRUCTURE AS-BUILT PLANS SUBMITTAL ROUTE SLIP

FOR LOCALLY-ADVERTISED CONSULTANT-DESIGNED STRUCTURE PROJECT(S)

CONTRACT EA: _____

PERMIT NO. (to local entity): _____

DIST/CO/RTE/PM(KP): _____

COMPLETION & ACCEPTANCE OF PROJECT CONSTRUCTION CONTRACT FIELD WORK (DATE): _____

BRIDGE NO(S): _____

CONSTRUCTION CONTRACT ADMINISTRATOR (Name, Phone, & Firm): _____

CALTRANS OVERSIGHT STRUCTURE REPRESENTATIVE (Name & Phone): _____

CALTRANS DISTRICT OVERSIGHT RESIDENT ENGINEER (Name & Phone): _____

DISTRICT ENCROACHMENT PERMITS ENGINEER (Name & Phone): _____

CALTRANS STRUCTURES OSFP OVERSIGHT LIAISON ENGINEER (Name & Phone): _____

Refer to Pages 3, 5, 6, 8 & 11

KEEP THIS MEMO WITH THE STRUCTURE AS-BUILT PLAN PACKAGE
(HAND CARRY OR EXPRESS MAIL TO THE NEXT PERSON)

Initials/Date

_____ 1) CONSTRUCTION CONTRACT ADMINISTRATOR / STRUCTURE REPRESENTATIVE

- Compile all structure As-Built changes, including supplemental plan sheets due to CCO's. Consultant Structure Representatives shall review structure As-Built changes with the State Oversight Structure Representative prior to delivery to Division of Structure Construction in Sacramento.
- Send the field office set of red-marked As-Built prints to CALTRANS ESC, Division of Structure Construction, 1801 30th Street, MS 9-2/11H, Sacramento, CA 95816.

_____ 2) DIVISION OF STRUCTURE CONSTRUCTION (DSC), SACRAMENTO

- Receive and review the structure As-Built Plans changes noted on the field office set of red-marked As-Built prints.
- Verify that **ALL** of the As-Built structure sheets have been received and have the As-Built stamp (including Log of Test Borings plan sheets).
- Update contract records.

_____ 3) DIVISION OF EARTHQUAKE ENGINEERING & DESIGN SUPPORT (DEE&DS), **O**ffice of **S**pecial **F**unded **P**rojects

- Receive and review As-Built changes.
- Deliver the package of the field office set of red marked as built prints, and the As-Built route slip to the Design Consultant so that the As-Built changes can be transferred onto the Local Entity's as-advertised tracings.

_____ 4) DESIGN CONSULTANT

- Transfer **red-marked** As-Built changes to original **as-advertised** tracings (or to the Computer Graphics files if necessary). The original as-advertised tracings thereby become the final As-Built tracings.
- Deliver field office set of red-marked As-Built prints, the set of final As-Built tracings and this Slip by express mail or hand carry to CALTRANS ESC – OSFP, 801 12th St, Suite 400, MS 12, Sacramento, CA 95814*

_____ 5) DIVISION OF EARTHQUAKE ENGINEERING & DESIGN SUPPORT (DEE&DS), **O**ffice of **S**pecial **F**unded **P**rojects

- Verify that As-Built red-marked changes and approved CCO's are reflected on the final As-Built tracings.
- **Inform** District Resident Engineer (or District Encroachment Permit Engineer if total estimate < $1M) that the final structure As-Builts have been received and are satisfactory. The RE or the District Permit Engineer can then initiate and submit the Progress Billing/Completion Notice (TR-0129) regarding structure requirements to the District Permit Section**
- **Inform** Design Consultant that final structure As-Builts have been received and are satisfactory.
- Structures OSFP retains the field office set of red-marked As-Built prints until the final As-Built tracings are returned from HQ Micrographics. Final structure As-Built tracings are forwarded to DSM&I.

_____ 6) DIVISION OF STRUCTURES MAINTENANCE AND INVESTIGATIONS (DSM&I)

- Notify DSM&I-Encroachment Permits Section that As-Built plans have been received and are satisfactory.
- Scan final As-Built tracings into bridge information records system, BIRIS.
- Forward final As-Built tracings to HQ Micrographics.

_____ 7) HQ MICROGRAPHICS

- Use final structure As-Built tracings to order 3 full sets of microfilm (roadway & structures) aperture cards.
- HQ Micrographics files a set of microfilms, delivers a set to both the District, and the Department's security file.
- Return the final structure As-Built tracings to Structures OSFP [for storage/disposal or return to Design Consultant of Local Entity (if requested)]. Structures OSFP can then dispose of the field office set of red-marked As-Built prints or return them to the Design Consultant or Local Entity (if requested).

* When required by contract with Local Agency, send a **copy** of red-marked prints and reproducible **copies** of final As-Built plans to the Local Agency.Des ign Consultant keeps a set of reproducible **copies** of the final As-Built plans for own file.

**Project closure is also contingent upon the submittal of other final structure project records and District Roadway As-Built Plan Package to the District.

CALTRANS ENCROACHMENT PERMITS MANUAL
Special Provisions to be inserted in APPENDIX K

STRUCTURE WORK

Use these special provisions when Permit includes any capital improvement work (Capital Outlay Program or Permit Program) involving structure related facilities such as: modification to existing bridges, new bridges, all tunnels, underground structures, single and multi-cell culverts wider than 20' (6.1 m) measured in the direction of traffic, storage boxes, non-standard retaining walls, non-standard sound walls (including sound walls on retaining wall), earth retaining systems, bridge-mounted sign structures, overhead sign structures, pump plants, slope paving under bridges (including any paving or channel lining around bridge columns), seal slabs/boat sections, transit stations, and toll plazas.

In addition to the attached General Provisions (TR-0045), the following special provisions are also applicable:

1) BEGINNING OF WORK:

The PERMITTEE shall notify the Department's Representative,___ _____
(Name of Structures Area Construction Manager)

at _____ two (2) weeks before the intent to start permitted work to ensure coordination
(Phone Number)

with the Division of Structure Construction.

2) CONTRACT DOCUMENTS:

In addition to the number of as-advertised contract document sets required by the District Permit Engineer for district use, the PERMITTEE shall include a minimum of eleven (11) additional sets of contract documents (plans, special provisions and addenda) for use by the Caltrans Engineering Service Center. Upon approval of the permit application, the District Permit Office shall distribute the eleven additional sets of contract documents to:

Caltrans Engineering Service Center
Office of Special Funded Projects
1801 30th Street, MS-12
Sacramento, CA 95816

Depending on the work contemplated in the project, more copies may be required as determined by the District Permit Engineer and the Structures OSFP Liaison Engineer.

3) AS-BUILT & OTHER COMPLETION RECORDS

Within sixty (60) days following completion and acceptance of the project construction contract, PERMITTEE shall furnish acceptable completion records, which are applicable to the project, to the STATE representatives shown in the following table. Completion records shall be submitted in accordance with the "Submittal Instructions and Forms" shown in the following table. When requested by the PERMITTEE, the STATE representative shall furnish the instructions and forms shown in the following table. This information is also available from the Caltrans internet website.

Completion records or accompanying correspondence shall not include disclaimer statements of any kind. Such statements shall constitute non-compliance with these provisions.

For Locally Advertised projects, the As-Built Plan Package shall include the " Structures As-Built Plan Submittal Route Slip."

Completion Records Table

Completion Record	Submittal Instructions and Forms	Submit Completion Record to:
Field Office set of red-marked As-Built plans for Structures, including Log of Test Borings from the Construction Contract Administrator	Furnish the construction field office set of red-marked As-Built prints, AND Initial, date, and attach the "Structures As-Built Plan Submittal Route Slip" to the As-Built plans submittal package.	Express Mail or hand carry to: State of California, Department of Transportation Engineering Service Center, Division of Structure Construction 1801 30th Street, MS-9 Sacramento, CA 95816
Final As-Built plans for Structures, including Log of Test Borings from the Design Consultant	Furnish one (1) complete set of acceptable full size reproducible As-Built plans, AND Furnish the construction field office set of red-marked As-Built prints, AND Initial, date, and attach the Structures As-Built Plan Submittal Route Slip to the As-Built plans submittal package.	Mailing Address: State of California, Department of Transportation Engineering Service Center, Office of Special Funded Projects 1801 30th Street, MS-12 Sacramento, CA 95816 Next Day Mail or hand carry to: 801 12th Street, Suite 400 Sacramento, CA 95814
Working Drawings (Shop Plans)	See contract special provisions and Standard Specifications for each individual structure.	ESC Structures Document Unit Division of Structure Design
Report of Completion for Structures	Submit, for each individual structure, Form DS-OS C3, "Report of Completion-Bridges", or equivalent.	Division of Structure Construction Oversight field Engineer for the project construction contract
Joint Movement Calculations for Structures	Submit, for each individual structure, Form DSD-D-0129, "Joint Movement Calculations" or equivalent.	Division of Structure Construction Oversight field Engineer for the project construction contract
Driven Pile Records	Submit, for each individual structure, Forms DC-C78, "Pile Quantity & Driving Record (Driven Piles)"; DH-OS C79, "Log Pile Sheet"; and DH-OS C80, "Pile Layout Sheet"; or equivalent.	Division of Structure Construction Oversight field Engineer for the project construction contract
Paint Records for Structures	Submit, for each individual structure, Forms DH-OS M5, "Clean and Paint Cost Summary"; DH-OS M8, "Daily Clean & Paint Record"; DH-OS M11, "Paint Record", and DH-OS M78, "Spot – Sandblasting Report"; or equivalent.	Division of Structure Construction Oversight field Engineer for the project construction contract

Refer to Pages 6 & 11

4) PROJECT COMPLETION (PROCESS BILLING/COMPLETION NOTICE)

For permits involving structure work, the Progress Billing/Completion Notice shall not be submitted by the District Oversight Resident Engineer/District Permit Engineer as the "Completion Notice" until the structure As-Builts and other applicable structure completion records have been submitted by the permittee and approved by Caltrans. The receipt of these records shall be noted on the Progress Billing/Completion Notice.

Private Entities
Failure of private entities to provide accurate, reproducible As-Built plans and satisfactory completion records for permit work shall be cause for bond or deposit retention by the Department.

Local Agencies
Failure of local agencies to provide accurate, reproducible As-Built plans, and satisfactory completion records for permit work shall be cause for the Department to require performance bonds on future permits. Future permitted work is subjected to a bond requirement until the completion records of said previously permitted work are submitted satisfactorily (Streets & Highways Code, Section 678).

Notice of Change in Structure Clearance or Permit Rating

The change in clearance and/or permit rating of a structure can affect the issuance of transportation permits and the routing of oversize and overweight vehicles.

The notification procedures for changes in the clearance or permit rating of a structure are addressed in the Caltrans *Construction Manual*[1], Section 3-703 *Public Safety*.

The clearance changes addressed by Section 3-703 are not limited to bridge structures, but shall also include the clearance changes caused by the installation or modification of sign structures. The instructions within this section apply to any changes in existing clearances or permit rating, even if the resulting clearance or permit rating satisfies legal height or load limitations.

The timely reporting of this information on a statewide basis is essential to maintaining the accuracy of the clearance and permit rating database and ultimately the safety of the traveling public. The Structure Representative shall submit written notice to the Resident Engineer when it is determined that construction operations will permanently or temporarily impair the clearance or permit rating on a State highway or roadway.

Reporting is provided using forms (TR-0019 *Notice of Change in Clearance or Bridge Weight Rating*, TR-0020 *Notice of Change in Vertical or Horizontal Clearance*, or TR-0029 *Notice of Change in Clearance or Bridge Weight Rating*)[2].

For falsework traffic openings, the Structure Representative should review the additional information in Bridge Construction Memo (BCM) 120-2.0[3], *Submitting Falsework Drawings*.

Notification of Impending Impairment

It is imperative that the Resident Engineer/Structure Representative provide clearance notification to the construction/maintenance liaison in the Transportation Permits Branch at least **15 calendar days prior** to implementing the proposed change.

Notification of Actual Impairment

The Structure Representative, immediately after the clearance is impaired, shall verify the dimensions of the impaired opening and notify the Resident Engineer of any necessary revisions to the clearance notification.

[1] http://www.dot.ca.gov/hq/construc/constmanual/
[2] Forms are available at http://cefs.dot.ca.gov/forms/index.html.
[3] http://onramp.dot.ca.gov/hq/oscnet/sc_manuals/crp/vol_2/crp120.htm

Notification of Permanent Impairment

In the case of **permanent** changes in clearance or permit rating of a bridge structure or overhead sign, the Structure Representative shall submit a copy of each notification form to SC Headquarters (HQ) in Sacramento. After faxing the form(s) to the Transportation Permits Branch, use one of the following methods to transmit the form to SC HQ:

-Write, *Cc: SC HQ* on the bottom of the form and concurrently fax to SC HQ at (916) 227-8179 (Be sure you receive confirmation on both faxes).

-Mail a copy of the fax confirmation of the Vertical Clearance Form to the appropriate Office Associate at SC HQ:

Office Associate, District ___
Structure Construction
1801 30th Street MS 9-2/11H
Sacramento, CA 95816

Notification of Impairment over Railroad

The contract Special Provisions will reference the *Railroad Relations and Insurance Requirements* of the Information Handout which will contain the notification requirements on reporting impaired clearances over railroad property. Further instructions on reporting both temporary and permanent clearances over railroad property can be found in BCM 8-1.0[4], *Railroads,* and the *Construction Manual,* Section 2-213, *Roadways over Railroad Tracks*[5].

SC Staff Responsibilities

Structure Representative:

- Ensure timely notice to the Resident Engineer when the structure clearance or permit rating is determined.
- Working with the Resident Engineer, determine whether the Resident Engineer or Structure Representative will notify Transportation Permits Branch.
- Notify Transportation Permits Branch at least 15 days prior to impairment of clearance.
- Verify actual dimensions of clearance; notify Resident Engineer and Transportation Permit Branch as needed.
- For permanent changes in clearance, provide SC HQ with information.
- Keep a copy of this notification in the project files.

[4] http://dschq.dot.ca.gov/sc_manuals/construction_records_and_procedures_vol_I/8-1.0_BCM.pdf
[5] http://www.dot.ca.gov/hq/construc/constmanual/chapter2/Chp2_2.pdf

Procedure for Obtaining Electronic Contract Plan Files

Electronic contract plan files can now be requested and obtained through the Office of Structure Design (OSD). Memo to Designers 1-16, dated March 2002, explains this process. Memo to Designers 1-16 can be found at: http://pd.dot.ca.gov/des/documents/req-elec-contr-drawings.doc.

Electronic plans should only be requested to prepare Contract Change Orders, Cost Reduction Incentive Proposals (CRIP), As-Built corrections, and any other construction support operation (e.g., falsework layout, 50 scale). Request to use electronic plans for other reasons than stated above will be approved on a case-by-case basis.

To request electronic plans, complete and transmit form DS-D0144E, *Request for Electronic Contract Drawings* to the appropriate person listed on the bottom of the form[1]. See attachment No. 1 for an example of a completed form DS-D0144E. A copy of a blank DSDO144E form can be found on the OSC intranet website located at http://oscnet.dot.ca.gov/oscnet/ under the "Downloads/Forms" section.

[1] The request form (DS-DO 144E) can also be submitted to the appropriate Office Associate at OSC HQ in Sacramento. Once received at the OSC HQ the form will be forwarded to the correct location.

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

REQUEST FOR ELECTRONIC CONTRACT DRAWINGS

DS-DO 144E (New 1/02)

REQUESTOR	John Doe
ADDRESS	221 First Street
OR	Sacramento, CA 95816
BRANCH	Structure Construction
PHONE	(555) 555-5555
EMAIL	John_Doe@dot.ca.gov

	DATE: October 15, 2002
NAME (3rd Party)	Mr. Joe Contractor
ADDRESS	Big Bridge Construction Co.
	1111 Bridge Builder Lane
	Sacramento, CA
PHONE	(916) 555-3636
EMAIL	BBCC@aol.com

	DOCUMENTS UNIT		DESIGN BRANCH		CADD SERVICES	
ACTION	DATE	INITIALS	DATE	INITIALS	DATE	INITIALS
RECEIVED						
FORWARDED						
RECEIVED						
RETURNED						

	REQUESTING (CHECK ONE)	
☐	REVISIONS	1ST NOTICE
☐	ADDENDUM	2ND NOTICE: RETRIEVE FROM OE
☐	CCO - CRIP	2ND NOTICE W/ ADDENDUM
☐	AS-BUILTS	2ND NOTICE W/ ADDENDUM & CCO
☒	OTHER	Releasing to the contractor for falsework layout

	REQUESTING (CHECK ONE)
☐	ALL SHEETS
☒	SPECIFIC SHEET(S) AS NOTED

DESIGN BRANCH:	SDT 3:	EMAIL:	
CONTRACT NUMBER / EA:			
BRIDGE NUMBER	FILE NAME	SHEET NAME	SHEET NUMBER
59-2482rl		Foundation Plan	131 of 267
59-0025		ALL	

COMMENTS

PROJECT ENGINEER	SPECIFICATION OR CONSTRUCTION ENGINEER
	John Doe

E-MAIL REQUEST TO *KATHY MATHES* ***OR*** *BILL IRWIN* ***OR DROP OFF FORM IN THE*** *ACCOUNT REQUEST FOLDER* ***OUTSIDE CUBICLE*** *5th floor - Column 1H*

Structures Resident Engineer (RE) Pending File Procedure

Structure Construction Transitioning to a New Procedure

Structure Construction (SC) has developed a new drop box tool to simplify and automate the procedure for accessing and receiving documents for the RE Pending file, by enabling the designer to upload documents directly into the Structures RE Pending File folder on the SC Intranet. Structure Construction has provided a user guide for the designer detailing how to use the new Structures RE Pending File drop box tool. This guidance document, *User Guide for Structures RE Pending File Drop Box*, is attached for reference.

The drop box tool will be implemented August 4, 2015.

The Bridge Construction Engineer, the Structure Representative (if one has been assigned), and the SC Headquarters Office Associates will be notified via email when a file has been uploaded in the RE Pending File. This email will include a link to view the uploaded file(s).

The Structures RE Pending File folder, as well as the entire electronic job file, can be accessed through on the SC Intranet at: http://dschq.dot.ca.gov/oscms/

Structure Construction will continue the current practice of shipping two full-size 4-Scale deck contour plots to the Structure Representative via overnight mail.

Documents No Longer Included/Located in the Structures RE Pending File

Documents produced by Geotechnical Services, such as *Foundation Reports* and *Core Log Viewing Sheets*, will not be included in the Structures RE Pending File. Instead, such documents can be accessed through the GeoDOG link on Geotechnical Services Intranet page, or by using the direct link at: http://svgcgeodog.dot.ca.gov/ .

For Technical Difficulties

For technical difficulties, send an email to the SC Office Associates mailbox at: sc.office.associates@dot.ca.gov.

USER GUIDE FOR STRUCTURES RE PENDING FILE DROP BOX

Purpose

This user guide provides instructions on the use of the new Structures Resident Engineer (RE) Pending File Drop Box tool. This tool was developed by Structure Construction (SC) Headquarters (HQ) to simplify and automate the procedure for accessing and receiving documents for the RE Pending File. Designers can upload files for a project directly into the Structures RE Pending File Drop Box tool located on the SC Intranet.

The 4-Scale deck contour plots will not be uploaded to the Structures RE Pending File. Structure Construction HQ will continue the current practice of shipping these to the Structure Representatives via overnight mail.

Note: Google Chrome is the recommended browser. Firefox, IE 9+, Opera and Safari are also supported browsers.

Target Audience

Any office that produces plans and quantities for a project to be advertised must provide a Structures RE Pending File for use by the SC Structure Representative (refer to Structure Design guidance on this topic). Typical design offices are listed below:

Office	**Division/Subdivision**
Structure Design (SD)	Division of Engineering Services (DES)/Structure Design
Structure Office Engineer (SOE)	DES/Structure Design
Office of Transportation Architecture (OTA)	DES/Structure Design
Office of Electrical, Mechanical, Water and Wastewater Engineering (OEMWW)	DES/Structure Design
Design & Technical Services (DTS)	DES/Structure Policy and Innovation
Structural Design and Analysis	Division of Maintenance/Structure Maintenance & Investigations (SM&I)

Structures RE Pending File Documents

There are various documents that should be part of the Structures RE Pending File. Design features of each structure will determine which documents should be included. Documents are preferred in PDF format. Types of documents may include, but are not limited to:

- Designer Notes (includes pertinent emails or other miscellaneous information).
- Joint Movements Calculations (Form DS-D 0129).
- Quantity Calculations.
- Schedule of Values (from OTA and OEMWW).
- Shaft Design Information Forms (See Memo to Designers 3-7, Attachment 1, April 2012).
- 4-Scale Deck Contour Plots (2 copies of full size plots).

Note: The 4-Scale deck contour plots are included as part of the Structures RE Pending File; however, they will not be delivered via this tool. The Designer will deliver the 4-scale deck contour plots to SC HQ for overnight shipment to the SC Structure Representative.

Before Uploading Documents

The name of each file uploaded into the electronic RE Pending File must include the:

- Contract Number (use the EA: XX-XXXXX).
- Bridge Number (XX-XXXX).
- Type of Document.
- Date the document was generated (YYYY-MM-DD)

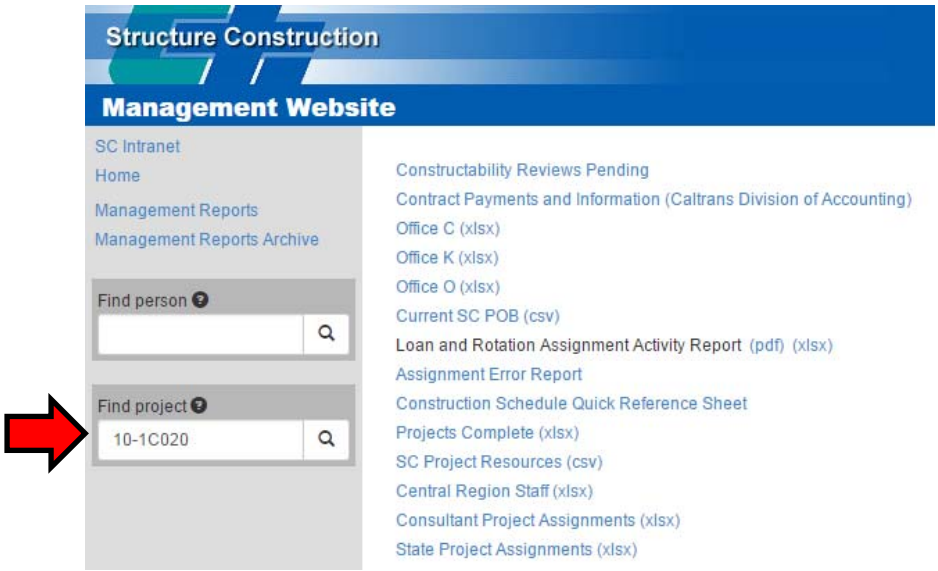
Consistency, accuracy and completeness are essential and required so that each file can be easily located and identified. Before uploading a document, rename each document using the following format and naming convention: XX-XXXXX XX-XXXX Type of Document YYYY-MM-DD, (e.g., 10-1C020 59-0101 Joint Movements Calculations 2015-06-08). For some documents, such as the Contract Award Summary, the Bridge Number will not be included (e.g., 10-1C020 Contract Award Summary 2014-07-16).

Instructions to Upload a File

Step 1: Launch browser (Google Chrome preferred). Access the SC Management site at: http://dschq.dot.ca.gov/oscms/. Bookmark this site, or navigate through the SC Intranet page at: http://onramp.dot.ca.gov/hq/oscnet/, then click on the *SC Management* link on the left side of page.

Step 2: Enter the Contract Number in the "Find project" box. The Contract Number must be in 7-digit format, separating the district with a dash (e.g., 10-1C020). The project can also be located by entering the ten-digit EFIS Project ID (e.g., 1014000061).

Click the magnifying glass symbol to the right or hit "Enter" to start the search.

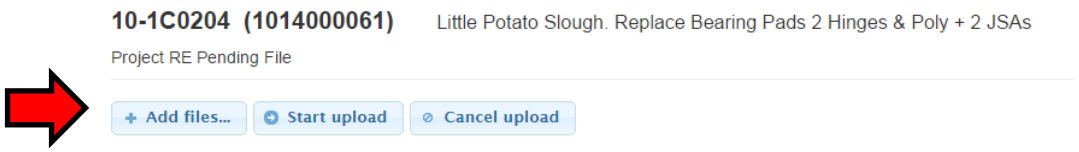


Step 3: When found, the project page is displayed.

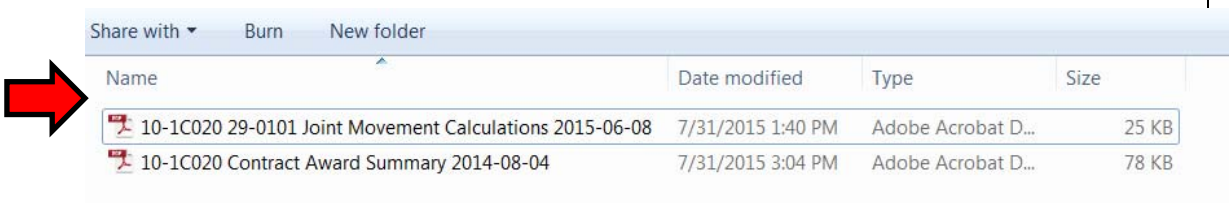
- Click on “Structures RE Pending File” under the “Files” heading on the left side of page.

Step 4: The Structures RE Pending File drop box is now open.

- Click the “+ Add files” button. Locate files to be uploaded.

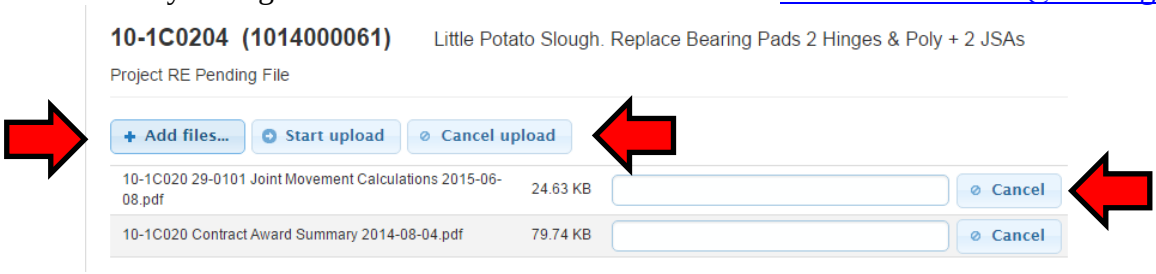


Step 5: Select document to be uploaded by double-clicking the filename or by clicking once on the filename and then “open” on the pop-up menu as shown below. Files can be added one at a time, by using “shift + click” to select multiple files, or by “dragging and dropping” the selected file from its folder directly onto the drop box screen.

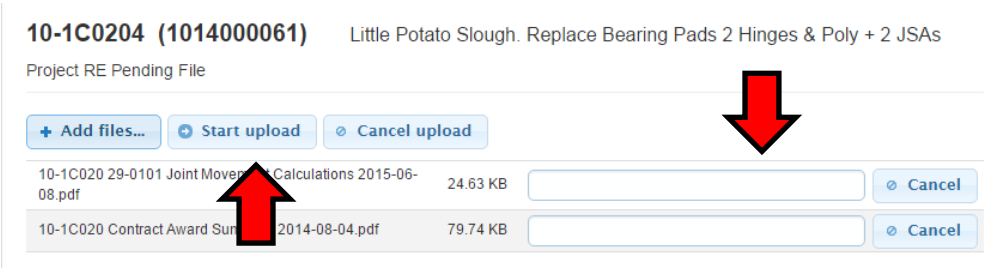


Ensure that the filename is in the correct format (XX-XXXXX XX-XXXX Type of Document YYYY-MM-DD). Refer to the “Before Uploading Documents” section referenced above. If not, click “Cancel” and go back and edit the filename so that it conforms to the naming convention. If “Open” was clicked with an incorrect file name the next screen (shown below) will be displayed, click “Cancel upload.” Another option is to click the “Cancel” button and the file will be de-selected from the selected files.

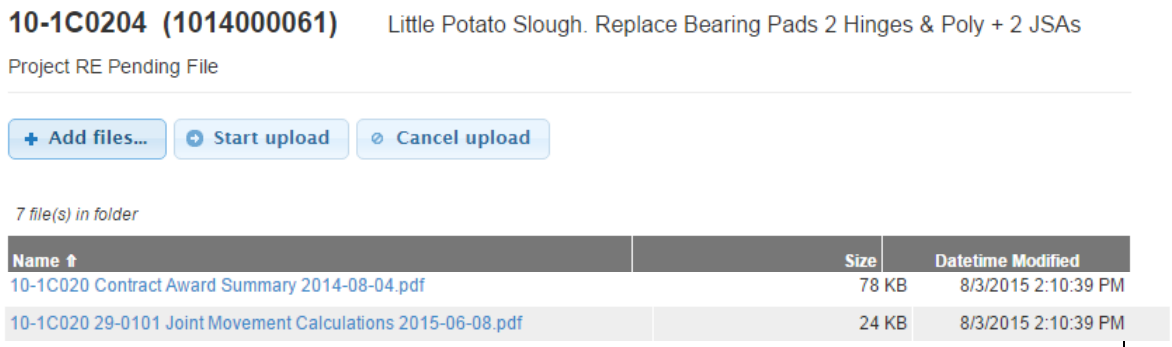
Note: Be careful when selecting documents to upload, as there is no "undo" feature when "Start upload" is clicked. Incorrect uploads must be handled by contacting SC HQ directly through the SC Office Associates mailbox at: sc.office.associates@dot.ca.gov.



Step 6: Click the "Start upload" button to begin the upload. A status bar will fill as the process is being completed. Successfully uploaded files will move to the "Files in folder" section (below the bar).



A successful upload screen will look like this:



Automatic Notifications

The system will automatically email a notification of the upload to the SC Bridge Construction Engineer, the SC Structure Representative (if assigned), and the SC HQ Office Associates mailbox.

For Technical Difficulties

For technical difficulties, send an email to the SC Office Associates mailbox at: sc.office.associates@dot.ca.gov.

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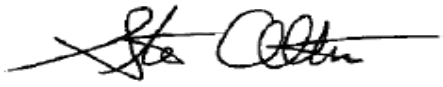
TABLE OF CONTENTS



STEVE ALTMAN
Deputy Division Chief
Structure Construction
Division of Engineering Services

Denotes the document is a Bridge Construction Bulletin

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Project Specific and Other Documents Required to be Submitted to Structure Construction Headquarters

The purpose of any record is to preserve information for future use. The record must clearly and accurately portray existing conditions and the events as they occur. Reports prepared from such records should present the facts and conclusions as clearly and concisely as possible. The importance of accurate, factual records and reports cannot be overemphasized. These reports are public documents and can be used for any litigation inquests.

Attachment No. 1 identifies documents that must be submitted to the Structure Construction (SC) headquarters (HQ) office in Sacramento. They include:

- Project specific records and reports that the Structure Representative is responsible for submitting.
- Other documents such as the *Change of Address* form, *Travel Expense Claims*, *Long Term Assignment* form, etc. that all employees are responsible for submitting when necessary.

Attachment No. 1 also identifies the Bridge Construction Memo (BCM) that references the documents listed.

The last table in Attachment No. 1 identifies documents that are no longer required to be submitted to SC HQ, for which the referenced BCM needs to be revised to specify these are no longer required to be submitted. Many additional records are required to be kept in the job files. Submission of records to Sacramento does not preclude placement in the permanent project record files.

Most of the final reports and other forms are available for download from the SC intranet. Electronic submittals are encouraged. Email all electronic records to the general SC Office Associate email SC.Office.Associates@dot.ca.gov .

Keep copies (electronic and/or hard) of all records transmitted to the appropriate SC HQ office in Sacramento until notification of receipt has been obtained (e.g. *Records Received Memo*).

PROJECT SPECIFIC DOCUMENTS REQUIRED to be SUBMITTED to SC HQ

	SUBMIT AT START OF WORK	
	Title of Form or Description	***Reference BCM***
	Change of Address for Check Disbursement (Form SC-0102)	BCM 2-5.0
	SUBMIT WHILE WORK IS IN PROGRESS (If Applicable)	
	Title of Form or Description	***Reference BCM***
	Travel Expense Claim (Form FA-0302)	BCM 10-7.0
	Long-Term Assignment (LTA) Information and Certification of Subsistence Rates (Form FA-1350)	BCMs 2-5.0, 10-8.0
	Falsework Drawings, Temporary Structure Plan Analysis Report, Contractor's Calculations, and SC Engineer's Calculations	BCM 120-1.0
	Confirmation of Sending Report of Permanent Horizontal and Vertical Clearances to Permits	BCM 2-20.0
	Column Guying Plans, Temporary Structure Plan Analysis Report, Contractor's Calculations and SC Engineer's Calculations	BCM 120-4.0
	Demolition Plans	BCM 124-2.0
	Shoring Drawings, Temporary Structure Plan Analysis Report, Contractor's Calculations and SC Engineer's Calculations	BCM 122.1.0
	Pile Design Data Form	BCMs 130-7.0, 130-10.0
	Authorized CIDH Pile Mitigation Plan	BCMs 130-7.0, 130-12.0
	CIDH Post Mitigation Report	BCMs 130-7.0, 130-12.0
	Working Drawings for Contractor-designed Temporary Bridges or Other Facilities (for Railroad or State Highway Involvement Only)	BCM 145-4.0
	Shipping Record (Form DAS-FM-1126)	BCM 13-4.0
	Receiving Record (Form FA-1226a)	BCM 13-5.0
	Summons and Complaint or Subpoena	BCM 15-3.0
	Letter Confirming Loss or Theft of Non-expendable Equipment	BCM 13-2.1
	Pile Quantity and Driving Record, Pile Quantity and Drilling Record, Log Pile Sheet and Pile Layout Sheet (Forms SC-4803, SC-4804, SC-4805, SC-4806)	BCM 3-7.0
	Accident Report: On-the-Job Bridge Construction Related Accidents (Form SC-0601)	BCMs 14-3.0, 14-4.0
	Report of Serious Injury or Fatal Industrial Accidents Involving Contractor's Personnel	BCM 14-3.0

PROJECT SPECIFIC DOCUMENTS REQUIRED to be SUBMITTED TO SC HQ
continued

	SUBMIT AT COMPLETION OF THE WORK (If Applicable)	
	Title of Form or Description	***Reference BCM***
	Notification to Structure Maintenance Upon Structure Completion	BCM 9-9.0
	As-Built Plans (including shop plans)	BCMs 9-1.0, 2-12.1
	Joint Seal Report	BCMs 9-7.0, 135-2.0
	Paint Records (Forms SC-4601, 6302, 6305)	BCM 155-1.0
	Progress Schedule	BCM 9-5.0
	Report of Completion	BCM 9-4.0
	CIDH Pile Mitigation Plan	BCMs 130-7.0, 130-12.0
	CIDH Pile Information Form (tested piles only)	BCMs 130-7.0, 130-10.0, 130-3.0

DOCUMENTS NO LONGER REQUIRED TO BE SUBMITTED TO SC HQ

These Documents Previously No Longer Required to be Submitted to SC HQ ***Note: These are lined-out to emphasis they are not submitted to SC HQ***	
Title of Form or Description	***Reference BCM***
~~Cash Expenditure Voucher (Form FA-202)~~	BCMs 10-7.1, 11-9.0 (Revision forthcoming)
~~Concurrence for Change Order Involving Structure~~	BCM 7-2.0 (Revision forthcoming)
~~Contract Change Order (copy) (Form HC-5)~~	BCM 7-2.0 (Revision forthcoming)
~~Letter of Transmittal for Contract Change Order (Duplicate DC-CEM-4903)~~	BCM 7-2.0 (Revision forthcoming)
~~Copies of Outgoing Correspondence Pertinent to Structure Work~~	BCM 2-6.0 (Revision forthcoming)
~~Copies of Incoming Correspondence Pertinent to Structure Work~~	BCM 2-6.0 (Revision forthcoming)
~~CIDH Pile Placement Plan~~	BCMs 130-7.0, 130-9.0 (Revision forthcoming)
~~CIDH Concrete Mix Design (Wet Only)~~	BCMs 130-7.0, 130-9.0 (Revision forthcoming)
~~Notification of Retrofit Completion~~	BCM 3-5.0 (Revision forthcoming)
~~Material Certification (copy)~~	BCM 9-2.0 (Revision forthcoming)
~~*Project Status Initial* (Form SC-6101)~~ ~~*Project Status Final* (Form SC-6102)~~	BCM 6-5.0 Information now submitted directly in *VISION* [1]
~~Disposition of Job Records (copy of letter sent to RE)~~	BCM 9-6.0 (Revision forthcoming)
~~Construction Photographs~~	BCM 3-4.0 (Revision forthcoming)

[1] http://dschq.dot.ca.gov/scims/webapps/vision

Daily Reports and Weekly Newsletters

General Information

A daily report documenting significant developments related to structure work will be prepared by each Structure Representative on Form CEM-4501, *Resident Engineer's Daily Report.* Assistants to the Structure Representative who are in charge of major phases of work will prepare a daily report Form CEM-4501, *Assistant Resident Engineer's Daily Report*. This form can be downloaded from the Caltrans Electronic Forms System (CEFS) website[1].

The Structure Representative must write a daily report for each day there is structure activity on the project. Daily reports should also be written when there is no structure activity to document:

- When there is data or information which is pertinent to the contract, such as granting a weather non-working day, discussions with the Contractor, the Project Designer, etc.
- When there is no work. If there is no work for the week, one report is written to document there is no work. If a report is not written, it is not clear if a daily report is misplaced or lost.

Daily reports should document work on one contract only. Each contract should have separate daily reports.

Daily reports must be numbered according to the number on the *Caltrans Working Day Calendar*. Caltrans non-working day daily reports are numbered as the last working day followed by A, B, C, etc. For example, Friday, September 2, 2016 is report No. 864; Saturday, September 3, 2016 is report No. 864A; Sunday, September 4, 2016 is report No. 864B; Monday, September 5, 2016 (Holiday – Labor Day) is report No. 864C; Tuesday, September 6, 2016 is report No. 865, etc. Daily reports covering one day of more than one page in length must be numbered sheet 1 of 2, 2 of 2, etc.

Each daily report must be signed at the bottom. If there is any question about the legibility of the signature, the writer's name must also be printed.

It is important that hand-written daily reports are legible. There is no excuse for poor penmanship or grammar. These are official documents that may be used to settle claims, cost adjustments and lawsuits. These reports should be legible, sensible and most importantly factual.

[1] http://cefs.dot.ca.gov/jsp/forms.jsp

Resident Engineer's Daily Report

The daily reports prepared by the Structure Representative should include (but is not limited to) the following information:

1. Weather conditions during the work, noting rain, exceptional wind, maximum and minimum temperature, amount of rainfall, etc. The online weather site in which the information was obtained can also be noted in your daily report. The effect of weather on job progress should also be noted. Include stream gauge readings for structures over waterways.

2. Any special developments or incidents. Do not include a description of routine operations when these are covered in the Assistant Resident Engineer's Daily Report.

3. A summary of all important conversations and discussions relative to job progress, performance of the work, etc. In the case of verbal instructions, give the essence of the instruction, to whom given, and whether there were any comments or objection by the person or persons to whom the instructions were given. All important instructions should be confirmed in writing and so noted in the daily report.

4. Record of important telephone conversations.

5. List of names of visitors and their relation to the project (District Safety Officer, FHWA auditor, Bridge Construction Engineer, etc).

6. Overtime worked by Structure Construction personnel is documented on Form SC-0104A or Form SC-0104B, *SC Preauthorization Overtime Log by Employee* and *by Unit*. The Area Construction Manager (ACM) may require that overtime is also documented on daily reports identifying the:
   - Employee's name.
   - Starting and Ending time the employee worked overtime.
   - Total net hours of overtime worked by the employee.
   - Reason the overtime work was necessary.

   If overtime is documented on a daily report, it is not part of the documentation required to satisfy Deputy Directive 56, *Use of Overtime*.

Assistant Resident Engineer's Daily Report

Assistant Resident Engineer's Daily Reports, when properly prepared, constitute a valuable supplement to the reports of the Structure Representative. They should be prepared for all major units of work. In addition, a separate report should be made for each Change Order on which force account work is being done. Do not give copies of daily reports to the contractor.

All daily reports prepared by the Assistant Structure Representative should be reviewed by the Structure Representative, then initialed in the lower right-hand corner of the form under the Assistant Structure Representative's signature.

The Contractor's normal starting and stopping time should be documented in the "shift hour" in the upper right corner of the form. The central portion of the form consists of a detailed breakdown of labor and equipment in use or idle. In many cases, segregating labor and

equipment by contract item does not provide a sufficiently detailed breakdown. For instance, showing all labor and equipment employed on concrete work under the concrete item will be too general for most jobs. This work should be further segregated into sub-groups, such as falsework, formwork, curing, surface finishing, etc. Furnishing prestressed girders is another item where it is often necessary to break down the work into separate operations. Structure Construction (SC) employees may use their own discretion on the amount of detail necessary. However, the purpose of the report is to establish, with reasonable certainty, the daily labor and equipment employed on a particular operation or phase of the work. In the event of a claim or similar situation, this report is absolutely essential!

Equipment identification numbers must be entered on the daily reports, noting the hours worked and/or idle time.

Under "Location & Description of Operation", include a complete factual description of the work in progress at the location being reported on. Include factors that may be affecting job progress, such as notations of arrival and departure of major items of equipment, material delivery, and problems that are encountered during the work. Perhaps the most important notation is to record any important conversations with the Contractor, particularly when instructions are given. Note what the instruction was and to whom it was given. Additional items to include are Quality Assurance testing results, field measured quantities, and any work done by the Structure employee (such as field surveying). Remember to write facts and not opinions. Any overtime worked by the SC employee is documented on Form SC-0104A or Form SC-0104B, *SC Preauthorization Overtime Log by Employee* and *by Unit*. The Area Construction Manager may require that overtime is also documented on daily reports in this section along with a written explanation of why overtime was required. Documenting overtime on the daily report is not part of the documentation required to satisfy Deputy Directive 56, *Use of Overtime*.

Separate daily reports should be kept for any work which is being performed, and on which it is anticipated there will be a claim filed at the end of the job.

Weekly Newsletter

The *Weekly Newsletter*, Form SC-2701A or Form SC-2701B, is intended to present a brief, concise summary of the work performed during the week and work planned for the next week. The statements in the Weekly Newsletter should be general in nature. A detailed description of operations is not required. It is not necessary to list each structure on the job and show the work performed on the individual structures. The intent of the Weekly Newsletter is to give a general "picture" of the work in progress and should include any items of special interest which occurred during the week, such as delays to the job, Contractor's complaints, major accidents, diversion of traffic, opening of structures, etc.

Use of the *Weekly Newsletter* by Structure Representatives is at the discretion of the ACM. This form is only used if your ACM requires its use.

All the information called for on the *Weekly Newsletter* must be completed. The "Estimated Date of Completion (Str.)" refers to the estimated completion date of the structures portion of the work. The estimated date of completion is the Structure Representative's best estimate of the

actual date the structure work will be completed. It should not be the completion date shown on the *Weekly Statement of Working Days*.

Distribution

The distribution of the *Daily Reports* and *Weekly Newsletters* must be in accordance with the following table:

Distribution To	Weekly Newsletter*	Resident Engineer's Daily Report	Assistant Resident Engineer's Daily Report
Area Construction Manager	Copy	Copy	Copy
Bridge Construction Engineer	Copy	Copy	Copy
Resident Engineer	Original	Original	Original + Copy

***At the discretion of the Area Construction Manager**

For *Weekly Newsletters* and *Daily Reports* submitted to the Resident Engineer (RE), the Structure Representative must comply with District policies.

When SC employees are assigned as RE's, they will comply with District policies concerning submittal of the *Weekly Newsletter* and *Daily Reports*. However, copies of the *Weekly Newsletter* and *Daily Reports* which pertain to structure work are to be distributed as described above.

Current SC policy no longer requires the submission of *Assistant Resident Engineer's Daily Reports* to SC Headquarters in Sacramento. Any *Assistant Resident Engineer's Daily Report* requiring further review will be forwarded to SC Headquarters in Sacramento by the ACM.

Project Record Review

The Area Construction Manager (ACM) shall ensure that one Project Record Review be performed annually for each Structure Representative by a senior level engineer or the ACM.

The Project Record Review form (Form No. DSC –110) shall be completed for each review. The Project Record Review form can be found in Section 16 (Bridge Construction Forms) of the BCRP Manual and on the OSC intranet website link: http://onramp.dot.ca.gov/hq/oscnet/downloads/forms.htm.

A copy of all completed Project Record Reviews shall be filed in Category 11, "Project Information" of the contract records and a copy will be sent to the Offices of Structure Construction Headquarters in Sacramento. Additionally, it is recommended that Senior Bridge Engineers place a copy of the review in their working file.

If inadequacies are found during a project record review, the reviewer shall conduct a Project Record Review within one month to verify that noted problems have been corrected.

Construction Photographs

General Information

The Structure Representative should take photographs to record structure construction progress on all contracts. The photo record shall be kept for any new or modified bridges, retaining walls, sound walls, and buildings. The photo record should be as complete as possible and include the following:

1. Preliminary photos of structure sites before work starts. For bridges, include views from both approach directions and from upstream and downstream if applicable. If fences, stream banks, utility poles, private roads, etc., will be disturbed during construction, be sure to show them in the original photos.

2. Take photos of all new Structure Construction personnel, and occasional photos of other Structure Construction personnel assigned to the work. Identify them by name and date on the back of the photos.

3. Progress photos of general and special structure construction methods (taken periodically).

4. Photographs of accidents, detour signs and barricades, poor workmanship, disputable features of the work, and items that may involve future claims.

5. Final structure photos taken after all work is completed and the site is cleaned up. Photos should be taken that give the best view of the structural features and the completed structure site. At least one picture should show the structure in its entirety.

Cameras and Supplies

Digital cameras have been assigned to most Structure Representatives for job use. Batteries are to be ordered from the District through the Resident Engineer, in accordance with District policy for expendable supplies. Additional digital camera data cards and data card readers are to be ordered through the Office of Structure Construction in Sacramento.

Identification of Photographs

The Structure Representative should comply with District instructions and policy in connection with identifying Structure Construction photographs. In absence of District policy regarding digital photos use the guidelines contained in this memo.

The naming of digital photos can follow this suggested format: EA_Date_Subject.jpg. The EA will include the District and contract number and the date will have the following format,

yyyymmdd. The subject may be a bridge name or a specific location. An example of the format is 07126414_20020614_Mills1.jpg. This is a photo from project 07-126414 taken on 14 June 2002 and it is the first photo taken at Mills Ave UC. This naming convention allows files to be easily sorted by project number followed by the date taken.

Printing of Digital Photos

The digital photos should be printed out and filed in the job files. The photos should be printed four per a page. Each photo should have the file name and a description of the picture, the date it was taken and the initials of who took it. You can use a simple Word template to print out the pictures. This template can be downloaded from the OSC website. An example is attached to this memo. The photos can be inserted into the template and the necessary information can be provided. Do not edit the photo once it has been inserted in the template. This increases the file size substantially. This file can then be saved for further use after it is printed. The software that came with the digital camera may also be suitable for printing the pictures. Any prints made of digital photos need to include the same basic information of file name, date taken, project EA, Structure Representative, and a description.

If requested, printed copies of digital photos should be given to the District for them to use as they see fit. If possible, a CD should be made of the digital photos at the end of the project and given to the District.

Submit all construction photos to the Headquarters Office of Structure Construction in Sacramento. If using digital photos e-mail the appropriate OSC Headquarters Office Associate the photo and the requested information. Check the OSC web page or call (916) 227-7777 if you need to verify the name of the current Office Associate assigned to your area.

Sending or e-mailing a copy of job photos along with photo identification to the Headquarters Office of Structure Construction in Sacramento in a timely manner allows Management to keep abreast of changing methods and problems in construction. These job photos are routed through the Headquarters Office of Structure Construction in Sacramento and are then routed to the responsible design unit in the Office of Structure Design or the Office of Specially Funded Projects, where they are a valuable tool in constructability awareness.

EA	59-00004				
Co-Rte-KP (PM)	Sac-50-9.20				
Structure Rep.	John Doe				
File Name:	07126414_20020614_Mills1.jpg		File Name:		
Date:	6-14-02	By Int: J.D.	Date:		By Int:
Description Pre-job photo of undisturbed contractor's staging area			Description		
File Name:			File Name:		
Date:		By Int:	Date:		By Int:
Description					

Notification of Retrofit Completion

The Caltrans Headquarters Office of Engineering Project Management retains responsibility for program management of the Caltrans seismic retrofit program. In order to maintain an up to-date status of the seismic retrofit program, the Office of Engineering Project Management needs to be informed when the seismic retrofit of a structure is "functionally" complete. "Functionally" complete means that all structural seismic retrofit elements are installed and fully functioning.

In order to notify the Office of Engineering Project Management that the seismic retrofit of a structure is "functionally" complete, Structure Representatives are to fax a "Notification of Retrofit Completion" to the Office of Structure Construction in Sacramento. This notification is to be faxed in for each structure when it becomes "functionally" complete.

It is expected that this notification will precede formal contract acceptance, which may not occur until some later date.

Information required on the Notification of Retrofit Completion" shall include the following:

- Date of "functional" completion.
- Contract number.
- County, Route, Post Mile.
- Description of retrofit work performed.
- Bridge Name and Number.
- RE/SR Name and Telephone.

The "Notification of Retrofit Completion" shall be faxed to the Office of Structure Construction at (916) 227-8179 or CAL NET 498-8179.

Shop Drawing Review for Temporary Structures

When the contractor submits shop drawings for temporary structures (falsework, trenching and shoring, cofferdams, column guying, and trestles) that require the drawings to be signed by an engineer who is registered as a Civil Engineer in the State of California, it is Structure Construction (SC) practice to perform an independent engineering analysis. The findings of the analysis are to be presented to the contractor in a *Temporary Structure Plan Analysis Report* that has been signed and sealed or stamped by the licensed engineer performing the review. This is in accordance with the *Streets and Highways Code*[1], Section 137.6, and the *Business and Professions Code*[2], Section 6735. A sample *Temporary Structure Plan Analysis Report* is on pages four and five of this Bridge Construction Memo (BCM).

Upon completion of the review of the temporary structure, the Structure Representative or the licensed engineer performing the review will complete a *Temporary Structure Plan Analysis Report* and transmit it to the contractor using existing processes for transmitting written documentation to the contractor.

Structure Representative Responsibilities:

Rejections**:**

- Contact the temporary structure design engineer by phone or in person to discuss the reason(s) for rejection of the submittal prior to sending the *Temporary Structure Plan Analysis Report*. Document this discussion in the appropriate *Chronological Log* and *Daily Structure Representative Report*.
- Omissions, inconsistencies and design deficiencies discovered during any review should be noted in red on the drawing(s).

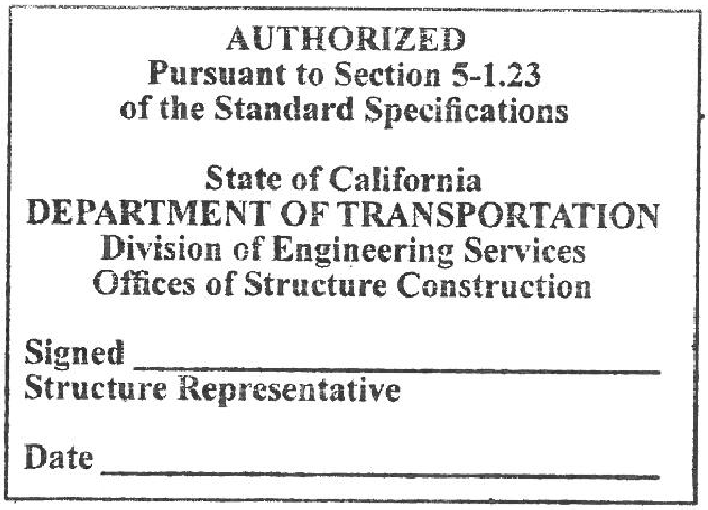
[1] *Streets and Highways Code,* Section 137.6.
The design of, the drafting of specifications for, and the inspection and approval of state highway structures shall be by civil engineers licensed pursuant to the Professional Engineers Act (Chapter 7 (commencing with Section 6700), Division 3, *Business and Professions Code*).
The approval of plans for, and the inspection and approval of, temporary structures erected by contractors in connection with the construction of state highway structures shall also be by such licensed civil engineers.

[2] *Business and Professions Code,* Section 6735.
All civil (including structural and geotechnical) engineering plans, calculations, specifications, and reports (hereinafter referred to as *documents*) shall be prepared by, or under the responsible charge of, a registered civil engineer and shall include his or her name and license number. The *Business and Professions Code* is available at the following website: http://www.leginfo.ca.gov/.html/bpc_table_of_contents.html

- Return the temporary structure shop drawings to the contractor for correction accompanied by a *Temporary Structure Plan Analysis Report* citing the reason(s) the drawings are not acceptable. The report should list the specific deficiencies found (e.g., 6x16 stringers overstressed in bending) but elaboration is unnecessary. Do not suggest any corrective measures; listing the deficiencies is sufficient.

Authorizations:

- Authorize the temporary structure shop drawings when the design meets all contract requirements.
- Authorize each sheet of the temporary structure shop drawings using the following stamp:



SC authorization stamp for contracts using the 2010 Standard Specifications

APPROVED
Pursuant to Section 5-1.02
of the Standard Specifications
State of California
DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Offices of Structure Construction
Signed _____
Structure Representative
Date_____

SC approval stamp for contracts using the 2006 Standard Specifications

Each sheet must be signed by the Structure Representative or by the licensed member of his staff who actually reviewed the design.

- Return one set of the authorized[3] drawings to the contractor, with the *Temporary Structure Plan Analysis Report*.
- Concurrently with authorization, submit one copy of the authorized drawings and one copy of the engineer's calculations to the SC Headquarters Office in Sacramento as directed in BCM 3-3.0, *Project Record Review*, along with a copy of the *Temporary Structure Plan Analysis Report* sent to the contractor.
- Ensure one set of the authorized drawings, the original calculation sheets, and *Temporary Structure Plan Analysis Report* is retained in the job files.
- Authorizing temporary structure shop drawings for construction that involve railroads will be contingent upon approval of the shop drawings by the railroad company.

The *Temporary Structure Plan Analysis Report* must include the following paragraphs:

- "The temporary structure shop drawings, *(insert type of drawing, i.e. falsework etc.)* dated *(insert date)* for *(insert name of structure)* have undergone an independent engineering review and found acceptable and are authorized to the extent provided in the Standard Specifications, Section 5-1.23, *Submittals*[4]."
- "Your attention is directed to your responsibilities pursuant to Standard Specifications, Sections 5-1.23, *Submittals*, and 7-1.04, *Public Safety*,[5]and (*insert appropriate Standard Specification reference, i.e. Standard Specifications, Section 48, Temporary Structures*[6]), and to applicable requirements of the *Construction Safety Orders*."
- "You are reminded that *(insert type of temporary structure, i.e. falsework, shoring, etc.)* construction must conform to the authorized drawings, that the materials used must be of the quality necessary to sustain the stresses required by the design, and that workmanship must be of such quality that the *(insert type of temporary structure, i.e. falsework, shoring, etc.)* will support the loads imposed without excessive settlement or joint take-up beyond that shown on the *(insert type of temporary structure, i.e. falsework, shoring, etc.)* authorized drawings."

[3] Note 2006 Standard Specifications (SS) uses term *Approved* whereas 2010 Standard Specifications calls it *Authorized*
[4] 2006 SS, Section 5-1.02, *Plans and Working Drawings.*
[5] 2006 SS, Section 7-1.09, *Public Safety.*
[6] 2006 SS, Section 51-1.06, *Falsework.*

The following is a sample *Temporary Structure Plan Analysis Report* that can be used as a template:

Structure Construction
Temporary Structure Plan Analysis Report

Insert Date

Project Information

Dist-EA
Dist-Co-Rte-PM
Structure or bridge name
Br. No.

Type of structure reviewed: *(insert falsework, trenching and shoring, column guying)*

Chronology:

Plans were received: *(date)*
Plans rejected: *(date)*
Revision No. 1 received: *(date)*
Revision No. 1 rejected: *(date)*
Revision No. n received: *(date)*
Revision No. n rejected: *(date)*
Review completed: *(date)*
Elapsed review time: _____ days

Introduction:

This report presents the results of an independent engineering review for the *(insert type of review completed, i.e. falsework, trenching and shoring, column guying)* at (*identify specific location i.e. Frame 1, stage 1 etc.)*

Discussion:

Rejection – *This portion of the report would describe specific deficiencies found with the plan that would be cause for rejection i.e. The following members have been found to be overstressed:*

W36x240 stringer in span FW5-6 is overstressed in bending
Post in bent FW5 overstressed in compression

For clarity redline clouds may be made on the temporary structure drawings and then described here.

Structure Construction *Temporary Structure Plan Analysis Report* continued

Authorization – No exceptions were found.

Conclusion:

Rejection:

The *(insert type of review completed, i.e. falsework, trenching and shoring, column guying)* plan for *(identify specific location)* of the (*Bridge name, Br. No.),* is rejected based upon an independent engineering analysis found the deficiencies listed above.

Authorization:

The *(insert type of review completed, i.e. falsework, trenching and shoring, column guying)* plan for *(identify specific location)* of the (*Bridge name, Br. No.),* is authorized based upon an independent engineering analysis and found acceptable and is authorized to the extent provided in the Standard Specifications, Section 5-1.23[7], *Submittals*.

The contractor's attention should be directed to their responsibilities pursuant to the Standard Specifications, Section 5-1.23, *Submittals* 7-1.04, *Public Safety*,[8] and *(insert appropriate standard specification references as appropriate, i.e. Section 48, Temporary Structures*[9]), as well as the *Construction Safety Orders*.

(insert type of review completed, i.e. falsework, trenching and shoring, column guying) must be constructed to conform to the *(insert type of review completed, i.e. falsework, trenching and shoring, column guying)* authorized shop drawings and the materials used must be of the quality necessary to sustain the stresses required by the *(insert type of review completed, i.e. falsework, trenching and shoring, column guying)* design, and that the workmanship shall be of such quality that the *(insert type of review completed, i.e. falsework, trenching and shoring, column guying)* will support the loads imposed on it without excessive settlement or take up beyond that shown on the *(insert type of review completed, i.e. falsework, trenching and shoring, column guying)* shop drawings.

If you have any questions regarding this report, please contact Structure Representative at (XXX) XXX-XXXX.

Howard Street, P.E.
Structure Representative
Structure Construction

[7] 2006 SS, Section 5-1.02, *Plans and Working Drawings*.
[8] 2006 SS, Section 7-1.09, *Public Safety.*
[9] 2006 SS, Section 51-1.06, *Falsework.*

Pile Records

General Information

It is the responsibility of the Structure Representative to provide for pile inspection and to develop pile records during the construction of the project.

The following forms are to be used to record the required data:

Form DC-SC78, Pile Quantity and Driving Record (Driven Piles)

Form DC-SC78A, Pile Quantity and Driving Record (CIDH Piles)

Form DH-OS C79, Log Pile Sheet

Form DH-OS C80, Pile Layout Sheet

A sample of each of these forms can be found in BRIDGE CONSTRUCTION RECORDS AND PROCEDURES, Volume I, Section 16.

Care should be taken in the preparation of these records as they will become a permanent part of the files maintained by the Office of Structural Foundations. It may be desirable to prepare extra copies of the forms for Structure employees to use in the field.

Form DC-SC78, Pile Quantity and Driving Record (Driven Piles) or Form DC-SC78A, Pile Quantity and Drilling Record (CIDH piles)

In general, list only one bridge or structure per sheet. This sheet is to provide a basis of payment to the Contractor for each item of work; therefore, at least one sheet should be prepared for each class or type of pile within the bridge or structure.

The pile number shown on the Pile Quantity and Driving Record or on the Pile Quantity and Drilling Record should/correspond to the pile numbers shown on the Pile Layout Sheet.

The "type pile used" should be the type actually used, not necessarily the pile type designated in the pay item.

Examples of completed Form DC-SC78 and Form DC-SC78A are contained in Attachment No. 1.

Form DH-OS C79, Log Pile Sheet

This sheet is used for driven piles to log the blow count for each foot of penetration. It is necessary that the penetration be referenced to some known elevation in order that the actual pile tip elevation may be established.

A Log Pile sheet is to be prepared for each pile logged, and a minimum of one pile is to be logged in each abutment or bent footing.

Additional piles should be logged when significant changes in the driving conditions are encountered within an individual footing.

Form DH-OS C80, Pile Layout Sheet

The Pile Layout Sheet is to be used to locate the piles which are referred to by number on the Pile Quantity and Driving Record sheet or the Pile Quantity and Drilling Record sheet.

Information shown on this sheet should be sufficient to enable the Structure employee to verify the Contractor's layout for the unit of work to be done.

Disposition of Pile Records

The original of the Pile Quantity and Driving Records or the Pile Quantity and Drilling Records are to be filed in the job records in Category 48, Contract Item Quantity Documents, where they will serve as a source document for progress payment purposes.

For driven piles, a copy of the Pile Quantity and Driving Records, along with copies of the Log Pile Sheets and Pile Layout Sheets for the driven piles, shall be sent to the Office of Structure-Construction in Sacramento as soon as a structure or major portion of the work is complete.

For drilled piles, submission of the pile records to the Office of Structure Construction in Sacramento is no longer required.

Upon receipt by the Office of Structure Construction, the pile driving records will be logged into the project management data base and then forwarded to the Office of Structural Foundations for inclusion in the permanent records. Do not send pile records directly to the Office of Structural Foundations.

DEPARTMENT OF TRANSPORTATION

PILE QUANTITY & DRILLING RECORD
(CIDH PILES)

FORM D.C.3C75A (8/81)

JOB STAMP: 11-Imp-86-64.2/67.8
11-195814

SHEET NO. 48 - 28-1

BRIDGE NO. 58-0721

ITEM DESCRIPTION 16" CIDH PILING

BRIDGE NAME Sparosa

~~ABUT OR~~ BENT NO. 2 FTG Center FTG TYPE _____ BOTTOM FTG ELEV. 310.0

PILE DRILLING INSPECTED BY F. I. Travelot

REINFORCING STEEL INSPECTED BY F. I. Travelot

CONCRETE PLACING INSPECTED BY F. I. Travelot

QUANTITY CALCULATIONS BY F. I. Travelot DATE 10/9/81

QUANTITY CALCULATIONS CHECKED BY I. L. Stayawae DATE 10/19/81

PILE NO.	DATE PILE DRILLED	DATE RE-BAR PLACED	DATE CONCRETE PLACED	(1) SPEC. TOP OF PILE ELEV.	(2) SPEC. PILE TIP ELEV.	(3) THEOR. LENGTH OF PILE (1-2)	(4) MEAS. LENGTH OF PILE	(5) ACTUAL PILE TIP ELEV. (1-4)	(6) PAY LENGTH * SEE NOTE BELOW	REMARKS	LENGTH OF RE-BAR REQ'D.
1	10/8/81	10/9/81	10/9/81	310.3	278.0	32.3	32.5	277.8	32.3	hard drilling	
2	"	"	"	"	"	"	32.8	277.5	"		
3	"	"	"	"	"	"	33.0	277.3	"	12" cobbles at Elev. 290 ±	
4	"	"	"	"	"	"	32.9	277.4	↓		
5	"	"	"	"	"	"	32.0	278.3	32.0		
6	"	"	"	"	"	"	32.3	278.0	32.3		
7	"	"	"	"	"	"	32.7	277.6	"	Core barrel used Elev. 280-285	
8	"	"	"	"	"	"	33.1	277.2	"		
9	↓	↓	↓	↓	↓	↓	32.6	277.7	↓	groundwater at tip - minor seepage	

SHEET TOTAL ITEM NO. 28 290.4 L.F.

* THE PAY LENGTH (6) IS THE THEORETICAL LENGTH (3), EXCEPT THAT IF THE MEASURED LENGTH (4) IS LESS THAN THE THEORETICAL LENGTH (3) THE MEASURED LENGTH (4) WILL BE THE PAY LENGTH (6)

FILE CATEGORY 48

DEPARTMENT OF TRANSPORTATION

PILE QUANTITY & DRIVING RECORD
(DRIVEN PILES)

FORM DOT-3273 (REV. 1/81)

JOB STAMP 05-022014
05-Mon-01-R85.0/R92.2

SHEET NO. 48 - 32 - 8

BRIDGE NO. 44-0211 ITEM DESCRIPT Class 70 PILING

BRIDGE NAME Seaside OC TYPE PILE USED 12" ϕ PC/PS

~~ABUT OR~~ BENT NO. 3 FTG. Right FTG TYPE _____ BOTTOM FTG ELEV. 70.0

HAMMER MAKE Kobe MODEL K25 E= 50,700 ft-lbs (9.2' stroke @ 39 BPM)

DESIGN BRNG. 70T REQUIRED BRNG. 70T BLOW/FT AT REQUIRED BRNG. 20

PILE DRIVING INSPECTED BY P.T. Mall PILE QUANTITY CALC BY P.T. Mall DATE 10/14/81

PILE CONCRETE PLACING INSP. BY NA PILE QUANTITY CHECK BY B.Shoot DATE 10/15/81

PILE NO.	DATE PILE DRIVEN	BLOWS PER FOOT	DATE PILE CONCRETE PLACED	(1) SPEC. TOP OF PILE ELEV.	(2) SPEC. TIP ELEV.	(3) LENGTH IN LEADS	(4) LENGTH OF CUT-OFF	(5) ACTUAL LENGTH IN GROUND (3-4)	(6) ACTUAL TIP ELEV. (1-5)	(7) PAY LENGTH * SEE NOTE BELOW	REMARKS	PRE DRILL HOLE DEPTH	LENGTH OF REBAR PINS
1	10/13/81	30	NA	70.3	20.0	53.0	0.0	53.0	17.3	50.3	Drive pile full length, cut off at cutoff		
2	"	20	"	"	"	60.0	9.7	50.3	20.0	50.3			
3	"	20	"	"	"	"	9.5	50.5	19.8	50.5			
4	"	20	"	"	"	"	8.8	51.2	19.1	51.2		20.0	
5	"	22	"	"	"	"	9.7	50.3	20.0	50.3		20.0	
6	"	20	"	"	"	"	9.6	50.4	19.9	50.4		20.0	
7	"	20	"	"	"	"	9.4	50.6	19.7	50.6			
8	"	20	"	"	"	"	9.6	50.4	19.9	50.4			
9	"	20	"	"	"	"	9.1	50.9	19.4	50.9			
10	10/14/81	20	"	"	"	"	9.3	50.7	19.6	50.7	Pile lagged		
11	"	28	"	"	"	"	9.7	50.3	20.0	50.3			
12	"	165	"	"	"	"	10.3	49.7	20.6	49.7	Pile broke during load driving		
13	"	120	"	"	"	"	11.0	49.0	21.3	49.0	Pile broke during load driving	20.0	
14	"	70	"	"	"	"	10.0	50.0	20.3	50.0		25.0	
15	"	20	"	"	"	"	9.5	50.5	19.8	50.5		20.0	

SHEET TOTALS ITEM NO. 32 15 EA. ITEM NO. 27 755 L.F.

FILE CATEGORY 48

* THE PAY LENGTH IS THE ACTUAL LENGTH IN THE GROUND, EXCEPT THAT NO PAY WILL BE MADE FOR THAT LENGTH OF PILE DRIVEN BELOW THE ELEVATION WHERE SPECIFIED TIP AND/OR SPECIFIED BEARING (WHICHEVER IS LOWER) WAS OBTAINED. ALSO, WHEN STEEL PILES ARE SUBSTITUTED FOR CLASS 45-1, 45-2, OR 70 PILING, THE LOWER LIMIT FOR PAYMENT WILL BE NO LOWER THAN THE SPECIFIED TIP ELEVATION.

Hydraulic Reports

Stream Flow Record

As a measure of stream flow, a record of stream surface elevation is required for bridges constructed over watercourses. Stream surface elevation should be based on the datum shown on the plans, and should be accurate to the nearest 0.1 foot. Stream surface elevations should be observed and recorded daily, except that during periods of low water, and on streams of little significance, weekly readings are satisfactory. The stream surface elevations should be recorded in the Structure Representative's daily report.

Gauges consisting of-painted boards with 0.l-foot graduations should be placed at suitable locations to permit recording of both low and high water elevations. Locate gauges above the probable extent of backwater and below turbulence downstream to establish the normal gradient.

In the event of claims by the Contractor or adjacent property owners, stream flow data may be of great importance; therefore, every effort should be made to obtain a complete and accurate record.

Report of High Water

When unusually high water occurs in the vicinity of a going contract, pertinent information relative to the high water elevation, scour, drift, velocity, adequacy of waterway opening, etc., should be obtained for structures near the going contract. This information should be consolidated in report form and submitted to the Office of Structure Construction in Sacramento as soon as possible.

The content of this report will vary with the circumstances, but in general, should include the following:

General Information - Identify each structure giving District, County, Route and Post Mile, name of stream and date of high water.

High Water - Obtain elevation of high water at each structure (elevations may be obtained by measuring the distance from top of piers, bottoms of girders or any other convenient reference). If possible, obtain elevations 300 or 400 feet upstream and downstream from the bridge, highway or other known point to give-the hydraulic gradient. If not present during the time of highest water, ask local residents for information, and look for water stains, drift or other evidence of high water elevation.

Velocity - Determine and record surface velocity by timing a piece of drift for 200 feet or more, and note the direction of flow relative to the structure.

Scour, Erosion, Extent of Flood Water - Prepare a sketch of the general area showing approximate distances and depths. This sketch need not be to scale.

Drift - Note which-bridges have significant drift and which do not. Comment on size, amount and type.

Photographs - Take photos of flood conditions, turbulence and high water marks when possible.

Preservation of High Water Marks

Some existing structures have high water marks painted on them. If these structures are widened, repaired or replaced, the elevation of the previously painted high water mark should be taken and recorded. If these high water marks are lost during construction, they should be replaced at the completion of the work

Chronological Record of Falsework or Shoring Drawing Review

The Structure Representative shall maintain a record relative to submission and approval of all falsework or shoring drawings. The log will be a part of the project records.

This record shall construction of a separate log for each structure. The log will chronologically list all pertinent information relative to the submission and approval of the drawings. Typical entries would show the date that drawings were received from the Contractor, the date that the Contractor was notified of required revisions, the date that revised drawings were received from the Contractor, dates of letters or conversations pertaining to the drawings, date drawings were forwarded to the Office of Structure Construction in Sacramento, dates of approval, etc.

Make a notation in the log of the date that falsework or shoring for a structure becomes the controlling operation on the project, and when it is no longer controlling. Be specific as to what actual operation is controlling (e.g., plans and calculation preparation by Contractor, approval by State or Railroad, specific structure and location, etc.).

The entries in the chronological logs are not in lieu of information shown in the daily reports. The daily report-entry should give detailed information, whereas the chronological log entry should list only the dates, identification of subject, and people involved.

The form of the falsework or shoring log is at the Structure Representative's option. The level of sophistication will depend on the complexity of the project. Attachment No.1 contains a sample of an acceptable falsework log.

The purpose of the record is to be able to establish the actual "flow" of falsework *or* shoring reviews, such as who is waiting for whom to take action at any particular time. This information will be of value to establish facts needed to evaluate any Contractor's claims in regard to falsework or shoring review times. The Office of Program/Project Management and Support; Plans, Specs, and Estimates Branch, will use the information in establishing review times, especially for complex structures and those involving other agencies such as Railroads.

<JOB STAMP>

FALSEWORK LOG

SOUTHWEST CONNECTOR OC (BRIDGE #57-0882)

Event No.	Date	Comments and/or References
1	4-01-85	Contractor submitted falsework drawings and calcs. for frames #l & #2. (See attached cc of Transmittal Letter dated 3-28-85).
2	4-04-85	Discussed FW submittal with Contractor's Engineer. Submittal incomplete, need pedestrian protection details, catalog data, etc. (See SR daily report this date).
3	4-08-85	Received additional FW data. (See cc of Transmittal Letter dated 4-6-85) **Falsework review period begins for frames #1 & #2.**
4	4-10-85	Contractor set pads for spans #1 & #2 in frame #1. (See Assistant daily report this date).
5	4-12-85	Contractor revised beam sizes, spans in FW spans 1-4 & l-5. (See attached cc of Transmittal Letter dated 4-10-85) This is Revision #1.
6	4-18-85	Frame #1 (incl. Rev. #l) and Frame #2 (except span #7 over RR) approved. (See attached cc of approval Letter to Contractor).
7	4-18-85	Frame #l (incl. Rev. #1) and Frame #2 drawings with SR calcs. and cc of Letter of Approval transmitted to OSC Sacto. Span #7 to be reviewed and transmitted to SPTC by OSC. (See attached Memo to OSC Sacto.).
8	4-22-85	Contractor revised lateral connections @ FW bents 1-6, l-7 & l-8. (See attached cc of Transmittal Letter). This is Revision #2.
9	4-23-85	Rev. #2 approved. (See attached cc of revision approval letter to Contractor). Rev. #2 attached to FW drawings.
10	5-07-85	Contractor requested status of RR review. (See SR daily report).
11	5-17-85	Received telephone contact from OSC Sacto. – RR approved span #7. Advised Contractor. (See SR daily report).
12	5-21-85	Received confirming memo from OSC Sacto. regarding RR approval. Sent letter approving span- #7 to Contractor. (See attached cc of RR approval, OSC memo, and approval letter to Contractor).

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TABLE OF CONTENTS

DOLORES M. VALLS, Deputy Division Chief
Offices of Structure Construction

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General Information

Acceptance of Materials

Final responsibility for the acceptability of all materials used in the work rests with the Resident Engineer, or in the case of materials for structure construction, with the Structure Representative. Sufficient field tests must be made, and/or check samples submitted to the Transportation Laboratory to ensure that all materials continue to meet specifications.

Note that, regardless of previous release by the Transportation Laboratory, it is the Structure Representative's responsibility to be certain that all materials used in structure construction comply with the specifications, and that proper written evidence of such compliance may be found in the job records.

Inspection and Release of Materials

Inspection by Transportation Laboratory

In general, the Transportation Laboratory will perform the necessary inspection, testing, and release of materials. The Transportation Laboratory headquarters office and testing lab is located in Sacramento. However, actual inspection may be delegated to one of the branch offices (either Los Angles or Berkeley) or District Laboratories, depending on the location of the material source, or in the case of manufactured items, the location of the manufacturing plans.

The Transportation Laboratory normally makes its assignment of inspection in California by forwarding copies of the Notice of Materials to be Used, Form HC-30, to the affected inspection offices with the inspection assignments for the various products noted in the margin. Inspection assignments based on information other than Form HC-30, or assignments to Resident Engineers (jobsite inspection), are made on Form TL-28, Notice of Materials to be Sampled. Assignments to commercial agencies or other State highway departments are normally made by a letter from the Transportation Laboratory to the other agency. Copies of the above noted notifications of assignment of inspection are forwarded to the Resident Engineer and are filed in Category 32.

Following an assignment to a branch office or district lab, the assigned office will inform the manufacturer or supplier that the material is subject to inspection before use, and that inspection should be requested as soon as production is contemplated. The Transportation Laboratory sends Form TL-608, Notice of Materials to be Furnished, to the supplier or manufacturer to notify him that the material is subject to prior inspection. A copy of this form is sent to the Resident Engineer to document the notification of the vendor, and to inform the Resident Engineer of the location of the office that should be contacted if problems or questions arise concerning the material. Copies of this form are filed in Category 33. Out-of-state agencies notify the vendor by telephone or letter. Documentation of such contracts is normally available if needed.

Release of Materials by Transportation Laboratory

On completion of the inspection process, the materials are released for shipment to the job. Materials so released are identified by an "inspection release tag" on which the inspector has written the identifying lot number, his initials and the date of release. This information may be stenciled on some products. On timber products the inspector will stamp a brand on each piece, usually on the end where it can be seen easily. State inspectors will use a stamp with the letters "CHP", whereas inspectors employed by private labs will use their own identifying initials or symbol.

Formal notice of inspection and shipment is made on Form TL-29, Report of Inspection, commonly known as the “lab release”. Copies of the Form TL-29 are forwarded to the Resident Engineer and are filed in Category 41.

Use of the material need not await arrival of Form TL-29, because, depending on work load and the efficiency of the mails, it may take several days for the reports to reach the Resident Engineer's office. Properly identified materials which arrive on the job in an undamaged condition, and appear otherwise acceptable to the Resident Engineer, may be incorporated into the work immediately.

If a copy of Form TL-29 is not received within ten days following receipt of the material, the assigned inspection office should be requested to furnish additional copies.

For each identification, each lot number is prefixed by a letter which indicates the inspecting office i.e.: B810.

Listed below are the inspecting offices and their identifying letters:

H Headquarters, Sacramento
B Branch Lab, Berkeley
L Branch Lab, Los Angeles
E Dist. 01, Eureka
R Dist. 02, Redding
M Dist. 03, Marysville
F Dist. 06, Fresno
S Dist. 10, Stockton
D Dist. 11, San Diego

If problems arise concerning the use of acceptability of any material furnished by the contractor, the assigned inspection office should be contacted immediately by telephone for clarification.

If for any reason the assigned inspection office is not known, or the problem is one that cannot be resolved by the branch office, call the Inspection Coordinator at Headquarters Transportation Laboratory. Such contacts should be confirmed by letter. If letters are written to a branch or District lab, a copy of the letter should be sent to the Transportation Laboratory, 5900 Folsom Boulevard, Sacramento.

Despite all precautions, material which is subject to source inspection is occasionally delivered to the job without any indication (such as inspection tags attached to the material) that it was inspected and released by the lab before shipment. In such cases, a release cannot be secured by telephoning or writing the lab, since without identification tags there is no way of knowing whether the material inspected at the source is the same as the material delivered to the job. Before any such material may be used in the work, a Transportation Laboratory inspector must come to the job and personally inspect and release the material, or representative samples must be submitted to Transportation Laboratory for testing. Samples submitted to the Transportation Laboratory should be submitted as soon as possible to prevent unnecessary delay to the work. Note, however, that the materials may not be used until the Transportation Laboratory release or test report is received.

Exceptions to the above noted procedures are as noted below:

Bar Reinforcing Steel may be covered by Certificates of Compliance as discussed elsewhere in this section.

Chlorinated Rubber Curing Compound is normally sampled by the Transportation Laboratory at the point of manufacture. The sample represents one "batch" of material produced by the manufacturer. If the sample is found to be satisfactory, then the manufacturer's entire "batch" is considered to be satisfactory, and the Transportation Laboratory accepts (green tags) the entire "batch". As the material is released to the jobsite, white inspection release tags are attached. The Transportation Laboratory will then follow up with a formal notice of inspection and shipment on Form TL-29. Each lot shipped will be identified with an inspection lot number.

Chlorinated Rubber Curing Compound should not be used on the Contract work until the Structure Representative has received the "Lab Release" (Form TL-29) and verified that the material is from the Lot as shown on the "Lab Release", and has also confirmed that the containers meet the Specification requirements and are properly labeled.

In addition to the above noted requirements, the Structure Representative should obtain a sample of each new Lot of chlorinated rubber curing compound delivered to the job site and submit it to the "Lab" for testing. The material so sampled should not be used on the contract work until after testing and release by the "Lab".

The Structure Representative may also sample the chlorinated rubber curing compound at any time he has reason to believe that it is unsatisfactory. Any time the material is sampled at the job site, the contractor should not be permitted to use it until after it has been tested and released by the "Lab".

For curing compounds other than chlorinated rubber the Transportation Laboratory does not sample and release the material at the source. It will not be tagged when it comes onto the job. However, it will be necessary to sample the material, get it tested, and obtain a release from the lab before using it on the job.

Paint is normally released at the point-of manufacture. In addition, paint must be sampled at the job site and an additional release obtained, based on this sample. Additional instructions for paints are to be found in Section 155 of the Bridge Construction Records and Procedures.

Rapid Set Concrete. Samples of rapid set concrete materials (magnesium Phosphate or modified high alumina) must be submitted to the Transportation Laboratory for testing prior to proposed use. If the rapid set concrete material has not been previously tested by the Transportation Laboratory, a 50 plus or minus pound sample must be submitted to the Laboratory at least 45 days prior to proposed use. For rapid set concrete material which has been previously tested and approved by the Transportation Laboratory, the Structure Representative is required to submit a 10 plus or minus pound job sample of the material to the Laboratory for quality control testing. This sample is to be submitted at least 3 days prior to use.

In order to determine if it is necessary to submit a 50 pound sample, the Structure Representative should contact the Transportation Laboratory to find out whether or not the rapid set concrete material proposed for use has been previously tested and approved.

Steel H-Piles which have been obtained from eastern mills, or from brokers, may have been shipped without identifying release tags or markings. In such cases, the piles may be used provided that copies of Mill Test Reports for those heat numbers have been furnished to the Resident Engineer. These reports must show that the piles conform to the specifications of ASTM Designation: A36.

Occasionally, materials are delivered to the job site with no “Release Tag” attached, and the truck driver attempts to hand tags to the State's inspector. When this occurs, the inspector should refuse to accept the tags, and he should notify the Transportation Laboratory so that they might **take** steps to prevent recurrence of this practice.

Occasionally a Contractor may elect to rep1ace improperly identified material with other material which has been properly inspected and released. In such instances, the unacceptable material should be removed from the job or marked for identification to prevent the possibility of a mix-up and subsequent use in the work.

Field Inspection and Release

Occasionally, the quantity of a particular material is so small, or the point of manufacture of a particular item so remote that source inspection and release prior to shipment is not feasible from the "Lab's" viewpoint. In this case, initial sampling may be assigned to the Resident Engineer. Since these materials may not be used until released by the “Lab”, samples must be taken and submitted for testing immediately upon delivery of the material to the job site.

Some materials may be of such nature or the quantity so small that it is not practical or necessary to actually sample and test them to determine their suitability for use. Such material may be accepted for use on the basis of a job site inspection by the Resident Engineer or the Structure Representative. The degree of inspection will depend on the material being inspected, but should be sufficient to assure that the material substantially meets the contract requirements.

Job site inspection and release is recorded on Form DH-OS-C53 Material Inspected and Released on Job. Enter the quantity represented by the inspection in the space provided on the form.

The electrical, Mechanical and Sanitary Engineering (EMS) staff will furnish the Resident Engineer with a Form DH-OS C53, “Materials Inspected and Released on Job,” after the final inspection of the project by the EMS Representative. On this form, the EMS Representative will indicate those materials which the EMS Representative has inspected and found to have been furnished and installed in accordance with the plans and specifications.

Form DH-OS-C53 should be filed in Category 41 book directly behind the appropriate materials release summary sheet in the same manner as the lab releases.

Out-of-State-Inspection

When materials are obtained from an out-of-state vendor, source inspection is usually handled by a private testing lab under contract with the Transportation Laboratory. Materials which are inspected by an out-of-state agency will be tagged or marked by that agency in a manner that will indicate that the material was inspected and released. Inspection Test Reports will be sent to the Sacramento Transportation Laboratory by the testing agency.

The Transportation Laboratory will forward copies of these reports to the Resident Engineer. These reports will be filed in Category 41 following the appropriate Materials Release Summary Sheet.

Use of Commercial Products

The Special Provisions occasionally specify the use of an “approved” or a “Commercial Quality” material or product for which no specification requirements are given. The intent of this procedure is to permit the use of any standard commercial product which the Structure Representative considers suitable for the purpose intended. No samples or tests are required for these materials.

Sampling Materials

General Information

Acceptance of Contractor-furnished materials is based on tests of representative samples. To ensure reliable test results, samples must be carefully taken and be truly representative of the material to be tested. Accordingly, all Structure Construction field personnel must familiarize themselves with the proper sampling procedures.

Additional information relative to sampling materials may be found in Chapter 8 of the *Construction Manual.*

Classes of Samples

The *Construction Manual* lists six different classes of samples. In general, however, Structure Construction field personnel will be concerned only with "Initial Samples", "Acceptance Samples", and" Independent Assurance Samples". Following are descriptions or these classes of samples.

1. Initial Samples and Tests or Process Control Samples and Tests.

   These samples are taken after the award of the contract to determine whether the material will meet all specification requirements. Usually taken by job personnel.

2. Acceptance Samples and Tests (formerly Control Samples and Tests).

   These samples are taken to determine the quality of materials or work being performed by the Contractor. Acceptance (Job Control) Samples include the following:

   A. .Samples of material or construction work taken and tested at the construction site by project personnel.

   B. Samples of materials or construction work taken at the construction site by project personnel and tested at Headquarters or District laboratories with results reported to the Resident Engineer.

   C. Samples of materials taken by lab personnel at the production or processing plant, shipping point, or other source of origin, and tested at Headquarters or District laboratories with results reported to the Resident Engineer.

3. Independent Assurance Samples and Tests (formerly Progress Samples and Tests)

Independent Assurance (Progress) samples are the responsibility of the District Materials Engineer and will be taken by the District Materials Engineer or his authorized representative. Acceptance (Job Control) samples may be used for Independent Assurance (Progress) samples provided the sampling and subsequent handling of samples is done under the observation of personnel authorized to take Independent Assurance (Progress) samples.

Frequency of Sampling

After work is underway, Acceptance (Job Control) samples will be taken from time to time to verify that the materials being furnished comply with contract requirements.

The normal frequency of Acceptance (Job Control) sampling is tabulated in Chapter 8 of the *Construction Manual*. Note that the frequency shown should be considered as a guide for average conditions. Material which is uniformly consistent and well within the specification limits may require somewhat less frequent sampling, whereas, borderline materials must, of necessity, be sampled with greater frequency.

Sampling Methods

The importance of accurate, representative sampling cannot be over emphasized. It should be obvious that unless the sample is truly representative of the material to be tested, any examination or test of the sample will apply to the sample only and not to the material from which it was taken.

Sampling methods for Portland cement concrete and concrete materials are described in detail in the Office of Structure Construction Manual of *Construction Manual*, and reference is made thereto.

Sampling methods for other materials may be found in the *Construction Manual* and in the various California test method descriptions.

Identification of Samples

All materials sent to the lab for testing must be clearly identified and accompanied by a properly completed sample identification form. Form TL-101 is used for aggregate materials, water and admixtures. Form TL-502 is used for concrete test cylinders and Form TL-518 for cement.

Chapter 8 of the *Construction Manual* gives instructions for identifying concrete compressive strength samples.

The lab will not test fine aggregate for Portland cement concrete if the sample does not conform to specification grading when it is received unless specifically requested to do so on the sample identification form.

If teletype or telephone results are needed, this should be noted on the identification form along with the address or phone number of the person who is to receive the results.

Shipping Samples

Samples shipped by freight or express to the Transportation Laboratory for testing must be sent collect.
Bills of lading accompanying shipments often state “2 packages” without any notation as to their content, in which case the shipment will take a Class 1 rate. Please make sure that bills of lading properly identify contents, as for example “2 packages soil samples or 2 cylinders concrete samples”. The shipment will then take a Class 4 rate, which is considerably less expensive.

All shipments of samples to the laboratory for testing shall be by the most economical means available: This is not meant to rule out all express shipments; however, express shall be used only when speed is essential or for a small package when there is no appreciable difference in cost.

To properly identify samples shipped by common carrier, the shipping tag must be filled out completely. Show the contract number, the county and route number, name of shipper (Resident Engineer) and town or station from which the shipment is made.

Showing “Department of Transportation” as the shipper, is not sufficient. It is also necessary that the information on the shipping tag and the bill of lading agree, since this is the only way carriers can identify the samples and make prompt delivery.

Prior to shipment of samples of any type of material to the Transportation Laboratory, the Structure Representative should contact the nearest District Lab. Many of the routine tests can be run there, and most have freight contracts and will handle this phase of the operation for the field personnel.

Records of Samples
Records of all samples are to be maintained in the project files in accordance with instructions contained in the *Construction Manual* and elsewhere in this section of the *Bridge Construction Records and Procedures.*

02-03

File	**BCM 4-3.1**
Date Effective	10/15/2002
Expiration Date	None
Supersedes	BCM 4-3.1 Dated December 1, 1996
Approved by	Original signed by Dolores Valls _____ Robert A. Stott, Deputy Division Chief Offices of Structure Construction

Subject: Shipping Samples to the Materials Engineering and Testing Services (METS)

Ensure that when shipping samples from the job to the laboratory, use the most economical mode of transportation available consistent with the time element involved. **Samples are not to be shipped C.O.D. to METS.** This is consistent with instructions contained within Section 6-107 of the Construction Manual.

Structure Construction personnel shall make every effort to adhere to the above policy. One exception to this policy is shipping samples from remote construction sites when operations in such locations do not have alternatives to C.O.D. shipping and cannot pay freight costs.

Shipping cartons for Concrete Test Cylinders and other construction materials are available from Materials Operations. These should be used to keep your samples from appearing to be suspicious packages (duct taped laundry detergent and shoe boxes). In all cases the return address of the sender should be shown on the package.

Bridge Construction Memo 4-3.0, Sampling Materials, Sheet 3 of 4 is amended to read as follows:

Shipping Samples

Bills of lading accompanying shipments often state “2 packages” without any notation as to their content, in which case the shipment will take a Class 1 rate. Please make sure that bills of lading properly identify contents, as for example “2 packages soil samples, or 2 cylinders concrete samples.” The shipment will then take a Class 4 rate, which is considerably less expensive.

All shipments of samples to the laboratory for testing shall be by the most economical means available. This is not meant to rule out all express shipments; however, express shall be used only when speed is essential or for a small package when there is no appreciable difference in cost.

To properly identify samples shipped by common carrier, the shipping tag must be filled out completely. Show the contract number, the county and route number, name of shipper (Resident Engineer) and town or station from which the shipment is made.

Showing “Department of Transportation” as the shipper is not sufficient. It is also necessary that the information on the shipping tag and the bill of lading agree, since this is the only way carriers can identify the samples and make prompt delivery.

Prior to shipment of samples of any type of material to the Materials Engineering and Testing Services, the Structure Representative should contact the nearest Construction Lab. Routine tests may be run there or they may have freight contracts and will handle this phase of the operation for field personnel.

cc: BCR&P Manual Holders
Consultant Staff
P. Stolarski, METS
R. Pieplow, HQ Construction

Testing Materials

General Information

The Department of Transportation has developed standard methods and procedures for testing the quality of materials furnished by the Contractor. Unless otherwise specified, all tests must be performed in accordance with the applicable test method. Reasonable care in the performance of required tests will ensure the validity of the test results and justify reliance upon them. Accordingly, all field personnel will be expected to familiarize themselves with the field test methods specified for materials used in structure construction.

Ordinarily, the only control tests which are performed by Structure field personnel are those relating to Portland cement concrete and concrete materials. Those tests are covered in detail in the Office of Structure Construction *Concrete Technology Manual*.

Standard test methods and procedures must be followed without deviation.

Additional requirements for testing materials are to be found in Chapter 8 of the *Construction Manual*.

California Test Methods

Department of Transportation tests are identified by the prefix "Calif." followed by the test number. The initial test is given a basic identification number, such as "Calif. Test 518." If the testing procedure is modified, the basic number is followed by a dash and a letter, such as "Calif. Test 520-B."

The tests which apply to a particular contract are those in effect on the day the Notice to Contractors for the project is dated. Copies of all standard test methods are available from the District Materials Engineer, and Structure field personnel will be expected to obtain and use the correct test methods for their particular contract.

Local and District Testing Facilities

Many of the field control tests required for concrete materials can be run in a field lab established at the jobsite by the District. Some of the larger districts maintain central construction laboratories and utmost use should be made of these facilities.

Certification of Testing Personnel

Certification of field personnel to perform materials testing is covered elsewhere in this section of the *Bridge Construction Records and Procedures*.

Calibration of Field Testing Equipment

Field testing equipment is periodically reconditioned and recalibrated on a regular basis. The District laboratories will perform the periodic reconditioning and recalibrating of field testing equipment. Decals will be attached to the testing equipment showing the date of last calibration, name of calibrator, and date that the next calibration is due.

Each piece of equipment should be recalibrated and reconditioned in accordance with the attached schedule. More frequent calibration may be required, depending on use of equipment, and on moving and handling practices.

Item	Calibration Procedures	Max. Time Interval between Calibrations
Unit weight measure	Calif. Tests 212 & 518	One year.
PCC air meter	Calif. Test 504	One year.
Kelly ball penetrometer	Calif. Test 533	One year.

While the maximum interval between calibrations may be as long as a year, any piece of equipment should be calibrated at any time there is reason to believe it has been damaged or worn in any way which would affect calibration.

The Structure Representative is responsible for ascertaining that the field testing equipment which he uses has been properly calibrated,

Record Keeping for Contractor Furnished Materials

General Information

The Resident Engineer has the overall responsibility for maintaining records of Contractor-furnished materials. However, as the Structure Representative is responsible for the acceptability of all materials used in structure construction, he **must** be familiar with the materials record keeping procedures so that he may keep informed as to the status of acceptability of the various materials used in the structures.

The Resident Engineer or his staff will generally maintain the materials records. The records will be filed in accordance with the instructions in Chapter 3 of the *Construction Manual*, and will be available for use by the Structure Representative. The Structure Representative may maintain portions of the materials records relative to structure construction items. There should be no duplication of record keeping procedures.

Information relative to establishing and maintaining file categories 31, 32, 33, 37, 39, 41 and 43 is given in *Bridge Construction Memos* which follow.

Category 31 – Notice of Materials to be Used

Section 6 of the Standard Specifications requires the Contractor to furnish the Engineer a list of his sources of materials in sufficient time to permit proper inspecting and testing of materials in advance of their use.

The Contractor's list of material sources is submitted on State-furnished Form HC-30, *Notice of Materials to be Used*. It is not necessary that all material be listed on a single submittal of the HC-30. These forms are filed in Category 31as they are received from the Contractor.

Form DH-OS C51, *Materials List*, is to be filed in this category. Form DH-OS C51 serves as a check list to ensure that a *Notice of Materials to be Used* is submitted for all materials which go into the work.

If the Resident Engineer elects to use the *Materials List* (Form DH-OS C5l), the Structure Representative should assist the Resident Engineer in preparation of the *Materials List*. A copy of the *Materials List* may be given to the Contractor, but if this is done, a cover letter should be attached stating that the list is a reminder only and does not necessarily constitute a complete list. As each Notice of Materials is received from the Contractor, the date of receipt should be entered in the appropriate column on the *Materials List*.

Category 32 – Notice of Materials to be Inspected

The Transportation Laboratory may assign inspection duties to branch laboratories, District laboratories, private laboratories, or laboratories of other agencies.

When inspection duties are assigned to other laboratories or agencies, a written notification of inspection assignment is issued by the Transportation Laboratory. This written notification is generally given by one of the following methods: Instructions in the margin of Form HC-30; Notice of Materials to be Inspected (Form TL-28); Letter assigning inspection to an outside agency. A copy of the inspection assignment form or letter is sent to the Resident Engineer. These inspection assignment forms or letters are filed in Category 32 to permit ready reference if an inquiry needs to be made with regard to the materials.

Category 33 – Notice of Materials to be Furnished

This file contains the Notices of Materials to be Furnished, Form TL-608. These are form letters notifying the manufacturer that the material is subject to prior inspection.

Category 37 – Initial Tests and Acceptance Tests

Introduction

This file consists of the records of all Initial Tests and Acceptance Tests for materials sampled on the job, including those materials which are sampled on the job but tested elsewhere. It also provides a place to file summaries of these test results. Refer to Chapter 3 of the *Construction Manual* for additional information.

Independent Assurance (Progress) and Final Test Results are to be filed in Category 39 as explained elsewhere in this section of the *Bridge Construction Records and Procedures*.

Format

The Category 37 file is divided into sections by index tabs which list the various materials sampled on the job according to contract item. Following is a listing of the divisions and subdivisions to be used for test results of structures materials sampled on the job. Note that additional divisions and subdivisions may be added or deleted, depending on what materials are sampled and tested.

Structure Backfill (Bridge)

37. -- * 1. SE and Gradings
2. Relative Compaction

Previous Material

37. 1. SE and Gradings

Bar Reinforcing-Steel (Bridge)

37. 1 Tests

Structure Concrete (Bridge)

37. -- 1. Contractor's Grading Letter
2. Fine Aggregate
3. Coarse-Aggregate, 1” max.
4. Coarse Aggregate, 1½” max.
5. Cement
6. Unit Weight or Uniformity Test
7. Compressive Strength
8. Water

9. Air Entraining Agents or other admixtures
10. Curing Compounds
11. Bearing Pads
12. Expansion Joint Filler

Joint Seals

37. -- 1 Tests

Membrane Waterproofing

37. -- 1 Primer
2 Fabric
3 Asphalt

Paint

37. -- 1 Prime Coats
2 Finish Coats

Contrast Treatment

37. -- 1 Asphalt
2 Aggregate (SE and Grading)

Example: The file number for compressive strength test results of job taken samples of structure concrete (Bridge), Item No. 108, would be 37.108.7.

where:

37= The file category
108= The division number which corresponds to the Contract Item No. structure concrete (Bridge).
7= Subdivision number as indicated in the above listing.

Filing Summary Sheets

A test Result Summary, Form DS-OS C57, will be filed behind each index tab. The results of tests of all Progress Control (Initial) Samples and Acceptance (Job Control) samples of structure materials will be shown on these summary sheets. Form DS-OS C57 is self explanatory.

Certain materials are also subject to statistical analysis, and test results are to be displayed on appropriate charts. These charts are filed in the corresponding category, and may be used in lieu of a Test Results Summary Sheet. See Statistical Testing elsewhere in this section.

Individual test results are to be filed directly behind the appropriate Test Result Summary Sheet. Tests made on the job (except relative compaction) are to be made on the appropriate Office of

Structure Construction form. Results of tests made in the District or Headquarters Lab will be reported on a lab resort form.
When an Independent Assurance (Progress) or Acceptance (Job Control) sample fails, the following information must be shown under "Remarks" on the corresponding summary sheet:

Magnitude of failure (i.e. variation of spec limits).

Apparent reason for failure (testing or sampling procedures, producers procedures, etc.)

Corrective action taken and results obtained.

It should be pointed out that as in the case of concrete aggregates, for instance, only one division need be established if the source of material and supplies are the same, and the test results represent the same materials. If this is done, those sections should be adequately cross-referenced.

Category 39 – Independent Assurance (Progress) and Final Tests

This file is to contain the test reports on Independent Assurance (Progress) Samples.

Category 39 is indexed into divisions and subdivisions as outlined in Chapter 3 of the *Construction Manual*. Form DS-0S C56, Summary of Progress Samples, may be used to summarize test results.

Test results should also be entered on the appropriate individual test result summary form in the Category 37 file. However, these results are not to be used in calculating the moving average of the material concerned.

Category 41 – Reports of Inspection of Material

Introduction

This file consists of the records for all materials sampled at the source and released by the Transportation Laboratory before being shipped to the job, plus certain other records as described herein.

The primary purpose of this category is:

1. To provide an accurate and up-to-date record of material shipped to the job. In some cases, this record will be used to arrive at the amount to pay on the monthly progress pay estimate.
2. To provide a place for filing Reports of Shipment of Material, (Form TL-29), with matching inspection tags attached, and also for filing Certificates of Compliance for reinforcing steel.
3. To provide a uniform and readily available record showing that all material shipped to the job has been inspected and released.

Refer to Chapter 3 of the *Construction Manual* for additional information.

Format

The Category 41 file is divided into sections by index tabs which list the various materials required in the work according to contract item. The file is for materials which are not job produced and which are normally tested and released by the Transportation Laboratory or by Certificate of Compliance. Following is a listing of divisions and subdivisions

In the interest of uniformity, use the particular numbers shown for the materials listed in the tabulation. Note, however, that space for other materials may be provided by including additional divisions and/or subdivisions.

Bar Reinforcing Steel

41. - - .1

Bar Reinforcing Steel (Bridge)

41. - - .1
.2 Welder's Qualification Test (Rebar)

Structural Steel

41. - - - .1
.2 Welder's Qualification Test (Structural Steel)

Structure Concrete (Bridge)

41. - - - .1 Elastomeric Bearing Pads
.2 Fabrica Bearing Pads
.3 Expansion Joint Filler
.4 Curing Compound
.5 Admixtures
.6 Air Entraining Agents

Bridge Approach Guard Rail

41. - - - .1 Metal Posts
.2 Rail Element

Metal Bridge Railing

41. - - - .l

Misc. Metal Bridge Railing

41. - - - .1

Prestressed Concrete

41. - - - .1 Prestressing Strand
.2 Prestressing Anchorage System
.3 Prestressing Bearing Blocks

Example: The file number for the Lab Release for Metal Bridge Railing Item No. 133, would be 41.133.1.

where:

41	=	The File Category
133	=	The division number which Corresponds to the Contract Item No. for Metal Bridge Rail
1	=	The subdivision number as indicated in the above listing.

Filing Summary Sheets

Behind each of the index tabs in the Category 41 Record Book will be one or more Materials Release Summary Sheets, Form DH-OS C52. The right half of this form is concerned with quantities and lot numbers of material shipped to the job. The left half is concerned with the releases (Form TL-29) and lot numbers of the same materials. The summary sheets must show that a lab release or a Certificate of Compliance was received for all material shipped to the job.

As soon as material is received on the job, it will be necessary to obtain the quantity and enter it in the appropriate columns on the summary sheet. This may not be easy in some instances, but it can be done. Perhaps the most effective method is to reach an understanding with the Contractor whereby he is responsible for furnishing the information.

The white inspection tags (Form TL-624) will be removed from the material by our inspector when it arrives on the job. Pertinent notes as to quantity and location should be made on the back of the tags. The lot numbers are entered in the column provided on the right half of the form.

A notable exception to the above mentioned procedure is Bar Reinforcing Steel and Bar Reinforcing Steel (Bridge) which may arrive at the jobsite accompanied only by a Certificate of Compliance and no TL-29 will be forthcoming. In this case, the quantity released and quantity received on job will be the same, and only one entry, the one on the right hand side, need be made. No inspection tags will be attached to the material. A discussion of Certificates of Compliance is to be found elsewhere in this section.

Occasionally, situations will arise in which some material shipped to the job will not be released by the Transportation Lab. When this occurs, there will be no identification tags or report of shipment of material. However, the quantity must still be entered on the right half of Form DH-OS C52. Since all material used in the work must be released in some manner, and since in this case there will be no identification tag or report of shipment of material, some other method of release is required. The usual procedure is to send a sample of the material to the lab for testing. When the test results are received (and assuming the material is acceptable for use) the quantity is entered on the left half of Form DH-OS C52, with a reference in the *Remarks* column to the test result summary sheet (Form DS-OS C57) on which the test results are recorded.

Filing Reports of Shipment of Material and Certificates of Compliance

A few days after the material arrives on the job, the Resident-Engineer should receive (by mail) a report of shipment of material on Form TL-29. The identification tag for the material covered by the report is stapled to this report form (just one tag per lot) and the form, with tag attached, is filed behind the appropriate Materials Release Summary Sheet.

Certificates of Compliance for Reinforcing Steel will be filed behind the appropriate Materials Release Summary Sheet.

Category 43 – Concrete Records

General

Category 43 is the number assigned to concrete records under the Department of Transportation uniform system of organizing contract documents. This category will consist of the concrete plant inspection and concrete mix design records.

The following records will be filed in Category 43 and labeled "43 Concrete Records". This file is to be tabbed as noted below:

43.1	Plant Inspection Check List
43.2	Concrete Mix Designs

Note: "Concrete Pour Record", Form DS-C73 is to be filed in: Category 48. (See Bridge Construction Memo 4-5.8 for additional information.)

"Bar Reinforcing Steel Placing Record", Form DS-C76 is to be filed in Category 48. (See Bridge Construction Memo 4-5.9 for additional information.)

Plant Inspection Check List

The Office of Structure Construction has a Plant Inspection Form DH-OS C54, to facilitate concrete batch plant inspections. This form should be completed prior to any use of the batch plant. The use of this form is not intended to preclude the use of a District or other suitable form. If the District has made a recent plant inspection, and their Plant Inspection Report is available, it may be filed in this category in lieu of filing Form DH-OS C54 in this category.

Further information on plant inspection is to be found in the Structures/ Manual of *Concrete Technology.*

Concrete Mix Designs

Section 90-1.01 of the Standard Specifications states, "The Contractor shall determine the mix proportions for all concrete to be used in concrete Structures." Also, "The Contractor shall submit in writing to the Engineer a copy of the mix design."

The submittal by the Contractor shall include all the necessary information to check: the mix including but not limited to dry batch weights of ingredients, water cement ratio, fine and coarse aggregate gradations, and types of admixtures to be used.

The Engineers shall check cement content, water cement ratio, fine, coarse, and the combined gradation of the aggregates, and assure himself that all other requirements of Section 90 are met.

Concrete Mix Design-Aggregate Gradation (Form DS-OS C70A), Concrete Mix Design-Mix Design Calculations (Form DS-OS C70B) and Aggregate Grading Chart (Form DH-OS C71) have been developed to facilitate designing and checking concrete mixes. Samples of the forms are in Section 16, Vol. 1 of this manual. For further information refer to Section 4 of the Office of Structure Construction *Concrete Technology Manual*, Volume 1.

The Engineer shall acknowledge receipt in writing of the Contractor's submittal and results of the check on the mix Design.

Mix Design Records

Each mix used on the contract should be shown on separate forms DS-OS C7OA and DS-OS C70B, and filed under Category 43.2, Concrete Mix Designs. In addition, Form DH-OS C71 for the combined aggregate grading should be filed with the first mix design used (by stapling it behind the mix design chart) and with all subsequent mix designs which are required because of a change in aggregate gradation.

Mix designs should be numbered so that they can be readily identified. Note, however, that minor adjustments in basic mix design should be given a letter suffix, not a new number.

Concrete mix designs are part of the permanent job records, and it is very important that information shown on Forms DS-OS C70A and DS-OS C70B is correct, complete and legible, and that the form is properly filed.

Concrete Pour Records

General

The following forms are used by the Office of Structure Construction to facilitate record keeping in connection with concrete used in structure work:

Form DH-OS C72	Field Record for Concrete Pours	Used by concrete inspector to record pour data. Use is optional.
Form DS-C73	Concrete Pour Record	Used to summarize and record data for each concrete pour. File Category 48.

Field Record for Concrete Pours (Form DH-OS C72)

Form DH-OS C72 is intended especially for use by field personnel assigned to inspection of concrete work: The form is pocket-size to facilitate its use in the field.

When concrete is batched away from the jobsite and delivered on the job in transit-mix or pre-mixed trucks, delivery tickets should be picked up by the inspector from the truck driver. Following completion of the pour, any information needed from the delivery tickets should be entered on Form DH-OS C72, if used, and the completed form along with the delivery tickets will be stapled together and filed by pour number in a suitable box.

Concrete Pour Record (Form DS-C73)

Form DS-C73 is the permanent record of each concrete pour, and all pertinent information should therefore be entered on the form. It may be prepared from information previously recorded on From DH-OS C72. A separate “Concrete Pour Record”, Form DS-C73 is required for each pour. “Concrete Pour Records” should be numbered consecutively for each concrete item on each structure. Space has been provided for entering the numbers of the Vendor's Certificates of Compliance. Note that it is important to substantiate all concrete waste. Waste due to form variation should be substantiated by showing actual calculations, even if they are of necessity only approximate. Waste outside of the forms (spilled, dumped, left in truck, rejected, etc.) should be described and estimated as accurately as possible.

The “Concrete Pour Record” provides space for showing the final authorized pay quantity of one concrete item at one structure, and also for showing the total quantity paid to date for the same concrete item at the same structure. A comparison of these figures will provide the necessary information to prevent an overpayment for the item.

On contracts having structures with large quantities of concrete, and where it takes extended periods of time to complete the structures, consideration should be given to increasing the pay quantity of each pour by the amount of the volume of any encased reinforcing steel.

The “Concrete Pour Record” is to be filed in Category 48 with the pay quantity being posted directly to the “Contract Input Transactions Sheet”, Form HC-34. See Attachment No. 1 for a sample of a completed Concrete Placing Record, Form DS-C73. Department of Transportation Concrete Pour Record DS-C73 (Rev. 5-2-77)

Department of Transportation
CONCRETE POUR RECORD
DS-C73 (Rev. 5-2-77)

File Category / Item Number / Pour No. - This Item - This Bridge / Bridge Identification

Sheet No. 48-53-3 — P

Job Stamp

Bridge Name Pyramid Creek Bridge No. 16-44
Item No. and Description 53-Structural Concrete, Bridge Footing
Date 8-2-84 Mix No. 1 Cert. of Compliance No. T-74156
Pour Location Pier No. 4 Footing
Admixture Used Pozzolith 300R Amount 3 oz/sack
Air Entraining Agent None Amount — % Air Required None
Pour Inspected By B. Jones Samples Taken By G. Smith
Sample Numbers 1-28-1/2 & 2/2-53P

Time	Load No.	Truck No.	Air Temp.	Conc. Temp.	Individual Penet. Readings	Aver. Penet.	% Air	Tests By	Remarks
0800	1	T-163	70°	65°	2"-1 3/4"-2"	2"	—	G. Smith	
0915	5	T-114	72°	66°	2 1/4"-2"-1 3/4"	2"	—	G. Smith	Tk. T-114 not mixing properly will not be used on job again until corrected.

Remarks: Concrete was chuted directly into forms from trucks.
Vibrator breakdown delayed pour for 1/2 hour after second load.

WASTE OUTSIDE FORMS - EXPLAIN
1.5 CY left in last truck
0.5 CY spilled on ground

WASTE INSIDE FORMS - SUBSTANTIATE
Ftg. aver. 0.1' over depth
$\frac{(20)(20)(0.1)}{27} = 1.5$ CY

Plan Pay Quant.-This Item-This Br.	810.0	Cy	Quantity Delivered	63.0 Cy
+ or - Due to CCO's	—	Cy	Quantity Rejected	— Cy
Final Pay Quant.-This Item-This Br.	810.0	Cy	Waste in Forms	1.5 Cy
Quant. Prev. Paid-This Item-This Br.	118.5	Cy	Waste Outside Forms	2.0 Cy
Pay Quantity-This Pour	59.5	Cy	Net = Pay Quant. This Pour	59.5 Cy
Total Quant. To Date-This Item-This Br.	178.0	Cy		

Pour Record Info Entered By B. Jones

Posted to RC-34 Contract Transactions Input Sheet
Sheet No. 003
Line No. 10
Date 8-3-84
By I. Entreid

Bar Reinforcing Steel Placing Record

Form DS-C76, "Bar Reinforcing Steel Placing Record" is used by the Office of Structure Construction to facilitate record keeping in connection with reinforcing steel used in structure work.

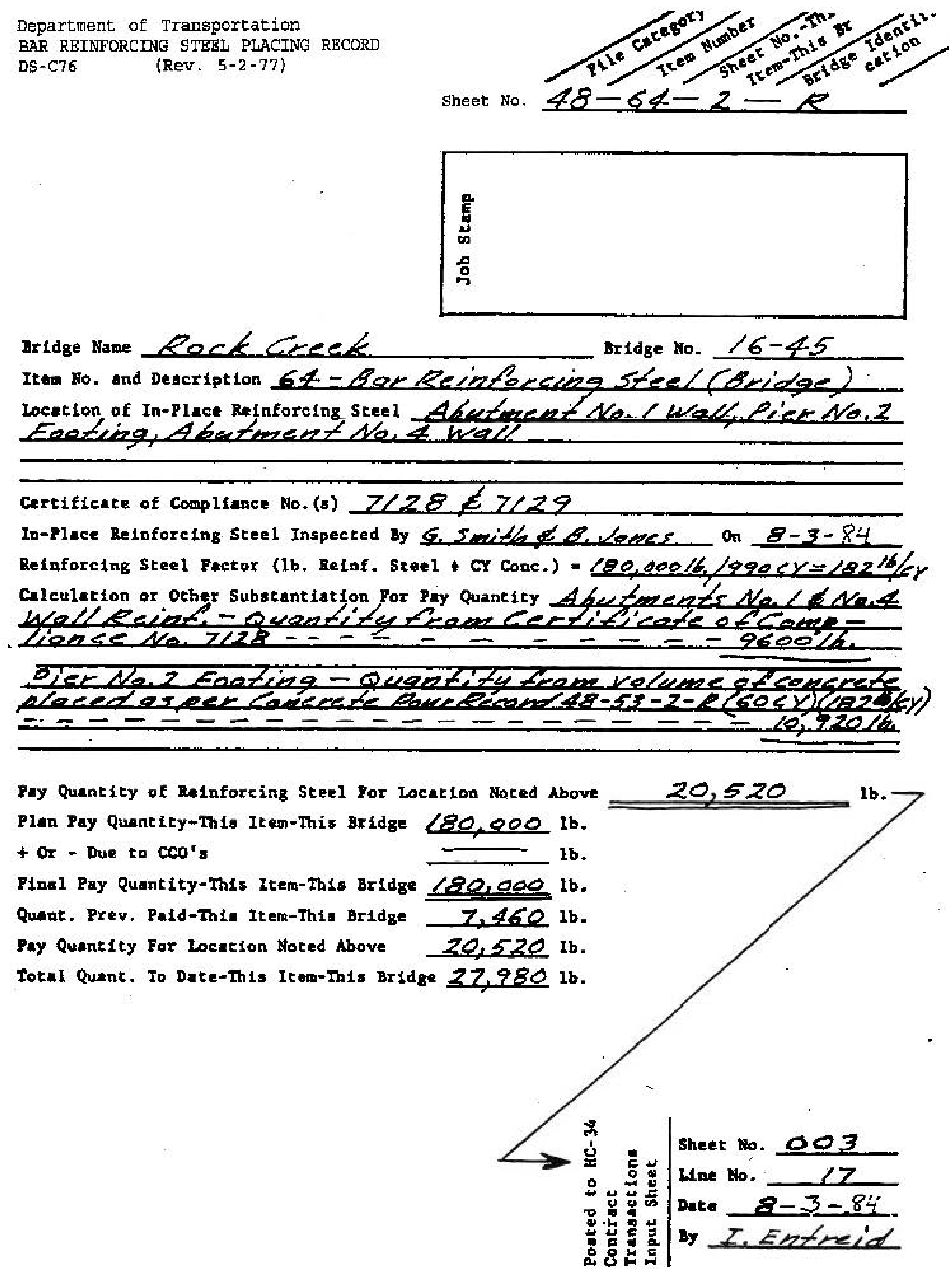
Bar reinforcing steel is normally paid for after it is ascertained that it is covered by a valid Certificate of Compliance, and the in-place steel has been inspected and found to be satisfactory.

The "Bar Reinforcing Steel Placing Record", Form DS-C76, provides space for entering the Certificate of Compliance numbers and for providing the name of the person who inspected the in-place reinforcing steel.

The quantity of reinforcing steel to be paid for may be determined by one of the following methods:

1. From a factor based on the pounds of reinforcing per cubic yard of concrete times the volume of concrete to be placed.
2. Weights, as shown on the Certificate of Compliance.
3. Weights as shown on truck delivery invoices.
4. Actual calculations of weight of reinforcing steel in place. The method of determining the weight of reinforcing steel in place will be at the Structure Representative's discretion. "The Bar Reinforcing Steel Placing Record" provides space for showing the calculations or other substantiation for the pay quantity.

"The Bar Reinforcing Steel Placing Record" is to be filed in Category 48 with the pay quantity being posted directly to the "Contract Input Transactions Sheet", Form HC-34. See Attachment No. 1 for sample of a completed "Bar Reinforcing Steel Placing Record", F&M DS-C76.



Department of Transportation
BAR REINFORCING STEEL PLACING RECORD
DS-C76 (Rev. 5-2-77)

File Category
Item Number
Sheet No.-This Item-This Br
Bridge Identication

Sheet No. 48—64—2—R

Job Stamp

Bridge Name Rock Creek Bridge No. 16-45

Item No. and Description 64 - Bar Reinforcing Steel (Bridge)

Location of In-Place Reinforcing Steel Abutment No. 1 Wall, Pier No. 2 Footing, Abutment No. 4 Wall

Certificate of Compliance No.(s) 7128 & 7129

In-Place Reinforcing Steel Inspected By G. Smith & B. Jones On 8-3-84

Reinforcing Steel Factor (lb. Reinf. Steel ÷ CY Conc.) = 180,000 lb./990 CY = 182 lb/CY

Calculation or Other Substantiation For Pay Quantity Abutments No. 1 & No. 4 Wall Reinf. - Quantity from Certificate of Compliance No. 7128 - - - - - - - - - - - - 9600 lb.

Pier No. 2 Footing - Quantity from volume of concrete placed as per Concrete Pour Record 48-53-2-R (60 CY)(182 lb/CY) - - - - - - - - - - - - - - - - - - 10,920 lb.

Pay Quantity of Reinforcing Steel For Location Noted Above 20,520 lb.

Plan Pay Quantity-This Item-This Bridge 180,000 lb.
+ Or - Due to CCO's —— lb.
Final Pay Quantity-This Item-This Bridge 180,000 lb.
Quant. Prev. Paid-This Item-This Bridge 7,460 lb.
Pay Quantity For Location Noted Above 20,520 lb.
Total Quant. To Date-This Item-This Bridge 27,980 lb.

Posted to HC-34 Contract Transactions Input Sheet

Sheet No. 003
Line No. 17
Date 8-3-84
By I. Entreid

Department of Transportation
BAR REINFORCING STEEL PLACING RECORD
DS-C76 (Rev. 5-2-77)

File Category / Item Number / Sheet No.-Th / Item-This Br / Bridge Identi- cation

Sheet No. 48-64-2-R

Job Stamp

Bridge Name Rock Creek Bridge No. 16-45

Item No. and Description 64-Bar Reinforcing Steel (Bridge)

Location of In-Place Reinforcing Steel Abutment No. 1 Wall, Pier No. 2 Footing, Abutment No. 4 Wall

Certificate of Compliance No.(s) 7128 & 7129

In-Place Reinforcing Steel Inspected By G. Smith & B. Jones On 8-3-84

Reinforcing Steel Factor (lb. Reinf. Steel ÷ CY Conc.) = 180,000 lb/990 CY = 182 lb/CY

Calculation or Other Substantiation For Pay Quantity Abutments No. 1 & No. 4 Wall Reinf. - Quantity from Certificate of Compliance No. 7128 - - - - - - - - - - - - 9600 lb.

Pier No. 2 Footing - Quantity from volume of concrete placed as per Concrete Pour Record 48-53-2-R (60 CY)(182[illegible]/CY) - 10,920 lb.

Pay Quantity of Reinforcing Steel For Location Noted Above 20,520 lb.

Plan Pay Quantity-This Item-This Bridge 180,000 lb.

\+ Or - Due to CCO's ______ lb.

Final Pay Quantity-This Item-This Bridge 180,000 lb.

Quant. Prev. Paid-This Item-This Bridge 7,460 lb.

Pay Quantity For Location Noted Above 20,520 lb.

Total Quant. To Date-This Item-This Bridge 27,980 lb.

Posted to HC-34 Contract Transactions Input Sheet

Sheet No. 003

Line No. 17

Date 8-3-84

By I. Entreid

BRIDGE CONSTRUCTION MEMO 4-5.9
ATTACHMENT NO. 1 (Rev. 12-28-84)
Sheet 1 of 1

Certificate of Compliance

Introduction

Section 6 of the Standard Specifications states that certain materials may be used prior to sampling and testing, if accompanied by a Certificate of Compliance stating that the materials involved comply in all respects with the requirement of the specifications. A certificate must be furnished with each lot of material delivered to the work, and the Pot so certified must be clearly identified in the certificate.

It should be noted, however, that all materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the work which conforms to the requirements of the plans and specifications. Material not conforming to the requirements will be subject to rejection, whether in place or not. In general, if materials are delivered with a Certificate of Compliance, and the Structure Representative determines that sampling and testing of the material is necessary, the sampling should be done sufficiently in advance of using the material to obtain test results before incorporating the material in the work.

The Chief, Office of Structure Construction, should be notified if it is determined that a material, which is accompanied by a Certificate of Compliance, does not conform to the requirements. The Supplier's certification privileges may be withdrawn if it is determined that he is certifying materials that do not conform to the contract requirements.

Currently, Portland cement, air entraining agents, and bar reinforcing steel are the materials which may be accepted for use, provided each shipment of lot is accompanied by a properly executed Certificate of Compliance.

Portland Cement

If the cement is delivered directly to the site of the work, a certificate should be furnished which is signed by a representative of the cement manufacturer. If the cement is used in ready-mix concrete or in precast products, a certificate should be prepared and signed by the manufacturer of the concrete or the concrete product. State-furnished Vendor's Certificate of Compliance is used for this purpose.

Space is provided on the Concrete Pour Record for entering the Cement Certificate of Compliance number.

Detailed instructions -for use of the Certificate of Compliance are to be found in Chapter 8 of the *Construction Manual* and Section 2 of the Manual of *Concrete Technology*.

Cement, furnished, without a Certificate of Compliance, shall not be used in the work until it has been tested and approved for use.

Air-Entraining Agents

Under certain conditions, air-entraining agents may be accepted for use if accompanied by a Certificate of Compliance. Refer to Section 90 of the Standard Specifications for information relative to Certificates of Compliance for air-entraining agents.

Bar Reinforcing Steel

Bar reinforcing steel may be accepted for use on the job, if accompanied by a Fabricator's Certificate of Compliance in accordance with Sections 6 and 52 of the Standard Specifications.

The certificate is prepared by the fabricator on a State-furnished form. A properly completed form is attached (Attachment No.1). One certificate is required for each lot or shipment of reinforcement delivered to the site of the work. A lot or shipment may consist of a very small quantity or several truckloads comprising a very large unit of the work.

All reinforcement in the lot or shipment is to be listed by bar sizes, heat numbers, grade and mill, and approximate quantity or weight of each.

The certificates, in addition to certifying that the materials comply with the specifications, shall also specifically certify that all manufacturing processes for the materials occurred in the United States.

Reinforcing steel shall not be encased in concrete, nor paid for until it can be established that it is covered by a valid Certificate of Compliance, or otherwise has been inspected, tested and released.

In order to readily establish that reinforcing delivered to the job has been covered by a valid Certificate of Compliance, it will be necessary that the supplier clearly identify the structure and the portion of the structure in which the reinforcing steel is to be used. The attached Certificate of Compliance (Attachment No. 1) illustrates properly identified structures and portions of structures.

Reinforcing steel covered by a Certificate of Compliance is subject to inspection and acceptance by the Structure Representative and, in some instances, it may be necessary for the Structure Representative to sample reinforcing steel which is covered by a Certificate of Compliance. When this is done, concrete should not be placed around the reinforcing until after the sampled reinforcing has been tested and found to be satisfactory.

Space is provided on the Bar Reinforcing Steel Placing Record, Form DS-C76 for entering the Fabricator's Certificate of Compliance number.

DEPARTMENT OF TRANSPORTATION

FABRICATORS CERTIFICATE OF COMPLIANCE

TL-5045 (Rev 1-79)

TO:

CHIEF ENGINEER
State of California
Department of Transportation

CERTIFICATE NUMBER: **62073**

DATE: February 23, 1987

In conformance with Section 6-1.07 and 52-1.04 of the Standard Specifications for the contract listed below, we certify that the reinforcing steel listed below complies with the specifications for Contract No. 03-089324, that certified mill tests for this steel are available for review in our office, and that the Materials and Research Department was notified in time to permit inspection prior to shipment.

JOB NUMBER: 6134

CONTRACTOR: MCM CONSTRUCTION, INC.

SIZE	HEAT NO.	GRADE	MILL	QUANTITY OR APPROX. WEIGHT	PLACING MARK	STRUCTURES AND LOCATION
4	60020	60	Tamco	11420	6AS	Forty Mile Rd OC Br. No. 16-44 End diaphragms
6	2034	60	CF&I	2319	6B3	do
11	3541	60	CF&I	1448	7C1	McGowan Rd OC Br. No. 16-47 Bent 2 Footings
6	2034	60	CF&I	365	10A3	Reeds Creek Br Br. No. 16-46R Wall, Abuts 1 & 5
5	6354	60	Tamco	1573	10A4	do
4	60020	60	Tamco	325	10A5	do
5	5350	60	CF&I	125480	None	Sidehill Viaduct Top deck slab, Spans 1 thru 3
8	2034	60	CF&I	7920	None	do
9	2034	60	CF&I	151030	None	do
4	60025	60	CSRM	25300	C12	Box Culvert @ Sta A 43+50 Complete
5	do	60	CSRM	30510	C13,C14	do
7	do	60	CSRM	21600	C15	do
	MATERIAL MEETS ALL FEDERAL AND STATE BUY AMERICA REQUIREMENTS.					
	I CERTIFY THAT ALL MANUFACTURING PROCESSES FOR THE MATERIALS					
	OCCURRED IN THE U.S.A.					

TOTAL WEIGHT: 379,290

FABRICATOR: JUDSON STEEL CO.

AUTHORIZED REPRESENTATIVE: J. JONES

INSTRUCTIONS: Route Copies To:

WHITE - Resident Engineer
GREEN - Contractor
PINK - Fabricator
GOLDENROD - Field Office
YELLOW - Trans Lab - Sacramento

Statistical Testing

Some construction materials must meet requirements for individual samples and moving average requirements as specified in Section 6 of the Standard Specifications.

Further instructions are to be found in Chapter 2 of the *Construction Manual*.

Of particular concern to Structure Representatives are compressive strengths of concrete cylinders. Specification requirements are to be found in Section 90 of the Standard Specifications.

Test results for specified strength concrete used in structure construction should be recorded on Form DH-OS Cl00. This form is self-explanatory and should be filed in Category 37 “Control Tests.”

Certification of Materials Testers

Introduction

In accordance with Chapter 8 of the *Construction Manual*, sampling and testing by project personnel shall be performed only by those personnel who have been certified to be proficient in sampling and materials testing by the District Materials Engineer or other designated District or Region authority.

Personnel to be Certified

While it is desirable that all personnel assigned to structure construction projects be qualified and certified to perform all the materials acceptance tests required by their work, this is not practical. Based on sampling and testing requirements on structure construction projects, certification of Structure Construction personnel should follow the guidelines below.

All OSC personnel should be certified for the following material tests:

• PCC Specimen Fabrication	California Test	#540
• Ball Penetration in Fresh PCC	"	#533
• Unit Weight of PCC	"	#518

Selected OSC personnel shall be certified as determined by job conditions for the following tests:

Sieve Analysis (CA & FA)	California Test	#202
Sand Equivalent (FA)	″	#217
Moisture Determination (CA&FA)	″	#223
Cleanness Value (CA)	″	#227
Air Content of Fresh PCC	″	#504
Weight Uniformity (Washout)	″	#529
Relative Compaction (Soils)	″	#216

Responsibility for Certification

Personnel who perform job control tests must obtain and maintain a valid Certificate of Proficiency (Form MR-0111) for as long as material tests are run. In order to maintain a valid Certificate of Proficiency, it will be necessary to schedule Witness Tests with the Materials Engineer every six months.

The Structure Representative shall be responsible to ensure that personnel who perform job control tests are currently certified.

Consultant engineers hired by Caltrans to perform acceptance tests on Caltrans construction projects, prior to performing any material tests, must conform to the same requirements as Caltrans employees. The consultant's employer will submit written evidence of materials testing training, and materials testing certification to the District Materials Engineer. Organizations that certify personnel in California Tests include the National Institute for Certification in Engineering Technologies (NICET), the American Concrete Institute (ACI), and the National Ready-Mixed Concrete Association (NRMCA). The Quality Assurance Program Manual may be referenced for additional details and requirements.

Records

The District Materials Laboratory making the certification will maintain records and show test certificate expiration dates for each employee.

Certification is documented by the Certificate of Proficiency, which is normally issued by the District Materials Engineer. Refer to Attachment No. 1 of this Bridge Construction Memo for a sample copy of Form MR-0111.

Form MR-0111: Certificate of Proficiency for an Acceptance Tester

MR 0111 (New 1/93)

CALIFORNIA DEPARTMENT OF TRANSPORTATION

CERTIFICATE OF PROFICIENCY
for an ACCEPTANCE TESTER

This certifies that

_____
(Print name)

_____
(Print agency)

is qualified **to perform the** ***following*** **tests:**

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

_____
District Materials Engineer ***(Print name)***

_____ _____
Certified Independent Assurance Sampler and Tester (signature) IAST Certificate No.

Date Issued: _____

Note: This certificate is valid as long as the Acceptance Tester complies with applicable requirements in Caltrans Quality Assurance Programs Manual

Form MR-0111: Certificate of Proficiency for an Acceptance Tester

MR 0111 (New 1/93)

CALIFORNIA DEPARTMENT OF TRANSPORTATION

CERTIFICATE OF PROFICIENCY
for an ACCEPTANCE TESTER

This certifies that

_____
(Print name)

_____
(Print agency)

***is qualified* to perform the *following* tests:**

_____
District Materials Engineer ***(Print name)***

_____ _____
Certified Independent Assurance Sampler and Tester (slgnature) IAST Certificate No.

Date Issued: _____

Note: This certificate is valid as long as the Acceptance Tester complies with applicable requirements in Caltrans Quality Assurance Programs Manual

Prequalification of Specified Strength Concrete

When concrete is specified by compressive strength, prequalification of materials, mix proportions, mixing equipment, and procedures proposed for use, will be required prior to placement of such concrete.

Prequalification shall be accomplished by submission of acceptable certified test data or trial batch reports by the Contractor. For each trial batch, the materials, mixing equipment, procedures, mix proportions and size of batch shall be the same as that to be used in the work.

The Specifications list the requirements that must be met in order for certified test data or trial batch test reports to be considered acceptable.

Should the Contractor elect to submit a trial batch report from another Caltrans project, a copy of such a report approved within the past 12 months of the proposed first use of the specified concrete in the project is acceptable, provided the mix is the same in all respects. Should the Contractor elect to submit certified test data, that data must represent the most recent compressive strength tests made within the past 12 months of the first proposed use of the same concrete mix. Strength tests from other Caltrans projects are acceptable as meeting the requirements for certified test data. A copy of Form DS-OS C57, Test Result Summary, listing 20 acceptable test results is sufficient.

The Structure Representative should inform the Contractor if prequalification is required. It should also be suggested to the Contractor that concrete made as a trial batch may be used in a footing or some other location where concrete of a lesser strength is required and that it should be performed at the earliest possible time so as not to delay the work at a future date. If concrete made as a trial is used in the work at locations where concrete of a lesser strength is required, payment shall be based on the type or class of concrete specified at that location.

The acceptance or non-acceptance of the concrete mix based on the results of the trial batch or the certified test data should be confirmed in writing to the Contractor.

Miscellaneous Materials

Introduction

This section of the *Bridge Construction Records and Procedures* is devoted to a discussion of State-furnished materials and disposal of salvaged materials, for which the Structure Representative may become responsible.

State-Furnished Materials

All State-furnished materials will be so designated in the Special Provisions for the particular contract. The responsibilities of the Contractor and the Engineer are clearly set forth in Section 6 of the Standard Specifications.

When the contract specifies the use of these materials, it is the responsibility of the Contractor to submit a written request to the Resident Engineer for the delivery of the material to the site of the work or some other suitable storage location. The date of request should be at least 15 days prior to the date of intended use, and it should state the quantity and type of each material. It is then the responsibility of the Resident Engineer to requisition the material through the District office.

The Contractor is responsible for the storage of State-furnished materials after the -- y are turned over to him. Materials lost or damaged should be re-ordered and the cost deducted from the monthly estimate.

Accurate records should be kept of all State-furnished materials and filed in Category 52 file.

Excess material should be returned to a State facility.

Disposal of Salvaged Material

The Special Provisions may require certain material to be salvaged from existing work and stockpiled at the jobsite. Material to be salvaged should be sorted and stockpiled within the State's right of way at an accessible location where it will not create a traffic hazard, and where it can be loaded without difficulty. Stockpiled material must be segregated (by size, weight, etc.) to facilitate inspection and appraisal.

When material is salvaged or is acquired for any reason and is to be turned over to a district or to Service and Supply, the Resident Engineer will make the necessary arrangements to dispose of the material.

Buy America Requirements

Attention is directed to the "Buy America" requirements of the Surface Transportation Assistance Act of 1982 (Section 165) and the regulations adopted pursuant thereto. In accordance with said law and regulations, all manufacturing processes for steel materials furnished for incorporation into the work on this project shall occur in the United States.

A Certificate of Compliance, conforming to the provisions in Section 6-1.07, "Certificates of Compliance", of the Standard Specifications, shall be furnished for steel materials. The certificates, in addition to certifying that the materials comply with the specifications, shall also specifically certify that all manufacturing processes for the materials occurred in the United States.

The requirements imposed by said law and regulations do not prevent a minimal use of foreign steel materials if the cost of such materials used does not exceed one-tenth of 1 percent (0.1%) of the total contract cost or $2,500, whichever is greater. The Contractor shall furnish the Engineer acceptable documentation of the quantity and value of any foreign steel prior to incorporating such materials into the work.

Following is a list of materials requiring certification when the Special Provisions state that the project is subject to the "Buy America" provisions of the Surface Transportation Act of 1982.

- Structural steel (including sheet piling, pipe piling, H-piling, shapes and plates, angles, channels and tees).
- Reinforcing steel and wire mesh reinforcement.
- Miscellaneous steel such as bearing plates, expansion dams, earthquake restrainers, etc.
- Steel sign structures.
- Iron and steel pipe (including steel CSP.)
- Prestressing bars, wires and strand.
- Steel wire and fencing fabric.
- Steel fence, guardrail, marker, and delineator posts.
- Steel rail and barrier elements.
- Steel light poles, signal standards, and signposts.
- Steel bin walls, sound walls, roofing and siding for buildings.
- Steel conduit.
- Structural steel bolts (both H.S. & A-307).
- Anchor Bolts.
- Prestressing hardware.

Note: The following materials do not need certification.

- Controllers and service cabinets.
- Pumping equipment.
- Misc. hardware items.
- Electrical materials and fixtures.
- Irrigation materials and plumbing fixtures.
- Machinery.
- Iron Castings.

Making Concrete Test Samples

When making concrete test samples OSC field personnel must follow the requirements for California Test 540 "Method of Making, Handling, and Storing Concrete Compressive Test Specimens in the Field." This test method can be accessed from the OSC website at the following page: http://onramp.dot.ca.gov/hq/oscnet/ (Look under: Links/Other Caltrans Links/California Test Methods).

Caltrans METS Concrete Testing Section has reported the following recurring deficiencies:

- The top of samples are: not leveled, overfilled, under filled, excessively sloped or have significant surface voids.
- The TL-0502 forms contain insufficient or conflicting, confusing information.
- The concrete samples are not clearly marked on the mold.

Suggestions:

- Prepare concrete test samples on a level surface. Pat sides of mold after each layer to release any entrapped air and use a wooden float to strike off the concrete even with the top edge of mold. Wipe off excess concrete around the sides, preferably with a moist sponge, to obtain a good seal with the cap.
- Caution should be used when moving the sample to the curing location to avoid excessive vibration. If necessary, first move the sample to the curing location and then complete the process from strike off of the cylinder.
- Make sure Project No., Date Cast, Sample No., Mix Design No. and project information is on the TL-0502 form. Keep the size of the form to 4 ½" x 7".
- Use a waterproof permanent marker (flow pen) to mark both the cap and each side of the mold with Contract No., Sample No. and Date Cast.

Example	
Contract No.	04-012024
Sample No.	1-28-1/2
Date Cast	06/28/05

If you need additional help after reviewing CT 540, contact Caltrans METS concrete testing section at (916) 227-7283.

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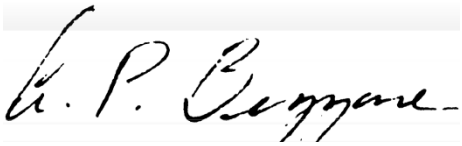

A. P. BEZZONE, Chief
Office of Structure Construction

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Preparing Quantity Calculations

General Information

Quantity calculation sheets are required for all contract items. This includes "Fixed Final Pay Quantity" items, "Lump Sum" items and "Unit Price" items. Quantity calculation sheets are also required for Contract Change Orders which increase or decrease the quantity of a contract item.

In general, pay quantities for all Structure items are calculated and checked by Structure field personnel assigned to the project. However, if it is agreeable with the Resident Engineer, District personnel may be used to assist in preparing or checking quantity calculations. On jobs, where no other personnel are available to check quantity calculations, arrangements should be made with the Bridge Construction Engineer to have the quantities checked by personnel assigned to other jobs in the vicinity.

All quantity calculation sheets must show the name of the person making the original computation and the name of the checker. Initials are not sufficient.

When calculating quantities, keep in mind that all computations must be checked, and quite often the checker will be less experienced and less familiar with the particular details of construction than the person making the original calculations. In addition, quantity calculation sheets are part of the contract payment records, and as such, are subject to audit both during and subsequent to completion of the project.

To facilitate checking and auditing, and to simplify original calculations, keep the following suggestions in mind:

1. All calculations should be legible and not crowded on the sheet.
2. Before starting the calculations for any item, a thorough study of the contract specifications should be made to prevent misinterpretation of the units involved.
3. Before starting complicated items, it may be advisable to prepare a detailed outline to ensure a logical sequence of computing the individual units.
4. Quantity calculations for complex features should be augmented by frequent sketches.
5. All sheets should be referenced to the plan sheet number, field book, detail sheet, etc., on which the calculations are based.
6. On any sheets on which dimensions are different from the original plans, include an appropriate reference to explain the change. Notations such as As-Built, Field Measured, See CCO No. 6, etc., will suffice.
7. When the same type of computation must be repeated a great many times, it will facilitate both computing and checking if a tabular form is used.

Auditing procedures require project identification on each quantity calculation sheet. Use the job identification stamp where possible. On contracts with two or more structures, the calculations for each structure should be further identified in some way, such as bridge name or number.

Electronic Computer Service

Most quantity calculations have electronic computer applications, and computer service is available to field personnel.

Individual code numbers and instruction sheets are available through the District Offices for those field personnel who wish to take advantage of the computer service.

Input sheets should be checked before submission. When the machine tabulation sheets are received, another check should be made to see that all calculations have been made.

If the computer service is used, prepare a summary of the quantities so calculated and make a suitable reference to the data processing sheets.

Unit Price Item Calculations

Payment for "Unit Price" items may be based on a "field measurement", a scale weight or a calculated quantity. The following information is presented to aid the Structure Representative in making quantity calculations, and to maintain uniformity.

Earthwork - If calculations are required for excavation, backfill, pervious material, etc., use *Quantity Calculation Sheet*, Form HC-52, or the computer Six Factor Computation Form HCS-289. The average end area method may be used for irregular sections. The accuracy of calculations would normally be 0.1 cubic yard. When original ground elevations must be determined and used, and elevation to the nearest 0.1 foot is generally adequate.

Piling - Pile quantities are to be calculated on Form DC-SC78 (Rev 8/81) *Pile Quantity and Driving Record (Driven Piles) or DC-SC78A (8/81) Pile Quantity and Drilling Record (CIDH Piles)*. See Section 3 and 130 of *Bridge Construction Records and Procedures* for instructions. The accuracy of calculations for piling would normally be 0.1 lineal foot.

Concrete - When concrete calculations are required, use *Quantity Calculation Sheet*, Form HC-52, or the Six Factor Computation Form HCS-289 for the calculations. When applicable, the prismoidal formula may be used and *Rise Over Chord* tables may be used for segments of circles. Do not use calculus. Deduct all chamfers over 2 inches and all openings over 2 inches except weep holes, deck drains, and similar small openings. Do not deduct for the volume occupied by reinforcing steel, embedded structural steel, or for the volume of expansion joint filler, rubber waterstops, etc. The accuracy of calculations for concrete quantities would normally be 0.01 cubic yard.

Reinforcing Steel - Form HCS 144, *Reinforcing Steel* may be used for determining reinforcing steel quantities. This form may be used either for hand extensions or computer computation. Instructions for computer application are given in Section 110,

Volume II of the *Bridge Construction Records and Procedures*. As the form is primarily for use by the Office of Structures Design, adaptations must be made when using it for field quantity calculations. When the form is used for field quantity calculations, be sure to show the project identification, bridge name and number, name of person making calculations and name of person checking calculations. Note that Form HCS-144 does not provide space for either No. 14 or No. 18 bars. It is therefore necessary to list these bars in one of the other columns. When this is done, cross out the size printed at top of column and the weight at bottom of column and enter the correct size and weight. The accuracy of calculations for bar reinforcing steel is 1.0 pound.

Structural Steel - When structural steel quantity calculations are required, use *Quantity Calculation Sheet*, Form HC-52 or the computer Six Factor Computation Form HCS- 289 for the calculations. Tabular weights, as given in the AISC Handbook, may be used in making calculations of weights of rolled shapes and structural plates. Additional details, concerning measurements for structural steel quantities, are given in Section 55 of the Standard Specifications. The accuracy of structural steel quantity calculations would normally be 1.0 pound.

Miscellaneous Metal - The pay quantity for miscellaneous metal is determined by scale weights. Quantity calculations, therefore, consist of a listing of scale weights for various components. These calculations can be shown on *Quantity Calculation Sheet*, Form HC-52. The accuracy of miscellaneous metal quantity calculations would normally be 1.0 pound.

Miscellaneous Items - Items such as railings, pipe, conduit, waterstop, joint seal, etc., are paid for by the lineal foot and are usually "field measured". Calculations for these types of items generally consist of a listing of the field measurements which can be made on Form HC-52, *Quantity Calculation Sheet*. The accuracy of quantity calculations for these type items would generally be 0.1 foot. Items such as Protective Cover, Membrane Waterproofing, Texture Panels, Chipped Surfacing, Contrast Treatment, etc., are paid for by the square yard. Quantities may be “field measured” or calculated. In either case, Form HC-52 may be used for the calculations. Accuracy of calculations is generally the nearest 0.1 square yard.

Fixed Final Pay Quantity and Lump Sum Item Calculations

Lump sum items (such as Removing Bridge or Prestressing Cast-in-Place Concrete) require only one quantity sheet per item. Since these will be summary sheets, list only one item per sheet. Show the item number, the name of the item, and the pay unit, such as “One Lump Sum.”

Items having fixed final pay quantities, such as ”Structure Concrete (Bridge)”, or “Bar Reinforcing Steel (Bridge)”, also require only one final quantity sheet per item, on which should be shown the item number, the name of the item and the final pay quantity shown on the plans. However, if authorized changes increase or decrease a fixed final pay quantity, calculation sheets must be prepared to substantiate the increase or decrease. The item summary sheet would list these quantities in addition to the fixed final pay quantity shown on the plans. Form HC-52 may be used for these calculation sheets.

No measurements, calculations, weight slips, etc., are required for the permanent record for "Lump Sum" items, nor for fixed "Final Pay Quantity" items.

Contract Change Order Calculations

Quantity calculations for Contract Change Orders require the same procedures and degree of accuracy as those calculated for other similar contract items. Additional copies of the calculations shall be made if requested by the Resident Engineer. The number of copies would be as requested. One or more sheets are to be made up for each item affected by the change order. Do not show more than one item on a sheet.

Totals shown on a contract change order quantity sheet should be the net increase or decrease due to the change. This figure can then be used in the "body" of the Contract Change Order. If a change is one that requires revised plan sheets, Structures Design will generally furnish revised quantities, along with the revised plan sheets.

Filing Contract Quantity Documents – Category 48

All original quantity calculation sheets, which have been prepared to determine final pay quantities, and all other documents supporting the contract item final pay quantities, are to be filed in Category 48, Contract Item Quantity Documents. See Chapter 3 of the *Construction Manual* for additional instructions.

A copy will be required of all calculations, which are based on "Field Measurements" (such as pile lengths), which could not be duplicated once the item is completed. In the case of quantities which are dependent upon "field measurements", the copy shall be sent to the Office of Structures in Sacramento as soon as a convenient unit of the item is complete.

When contract item payment is by scale weight, the certified weight ticket or load slip is the original source document and must be preserved as part of the back-up data to support the payments made, even though the quantity (weight) to be paid for is subsequently listed on a quantity calculation sheet.

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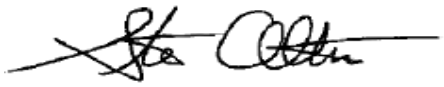

STEVE ALTMAN
Deputy Division Chief
Structure Construction
Division of Engineering Services

**Denotes the document is a Bridge Construction Bulletin*

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General Information

All contracts administered by the Department of Transportation require monthly payments to the Contractor for work done and for certain materials furnished but not yet incorporated into the work. Although payment vouchers are prepared in the District Office, the Resident Engineer must determine the actual contract item pay quantities, the amount of extra work and the value of materials on hand for which payment is due under the terms of the contract, as well as any adjustments in, compensation, deductions or retentions which may be required for any given estimate period.

The Department of Transportation has developed the Automated Progress Pay System to provide for correct and timely payments to the Contractor.

Under present Department of Transportation policy, the project Resident Engineer is responsible for providing the necessary data to the District Office so that the correct monthly payments can be made to the Contractor. The Bridge Representative is to provide the Resident Engineer with information as required to prepare that portion of the Estimate relative to the "Bridge Work". This information should be furnished in a manner that will satisfy the Resident Engineer's needs. (See Bridge Construction Memo 6-2.0 for information pertaining to the Division of Structures participation in the automated pay system.)

All Department of Transportation contracts are subject to audit anytime within three years following final payment. Audits may be conducted by the Department's Internal Audit Section, or by any one of several agencies having an interest in project financing, such as the Federal Highway Administration or the Department of Finance. To ensure that contract payments may withstand such audits, it is important that a uniform and systematic procedure be used when determining the payments to be made under the contract, and that records supporting payments be both accurate and complete.

The proper use of the Bridge Estimate Data Record Book (Category 59) will provide supporting records that are sufficiently detailed and complete to withstand an audit. Instructions for the use of the Bridge Estimate Data Record Book (Category 59) are given in *Bridge Construction Memo* 6-3.0.

Instructions for Projects in the Automated Progress Pay System (PISA)

General Information

The automated progress pay system, known as PISA (Project Information System and Analysis) is used by the State to produce the monthly progress pay estimate for most construction projects on the State highway system. Some of the PISA features require input from Offices of Structure Construction employees. These features help in monitoring the payment of "structure work" at the project level.

This memo contains instructions regarding specific information required on the PISA data input forms, when to prepare the PISA data input forms, and how to correct data contained in PISA. This memo also contains information on what reports are available from PISA and the Offices of Structure Construction.

There are several types of projects that are in PISA. These types of projects include the following:

- Major projects: Projects where the total value of the contract is greater than $750,000 and the contract specifications provide for monthly progress payments to the contractor.
- Minor "A" projects: Projects where the total value of the contract is greater than $111,000 and less than or equal to $750,000 and the contract specifications provide for monthly progress payments to the contractor.
- Local Agency projects with State Staffing: Projects where structure work is performed in the State right-of-way that are designed by a Local Agency, such as a City or County, and the Offices of Structure Construction provides full or partial staffing to administer the contract. In this case, the State is responsible for contract administration and the contract specifications provide for monthly progress payments to the contractor.

In order to obtain maximum value from PISA, it is necessary that information concerning "structure work" be accurately entered for all contracts.

The proper use of PISA by Offices of Structure Construction employees will result in less time spent compiling and correcting the progress pay estimates.

To understand how the structure item quantities, contract change orders, and Material on Hand payments are handled by PISA, refer to Section 3-02 of the Caltrans *Construction Manual*. Section 3-02 contains comprehensive instructions for filling out PISA data input forms, estimate processing and estimate report requests. **Structure Representatives shall review the contents of Section 3-02 of the Caltrans *Construction Manual* prior to processing the first progress pay estimate for a construction project with structure work.**

PISA Data Input Forms

There are several PISA data input forms that require information and review by Offices of Structure Construction employees.

Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update" (Old Form DAS-CS-172)

Refer to Page 3-02-5 of the *Construction Manual*, the Caltrans Electronic Forms System at website address http://cefs.dot.ca.gov/jsp/forms.jsp, or Attachment No. 1 for a sample of this form. This form is used to initiate and complete a project in PISA. It is important that the initial data supplied to PISA is correct. **Structure Representatives shall fill in the two sections entitled "Project Key" and "Bridge Department Data" on this form, which is then submitted to the Resident Engineer or District Office for processing. Structure Representatives shall also send a copy of this form to the Headquarters Office of the Offices of Structure Construction in Sacramento**.

The letters shown in the following correspond to the callout boxes shown on the sample Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update shown in Attachment No. 1.

A. Project Key, "Dist." field: Enter the project District, as shown on the contract Special Provisions.

B. Project Key, "Contract Number" field: Enter the project contract EA. The last number must always be "4".

C. Bridge Department Data, "Bridge Rep. Name" field: Enter your last name and first initial.

D. Bridge Department Data, "Respon. Unit" field: Enter the Responsible Unit number of the Bridge Construction Engineer the project is assigned to. Refer to Bridge Construction Memo 11-3.0 for more information regarding responsible units. **Do not use your permanent source number**.

E. Bridge Department Data, "Original Authorized Amount for Bridge Work" field: Enter the dollar amount of structure work for this project. Refer to Bridge Construction Memo 12-2.0 for instructions on calculating this amount. Note that this is a formatted field, with the last two spaces reserved for numbers to the right of the decimal point.

F. Bridge Department Data, "Mobil. %" field: Refer to Bridge Construction Memo 12-2.0 for instructions on calculating this percentage. Note that the mobilization percentage can be entered only to the nearest whole percentage.

G. Bridge Department Data, "C" field: Enter a "C" in this field when the structure work is complete **and all structure payments have been processed correctly**. This can be entered any time after the structure work has been completed, **but no later than when the Proposed Final Estimate is issued to the Contractor**.

Structure Representatives shall fill in this form and submit it to the Resident Engineer any time the data is revised. This form should be processed whenever the project Structure Representative is changed, when the project is moved to another responsible unit, and when the project is completed and all structure payments have been made.

Occasionally, corrections need to be made to the data contained in PISA. Structure Representatives will be notified as described in the *Reports Generated by the Offices of Structure Construction* section of this Bridge Construction Memo when corrections are necessary.

Form CEM-6004, "Contract Transactions Input" " (Old Form HC-34)

Refer to Page 3-02-29 of the *Construction Manual* or the Caltrans Electronic Forms System at website address http://cefs.dot.ca.gov/forms/for an example of this form. This form is used to enter contract item transactions, Materials on Hand payments, and Contract Change Order transactions. Review Section 3-02 of the Caltrans *Construction Manual* for detailed instructions on how to enter data on this form.

Monthly estimate data shall be calculated by the Structure Representative and retained in the project records as described in *Bridge Construction Memos* 5-1.0 and 5-2.0. The Resident Engineer typically prepares this form after the Structure Representative has provided the monthly estimate data. **Structure Representatives shall review this form prior to District processing to ensure that all structure entries have the letter "B" entered in the "Bridge" field.**

In the event that the letter "B" is omitted on a structure entry, the structure entry can be corrected on any future submittal of this form by making an exact negative entry of the entry in error. On the next line, make a positive entry for the same amount and entering the letter "B" in the "Bridge" field. This is known as a "reversing" entry. **Do not wait until the end of the project to make these corrections.** A "reversing" entry can also be used to change whole items, or portions of items, from District to Structures or Structures to District. When these correcting entries are made, appropriate entries under "Source Document Description" could be "Corr D to S", or "Corr S to D."

If the Structure Representative wishes to make use of the "Segregation of Structure Quantities by Structure" feature available within PISA, each structure contract item record entered in the "Source Document Description" field on this form must correspond to an individual structure. Identification of an individual structure is accomplished by utilizing the last six spaces of the "Source Document Description" field on the form. The use of these spaces for such identification is effective only if there is a "B" in the "Bridge" field. Do not extend the source document description into any of these six spaces if you are using them for structure identification. All structure identification is to be written so as to leave no blank spaces next to the "Bridge" field. An individual structure may be described by the Bridge Number, by name, by name abbreviation, by letter designation, etc.

Form CEM-4901, "Contract Change Order (CCO) Input Form"

Refer to Page 3-00-33 of the *Construction Manual* or the Caltrans Electronic Forms System at website address http://cefs.dot.ca.gov/forms/for an example of this form. This form is filled in by the Resident Engineer and is used to initiate a Contract Change Order in PISA. Refer to Section 3-02 of the *Construction Manual* for detailed instructions on how to enter data on this form. The entry on this form which is of concern to the Structure Representative is located in "Card Type 4" and is entitled "Net $ Amount Bridge Work This CCO." This number is the dollar total of all structure change order work pertaining to this change order, whether it is force account work, adjustments in compensation, or contract item adjustments. It cannot be greater than the net amount of the Contract Change Order, and it must be shown in order that the total authorized structure cost in PISA will be correct.

Structure Representatives shall review this form prior to District processing to ensure that all structure change order work has been accounted for and the data entered in the "Net $ Amount Bridge Work This CCO" field is correct.

Form CEM-4902, "Extra Work Bill, Short Form."
Form CEM-4902-A, "Extra Work Bill – Title Page."
Form CEM-4902-B, "Extra Work Bill – Labor Charge."
Form CEM-4902-C, "Extra Work Bill – Equipment Charges."
Form CEM-4902-D, "Extra Work Bill – Material Charges."

Refer to Pages 3-00-34 through 3-00-38 of the *Construction Manual* or the Caltrans Electronic Forms System at website address http://cefs.dot.ca.gov/forms/for examples of these forms. The contractor enters daily extra work charges for labor, equipment, and materials on the Extra Work Bill. The Resident Engineer also uses Extra Work Bills to facilitate payment for Adjustments in Compensation. Refer to Section 3-02 of the *Construction Manual* for detailed instructions on how to enter or check data on these forms.

The entries on each Extra Work Bill cannot be split between Structure work and District work. If extra work for one change order is performed on one day that consists of both Structure and District work, two Extra Work Bills will need to be submitted; one covering the District portion of the extra work, and one covering the Structure portion of the extra work**. For the structure portion of the extra work to be properly credited in PISA, the "Bridge" box on the Extra Work Bill must be checked.**

Structure Representatives shall review Extra Work Bills for Contract Change Orders that include structure work to ensure that the Extra Work Bill contains only structure work charges and that the "Bridge" box on the Extra Work Bill has been checked.

If errors are made on the Extra Work Bill in segregating the work by Structure or District, they can be corrected. However, the correction must be done for each daily extra work report submitted. These corrections are made by submitting another Extra Work Bill. For each extra work bill that needs correction, enter the "Contract No.", "C.C.O. No.", "Report No." of the extra work bill to be corrected, and place an "X" in the "Correction" box. If all of the extra work on the extra work bill is being changed from District work to Structure work, place a "B" in the "Bridge" box. If all of the extra work on the extra work bill is being changed from Structure work to District work, place a "D" in the "Bridge" box. For instructions on making line-by-line corrections to the Labor, Equipment, and Materials sections on the extra work bill, refer to Section 3-02 of the Caltrans *Construction Manual*.

Reports Generated by PISA

The Automated Progress Pay System provides many reports that are of interest to Structure Representatives. Some of these reports are automatically run whenever a monthly progress estimate is processed. The Resident Engineer receives one copy of the monthly estimate report as soon as it is processed and payment has been made to the contractor. Other reports can be obtained separately. Refer to Section 3-02 of the *Construction Manual* for additional information.

The following reports are automatically run whenever a monthly progress estimate is processed:

Progress Payment – Work Done by the Office of Structures
This report is a summary of all of the structure work processed for payment on the monthly progress pay estimate. This report will only be generated for items of work or contract change order work that has been designated as "structure" work on the PISA data input forms as described previously. This report includes a summary for the current estimate and for the total estimate to date. Note that the structure portion of mobilization is automatically calculated and printed on this report. The structure portion of mobilization is based upon the value entered on **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** in the **"Mobil. %"** field. **Structure Representatives shall obtain this report from the Resident Engineer and verify that all structure payments made are correct.** If there are incorrect structure payments, the Structure Representative shall make corrections as described previously in this Bridge Construction memo.

Schedule of Extra Work
This report is a summary of all Extra Work Bills paid on this monthly progress pay estimate. **Structure Representatives shall obtain this report and verify that all structure extra work payments are correct.** If there are incorrect structure extra work payments, the Structure Representative shall make corrections as described previously in this Bridge Construction memo.

Contract Change Order Processing
This report is a summary of all contract change order balances to date. **Structure Representatives shall obtain this report and verify that structure contract change order payments are correct and have not exceeded the authorized amount of the change order.**

Contract Item Processing
This report is a summary of all contract item balances to date. **Structure Representatives shall obtain this report and verify that structure item payments are correct and have not exceeded the authorized amount for each contract item.**

The following reports that are of interest to Structure Representatives are available on an "as-needed*:* basis and can be requested by filling out **Form CEM-6002, "Contract Administration System (CAS) – Report Requests**." Refer to Page 3-00-65 of the *Construction Manual* or the Caltrans Electronic Forms System at website address http://cefs.dot.ca.gov/forms/for an example of this form. This form can also be used to receive many different types of reports. However, you should not request these other types of reports unless you need to have them.

Bridge Quantities by Structure
This report is a summary of all contract item payments per structure. It is available only if the contract item quantities have been segregated by structure on **Form CEM-6004, "Contract Transactions Input"**, as described previously in this Bridge Construction Memo. Refer to Section 3-02 of the *Construction Manual* for detailed instructions on how to fill out **Form CEM-6002, "Contract Administration System (CAS) – Report Requests"**, to obtain this report.

Process Payment – Work Done by the Office of Structures

If the Structure Representative cannot obtain a copy of the monthly progress pay estimate from the Resident Engineer, the Structure Representative can request a separate copy of this report. Refer to Section 3-02 of the *Construction Manual* for detailed instructions on how to fill out **Form CEM-6002, "Contract Administration System (CAS) – Report Requests"**, to obtain this report.

Reports Generated by the Offices of Structure Construction

Occasionally, errors in PISA data entry occur. The Offices of Structure Construction produces two error reports. The individual reports available are the following:

1. Problems with PISA Data Submittal.
2. Error in the Final Amount of Bridge Work Paid.

Structure Representatives receive error reports for the projects they are responsible for that have PISA data errors. **Structure Representatives are responsible for correcting erroneous structure data contained in the PISA system**.

Instruction for Report (1) Problems with PISA Data Submittal

This report is issued to Structure Representatives responsible for projects that have not been marked as completed in the PISA system for which some type of PISA data error has been detected.

The letters shown in the following correspond to the callout boxes shown on the sample ***Problems with PISA Data Submittal*** report shown in Attachment No. 2.

A. **EA**: This data field header contains a list of the projects with data errors in the PISA system assigned to the responsible Structure Representative. The Structure Representative enters the project EA into this field using **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update**." Refer to the instructions for filling out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** for more information.

B. *****: This data field header indicates the projects that have been marked as completed in the PISA system. The Structure Representative marks the project for completion using **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update**." Refer to the instructions for filling out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update**" for more information. Completed projects are denoted with an "*".

C. **Resp. Unit**: This data field header contains the Responsible Unit number of the Bridge Construction Engineer responsible for the project in the PISA system for each of the projects listed. The Structure Representative enters the Responsible Unit into this field using **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update**." Refer to the instructions for filling out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update**" for more information.

D. **Name**: This data field header contains the Structure Representative's name in the PISA system for each of the projects listed. The Structure Representative enters his or her name into this field using **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update."** Refer to the instructions for filling out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** for more information.

E. **Est #**: This data field header contains the Estimate Number in the PISA system for each of the projects listed. The Estimate Number represents the number of progress pay estimates paid to date by the Resident Engineer for the project.

F. **$OAA**: This data field header contains the Original Authorized Amount for structure work in the PISA system for each of the projects listed. The Structure Representative enters the Original Authorized Amount for structure work into this field using **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update."** Refer to the instructions for filling out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update**" for more information.

G. **Bridge CCO'S**: This data field header contains the amount authorized for structure contract change order work in the PISA system for each of the projects listed. The Structure Representative updates the amount authorized for structure contract change orders each time he or she fills out **Form CEM-4901, "Contract Change Order (CCO) Input Form."** Refer to the instructions for filling out **Form CEM-4901, "Contract Change Order (CCO) Input Form"** for more information.

H. **Final $OAA + CCO**: This data field header contains the estimated final cost for structure work in the PISA system for each of the projects listed. The estimated final cost is the sum of the Original Authorized Amount for structure work and the amount authorized for structure contract change order work.

I. **Paid This Estimate**: This data field header contains the amount of structure work paid to the contractor for the month of the report. The amount of structure work paid to the contractor is the summation of all contract items and contract change order extra work bills that have been marked as "Bridgework", with a "B" in the appropriate field on the various forms for the month of the report. Refer to the instructions for filling out **Form CEM-6004, "Contract Transactions Input"** and **Form CEM-4902, "Extra Work Bill"** for more information.

J. **Paid to Date**: This data field header contains the amount of structure work paid to the contractor through the month of the report. The amount of structure work paid to the contractor is the summation of all contract items and contract change order extra work bills that have been marked as "Bridgework," with a "B" in the appropriate field on the various forms for the month of the report. Refer to the instructions for filling out **Form CEM-6004, "Contract Transactions Input"** and **Form CEM-4902, "Extra Work Bill "**for more information.

K. **% Paid**: This data field header contains the percentage of the estimated final cost for structure work paid to the contractor through the month of the report. The value in the field is the amount of structure work paid to the contractor through the month of the

report divided by the estimated final cost for structure work, and is expressed as a percentage.

L. **Problems With Input**: This data field header contains messages for various problems with the data currently contained in the PISA system for each project. If a message is present, the Structure Representative shall correct the problem. Messages that may appear are shown below, along with instructions on how to correct the problem. To correct the problem, the Structure Representative shall fill out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"**. District personnel enter the data on this form into PISA. A copy of this form should be sent to the Headquarters Office of the Offices of Structure Construction in Sacramento to verify the data entry.

- "New Project, Resp Unit = xxx": This message appears if the project has been approved for construction, no contract payments for structure work have been made, and the project has not been initiated in the PISA system. To correct this problem, the Structure Representative shall fill out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** and enter all of the data necessary to initiate the project in the PISA system.

- "Incorrect Resp Unit, Should be xxx, Missing $ Value of Structures Work.": This message appears when contract payments for structure work have been made, but the project has not been initiated in the PISA system. To correct this problem, the Structure Representative shall fill out Form **CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** and enter all of the data necessary to initiate the project in the PISA system.

- "Missing $ Value of Structures Work, no Structure Rep": This message appears when contract payments for structure work have been made, but there is no Original Authorized Amount or name of the Structure Representative in the PISA system. To correct this problem, the Structure Representative shall fill out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** and enter the Original Authorized Amount and the name of the Structure Representative. If the other data contained in the PISA system is correct, it is not necessary to enter any other data (other than the project EA) on Form CEM-6003.

- "Missing $ Value of Structures Work": This message appears when contract payments for structure work have been made, but there is no Original Authorized Amount in the PISA system. To correct this problem, the Structure Representative shall fill out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** and enter the Original Authorized Amount. If the other data contained in the PISA system is correct, it is not necessary to enter any other data (other than the project EA) on Form CEM-6003.

- "The $OAA Appears to be Incorrect - Please Review and Correct (If Necessary)": This message appears if the estimated structure cost of the project is vastly different from Original Authorized Amount in the PISA system. The Structure

Representative shall review the Original Authorized Amount in the PISA system and correct it if it is incorrect (it may not be incorrect). This usually occurs if an error is made when the Original Authorized Amount is keypunched into the PISA system, such as a misplaced decimal point. To correct this problem, the Structure Representative shall fill out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** and enter the correct Original Authorized Amount. If the other data contained in the PISA system is correct, it is not necessary to enter any other data (other than the project EA) on Form CEM-6003.

- "Incorrect Resp Unit, Should Be xxx": This message indicates that the Responsible Unit number contained in the PISA system is incorrect. To correct this problem, the Structure Representative shall fill out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** and enter the correct Responsible Unit number. If the other data contained in the PISA system is correct, it is not necessary to enter any other data (other than the project EA) on Form CEM-6003.

- "Project Has Been Accepted. Verify That the Structure Estimate Data is Correct, Then Enter 'C' on Form CEM-6003 to Close out the Project": This message appears if the project has been accepted and the project is still open in the PISA system. To correct this problem, the Structure Representative shall fill out **Form CEM-6003, "Progress Pay-Estimate Project Initiation or Update"** and enter a "C" in the "C" field of the form. However, the Structure Representative should not enter a "C" in the "C" field of the form until all bridge work payments have been made or corrected. If the other data contained in the PISA system is correct, it is not necessary to enter any other data (other than the project EA) on Form CEM-6003.

Instruction for Report (2) Error in the Final Amount of Bridge Work Paid:

This report is issued to Structure Representatives responsible for projects that have been marked as completed in the PISA system for which some type of PISA data error in the final amount of bridge work paid has been detected. Projects that appear on this report are those where the percent difference between the amount paid to date differs from the estimated final cost by more than 10%.

The purpose of this report is to inform the Structure Representative of projects that have been marked complete in the PISA system where the amount of structure work paid to date appears to be in error. It does not mean that the amount paid to date is in error. Rather, it means there is a significant difference between the amount paid to date and the estimated final cost, which should be investigated further.

When a contract does not show 100% complete in the "% Paid" column of the printout, some or all of the payments or contract change orders for bridge work may not have been coded or entered correctly. Some of the types of payment problems are listed below:

1. Structure contract items were not entered with a "B" **on Form CEM-6004, "Contract Transactions Input."**
2. Incorrect initiation of CCO's as bridge work on **Form CEM-4901, "Contract Change Order (CCO) Input Form."**
3. Structure CCO payments were not entered with a "B" on **Form CEM-6004, "Contract Transactions Input" or Form CEM-4902, "Extra Work Bill."**

4. Actual contract item quantities that varied greatly from the original approximate amount shown on the contract plans.

If the Proposed Final Estimate for the project has not been processed, the Structure Representative shall correct these problems. Refer to the instructions for filling out **Form CEM-6004, "Contract Transactions Input", Form CEM-4901, "Contract Change Order (CCO) Input Form", and Form CEM-4902, "Extra Work Bill"** for more information on correcting information in the PISA system.

If the Proposed Final Estimate for the project has been processed, the project has most likely been "closed out" in the PISA system, and no corrections can be made. In that case, the Structure Representative shall calculate the actual structure cost of the project and report it to the SCEMS database administrator in the Headquarters Office of the Offices of Structure Construction in Sacramento.

Generally, if a project appears on this report and there is no error in the amount paid to date for bridge work, it is because one or more contract items were underpaid or overpaid for whatever reason. In that case, the Structure Representative shall inform the SCEMS database administrator in the Headquarters Office of the Offices of Structure Construction in Sacramento that the amount paid to date for the project is correct.

The letters shown in the instructions for the Problems with PISA Data Submittal report correspond to the callout boxes shown on the Error in the Final Amount of Bridge Work Paid report shown in Attachment No. 3.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROGRESS PAY-ESTIMATE PROJECT INITIATION OR UPDATE

CEM-6003 (REV 02/2001)

CASOOA

B

PROJECT KEY

FB	DIST.	CONTRACT NUMBER
U	XX	XXXXX4
1	2 3	4 9

INSTRUCTIONS FOR CARD C05
-CONTRACT SUSPENSION: ENTER SUSPENSION DATE AND 'S' IN SR
-CONTRACT REACTIVATION: ENTER REACTIVATION DATE AND 'R' IN SR
-FOR CORRECTION: ENTER CORRECT DATE OR 00/00/0000 AND 'C' IN SR
-FOR PROJECT REQUIRING 5% RETENTION: ENTER 'X' IN PE
-FOR PROJECTS AWARDED AFTER 1/1/88;
ENTER DATE WHICH IS 15 CALENDAR DAYS AFTER APPROVAL DATE IN BEGIN CONSTRUCTION DATE

MISCELLANEOUS INPUT

CC	CARD TYPE	RESIDENT ENGINEERS PHONE NUMBER	RESPON. UNIT	DATE WORK STARTED	EST. DATE FOR COMPLETION	PASSWORD	SUSPENSION OR REACTIVATION DATE	S R	P E	BEGIN CONSTRUCTION DATE
C	05									

RESIDENT ENGINEERS MAILING ADDRESS

C06
C07
C08

CONTRACTOR NAME AND ADDRESS

C09 NAME
C10
C11
C12
C13 ADDRESS
C14

ADA Notice
For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 263-2041 or TDD (916) 263-2044 or write Records and Forms Managment, 1120 N Street, MS-89, Sacramento, CA 95814.

CONTRACTORS PHONE NUMBER

C D E F G

BRIDGE DEPARTMENT DATA

CC	CARD TYPE	BRIDGE REP. NAME	RESPON. UNIT	ORIGINAL AUTHORIZED AMOUNT FOR BRIDGE WORK *	MOBIL %	C
C	15	Last, F	505	10,000,000,000	75	C

* (INCLUDE MOBIL AMT.)

BY:

REMARKS

NAME: Structure Rep
PHONE: (530) 999-9999
DATE: 99/99/2001

VERIFY

State of California **Business, Transportation and Housing Agency**

Memorandum

To: D
STRUCTURE REPRESENTATIVE

Date: 5/14/2001

File: PISA

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
OFFICE OF STRUCTURE CONSTRUCTION

Subject: PROBLEMS WITH PISA DATA SUBMITTAL

This memorandum contains a summary of projects identified as structure projects in the PISA system that are assigned to you. The projects listed contain errors, omissions, or questions about the data submitted to PISA. Please reference the described problem under the "PROBLEMS WITH INPUT" heading of the list of projects.

	B EA	*	C RESP. UNIT	D NAME	E EST #	F $OAA	K % PAID	L PROBLEMS WITH INPUT
G	BRIDGE CCO'S		H FINAL $OAA + CCO	I PAID THIS ESTIMATE	J PAID TO DATE			
	12-001084		544	N	3	$1,139,065.00		INCORRECT RESP UNIT, SHOULD BE 584.
	$10,000.00		$1,149,065.00	$143,677.00	$143,677.00		13%	

In accordance with Bridge Construction Memo 6-2.0, please initiate the new project, correct the data in the going project, or close out the completed project using Form CEM-6003, "PROGRESS PAY - ESTIMATE PROJECT INITIATION OR UPDATE". Send the original Form CEM-6003 to the Resident Engineer or the District/Region Construction Office for processing. To verify that the data was correctly updated in the PISA system, send a copy of Form CEM-6003 to the Office of Structure Construction in Sacramento.

If you have any questions about this, please call the SCEMS database administrator at CALNET 8-498-8827 or (916) 227-8827.

Richard W. Shepard
Assistant Office Chief

cc: MCCOOK,A.

State of California **Business, Transportation and Housing Agency**

Memorandum

To: STRUCTURE REPRESENTATIVE

Date: 5/14/2001

File: PISA ERRORS

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
OFFICE OF STRUCTURE CONSTRUCTION

Subject: ERROR IN THE FINAL AMOUNT OF BRIDGE WORK PAID

This memorandum contains a summary of projects identified as structure projects in the PISA system that are assigned to you for which a "C" has been entered on Form CEM-6003, "Project Initiation or Update" indicating completion of payments to the contractor through the PISA system where the final amount paid to the contractor as bridge work varies significantly from the Final Authorized Amount.

EA	*	RESP. UNIT	NAME	EST #	$OAA	% PAID	PROBLEMS WITH INPUT
BRIDGE CCO'S		FINAL $OAA + CCO		PAID THIS ESTIMATE	PAID TO DATE		
11-225904	*	599		5	$101,280.00		
$35,000.00		$136,280.00		$0.00	$101,860.70	75%	

If the amount of bridge work paid to date is correct, please call the SCEMS database administrator so that this project can be taken off of the error report.

If the amount of bridge work paid to date is incorrect and the Proposed Final Estimate has not been processed, please correct the bridge work data in the PISA system in accordance with the instructions in Bridge Construction Memo 6-2.0.

If the amount of bridge work paid to date is incorrect and the Proposed Final Estimate has been processed, please calculate the correct amount paid as bridge work in accordance with the instructions in Bridge Construction Memo 6-2.0 and call the SCEMS database administrator with the correct amount paid as bridge work so that this project can be taken off of the error report.

If you have any questions about this, please call the SCEMS database administrator at CALNET 8-498-8827 or (916) 227-8827.

Richard W. Shepard
Assistant Office Chief

cc: YEE,S.

Category 59 – Bridge Estimate Data

General Information

The Resident Engineer is responsible for preparing the "Contract Transactions Input" (Form HC-34). All entries on the Form HC-34 must be referenced to a source document. "The Bridge Estimate Data Record Book" (Category 59) provides source document information for quantities of bridge items to be entered on the "Contract Transactions Input" (Form HC-34). An exception to this is that the "Concrete Pour Record" (Form DS-C73) and the "Bar Reinforcing Steel Placing Record" (Form DS-C76) provides source document information for concrete and bar reinforcing steel quantities. The Bridge Representative is responsible for preparing and maintaining the basic source documents which provide "back-up" data for entries onto the Contract Transactions Input (Form HC-34).

Bridge Estimate Data Record Book

The Bridge Estimate Data Record Book will consist of a loose-leaf notebook (or notebooks) containing index tabs for each item of bridge work. The index tabs should be labeled with the category number, item number and name of item. For example, if Structure Excavation is Item No. 12, the index tab should be labeled 59.12 Structure Excavation."Behind each item tab will be filed one or more summary sheets entitled "Summary of Estimate Data" (Form DH-OS-C42).

A properly completed summary sheet for a hypothetical structure excavation item with a fixed final pay quantity is shown on Attachment No. 1.

As shown on the example, the item description and item number, the Engineer's estimated or final pay quantity and the unit price are entered in the designated spaces at the top of the form. Under the column headed "Location of Work", enter a brief description of any individual unit of work which the Contractor has completed. Of particular importance from the auditing standpoint is the information shown in the verification column. In the example the figures "E-D. 59.12-l" and "ED. 59.12-2" are identifying numbers for estimate data sheets on which the estimate quantity has been computed. Note that estimate data sheets are merely "back-up" calculations sheets which are prepared solely to support the payments made on progress pay estimates. These "back-up" calculation sheets should be filed behind the Summary of Estimate Data Sheets (Form DH-OS-C42) for the particular item, and should be sufficiently accurate to establish the amount due on the monthly estimate. These calculations need not be exact.

It is not always necessary to have the "back-up" calculations in the Bridge Estimate Data Record Book, The "back-up" data supporting the entries in this book may be located elsewhere.

If the verification shown on Form DH-OS-C42 is a source other than an estimate data sheet, this must be noted on the DH-OS-C42 with an appropriate reference. For example, for concrete

piling the reference might be “final quantity sheet 48-11-3” while for Structure Concrete (Bridge) the reference might be “Concrete Records - File 43.4.” For items such as Metal Railing Type 9 the reference probably would be to the field book or other document where the measured pay lengths were recorded.

Note that final quantity calculations are always filed in Category 48 but that they may be used as “back-up” data for an estimate quantity provided the proper reference to the 48 file is shown on the “Summary of Estimate Data Sheet” (Form DH-OS-C42).

Quantities shown on Form DH-OS-C42 for unit-price items, where the final quantity calculation has not yet been completed, must be referenced to an estimate data sheet showing the calculation and the method of arriving at the figure shown on the estimate.

In some cases it may be convenient to use the Bridge Design Group's D22 estimate of quantities as the back-up for quantities shown on the Summary of Estimate Data Sheets, Quantities calculated by the Bridge Design Group are summarized on a special form (Form DH-OS-D22) which is placed in the RE Pending file after the Engineer's Estimate is prepared. When used as an estimate data back-up sheet, Form DH-OS-D22 should be filed behind the corresponding summary sheet in the same manner as any other estimate data back-up sheet.

When making entries on Form DH-OS-C42, the most important point to keep in mind is that there must always be a reference to an estimate data sheet, a quantity calculation sheet or some other record (such as a field book) which verifies the figures shown.

The Posting Reference column is used to permit posting directly to the Contract Transactions Input (Form HC-34). It should contain reference to the sheet number and line number upon which the entry is made. The date of the entry and the signature of the person making the entry must also be shown.

The Remarks column at the right of the sheet may be used to facilitate any distribution or segregation of costs which may be required, or for such other purposes as the Bridge Representative may choose.

When work on any item has been completed, indicate this fact on the Summary of Estimate Data Sheet (Form DH-OS-C42) and enter the final pay quantity under the *Total Quantity to Date-This Item* column. Make reference to the 48 File where the Final Pay Quantity is filed. (Note that a retention should be made for items that are substantially complete but on which incidental work remains to be done. Calculations showing how the retention amount was determined must be filed behind the appropriate item in the Bridge Estimate Data Book.)

DEPARTMENT OF TRANSPORTATION

SUMMARY OF ESTIMATE DATA

OH-08 C42 (REV. 11-73)

JOB STAMP

SHEET 1 OF 1

ITEM Structure Excavation (Bridge) ITEM NO. 12

ENGINEERS (FINAL PAY) 875 CY UNIT PRICE $4.50

LINE UNIT	LOCATION OF WORK	VERIFICATION REFERENCE	QUANTITY THIS LOCAT. THIS EST.	QUANTITY THIS ITEM THIS EST.	TOTAL QUANTITY TO DATE THIS ITEM	POSTING REF DATE/BY	REMARKS Bk: NB-133 6-135	REMARKS Bk: NB-130A 6-130A
1	Island View Abut. 1	E. D. 59.12-1	135				135	
2	Turntable Bay Abut. 1	E. D. 59.12-2	51					51
3	Island View Pier 2	E. D. 59.12-1	124				124	
4	Pay Est. #1			310	310	60-12/2 3/20 K.Jones	259	51
5	Island View Pier 3	E. D. 59.12-1	120				120	
6	✓ Pier 4	✓	105				105	
7	Turntable Bay Bent 2	E. D. 59.12-2	25					25
8	✓ Bent 3	✓	30					30
9	Pay Est. #2			280	590	60-12/5 4/20 K.Jones	484	106
10	Island View Pier 3	E. D. 59.12-1	108				108	
11	✓ Abut. 6	✓	116				116	
12	Turntable Bay Abut. 4	E. D. 59.12-2	56					56
13	Adjust Quantity		+5				2	3
14	Engineer's Estimate	48.12-1 Final Pay		285	875	60-12/8 5/20 K.Jones	710	165

FILE CATEGORY NO. 12

Partial Payments

General

Refer to Section 3-9.07 of the Caltrans *Construction Manual* for detailed information relative to partial payments.

Material on Hand But Not in Place

In addition to payment for work done, Section 9-1.06 of the Standard Specifications provides for payment of certain materials furnished by the Contractor and delivered to the job site or stored subject to or under State control, and unused.

Before a given material can be considered as "material on hand" for payment purposes, all of the following conditions must be met:

1. The material must be listed in the Special Provisions as eligible for payment as material on hand.
2. The material must meet job specifications.
3. The material must be unused. Once material has been paid for as material on hand, it cannot be used by the Contractor except in the manner contemplated by the contract. (For example, steel H-piles paid for, as material-on-hand may not be used as falsework beams.)
4. The material must be stored within the State of California, and subject to or under State control. If the material is stored away from the job site, verification (by the Office of Materials Engineering and Testing Services – METS) of the acceptability of the material is required before payment may be made.
5. The Contractor must request payment by submitting a properly completed Form CEM-5101, Request for Payment for Materials on Hand. Note that a new request must be submitted each month, even though the quantity of material on hand or stored under State control has not changed since the previous month's estimate.

Instructions pertaining to the processing of requests for payment of materials on hand are included in Chapter 3 of the Caltrans *Construction Manual*. Note that the use of CEM-5101 to request payment for materials on hand does not in any way change or modify the established procedure for METS release of Contractor-furnished materials. Release of materials to a specific project will be made by a Report of Inspection, Form TL-29, prepared by METS when the materials are shipped to the job.

Records of Materials-On-Hand payments are kept in File Category 51.

In accordance with present Caltrans policy, payment for materials, which are stored away from the job site, is contingent upon verification by a METS representative that the material meets specifications and is stored subject to or under State control. Ordinarily, verification will be made on Form TL-649, Inspectors Report of Material on Hand. In the case of structural steel and prestressed girders, Fabrication Progress Report Form, TL-6037, is used.

Payment for materials-on-hand is, in effect, an advance payment for part of the work subsequently to be paid for under a contract item. Since many items include both furnishing and placing of material (i.e., bar reinforcing steel, rubber waterstop, etc.) the maximum payment for materials on hand but not yet placed or installed must not exceed the contract price less the estimated cost of handling (i.e., trucking), installation or other work necessary to complete the item.

Payments for Furnishing Materials

Precast members and piling are examples of materials that have two contract items of payment shown in the Engineer's Estimate, (i.e., furnishing and erecting or driving).

When steel, precast concrete, or timber piling of proper length are delivered to the job site ready for driving, the specification requirements for "furnishing" have been met and the material should be paid as a contract item on the progress pay estimate. Piles stored offsite, or onsite but not ready for driving, are to be considered as Materials-on-hand. Portions of piling, such as steel shells for cast-in-place concrete piles, as described in Section 49-4 of the Standard Specifications, are not complete piling and cannot be paid under the "furnishing" contract item. When the steel shells for cast-in-steel-shell concrete piles have been driven and the concrete and reinforcing steel have been placed to provide a complete pile, the contract item for "furnishing" may be paid.

When precast structural members are delivered to the site of the work complete and ready for erection, the specification requirements for "furnishing" have been met and the material should be paid for under the furnishing item, not as Materials-on-hand.

When the special provisions qualify the material for partial payment and it does not meet the requirements for "furnishing", payment may be made as Materials-on-hand at the Contractor's request. The usual requirements for Materials-on-hand will apply.

Partial Payments for Bar Reinforcing Steel

Chapter 3 of the *Construction Manual* permits payment for Bar Reinforcing Steel, which is complete in place in the forms. It does not have to be encased in concrete.

Each month it will be necessary for the Structure Representative to make an estimate of the reinforcement, which is tied in place, but not necessarily encased in concrete. This amount may be obtained from the weights shown on the Certificates of Compliance, by calculations, by comparison with known weights in a similar portion of the structure, etc.

This estimated quantity of tied bar reinforcing steel is added to the amounts of reinforcing steel determined to be complete and encased in concrete. The sum of all completed rebar will be shown on the Bar Reinforcing Steel Placing Record, Form No, DS-C76.

Partial Payments for Lump Sum Items

Chapter 3 of the *Construction Manual* establishes the policy concerning partial payment as follows: "For lump sum items, a percentage of the lump sum bid price will be paid as work progresses toward completion."

Prestress Steel

Section 50 of the Standard Specifications describes the work to be done in prestressing cast-in-place concrete, and provides that payment for this work will be on a lump sum basis.

The following guidelines are established to ensure uniform practice throughout the State in determining the percent complete of the lump sum bid item for prestressing cast-in-place concrete.

The proportion of the lump sum item, "prestressing cast-in-place concrete", for any one structure, shall be the ratio of the deck area of that structure to the total deck area of all cast-in-place prestressed structures on the contract. Other logical and equitable methods of determining this proportion may be used with approval of the area Bridge Construction Engineer.

The percentage of prestressing work required shall be divided into the following categories only, and the following individual percentages shall apply:

Ducts: Complete in place with distribution plates and required vents, for all tendons in the structure……..……30%

Prestressing Steel: Complete in place in all ducts; free and unbonded; protected from corrosion if required; and acceptable……..….50%

Prestressing: Including the work on stressing (jacking) and anchoring all tendons in the structure; with ends trimmed and ready for grouting……..….10%

Grouting: Including grouting all tendons in the structure, and completing all work required by the bid item……...……10%

On any structure, or major portion of structure, partial payment shall be made as each of the above operations has been completed.

Tieback and Tiedown Tendons

To provide uniformity in the way we are making payments for partially completed tieback and tiedown anchors, the following percentages of the unit price are to be used:

After completion of drilling, installing the tendon and initial grouting……60%

After satisfactory completion of the testing and if the contractor provides temporary corrosion protection[1] for the tendon and anchorage assembly on any anchor where final grouting is not completed……..……..…..……..30%

After completion of final grouting…….…...10%

Column Casings

To provide uniformity in the way we are making payments for partially completed column casings on seismic retrofit work, the following percentages of the unit price are to be used:

When casing is erected and fully welded……...…70%

When the casing is fully grouted……..…….15%

When the casing is fully painted and has met all
Other contract requirements……..……15%

Building Construction

The "Instructions to Bidders and General Conditions for Building Construction" requires that the Contractor submit to the Engineer a "schedule of values" for each lump sum item. As soon as the Structure Representative receives and approves the "schedule of values," he should make a copy and forward it to the Structure Construction Office marked, "Attention: DES, Office of Transportation Architecture."

The Structure Representative can use the information given in the "schedule of values" to determine the percentage of the lump sum bid price that will be paid as work progresses toward completion.

[1] When temporary corrosion protection is proposed by the contractor, it shall protect the portions of the tendon and anchor assembly that have not been grouted from intrusion by air and moisture. The contractor may propose sealing openings in the anchor assembly and coating the anchor head, wedges or anchor with a thick layer of corrosion inhibiting grease.

10-03

File	**BCM 6-4.1**
Date Effective	05/20/2010
Expiration Date	12/31/2011
Supersedes	None
Approved by	Robert A. Stott, Deputy Division Chief Offices of Structure Construction

Subject: Partial Payment for Structural Concrete, Bridge

Section 51-1.23, "Payment" of the Standard Specifications Section 51, "Concrete Structures," states that "the contract prices paid per cubic yard for the various types and classes of concrete in structures and structure approach slabs shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing the concrete work, complete in place, as shown on the plans, and as specified in these specifications and the special provisions…."

A partial payment for work done is allowed per the Caltrans Standard Specifications Section 9-1.06, "Partial Payments" by stating that the "estimate shall include the total amount of work done and acceptable materials furnished…" Very few items on a Caltrans project require the extent of effort and time to produce a unit of the contract item, as does "Structural Concrete, Bridge."

Analysis has shown falsework costs can easily be 35 – 50% of the "Structural Concrete, Bridge" item. This bulletin is intended to provide uniform guidelines for payment of the contract item "Structural Concrete, Bridge" during various stages of bridge construction that utilize falsework.

When supported on falsework partial payments will be allowed for the contract item, "Structural Concrete, Bridge," as a portion of the supported volume of concrete in the superstructure of box girder or slab bridges as follows:

35% - Falsework – A partial payment will be made when soffit plywood is in place. The partial payment will be equivalent to 35% of the projected concrete volume to be supported by the soffit plywood.

5% will be paid upon complete removal of falsework materials and final finishing of concrete.

The balance of the quantity under consideration above will be paid in accordance with existing practices.

There will be no change to payment methods for Precast Girder or Steel Girder bridges. Concrete for elements not supported by falsework will continue to be paid for in accordance with current processes.

Example:

Consider the following for determining a partial pay quantity of the "Structural Concrete, Bridge" item for falsework.

A two span box girder bridge with the following characteristics:

Distance between abutment faces – 187.1 feet
Distance abutment face to face of bent – 89.55 feet
Width of deck – 41.9 feet
Volume of concrete in:

Element	Volume					
soffit/stems	225.9	CY	1.26	CY/ft	179.10	Feet
bent cap	34.4	CY	4.30	CY/ft	8.00	Feet
Total	260.3	CY				
Deck	200.8	CY	1.07	CY/ft	187.10	Feet
Total	461.1	CY				

For simplicity only the concrete supported by falsework will be considered in this example. In real life concrete placed for abutments and columns would be part of the "previously paid" quantity but not included in calculations for determining partial payment for falsework. The bridge is constructed over a four month period.

Month X estimate shows that the contractor has erected falsework and placed soffit plywood full width for 48 feet (26.8%) of the soffit/stems. In accordance with this BCB, pay the contractor for the falsework that has been erected.

48 feet of soffit plywood would support the following concrete volumes:

(1.26 CY/ft)(48 ft) = 60.5 CY for soffit/stems

(1.07 CY/ft)(48 ft) = 51.4 CY for deck

Payment for falsework would be 35% of this supported volume of concrete or:

(0.35)(60.5 CY)	21.2 CY	stems/soffit
(0.35)((51.4 CY)	18.0 CY	deck
Total	39.2 CY	

Pay this estimate	39.2 CY
Previously paid	0.0 CY
Total to date	39.2 CY

Month X+1 estimate, the contractor has placed all soffit plywood between abutments and the concrete for the soffit/stems.

Soffit/stems/ bent cap	260.3	CY	__ - 128-8-20-0277
Less amount paid previously for soffit/stem falsework	- 21.2	CY	
Less 5% for removal and finishing	- 13.0	CY	(5%)(260.3)
Remainder for falsework supporting deck	52.3	CY	(.35)(200.8)-18.0
Total	278.4	CY	

Pay this estimate	278.4 CY
Previously paid	39.2 CY
Total to date	317.6 CY

Month X+2 estimate, the contractor has placed the deck concrete.

Deck	200.8	CY	__ - 128-9-20-0277
Less amount paid previously for deck falsework	- 70.3	CY	
Less 5% for removal and finishing	- 10.0	CY	(5%)(200.8)
Total	120.5	CY	

Pay this estimate	120.5 CY
Previously paid	317.6 CY
Total to date	438.1 CY

Month X+3 estimate, the contractor has applied the final finish to all concrete surfaces of the superstructure concrete and removed the falsework.

Falsework removed and concrete finished	23.0	CY	

Pay this estimate	23.0 CY
Previously paid	438.1 CY
Total to date	461.1 CY

Structure Construction Project Status Initial/Final

Project Status Data:

The Structure Construction (SC) Oversight Engineer or Structure Representative (SR) must submit Project Status Initial (PSI) and Project Status Final (PSF) data for **all** Structure Construction Projects.

Structure Construction uses the PSI/PSF information in numerous ways, including checking resource needs against the project cost, to provide the current status of the project, and to establish completion of the project for final records.

Structure Construction's project management web application, *VISION* [1], is used to complete and submit PSI and PSF data. *VISION* automatically notifies SC Headquarters Office Associates via email when PSI or PSF data has been submitted.

The SR is responsible for entering PSI/PSF data in *VISION*. Paper (or PDF) copies of PSI/PSF forms are no longer accepted. If a SR is unable to submit PSI/PSF data for the project that they are assigned, then the project Bridge Construction Engineer must verify that the SR is currently assigned to the project in *VISION* and the project working calendar is current.

The PSI and PSF web forms can be accessed through *VISION* on the Structure Construction Intranet website.

- The *Project Status Initial* data is to be submitted after the Task 275 start date in *VISION* and after the Division of Work memo has been written.

- The *Project Status Final* data is to be submitted when all structure work is complete and after the Task 275 end date in *VISION*. *Project Status Final* data for projects with pending claims must be entered at this time with known costs and updated with the final costs after all claims are resolved. Enter a note in the comment field in *VISION* that the project has pending claims.

- More detailed instructions on how to submit PSI/PSF data in *VISION* can be found by clicking the *VISION* guidance link on the *VISION* home page.

[1] http://dschq.dot.ca.gov/scims/webapps/vision

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A. P. BEZZONE, Chief
Office of Structure Construction

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General Information

Section 4-1.03 of the Standard Specifications permits the Department of Transportation to change the work shown on the plans and described in the specifications, and to order such extra work as may be required for the proper completion or construction of the work as contemplated at the time the plans and specifications were approved.

Requests for changes to the contract may come through several sources, such as the Contractor, outside agencies, or other units of the Department, etc. If dictated by conditions encountered on the job, the change would normally be initiated by the Resident Engineer.

Any proposed change should be reviewed to determine if the change is necessary to complete the work as it was intended, and to determine its effect on the orderly and timely completion of the project.

If it is determined that a change is necessary, a contract change order must be prepared to set forth the work to be done, the method of pay, and the effect on the contract time. The provisions of the change order should be discussed with the Contractor prior to its preparation.

Where changes are to be made which involve structures, the decision to make the change, the intent or content of the change order, and any methods or restrictions in doing the work, are the responsibility of the Office of Structure Construction.

Although the Office of Structure Construction is responsible for the technical aspects of changes to structures, the Districts have the responsibility for the overall administration of contract change orders.

A general discussion of changes to the contract are contained in Section 2-04 of the *Construction Manual*.

Detailed instructions on preparation of a change order are outlined in Section 2-50 of the *Construction Manual*.

Structure Construction Contract Change Order Policy

Structure Construction Concurrence

For contract change orders involving "structure work", we use the terminology that the Districts "approve" contract change orders, and Structure Construction "concurs" on change orders.

The Chief, Office of Structure Construction has delegated the authority and responsibility for Structure Construction concurrence of contract change orders involving structure work to the Senior Bridge Engineer level. This concurrence will be indicated by the Bridge Construction Engineer's signature in the margin of the final change order. At the Bridge Construction Engineer's discretion, this authority may be delegated to the Structure Representative.

Preparation of Routine Change Orders

A routine change order is one that is written and approved prior to the start of the change order work. Change orders are usually initiated by field personnel: however, changes may also be requested by the Contractor, outside public agencies, Structures Design, other units of the Department, etc.

When a Contract Change Order is deemed necessary, and after gathering basic information as to costs and time adjustments, the Structure Representative will discuss the proposed change with the Resident Engineer and the Bridge Construction Engineer.

Prior to preparing a Contract Change Order involving bridges, the Structure Representative is encouraged to consult with Designers, Geologists, Specification Writers, etc., as appropriate to obtain their comments and concurrence for the proposed change.

Prior to making any changes involving building projects, the Structure Representative must contact the appropriate section of Structures Design, Architectural and Transit Branch, to inform them of the proposed change, and to obtain their concurrence for the change. (Refer to Bridge Construction Memo 132-4.0 for additional information.)

The Structure Representative should make every attempt to discuss the proposed work with the local representative of the Federal Highway Administration, if applicable.

All elements of the change, including method of compensation and effect on time, should be discussed with the Contractor to develop agreement or determine elements requiring further negotiations or those that could lead to claims.

The Structure Representative prepares the proposed change order and letter of transmittal, and gives them to the Resident Engineer, along with necessary back-up data. The contract change

order may be prepared in either "rough draft" or in the final form ready for the Resident Engineer's signature. In either case, this will be referred to as a "draft". This "draft" includes the letter of transmittal, the contract change order, copies of any pertinent correspondence, and back-up data to verify the change order cost or credit.

A copy of the "draft" C.C.O. form and transmittal letter is sent to the Bridge Construction Engineer and to the Sacramento Office of Structure Construction at the same time it is given to the Resident Engineer. Back-up data need not be included, but should be made available to Sacramento upon request.

If significant changes are made to the change order at a later date by the Resident Engineer, or anyone else, a corrected copy should be given the same distribution as above, with an explanation of the change.

By the time the contract change order is in the District Office for approval, or sent to Headquarters Construction for review and approval, both the Bridge Construction Engineer and the Sacramento Office of Structure Construction should have their copies of the "draft" and be familiar with the proposed change. This is necessary to permit them to answer any questions from the District Office, Headquarters Construction, or the Federal Highway Administration.

Preparation of Emergency Type Change Orders

Occasionally the work to be authorized by a change order will have to be started before the contract change order can be approved as previously described. This occurs when the Structure Representative finds himself in a position of having no choice but to start some change order work without an approved change order.

When this situation occurs, the Structure Representative should immediately contact the Resident Engineer and the Bridge Construction Engineer and explain the circumstances. The Bridge Construction Engineer will then give the Structure Representative verbal concurrence if he agrees with the necessity and details of the proposed change. If the Bridge Construction Engineer is not available, the Structure Representative should call the Sacramento Office of Structure Construction for prior concurrence.

If the proposed change involves a bridge, the Structure Representative is encouraged to consult with Designers, Geologists, Specification Writers, etc. as appropriate to obtain their comments and concurrence for the proposed change.

If the proposed change involves building projects, the Structure Representative must contact the appropriate section of Structures Design, Architectural and Transit Branch to inform them of the proposed change, and to obtain their concurrence for the change. (Refer to Bridge Construction Memo 132-4.0 for additional information.)

The Resident Engineer must obtain prior approval from the District Office before permitting the Contractor to begin work.

After the above noted steps have been taken, the procedure is the same as for a routine change order.

Preparation of Letter of Transmittal

The Structure Representative is to prepare a letter of transmittal for any change order which he prepared. The letter of transmittal should be given to the Resident Engineer with the "draft" of the contract change order. Copies of the letter of transmittal are to be furnished to the Sacramento Office of Structure Construction and to the Bridge Construction Engineer. These should be submitted as a portion of the change order "draft".

The letter of transmittal should contain the following information:

1. A complete description of the change and the reason for the change.

2. The names of persons contacted concerning the proposed change, the method of contacting these persons, and a statement as to whether or not the persons contacted concurred with the proposed change.

3. A recommendation as to how the change is to be paid for and sufficient cost back-up data should be submitted to substantiate the cost and method of paying for the change. Any change which results in a savings to the Contractor must provide a corresponding credit to the State. The amount of the credit should be fully substantiated. If a change requested by the Contractor does not include a credit to the State, this fact must be explained.

4. State whether or not the Office of Structure Construction prior concurrence has been given, and if so, by whom and what date.

5. Note if a DS-OS C93 is on the file with the Structure Representative at the time of submitting the "draft". Give the date of the DS-OS C93 and the name of the person signing it.

6. State recommended time adjustment, if any, and substantiate any days allowed. If time is to be deferred make an estimate of the number of days and document that the contractor has been apprised of said estimate.

The importance of a comprehensive letter of transmittal and cost back-up data cannot be overemphasized. Incomplete and/or poorly written letters make further correspondence necessary and delay approval.

Concurrence for Change Orders Involving Structure Work (Form DS-OS C93)

Except for those types of contract change orders listed below, Bridge Construction Engineers are required to prepare a Form DS-OS C93 for each proposed contract change order involving structure work.

Types of CCO'S for which a Form DS-OS C93 Need Not be Prepared.

1. CCO's made necessary by reason for the Office of Structure Construction giving the Structure Representative written instructions to make the change.

2. CCO's prepared to reimburse the Contactor for work stipulated in the Contract Special Provisions.

3. Supplemental CCO's which establish an adjustment in contract time where the time adjustment was deferred on a previously authorized CCO.

4. CCO's which authorize an increase in extra work funds necessary to complete a previously authorized CCO.

5. CCO's prepared to cover adjustment to contract unit prices for overruns or underruns.

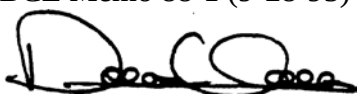
6. CCO's to effect payment after settlement of claims.

Preparation of the DS-OS C93 will indicate that the Bridge Construction Engineer has been made aware of the proposed change, and that he concurs with the necessity and the provisions of the change. The Bridge Construction Engineer will register his concurrence with a proposed change by filling out and sending to Sacramento a Form DS-OS C93 as soon as he has received adequate information from the Structure Representative. This will then authorize the Structure Representative to proceed with the preparation of the "draft" of the contract change order.

The original of the DS-OS C93 goes to the Structure Representative for the project files, the Bridge Construction Engineer keeps a copy, and a copy is to be sent immediately to the Office of Structure Construction.

When the Bridge Construction Engineer is also acting as District Construction Engineer on a project, he may register Structure Construction "prior concurrence" by using the District's prior approval form in lieu of the DS-OS C93.

B98-08

File	**BCM 7-2.1**
Date Effective	03/20/1998
Expiration Date	None
Supersedes	BCE Memo 88-1 (9-28-95)
Approved by	
	R. P. Sommariva, Chief Office of Structure Construction

Subject: Contract Change Orders Request Guidelines – Correspondence from Other Units

The Office of Structure Construction has established the following policy regarding the procedure for initiating or requesting a change order by someone other than the Structure Representative for structure work:

1. When a change is prepared by the Design Engineer, Architect, Liaison Engineer or other person, a change order is requested in the form of a memorandum. This memorandum is addressed to the Office of Structure Construction, Attention Assistant Office Chief. The memorandum will contain the following information:
    a. Who is requesting the change.
    b. What is being requested.
    c. Why is the change being requested.
    d. Whether the change has been discussed with the Structure Representative.
    e. A cost estimate for specialized work. (Mechanical/Electrical/Architectural)
    f. Necessary details or specifications describing the change. Plan revisions will be signed and stamped as appropriate.

2. The Office of Structure Construction will review the memorandum and give concurrence in writing to the Structure Representative. Copies of the concurrence will be sent to the Area Construction Manager, Area Bridge Construction Engineer, and the District Office.

Please share the above procedure with your Design contact.

c: BCR&P Manual Holders
TRut, OSM&I
EDavisson, Structure Design
MHorn, CCMB, EFPB
Consultant Firms
BGauger, Construction Program Manager

3. The actual cost of special items of material which are manufactured or furnished solely for use on extra work, and which would not have been otherwise required, may be paid for by the State. Although such items may have no value except as they are needed to perform the extra work, they are State property and must be accounted for. If advantageous to the State they may be sold back to the Contractor as scrap, or they may be surveyed if the cost of disposal exceeds their value. In any case, the important point is that the method of disposal be documented, and any value or cost determinations be fully substantiated.

Specialist Payment on Force Account Work

The Standard Specifications (see Section 9) provide that services or extra work may be performed and paid for on a specialist basis if the work or service "cannot be performed by the forces of the Contractor or those of any of his subcontractors".

For the purpose of administering this specification, the term" Contractor" will include all firms or organizations performing contract item work, subsidiaries of such firms or organizations, and subsidiaries of the Contractor. The term "subcontractor" will include subsidiaries of the subcontractor.

Work performed off the project in connection with the fabrication of material needed for extra work may be paid for on a speciality billing basis. Such work would include engineering and shop costs in a machine shop, foundry, fabricating plant or similar facility. The specialist billing may include transportation if transportation is furnished by the fabricator or manufacturer.

All erection or other work at the job site which is performed in connection with fabricated or manufactured items must be paid for at force account.

Extra work may require the services of an independent specialist such as a plumber, electrician, etc. These specialists are equipped with service trucks and a variety of tools and equipment, and they normally bill on the basis of a flat hourly rate covering all elements of cost. In these situations an accurate determination of hours of use and rental rates of incidental equipment is highly impractical, and so the work may be paid for on a speciality billing basis.

See Chapter II of the *Construction Manual* for additional information relative to speciality billings.

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ROBERT A. STOTT
Deputy Division Chief
Structure Construction
Division of Engineering Services

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Railroads

When contracts involve railroads the *Standard Specifications*[1] will indicate that a railroad company is involved and that the *Railroad Relations and Insurance Requirements* will be available in the *Information Handout*[2]. Railroad Agreements are generated by the Regional/District Railroad Agents. The agreements are approved and sent to the railroads by Headquarters Right of Way Railroad Agreements. Service Contracts for railroad inspection and flagging are initiated and administered by Headquarters Right of Way Railroad Agreements.

If there are any issues with the agreement or the need to modify an agreement, immediately notify the Resident Engineer and Regional/District Railroad Agents. Change orders that involve railroads are coordinated through the Resident Engineer to the Regional/District Railroad Agents. If notifications are received from the Contractor pertaining to the railroads, immediately forward these to the Resident Engineer for processing through the Regional/District Railroad Agents.

Process all railroad paperwork and issues through the Resident Engineer to the Regional/District Railroad Agents. Contact the District Right Of Way Office for the name of the Regional/District Railroad Agent for your area.

Falsework, shoring, and demolition plan submittals that involve the railroad require railroad approval prior to construction. Because they have special requirements and need to be routed through the SC Headquarters office, follow the appropriate procedures outlined in:

- Falsework Manual, Section 2-1.06B, *Procedure when Railroad Company Approval is Required*.
- Bridge Construction Memo (BCM) 120-1.0, *Submitting Falsework Shop Drawings*.
- BCM 122-1.0, *Submitting Shoring Plans*.
- Bridge Construction Bulletin (BCB) 124-3, *Demolition Over and/or Adjacent to Union Pacific Railroad Company Tracks.*

Temporary construction clearances and notification requirements for railroads will be specified in the *Railroad Relations and Insurance Requirements*. The railroad must be notified prior (typically 25 days prior) to any construction that affects clearance to railroad property. As stated above, notification must be given to the Regional/Railroad Agents through the Resident Engineer.

[1] *2010 Standard Specifications*, Section 5-1.20C, *Railroad Relations*, as modified the *Revised Standard Specifications*.
[2] Utilizing the *2006 Standard Specifications* will find this information in Section 13 of the *Special Provisions.*

The minimum permanent vertical and horizontal clearances to the railroads tracks must be noted on the structure as-built General Plan. Vertical clearance is measured from the top of rail to the structure. Horizontal clearance is measured to the centerline of the track to the structure.

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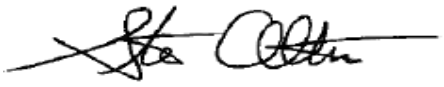

STEVE ALTMAN
Deputy Division Chief
Structure Construction
Division of Engineering Services

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As-Built Plans

General

Under present policy, as outlined in Chapter 5 Section 5-104D of the *Construction Manual*, each District is responsible for preparation of "As-Built" road plans while "As-Built" structure plans are the responsibility of the Offices of Structure Construction (OSC).

Structure Representative's Responsibility

At the start of the job, the Structure Representative should obtain an unmarked copy of all sheets with "Structures" signature blocks to be used for final record drawings. These drawings are to be marked with an "As-Built" stamp.

A copy of the contract drawings may generally be obtained from the Resident Engineer. If the Resident Engineer cannot furnish them, the structure representative should contact the Bridge Project Engineer or Oversight Engineer. The project Engineer has access to the electronically archived advertised set of structure drawings and if needed can authorize the printing of additional copies.

Past practice required as-built drawings to be completed on full-sized (22″x36″) plan sheets. It is no longer necessary to provide as-built drawings on full-sized sheets. Full-sized plan sheets may be used; however, it is acceptable to use half-sized (11″x17″) sheets. Regardless of the sheet size used, it is imperative that all red-lined changes are legible. Some changes may require additional sketches to be attached in order to clearly show the details of the change.

All changes in dimension, elevation, detail, etc. must be shown on these plans. The contract change order number shall be shown where applicable.

All corrections must be made in Red ink or Red pencil. This is necessary so that the corrections can be easily distinguished on the as-built drawings. Superseded data should be lined out. Do not eradicate original figures, nor make corrections over them. Extensive changes, which cannot be shown clearly on the as-built plan, should be made on a new tracing. These sheets should be stamped "As-Built" and include the following identifying information: District, County, Post Mile (Kilometer Post), Contract Number, Contract Change Order Number, Bridge Number and Name, Sheet Title (general description of change), name of person who designed change, name of person who checked design, date, and the signature and license number of the responsible registered engineer. Normally, if extensive changes are made, the Office of Structures Design will provide revised or supplemental plans.

Where revised or supplemental sheets have been furnished by the Office of Structure Design, make appropriate changes on the original plan sheets or insert the new tracing into the "As-Built" plans.

If no changes are made to a sheet, state, **"No As-Built Changes",** in Red ink or Red pencil, to eliminate any confusion.

In addition to changes and corrections, the following supplemental information must be shown on "As-Built" plans.

1. Elevation and location of all permanent reference points. If possible, show this on the bridge general plan. (Refer to BCM 2-15.0 of the Bridge Construction Records and Procedures Manual for additional information relative to permanent reference elevations.)
2. For all bridges over a highway, street or railroad, show the minimum vertical clearance above the roadway surface or top of rail. (See the 3rd to last paragraph of this memo for additional information.)
3. For stream crossings, show major differences between the streambed elevations shown on the plans and existing at time of completion of construction.
4. For structures on pile foundations, show the type of pile and average tip elevation for each bent or footing. At locations where variations in penetration are extreme (greater than 10% of the average penetration) show the highest and lowest tip elevation as well as the average. Show this information on the Bridge General Plan.
5. For footings with tremie seals, show the horizontal dimensions of the tremie seal (on the GP plan view). Show the bottom elevation of the tremie seal if different than planned (on the GP elevation or typical section). At footings designated to have a tremie seal and where no tremie seals were placed, make a note that "No Tremie Seal Was Placed". This information is important for future widening or any future retrofit scheme that would involve footing work.
6. Where a utility encroaches on a structure, it will be necessary to show the following information on the "As-Built" plans:
   a. Description of the utility or utilities, i.e.; 24″ Welded steel pipe or 2-4″ ABS Conduits.
   b. Name of Owner, i.e.; Pacific Gas and Electric or Pacific Bell.
   c. Location or distance right or left of centerline.
   d. Show number of Encroachment Permit. This can be found in the project records.
7. For structures with structural concrete, show the percentage of mineral admixture (i.e. fly ash, silica fume) in each element of the structure on the "Concrete Strength and Type Limits" detail shown on the contract plans. See Attachment No. 1 for an example of the information that needs to be shown.
8. For reinforced concrete structures, show the exact location and type of all reinforcing steel splices that are **not placed** in accordance with the contract plans and specifications. If mechanical couplers are used, note the manufacturer and model name. The splice location should be referenced to a known point on the plans.

The Structure Representative should complete the "As-Built" plans for structure work and return them to the Office of Structure Construction as soon as possible after all structure work is

finished on the project and no later than 30 days after completion of the structure. Each sheet of the "As-Built" structure plans must be dated and signed by the **Structure Representative.** The Structure Representative's name should also be printed in cases where the signature is not legible. On contracts with more than one structure, all As-Built structure plans should be submitted together at the completion of structure work. As-Built plans submitted by consultant Structure Representatives should include the name of their firm on the "Corrections By" line of the stamp. Firm names may be printed by hand.

On contracts where pavement overlays are placed or sign structures are erected, the minimum vertical clearance might be changed on existing structures that may not be part of the contract bridgework. Even if these structures are not detailed on the plans, the Structure Representative shall report the new permanent clearances to the Resident Engineer. The notification procedures for changes in the clearance or permit rating of a structure are addressed in Section 3-705 "Public Safety" of the Caltrans *Construction Manual*. (http://projdel.dot.ca.gov/construction/newindex.htm) and in Bridge Construction Memo 2-20.0 (http://dschq.dot.ca.gov/sc_manuals/construction_records_and_procedures_vol_I/2-20.0_BCM.pdf).

Building Contracts

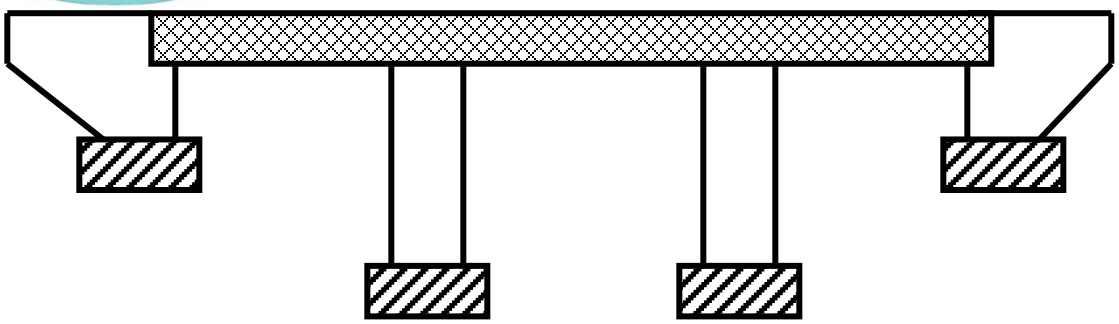
On building contracts the contractor is responsible for maintaining, completing and submitting Record Drawings (As-Builts) to the engineer for approval prior to acceptance of the contract. It will be necessary to provide the contractor with a complete set of full sized contract plans for recording as-built changes. It is imperative that these record drawings be reviewed for accuracy and completeness periodically during the progress of the work and prior to recommending acceptance of the job. As a minimum, these record drawings shall document:

1. Any plan clarifications or change orders.
2. Locations of any underground utilities.
3. The location, size, type, and manufacturer of all major products or components selected by the Contractor for use in the work.

Prior to submitting the final building record drawings to the OSC, the Structure Representative shall stamp each sheet with the "As-Built" stamp, verify all redlines made by the contractor are correct, and sign and date every drawing.

Specially Funded Projects

Specially funded projects entail projects that are within the State right-of-way and are funded by others. Often, OSC personnel will have the responsibility to assure that the structure as-builts and other final records are accurately submitted. See BCM 2-19.0 (Administration of Special Funded Projects) for further information and instructions.
http://dschq.dot.ca.gov/sc_manuals/construction_records_and_procedures_vol_I/2-19.0_BCM.pdf



Concrete Strength and Type Limits

Structural Concrete, Bridge – **25% fly ash**

Structural Concrete, Bridge Footing – **25% fly ash**
(25 MPa at 28 days)

Structural Concrete, Bridge – **25% fly ash in stems and soffit; 10% silica fume in deck**
(31 MPa at 28 days)

Note: Only information shown in **bold face** and underlined next to the above concrete types needs to be provided by the Structure Representative on the as-built drawings.

Materials Certification

For all federally funded projects, a senior level engineer or above must certify that all materials used in the project comply with contract requirements. The certification is required by the Division of Construction and shall be submitted prior to processing the final or semi-final estimate. To determine whether a project is federally funded, check the cover of the project Special Provisions.

On contracts involving structures work, the senior bridge engineer (Bridge Construction Engineer) or Area Construction Manager (ACM) must certify (for structures work) that all materials incorporated in the structure meet the specification requirements of the contract based on the certification and inspection by the Structures Representative or their assignee. The Material Certification Letter is prepared by the Structure Representative and is based on the results of acceptance samples and tests, independent assurance samples and tests, final samples, and reports of inspection taken throughout the project. These test results are filed in Job Categories 37, 38, 39, 41 and 42 of the contract records in accordance with Chapter 6, *Sampling and Testing* of the *Construction Manual*.

The Materials Certification Letter shall comply with the format shown in Attachment No. 1. The Bridge Construction Engineer (BCE) or Area Construction Manager (ACM) is required to sign the Materials Certification Letter to indicate that they have reviewed the test results and concur that all materials incorporated in the structure comply with the specification requirements. All non-conforming materials should be noted in the memo. This includes materials accepted at reduced pay factors under acceptance specifications. After appropriate signatures have been obtained, the original letter should be submitted to the Resident Engineer, a copy should be given to the OSC-HQ Office Associate and a copy should be filed in Category 63 – 'Project Completion Documents'.

Memorandum

To: **Date:**

Resident Engineer

Job Stamp:

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Offices of Structure Construction

Subject: **Materials Certification**

This is to certify that:

1. All of the materials used on the portion of this project inspected by the Office of Structure Construction personnel met pertinent specification requirements of the contract. All of the materials were properly covered by samples tested and accepted by the Transportation Laboratory, by a Certificate of Compliance signed by the vendor or fabricator, or were inspected and released on the job.

2. The results of the tests of acceptance and independent assurance samples indicate that: (a) the materials and construction work conform to the plans and specifications and (b) such results are representative of the materials incorporated in the work as shown by the results of project sampling and testing.

Results of materials tests and Certification of Compliance are on file in the records of the above named project.

☐ Exceptions to the plans and specifications are explained on the attached sheets.
☐ No Exceptions to the plans and specifications were necessary.

_____

Structure Representative

Concurred with the above noted certification:

_____

Bridge Construction Engineer/
Area Construction Manager

Original to Resident Engineer
Cc: Copy to Offices of Structure Construction – HQ, Office Associate
File Category 63

Report of Completion for Structures

All structures, including buildings and earth retaining structures, which have been assigned a structure/bridge number on the contract plans require a final Report of Completion. The Records Required Memorandum from the Headquarters Office of Structure Construction (OSC) in Sacramento will specify if a report of completion is needed. If there are questions regarding what final records are required, contact the appropriate OSC Headquarters Office Associate. View the OSC web page or call (916) 227-7777 if you need to verify the name of the current Office Associate assigned to your area.

A Report of Completion form shall be filled out for each structure (left and right qualify as individual structures) and submitted to the OSC Headquarters in Sacramento as soon as contract work is completed on each structure. Submitting the form electronically via Email is encouraged. Electronic transmittals should be sent to the OSC Headquarters Office Associate assigned to your area.

Do not wait until completion of all the structures or completion of the contract before submitting the individual structure completion reports. After OSC Headquarters logs the receipt of the completion report, the report is forwarded to the Office of Structure Maintenance and Investigations (OSM&I) where it is entered into BIRIS. OSM&I keep bridge books for every individual bridge in the State Highway inventory, thus creating the need to have individual completion reports for each structure.

The Report of Completion forms can be found in Section No. 16 of the Bridge Records and Procedure Manual (BCR&P). Form DS-OS-C3 shall be used for all non-building structures, and form DS-OS-C4 for buildings. They can also be downloaded in Word format from: http://onramp.dot.ca.gov/hq/oscnet/ (under Downloads/Forms on the OSC main page).

The following is a brief checklist to assist the Structure Representative when preparing the Report of Completion form.

- Total cost recorded should include contract change orders. (Do not delay the report submittal while waiting for final accounting information. The estimated final cost is sufficient).
- List only the materials incorporated into the structure covered by the report. If the materials are common to more than one structure, this page of the report can be copied for inclusion in the Report of Completion for the other structure(s).
- The resin manufacturer's name should be listed under Deck Seal when Methacrylate treatment is used on a structure.

- If there are more than two items in the same classification, then the "Other" category at the bottom of the list should be utilized.
- When the structure is an earth retaining structure, the following should be used as a guide for classification of the non-standard material:
    - Tieback anchors.
        - Strand is under Presstressing Systems.
        - Grout is under Cement.
        - Bearing plate is under Structural Steel.
    - Mechanically Stabilized Embankment (MSE).
        - Manufacturer of the system is under Other.
        - Soil reinforcement is under Structural Steel.
        - Structural Backfill is under Fine Aggregate.
    - Soil Nail.
        - Soil Nail is under Reinf. Steel, Grade.
        - Grout is under cement.
- List the name of the utility owner and encroachment permit number (if available).
- List only construction details that are unusual or of special interest and use additional sheets if necessary. Include any attachments that are deemed appropriate by the Structure Representative and identify them in the Attachments section of the report.

Progress Schedule

The Structure Office Engineer – Cost Estimates Branch obtains final update schedule information from the Offices of Structure Construction. The progress schedule information is used to improve the accuracy of the Engineer's Estimates to better determine duration of construction activities.

Progress Schedules are required to be submitted by the Contractor per the Standard Specifications. For contracts that utilize a "Critical Path Method" (CPM) schedule, the Structure Representative must submit a copy of the most accurate version of the As-Built CPM progress schedule to the OSC-Office Associate in Sacramento. The most accurate CPM schedule should depict the actual sequence and duration of activities during the life of the contract. The initial baseline CPM schedule does not properly represent the actual work duration of each Contract item over the life of the project. Typically the last update of the CPM schedule prior to the project completion is the most accurate progress schedule to submit to OSC headquarters.

If the As-Built CPM is unavailable due to claims or other special circumstances, the most accurate CPM schedule may be submitted instead. However, once claims or special circumstances are resolved, a revised schedule should be submitted to the Office Associate. The CPM schedule must be submitted to OSC-HQ as a hardcopy.

Section 8-1.04 of the Standard Specifications generally discusses progress schedules. In addition, Section 10 of the Special Provisions discusses the type of progress schedule for each project. Progress schedules should be filed in Category 26 – 'Progress Schedules'.

Disposition of Job Records

Construction Manual Chapter 5-104 *Final Construction Project Records*, states that all job records concerning payments made and materials furnished are retained for a specific period of time in the permanent record centers.

On projects that include structures and roadway work, job files and records will be consolidated and filed by the District responsible for administrating the contract. This procedure is necessary to ensure all project documents will be filed together and be readily available in the event of an audit or other needs.

Upon completion of the contract and/or departure of the Structure Representative, all job records (including but not limited to: field books, concrete pour records, and survey notes) shall be transferred to the Resident Engineer with a transmittal memo. A copy of the transmittal memo should also be sent to the Sacramento Headquarters Offices of Structure Construction (see Attachment 1 for a sample). A copy of this signed memo should be filed in Category 63 - 'Project Completion Documents'.

Any duplicate records already obtained and filed by the Resident Engineer may be discarded.

Shop drawings, falsework calculations and any other contract drawings should be filed in Category 12 in the uniform filing system. Bar reinforcing placement sheets need not be kept unless deemed necessary by the Resident Engineer or Structure Representative.

Pile records are to be disposed of in accordance with instructions contained in Bridge Construction Memo 3-7.0, *Pile Records*.

Memorandum

To: **Date:**

Resident Engineer

Job Stamp:

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structure Construction

Subject: **Disposal of Job Records**

In accordance with Bridge Construction Memo 9-6.0 of the Bridge Construction Records and Procedures Manual, please find enclosed the Job Records of the Structure Items for the above mentioned contract.

If you have any questions, please call <Structure Rep> at <phone number>.

Sincerely,

_____

Structure Representative

Received by:

_____

Resident Engineer

cc: Project Category 63

Joint Movement Calculations

The "Joint Movement Calculations" forms (DS-D129) are furnished by the designer, the contract manager, (for consultant contract managed projects) or the liaison engineer (for externally financed projects), upon request by the Structure Representative, when they are not included in the RE Pending File.

When the "Joint Movement Calculation" form has been completed in accordance with Bridge Construction Memo 135-2, each form should then be returned to the Office of Structure Construction in Sacramento.

Note that a separate "Joint Movement Calculation" form should be filled out for a structure whenever a Type "B" Joint Seal or a Joint Seal Assembly is used. Each form should be submitted as soon as all joint seal placement is completed on that structure. Do not wait until the completion of all the structures or completion of the contract.

Unrecoverable Final Records

Background

Final records (As-Built Plans, Reports of Completion, Pile Records, etc.) are important documents that can assist in the development of future projects that relate to a given structure. It is the sustained effort of every Structure Construction (SC) employee that ensures that final records are produced and delivered timely to Headquarters (HQ) SC.

In the unfortunate event that final records are lost or destroyed the current practice allows the Area Construction Manager (ACM) to determine that a record is unrecoverable. The new practice requires that the Deputy Division Chief, Division of Engineering Services, Structure Construction (DDC, DES, SC) to make this determination based on the recommendation of the ACM.

Current Practice

The ACM makes every effort to retrieve the lost final records, and if they are not successful must proclaim that the documents are unrecoverable and notify the Office Associate (OA) in HQ SC. The OA issues a cover memorandum stating that the specified final records are unrecoverable. For as-built plans, the original contract plans will be submitted for the as-built plans; each contract plan sheet is stamped "AS-BUILT PLANS Not recoverable". The OA will also update the database to indicate that the documents were unrecoverable. Other records are handled in a similar manner.

New Practice

If a record is determined to be lost or destroyed every effort must be made to recreate as much of the missing record as possible using information available to the Structure Representative.

Final Records such as the Project Status Initial and Project Status Final, should not be classified as "Unrecoverable", because the information can be obtained from the Caltrans *Division of Accounting, Major Construction Payment & Information* website (Major and Minor A contracts, and occasionally Minor B projects) at http://www.dot.ca.gov/hq/asc/oap/payments/index.htm. The local government agency can also be contacted for jobs that were administered by Office of Specially Funded Projects (OFSP).

Missing information on the Report of Completion, Pile Logs, Joint Movement Calculations, etc. will be more difficult to replace. Often, missing information can be obtained from various other source documents within the project files (e.g. the Concrete Mix Design provides information to complete the section of cement, aggregate and chemical admixture in the Report of Completion). Every effort should be made to recreate these records based on this information.

For as-built drawings, use the original contract plans to generate a replacement set of as-built documents. Use project records, including change orders, as well as staff recollection to depict the as-built conditions. If a dimension, pile tip, or bar sizes were changed from what was shown on the plans but the exact details are lost, the notes on the as-built plans should reflect the changes as well as this limitation. These notes could have a significant impact on the design and construction of future projects involving this structure.

Responsibilities for declaring final records unrecoverable:

Structure Representative
Every effort should be made to recover all final records before declaring final records as unrecoverable. The Structure Representative notifies the Bridge Construction Engineer that the record is unrecoverable only after making every reasonable attempt to restore the records.

Bridge Construction Engineer (BCE)
The BCE prepares a recommendation to the ACM, listing the effort made to restore the record and the circumstances why the final records are being declared as unrecoverable. The memorandum should list the unrecoverable records for each structure separately. This memorandum will also include the action taken to ensure future final records are preserved.

In the event that the Structure Representative is no longer employed by Caltrans before completing final records, the BCE shall be responsible for completing the final documents.

Area Construction Manager
The ACM will verify the circumstances why the final records are unrecoverable cited by the BCE and submit a recommendation to the DDC, DES, SC that details why the final records should be proclaimed as unrecoverable. Take appropriate action to ensure future final records are complete and submitted in a timely manner.

Deputy Division Chief, Structure Construction, Division of Engineering Services
Determine if final records are unrecoverable.

Office Associate
As directed, the OA will issue a cover memo stating that the documents are unrecoverable. For as-built drawings, the original contract plans will be submitted for the as-built drawings; each contract plan sheet is stamped “AS-BUILT PLANS Not recoverable”. Other records are handled in a similar manner.

Notification of Structure Maintenance upon Structure Completion

To comply with FHWA regulations, Structure Maintenance and Investigations (SM&I) needs to inspect each structure and enter it into the National Bridge Inventory.

Completion for all new or widened structures will be defined as:

- Bridges constructed in place.
- Falsework removed.
- Barrier rail completed.
- Traffic in final configuration.[1]
- Stream bed in final configuration.
- Final surface finishing need not be completed.

Responsibilities When Caltrans is the Implementing Agency

Structure Representative:

Notifies Structure Maintenance and Investigations (smi.office@dot.ca.gov) and Structure Construction (SC.Office.Associates@dot.ca.gov) within the expected timeframe of 15 days of the completion of all new or widened structures with the following:

- Bridge Name.
- Bridge Number.
- County.
- Route.
- Post Mile.
- Short description of the completed work i.e. new structure, bridge widening.
- Copy of the General Plan sheet.

Responsibilities When Caltrans is not the Implementing Agency

Agency Structure Representative:

- Within 15 days of the completion of all new or widened structures completes the form, "Request to Add a Structure to the National Bridge Inventory (NBI)" http://smi.onramp.dot.ca.gov/content/smi-forms
- Submits the above mentioned form and a copy of the General Plan sheet to Structure Maintenance and Investigations (smi.office@dot.ca.gov) and Structure Construction (SC.Office.Associates@dot.ca.gov).

[1] When practical and applicable, notification should be given with ample lead time to allow SM&I an inspection opportunity before the structure is opened to traffic but completion would be recognized when the traffic was in the final configuration.

Department:

- Ensures Caltrans Division of Maintenance, Structure Maintenance and Investigations, have been notified of structure completion[2].

The following are samples of emails to Structure Maintenance and Investigations informing them of Structure Completion:

To: smi.office@dot.ca.gov

Subject: Structure Completion (Br. No. XX-XXXX)

For bridge widenings:

Bridge Name: No Paddle River
Bridge Number: XX-XXXX
County: Xyz
Route: nnn
Post Mile: mmm
The widening of the above named bridge is complete. The General Plan for this structure is attached for your use.

For new bridges:

Bridge Name: Short-cut Overcrossing
Bridge Number: XX-XXXX
County: Xyz
Route: nnn
Post Mile: mmm
The above named bridge is complete. The General Plan for this structure is attached for your use.

I.M. Engineer
Structure Representative
(XXX) XXX-XXXX

[2] When Caltrans is the implementing Agency, Structure Construction HQ Office Associate will ensure that SM&I has been notified of structure completion.

TABLE OF CONTENTS

STEVE ALTMAN
Deputy Division Chief
Structure Construction
Division of Engineering Services

**Denotes the document is a Bridge Construction Bulletin*

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Collective Bargaining

The rates of pay, hours of work, and other conditions of employment are set forth in a "Memorandum of Understanding" or agreement which was enacted through negotiations between a "Bargaining Unit" and the State of California.

Employees of the Office of Structure Construction are represented by one of the following "Bargaining Units":

Unit 4	CSEA	Office and Allied
Unit 9	PECG	Professional Engineers in California Government
Non-Represented and Excluded Employees	(none)	Management and Supervisory

Structure employees should have a copy of the "Memorandum of Understanding" (MOU) for their "Bargaining Unit" and be familiar with the provisions relating to hours of work, wages, overtime, Compensating Time Off (CTO), vacation, sick leave, military leave, leave of absence, miscellaneous absences, travel expenses, moving expenses, etc. Note that the provisions of the MOU may be different for different "Bargaining Units".

Occasionally, the current MOU will expire before a new MOU can be negotiated between the Department of Personnel Administration and the "Bargaining Unit." In that event, all of the provisions of the expired MOU will continue to be enforced until otherwise notified.

Working Hours and Payroll Periods

Office of Structure Construction employees normally work a 40-hour week, with no work scheduled on Saturdays, Sundays, or established State holidays. However, Structure employees working in the field will generally be expected to observe the same working hours and work days as the Contractor.

Employees are paid once each month. For payroll purposes, the year has been divided into 12 nearly equal payroll periods. Each payroll period consists of 21 or 22 working days and pay checks are issued on the last day of the pay period.

The last day of the payroll period will usually coincide with the last working day of the month. However, there are a few times during the year when either the first or the last working day of the month is counted with either the previous or the following month's payroll period. In these few instances, payday will fall on the first day of the month or the next to last day of the month, respectively.

Pay checks and Direct Deposit statements are mailed to Structure employees so as to be distributed on payday.

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
Form SC0104A (Formerly DH-OS C21) (REV 11/08/2013)

STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG BY EMPLOYEE

1. Employee Name (Print or Type):		2. Employee ID:		3. Perm Dist-Unit:		4. Structure Representative Name:			5. FY Balance from Previous Month:			
6. Month-Year:		7. First Line Supervisor Name:			OT Must be Documented in Daily Report[1]			Actual OT Worked		Total Hours OT for:		
8. Date of Request	9. # OT Hours Requested***	10. Time period for OT Hours Requested*** / Date OT worked	11. Project Identifier	12. Reason for Overtime/Product Produced	13. **Reason for approval enter A, B, C, D , E	14. Date approved	15. First Line Supervisor's Signature	16. Time OT Starts*	17. Time OT Ends*	18. This Shift	19. This Month	20. This Fiscal Year
											0.0	0.0
											0.0	0.0
											0.0	0.0
											0.0	0.0
											0.0	0.0
											0.0	0.0
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											0.0	0.0
											0.0	0.0
											0.0	0.0
											0.0	0.0

*Use 24 Hour Clock,log the time OT starts and ends.
**Reason for Approval A. Work requiring full-time inspection that cannot be deferred and must be inspected during the work shift (work performed adjacent to public traffic, pile driving, and concrete placement).
**Reason for Approval B. Work required to ensure the safety of the traveling public.
**Reason for Approval C. Fair Labor Standards Act (FLSA) travel.
**Reason for Approval D. Field office work required to ensure timely response to the contractor in order to not delay the controlling item of work.
**Reason for Approval E. Work to ensure quality and safety compliance during an emergency response.
[1.] Document overtime in Assistant Structure Representative's Daily Report .
*** Overtime for more than one day can be requested; however the "Actual OT Worked" must identify Time OT Starts and Time OT Ends.

Bridge Construction Engineer may attach supporting documents if necessary.

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
SC-0104B (NEW 11/08/13)

STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG
BY UNIT

1. Senior Name (Print or Type):	2. Unit Number:	3. Month-Year:	4. Area Construction Manager Name	*OT Must be Documented in Daily Report*[1]

5. Employee Name	6. Date of Request	7. # OT Hours Requested***	8. Time period for OT Hours Requested*** / Date OT worked	9. Project Identifier	10. Reason for Overtime/Product Produced	11. **Reason for Approval Enter A, B, C, D , E	12. Date Approved	13. Supervisor's Signature	14. Time OT Starts*	15. Time OT Ends*	16. Total This Shift

***Use 24 Hour Clock,log the time OT starts and ends.**
****Reason for Approval A. Work requiring full-time inspection that cannot be deferred and must be inspected during the work shift (work performed adjacent to public traffic, pile driving, and concrete pla**
****Reason for Approval B. Work required to ensure the safety of the traveling public.**
****Reason for Approval C. Fair Labor Standards Act (FLSA) travel.**
****Reason for Approval D. Field office work required to ensure timely response to the contractor in order to not delay the controlling item of work.**
****Reason for Approval E. Work to ensure quality and safety compliance during an emergency response.**
[1.] **Document overtime in Assistant Structure Representative's Daily Report .**
***** Overtime for more than one day can be requested; however the "Actual OT Worked" must identify Time OT Starts and Time OT Ends.**
Bridge Construction Engineer may attach supporting documents if necessary.

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
SC-0104B (NEW 11/08/13)

STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG
BY UNIT

acement)

Overtime

Overtime is defined as authorized time in excess of the regularly scheduled work week.[1]

The use of overtime must be administered with common sense, good judgment and limited to the performance of essential work which, in the interest of prudent project administration, cannot be deferred. Routine, benchmark, and intermittent inspection can be deferred and overtime should not be worked.

The use of overtime by Structure Construction (SC) employees is authorized for:

- Work requiring full-time inspection that cannot be deferred and must be inspected during the work shift (e.g., work performed adjacent to public traffic, pile driving, and concrete placement).
- Work required to ensure the safety of the traveling public.
- Fair Labor Standards Act (FLSA) travel.
- Field office work required to ensure timely response to the Contractor's submittal to ensure no delays to the controlling item of work.
- Work necessary to ensure quality and safety compliance during an emergency response.

Authorization must be obtained, *in writing*, prior to working overtime, except in an emergency. In the event of an emergency, written authorization must be obtained within 72 hours of the beginning of the emergency.

The use of overtime must be documented. Documentation is specific evidence demonstrating the following[1]:

- Preauthorization of overtime.
- Overtime hours worked.
- Reason for overtime.
- Product produced as a result of overtime.

Procedure

The documentation for overtime is a two-step process. The first step is pre-authorization, and the second step is recording the actual hours worked. Pre-authorization can be for a day, or it can be for a certain number of hours over a period of time (up to a month). See Attachment No. 1-3 for further details.

[1] Caltrans Deputy Directive DD-56, *Use of Overtime.*

The Structure Representative determines the amount of overtime needed for each employee assigned to their projects in consultation with the first-line supervisor. The Structure Representative completes the overtime preauthorization request, titled *Structure Construction Preauthorization Overtime Log by Employee* (Form SC-0104A) (Attachment No. 1) or the *Structure Construction Preauthorization Overtime by Unit* (Form SC-0104B) (Attachment No. 2). This will then be signed by the first-line supervisor. See Attachment No. 3 for detailed instructions on how to complete these forms.

The first-line supervisor obtains additional prior written authorization from the second-line supervisor for employees who exceed:

- 12 hours regular and overtime worked in one day.
- 30 hours overtime worked in one week.
- 50 hours overtime worked in one month.
- 6 work days per week.

The second-line supervisor allocates overtime to each first-line supervisor to use and monitor overtime usage.

The second-line supervisor obtains additional prior written authorization from the Chief of the Division of Engineering Services for employees who exceed:

- 450 hours overtime worked within the fiscal year (i.e., July 1 through June 30).

Employees may be reimbursed for overtime at 1-1/2 times the hourly rate in Compensating-Time-Off (CTO) if approved by both the first-line supervisor and the second-line supervisor.[2]

Responsibilities

Structure Representatives:

1. Determine the amount of overtime needed for each employee assigned to their projects in consultation with the first-line supervisor. Overtime preauthorization documentation must include:
    - The date overtime was requested.
    - Date or period of anticipated overtime work.
    - Number of overtime hours needed.
    - Reason for overtime.
2. Complete the SC overtime preauthorization request, *Form SC-0104A* or *Form SC-0104B*. Refer to Attachment No. 1 or Attachment No. 2, respectively, for an example. The Structure Representative may delegate this to the Assistant Structure Representative; however, the Structure Representative must review to ensure accuracy.
3. Send the overtime preauthorization request, *Form SC-0104A* or *Form SC-0104B*, to the first-line supervisor for authorization of overtime.
4. Ensure the Assistant Structure Representatives do not to exceed the amount of overtime each Assistant Structure Representative is authorized to work. If additional overtime is needed, the

[2] Personnel Information Bulletin 13-18, *Compensating Time Off (CTO) Cash-Out/Carryover/Use.*

Structure Representatives must confer with the first-line supervisor so additional overtime can be obtained, or the work covered by other means, to minimize the need for overtime.

5. When the Structure Representative works overtime, *Form SC-0104A*, or *Form SC-0104B* must be completed and authorized by the first-line supervisor.
7. Ensure overtime used does not exceed the amount of authorized overtime hours. Structure Representatives who foresee the need for additional overtime above that authorized must notify their first-line supervisor so additional overtime authorization can be obtained or the work covered by other means to minimize the need for overtime.
8. Once overtime has been worked, the Structure Representative must ensure the "Actual OT Worked" portion of the Preauthorization form is completed.

Assistant Structure Representatives:

Must be aware of and not exceed the amount of overtime they are authorized to work. Assistant Structure Representatives who foresee the need for additional overtime above that authorized must notify their Structure Representative so additional overtime authorization can be obtained, or the work covered by other means, to minimize the need for overtime.

First-Line Supervisors (Bridge Construction Engineers):

1. Ensure compliance with overtime rules and procedures.
2. Confer with their Structure Representatives on the need for overtime, receive and review completed *Form SC-0104A* or *Form SC-0104B* from Structure Representatives, and authorize the use of overtime.
    a. Logs preauthorization of overtime to the Structure Representative by signing *Form SC-0104A* or *Form SC-0104B.*
3. Verify that the entries on *Form SC-0104A* or *Form SC-0104B* are in agreement with the employee's timesheet prior to approval.
4. Forward *Form SC-0104A* or *Form SC-0104B* to the second-line supervisor for retention.
5. Monitor overtime allocation and employee overtime usage.

Second-Line Supervisors (Area Construction Managers):

1. Ensure compliance with overtime rules and procedures, and monitor overtime usage.
2. Allocate the amount of overtime available to each first-line supervisor.
3. Retain overtime preauthorization documentation, *Form SC-0104A* or *Form SC-0104B*, for five years.
4. Ensure their office does not exceed their overtime allocation.

Forms:

Either of the two forms can be used to document preauthorization of overtime:

- *Structure Construction Preauthorization Overtime Log by Employee* (Form SC-0104A).
- *Structure Construction Preauthorization Overtime Log by Unit* (Form SC-0104B).

Both forms are located in Section 16, *Bridge Construction Forms*, of the *Bridge Construction Records & Procedures Manual, Volume 1,* and on the Structure Construction Intranet[3]. Refer to Attachment No. 3 for instructions on how to complete *Form SC-0104A* and *Form SC-0104B.*

[3] http://des.onramp.dot.ca.gov/structure-construction/forms

Form SC-0104A documents overtime used and tracks the cumulative overtime for the month and the fiscal year for one employee allowing the supervisor to monitor when the employee nears:

- The 50-hour monthly threshold which, if exceeded, requires additional authorization from the second-line supervisor.
- The 450-hour yearly threshold which, if exceeded, requires additional authorization from the Division of Engineering Services, Deputy Division Chief.

Form SC-0104B tracks the overtime for more than one employee, or all employees, in a supervisor's unit. This form does not track the cumulative overtime hours for the month or fiscal year. The supervisor may also create their own system for tracking monthly and yearly overtime hours.

Additional Information:

Information regarding overtime and leave for various bargaining units can be found in each Bargaining Unit's Memorandum of Understanding (MOU) located on the California Department of Human Resource's website[4].

Requirements for reporting time worked and leave taken can be found in Deputy Directive 108[5]. All other questions regarding overtime, time reporting or payroll should be referred to the first-line supervisor or to the appropriate timekeeper.

General References:

1. California Department of Human Resources CCR Sections 599.702 and 599.707[6].
2. State Administrative Manual (SAM) 8540[7].
3. California Government Code Section 19853[8].
4. Deputy Directive DD-56-R3[9].
5. Bargaining Unit 9 Memorandum of Understanding[10].

[4] http://www.calhr.ca.gov/state-hr-professionals/Pages/bargaining-contracts.aspx
[5] http://admin.dot.ca.gov/bfams/admin_svcs/sw_policy/dd/dd_108.pdf
[6] http://ccr.oal.ca.gov/linkedslice/default.asp?SP=CCR-1000&Action=Welcome
[7] http://sam.dgs.ca.gov/home.aspx
[8] http://www.leginfo.ca.gov/.html/gov_table_of_contents.html
[9] http://admin.dot.ca.gov/bfams/admin_svcs/sw_policy/dd/dd_by_number.html
[10] http://www.calhr.ca.gov/state-hr-professionals/Pages/bargaining-contracts.aspx

ATTACHMENT No. 1
SAMPLE–STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG by EMPLOYEE (Form SC-0104A)

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
SC-0104A (Formerly DH-OS C21)
(Rev. 11/08/13)

STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG
BY EMPLOYEE

1. Employee Name (Print or Type): Beau Bridge				2. Employee ID: s123456	3. Perm Dist-Unit: 59-540-XXX		4. Structure Representative Name: Joe Botsman			5. FY Balance from Previous Month:		25
6. Month-Year: Jul-13	7. First Line Supervisor Name: Biggs Bosse				OT Must be Documented in Daily Report[1]			Actual OT Worked		Total Hours OT for:		
8. Date of Request	9. # OT Hours Requested***	10. Time period for OT Hours Requested*** / Date OT worked	11. Project Identifier	12. Reason for Overtime/Product Produced	13. **Reason for approval: enter A, B, C, D, E	14. Date approved	15. First Line Supervisor's Signature	16. Time OT Starts*	17. Time OT Ends*	18. This Shift	19. This Month	20. This Fiscal Year
7/7/13	18	Week of 7/7/13	03-105104	Pile Driving week of July 7, 2013	A	7/7/2013	Biggs Bosse				0.0	25.0
	7/8/13		03-105104	Pile Driving 16-0016 Bt 2L, 1-5		7/7/2013		1500	1700	2.0	2.0	27.0
	7/9/13		03-105104	Pile Driving 16-0016 Bt 2L, 1-5		7/7/2013		1500	1600	1.0	3.0	28.0
	7/10/13		03-105104	Pile Driving 16-0016 Bt 2L, 1-5		7/7/2013		1500	1700	2.0	5.0	30.0
	7/11/13		03-105104	Pile Driving 16-0016 Bt 2L, 1-5		7/7/2013		1500	1700	2.0	7.0	32.0
	7/12/13		03-105104	Pile Driving 16-0016 Bt 2L, 1-5		7/7/2013		1500	1700	2.0	9.0	34.0
	7/13/13		03-105104	Pile Driving 16-0016 Bt 2L, 1-5		7/7/2013		0600	1430	8.0	17.0	42.0
7/15/2013	4	7/15/13	03-105104	Deck pour on 26-0016	A	7/16/2013	Biggs Bosse	1530	1930	4.0	21.0	46.0
7/16/2013	2	7/17/13	03-105104	Polyester placement on 16-0068	A	7/18/2013	Biggs Bosse	1530	1730	2.0	23.0	48.0
7/16/2013	2	7/19/13	03-105104	Polyester placement on 11-0073	A	7/16/2013	Biggs Bosse	1530	1730	2.0	25.0	50.0
7/19/2013	4	Week of 7/21/13	03-105104	Final Falsework Submittal Review-due 7/26/13	D	7/19/2013	Biggs Bosse				25.0	50.0
		7/21/13	03-105104			7/19/2013		1530	1730	2.0	27.0	52.0
		7/25/13	03-105104			7/19/2013		1530	1730	2.0	29.0	54.0
											29.0	54.0
											29.0	54.0
											29.0	54.0

*Use 24 Hour Clock; log the time OT starts and ends.
**Reason for Approval A. Work requiring full-time inspection that cannot be deferred and must be inspected during the work shift (work performed adjacent to public traffic, pile driving, and concrete placement).
**Reason for Approval B. Work required to ensure the safety of the traveling public.
**Reason for Approval C. Fair Labor Standards Act (FLSA) travel.
**Reason for Approval D. Field office work required to ensure timely responses to the contractor in order to not delay the controlling item of work.
**Reason for Approval E. Work to ensure quality and safety compliance during an emergency response.
[1] Document overtime in Assistant Structure Representative's Daily Report.
*** Overtime for more than one day can be requested; however the "Actual OT Worked" must identify Time OT Starts and Time OT Ends.
Bridge Construction Engineer may attach supporting documents if necessary.

ATTACHMENT No. 2
SAMPLE–STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG by UNIT, (Form SC-0104B)

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
SC-0104B (New 10/8/13)

STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG
BY UNIT

1. Senior Name (Print or Type): Sam McKenzee		2. Unit Number: 69-643-101	3. Month-Year: September-13		4. Area Construction Manager Name Henry Kirchner			OT Must be Documented in Daily Report[1]			
5. Employee Name	6. Date of Request	7. # OT Hours Requested**	8. Time period for OT Hours Requested*** / Date OT worked	9. Project Identifier	10. Reason for Overtime/Product Produced	11. **Reason for Approval Enter A, B, C, D , E	12. Date Approved	13. Supervisor's Signature	14. Time OT Starts*	15. Time OT Ends*	16. Total This Shift
Tom Thomas	9/13/2013	4	9/14/2013	07-168004	Weekend work - Approach slab concrete pour	A	9/13/2013		0900	1300	5
Andrew Alvarado	9/16/2013	8	9/16 & 9/17/13	07-132344	Night work for falsework erection	A, B	9/16/2013		2100	0500	8
Tony Freeman	9/18/2013	4	9/18/2013	07-155432	Extended shift for concrete deck pour	A, B, C	9/18/2013		1530	1700	1.5
					SAMPLE						

*Use 24 Hour Clock,log the time OT starts and ends.
**Reason for Approval A. Work requiring full-time inspection that cannot be deferred and must be inspected during the work shift (work performed adjacent to public traffic, pile driving, and concrete placement).
**Reason for Approval B. Work required to ensure the safety of the traveling public.
**Reason for Approval C. Fair Labor Standards Act (FLSA) travel.
**Reason for Approval D. Field office work required to ensure timely response to the contractor in order to not delay the controlling item of work.
**Reason for Approval E. Work to ensure quality and safety compliance during an emergency response.
1. Document overtime in Assistant Structure Representative's Daily Report.
*** Overtime for more than one day can be requested; however the "Actual OT Worked" must identify Time OT Starts and Time OT Ends.
Bridge Construction Engineer may attach supporting documents if necessary.

ATTACHMENT No. 3
INSTRUCTIONS FOR COMPLETING *FORM SC-0104A* and *FORM SC-0104B*

The *Structure Construction Preauthorization Overtime Log by Employee*, (Form SC-0104A), and the *Structure Construction Preauthorization Overtime Log by Unit*, (Form SC-0104B), are to be completed as described below. Attachments No. 2 and No. 3 are samples of each form, respectively, providing examples of common scenarios for completing the form(s).

Preauthorization:

1. The Structure Representative will consult with the first-line supervisor about the need for overtime and identify who will be working overtime.
2. Once the need for overtime has been authorized, the Structure Representative will complete Items 1-14 of *Form SC-0104A*, or 1-12 of *Form SC-0104B*, for the time period overtime is requested. The Structure Representative may delegate this to the Assistant Structure Representative; however, the Structure Representative must review to ensure accuracy.

Documenting Actual Overtime Worked:

1. After the overtime is worked, the Structure Representative will complete Items 16-18 on *Form SC-0104A*, or 14-16 on *Form SC-0104B,* for each day overtime is worked. The Structure Representative may delegate this to the Assistant Structure Representative; however, the Structure Representative must review to ensure accuracy.
2. *Time OT Starts* and *Time OT Ends* is the beginning and ending of the overtime period. Use the 24 hour time system (1500 – 1700).
3. On *Form SC-0104A*, the *FY Balance from Previous Month* must be entered in Item 5.
4. On *Form SC-0104A*, values in Items 19-20, the total number of overtime hours worked for the month and fiscal year, will calculate automatically.

Review, Signature and Retention:

1. At intervals determined by the first-line supervisor, not to exceed one calendar month, the Structure Representative will send *Form SC-0104A* or *Form SC-0104B* to the first-line supervisor for signature.
2. The first-line supervisor will verify the entries on *Form SC-0104A* or *Form SC-0104B* are in agreement with each employee's timesheet; then, complete item15 on *Form SC-0104A* or item 13 on *Form SC-0104B,* for each line entry on the *Form SC-0104A* or *Form SC-0104B,* respectively.
3. The first-line supervisor will send the completed *Form SC-0104A* or *Form SC-0104B* to the second-line supervisor (ACM) for retention. The completed *Form SC-0104A* or *Form SC-0104B* must be retained for five years.

Absences

For information concerning the absences listed below refer to the Memorandum of Understanding for your bargaining unit, or consult with your Personnel Officer.

ABSENCE WITHOUT PAY

ADOPTION LEAVE

ANNUAL LEAVE

BEREAVEMENT LEAVE

CATASTROPHIC LEAVE

CATASTROPHIC LEAVE - NATURAL DISASTER

COMPENSATING TIME OFF

EXCESS HOURS

INDUSTRIAL DISABILITY LEAVE

JURY DUTY/ SUBPOENAED WITNESS

LEAVE OF ABSENCE

MILITARY LEAVE

NON-INDUSTRIAL DISABILITY LEAVE

PARENTAL LEAVE

PERSONAL HOLIDAY

PERSONAL LEAVE

SICK LEAVE (FAMILY CARE)

SICK LEAVE (SELF)

VACATION

Guidelines for Establishing Headquarters of Construction Personnel

Each employee of the Office of Structure Construction will have a designated headquarters. The primary consideration in designating a Structure employee's headquarters is that the headquarters location conforms to the Board of Control definition. That is, it shall be "... the place where the officer or employee spends the largest portion of his regular workdays or working time; or the place to which he returns on completion of special assignments...".

Each time a Structure employee is given a new assignment, the letter of assignment will designate their headquarters location. A Structure employee's designated headquarters would normally remain the same, but may be changed for the following reasons.

If it appears reasonably certain that there will be a continuing work load in an area where there are insufficient numbers of Structure employees to handle the work, then a Structure employee may be assigned to that area, and that area may be designated as the Structure employee's new headquarters. Also, if a Structure employee has been working in an area not within commuting distance of their headquarters, and it appears reasonably certain that there will be a continuing work load in that area, the Structure employee's headquarters may be changed to the work area and relocation expenses will be paid, but the Structure employee will not be eligible for per diem subsistence allowance when located at the new headquarters.

Expense Allowances

For information on expense allowances, visit the following Division of Accounting website:
http://www.dot.ca.gov/hq/asc/travel/index.htm

The Office of Structure Construction has personnel available to answer Travel Expense Claim questions that cannot be found on Accounting's website. Please visit the OSC homepage at http://onramp.dot.ca.gov/hq/oscnet/ for the name and number of the appropriate contact person. This information can be found under the, "SC People" toolbar that runs across the middle of the page and select, "HQ People".

02-05

File	**BCM 10-7.1**
Date Effective	10/15/2002
Expiration Date	07/01/2003
Supersedes	BCM 10-7.1 Dated 08/10/1998
Approved by	_____ Dolores Valls, Deputy Division Chief Offices of Structure Construction

Subject: Timely Submission of Travel Expense Claim (TEC) and Cash Expenditure Voucher (CEV)

In order for the Offices of Structure Construction to properly budget their fiscal resources, OSC employees must submit TEC'S (Form FA-0302) and CEV'S (Form FA 202) timely.

The following will be Offices of Structure Construction policy as to what constitutes timely submittal of these Claims/Vouchers:

> Timely submittal of TEC'S will be at least once a month and not more than twice a month, except where the amount claimed is less than $10, the claim need not be submitted until it exceeds $10 or until June 30, whichever comes first. Claims for $10 or more are due by the end of the month following the month in which the travel expense was incurred.
>
> Timely submittal of CEV'S will be that they are submitted by the end of the month following the month in which the cash purchase was made.

Timely as defined here may be superseded by Memorandum issued by the Accounting Service Center (ASC) regarding the close of the Fiscal Year. Each employee is requested to do their utmost in submitting all required documents for the ASC to close out their fiscal year books.

Employees failing to adhere to this policy affect the budgeting practices of the OSC and may be subject to adverse action being taken against them.

c: BCR&P Manual Holders
Consultant Firms
R. Pieplow, HQ Const.

Commonly Asked Questions Regarding Travel Expense Claims for Represented Employees in Bargaining Unit 9

To uniformly administer the Travel policy of the Engineering Service Center, it is of utmost importance that Supervisors within the Office of Structure Construction approve Travel Expense Claims in accordance with the Travel and Expense Guide as published by the Department and the policies established by the Office of Structure Construction. As an aid in administering the Travel policy, this Memorandum will address issues that may not be covered in the Travel and Expense Guide. This Memorandum has two parts: the first is commonly asked questions from those on a LTA and the corresponding answer, the second is a list of common mistakes that hold up processing of TECs. Sample claim forms have also been completed for your reference. The payment of expenses is a "dynamic" process and rules and regulations of both the Department of Transportation, the Internal Revenue Service, and the Memorandums of Understanding with the bargaining units change periodically. These changes may affect the contents of this Memorandum. The answers to the questions in this Memorandum are based upon the employee (claimant) being a **represented** employee in Unit 9.

To ensure proper reimbursement of expenses while on a Long Term Assignment (LTA), it is important to properly complete the form Travel Expense Claim (FA-0302 (REV. 6/93)). This form is commonly referred to as the TEC.

The sample questions and answers are current as of the printing of this Memorandum and are based upon the current Travel and Expense Guide as published by the Department of Transportation.

Instructions for completing the TEC form may be found on the back of the form itself in addition to being found within the current Travel and Expense Guide (TEG).

Common abbreviations and forms referenced in this memorandum:

OSC - Office of Structure Construction
ACM - Area Construction Manager
Form FA-1350 - Long Term Assignment (LTA) Information and Certification of Subsistence Rates
Form FA-0302 - Travel Expense Claim (REV. 6/93))
LTA - Long Term Assignment
TEC - Travel Expense Claim (FA-0302 (REV. 6/93))
TEG - Travel and Expense Guide
HQ - Headquarters, as defined in the Travel and Expense Guide (TEG 11-6)

I. Common TEC Questions

Question 1: May a claimant on an assignment claim expenses when traveling less than 120 miles to their LTA location the night before the beginning of the shift while still on short term per diem?

Answer: Yes, provided long term accommodations have not been located per DPA Regulations 599.619 and 599.621. Expenses incurred while traveling to an assignment the night before is permissible while on short term per diem. The dates of the claimed expenses must be inclusive on the Form 1350, Long Term Assignment (LTA) Information and Certification of Subsistence Rates.

When long term accommodations have been located at the LTA site by the claimant, OSC policy states that expenses incurred at the LTA location the night before the beginning of the work shift will not be reimbursed when the LTA location is closer than 120 miles from the claimants headquarters/primary residence.

Question 2: Are there exceptions for receiving expenses when traveling back to the LTA on the day preceding the regularly scheduled work day when the distance between the headquarters/primary residence and the LTA is less than 120 miles.

Answer: Yes. OSC policy states that exceptions to the 120 mile requirement require written approval from the employee's Area Construction Manager.

Question 3: When reporting to my new LTA location on Monday, would short-term allowance be allowed for Saturday/Sunday?

Answer: Yes, provided the employee was actively searching for accommodations at their LTA location and the dates are inclusive on the Form 1350.

Question 4: If I leave my LTA on Saturday without returning to my Headquarters/primary residence and return on the day preceding the regularly scheduled work day to the LTA location, are my expenses claimable?

Answer: No. TEG VI-4 states that employees who leave the LTA location on day(s) off and remain overnight away from the LTA site for personal business and do not return to their primary/permanent residence or headquarters shall not receive per diem or transportation expenses.

Question 5: Is the signature of a supervisor required on the TEC prior to it being sent to Sacramento?

Answer: Yes. All TECs must be signed by the first line supervisor prior to being sent to the headquarters office of the Office of Structure Construction (Sacramento).

Question 6: What address is required in the Claimant's home address and Headquarters address sections of the TEC?

Answer: If the employee maintains a primary residence at their headquarters location while on a LTA, then the address of the employee's primary residence would be shown in this section. The address of the employee's headquarters would be placed in the headquarters address section.

If the employee does not maintain a primary residence at their headquarters location while on an LTA, then the employee's headquarters address would be entered for both the Claimant's home address and headquarters address (TEG VI-1).

Question 7: Will an employee be reimbursed for travel back to their headquarters when a primary residence is not being maintained?

Answer: No. OSC policy is that until a primary residence is re-established at the employee's headquarters, no travel expenses will be paid for travel back to the employee's headquarters on regularly scheduled days off. If the employee is sent to their headquarters on official State business, then the travel to their headquarters would be reimbursable.

Employees on LTA not eligible (does not maintain a primary residence) for the full long-term subsistence rate will be allowed one-half the long-term subsistence rate for each 24 hour period.

Question 8: Will transportation costs be reimbursed (mileage or air fare) for an employee to return to their primary residence during the week?

(An example of this would be if an employee were to return to their primary residence on Tuesday evening, take Wednesday off and return to the LTA site on Thursday.)

Answer: If Wednesday is the employee's regularly scheduled day off or a vacation day Yes, the transportation costs would be claimable provided that the trip did not exceed the OSC policy of returning to a claimant's headquarters/primary residence more than once per week.

The amount of reimbursement would be based on the most economical mode of travel. A worksheet is attached that may be used in determining the most economical mode of travel (Attachment 1).

Question 9: What is the maximum reimbursement allowed for travel from the airport nearest the employee's headquarters to the employee's primary residence?

Answer: The most economical form of transportation shall be used to travel from the airport to the employee's primary residence. Private vehicle mileage is normally the most economical and will be used for cost comparison purposes even if the employee's private vehicle is located at the LTA site.

Question 10: If an employee travels to their primary residence and back to the LTA site the same day, are full expenses allowed?

An example of this would be if the employee had a Doctor's appointment at their primary care physician near their primary residence then returns to their accommodations at the LTA location the same day.

Answer: **Yes**, if the one way travel distance is 120 miles or greater. Full expenses would be allowed for the day of the travel for it meets the requirements of the 120 mile rule and travel to the LTA on the day preceding the regularly scheduled work day.

No, if the travel distance is less than 120 miles and the employee did not return to, or report to work.

Question 11: While on a LTA, employee is sick for two days and misses scheduled work, are full expenses allowed?

Answer: Yes. Employees on LTA may be granted subsistence allowance up to a maximum of three consecutive working days per illness when absent on authorized sick leave, provided that they remain at their LTA location. (TEG VI-4)

Question 12: When using a taxi as the most economical form of transportation, are the tips reimbursable?

Answer: No. Provisions for paying tips is covered under incidentals. A tip will not be reimbursed when added to a taxi receipt.

Question 13: When there is no state car available while on a LTA, what is the maximum mileage that can be reimbursed?

Answer: The maximum reimbursable daily mileage for an employee to travel between the employee's living accommodations and job site while on a LTA is 25 miles. Mileage for using the employee's vehicle on **state business** is reimbursable in accordance with the requirements in the Travel and Expense Guide. (TEG VI-6)

Question 14: When on a LTA and you own your primary residence, can you sublet it and still qualify for full LTA per diem?

Answer: Yes. Whether you own or rent your primary residence, provided your expenses for maintaining the primary residence is **in excess** of $200.00 per month and the primary residence is available to the employee upon the termination of the LTA, you still qualify for LTA per diem.

Question 15: When first reporting to my LTA location, may I claim $24.99 for lodging even though I stay at a friend's house?

Answer: No. If you are not staying at a commercial establishment while on a short term allowance then you should be claiming the noncommercial rate. The Travel and Expense

Guide (TEG VI-4) states that the non-commercial allowance may be claimed by employees when staying with friends or relatives if out-of-pocket expenses are incurred.

Currently the non-commercial rates are $23.00 for lodging and $24.00 for meals for 24 hours or partial day of 12-24 hours. Less than 12 hours either $23.50 for meals or lodging.

Question 16: What are the rules for using vacation time while remaining on a LTA?

Answer: This is best demonstrated by examples of various situations that an employee may find themselves in. It is understood that the employee in question is on a LTA. The employee normally works Monday through Friday starting each work shift at 0700 and ending at 1530. *Where applicable these situations represent the employee leaving the LTA location at the end of the normal work shift.*

Situation 1: Employee takes vacation on Wednesday, works both Tuesday and Thursday.

(Employee does **not** return to HQ/primary residence and does not stay away from the LTA overnight).

Per diem allowance for Tuesday = full amount
Per diem allowance for Wednesday = none
Per diem allowance for Thursday = full amount

Situation 2: Employee takes vacation on Friday, works both Thursday and the following Monday.

(Employee does **not** return to HQ/primary residence and does not stay away from the LTA overnight).

Per diem allowance for Thursday = full amount
Per diem allowance for Friday = none
Per diem allowance for Saturday = full amount
Per diem allowance for Sunday = full amount
Per diem allowance for Monday = full amount

(Employee returns to HQ/primary residence or leaves LTA location overnight).

Per diem allowance for Thursday = one-half full amount (less than 12 hrs)
= full amount (more than 12 hrs) (TEG VI-4)
Per diem allowance for Friday = none
Per diem allowance for Saturday = none
Per diem allowance for Sunday = none, or full amount subject to 120 mile policy.
Per diem allowance for Monday = full amount

Situation 3: Employee on LTA takes vacation on Friday & Monday, works both Thursday and the following Tuesday

(Employee does **not** return to HQ or primary residence and does not leave the LTA area.)

Per diem allowance for Thursday = full amount
Per diem allowance for Friday = none
Per diem allowance for Saturday = full amount
Per diem allowance for Sunday = full amount
Per diem allowance for Monday = none
Per diem allowance for Tuesday = full amount

(Employee returns to HQ/primary residence on Thursday (no supervisory approval to return Sunday or Monday):

Per diem allowance for Thursday = 1/2 full amount (less than 12 hrs)
= full amount (more than 12 hrs) (TEG VI-4)
Per diem allowance for Friday = none
Per diem allowance for Saturday = none
Per diem allowance for Sunday = none
Per diem allowance for Monday = none
Per diem allowance for Tuesday = full amount

Question 17: While on a LTA, an employee is required to attend a training class which is also away from their headquarters and primary dwelling. What long term per diem is the employee allowed?

Answer: Employees who leave the LTA location to travel on short-term State business shall not receive per diem at their LTA location when short-term expenses are being claimed (TEG VI-4).

II. **Other Common Mistakes (Which May Hold up the Processing of a TEC)**

1. Current and approved LTA (Form 1350) paperwork is required to be on file in Accounting prior to TECs being processed. This form is submitted to your ACM for approval, and then forwarded to the OSC Chief for approval and then submitted to Accounting.

   When submitting Form 1350, include a copy of a current canceled rent or mortgage payment check. In lieu of a canceled check, a copy of the completed uncanceled rent or mortgage payment check and a copy of your current bank statement showing that the check was cashed.

2. For TECs, Dist/Unit should be 59-501 for section where checks are to be printed and distributed. Use the "source unit" shown on your assignment letter in the charging boxes (generally 59-540 through 59-547).

3. Bargaining unit needs to be correct. Typically, your bargaining unit is 9/S or 9/R; S represents a supervisory employee and R is rank and file.

4. Missing and/or switching depart and/or return time (Depart from and return to primary residence).

5. Proper AGCY. OBJ code for parking is 001. The proper AGCY. OBJ code for In-State private vehicle mileage and in lieu of airfare costs is 010. A list of commonly used AGCY. OBJ codes is attached (Attachment 2).

6. TECs are not to be sent directly to the accounting unit**!** Send all TECs to the Headquarters office of the Office of Structure Construction.

7. Processing time for TECs varies between 3 - 4 weeks after mailing by you. If you have not received a check for your TEC within 4 weeks, you may call your OSC timekeeper in Sacramento to investigate.

   Verify OSC received your TEC and obtain the forwarding date from OSC to Accounting before contacting the Travel Information Line (227-9061). Allow 10 working days after OSC has forwarded your TEC prior to calling Accounting.

   Checks for reimbursement of travel expenses will be mailed directly from OSC (Sacramento HQ Office) to the claimant at the address reported on the form Change of Address and Check Disbursement (DS-OS-C17).

8. LTA per diem is taxable for assignments greater than 1 year in length. If your assignment was originally less than one year, but extends to greater than 1 year, a revised LTA (Form 1350) must be filed. Per diem will be taxed for TEC's processed thereafter. Taxes are not assessed retroactively. Withholding, as reported by the Accounting Service Center, will be for Federal Income Tax (28%), State Income Tax (6%), applicable Social Security (6.2%) and Medicare Tax (1.45%) withholding. All taxes will be withheld from a subsequent, regular payroll warrant by the State Controller's Office.

9. Rates to be claimed for:

   Long-term travel with separate residence in Headquarters area.
   For 24 hours or partial day of 12-24 hours.
   $24.00 for meals and $23.00 for lodging. Use the appropriate columns of the TEC form.
   Less than 12 hours.
   Claim only meals $23.50 or claim only lodging $23.50.

   Long-term travel with no separate residence in Headquarters area.
   For 24 hours or partial day of 12-24 hours.
   $12.00 for meals and $11.50 for lodging. Use the appropriate columns of the TEC form.

Less than 12 hours.

Claim only meals $12.00 **or** claim only lodging $12.00.

III. **Some Useful Tools to Assist with Completion of LTA Paperwork**.

For determining comparative costs between flying and driving, the form titled In-Lieu-of Air Fare Cost Comparison is attached (Attachment 1) for your use. For reimbursement, complete and submit the attached worksheet in accordance with the instructions.

A list of frequently used travel object codes and descriptions with Federal Aid Eligibility is attached. (Attachment 2) Always verify that Federal eligibility is correctly denoted. A complete list of Agency Object codes may be found in Volume I of the Department's Coding Manual.

Questions regarding the coding of Travel Expense Claims should be directed to your supervisor. If additional information is needed, contact the Assistant Office Chief in Sacramento, (Dolores Valls 916-227-8845 or Rob Stott 916-227-8871) for assistance.

IN- LIEU-OF AIR FARE COST COMPARISON

Revised 5/10/96

Instead of flying, an employee may choose to drive a personal or rental car. For reimbursement, please complete cost comparison A or B below, then claim the ***least*** expensive mode of transportation on your travel expense claim (TEC). Please attach the original and one copy of this form to your TEC. **NOTE:** The cost of flying should not include rental car charges. Private car mileage reimbursement is $.24 to $.30 per mile; over $.24 per mile is taxable.

Regarding meal expenses, the employee is only allowed reimbursement for meal expenses that would have been incurred if a commercial aircraft was used.

A. COST OF FLYING VS. COST OF PRIVATE CAR:

COST OF FLYING		COST OF PRIVATE CAR
Air Fare	$_____	_____miles x $_____/mile = $_____
Airport Parking	$_____	
Personal Car Mileage To/From Airport	$_____ *	
Total	$_____	

* personal car mileage = ____ miles x $ ____/mile = $_____

B. COST OF FLYING VS. COST OF **RENTAL CAR:**

COST OF FLYING		COST OF RENTAL CAR
Air Fare	$_____	$_____/day x ____days = $_____
Airport Parking	$_____	Rental car gas _____
Personal Car Mileage To/From Airport	$_____ *	Total $_____
Total	$_____	

* Personal car mileage = ____ miles x $ ____/mile = $_____

To avoid processing delays on future travel expense claims (TECs), please refer to the Federal Aid Eligibility and Agency Object Codes below to code expenses. *NOTE: Coding is different for In-State, Out-of-State and Relocation expenses; these expenses must be submitted on separate TEC forms.*

For questions, please call the Travel Information Line at (916) 227-9061 or CALNET 498-9061 from 9:00-12:00/1:00-3:00.

FEDERAL AID		
ELIGIBLE	**INELIGIBLE**	**AGENCY OBJECT CODE DESCRIPTION**
6001	**7001**	In-State travel (rental car, parking, gas, taxi, bus, rail, bicycle, private airplane, tolls, phone calls, business expenses)
6008	7008	In-State commercial air
6010	7010	In-State private car mileage, in-lieu-of airfare costs
N/A	**7015**	**Uniform allowance**
6020	**7020**	In-State per diem (lodging, meals, incidentals)
6021	7021	Out-of-State per diem (lodging, meals,. incidentals)
N/A	7022	Relocation (lodging, meals, incidentals, private car mileage, tolls, sale of residence, miscellaneous expenses)
6023	7023	Overtime meals
6024	7024	Tuition, registration fees, training material, books that are directly related to a State-approved training course
6025	7025	Cellular phone calls
6026	N/A	Postage
N/A	7032	Flight physicals.
6044	7044	Stationery and office supplies, maps, books that are not directly related to a State-approved training course, retirement service award
6075	7075	Application or renewal of professional license fees, State bar dues, In-State or Out-of-State conference/convention registration fees
6101	7101	Out-of-State travel (private car mileage, rental car, parking, bus, taxi, bus, rail, etc.)
6108	7108	Out-of-State commercial air
6110	**7110**	Overtime mileage and call back mileage (effective 7/1/96)
6132	7132	Physicals

Revised 7/1/96

STATE OF CALIFORNIA. DEPARTMENT OF TRANSPORTATION

TRAVEL EXPENSE CLAIM

FA-0302 (REV. 6193) CT # 7547-0620-9

Page 1 of 1

See instructions On Reverse Side

PERSONAL INFORMATION NOTICE

Pursuant to the Federal privacy Act (P.L. 93-579) and the information Practices Act of 1977 (Civil Code Sections 1798, et seq.), notice is hereby given for the request of personal information by this form. The requested personal information is voluntary. The principal purpose of the voluntary information is to facilitate the processing of this form. The failure to provide all or any part of the requested information may delay processing of this form No disclosure of personal information will be made unless permissible under Article 6. Section 1798.24 of the IPA of 1977. Each individual has the right upon request and proper identification to inspect all personal information in any record maintained on the individual by an identifying particular. Direct any inquires on information maintenance to your IPA Officer.

CLAIMAINT'S NAME (First, Mi, Last)	SOCIAL SECURITY #	DEPARTMENT
I. M. ENGINEER	000-00-0000	TRANSPORTATION

POSITION	B.U./M.D.	DIST./UNIT (Where Check is To Be Printed & Distributed)	INDEX NUMBER
TRANS ENGR (CIVIL)	09R	59-501	

CLAIMANT'S HOME ADDRESS	HEADQUARTERS ADDRESS	BUSINESS PHONE
XXX ANN ARBOR WAY	000 KNOX AVE	(619) XXX-XXXX

CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
SANTA CLARA	CA	00000-0000	SAN JOSE	CA	00000

(1) MONTH/YEAR 07/96		(3) LOCATION Where Expenses Were Incurred	(4)	(5) MEALS			(6)	(7) TRANSPORTATION				(8)	(9)
(2) DATE	TIME		LODGING	BREAK-FAST	LUNCH	O.T., L/T, N/C, RELO, OR DINNER	INCIDEN-TALS	(A) COST OF TRANS.	(B) TYPE USED	(C) CARFARE TOLLS, PARKING	(D) PRIVATE CAR USE MILES / AMOUNT	BUSINESS EXPENSE	TOTAL EXPENSE FOR DAY
7	1000	BISHOP	23 -			24 -			PC		450 / 108 -		155 -
8		BISHOP	23 -			24 -			SC				47 -
9	0500	SACRAMENTO	48 -	5 50	9 50	17 -	5 -		SC				85 -
10		SACRAMENTO	48 -	5 50	9 50	17 -	5 -		SC				85 -
11	1600	BISHOP	23 -			24 -			SC				47 -
12		BISHOP	23 -			24 -			SC				47 -
13		BISHOP	23 -			24 -			SC				47 -
		CONTINUES ATLTA											
(10) SUBTOTALS			211 -	11 -	19 -	154 -	10 -				450 / 108 -		

(11) PURPOSE OF TRIP, REMARKS AND DETAILS *(Attach receipts/vouchers when required)*

CONSTRUCTION ENGINEERING

CONSTRUCTION WELDING. TESTING AND REVIEW TRAINING SEMINAR

CLAIM TOTAL $ 513 -

(12) NORMAL WORK HOURS	SUF-FIX	T. CODE	M O D	SOURCE DIST	SOURCE UNIT	CHG DIST	EXP. AUTH.	SUBJOB	SPECIAL DESIGNATION	F A E	AGCY. OBJ.	AMOUNT	FY	MSA CODE
0700-1530														
(13) PRIVATE VEHICLE LICENSE # UMCIVIL				59	5A11	09	XXXXXX3			6	0110	108 -		
				59	5A11	09	XXXXXX3			6	0120	235 -		
(14) MILEAGE RATE CLAIMED 0.24				59	5A11	59	911 20176			6	0120	170 -		
AGENCY ACCOUNTING OFFICE USE ONLY														
PAID BY REV. FUND CHECK #														

I HEREBY CERTIFY that the above is a true statement of the travel expenses incurred by me in accordance with DPA rules in the service of the State of California. If a privately owned vehicle was used and if mileage rates exceed the minimum rate, I certify that the cost of operating the vehicle was equal to or greater than the rate claimed, and that I have met the requirements as prescribed by SAM Sections 0750, 0751, 0752, 0753 and 0754 pertaining to vehicle safety and seat belt usage.

CLAIMANT'S SIGNATURE	DATE	(16) SIGNATURE OF OFFICER APPROVING TRAVEL AND PAYMENT	DATE
(17) SIGNATURE AND TITLE OF AUTHORITY FOR SPECIAL EXPENSES *(See Item 17 on reverse side)*			DATE

FM93 1829 M

Training

In order to assure that employee requests for training are handled uniformly, the following information is provided:

Every OSC employee has been assigned a Structure Construction Training Coordinator. A complete, supervisor signed, Training Request Form (CT-0300) should be faxed to their Training Coordinator at (916) 227-8179. Sections 1, 2 and 3 of the Training Request Form must be complete in order for the Structure Construction Training Coordinator to successfully register the employee. Questions on proper completion of the Form 300 should be directed to the employee's appropriate Structure Construction Training Coordinator.

Structure Construction Training Coordinator assignments and phone numbers can be found within the Structure Construction Intranet on the following page:
http://dschq.dot.ca.gov/training/trainingcoord.asp.

Background
The Division of Training's guidelines differentiate between "supervisor assigned" and "voluntary" training. Please see the following link, http://admin.dot.ca.gov/tr/reg/reg_cat.shtml for further information on these guidelines and a description of the six categories of training.

An employee's Structure Construction Training Coordinator can answer specific questions. (i.e. what training classes are available, which category is applicable to a specific training course, or how are requests for reimbursement for Category 6 training handled).

The Structure Construction Intranet home page contains a link to the Training History and Training Plan for each employee.

TABLE OF CONTENTS

DOLORES M. VALLS, Deputy Division Chief
Offices of Structure Construction

*Denotes the document is a Bridge Construction Bulletin

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Introduction

This section of *Bridge Construction Records and Procedures* contains information and instructions pertaining to the preparation and submission of cost accounting documents.

The Department of Transportation accounting system incorporates electronic data processing (EDP) as a means of cost reporting. The accounting system is designed to provide fast and accurate cost communication between all echelons of the Department of Transportation and to ensure expeditious payment and collection by the Department of Transportation of all monies due.

Further enhancements has resulted in the development and implementation of the Department of Transportation Time Reporting System (TRS) which is an application on the Caltrans VM (virtual machine) computer platform that allows online entry of labor and leave data. Its purpose is two-fold:

a. To furnish timely, cost-effective reporting of labor information to fulfill the various needs of the Department and to enable Caltrans managers to efficiently and effectively manage the Department's projects and resources.
b. To make accurate employee time reporting easier by allowing employees to electronically track and report their time on a weekly basis with the help of online edits of errors and without having to manually sum their hours. It also provides descriptions of expenditure authorizations and activity codes to assist the employee.

On a construction project, many costs and charges are generated, and field personnel regularly submit numerous cost input data for electronic data processing. The accuracy and usability of the input data, as received from the field, will determine the time required in the office to edit the input data and will affect the correctness of the cost charged to an account or the payment made to a vendor or an employee. As the Time Reporting System becomes fully implemented, we anticipate that all employees will submit their time sheets electronically rather than with the paper time sheets that are used currently.

Cost Center/Responsible Unit

The Office of Structure Construction is organized into various construction branches (Cost Centers) managed by an Area Construction Manager, which in turn are composed of one or more Responsible Units supervised by a Senior Bridge Engineer.

Each Cost Center / Responsible Unit is identified by a five-digit number. The first two digits are the Source code, which represents the District or other major function within the Department of Transportation. For the Office of Structure Construction, the Source code will be "59" in all cases. The last three digits identify the Cost Center / Responsible Unit within the Office of Structure Construction's organization. Refer to the OSC Organization Chart within the Office of Structure Construction Intranet website at http://oscnet.dot.ca.gov/oscnet/ for a listing of the Office of Structure Construction Responsible Units and Cost Centers.

All Source code entries made by Office of Structure Construction employees must show "59" as the first two digits. The geographic location of a project in a certain District has no bearing on the Source code, and Office of Structure Construction personnel should not use a District Source code unless on temporary assignment with a District and directed to do so.

Use of Cost Center:

Employees Permanently Sourced to the Office of Structure Construction:

Each Office of Structure Construction employee is assigned to a permanent Cost Center. The Cost Center may be one of the following: 59-501, 59-510, 59-511, or 59-540 through 59-551.

To identify the costs generated in a construction branch, the Cost Center number for an employee of the Office of Structure Construction shall be entered into the employee's Time Reporting System (TRS) "Personal Profile" for each fiscal year (FY). A fiscal year begins on July 1 of the previous year shown and continues to June 30 of that year. For example, FY 01 is from July 1, 2000 through June 30, 2001. **When an employee receives a new assignment, the source "Unit" in the TRS "Personal Profile" should match the "perm" Cost Center shown on the assignment letter.** The Cost Center is also entered on the electronic data input forms (i.e., timesheet, TEC, CEV, etc.) in the space provided for "Dist Unit" for all employees sourced to the Office of Structure Construction.

Employees on Temporary Assignment with the Office of Structure Construction:

Employees who are temporarily working for the Office of Structure Construction are assigned to permanent Cost Centers other than those mentioned previously.

To identify the costs generated in a construction branch by employees who are permanently sourced to an office other than the Office of Structure Construction, the Cost Center number for the construction branch that they are temporarily assigned to shall be entered into the employee's TRS "Personal Profile" for the appropriate fiscal year. **When the employee receives a construction assignment, the source "Unit" in the TRS "Personal Profile" should match the Cost Center shown in the assignment letter.** This Cost Center should also be used on all travel expense-related documents (e.g. TEC, airline ticket request, etc.) and not the employee's permanent Cost Center. The appropriate Cost Center will be shown on the employee's assignment letter.

Use of Responsible Unit

When completing **Form DAS-CS-172, "Progress Pay-Estimate Project Update and Initiation"**, the Structure Representative must use the Responsible Unit in the "Respon. Unit" field. Refer to Bridge Construction Memo 6-2.0 for further instructions.

Charge District

Charge District is the term which applies to the district that is managing the work for which costs are incurred and receives the benefit of the work performed.

Since all construction projects are administered by a District, Office of Structure Construction personnel will show a District number in the charge district column whenever they are working on a construction project. For Office of Structure Construction generated activities, such as:

- Annual Training Class.
- Safety meetings, tailgate and stand-downs.
- Work within the headquarters office of Structure Construction or as directed by the Deputy Office Chief.

Office of Structure Construction personnel should use their Office of Structure Construction charge district (59).

All expenditure authorization or work order numbers are linked to specific charge districts. The electronic data processing equipment will reject any cost distribution which attempts to associate an improper charge district with a specific expenditure authorization.

Expenditure Authorization / Subjob Code

An Expenditure Authorization (EA) is a record stored in TRAMS (EA Table) that authorizes, classifies and reports expenditures consistent with Program Definitions, Budgets and other statutory or management requirements. When required a subjob number may be associated with the EA.

Expenditure Authorizations are broken down by types as described in the following:

- Multiphase EAs (OXXXXX - 4XXXX9) are used to identify specific projects where there is more than one phase of work. The last digit of the project number indicates the phase of the project as follows:

K	Project Study Report
0	Project Report
1	Plans, Specifications and Estimates/Design
2	Right of Way Operations
3	Construction Engineering
4	Construction (Major, Minor A, Maintenance Contracts)
5	Minor B Contract
7/8	Miscellaneous - Service agreements, Co-op agreements, Day Labor
9	Right of Way Capital
H	Right of Way Hardship and Protection
R	Right of Way Rental Property Management

Note that all charges to construction engineering must have a Phase Number 3. Example: All construction engineering costs applicable to Contract Number 02-026524 will be charged to EA Number 02-026523.

Time worked on a specific project should be charged only to the EA established for that project. Such time should not be charged to an unrelated project or non-project EA.

- Maintenance EAs (500001 - 599999) are used to capture maintenance cost.

- Special Project EAs are used to capture cost for non capital outlay activities such as Planning, Research, and Mass Transportation.

- Single phase EAs (900001 - 999999) are used to cover all other work not covered by the above types.

Single phase EAs are broken down even further and are defined as follows:

- Overhead - The cost of providing direction, management, supervision, staff services and housing to personnel who are directly responsible for carrying out the workload and responsibilities of a particular program or functional area.

- Project - All phases of work necessary to complete a Capital Outlay undertaking. It may be identified as a "multi-phase" or "single task" project.

- Owner Operator - Tasks that are considered necessary by departmental management to carry out the Capital Outlay programs, but which do not directly relate to the delivery of a project.

- Programmatic - Non-capital Outlay program production oriented activities that when performed in concert result in achieving the goals of the various noncapital outlay programs administered by Caltrans.

- Service Center - A variety of tasks performed by Caltrans employees to provide technical services for all the other four major categories of EAs.

Subjob - A subjob is a five digit number prefixed by 3, adjacent to an EA (which is called the parent EA), which normally isolates a separate portion of a project for billing purposes or separate cost control.

Expenditure Authorizations commonly used by Office of Structure Construction are listed in Attachment 1 to this memo.

EXPENDITURE AUTHORIZATIONS USED BY STRUCTURE CONSTRUCTION

Expenditure Authorizations most often used by field personnel with a brief description and restrictions are listed below. In the following listing, XX represents an eligible charge district (01-12, 59) and XXXXXX represents any valid multi-phase EA.

XX-912076 - General management, supervision, and staff activities primarily related to the construction engineering function that cannot be charged effectively to specific project EAs.

Examples of when this EA and charge district would be used are as follows:

- Annual Training Classes
- Safety Meetings
- Work within the headquarters office of Structure Construction or as directed by the Deputy Office Chief
    - The charge district should be 59 when used by Office of Structure Construction personnel except when the activity benefits the District exclusively (e.g. District's annual RE meeting) in which case the charge district should be 01-12.

XX-937182 - To capture the time expended to inspect and control work performed under a valid encroachment permit. Activity code and FAE 2037 should be used exclusively with this EA.

53-965100 - This EA is used to capture salary, wages and related operating expenses incurred by District and Headquarters employees in carrying out all responsibilities related to the Local Assistance Program. Railroad grade crossing program will charge to this EA.

59-910199 - Development of Standards and Manuals

XX-XXXXX3 - Represents the Construction Engineering phase of a multi-phase EA. Generally the charge district is the district in which the project is located (01- 12) or Division responsible for the project. Most construction engineering work is charged to an EA ending in phase 3. Some minor or special projects may be charged to an EA that does not end with phase 3, in these cases charge to the EA specified by the District.

See BCM 11-7.0, Attachment 1 for the activity codes typically used with these EA's.

Special Designation Code

The special designation field is used when it is necessary to capture a variety of special information regarding charges to a particular EA.

When special instructions are given to identify costs with a specific structure, the bridge number will be entered in the Special Designation column. The customary hyphenated bridge number is extended to a six-digit number by zero fills, preceded by a "4" in the Prefix column and followed by the letters R, L, QL or QR, if applicable. Example: To identify costs with Bridge O1-14L, enter in the Special Designation column the number 40l0014L. This coding is commonly used with Design costs and is here for those special cases when field personnel are instructed to code their work according to these specific instructions.

The special designation coding for training expenditure authorizations consists of the prefix G followed by a five digit number which identifies the specific type of training. The number for each particular course will be furnished to the trainee, or it may be obtained from the Office of Structure Construction's Administrative Assistant.

Activity Codes / Work Breakdown Structure

Proper time charging practice is the responsibility of all Caltrans employees. This document provides information and instruction regarding the use of Activity Codes and the Work Breakdown Structure. This document also provides examples of proper time charging for various tasks typically performed by the Office of Structure Construction.

Activity Codes

The activity code is a four-character code used to classify labor charges in the performance of a specific function or duty. The four characters consist of a single-character Federal Aid Eligibility (FAE) code and a three-character Activity Code. The Federal Aid Eligibility Code is entered in the "FA" field of the Time Reporting System (TRS) "Time Reporting" or "Staff Cost Distribution" screens. The Activity Code is entered in the "AO" field of the TRS "Time Reporting" or "Staff Cost Distribution" screens.

The FAE code serves two purposes. First, it denotes the eligibility of the Activity Code for Federal Highway Administration (FHWA) reimbursement. Second, it distinguishes Activity Codes from Object Codes. Refer to Bridge Construction Memo 11-8.0 for a description of Object Codes.

The following table indicates whether an Activity Code is eligible for Federal Aid reimbursement. In general, activities that are eligible for Federal Aid reimbursement include charges to projects with multiphase Expenditure Authorizations (EA). Activities that are not eligible for Federal Aid reimbursement include overhead activities and technical oversight of consultants who have been hired by Caltrans or by a local agency to perform the activity.

Activity Code	FAE code	Comments
001-999	1	Use FAE code "1" if the activity is eligible for Federal Aid reimbursement.
001-999	2	Use FAE code "2" if the activity is not eligible for Federal Aid reimbursement.

Work Breakdown Structure

As part of Caltrans effort to implement Project Management statewide, the Department instituted the Work Breakdown Structure (WBS). The WBS is defined as a "…product-oriented grouping of project elements that organizes and defines the total scope of the project." **The WBS applies only to Capital Outlay Support work, for which labor charges are made for Activity Codes 100- 300 only**. Currently there are nine WBS levels available. **The WBS levels that Office of Structure Construction employees need to be concerned about are WBS levels 5 through 8**. **The current three-digit Activity Code constitutes the WBS Level 5 task code**. WBS Level 6

tasks are designated by two-character codes that constitute a further breakdown of the tasks described in WBS Level 5. WBS Level 7 tasks are by an additional two-character code that constitutes a further breakdown of the tasks described in WBS Level 6. WBS Level 8 tasks are designated by an additional two-character code that constitutes a further breakdown of the tasks described in WBS Level 7.

Current Office of Structure Construction policy is that employees will only be required to charge to WBS Level 5 unless the District Project Manager wishes to schedule the project at WBS Level 6, 7, or 8.

The WBS Level 5 task code is entered in the "AO" field of the TRS "Time Reporting" or "Staff Cost Distribution" screens. The WBS Level 6, 7, and 8 task codes are entered in the "MSA" field of the TRS "Time Reporting" or "Staff Cost Distribution" screens. Data shall be entered into the "MSA" field as follows. The first character of the "MSA" field shall be either "P" or "O". Enter the letter "P" in the first character of the "MSA" field for activities involving work on State projects. Enter the letter "O" in the first character of the "MSA" field when performing technical oversight of consultants who have been hired by Caltrans or by a local agency to perform the task. The second and third characters of the "MSA" field are reserved for WBS Level 6 task codes. The fourth and fifth characters of the "MSA" field are reserved for WBS Level 7 task codes. The sixth and seventh characters of the "MSA" field are reserved for WBS Level 8 task codes.

Refer to the Office of Structure Construction Intranet website at http://oscnet.dot.ca.gov/oscnet/ for a listing of the typical Activity Codes and WBS task codes used by Office of Structure Construction employees, with examples.

Further definitions of activities can be found in the *Caltrans Coding Manual*. The *Caltrans Coding Manual* may be viewed on the Accounting Service Center Intranet website at http://adsc.caltrans.ca.gov/ASC/Coding_Manuals/index.htm.

Further definitions of WBS tasks can be found in the latest release of the "Guide to Caltrans Capital Project Work Breakdown Structure". The latest release of the "Guide to Caltrans Capital Project Work Breakdown Structure" may be viewed on the Project Management Program Intranet website at http://onramp.dot.ca.gov/hq/pmpweb/pm_menu.htm.

Object Codes

The object code is a four-character code used to classify the type of expenditure for non-labor charges, such as equipment, travel expense, supplies, etc. The four characters consist of a single-character Federal Aid Eligibility (FAE) code and a three-character Object Code. The FAE code is entered in the "FA" field of the EDP form. The Object Code is entered in the "AO" field of the EDP form.

The FAE code serves two purposes. First, it denotes the eligibility of the Object Code for Federal Highway Administration (FHWA) reimbursement. Second, it distinguishes Object Codes from Activity Codes. Refer to Bridge Construction Memo 11-7.0 for a description of Activity Codes.

The following table indicates whether an Object Code is eligible for Federal Aid reimbursement. In general, Object Codes that are eligible for Federal Aid reimbursement include charges to projects with multiphase Expenditure Authorizations (EA). Object Codes that are not eligible for Federal Aid reimbursement include overhead activities and technical oversight of consultants who have been hired by Caltrans or by a local agency to perform the activity.

Object Code	FAE Code	Comments
001-999	6	Use FAE code "6" if the object is eligible for Federal Aid reimbursement.
001-999	7	Use FAE code "7" if the object is not eligible for Federal Aid reimbursement.
001-999	8	Use FAE code "8" if the eligibility for Federal Aid reimbursement has not been determined.

Refer to the Office of Structure Construction Intranet website at http://oscnet.dot.ca.gov/oscnet/ for a listing of the typical Object Codes used by Office of Structure Construction employees.

Preparation of EDP Input Forms

The general instructions contained herein are applicable to all accounting electronic data processing input forms. Adherence to these instructions will reduce data processing costs by eliminating careless errors and avoiding incorrect and useless machine input.

Note that these instructions must be followed precisely. Key punch operators are trained to use the symbols and techniques described herein, and variations or deviations cannot be accommodated by the data processing equipment.

To enable the Office of Structures accounting staff to correct obvious errors, all EDP input data must be entered on the form in pencil. Cash Expenditure Voucher and Travel Expense Claim forms must be completed in ink. Use 2-digit numerical designation for all dates (month-day-year), such as 08-05-69. Use the 24-hour clock for times shown on travel expense claims, and car reports. (i.e., 3:00 pm is shown as 1500, 4:30 pm is shown as 1630, etc.)

To repeat any code shown on the cost entry line immediately above, make a check mark ( ). Do not use ditto marks. Do not draw vertical lines or arrows. The check mark is the only acceptable symbol.

To repeat code entries, one check mark per field is sufficient. For example, it is not necessary to make six check marks for the six digits in a work authorization number.

Finally, when preparing EDP input forms, field personnel should keep the following points in mind:

1. Input data must be complete. All cost distribution codes and information must be shown or readily identifiable by symbols (i.e., source code, charge code, expenditure authorization, special designation if applicable, activity or object, hours or miles, amount, etc.) If any cost entry is missing or cannot be determined, the entire cost information is useless.

2. Input data must be accurate. To submit a cost entry, perhaps as many as 30 different numbers will have to be written in the coding block of the input form. If any one number is wrong, the entire entry may be worthless.

3. Input data must be legible. All letters, figures and symbols used on EDP input forms must be legible so the intended meaning will be clearly understood by the key punch operator. If a figure or symbol can be misread, it will be misread. Key punch operators are neither trained nor required to interpret code symbols or figures from their context.

4. Erasures must be complete. To ensure against misinterpretation, all erasures and subsequent reentries should be double-checked for neatness and legibility.

5. Input data must be compatible. Expenditure authorization codes are programmed for use with specific charge districts. Since the use of noncompatible cost entries will result in unnecessary delay to the processing of the input document, do not use any expenditure authorization unless you are certain it is compatible with the charge district. The same rule applies in connection with CHC equipment numbers, which must be entered with the proper equipment item number, etc.

Attachment 1 shows examples of a completed time sheet, time sheet correction and Travel and Expense Claim form.

Examples of properly completed Timesheet, Timesheet Correction and Travel Expense Claim for an employee named "Any Employee" working in District 4.

Coding for the Monthly Timesheet

This employee since they are sourced to Structure Construction has placed their cost center number in the box labeled "Dist. Unit".

The employee performed construction engineering (phase 3) on contract 04-003854 during the first and a portion of the second week of the month alternating time between the following activities:

(1270) Perform Construction Engineering and General Contract Administration
(1285) Prepare and Administer Contract Change Orders

Worked 3 hours of overtime each day on the 5th and 6th of the month.

Attended a tailgate safety meeting on the 7th and 21st of the month.

The employee performed construction engineering (phase 3) on contract 04-028354 during the remainder of the month with the exception of the annual Structure Construction Training class (Structure Foundations) on the 24th through the 26th, the remainder of his time he alternated performing the following activities:

(1270) Perform Construction Engineering and General Contract Administration
(1285) Prepare and Administer Contract Change Orders

Worked an hour of overtime each day on the 17th and 21st.

The employee had their field supervisor sign it and submitted it to Sacramento for processing.

Additional instructions for completing the Monthly Timesheet Form may be found on the back of the form itself.

Coding for the Monthly Timesheet Correction
Changes occurred after the submittal of the Monthly Timesheet, these changes are as follows:

- The employee had a Medical Appointment on the 27th and took 4 hours off as sick leave - self. This is shown on the Timesheet Correction form as the five hours on the 27th being circled (-) with subsequent entries being 1 hour as activity 1270 and 4 hours of sick leave – self also on the 27th.

  For this type of correction, the hours subtracted need to balance the hours added (-5 = 1 + 4).

- Worked additional overtime on the 28th. Since Any Employee did not have a full work week (40 hrs) due to sick leave, they are only entitled to overtime at normal rate.

- The employee worked 4 hours of overtime on the 30th, the supervisor verified that this was in addition to the normal 40 hr workweek, therefore it is coded as being eligible for overtime at 1 l/2 times the normal rate.

Additional instructions may be found on the back of the Monthly Timesheet Correction form.

Coding for the Travel Expense Claim

Any Employee was on short term per diem while working on contract 04-003854 and attended the annual Structure Construction Training class the latter part of the month. Coding for these two activities is shown on the attached example and described as follows:

- The amounts shown are for the actual costs incurred up to the maximum amount allowed.

- Any Employee used his state vehicle while on the construction assignment. The spouse of the employee drove the employee to the airport, therefore the rate is doubled for the mileage that Any Employee was the passenger. Travel to the hotel from the airport was by shuttle bus.

Additional instructions may be found on the back of the Travel Expense Claim form and in the Departments Travel & Expense Guide.

TATE OF CALIFO DEPARTMENT OF TRANSPORTATION

FA-706 (REV. 6/93) ICT-7541-07 10-0

MONTHLY TIME SHEET

Confidential: ...document contains personal information and pursuant to Civil Code 1798.21 it shall be kept confidential in order to protect against unauthorized disclosure.

ENTER DAILY HOURS (INC. O.T.) CHARGED TO EACH EXPENDITURE AUTHORIZATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		8	8	6	6	7			8	8	7																			
				2	2						1																			
												7	8			8	8	8	8	7						8	7			
												1																1		
				3	3											1				1										
						1														1										
																							8	8	8					

ENTER BELOW THE HOURS OF O.T. INCLUDED IN DAILY HOURS SHOWN ABOVE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
				3	3											1				1										

ENTER BELOW THE HOURS NOT WORKED (VACATION, SICK LEAVE, ETC.)

FOR OSC EMPLOYEES, THESE TWO UNIT NUMBERS SHOULD BE THE SAME

CHARGE DISTRICT	EXPENDITURE AUTHORIZATION	SUB JOB	PREFIX	SPECIAL DESIGNATION	FA ELIG.	AGENCY OBJECT	HOURS TO 1/10	PAY CODE	PREFIX	AUTHORIZED USE ONLY MGMT. SYSTEM ACTIVITIES
04	0 0 3 8 5 3				1	2 7 0	58			
✓	✓				1	2 8 5	5			
04	0 2 8 3 5 3				1	2 7 0	77			
✓	✓				1	2 8 5	2			
04	0 0 3 8 5 3				1	2 7 0	6	A		
04	0 2 8 3 5 3				1	2 7 0	2	B		
59	9 1 2 0 7 6				2	0 A 9	2			
59	9 1 2 0 7 6			G 1 2 3 3 9	2	0 5 9	24			

	TOTAL HOURS WORKED INCLUDING OVERTIME			176
830032	CTO TOTAL	2	2	B
770002	CASH O.T. TOTAL	3	6	A
770001	REGULAR TIME WORKED (BOX 1 MINUS 2 & 3)	4	168	
830130	VACATION	5		
830131	SICK LEAVE TAKEN - SELF	6		
830139	SICK LEAVE TAKEN - FAMILY CARE	7		
830132	OVERTIME (CTO) TAKEN	8		
830199	PERSONAL HOLIDAY TAKEN	9		
830140	JURY DUTY/SUBOENAED WITNESS	10		
830133	MILITARY LEAVE TAKEN	11		
830143	INDUSTRIAL DISABILITY LEAVE	12		
830144	BEREAVEMENT LEAVE	13		
830150	ANNUAL LEAVE	14		
830153	PERSONAL LEAVE TAKEN	15		
	HOURS ABSENT WITHOUT PAY	16		
	EXCESS HOURS TAKEN	17		
	NORMAL TOTAL HOURS (SUM BOXES 4-17 INCLUSIVE)	18	168	

CHECKED BY

Reason For Absence

Relationship

CERTIFIED CORRECT

Any Employee
Employee's Signature

Field Supervisor
Supervisor's Signature

BUSINESS PHONE#

NAME		OBJ. DET.
A EMPLOYEE		003

CIVIL SERVICE TITLE	B.U. M.D.	W.W.G.
TRANS ENG, CIVIL	09 R	4A

SOC. SEC. NO.	POS. IDENT.	AGENCY	UNIT	CLASS	SERIAL
XXX-XX-XXXX		1913	54X	3135	XXX

DIST. UNIT	MONTH & YEAR	MONTHLY SALARY
59-54X	04-95	XXXX

PLEASE VERIFY TOTALS AND NOTIFY PERSONNEL IMMEDIATELY OF ANY DISCREPANCIES

LEAVE RECORD (Hours)	Vacation/ Annual Leave	Sick Leave (incl. fam. care)	State Service	CTO	Personal Holiday	Excess Hours	Personal Leave
Available Beg. PP							
Used During PP							
Earned During PP							
Available Beg. PP							

ACCTG. USE ONLY

Key Punched

Audited

Variance

G91 0031

Form Distribution: White-Accounting, Blue-Personnel, Green-Unit Timekeeper, Pink-Employee

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

MONTHLY TIMESHEET CORRECTION

FA 0709 (REV. 8/93)

PERSONAL INFORMATION NOTICE

Pursuant to the Federal Privacy Act (P.L. 93-579) and the Information Practices Act of 1977 (Civil Code Sections 1798, et seq.), notice is hereby given for the request of personal information by this form. The requested personal information is voluntary. The principal purpose of the voluntary information is to facilitate the processing of this form. The failure to provide all or any part of the requested information may delay processing of this form. No disclosure of personal information will be made unless permissible under Article 6, Section 1798.24 of the IPA of 1977. Each individual has the right upon request and proper identification, to inspect all personal information in any record maintained on the individual by an identifying particular. Direct any inquiries on information maintenance to your Accounting IPA Officer.

CHANGES OR CORRECTIONS TO (MONTH/YEAR): 04-95

☐ 9/80 TIMEBASE
☐ 4/40 TIMEBASE
☒ REGULAR TIMEBASE

NAME: Any Employee
OBJ DET: 003
CIVIL SERVICE TITLE: TRANS ENG, CIVIL
BU / MD: 09R
WWG: 4A
SOCIAL SECURITY NUMBER: XXX-XX-XXXX
POSITION IDENTIFICATION:
AGENCY: 913
UNIT: 54X
CLASS: 3135
SERIAL: XXX
DISTRICT / UNIT: 59-54X
MONTH / YEAR: 04/95
MONTHLY SALARY: XXXX

ATTENDANCE CLERK SIGNATURE
PERSONNEL TRANSACTIONS SIGNATURE
ACCOUNTING SIGNATURE

ENTER DAILY HOURS (INC. O.T.) CHARGED TO EACH EXPENDITURE AUTHORIZATION

CHGT	EXPENDITURE AUTHORIZATION	SUB-JOB	PREFIX	SPECIAL DESIGNATION	FA ELIG	AD	HOURS TO 1/10	PAY CODE	PREFIX	AUTHORIZED USE ONLY MGMT. SYSTEM ACTIVITIES
04	028353				1	27	5	-		
04	028353				1	27	1	-		
04	028353				1	27	4	-	A	
04	028353				1	27	1	-	E	

ENTER BELOW THE HOURS OF OVERTIME (INCLUDED IN DAILY HOURS SHOWN ABOVE)

ENTER BELOW HOURS NOT WORKED (VACATION, SICK LEAVE, ETC.)

1				REASON FOR CHANGE:
830032	CTO	2		
770002	CASH O.T.	3	5 -	A +E
		4		
830130	VACATION	5		
830131	SICK LEAVE-SELF	6	4 -	
830139	SICK LEAVE TAKEN - FAMILY CARE	7		
830132	OVERTIME (CTO) TAKEN	8		
830199	PERSONAL HOLIDAY TAKEN	9		
830140	JURY DUTY/SUBPOENAED WITNESS	10		
830133	MILITARY LEAVE TAKEN	11		
830143	INDUSTRIAL DISABILITY LEAVE	12		
830144	BEREAVEMENT LEAVE	13		
830150	ANNUAL LEAVE	14		
830153	PERSONAL LEAVE TAKEN	15		
	HOURS ABSENT WITHOUT PAY	16	168 -	
	EXCESS HOURS TAKEN	17		
	TOTAL CALENDAR HOURS FOR THIS PAY PERIOD —SUM OF BOXES 4-17 INCLUSIVE—	18	168	

27 - Doctors Appt for head cold

29/30 Overtime worked after submittal of Timesheet

EMPLOYEE'S SIGNATURE: Any Employee — BUSINESS PHONE #: XXX-XXX-XXXX — DATE: 5-5-95

SUPERVISOR'S SIGNATURE: Field Supervisor — BUSINESS PHONE #: XXX-XXX-XXXX — DATE: 5-5-95

FM 91 1234 M — WHITE - Accounting — YELLOW - Timekeeper — PINK - Personnel — GREEN - Employee

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

TRAVEL EXPENSE CLAIM

FA-0302 (REV. 6/93) CT # 7541-0620-9

Page 1 of 1

See Instructions On Reverse Side

Pursuant to the Federal Privacy Act personal information on this form. of this form. The failure to provide made unless permissible under Act. personal information in any record it.

ALWAYS USE 59-501 HERE, FOR ROUTING PURPOSES

...ICE ...ic Sections 1798, et seq.), notice is hereby given for the request of ...purpose of the voluntary information is to facilitate the processing ...g of this form. No disclosure of personal information will be ...he right upon request and proper identification, to inspect all ... Direct any inquiries on information maintenance to your LPA Officer.

CLAIMANT'S NAME (First, MI, Last)	SOCIAL SECURITY #	DEPARTMENT
ANY EMPLOYEE	XXX-XX-XXXX	TRANSPORTATION

POSITION	B.U./M.D.	DIST./UNIT (Where Check is To Be Printed & Distributed)	INDEX NUMBER
TRANS ENG, CIVIL CT	09R	59-501	

CLAIMANT'S HOME ADDRESS	HEADQUARTERS ADDRESS	BUSINESS PHONE
1XY SOME AVE	XXXX STREET AVE.	707-XXX-XXXX

CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE
PENNGROVE PARK	CA	XXXXX	SANTA ROSA	CA	XXXXX

(1) MONTH/YEAR 02/95	(2) DATE	TIME	(3) LOCATION Where Expenses Were Incurred	(4) LODGING	(5) MEALS BREAK-FAST	LUNCH	O.T., L/T, N/C, RELO. OR DINNER	(6) INCIDENTALS	(7) TRANSPORTATION (A) COST OF TRANS.	(B) TYPE USED	(C) CARPOOL TOLLS PARKING	(D) PRIVATE CAR USE MILES	AMOUNT	(8) BUSINESS EXPENSE	(9) TOTAL EXPENSE FOR DAY
	CONTINUE														
W	3	0620	MORGAN HILL	23 -			24 -			SC					47 -
	4		MORGAN HILL	23 -			24 -			SC					47 -
	5		MORGAN HILL	23 -			24 -			SC					47 -
	6		MORGAN HILL	23 -			24 -			SC					47 -
	7	1720	MORGAN HILL				23 50			SC					23 50
M	10	0620	MORGAN HILL	23 -			24 -			SC					47 -
	11		MORGAN HILL	23 -			24 -			SC					47 -
	12	1720	MORGAN HILL				23 50			SC					23 50
	24	1000	ONTARIO	79 -		4 -	8 75			PC A B		30	7 20		98 95
	25		ONTARIO	79 -	4 25	6 -	17 -								106 25
	26	1500	ONTARIO		1 25	6 -		5 00		B A C		30	7 20		22 45
(10)			SUBTOTALS	296 -	8 50	16 -	216 75	5 -				60	14 40		556 65

(11) PURPOSE OF TRIP, REMARKS AND DETAILS (Attach receipts/vouchers when required)

5-1: CONSTRUCTION ENGINEERING

24-26 TRAINING, FOUNDATIONS CONSTRUCTION CLASS

CLAIM TOTAL $ 556.65

(12) NORMAL WORK HOURS	SUF-FIX	T. CODE	SOURCE MOD	SOURCE DIST	SOURCE UNIT	CHG. DIST	EXP. AUTH.	SUBJOB	SPECIAL DESIGNATION	FAE	AGCY. OBJ.	AMOUNT	FY	MSA CODE
0730-1600				5A	5AX	0A	0103B	153			60	20	329.00		
(13) PRIVATE VEHICLE LICENSE # 1XXX ØØØ				5A	5AX	5A	9112	0716	61123	3A	70	10	14.40		
(14) MILEAGE RATE CLAIMED 0.29				5A	5AX	5A	9112	0716	61R3	3A	70	RP	213.25		
AGENCY ACCOUNTING OFFICE USE ONLY															
PAID BY REV. FUND CHECK #															

OSC EMPLOYEES SHOULD USE THEIR OWN PERMANENT SOURCE CODE HERE

(15) I HEREBY CERIFY that the above is a true statement of the travel expenses privately owned vehicle was used, and if mileage rates exceed the minimum. claimed, and that I have met the requirements as prescribed by SAM Sections ... A rules in the service of the State of California. If a the vehicle was equal to or greater than the rate ...ng to vehicle safety and seat belt usage.

MY SUPERVISOR

CLAIMANT'S SIGNATURE	DATE	(16) SIGNATURE OF OFFICER APPROVING TRAVEL AND PAYMENT	DATE
Any Employee	4-28-95		

(17) SIGNATURE | DATE

FM 83 1829 M

- ATTACH ORIGINAL RECEIPTS TO 8 1/2" X 11" SHEET OF PAPER AND ONE COPY OF SAME
- DO NOT USE WHITE OUT ON THIS FORM

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RALPH P. SOMMARIVA, Chief
Office of Structure Construction

**Denotes the document is a Bridge Construction Bulletin*

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Construction Engineering Cost Computation

General Information

State highway construction projects usually involve structures, roadwork, and related operations. Office of Structure Construction employees are expected to cooperate with and assist District employees in order that the work may be accomplished in the most efficient and economical manner possible. Since delineation of responsibility is necessary for proper handling of the work and engineering cost accounting, the procedures in the following paragraphs have been established.

Division of Work

At the beginning of all projects having both structure work and roadwork, the Structure Representative and the Resident Engineer will establish, by agreement, which of the contract work will be considered as "structure" work and which as "road" work. When making this division of work, it is normal that the work is divided by contract item, but in some cases it may be necessary that the division be done by portions of contract items or by unit of the work. Note that there may be some work included in the contract (such as large box culverts, sign frames, certain retaining walls, etc.) which is not clearly defined as either structure or road work. To avoid misunderstandings due to personnel changes or other reasons, the agreement should be confirmed by written memorandum. A copy of this memorandum should be sent to the Office of Structure Construction in Sacramento.

Engineering Cost Submittal

The Office of Structure Construction's engineering cost is computed monthly in the Sacramento office using data obtained from the Transportation Accounting and Management System (TRAMS) and the Project Information System and Analysis (PISA) system.

This monthly data is input automatically for projects which are part of the PISA system. Projects that are not in the PISA system, such as Local Agency oversight projects, Minor "B" projects, and Emergency projects do not have this automatic monthly input. For these projects, the Oversight Engineer or Structure Representative is responsible for submitting the required information.

For projects which are part of the PISA system, the Structure Representative is responsible for submitting Engineering Cost data on Form DAS-CS-172, *Progress Pay-Estimate Project Initiation or Update*, and for reviewing the Engineering Cost data on Form HC-34, *Contract Transactions Input*, Form CEM-4901, *Contract Change Order (CCO) Input*, Form CEM-4902, *Extra Work Bill, Short Form*, Form CEM-4902-A, *Extra Work Bill–Title Page*, Form CEM-4902-B, *Extra Work Bill–Labor Charges*, Form CEM-4902-C, *Extra Work Bill–Equipment Charges*, and Form CEM-4902-D, *Extra Work Bill – Materials Charges*. These forms are completed in conjunction with the Resident Engineer and are submitted to the District or Region office for processing. Detailed instructions regarding the use of these forms are included in Bridge Construction Memo 6-2.0.

For projects that are not part of the PISA system, the Oversight Engineer or Structure Representative shall refer to the instructions contained in Bridge Construction Memo 6-2.1.

Mobilization Cost for Structure Work

In order to accurately determine the Hourly Engineering Production (HEP) factors, an appropriate amount of the Mobilization contract item must be included when calculating the cost of "structure" work.

For projects that are part of the PISA system, an appropriate amount of the Mobilization contract item is automatically included in the cost of "structure" work.

For projects that are not part of the PISA system, the Oversight Engineer or Structure Representative must include an appropriate portion of the Mobilization contract item (if applicable) when calculating the values of "structure" work to be shown in the “Contractor’s Bid Price for Structure Work” field on Bridge Construction Memo 6-2.1, Attachment No. 1.

The method to be used for determining the portion of the Mobilization contract item to be applied to "structure" work will be as follows:

1. At the beginning of the project, segregate contract work as "road" or "structure" work in accordance with instructions in Bridge Construction Memo 12-1.0.
2. For projects that are part of the PISA system, calculate the percentage of "structure" work to be done on the total project and enter this percentage on Form DAS-CS-172, *Progress Pay-Estimate Project Initiation or Update*, Line C15, "Mobil %" field. Apportion the bid price for the Mobilization contract item based on the percentage calculated above, add it to the "structure" work amount, and enter the total on Form DAS-CS-172, *Progress Pay-Estimate Project Initiation or Update*, Line C15, "Original Authorized Amount for Bridge Work" field. Additional instructions are given in Bridge Construction Memo 6-2.0.

   For projects that are not part of the PISA system, apportion the bid price for the Mobilization contract item based on the percentage of "structure" work to be done on the total project. Include this amount with the "structure" work amount and enter the total in the “Contractor’s Bid Price for Structure Work” field on Bridge Construction Memo 6-2.1, Attachment No. 1.
3. For projects that are part of the PISA system, the percentage determined above will be used to split the monthly progress payment for the Mobilization contract item and the appropriate portion will be included in the "Progress Payment, Work Done by Office of Structures" portion of the Monthly Progress Estimate.

   For projects that are not part of the PISA system, the "structure" work amount will be used to calculate staffing needs for the Office of Structure Construction so the proper PY allocation will be requested.

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Robert A. Stott, Deputy Division Chief
Offices of Structure Construction

**Denotes the document is a Bridge Construction Bulletin*

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Expendable Supplies, Office Space, and Associated Services

General Information

The District that administers the contract is responsible for providing expendable supplies, office space and associated services.

Expendable Supplies

All expendable supplies are to be ordered from the District through the Resident Engineer, in accordance with District policy. Items such as stationery, forms, rulers, steel tapes, pencils, etc., are examples of expendable supplies. All field employees requiring postage stamps should purchase them and obtain a refund by submitting a C.E.V. Form FA 202 to Headquarters.

Office Space

The District is to provide suitable office space, office trailers and furniture for both District and Structures' field personnel. This is to include such necessary services as telephone, water and electricity.

Local Purchases

The Resident Engineer or Structure Representative is authorized to purchase certain supplies, not normally available through normal supply channels, which are necessary to perform the required work.

Items which amount to no more than $50 plus sales tax may be purchased for cash, and reimbursement made upon submittal of a Cash Expenditure Voucher.

When needed supplies costing more than $50 are not available through normal channels, they may be purchased on a sub-purchase order obtained through the District Office.

Non – Expendable Equipment

General Information

The procedure for the issuance and maintenance of non-expendable equipment for use by Structure field personnel has been revised.

The following non-expendable equipment has been transferred to the Office of Structure Construction: Transits and theodolites, dumpy and self-leveling levels, calculators currently used by Construction, elcometers, Lenker rods, concrete test hammers, torque wrenches and torque multipliers, pressure cells and readouts, and bolt load meters.

The Bridge Construction Seniors will monitor and control the assignment of Office of Structure Construction equipment in their areas. Structure Representatives will send a copy of Shipping/Receiving Records to the Bridge Construction Senior, in addition to the normal copy sent to the Sacramento Office.

The above noted equipment will be monitored by Les Robison in the Sacramento Office of Structure Construction under a master record system.

The following non-expendable equipment has been transferred to the various Transportation Districts: Portable and standard typewriters, hand crank and electric adding machines, cameras, drafting machines, binoculars, air meters, flow cones and watches, walkie talkies (portable two-way radios), unit weight kits, and kelly balls.

The above noted District equipment will be monitored and maintained by the Districts.

Supplies and equipment furnished to field personnel are intended for use in the performance of State work. They are not to be requisitioned for or converted to personnel use, regardless of the nature of the equipment, expendable or non-expendable.

Every effort should be made to keep the total amount of equipment on the project to a minimum. Joint use by District and Structure personnel will help accomplish this.

Instructions for the use of State automobiles and mobile radios are contained elsewhere in this Section 13 of the Bridge Construction Records and Procedures.

Procurement & Shipment of Non-Expendable Equipment

Non-expendable supplies and equipment for use of Structure field personnel are to be requisitioned on a Transfer Request, Form DAS-FM-523.

Shipment of accountable equipment will be reported on a Shipping Record, Form FA-1126. The Shipping Record is also used to report shipment of equipment transferred among field personnel.

When equipment is received, prepare a Receiving Record, Form DAS-FM-1226A, to acknowledge receipt of the equipment or supplies.

Instructions for proper completion and distribution of the above mentioned forms are to be found elsewhere in this section of the Bridge Construction Records and Procedures.

Inventory

All accountable equipment issued to field personnel by the Office of Structure Construction will be inventoried and reported annually on a copy of the master record sent to the Structure Representatives.

The purpose of the annual inventory is to maintain an up-to-date record of the location and disposition of all non-expendable equipment issued by the Office of Structure Construction.

It is expected that office of Structure Construction personnel may make occasional inspections to inventory and review the condition of field equipment.

Maintenance of Equipment

Repairs to non-expendable equipment such as pressure cells and pressure cell readouts, torque wrenches and torque multipliers, bolt load meters, elcometers, and concrete test hammers would be made through the Sacramento Office of the Office of Structure Construction.

Repairs to non-expendable equipment such as transits, theodolites, dumpy and self-leveling levels, calculators currently used by Construction, typewriters, adding machines, cameras, drafting machines, binoculars, air meters, flow cones, watches, walkie talkies (portable two-way radios), unit weight kits, and kelly balls would be made through the local District Office.

A note should be placed on the Shipping Record to indicate that the equipment is damaged to prevent unintentional reissue of the item without repair. Describe damages fully, and include a list or description of any missing parts of components of kits or assemblies.

Loss of Theft of Non-Expendable Equipment

Loss or Theft of State Equipment

When it becomes apparent that State property which was issued by the Office of Structure Construction has been lost, or is otherwise unaccounted for, a Shipping Record should be sent to the Sacramento Office. Include a description of the article lost, the approximate date of loss and other circumstances and indicate that the article has been "Shipped to Lost ".

In all cases of robbery or vandalism involving State property or equipment the local law enforcement authorities must be notified immediately.

The losses are also to be reported by telephone to the Office of Structure Construction and to the area Senior Bridge Construction Engineer. This report should be made immediately after notifying local law officers. Be prepared to give a description of the loss or damage (including CHC Bridge and/or serial numbers), as well as the name of the law enforcement agency notified and the time of notification.

The telephone report is to be followed with a confirming letter giving the complete details.

To decrease the possibility of loss due to theft or vandalism, it is suggested that the following security measures be taken at all construction field offices:

> Before leaving at night, office equipment (typewriters, calculators, etc.) should be moved to a location where they are not readily visible from the outside.
>
> Outside lights at the front and rear entrances to the office should be left burning at night and over the weekend.

When equipment is to be transported or stored in vehicles, reasonable precautions must also be taken to discourage theft or vandalism.

Responsibility for Loss of State Equipment

When equipment is lost or stolen, Property Survey Reports are initiated in order to remove the equipment from the property accounts. If culpable negligence is determined, the value of the property so lost must be recovered through a billing procedure. The Department of Transportation Accounting Manual states:

> "If the survey report is subsequently disapproved due to negligence on the part of the employee having custody of the property (such as failure to lock a parked car

from which the article was stolen), the value of the property will be recovered from the employee."

Stolen Personal Property

Board of Control rule number 895, provides reimbursement for, or replacement of stolen personal property.

When tools, or equipment an employee is required to use in the performance of his assigned work is stolen, the employee's department may reimburse him for his loss, or provide him with an exact duplicate provided that:

a. The item is required in the employee's work.
b. The loss occurred at the work site, the work base, or enroute between the two locations.
c. The loss was not caused by carelessness or negligence on the part of the employee.

Employees required to use their personal tools or equipment as a condition of employment shall provide their employing unit with an inventory of all personal property used on the job.

Personal property stolen from a work site or base shall be reported immediately to the local law enforcement authorities having jurisdiction over the area in which the theft occurs.

The loss is also to be reported by telephone to the Office of Structure Construction and to the area Senior Bridge Construction Engineer. This report should be made immediately after notifying local law officers. Be prepared to give a description of the loss (including any serial numbers), as well as the name of the law enforcement agency notified, and the time of notification.

The telephone report is to be followed with a confirming letter giving the complete details. A copy of the report made by local law officers shall accompany the letter: the report is required to be forwarded with the claim for reimbursement.

The employee's department shall verify the value of the property by original sales records, current price lists or other appropriate methods.

Claims for replacement of stolen job-required personal property with replacement value of $500 and above require prior approval by the Board of Control.

The choice of reimbursement or replacement rests with the employee's department, but the employee's preference will be considered before a decision is made.

Transfer Request

The Transfer Request, Form DAS-FM-523, is used by field personnel to requisition supplies and equipment from the local District Office or to order certain non-expendable equipment from the Office of Structure Construction in Sacramento. Structure employees should conform with local District policy when receiving or shipping District supplies or equipment.

An example of a properly prepared transfer request for expendable supplies is shown on Attachment #l of this Bridge Construction Memo. Note that the circled numbers preceding the instructions in this memo refer to corresponding entries on the example.

1. Enter name of person, office or account to perform or to take action on the request.
2. Enter District code of issuing agency, i.e., “01” for District 01; etc., when ordering expendable supplies from the local District Office. Enter "59" when ordering equipment from the Office of Structure Construction.
3. Enter date of preparation.
4. Enter name of person or office to receive supplies, materials or equipment.
5. Structure Representatives sign all transfer requests initiated by Structure personnel.
6. Enter number and unit of items wanted.
7. Enter complete description of supplies or equipment requested.
8. Enter stock numbers.
9. Enter proper cost distribution codes. Show the object code for expendable supplies or hand tools (644). Do not show an object code for major equipment.
10. Person filling the request will fill out the shipping information.

Acknowledge receipt on copy or copies accompanying the supplies or equipment.

Leave price or amount column blank.

Distribution
Prepare an original and five copies.

Submit original and four copies to the District Office or Office of Structure Construction. Retain one copy for the job files. Two copies will be returned with the filled order. Acknowledge receipt on one of the copies and return without delay.

TRANSFER REQUEST
FOR MATERIALS AND SUPPLIES
DEPARTMENT OF TRANSPORTATION
DISTRICT 01
DATE 07-02-79
TO DISTRICT 01 STOCKROOM
(ADDRESS)
FROM M. L. TRUFFELLOW
(ADDRESS)
ORDERED BY M.L.Truffellow
APPROVED BY
SOURCE
CHARGE
SPECIAL DETERMINATION
OBJECT
AMOUNT
13030 100 Ea Form MC16-4, A.S. Daily Report 59 51 17 01 15 02 07 75 03 6 4 4
12211 25 Ea MC-3, Contract Change Order
12700.34 100 Ea MC-34, MMR
11025 10 Ea Form FM523, Transfer Req.
16827 1 Ea Pencils - H (drawing)
10457 1 Roll Tape - Scotch 810
14175 12 Ea Paint - CPS Orange (Dry.)
SHIPPED
RECEIVED
1
2
3
4
5
6
7
8
9
10
11
12

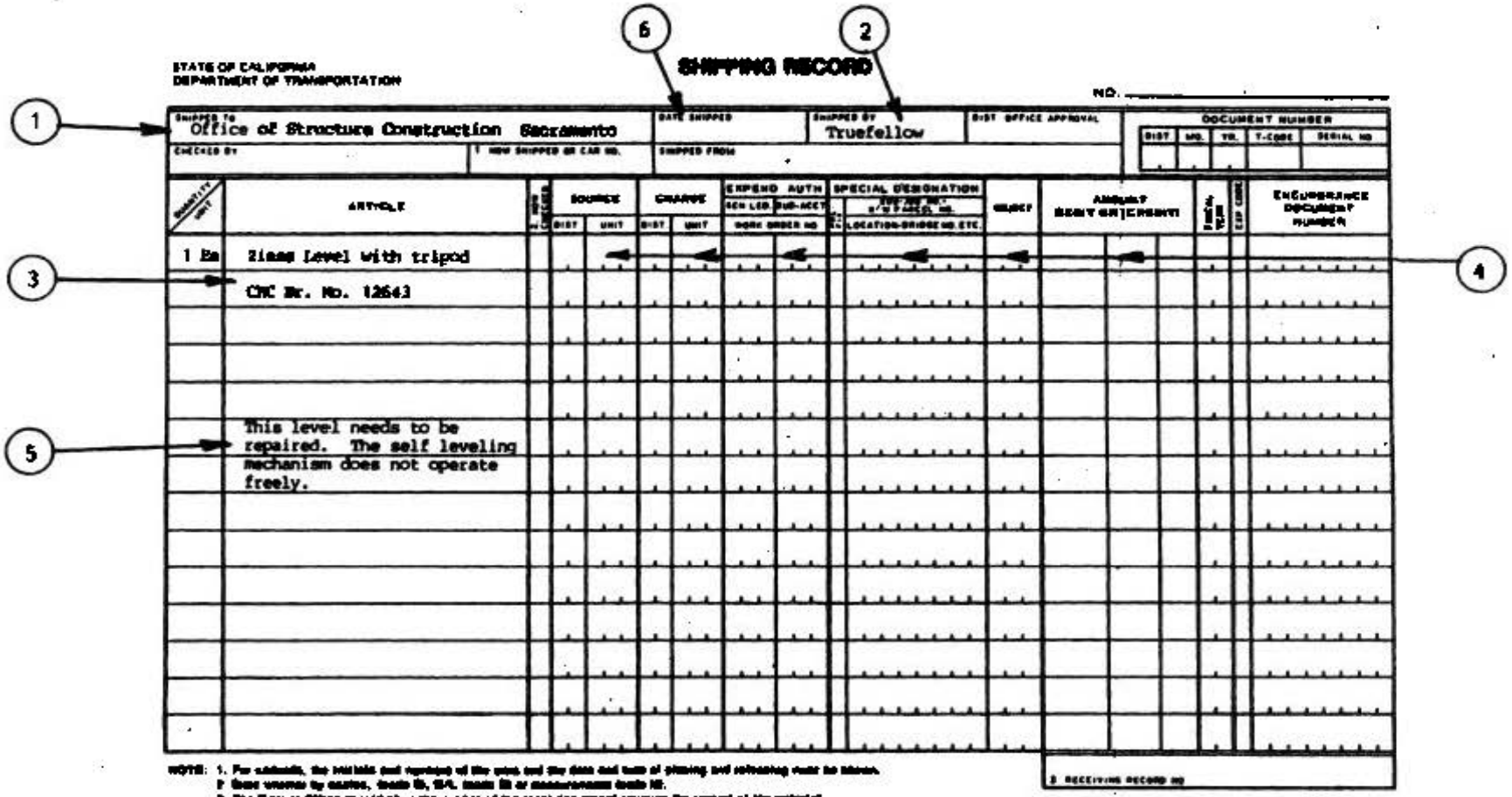
Shipping Record

Field personnel will use Form FA-1126, *Shipping Record*, to report shipment of accountable equipment. This form may also be used for lateral transfer of equipment between Office of Structure Construction employees. An example of a properly prepared Shipping Record is shown on Attachment No. 1 of this Bridge Construction Memo. Note that the circled numbers preceding the instructions in this section refer to corresponding entries on the example.

1. Enter accountable person (or office) to whom items are transferred.
2. Enter name of Structure Representative.
3. Enter complete description of equipment transferred. Show CHC numbers, serial numbers, etc.
4. Do not enter any cost distribution codes.
5. Indicate any damage, losses, missing parts, etc.
6. Enter date.

Distribution

Prepare an original and three copies. Send original to Sacramento, one copy to the recipient of items shipped, one copy to the Bridge Construction Engineer, and retain one copy for the job files. If item is shipped to the Sacramento Office, omit the copy sent to the recipient.



NOTE: 1. For estimate, the materials and services of the crew and the date and time of shipping and returning must be shown.
2. Goods received by carrier, Goods In, G.F., Goods In or disbursement Goods In.
3. The District Office should show the number of the receiving record showing the receipt of the material.
If the goods are not in good condition, mention should be made in regard to their condition.
Shipping clerk's mark is made on them as the goods are shipped and mailed at once to the District Office.
If the material does not always handle and record in route simply to cover charge in distribution, both the charge and credit only at choice fabrics, the charge being put on one line with "Dr." opposite it and the credit on the following line with "Cr." opposite it.

FR 1169 (3-76)

Receiving Record

Receiving Records, Form DAS-FM-1226A, are used to acknowledge receipt of supplies, equipment and services obtained from commercial sources. An example of a Receiving Record prepared for this purpose is shown on Attachment #1 of this Bridge Construction Memo.

Receiving Records are also used to acknowledge receipt of equipment obtained from storage or by transfer from another Structure employee. An example of this use is shown on Attachment #1 of this Bridge Construction Memo.

Note that the circled numbers preceding the instructions in this section refer to corresponding entries on the example.

1. Enter the vendor's name exactly as shown on the purchase order, service contract or invoice.
2. Enter name of person who made actual count and inspection of items received.
3. Enter name (not just initials) of Structure Representative.
4. Enter name of person preparing the receiving record.
5. Enter date receiving record is prepared.
6. Enter date supplies, equipment or services were received.
7. Leave blank. These spaces will be completed in headquarters.
8. Enter location at which delivery was made.
9. Enter name of carrier or method of shipment.
10. Indicate how the shipment was checked.
11. Check applicable box and give explanation if necessary.
12. Enter number of service contract of purchase order, if applicable, covering the transaction.
13. Entries are made in this section only when there is apparent loss, damage or theft or when a copy of the freight bill on freight collect shipments is not available for attaching to receiving record.
14. Fully describe articles or services received, but do not show items as received if they are back ordered. The equipment description must be complete enough to enable the Accounting Office to properly classify and code the transaction. An explanation (in the

body of the form) of the need of unusual articles or services will forestall questions regarding the propriety of the purchase. Attach delivery slips or show invoice number.

15. Enter the proper cost distribution codes.

16. Enter the amount chargeable to each object. If the amount cannot be readily determined because of possible discounts, etc., leave the amount column blank. It will be taken care of by accounting personnel in headquarters.

17. For lateral transfer, enter name of office or Structure Representative from whom equipment is received.

18. Indicate who checked or received the equipment.

19. Enter name of Structure Representative.

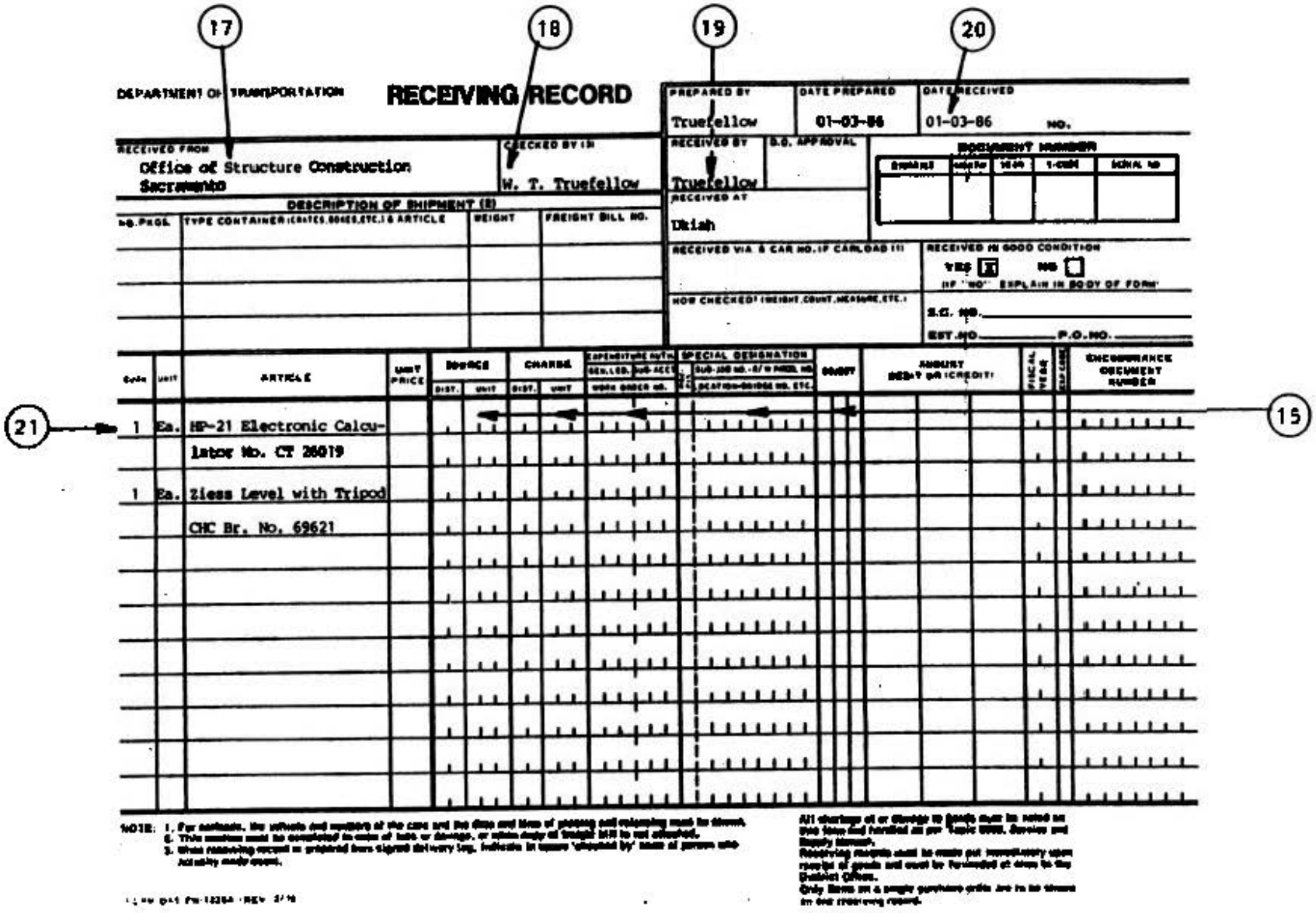
20. Enter date received.

21. Describe equipment received. Give CHC and/or serial number of equipment.

Distribution

When used to acknowledge receipt of non-expendable equipment obtained from the Office of Structure Construction or of lateral transfer from other Structure personnel, prepare an original and three copies. Send the original to the Sacramento Office of Structure Construction. Send one copy to the person from whom the equipment was received, one copy to Bridge Construction Engineer, and retain one copy for the job files. If the equipment was supplied by the Sacramento Office of Structure Construction, omit the copy for the person from whom the equipment was received.

DEPARTMENT OF TRANSPORTATION
RECEIVING RECORD
RECEIVED FROM
DEUEL HARDWARE
CHECKED BY (3)
N. T. Trueblood
PREPARED BY
T. Jones
DATE PREPARED
01-03-86
DATE RECEIVED
01-03-86
RECEIVED BY
Truefellow
P.O. APPROVAL
RECEIVED AT
Duluth
DOCUMENT NUMBER
DISTRICT
MONTH
YEAR
T-CODE
SERIAL NO.
DESCRIPTION OF SHIPMENT (2)
NO. PKGS.
TYPE CONTAINER(CRATES, BOXES, ETC.) & ARTICLE
WEIGHT
FREIGHT BILL NO.
RECEIVED VIA, & CAR NO. IF CARLOAD (11)
Bobs Pickup
RECEIVED IN GOOD CONDITION
YES X NO
(IF "NO", EXPLAIN IN BODY OF FORM)
HOW CHECKED (WEIGHT, COUNT, MEASURE, ETC.)
Weight, measure & count
S.C. NO.
EFF. NO.
P.O. NO.
QUAN. UNIT
ARTICLE
UNIT PRICE
SOURCE
EXTENSIONS
CHARGE
SPECIAL DESIGNATIONS
REQUIRED QUANTITY ORDERED
BACK ORDER
DISCREPANCY DOCUMENT NUMBER
1 Ea. Claw hammer 7.00 5,9 5,1 1,7 0,1 5,0 1,2 0,7 7,5 0 3 6 4 4 24 14
2 lb. 8d Nails @ 1.00 2.00
1 Sht 3/4" Interior Plywood 14.00
23.00
1.38
6% Tax
24.38
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



DEPARTMENT OF TRANSPORTATION

RECEIVING RECORD

PREPARED BY	DATE PREPARED	DATE RECEIVED
Truefellow	01-03-86	01-03-86 NO.

RECEIVED FROM: Office of Structure Construction, Sacramento

CHECKED BY (1): W. T. Truefellow

RECEIVED BY: Truefellow

S.O. APPROVAL:

RECEIVED AT: Ukiah

DOCUMENT NUMBER: DISTRICT | COUNTY | YEAR | T-CODE | SERIAL NO

RECEIVED VIA & CAR NO. IF CARLOAD (1):

RECEIVED IN GOOD CONDITION: YES [X] NO [ ] IF "NO" EXPLAIN IN BODY OF FORM

HOW CHECKED? (WEIGHT, COUNT, MEASURE, ETC.):

S.C. NO.

EST. NO. P.O. NO.

DESCRIPTION OF SHIPMENT (2)

NO. PKGS.	TYPE CONTAINER (CRATES, BOXES, ETC.) & ARTICLE	WEIGHT	FREIGHT BILL NO.

CODE	UNIT	ARTICLE	UNIT PRICE	SOURCE DIST.	SOURCE UNIT	CHARGE DIST.	CHARGE UNIT	EXPENDITURE ACCT. GEN. LED.	EXPENDITURE ACCT. SUB-ACCT.	EXPENDITURE ACCT. WORK ORDER NO.	SPECIAL DESIGNATION SUB-JOB NO. - C/O PANEL NO.	SPECIAL DESIGNATION LOCATION-BRIDGE NO. ETC.	AUDIT	AMOUNT DEBIT OR (CREDIT)	FISCAL YEAR	ENCUMBRANCE DOCUMENT NUMBER
1	Ea.	HP-21 Electronic Calcu-														
		lator No. CT 26019														
1	Ea.	Ziess Level with Tripod														
		CHC Br. No. 69621														

NOTE: 1. For contents, the subunits and numbers of the cans and the date and time of opening and returning must be shown.
2. This section must be completed in case of loss or damage, or when claim of freight bill is not attached.
3. When receiving record is prepared from signed delivery leg, indicate in space "checked by" name of person who actually made count.

All shortage of or damage to goods must be noted on the form and handled as per Topic 0000, Service and Supply Manual.
Receiving reports must be made out immediately upon receipt of goods and must be forwarded at once to the District Office.
Only items on a proper purchase order are to be shown on our receiving report.

(17) (18) (19) (20) (21) (15)

State Automobiles

General Information

All State automobiles used on construction projects are under the control of the District.

Bridge Construction Engineers will determine the automotive equipment needs of Structure Construction personnel assigned to construction projects in their area, and make arrangements with the appropriate District personnel to obtain the needed automotive equipment.

Structure Representatives must make certain that all field personnel assigned to their projects are thoroughly familiar with the rules governing the proper use of State motor vehicles. Disciplinary action will be taken in cases of misuse of State-owned automobiles. Employees are also liable to the State for any loss due to misuse of State-owned vehicles.

Instructions for reporting of accidents to State cars and equipment are found in Section 14 of the Bridge Construction Records and Procedures Manual.

Official Use of State Cars

State Board of Control Rules limit the use of State cars to official use only.

Because it is difficult, if not impossible, to precisely and conclusively define "official business" the Office of Structure Construction must rely heavily on the good judgment and integrity of its employees. For instance, the use of State cars within the job limits during working hours is a clear-cut example of official use. However, the operation of State cars before and/or after working hours, or away from places directly or indirectly related to the job may under some circumstances be construed as private or personal use.

Employees will be permitted to drive a State vehicle from a jobsite to their dwelling under authority of an approved Home Storage Permit. (See Policy and Procedure Memo P79-14 for additional information.)

It is recognized that employees assigned to construction projects, who are away from their place of residence and away from their means of private transportation, whether during or after working hours, need to obtain meals and occasionally other necessary items of personal use. The Office of Structure Construction sanctions the reasonable use of State cars to obtain personal necessities where State cars are the employee's sole means of transportation. Use of State cars for reasons other than to obtain personal necessities (as they may occur while the employee is dependent on a State car) is not permitted.

Structure employees are reminded that the use of State cars is subject to public scrutiny and that allegations of misuse will occasionally be made. Therefore, if at all possible, a State car should not be operated when there is appearance of misuse, even though the employee is able to show that his use of the car is legitimate.

The State Board of Control has amended its definition of Rule No. 842, "Misuse of a State-owned vehicle" to include "Carrying in the vehicle any persons other than those directly involved with official State business, except with approval of the employee's immediate supervisor for each trip."

Prior approval will be necessary to carry anyone in a State vehicle who is not directly connected in an official capacity with the trip. No hitchhikers are to be carried at any time.

State cars must be locked at all times when parked and left unattended.

Insurance

The State provides its own public liability and property damage insurance to protect its employees while they are operating State motor vehicles. However, the insurance is valid only when the State motor vehicle is being operated on official business and the coverage is limited to the minimum amount required by the Financial Responsibility Law.

In addition to providing the employee with public liability and property damage insurance, the State is required, by statute, to defend the employee against civil action arising out of an act or omission in the scope of his employment, unless the employee acted with actual fraud, corruption or malice.

Under certain circumstances, determining whether a particular use of a State car is in fact official business will involve interpretation of policy with respect to the use of State vehicles. Since the State may be more restrictive in its interpretation than the Office of Structure Construction, field personnel are urged to add "other car" riders to the insurance which they carry on their personal automobiles.

To be fully covered, employees should make sure that an "other car" rider on their private automobile policy is NOT of the type which excludes regular or frequent use of non-owned automobiles.

Servicing State Vehicles

Office of Structure Construction personnel are responsible for proper servicing of the cars assigned to them in accordance with instructions furnished with the particular type and model of car, and in accordance with District instructions.

Fuel, oil, grease, antifreeze, and other materials or parts shall be obtained in accordance with instructions issued by the District furnishing the vehicle.

Storage of State Motor Vehicles

Office of Structure Construction personnel should comply with the appropriate District policy in regard to providing adequate overnight storage for vehicles which they are authorized to take home overnight or on weekends.

Motor Vehicle Reports

Motor vehicle travel log and other required reports are to be completed and submitted in accordance with the requirements of the District which controls the particular piece of automotive equipment.

Commercial Automobile Rentals

Office of Structure Construction personnel who find it necessary to rent a commercial automobile should comply with instructions given in the Caltrans Employee Travel Guide.

Use of Private Automobiles on State Business

Under present Department of Transportation's policy, transportation will be furnished to any employee who has occasion to travel on official business. Structure Construction employees are expected to use State-furnished transportation in most travel situations, however, exceptions may be granted in those situations where the use of a privately-owned automobile would be advantageous to the State, or when a State car cannot be made available economically.

Refer to the Caltrans Employee Travel Guide for detailed information concerning the use of private vehicles on State business.

DEPARTMENT OF TRANSPORTATION

AUTHORIZATION TO USE PRIVATELY-OWNED VEHICLES ON STATE BUSINESS

FA 205 (REV. 12/87)

NOTE: Instructions on Back of Form

Effective (Max 1 yr.) for Calendar year 19 88

NAME (print) Last	First	Initial	S.S. NUMBER	B.U. NUMBER	OR	CIRCLE ONE			
Trustworthy	Wellington	T.	123-45-6789	9		E	M	S	C

IN ACCORDANCE WITH STATE POLICY (S.A.M. 0754), APPROVAL IS REQUESTED TO USE MY PRIVATELY OWNED VEHICLE(S) TO CONDUCT OFFICIAL STATE BUSINESS:

MAKE	YEAR	MODEL	LICENSE NUMBER	MILEAGE RATE' SUBSTANTIATED
Ford	87	Escort	1ABC234	21¢
Olds	85	Cutlass	1XYZ789	21¢

[1]ATTACH PRIVATELY-OWNED VEHICLE OPERATING COST WORKSHEET

I HEREBY CERTIFY that whenever I drive a privately-owned vehicle on State business I will have a valid driver' s license in my possession all persons in the vehicle will wear safety belts and the vehicle shall always be:

1. Covered by liability insurance for the minimum amount prescribed by state law: $15,000 for Personal injury to or death of one person; $30,000 for injury to or death of two or more persons in one accident $5000 property damage. Employees must be able to show evidence of auto liability insurance coverage currently in force. (State Financial Responsibility Act, Chapter 1322, 1985.) ☒ YES ☐ NO
2. Adequate for the work to be performed ☒ YES ☐ NO
3. Equipped with seat belts ☒ YES ☐ NO
4. To the best of my knowledge, in safe mechanical condition, as required by law. ☒ YES ☐ NO

NOTE: COLLISION INSURANCE IS NOT REQUIRED, BUT THE STATE CANNOT REIMBURSE AN EMPLOYEE FOR DAMAGE SUSTAINED TO THEIR PRIVATE VEHICLE WHILE IN USE ON STATE BUSINESS IF THE EMPLOYEE CHOOSES NOT TO MAINTAIN COLLISION INSURANCE UNDER THE PROVISIONS OF DPA RULE 599.630.

I agree that while using my privately-owned vehicles on official State business, all accidents will be reported on State Form 270 within 48 hours (SAM 2547). I understand that permission to drive a privately-owned vehicle on State business is a privilege which may be suspended or revoked at any time.

EMPLOYEE RESIDENCE ADDRESS	One way mileage residence to office	Job Site
12345 Riverside Blvd, Sacramento, CA 95831		205

SIGNATURE-EMPLOYEE	WORK TELEPHONE NUMBER	DATE
W. T. Trustworthy	(213) 456-7891	9/1/88

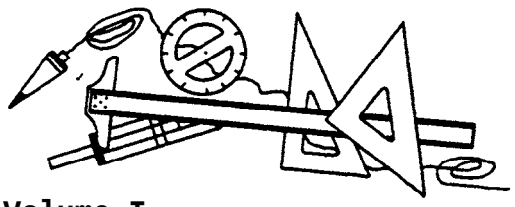
II. APPROVAL

USE OF A PRIVATELY-OWNED VEHICLE TO CONDUCT OFFICIAL STATE BUSINESS IS APPROVED. IN ACCORDANCE WITH S.A.M. SECTION 0754.

SIGNATURE-CURRENT SUPERVISOR	PRINT NAME	DATE	PHONE NO.
J. Truefellow	J. Truefellow	9/1/88	5-7124

Prepare In Triplicate:

White - Accounting Office Yellow - Supervisor Pink - Employee



Volume I

MOBILE RADIOS

General

Mobile radios are installed in vehicles for the efficient operation of field personnel, Units are subject to strict Federal Communications Commission (FCC) regulations and are for the conduct of official business only.

Instructions for proper use of State-owned radios are set forth in Department of Transportation RADIO OPERATORS MANUAL, and are to be strictly followed. Failure to adhere to these instructions could result in a fine or loss of license to operate the radio system.

All mobile radios are under the control of the Districts. Bridge Construction Engineers will determine the radio needs of Bridge Construction personnel assigned to construction projects in their area, and will make arrangements with appropriate District personnel to obtain the needed radios.

For State-owned mobile radios, the FCC no longer requires that the radios be checked on an annual basis. Therefore, effective immediately, a check will be made when the radio is installed in the vehicle, and subsequent checks will be made only on an "as-needed" basis.

Office Of Structure Construction Radio Call Numbers

Each Bridge Construction Engineer will assign radio call numbers to the men in his area having radios, in accordance with the policy of his Supervising Bridge Engineer.

The Bridge Construction Engineer will be responsible for seeing that all new assignments andchanges in assignments of radio call numbers are reported to the Sacramento Office by letter. In addition, changes and assignments should be reported to the local District Communications Center.

TABLE OF CONTENTS

JEFF ABERCROMBIE
Deputy Division Chief (Acting)
Structure Construction
Division of Engineering Services

**Denotes the document is a Bridge Construction Bulletin*

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Safe Work Practices

California Department of Transportation (Caltrans) policy is to emphasize the importance of employee safety and Caltrans' obligation to protect the traveling public from unnecessary risk. Caltrans' practice is to be proactive in dealing with safety issues, establish responsibility, and enforce accountability for safety.

Federal and State Laws have established occupational safety and health standards to which all employers must comply. State law contained in Division 5 of the Labor Code and Title 8 of the California Code of Regulations (CCR), as defined in General Industry Safety Orders (GISO), Section 3203 requires every employer to have an effective *Injury and Illness Prevention Program* (*IIPP*) in writing, which includes procedures, and is put into practice. The *IIPP* includes procedures for:

- Evaluation of workplace hazards and performance of periodic inspections.
- Correction of unsafe or unhealthy conditions in a timely manner.
- Safety training and periodic safety meetings.
- Injury and illness investigation.
- Enforcement procedures for violations of safety regulations.
- Appropriate record keeping and documentation.

Because Caltrans is made up of a varied and complex workforce, the *Caltrans IIPP* is not available in a single source document. For the purposes of Structure Construction, the *Caltrans IIPP* consists of the following:

- *Caltrans Safety and Health Manual.*
- *Construction Code of Safe Practices (COSP).*
- *Caltrans Director's Policy DP-03-R1.*

These publications provide more detailed information on the employee's role in the *Caltrans IIPP*. References made in this Bridge Construction Memo (BCM) to the *Caltrans IIPP* should be considered references to the above mentioned publications. BCM 14 is intended to provide instructions specific to Structure Construction employees.

Contractor's Employee Safety

The Resident Engineer is responsible for the administration of the project and ensures that the Contractor complies with all applicable safety laws and regulations. Frequently, the Resident Engineer may delegate portions of this responsibility to the Structure Representative. As outlined in the *Construction Manual*, Section 2-102F, *Project Staff*, Structure Construction (SC) employees are to support the districts with the monitoring of all safety concerns, not merely those related to structure work. Safety on Caltrans projects is a team effort; all employees

contribute in the support of accident free projects. Therefore, all SC employees should be familiar with the applicable *Cal/OSHA Construction Safety Orders*, *Caltrans Safety and Health Manual*, *the Construction COSP,* including any supplemental information from the *SC Code of Safe Practices*, and the *Caltrans Construction Manual*.

State Employee Safety

Caltrans provides a safe and healthy workplace that protects its employees. All employees have a professional obligation to protect themselves and their co-workers. Employees are encouraged to report unsafe conditions so that they can be corrected before an accident occurs.

SC employees will actively participate in the *Caltrans IIPP* by:

- Performing work safely.
- Following all safety rules, practices and policies.
- Reporting any recognized safety hazards and ensuring they are corrected.
- Suggesting improvements in policies or procedures that enhance employee safety, the safety of the traveling public, and highway workers.

Code of Safe Practices

The *Cal/OSHA Construction Safety Orders* require that Caltrans adopt and use a *Code of Safe Practices* and that the code be posted in a conspicuous location at each construction field office. Structure Construction has developed a standard *Code of Safe Practices* for construction projects. The *SC Code of Safe Practices* is a living document and the most current version is available on the SC webpage under the Safety tab[1].

The Structure Representative and Resident Engineer are responsible for adding project-specific safe practices to the generic code of safe practices for each project being administered by the construction field office. The Structure Representative and the Resident Engineer must work together to form a complete *Code of Safe Practices* for the project that incorporates both the structures work and roadway work. A sign-in sheet in the front of the *Code of Safe Practices* will be maintained for all who read it. All SC employees are to read and sign the *Code of Safe Practices* for all projects that they are assigned to.

Cal/OSHA Inspections

Cal/OSHA representatives will periodically inspect the jobsites for compliance with safety laws and regulations. They will also investigate industrial accidents and inspect the jobsite whenever an accident occurs.

The *Caltrans Construction Manual*, Section 2-104D, *Procedures During Division of Occupational Health and Safety Inspections*, has specific procedures on what takes place during a Cal/OSHA inspection. Whenever a Cal/OSHA representative visits the jobsite or field office for any reason, SC employees will immediately notify the Resident Engineer and the Bridge Construction Engineer. The SC employees must fully cooperate with the Cal/OSHA representative. The SC employees will identify themselves as representatives of Caltrans, the owner. Cal/OSHA can now issue citations to both the Contractor and Caltrans, which is why it is important that the Resident Engineer be aware of the visit. All SC employees should be aware of their District's procedures and the procedures outlined in the *Caltrans Construction Manual*,

[1] http://onramp.dot.ca.gov/hq/oscnet/

Section 2-104D, *Procedures During Division of Occupational Health and Safety Inspections*, when Cal/OSHA visits jobsites or field offices.

Cal/OSHA representatives may also inspect construction field offices to ensure the *Code of Safe Practices* is posted, there is a copy of the *IIPP* (*Caltrans Safety and Health Manual, Construction Code of Safe Practices (COSP), Caltrans Director's Policy DP-03-R1)* required by the *General Industry Safety Orders*, and that the supervisor is in substantial compliance with its requirements. First-line supervisors are responsible for keeping the records required by the *IIPP* for their employees. Any SC employee who is approached by Cal/OSHA representatives in this regard should refer the Cal/OSHA representative to their first-line supervisor.

Tailgate Safety Meetings

Caltrans' policy is that all first-line supervisors schedule and conduct safety meetings with their employees to discuss occupational health and safety issues. First-line supervisors in construction must conduct tailgate safety meetings with their *employees at least every 10 working days.* These tailgate safety meetings are mandatory for all employees and are required per the *Cal/OSHA Construction Safety Orders Section 1509*[1].

For Structure Construction (SC) employees, the first-line supervisor responsible for scheduling and presiding over tailgate safety meetings is the Bridge Construction Engineer (BCE). For occasions when SC employees are unable to attend the scheduled tailgate safety meeting, the BCE should briefly review points of immediate interest with those employees.

The BCE has several options for ensuring the attendance of their SC employees:

1. In a large office setting, where the BCE and staff share office space, the BCE can schedule and preside over tailgate safety meetings.
2. In remote areas, the BCE can delegate scheduling and conducting tailgate safety meetings to the Structure Representative.
3. If SC employees are working different shifts, the BCE may elect to schedule separate safety meetings for each work shift.
4. On projects with roadway and structure work, consideration should be given to scheduling tailgate safety meetings with the combined staff to ensure all personnel are aware of the safety issues.

Topics to be discussed at tailgate safety meetings should be pertinent to the type of work being performed in the field. The project specific *Code of Safe Practices* can be used as a guideline for discussion of safety topics. If the *Code of Safe Practices* for a particular project is amended with new field activities, discuss the safety hazards associated with those activities.

All BCEs are encouraged to take every opportunity to exchange ideas on safety and accident prevention with their employees, to inform them of Caltrans policies and procedures with regard to safety, to commend them for their efforts in performing their job safely, and to invite them to submit safety suggestions. The SC employees are encouraged to participate in the discussion during the tailgate safety meetings and are to comply with the direction of their BCE with regard to Caltrans policies and procedures on safety.

Tailgate safety meetings must be documented using form PM-S-0110, *Safety Meeting Report*. For SC employees, the BCE is responsible for documenting tailgate safety meetings. Employees should print their name and sign or initial next to their printed name.

[1] http://www.dir.ca.gov/Title8/1509.html

In the event the BCE does not preside over the tailgate safety meeting, form PM-S-0110 must be sent by the Structure Representative attending or presiding over the tailgate safety meeting to the BCE for review, signature, posting, and distribution. If SC employees attend District tailgate safety meetings, a copy of Form PM-S-0110 must be acquired and sent by the Structure Representative to the BCE for review, signature, posting, and distribution. Distribution of Form PM-S-0110 is specified on the form. As the first-line supervisor, the BCE must also retain a copy of each Safety Meeting Report for three years.

As first-line supervisors, BCEs are also responsible for follow-up and correction of any unsafe conditions or acts noted on the Safety Meeting Report.

For further information on safety meetings, refer to *Caltrans Safety Manual*, Chapter 2, *Safety Meetings*[2].

[2] http://www.dot.ca.gov/hq/opo/safety/safetymanual_toc.htm

Investigating and Reporting Accidents in Construction Zones

Investigating and documenting occupational injuries and illnesses is a mandatory requirement of the *Caltrans Injury and Illness Prevention Program (IIPP)*[1] and the California Occupational Safety and Health Administration (Cal/OSHA) regulations.

It is the Resident Engineer's responsibility to investigate an accident involving the traveling public or Contractor's employees. The Structure Representative might be called upon to assist in the investigation. The *Caltrans Construction Manual*[2], Chapter 2, Section 2-1, *Safety*, and Section 2-3, *Major Construction Incidents*, provides background information if this situation occurs.

The *Caltrans Safety and Health Manual*[3], Chapter 4, *Accident Investigation and Analysis*, contains specific instructions for investigating and reporting accidents and includes investigation reports. Chapter 19, *Special Reporting of Serious Injury, illness, or Fatality*, of the *Caltrans Safety and Health Manual* includes additional information for special reporting of serious injuries.

For Structure Construction (SC) employees, the supervisor will investigate, analyze, and document every:

- Vehicle accident.
- Occupational injury and/or illness.
- Near miss occurrences in the construction zone.

The investigation should be conducted in a timely manner to identify contributing factors that will prevent further incidents. When possible, the investigation should be initiated within 24 hours and completed within 72 hours of the accident.

If an accident results in personal injury with lost time or involves a structure construction operation (such as falsework or guying) that could have resulted in personal injury, complete Form No. SC-0601, *Accident Report: On-the-Job Bridge Construction Related Accident*[4] as soon as possible. Submit the form as outlined below, and call SC Headquarters to report the incident at (916) 227-7777.

[1] Includes the *Caltrans Safety and Health Manual, Construction Code of Safe Practices (COSP), Caltrans Director's Policy DP-03-R1*.
[2] http://www.dot.ca.gov/hq/construc/constmanual/.
[3] http://www.dot.ca.gov/hq/opo/safety/safetymanual_toc.htm
[4] http://onramp.dot.ca.gov/hq/oscnet/sc_manuals/crp/vol_1/crp016.htm.

Send the original report (form SC-0601) to the DES Safety Officer.

Caltrans
Attn: DES Safety Officer
DES MS 9-5/5J
1801 30th Street
Sacramento, CA 95816

A copy of the investigation and incident report should be faxed to the SC Safety Liaison at (916) 227-8179 or emailed to SC Administration (sc.administration@dot.ca.gov) Attn: SC Safety Liaison and the original mailed to:

Caltrans
DES/SC MS 9-2/11H
Attn: SC Safety Liaison
1801 30th Street
Sacramento, CA 95816

Copies of the incident report should be sent to the second-line supervisor and the District Safety Officer for further review. The first-line supervisor should also keep a copy as part of the accident/incident records.

Vehicle Accidents Involving State Personnel

The State policy for employee vehicle accidents is applied uniformly and can be viewed on the Health and Safety Intranet site, which includes links to accident reporting forms and step-by-step instructions for filling each of the required forms. The vehicle accident reporting procedure is available at:
http://hs.onramp.dot.ca.gov/motor-vehicle-accident-reporting .

Additional reference information can be found in Chapter 18, *Motor Vehicle Accidents*, of the *Caltrans Safety and Health Manual*[1].

For further information, the Structure Construction (SC) accidents and injuries presentation is available at:
http://dschq.dot.ca.gov/OSCHQDownloads/misc/reporting_accidents_and_injuries_presentation.pdf.

As an SC employee, you are responsible to the District you work in and the Division of Engineering Services (DES), District 59. Accident reports should be sent in accordance with District policy and to the DES Safety Officer[2], with copies to the SC Safety Liaison[3] as identified in the footnoted webpages for each.

[1] http://hs.onramp.dot.ca.gov/safety-manual-online.
[2] http://des.onramp.dot.ca.gov/functional-duties-listing
[3] http://onramp.dot.ca.gov/hq/oscnet/sc_people/hq_people.htm

Tunnel Safety

The *Tunnel Safety Orders*, Sections 8400 through 8568, of the *Cal/OSHA Construction Safety Orders*, establish minimum safety standards for tunnels, shafts, and underground chambers during excavation, construction, alteration, repairing, renovating, or demolishing. The full regulations are available at: http://www.dir.ca.gov/Title8/sub20.html.

NOTE: Excavating under bridges constructed at grade (waste slab) and constructing CIDH Pile Shafts (30″ or larger outside diameter, and over 20 feet in depth) are tunneling operations.

***Injury Illness and Prevention Plan* (*IIPP*)**
Every employer, during tunneling operations, must establish, implement, and maintain an effective *IIPP* in accordance with *Cal/OSHA General Industry Safety Orders* Section 3203 and *Tunnel Safety Orders*, Section 8406. The employer must adopt, post, and use a *Code of Safe Practices* for underground operations. *Structure Construction Code of Safe Practices for Tunneling* is available at http://onramp.dot.ca.gov/hq/oscnet/ under the *Safety* tab.

The *Cal/OSHA, Tunnel Safety Orders*, Section 8406 requires the Contractor to designate an on-site Tunnel Safety Representative, who is qualified to recognize hazardous conditions and is certified by the Division of Mining and Tunneling. The Tunnel Safety Representative is responsible for directing the *IIPP*, and must have the authority to correct unsafe conditions and practices, or stop the work if an imminent hazard exists. Section 8406(l) also requires the Tunnel Safety Representative to have a minimum of two years experience working in tunnels and must pass a written test administered by the Mining and Tunneling Unit.

Tunnel Classification
Before Caltrans sends a tunnel project to bid, they must contact Cal/OSHA's Division of Mining and Tunneling Unit. Cal/OSHA must review and classify all tunnels for the potential presence of flammable gas and vapors. Tunnels will be classified as: non-gassy, potential gassy, gassy, and extra hazardous. The underground classification shall be in place in all cases prior to actual underground construction.

Cal/OSHA Inspections
CAL/OSHA, Division of Mining and Tunneling representatives are required to inspect all tunnel jobsites bi-monthly for compliance with safety laws and regulations. They will also investigate industrial accidents and inspect tunnel jobsites if accidents occur. For responsibilities during Cal/OSHA inspections refer to *Bridge Construction Records and Procedures Manual*, BCM 14-1.0, *Safe Work Practices*.

Impalement Protection

Employee exposure to impalement is always a concern when there is a potential to fall into or onto reinforcing steel or other projections. The requirements for impalement protection are described in *Cal/OSHA Construction Safety Orders* Section 1712.

All personnel working at grade must be protected against the hazard of impalement by guarding all exposed ends that extend up to 6 feet above grade or other work surfaces, with protective covers or troughs on the exposed ends of reinforcing steel or other similar projections that are less than 6 feet above grade or other work surfaces.

NOTE: Lost deck grading dowels require protective covers.

Protect personnel working above reinforcing steel or other projections by using guardrails, approved fall protection systems, or protective covers.

The Contractor must place protective covers to prevent impalement. Protective covers may be square or circular. Square covers must have a minimum area of 4-inches by 4-inches. Circular covers must have a minimum diameter of 4.5 inches. Protective covers can be job-built or commercially manufactured. Manufactured protective covers must be approved by a Nationally Recognized Testing Laboratory, as outlined in the *Cal/OSHA Construction Safety Orders* Section 1505, and be legibly marked with the manufacturer's name or logo. Manufactured protective covers made on or after October 1, 2000 must meet the testing criteria of *Cal/OSHA Construction Safety Orders* Section 344.90.

Cal/OSHA Construction Safety Orders Section 1712, *Reinforcing Steel and Other Similar Projections*, requires job-built protective covers to be designed by an engineer currently registered in the State of California. Exception: Job-built troughs, as depicted in Appendix Plate C-25,[1] may be used as a substitute for engineered or manufactured protective covers when employees are working at heights not greater than 6 feet above grade or other working surfaces.

NOTE: "Hooking" (180 degree bending) is not an acceptable alternative to providing protective covers.

The Structure Construction (SC) Code of Safe Practices[2] identifies several situations where impalement is a hazard and is available at the SC webpage under the Safety tab.

[1] http://www.dir.ca.gov/Images/t8img/1938-48.gif
[2] http://onramp.dot.ca.gov/hq/oscnet/

Both manufactured and engineered job-built protective covers meeting the approval requirements *of Cal/OSHA Construction Safety Orders* Section 1505, are acceptable for fall exposure heights up to 7.5 feet. Cal/OSHA designed protective covers, as detailed in *Cal/OSHA Construction Safety Orders* Appendix C, Plate C-25, can be used without an engineer's approval or *Cal/OSHA Construction Safety Orders* testing requirements, but are only sufficient for exposure heights up to 6 feet.

All sections of the *Cal/OSHA Construction Safety Orders* (Section 344.90, 1505, 1712, and Appendix C, Plate C-25) are available on the Cal/OSHA webpage[3].

The *Cal/OSHA, Construction Safety Orders* pertaining to impalement protection are also summarized in the *CAL/OSHA Pocket Guide for the Construction Industry*[4].

[3] http://www.dir.ca.gov/Samples/search/query.htm
[4] http://onramp.dot.ca.gov/hq/oscnet/ Select the Safety tab.

Respirators

Structure Construction (SC) employees may be required to wear respirators during certain construction operations, such as methacrylate or polyester concrete placement operations, removal of lead-based paint, in certain confined space situations, or when working with other hazardous materials, such as asbestos or animal wastes.

Cal/OSHA General Industry Safety Orders, Section 5139–5155, provides safety guidance when working with dust, fumes, mists, vapors and gasses. Respiratory protection plans are mandatory and must provide a comprehensive approach to respirator use training. The *Cal/OSHA General Industry Safety Orders* are available at the Cal/OSHA webpage[1].

The State policy for respirator use acknowledges the *Cal/OSHA General Industry Safety Orders* and outlines the requirements for respiratory protection plans in Chapter 15, *Respiratory Protection Program*, of the *Caltrans Safety and Health Manual*, which is available on the Health and Safety webpage[2].

The *SC Code of Safe Practices* identifies several situations where respirator use may be required and is available on the SC webpage under the Safety tab[3].

A variety of air-purifying respirators, ranging from disposable dust masks to air-supplied, positive-pressure, full-face piece respirators may be required in the construction environment. The contaminant and percentage level of contaminant in the air determines respirator choice. Refer to project Special Provisions for predetermined exposure protection requirements, any applicable Material Safety Data Sheets, and Cal/OSHA regulations (refer to the Cal/OSHA web site listed above to search for regulations). Unknown materials can be encountered on the work site. Contact your Safety Officer and/or Caltrans Hazardous Materials Environmental staff for assistance identifying any questionable substances. For most situations, suitable respiratory protection can be obtained through the SC HQ Equipment Coordinator or SC Safety Liaison. Respirator fit testing will be provided by the District's Construction Safety Coordinator. Respirator medical evaluation, training, and fit testing are required initially (prior to first use) and annually thereafter. Contact the SC Safety Liaison for forms and procedures on obtaining a respirator medical evaluation.

[1] http://www.dir.ca.gov/Title8/sub7.html.
[2] http://www.dot.ca.gov/hq/opo/safety/safetymanual_toc.htm.
[3] http://onramp.dot.ca.gov/hq/oscnet/.

Confined Spaces

Structure Construction (SC) personnel must be trained in confined space safety protocols prior to engaging in any work that involves a confined space. Additionally, refresher training must be provided every two years. Contact the SC Safety Liaison[1] or the local District Construction Safety Officer for available training.

The *Cal/OSHA General Industry Safety Orders*, Sections 5156 through 5159, establish minimum safety standards for construction operations performed within confined spaces. The full regulations are available on the Cal/OSHA webpage[2].

The *Caltrans Safety and Health Manual*, Chapter 14, *Confined Spaces*, provides confined space safety protocols, which is available on the Caltrans Administration Health and Safety webpage[3].

The *Structure Construction Code of Safe Practices* provides training requirements and safety protocols for confined space operations, which is available on the SC webpage under the safety tab[4].

[1] email: osc.administration@dot.ca.gov
[2] http://www.dir.ca.gov/Title8/sb7g16a108.html.
[3] http://www.dot.ca.gov/hq/opo/safety/safetymanual_toc.htm.
[4] http://onramp.dot.ca.gov/hq/oscnet/

Lead Compliance Plan

In compliance with *Cal/OSHA Construction Safety Orders* Section 1532.1, *Lead*, Structure Construction (SC) has developed a *Lead Compliance Plan (LCP)* that addresses the procedures to be followed whenever SC employees are exposed to lead. Attachment 1 is the *SC LCP*.

Major requirements of the *LCP* are:

1. Training is required annually (either the 8-hour class or the 2-hour refresher).
2. Medical surveillance is required.
    a. Medical surveillance will include a blood sample that is analyzed for Blood Lead Level (BLL) and Zinc Protoporphyrin (ZPP).
3. Quarterly review of the *LCP* by the Bridge Construction Engineer (BCE) and Area Construction Manager (ACM).

A half-face cartridge-style respirator will be provided, based on exposure or when requested by the employee.

Work Procedures
A summary of the work procedures is given in the Lead Compliance Program Matrix, (Attachment 2).

Code of Safe Practices
The *SC Code of Safe Practices* lists the standard procedures for working in an environment with potential lead exposure and is available on the SC webpage under the Safety tab[1].

Medical Surveillance Procedure
The *LCP* requires medical surveillance for all SC personnel who are exposed to lead paint. This medical surveillance program will involve blood sampling and analysis for BLL and ZPP levels.

Cal/OSHA regulations require the employer to maintain employee medical records for **30 years**, therefore no deviation is allowed from the following procedure when arranging for medical surveillance or respirator medical evaluations.

1. The supervisor selects a local laboratory approved by Cal/OSHA.
2. The laboratory contacts the SC Safety Liaison to verify the work to be done and to arrange payment.
3. The supervisor completes a SC-0602, *SC Medical Testing Authorization Form* for each employee going for lab work.

[1] http://onramp.dot.ca.gov/hq/oscnet/.

4. A copy of the signed authorization form is faxed to SC Headquarters (HQ) in Sacramento (Attn: SC Safety Liaison).
5. The employee presents and surrenders the authorization form at the laboratory.
6. The laboratory mails the results and the invoice directly to SC HQ in Sacramento.
7. SC HQ in Sacramento processes the invoice to Accounts Payable.
8. Results are relayed via e-mail or phone to the employee, the supervisor, and to the Office of Safety & Health.
9. The original results will remain on file with SC HQ in Sacramento.

Attachment 3 is a copy of the SC-0602, *SC Medical Testing Authorization Form*[2].

Advisory Letter

The *SC LCP* explains that a Blood Lead Level of 10 µg/dl or above will initiate an advisory letter being sent by the SC Safety Liaison to the employee, with copies sent to the BCE, the ACM, and the Office of Safety and Health. Attachment 4 is a sample advisory letter. A blood lead level of 10 µg/dl does not imply immediate health risks; however, it is at the high end of the BLL in the general population.

The *SC LCP* requires employees with a BLL of 10 µg/dl or above to retest within 6 months. However, because the half-life of lead is 30 days, the employee will be asked to retest in 30 days. If an employee has zero exposure for 30 days, the BLL should drop from 10 µg/dl to 5 µg/dl.

During this 30 days an employee may continue with assigned duties. However, the employee, the leadworker, and the supervisor must pay strict attention to the provisions of the *LCP*, be aware of all sources of lead exposure. There may be lead exposure at home as well as at work. The employee must follow the basic hygiene practice of washing hands and face before eating, drinking, or smoking.

At a BLL of 20 µg/dl, the SC employee will be transferred to an assignment with zero lead exposure until blood lead levels have dropped below 10 µg/dl. In addition, an assessment interview will be held to determine if changes to the *LCP* are required. The interview team will consist of the BCE, the ACM, the Office of Safety and Health, and the SC Safety Liaison.

Additional Resources

Cal/OSHA, Construction Safety Orders, Section 1532.1, *Lead*[3].

General information pertaining to lead safety is available at the Department of Health Services, Occupational Lead Poisoning Prevention Program (OLPPP) webpage[4].

[2] http://onramp.dot.ca.gov/hq/oscnet/sc_manuals/crp/vol_1/crp016.htm
[3] http://www.dir.ca.gov/title8/1532_1.html.
[4] http://www.cdph.ca.gov/programs/olppp/Pages/default.aspx.

STRUCTURE CONSTRUCTION

LEAD COMPLIANCE PLAN

Introduction

This *Lead Compliance Plan (LCP)* provides guidance to the Structure Construction (SC) personnel who work on bridges and other structures that are coated with paint containing lead, particularly during operations that disturb that paint. This *LCP* also meets the requirements of the *Cal/OSHA Construction Safety Orders* Section 1532.1, *Lead*.

All SC personnel who perform work on a structure or bridge, and are exposed to paint being disturbed, will follow the requirements of this *LCP* unless the paint system and underlying residual paints have been tested and found to contain no lead. If the paint content is not known, then it will be presumed to contain lead until tested.

This *LCP* addresses lead related hazards, and does not replace the *Caltrans Injury Illness Prevention Program (IIPP),* the *SC Code of Safe Practices,* or other location specific safety rules and regulations.

Roles and Responsibilities

Area Construction Managers (ACM):

1. Ensure that SC employees receive the necessary health and safety training to work around lead-containing materials safely, and that such training is renewed annually as required.
2. Ensure that the required personal protective equipment is available to employees.
3. Ensure that the medical surveillance program is provided when required based on the level of exposure.
4. Conduct accident investigations as needed with the first-line supervisor, SC Headquarters, and the Office of Safety and Health, and make recommendations on any necessary actions.
5. Periodically review the performance of first-line supervisors to ensure that the actions required by the *LCP* are being completed.

Bridge Construction Engineers (BCE) (First-Line Supervisors):

1. Ensure that all employees working around lead containing materials are trained in the provisions of the *LCP*.
2. Ensure that employees follow the provisions of the *LCP* and other applicable safety and health rules related to lead.
3. Ensure that employees follow the respiratory protection requirements and wear their respiratory protection properly.
4. Ensure that the personal protective equipment used by the employees exposed to lead is appropriate for the actual exposure.
5. Provide regular pre-job *tailgate meetings* to discuss lead safety issues.
6. Ensure that employees follow the proper decontamination and hygiene procedures.
7. Conduct routine health and safety audits and document those findings, including recommendations for modification of the *LCP* if needed, and take immediate action to correct any unsafe conditions.

8. Ensure that lead waste is disposed of in compliance with local, state, and federal regulations.

NOTE
The above items are primarily the responsibility of the first-line supervisor, however, it is expected that SC employees assigned as leadworkers will assist the first-line supervisor.

SC Employees:

1. Follow the provisions of the *LCP* and other applicable safety and health rules related to lead.
2. Use the required personal protective equipment properly.
3. Report any unsafe condition or equipment to their supervisor immediately.
4. Follow proper decontamination and hygiene procedures.

District/Headquarters Office of Safety and Health and/or Construction Safety Liaison Coordinators:

- Provide oversight of the *Lead Compliance Program* and coordinate industrial hygiene monitoring for lead work to evaluate employee exposures.

SC Safety Liaison:

1. Receive, review, and report, within 5 days of receipt, the results of Blood Lead Level (BLL) testing to the tested employee and to the first-line supervisor.
2. Receive from the ACM, review, file, and maintain for 3 years the BCE's quarterly reviews of employee's compliance with this *Lead Compliance Program*.
3. Participate in assessment interviews if BLL is greater than 20 μg/dl.
4. Provide technical guidance on lead issues.
5. Review *LCP* biannually and initiate appropriate changes.
6. Facilitate lead training as requested by ACMs and BCEs.

See SC webpage[5] for current SC Safety Liaison assignment or call (916) 227-7777.

Activities with Lead Exposure

The following activities performed by SC employees could involve exposure to paint containing lead on steel bridges and structures:

1. Inspection of surface preparation conducted by the Contractor prior to painting, including measurement of areas and examination of cleaned surfaces.
2. Entering the Contractor's lead paint containment area.
3. Inspection of new and old paint on the structure.
4. Inspection of the Contractor's lead paint clean up and disposal operations.
5. Onsite inspection of contract work.
6. Disturbance of lead contaminated soil under or near existing structures (see lead compliance plan for lead in the soil).
7. Inspection of seismic retrofit projects, including removal and replacement of structural steel and paint.

[5] http://onramp.dot.ca.gov/hq/oscnet/sc_people/hq_people.htm.

8. Activities that disturb aerially deposited lead debris on girder flanges, the tops of bent caps, and inside bridge cells and towers.

Expected Exposure Level

Initial monitoring, conducted on operations similar to those listed above, indicates that expected employee exposure to airborne lead is well below the action level of $30\mu g/m^3$ [8 Hour Time Weighted Average (TWA)]. If the employee's exposure is below the action level, the requirements of the *LCP* are dramatically reduced.

Employee Training

SC employees who work on the activities listed above will be trained in the following topics prior to starting work:

1. Lead health hazards.
2. Contents of *Cal/OSHA Construction Safety Orders* Section 1532.1, *Lead.*
3. Operations that could result in lead exposures.
4. Medical surveillance program.
5. Medical removal protection.
6. Chelating agent use.
7. Applicable engineering controls.
8. Contents of the *SC Lead Compliance Plan (LCP).*
9. Required personal hygiene and decontamination practices.
10. Rights to access medical and exposure monitoring records.
11. Purpose, selection, proper use and limitations of respiratory protective devices.
12. Hazardous materials or products.

Qualified trainers, in cooperation with the District/Headquarters Office of Safety and Health and Structure Construction, will provide training. Update this training annually if lead exposure continues. Refer to the Special Provisions for the project as the Contractor may be required to provide this training.

Exposure Control Methods

The Structure Construction practice is to minimize SC employee's exposures to lead through the use of engineering and administrative controls. In accordance with this practice, SC employees will not enter the Contractor's containment area during any operation that disturbs the paint containing lead. Additionally, SC employees will not enter the containment area when the Contractor stops work, unless it has been cleaned as outlined below, and the proper protective equipment is worn.

SC employees will position themselves away from active removal or clean-up operations to minimize their exposure to lead. To assist in the control of lead exposures to workers during work involving disturbance of paint containing lead, the following work areas or zones will be established:

> Containment Area (lead work area)–this is the area where actual lead paint disturbance and cleanup is taking place. It includes the areas where lead dust and paint chips accumulate during work.

Cleanup Area–this is the transition area between the actual work area and the support areas (where no lead exposure exists). This zone is located outside of the actual lead work area and includes the blasting support equipment, the initial decontamination area, transportation vehicles to the change room/ decontamination trailer and support area, and the *dirty* side of the change room/ decontamination trailer.

Support Area–these areas are the locations where no lead exposure exists. It includes lunchrooms, offices, toilets, crew rooms, the *clean* side of the change room/ decontamination trailer, employee's personal transportation, and all locations after final decontamination.

Tarp containment areas to contain lead emissions and minimize contamination of surrounding areas. Post a sign at the entrance to lead work areas stating:

WARNING LEAD WORK AREA POISON NO SMOKING OR EATING.

Access into the lead work area will be restricted to authorized-personnel wearing the required personal protective equipment.

These regulated areas are required under the *Cal/OSHA Construction Safety Orders* Section 1532, *Lead*. These areas are also addressed in the Contractor's *LCP*. The Contractor will establish them and provide the necessary signs, clean-up equipment (i.e., tarps, HEPA vacuum, etc.), and decontamination facilities (hand wash facilities, etc.). If inspection activities by SC employees occur outside of the Contractor's normal working hours, these items are still required. Discuss with your first-line supervisor/lead-worker any inspection activities that will occur outside the Contractor's normal working hours. You may need to reschedule these inspection activities.

Daily cleaning of the lead work area is required to minimize the accumulation of lead containing materials. HEPA (High Efficiency Particulate Air filter) vacuums or wet wash methods that minimize dust are required. Do not use methods that create dust, such as wet or dry sweeping, shoveling, compressed air blow down, etc.

(Exception: Those locations where a full enclosure, a negative pressure air ventilation system, and air supplied respiratory protection are used.)

Tarps and other materials used for containment will also be HEPA vacuumed or wet washed before taken down or moved. The Contractor's personnel will perform the clean-up operations.

Work Procedures

SC personnel exposed to lead containing materials will follow the work procedures, decontamination procedures, and personal protective equipment requirements listed in the Lead Compliance Plan Matrix (Attachment 2).

Personal Protective Equipment

Employees entering the containment or clean up areas will wear coveralls (cloth and/or Tyvek, depending on work activity and expected level of contamination) over their work clothes. Gloves are required to minimize skin contamination. Wear rubber boots or work shoes in the lead work area to aid in decontamination. At the end of the work shift, remove, properly store, or clean coveralls, protective equipment, and contaminated shoes before leaving the clean-up area. The specifications require the Contractor to provide coveralls for SC personnel. Review your project Special Provisions early to determine if sufficient coveralls are provided for employees. It might be necessary to write a Contract Change Order to increase the number of coveralls provided.

Employees must wear respiratory protection equipment in accordance with the Lead Compliance Plan Matrix. They will also comply with the Caltrans Respiratory Protection Program (Chapter 15 in the *Caltrans Safety and Health Manual*). A respiratory medical evaluation and a respirator fit testing will be required annually. Clean and check the fitting on the respirator each day. SC practice is that employees cannot wear respirators requiring a tight face piece seals if they have facial hair in the seal area. Employees with facial hair below their upper lip will be required to shave.

Any SC employee exposed to lead may request a respirator regardless of the exposure level. They must comply with all provisions of the Caltrans respirator program.

Entry/Exit and Decontamination

To minimize cross contamination and taking home lead containing materials, use the following entry/exit and decontamination procedures. The specifics of the Entry/Exit and Decontamination procedures for each project are also covered in the *LCP* submitted by the Contractor or subcontractor. The following are the minimum entry/exit procedures for SC employees:

1. Employees will enter the cleanup area from the support area through an established location (preferably at the decontamination facilities). Wear work clothes and shoes, coveralls, and appropriate personal protective equipment into the lead work clean-up area. Before moving into the containment area (if necessary and allowable), put on the required respiratory protection equipment.
2. When workers leave the containment area, they must be decontaminated to remove lead residue from their protective equipment and outer clothing. Use a HEPA vacuum or water wash (for rain suits) ~~as required~~ just before or after leaving the containment area. *Do not blow down or shake clothing to remove lead dust*. Remove outer protective clothing and other protective equipment. Vacuum cloth coveralls or work clothes and clean shoes if contaminated. Remove Tyvek coveralls inside out and place in bags or buckets for disposal. Do not eat, drink, or smoke in the cleanup area.
3. To leave the cleanup area and enter the support area, go to the established entry/exit decontamination location and wash face, arms, hands, and neck with soap and water. Remove coveralls and, if necessary, vacuum or remove contaminated inner work clothing before entering lunchroom, toilets, offices, etc. in the support area. *Do not wear coveralls and contaminated work clothing into lunchrooms, vehicles, or the support areas.*
4. At the end of shift, workers must decontaminate as required by the Lead Compliance Plan Matrix before entering the support area and going home. *As a minimum, all employees must wash hands, face, neck, and arms before leaving.* If work clothes are contaminated, clean or change before leaving the site. Store contaminated clothing or coveralls in plastic bags to prevent cross contamination.

5. Cloth coveralls must be changed and laundered at least weekly. They will be stored in sealed and labeled plastic bags until laundered. If washed at home, wash separately from the family's clothes. If laundered commercially, notify the laundry facility that the clothing is contaminated with lead. Change Tyvek coveralls daily or as needed. As discussed previously, the Special Provisions require the Contractor to provide coveralls for SC employees.
6. Decontamination areas, change rooms, cars, etc. that could be contaminated with lead containing materials must be cleaned and decontaminated by HEPA vacuum and/or wet methods on a weekly basis or sooner to minimize lead contamination.

Medical Surveillance Program

All SC personnel who are exposed to lead paint removal (i.e., structure re-painting jobs) will be enrolled in the medical surveillance program, which includes blood sampling and analysis for lead (BLL) and zinc protoporphyrin (ZPP) levels. Contact the SC Safety Liaison to arrange for medical services for medical surveillance or respirator physicals. (See below for sampling intervals.)

The results of this monitoring will be reported to the SC Safety Liaison and provided simultaneously to the tested employee and the employee's first-line supervisor within 5 days.

Employee Sampling Intervals

The following are the minimum sampling intervals, for SC employees:

1. No prior sampling: Sample before the job and at the end of the job, at 6 months and at 12 months for the first year, and then annually.
2. Prior sampling, but not within last 2 years: Sample before the job and at the end of the job, at 6 months and at 12 months for the first year, and then annually.
3. Current sampling (within last 2 years): Sample at the end of the job and annually.

NOTE
Sampling will continue as long as employee exposure exists. If lead work is completed and no further exposure is expected, end of job sampling is required.

Employees with blood lead levels at 10 μg/dl or above will be sent an advisory letter and will be required to have their blood sampled every 6 months until their blood lead level drops below 10 μg/dl.

*The SC Lead Compliance mandates that employees with blood lead levels over 20 μg/dl will be transferred to work assignments with no lead exposure until subsequent monitoring shows their BLL has fallen below 10μg/dl***.**

If BLL exceeds 20 μg/dl, conduct an assessment interview with the first and second-line supervisors, the Office of Safety & Health, and the SC Safety Liaison to determine if changes to the *LCP* are required.

Perform the blood lead sampling under the direction of a California licensed physician and the blood analysis must be performed at a Cal-EPA/DHS accredited laboratory. The ACM over the employee is responsible to ensure that the medical surveillance program is conducted.

SC Lead Compliance Plan Evaluation

Bridge Construction Engineers (First-Line Supervisors) and Structure Representatives (Leadworkers) are responsible to ensure that employees are following the provisions of this *LCP*. The BCE (First-Line Supervisor) must conduct quarterly reviews of employees exposed to lead containing materials to evaluate their compliance with the *LCP*. Such reviews will be recorded and forwarded to the appropriate ACM, who is responsible to ensure that such reviews are being conducted. The ACMs will forward these reviews to the SC Safety Liaison, who will maintain them for three years. The results will be used to make needed changes to this *LCP* and to monitor and schedule SC lead training. The *LCP* must be reviewed and updated as necessary every 6 month.

STRUCTURE CONSTRUCTION - LEAD COMPLIANCE PROGRAM MATRIX

TASK	Expected Exposure	Respirator	Personal Protective Equip.	Decontamination Procedures	Administrative Requirements	Work Procedures
Bridge steel/paint insp., area measure, entering cleaned containment area	Low Exposure: $<30\mu g/m^3$	Half Face HEPA when entering containment area	Coveralls, gloves, safety glasses	Remove coveralls, wash face & hands before eating or smoking	Annual training, Quarterly insp., Annual blood test BLL/ZPP	Keep paint chips off street clothes, minimize dust, HEPA vac or wash coveralls
Scaffold rigging, bridge maintenance with minimal paint disturbance	Very Low	None required if no airborne exposure	Coveralls, gloves, safety glasses	Remove coveralls, wash face & hands before eating or smoking	Annual training, Quarterly inspection	Keep paint chips off street clothes, minimize dust, HEPA vac or wash coveralls
Painting	Low	Not required for lead - but use is required for paint	Coveralls, gloves, safety glasses	Remove coveralls, wash face & hands before eating or smoking	Annual training, Quarterly inspection	Keep paint chips off street clothes, Minimize dust
Cleanup after blasting, entering dirty containment area, containment removal	Low	Half Face HEPA, Full Face HEPA	Coveralls, boots, gloves, safety glasses	HEPA vac at site, remove coveralls, wash face & hands	Annual blood test, 6 mos. fit test, annual training/ quarterly insp	Wet or HEPA vac cleanup, NO DRY SWEEP, clean containment before removal
Vehicle & building lead dust/paint chip decontamination	Low	HEPA mask, Half Face HEPA	Coveralls, boots, gloves, safety glasses	HEPA vac at site, remove coveralls, wash face & hands	Annual blood test, 6 mos. fit test, annual training/ quarterly insp	Minimize dust, HEPA vac or wet wipe cleanup
Manual surface prep (hand scraping & brushing), drilling painted surfaces	Low	Half Face HEPA	Coveralls, safety glasses, gloves, boots	HEPA vac at site, remove coveralls, wash face & hands	Annual blood test, 6 mos. fit test, annual training/ quarterly insp	Minimize dust, contain waste, HEPA vac or wet cleanup
Pressure washing	Low	Half Face HEPA Full Face HEPA	Rainsuit, rubber boots, faceshield w/safety glasses or goggles	Wash off at site, remove rainsuit, wash hands & face	Annual blood test, 6 mos. fit test, annual training/ quarterly insp	Contain chips & water, wash down, HEPA vac or wet cleanup

DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICES, STRUCTURE CONSTRUCTION
SC-0602 (Rev 12/17/13)

SC Medical Testing Authorization Form

PERSONAL INFORMATION NOTICE

Pursuant to the Federal Privacy Act (P.L. 93-579) and the Information Practices Act of 1977 (Civil Code Sections 1798, et seq.), notice is hereby given for the request of personal information by this form. The requested personal information is voluntary. The principal purpose of the voluntary information is to facilitate the processing of this form. The failure to provide all or any part of the requested information may delay processing of this form. No disclosure of personal information will be made unless permissible under Article 6, Section 1798.24 of the IPA of 1977. Each individual has the right upon request and proper identification, to inspect all personal information in any record maintained on the individual by an identifying particular. Direct any inquiries on information maintenance to your IPA Officer.

Employee name:_____ Unit:_____

Employee ID:_____

Authorized By:_____

Supervisor Name:_____ Phone:_____

Supervisor Signature:_____ Date:_____

To the Vendor:

The Structure Construction employee named above is authorized to receive the test(s) marked below. Contact the employee's supervisor above to verify employment and approval of these tests. The cost to perform the Respirator Physical must not exceed $200 or $350 for all three tests.

Forward invoices and test results to:

CALTRANS
Structure Construction MS 9-2/11H
1801 30th Street
Sacramento, CA 95816
Attn: SC Safety Liaison

Testing Authorized:

_____Blood Lead
_____Zinc Protoporphyrin
_____Respirator Physical

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

M e m o r a n d u m

Serious drought.
Help Save Water!

To:

Date: Month Day, Year

File: Safety BLL/ZPP

From: DEPARTMENT OF TRANSPORTATION
Division of Engineering Services
Structure Construction

Subject: **RESULTS OF BLOOD LEAD LEVEL TESTING**

Your blood lead level (BLL) test resulted in a BLL of XX μg/dl. In accordance with the Structure Construction Lead Compliance Plan (LCP), this level warrants an advisory letter. While this level of lead in the blood does not imply immediate health risks, it is at the high end of the BLL in the general population.

Structure Construction's (SC) LCP is based on controls and procedures that will maintain an employee's BLL at or below 10 μg/dl and I am concerned that your initial testing is at our first trigger level.

The LCP requires you to retest within 6 months, however, please schedule yourself for another BLL test in 30 days. The half-life of lead is 30 days. If you have zero exposure for the next 30 days, I would expect your BLL to drop to X/2 μg/dl.

Continue with your assigned duties, however, pay strict attention to the provisions of the LCP, be aware of all sources of lead that you may be exposed to, at home as well as at work, and follow the basic hygiene practice of washing your hands and face before eating, drinking, or smoking.

We will review and discuss the results of this second sample. In the meanwhile if you have any questions please contact me at (916) 227-7777.

Name of SC Safety Liaison
SC Safety Liaison
Senior Bridge Engineer

cc: Bridge Construction Engineer,
Area Construction Manager,
SC Safety Liaison

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

BRIDGE CONSTRUCTION MEMO 14-12.0

SAFETY PRACTICES AND ACCIDENT REPORTING

October 31, 2009

Volume I

Prepared by OSC Safety Technical Team

PRE-DESIGNATION OF PERSONAL PHYSICIAN

Employees may pre-designate their own physician (doctor) for medical care in the event that they sustain an occupational injury or illness. This pre-designation must be on file before an occupational injury or illness occurs. The employee may use the pre-designated personal physician for occupational injuries or illnesses of a non-emergency nature. Non-emergency means that the employee's injury or illness is not life-threatening.

If the employee has pre-designated a personal physician (prior to the date of injury), they may be taken to their own doctor if within an appropriate geographical distance and the doctor agrees to take them as a walk-in; otherwise they must be seen by the Authorized Medical Facility. Prompt medical care is the priority!

The pre-designation form for personal physician is the only form that can be accepted and is available at:
http://cefs2.dot.ca.gov:8080/v2Forms/servlet/FormRenderer?frmid=PMS0942&distpath=safe&brapath=injur.

Check with your Personnel Services Specialist in the Administrative Service Center, Office of Personnel Operations if you are not certain whether your form is on file and you wish to use your personal physician in the event of an occupational injury or illness. Send the original completed form to the following address for inclusion with your personnel records:

State of California
Department of Transportation
Personnel Operations - MS 88
P.O. Box 168037
Sacramento, CA 95816-8037
Attn: Worker's Comp Unit

Give a copy of the completed form to your first-line supervisor. Update the form annually or when you are assigned to another first-line supervisor.

The emergency notification form must be updated annually, and is available at:
http://cefs2.dot.ca.gov:8080/v2Forms/servlet/FormRenderer?frmid=adm0131&distpath=adminsvcntr&brapath=personnel.

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A. P. BEZZONE, Chief
Office of Structure
Construction

**Denotes the document is a Bridge Construction Bulletin*

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Contract Claims

General

Considering the diverse and complex nature of the work being administered by the Department of Transportation, it is virtually impossible to anticipate and provide for every possible contingency that may arise on a construction project. Consequently, differences of opinion between the State and the contractor as to proper interpretation of the plans or specifications, or the work to be done, or payments to be made, will inevitably occur and should be expected.

While most of these differences can be, and should be resolved on the job, occasionally there will be situations in which the difference of opinion is so great, or the circumstances are such, that agreement at the job level is not possible. Such situations are properly administered as claims in accordance with the applicable provisions of the Standard Specifications.

Construction Claim Process

The claims process usually begins by the contractor initiating a *Notice of Potential Claim*, or a *Notice of Protest*. Per Sections 4-1.03, 8-1.06 and 9-1.04 of the Standard Specifications, these notices must be in writing, must be given to the Resident Engineer within 15 days of the event causing the claim or protest, and must contain sufficient information to describe the reasons for the notice and the nature and amount of the costs involved. District Construction offices make a specific form (HC-11) available for this purpose, and routinely include this form in pre-job conference material given to the contractor prior to start of work.

The Resident Engineer acknowledges receipt of this Notice, in writing, reviews it to see that it contains the basic information required by the Specifications, and may also comment on the merits of the potential claim as described by the contractor.

During the life of the contract, the potential claim may be resolved by the Engineer and the contractor coming to an agreement. Such an agreement can be formalized via a contract change order.

A potential claim does not become a formal claim until the end of the contract. When the Resident Engineer sends the contractor a Proposed Final Estimate, the contractor has 30 days to either accept the Proposed Final Estimate or to return this Estimate with a list of exceptions. If an item appears as an exception and has previously been submitted under a Notice of Potential Claim or Notice of Protest, then that item becomes a formal Contract Claim.

Individual Districts may handle formal claims differently - analysis and preparation of background materials may be done by the District R.E., Construction Senior, or by a specialist in the District Construction office. In any event, the Structure Representative is expected to prepare

an analysis for all claims involving "bridge work" or items of work that have been previously agreed to as being administered by the Structure Representative.

A claims analysis should include the following information:

- Brief statement of the nature of the claim.
- Specific references to plans and specifications.
- Facts and circumstances which led to the development of the claim situation, and the principle issues involved.
- Whether and how "Notice" was given.
- Arguments supporting the contractor's position.
- Arguments supporting the State's position.
- Discussion - Note any discrepancies between information included in the claim and actual facts and figures as known to the Structure Representative.
- Resident Engineer's recommendation. (Should include recommendation of the Structure Representative).
- References to specific correspondence, diary entries, etc.

The Structure Representative should enlist the help of the area Bridge Construction Engineer in analyzing and preparing the claim background.

The claims handling process involves a series of three progressive meetings with the contractor: the first at the job level, including both bridge and district area seniors; the second at the District level and usually held by the District Deputy Director - Construction. If no claims resolution has been made at the second meeting, then a third meeting is held in Sacramento HQ and the contractor can make a presentation to the Claim Review Board.

This Board currently consists of 2 Division Chiefs (Construction; Structures) plus a staff attorney from the Legal Division, and a staff senior engineer from the Division of Construction. Of course the Resident Engineer and Structure Representative, both area seniors plus the District Deputy Director – Construction attend.

The results of this hearing by the Claim Review Board consists of a written response to the contractor either denying or agreeing to each claim presented, and reasons why. Claim settlements to the contractor are made via a Contract Change Order (C.C.O.)

If the contractor still wishes to pursue an unresolved claim, the next step is the arbitration process. Here, an arbitrator is agreed to by both the contractor and CALTRANS, the issues are argued in a semi-formal legal setting with attorneys representing both sides. The arbitrator’s findings essentially amount to a binding agreement to settle the claimed issues and usually is the end of the claim process, short of an actual lawsuit by the contractor against the Department.

Responsibilities of the Structure Representative

Structure Representatives are expected to prepare claims analysis on potential claims and formal claims involving bridge items. The area Bridge Construction Senior should be involved at the early stages of the claims process and can advise on how to proceed with claims analysis.

Structures field personnel are expected to assist the District construction organization in the various stages of claim handling and to search out expertise needed to resolve technical issues raised involving bridge work.

The claims handling process can go on long after the specific project is over, and probably well into your next assigned job. However, handling construction claims is just one of the contract administration duties that go with each project and one that must be followed through with to resolution.

Tort Claims

A *tort* is any wrongful or negligent act (not involving breach of contract) for which a civil action can be taken. It also includes the failure to act when an act is reasonably expected or required.

As the State may become involved in litigation arising from an accident where tort liability is involved, it is extremely important that investigation of accidents be thorough and reports detailed and well documented. The report is the responsibility of the Resident Engineer. The Structure Representative may be requested to assist in the preparation of reports for accidents involving the bridge work.

Because of the physical difficulty of locating and interviewing witnesses and other interested parties and because job conditions are apt to change overnight, accidents which involve potential State liability must be investigated promptly. The accident scene should be photographed, witnesses interviewed and necessary measurements taken as soon as possible following an accident; otherwise it may be too late.

An investigation report should include the following, if available and pertinent.

a. Legible copy of the Form R-103 report when damage to State highway property is involved.

b. Legible copy of the California Highway Patrol accident report or the local police accident report.

c. Name and address of State's contractor, together with the contract number and dates of execution and final acceptance of the contract.

d. References to the special provisions, standard specifications or change orders relating to the situation giving rise to the accident, if applicable.

e. Encroachment permits, maintenance agreements, cooperative agreements, or other documents pertaining to the situation giving rise to the accident.

f. A map or drawing of the scene of the Accident showing the location where the accident occurred, with measurements, the location of permanent *or* temporary warning signs and devices and the path of travel of the vehicles involved.

g. Photographs of the damage and of the accident site. A complete photographic record of the accident site and all pertinent features in the area shall be made before any remedial

work is done. Whenever the Resident Engineer can conveniently do so, photographs of any vehicles involved should also be taken.

h. Statements from Department of Transportation employees who may have witnessed the accident or who have knowledge of the situation concerning the accident.

i. Any other pertinent information which can be obtained from other public agencies.

Of foremost importance is the necessity that initial investigations and photographs be made without delay. Prompt investigation is particularly important in construction zone or work area accidents where conditions frequently change. Discretion must be exercised in determining the intent and scope of additional investigation dependent upon the seriousness of the accident and the amount of damage. Reports should contain factual data, not opinions or conclusions regarding the cause of the accident and liability of the State.

It is imperative that caution be exercised in the matter of supplying engineering plans, photographs, reports or other data in response to requests by private attorneys or investigators where the data is or might be used in connection with a pending or potential claim against the State. In order to maintain control over the release of such information all such requests should be referred to the District Claims Officer. Information or data in response to such requests should not be given without prior authorization of the District Claims Officer.

All claims for damage against the State are required to be filed by the claimant with the State Board of Control in Sacramento. State employees cannot accept claims nor can they act as a forwarding agency to the Board. The law does not require that claims be filed with individual State employees. All employees who receive inquiries regarding claims should refer the matter to the District Claims Officer.

Complaints, Summons, Subpoenas and Potential Damage Claims

The following is a guide to help you better understand complaints, summons, and subpoenas. This guide does not cover all the possible questions, problems or other conditions that may be involved if you are served with a summons and complaint, or with a subpoena. For that reason, the Sacramento office should be contacted as quickly as possible in the event you are served with one of these documents. A member of the office staff will discuss the matter with you and outline the proper procedures to follow.

Complaints and Summons

Briefly, a complaint is a document filed by a private party with a court of law naming the State, and/or one or more of its employees, as allegedly being responsible for an injury, damage, or offense. It is filed with a court but does not become effective until the party named is brought under the court's authority by means of a summons.

A summons is a document by which the court requires an appearance before it to answer or otherwise defend oneself from the charges contained in the complaint. The two documents are normally served at the same time.

Structures employees are not authorized to accept the service of a summons and complaint where only the State is named as defendant. Service of summons and complaint in actions against the State is required to be made upon the Attorney General except that for actions in inverse condemnation, service may be made upon the Director of Transportation or the Attorney General.

In cases where the employee himself is named as the defendant, or is one of the defendants, then service is required to be made upon the named employee personally. If an employee is served with a summons and complaint, he should note the following information in the upper right-hand corner of the documents:

1. The date and time service was made.
2. The name of the employee being served or receiving the summons and complaint.
3. The location and county where the service was made.
4. The name of the person who served the document.

As soon as possible, after receipt, a copy of the summons and complaint, along with a letter of transmittal, should be forwarded to the Sacramento office. The office staff will take care of processing it through the State's legal division and informing the employee as to what his next step should be.

The letter of transmittal should contain a reference to any previous reports which have been submitted concerning the matters contained in the complaint. If no report has been previous submitted, one should be prepared immediately. Under no circumstances, however, should the copy of the summons and complaint be retained by the employee while the circumstances are being investigated and the report prepared. If additional information is to be sent, this fact should be contained in the letter of transmittal.

If an employee is served with a summons and complaint arising out of the operation of a State-owned motor vehicle, the letter of transmittal should include a reference to the original loss report (Form 270) if possible. Include also any other pertinent information which might be of assistance in the defense of the lawsuit.

Subpoena

A subpoena is a writ, or judicial order, which commands the attendance or appearance of an employee in court, or before a judicial officer, or a deposition.

A subpoena may be served on anyone. If the service is made properly (valid), it becomes a direct order from the court compelling the employee to appear on the date, time and place specified. In some cases, the subpoena may require that the employee bring certain records or data with him to his scheduled appearance (Subpoena Duces Tecum). This is a part of the order and must be obeyed if at all practical. If the order is violated and the person named fails to appear, or otherwise does not meet the requirements of the subpoena, he is subject to a court imposed penalty.

The subpoena is valid only when it is served at a point within 150 miles of the place where the employee's appearance is scheduled. In certain cases, however, this distance limitation can be modified by an order of the court. It is wise, therefore, to check with the Sacramento office in the event there is a dispute over the distance involved.

An individual served with a subpoena may refuse to accept service, normally, if he is required to travel more than 150 miles. In all cases when a subpoena is served, the employee is entitled to receive, in advance, a $35.00 witness fee per day plus 20 1/2 cents per mile each way transportation expenses from the place of his residence to the place where he is to appear. These fees are seldom offered voluntarily. In order to obtain them, the witness must demand them, in advance, from the person serving the subpoena. (There is an exception in cases involving criminal proceedings in which case the person serving the subpoena does not have to give the witness the fees in advance.)

As with the summons and complaint; the employee must note up in the right-hand corner, the date pertinent to the receipt of the subpoena. He must also see that the Sacramento office is notified promptly.

In general, subpoenas served in connection with litigation in which the State is not involved need not be submitted to the Division of Structures. However, subpoenaed employees should inform the Sacramento office giving the date, place of service or receipt, the manner of service or receipt, the name and authority of the individual serving the subpoena and the reason for the subpoena. If it appears that legal advice or action is necessary, the employee will be so advised.

The State is *required* to defend a civil action against an employee when the action arises out of an act or omission in the scope of his employment, unless the employee acted with actual fraud, corruption or malice. The State is *authorized* to defend an employee against criminal charges or administrative proceedings where the employee, in the course of his employment, acted in good faith, and the employee's defense is in the best interest of the State.

The State is required to pay any judgment for any compromise or settlement of a claim against an employee or former employee if the act or omission upon which the claim or judgment is based occurred within the scope of his employment and the employee did not act or fail to act because of actual fraud, corruption or malice.

Payroll Status

If an employee is called as a witness in a court case, either civil or criminal, by reason of knowledge acquired by him in the course of his official duties, he will be carried on the payroll in the same manner as though engaged in his regular work. The State will provide transportation to and from the place where the court case is heard, and the employee will be considered to be on official duty if required to be away from his headquarters overnight.

(Examples of this type would be: the designer of a freeway bridge being called upon to provide the court with design data; a maintenance man called upon to testify regarding an auto accident he witnessed; a construction engineer subpoenaed to explain the geometric details of a detour; etc.)

If an employee is subpoenaed as a witness in a case, by reason of knowledge not acquired in the course of his official duties, and in which he is neither a party nor an expert witness, he may be paid his regular salary provided he remits to the State any fees which he is paid for his appearance. Under these circumstances, the employee would furnish his own transportation and would retain any payment he received for travel expenses. (The only situation where the employee cannot be paid his regular salary is if he is a party to the litigation, or is called as an expert witness.)

If the employee is paid his regular salary, monies collected for witness fees must be turned over to Accounting. If he chooses to take vacation or leave without pay in order to testify, he may retain witness fees.

If there is any question of whether or not a court appearance is at the State's expense and time, you should contact the Sacramento office for clarification.

Miscellaneous

Thus far we have discussed only cases where an outside party has issued a summons or subpoena. There are also many incidences in which an employee's presence in court at a deposition taking, or at a fact-finding meeting, is required by the State's legal division or a private law firm handling the State's defense. In these cases arrangements will be made by the Sacramento office for your appearance, your necessary expenses and travel allowances.

Potential Damage Claims

Employees may occasionally receive letters, bills or other informal written communications in connection with accidents involving the operation of State-owned motor vehicles, or referring to an alleged dangerous or defective condition of the highway, or an alleged negligent act or omission of a State employee. All such communications will be considered as potential damage claims against the State, and must be forwarded to the Sacramento office for further handling. Such letters should not be acknowledged by the employee.

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TABLE OF CONTENTS

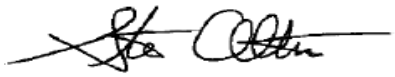
**Denotes the document is a Bridge Construction Bulletin*

FORM NO.	ISSUE DATE**	TITLE
SC-4801	12/17/2013	Concrete Pour Record
SC-4802	12/17/2013	Bar Reinforcing Steel Placing Record
SC-4803	12/17/2013	Pile Quantity & Driving Record (Driven Piles)
SC-4804	12/17/2013	Pile Quantity & Drilling Record (CIDH Piles)
SC-4805	12/17/2013	Log Pile Sheet
SC-4806	12/17/2013	Pile Layout Sheet
SC-4807	12/17/2013	Spot - Sandblasting Report
SC-4808	12/17/2013	Reinforcing Steel
SC-4901	12/17/2013	Structure Construction Concurrence for Change Orders Involving Structures Work
SC-4902	07/21/2015	Request for Change Order
SC-5901	12/17/2013	Summary of Estimate Data
SC-6101		(Project Status Initial – Removed 05-17-16)
SC-6102		(Project Status Final – Removed 05-17-16)
SC-6301	12/17/2013	Project Record Review
SC-6302	12/17/2013	Clean and Paint Cost Summary
SC-6303	07/21/2015	Report of Completion - Bridges
SC-6304	07/21/2015	Report of Completion - Building Projects
SC-6305	12/17/2013	Paint Record

Frequently Used Forms Created by METS:

S-OS C70A	Oct/1986	Concrete Mix Design-Aggregrate Gradation
DS-OS C70B	Oct/1986	Concrete Mix Design-Mix Design Calculations
DH-OS C100	Nov/1973	Moving Average and Test Result Summary
Skid Test Forms	Jan/2012	Skid Test Request

***For most recent updates of all forms, please refer to the SC Intranet site: http://des.onramp.dot.ca.gov/structure-construction/volume1-section16-bridge-construction-forms*



STEVE ALTMAN
Deputy Division Chief
Structure Construction
Division of Engineering Services

State of California
DEPARTMENT OF TRANSPORTATION
SC-0101, (Formerly DS-OS C1) (Rev 12/17/13)

California State Transportation Agency

M e m o r a n d u m

Flex your power!
Be energy efficient!

To: DAN SPEER, CHIEF
STRUCTURAL MATERIALS BRANCH MS-5
5900 FOLSOM BLVD
SACRAMENTO, CA 95819

Date: Month Day, Year

File: (leave blank if not used)

From: CALIFORNIA DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICES
STRUCTURE CONSTRUCTION

Subject: **JOB ASSIGNMENT INFORMATION**

The Structure Representative on this contract is:

_____

Project Mailing Address:

_____

_____

Location of Field Office:

_____

_____

Field Office Phone: _____ Field Office Fax: _____

e-mail address: _____

Job Resident Engineer: _____

_____
by Structure Representative

c: California Department of Transportation
OSM-QASI Branch
100 South Main Street, 11th Floor, MS-19
Los Angeles, CA 90012-3712

California Department of Transportation
OSM-QASI Branch
690 Walnut Avenue, Suite 150
Vallejo, CA 94592-1133

Author/typist

DEPARTMENT OF TRANSPORTATION · STRUCTURE CONSTRUCTION

*For **Internal Use by Structure Construction** (SC) ONLY - This does not change information with Personnel.*

CHANGE OF ADDRESS FOR CHECK DISBURSEMENT

FORM NO. SC-0102 (Formerly DS-OS-C17) (REV 11/27/13)

For Official Use by SC Only
CHECKED BY
a) b) c)

Fax # for this form is (916) 227-8179

PERSONAL INFORMATION NOTICE

Pursuant to the Federal Privacy Act (P.L. 93-579) and the Information Practices Act of 1977 (Civil Code Section 1798, et seq.), notice is hereby given for the request of personal information by this form. The requested personal information is voluntary. The principal purpose of the voluntary information is to facilitate the processing of this form. The failure to provide all or any part of the requested information may delay processing of this form. No disclosure of personal information will be made unless permissible under Article 6, Section 1798.24 of the IPA of 1977. Each individual has the right upon request and proper identification, to inspect all personal information in any record maintained on the individual by an identifying particular. Direct any inquires on information maintenance to your IPA Officer.

NOTE: REP RT LL HA E E ELY & C MP E ORA

INSTRUCTIONS

NAME(PRIN O T PE	AS DIGITS O SSN	Employe ID #	UIT #
❑ PERMANENTLY ASSIGNED TO SC	❑ ON LOAN TO SC	❑ ON ROTATION	

ASSIGNED AS:
❑ Resident Engineer ❑ Structure Representative ❑ Assistant Structure Rep.

ASSISTANT STRUCTURE REPRESENTATIVES PLEASE COMPLETE THE FOLLOWING:

DATE OF ASSIGNMENT	STRUCTURE REPRESENTATIVE ASSIGNED TO (NAME)

PERMANENT RESIDENT MAILING ADDRESS:

1	MAILING ADDRESS		HOME TELEPHONE	
	CITY		TE	ZIP CODE
	TREET ADDRESS (IF P.O. Box us			ZIP CODE

FIELD OFFICE MAILING ADDRESS: (I e Structure Rep.)

2	MAILING ADDRESS	FICE FAX NUMBER
	CITY	HONE NUMBER
	STREET ADDRESS (IF P.O	UMBER

RESIDENCE MAILING ADDRESS W

3	MAILING ADDRESS ❑ Chec	ONE
	CITY	ZIP CODE

PUT ONE OF THESE 3 NUMBERS INTO EACH OF THE BOXES BELOW. THIS IS NECESSARY TO INDICATE THE ADDRESS WHERE YOU WANT EACH TYPE OF CHECK SENT. THIS WILL BE ENTERED INTO SC'S DATABASE.

IN CASE OF ACCIDENT PLEASE NOTIFY:

NAME	RELA	VENING TELEPHONE #	
HOME ADDRESS	CITY	STATE	ZIP CODE

THIS SECTION IS REQUIRED:

Indicate where you want your paycheck (or direct deposit receipt), overtime check (or direct deposit receipt), and TEC checks sent by putting the appropriate address number (1, 2, or 3) in the spaces provided below: (Do not use check marks or X's.)

1	PAYCHECK	1	OVERTIME	2	TEC, CEV'S

SIGNATURE DATE

Please mail completed form to SC Headquarters or fax to SC at (916) 227-8179.

DEPARTMENT OF TRANSPORTATION · STRUCTURE CONSTRUCTION

*For **Internal Use by Structure Construction** (SC) ONLY - This does not change information with Personnel.*

CHANGE OF ADDRESS FOR CHECK DISBURSEMENT

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NOTE: REPORT ALL CHANGES IMMEDIATELY & COMPLETE ENTIRE FORM

NAME(PRINT OR TYPE)	LAST 4 DIGITS OF SSN	Employee ID #	UNIT #

❑ PERMANENTLY ASSIGNED TO SC	❑ ON LOAN TO SC	❑ ON ROTATION

ASSIGNED AS:
❑ Resident Engineer ❑ Structure Representative ❑ Assistant Structure Rep.

ASSISTANT STRUCTURE REPRESENTATIVES PLEASE COMPLETE THE FOLLOWING:

DATE OF ASSIGNMENT	STRUCTURE REPRESENTATIVE ASSIGNED TO (NAME)

PERMANENT RESIDENT MAILING ADDRESS:

1	MAILING ADDRESS	HOME TELEPHONE	
	CITY	STATE	ZIP CODE
	STREET ADDRESS (IF P.O. Box used above)	STATE	ZIP CODE

FIELD OFFICE MAILING ADDRESS: (If you are an Assistant Structure Rep. this must be the same as the Structure Rep.)

2	MAILING ADDRESS	FIELD OFFICE TELEPHONE		FIELD OFFICE FAX NUMBER
	CITY	STATE	ZIP CODE	CELLULAR PHONE NUMBER
	STREET ADDRESS (IF P.O. Box used above)	E-MAIL ADDRESS @DOT.CA.GOV		PAGER NUMBER

RESIDENCE MAILING ADDRESS WHILE ON THIS ASSIGNMENT:

3	MAILING ADDRESS ❑ Check box if same as address #1	HOME TELEPHONE	
	CITY	STATE	ZIP CODE

IN CASE OF ACCIDENT PLEASE NOTIFY:

NAME	RELATION	DAY TELEPHONE #	EVENING TELEPHONE #	
HOME ADDRESS		CITY	STATE	ZIP CODE

THIS SECTION IS REQUIRED:

Indicate where you want your paycheck (or direct deposit receipt), overtime check (or direct deposit receipt), and TEC checks sent by putting the appropriate address number (1, 2, or 3) in the spaces provided below: (Do not use check marks or X's.)

1	**PAYCHECK**	1	**OVERTIME**	1	**TEC, CEV'S**

SIGNATURE DATE

Please mail completed form to SC Headquarters or fax to SC at (916) 227-8179.

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORTATION

STRUCTURE CONSTRUCTION LEAVE & OVERTIME RECORD

SC-0103 (Formerly DH-OS C20) (Rev.12/17/13)

Supervisor: _____

Reporting Unit: _____

Job Stamp: _____

Year: _____ Month: _____

Days	Employee									
1										
2										
3										
4										
5										
6										
7										
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25										
26										
27										
28										
29										
30										
31										
										Tot OT worked CTO
										Tot OT worked CASH
										Tot VA Taken
										Tot SL Taken

CODES

*OT worked at normal rate:
CT6-CTO
OT5-Cash

*OT worked at 1.5 x normal rate:
CT7-CTO
OT6-Cash

Leave Taken:
VA - Vacation
CT - CTO
AL - Annual Leave
SL - Sick Leave (self)
SF - Sick Leave (family)
PH - Personal Holiday
HC - Holiday Credit
PL - Personal Leave
LD - Personal Leave 2003
JD - Jury Duty
BL - Bereavement Leave
AWOL - Absent without Leave
AWOP - Absent without Pay

***This form does not qualify for reporting overtime. Overtime must be reported on SC-0104A or SC-0104B.**

I have verified that all overtime hours are documented in the Assistant Resident Engineers Daily Diaries.

Signature of Structure Representative: _____

I have verified that all overtime hours are documents.

Signature of Senior Bridge Engineer/1st line supervisor: _____

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
Form SC0104A (Formerly DH-OS C21) (REV 11/08/2013)

STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG BY EMPLOYEE

1. Employee Name (Print or Type):		2. Employee ID:	3. Perm Dist-Unit:	4. Structure Representative Name:		5. FY Balance from Previous Month:	
6. Month-Year:		7. First Line Supervisor Name:		OT Must be Documented in Daily Report[1]		Actual OT Worked	Total Hours OT for:

8. Date of Request	9. # OT Hours Requested***	10. Time period for OT Hours Requested*** / Date OT worked	11. Project Identifier	12. Reason for Overtime/Product Produced	13. **Reason for approval enter A, B, C, D , E	14. Date approved	15. First Line Supervisor's Signature	16. Time OT Starts*	17. Time OT Ends*	18. This Shift	19. This Month	20. This Fiscal Year

*Use 24 Hour Clock, log the time OT starts and ends.
** A. Work requiring full-time inspection that cannot be deferred and must be inspected during the work shift (work performed adjacent to public traffic, pile driving, and concrete placement).
** B. Work required to ensure the safety of the traveling public.
** C. Fair Labor Standards Act (FLSA) travel.
** D. Field office work required to ensure timely response to the contractor in order to not delay the controlling item of work.
** E. Work to ensure quality and safety compliance during an emergency response.
[1] Document overtime in Assistant Structure Representative's Daily Report .
*** Overtime for more than one day can be requested; however the "Actual OT Worked" must identify Time OT Starts and Time OT Ends.

Bridge Construction Engineer may attach supporting documents if necessary.

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
SC-0104B (NEW 12/17/13)

STRUCTURE CONSTRUCTION PREAUTHORIZATION OVERTIME LOG
BY UNIT

1. Senior Name (Print or Type):	2. Unit Number:	3. Month-Year:	4. Area Construction Manager Name	*OT Must be Documented in Daily Report* [1]

5. Employee Name	6. Date of Request	7. # OT Hours Requested***	8. Time period for OT Hours Requested*** / Date OT worked	9. Project Identifier	10. Reason for Overtime/Product Produced	11. **Reason for Approval Enter A, B, C, D , E	12. Date Approved	13. Supervisor's Signature	14. Time OT Starts*	15. Time OT Ends*	16. Total This Shift

***Use 24 Hour Clock,log the time OT starts and ends.**
**** A. Work requiring full-time inspection that cannot be deferred and must be inspected during the work shift (work performed adjacent to public traffic, pile driving, and concrete placement).**
**** B. Work required to ensure the safety of the traveling public.**
**** C. Fair Labor Standards Act (FLSA) travel.**
**** D. Field office work required to ensure timely response to the contractor in order to not delay the controlling item of work.**
**** E. Work to ensure quality and safety compliance during an emergency response.**
[1] Document overtime in Assistant Structure Representative's Daily Report .
***** Overtime for more than one day can be requested; however the "Actual OT Worked" must identify Time OT Starts and Time OT Ends.**
Bridge Construction Engineer may attach supporting documents if necessary.

DEPARTMENT OF TRANSPORTATION
STRUCTURE CONSTRUCTION
SC-0105 (NEW 12/17/13)

Print Form

SC MANUAL ORDER FORM

Name: Date:

Supervisor: Source: 59-5

Phone:

Shipping is done by GSO, no P.O. Boxes please:

Employee's Shipping Address:

City: Zip Code:

Date Ordered: Date Manuals Sent from SC:

Check the appropriate box(es) to indicate the specific manual(s) needed:

- ☐ 1. Falsework
- ☐ 2. Trenching & Shoring Manual
- ☐ 3. Foundation
- ☐ 4. Deck Construction
- ☐ 5. Prestress
- ☐ 6. Bridge Survey Guide
- ☐ 7. Construction Records and Procedures
- ☐ 8. Building Construction
- ☐ 9. Concrete Technology

Manual Distribution Guidelines:

Manuals numbered 1 through 7 are to be distributed to all permanent SC employees. Notification will be sent when the new manuals are available.

Most manuals such as the TEC Travel Guide, the Construction Manual and the Safety Manual can be found on the SC Intranet Manuals page at: http://onramp.dot.ca.gov/hq/oscnet/sc_manuals/

Supervisor's signature required for manual orders:

Supervisor's Signature:

Please fax completed form to: 916-227-8179 or
email: osc.administration@dot.ca.gov
Attn: Manual Coordinator

Print Form

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORTATION

ACCIDENT REPORT : ON-THE-JOB

BRIDGE CONSTRUCTION RELATED ACCIDENT

Form No. SC-0601 (Formerly DS-OS C107) (Rev. 12/17/13)

File No.

Contract No.

Structure Representative

Date of Accident

Contractor

TYPE OF ACCIDENT: (check all applicable types)

- ☐ **A - Cofferdam or Shoring Failure**
- ☐ **B - Equipment Contacted Power Lines**
- ☐ **C - Excavation Cave-In**
- ☐ **D - Explosion**
- ☐ **E - Falling Object**
- ☐ **F - Falsework Blown Over, Fell Over, Knocked Over**
- ☐ **G - Falsework Failure**
- ☐ **H - Fire**
- ☐ **I - Forms Blown Over, Fell Over, Knocked Over**
- ☐ **J - Form Failure**
- ☐ **K - Injury or Damage by Contractor Equipment**
- ☐ **L - Injury or Damage by Private Vehicle**
- ☐ **M - Permanent Portion of Structure Fell or Was Knocked Over**
- ☐ **N - Person Fell**
- ☐ **O - Prestressing Accident**
- ☐ **P - Radiation Exposure**
- ☐ **Q - Reinforcing Steel Cage Fell**
- ☐ **R - Other Accident:**

Give concise but brief description of the accident:

Accident recorded in Daily Diary? ☐ **No** ☐ **Yes:** **Report No:** **Date:**

Special Accident Report Prepared? ☐ **No** ☐ **Yes:** **Report Ref:**

Photographs Taken? ☐ **No** ☐ **Yes:** **Photo ID No:**

Person who filled out this form: **Cell Phone:**

Date Submitted:

Fax completed form to: 916-227-8179 or e-mail to SC Administration (Attn: SC Safety Liaison): osc.administration@dot.ca.gov
AND send original completed form to: Caltrans. DES/SC MS 9-2/11H. Attn: SC Safety Liaison. 1801 30th St. Sacramento, CA 95816

Internal Use Only

SC HQ Handled By	Date

DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICES, STRUCTURE CONSTRUCTION
SC-0602 (Rev 12/17/13)

SC Medical Testing Authorization Form

PERSONAL INFORMATION NOTICE

Pursuant to the Federal Privacy Act (P.L. 93-579) and the Information Practices Act of 1977 (Civil Code Sections 1798, et seq.), notice is hereby given for the request of personal information by this form. The requested personal information is voluntary. The principal purpose of the voluntary information is to facilitate the processing of this form. The failure to provide all or any part of the requested information may delay processing of this form. No disclosure of personal information will be made unless permissible under Article 6, Section 1798.24 of the IPA of 1977. Each individual has the right upon request and proper identification, to inspect all personal information in any record maintained on the individual by an identifying particular. Direct any inquiries on information maintenance to your IPA Officer.

Employee name: _____ Unit:

Employee ID:_____

Authorized By:

Supervisor Name:_____Phone:_____

Supervisor Signature:_____ Date:_____

To the Vendor:

The Structure Construction employee named above is authorized to receive the test(s) marked below. Contact the employee's supervisor above to verify employment and approval of these tests The cost to perform the Respirator Physical must not exceed $200 or $350 for all three tests.

Forward invoices and test results to:

CALTRANS
Structure Construction MS 9-2/11H
1801 30th Street
Sacramento, CA 95816
Attn: SC Safety Liaison

Testing Authorized:

_____Blood Lead
_____Zinc Protoporphyrin
_____Respirator Physical

Memorandum

To: Chief, Structure Construction Date:

Job Stamp:

Subject:

Weekly Newsletter # _____

Newsletter Week Ending _____

% Time Elapsed _____ % Complete _____

Est. Date of Completion (Str.) _____

THIS PAST WEEK THE FOLLOWING WORK WAS DONE:

NEXT WEEK WORK WILL PROBABLY CONSIST OF:

_____

Structure Representative

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORATION

SC WEEKLY NEWSLETTER

Job Stamp:

Weekly Newsletter

REPORT FOR WEEK ENDING: _____
CONTRACTOR: _____
STUCTURE REPRESENTATIVE: _____
STRUCTURES WORK: _____

Project Milestones		Progress & Time	
Original Advertise:		*Contract Time Elapsed:*	
Bid Opening:		*Estimated % of Work Complete:*	
Award:			
Approved:		*Original Contract Working Days*	
Start of Work:		*CCO Days*	
Work Completed:	*TBD*	*Total Working Days:*	
Recommend Acceptance:	*TBD*	*First Contract Working Day:*	
Contract Acceptance:	*TBD*	*Last Working Day per WSWD:*	
PFE Sent:	*TBD*	*Estimated Date of Completion:*	

THIS PAST WEEK THE FOLLOWING WORK WAS COMPLETED:

ANTICIPATED WORK TO BE PERFORMED NEXT WEEK:

MEETINGS:

ENVIRONMENTAL/SWPPP/PERMITS

CONTRACT CHANGE ORDERS:

SUBMITTALS:

NOPC'S:

PROJECT PHOTOGRAPHS:

Description

Description

OT REQUEST / NOTIFICATION (COMBINED DISTRICT/STRUCTURES OT REQUEST):

Employee: **OT Worked This Week:** **OT Anticipated Next Week:**

Level of Priority per Construction Activity Inspection Priority Chart:

Benchmark: Intermittent: Mandatory:

OT Substantiation for Next Week:

Measures Taken To Reduce OT Usage:

Resident Engineer/Structure Representative

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

MATERIALS LIST

SC-3101 (Formerly DS-OS C51) (Rev.12/17/13)

JOB STAMP

LIST BELOW ALL MATERIALS TO BE INCORPORATED IN THE COMPLETED WORK.
THIS LIST MAY BE USED AS A REMINDER TO THE CONTRACTOR OF HIS RESPONSIBILITY
TO SUBMIT DH-C30S IN SUFFICIENT TIME TO ALLOW TESTING BEFORE USE.

COPY TO CONTRACTOR ON

MATERIAL	DATE DH-C30	REMARKS

FILE CATEGORY 31.___

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

TEST RESULT SUMMARY

SC-3701 (Formerly DS-OS C57) (12/17/13) or CEM3701

JOB STAMP

MATERIAL _____

CONTRACT ITEM NO. _____

CALIF. TEST NO. _____

File Category: _____

TEST NO.	DATE SAMPLED	SOURCE OF SAMPLE LOCATION	TEST RESULTS									REMARKS

CALIFORNIA DEPARTMENT OF TRANSPORTATION

GGL Inspection Pipe Verification

SC-3801 (Rev 05-17-16)

JOB STAMP:

Br. Name _____ Br. No. _____ Abut./Bent No. _____

Pile No. _____ Pile Length _____ Pile Diameter _____

General Contractor _____ Drilling Contractor _____

Tested By _____ Witnessed By _____ Date _____

Pipe No.	**PipeTop Elev.** (ft)	**Pipe Bottom Elev.** (ft)	**Is Pipe Clear?*** Yes/No	**Blockage Elev.** (ft)	**Comments**
Notes:					

*** As verified by passing 1-1/4-inch-diameter by 4.5-foot-long rigid cylinder through the length of pipe per Section 49-3.02c(5)"Vertical Inspection Pipes" of the 2015 Standard Specifications.**

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORATION

WORKSHEET FOR CALIFORNIA TEST 518 UNIT WEIGHT OF FRESH CONCRETE

FORM SC-3702 (Formerly DS-OS C68) (REV. 7/21/15)

JOB STAMP

TEST NO. _____ TEST BY _____ DATE _____

MIX NO. _____ POUR NO. _____ LOAD CY _____

DELIVERY SLIP NO. _____ PENETRATION (KELLY BALL) _____

F = CALIBRATION FACTOR FOR MEASURE.

1. GROSS WT. OF MEASURE CONCRETE AND COVERPLATE. _____ lbs

2. WT. OF MEASURE AND COVERPLATE. _____ lbs

3. NET WT. OF CONCRETE SAMPLE (line 1 minus line 2). 0 lbs

W = UNIT WT. OF CONCRETE SAMPLE (line 3 times F). 0 lbs/cf

LA = TOTAL VOLUME OF LIQUID ADMIXTURE. _____ oz

W_a = TOTAL WT. OF CEMENT MATERIAL PER LOAD, AS BATCHED. _____ lbs

W_x = TOTAL WT. OF SUPPLEMENTARY CEMENTITIOUS PER LOAD AS BATCHED. _____ lbs

W_{11} = TOTAL WT. OF FINE AGGREGATE #1 PER LOAD, INCL MOISTURE, AS BATCHED. _____ lbs

W_{12} = TOTAL WT. OF FINE AGG. #2 PER LOAD, INCL MOISTURE, AS BATCHED. _____ lbs

W_{C1} = TOTAL WT. OF COARSE AGG. #1 PER LOAD, INCL MOISTURE, AS BATCHED. _____ lbs

W_{C2} = TOTAL WT. OF COARSE AGG. #2 PER LOAD, INCL MOISTURE, AS BATCHED. _____ lbs

W_{W1} = TOTAL WT. OF WATER PER LOAD AS ADDED AT PLANT (8.33 lbs/gal). _____ lbs

W_{W2} = TOTAL WT. OF WATER PER LOAD AS ADDED AT JOB SITE (8.33 lbs/gal). _____ lbs

W_{W3} = TOTAL WT. OF LIQUID ADMIXTURE PER LOAD (128 oz/gal & 8.33 lbs/gal).

$W_{W3} = LA \times 8.33/128$ _____ lbs

$$S = \frac{\text{VOLUME OF CONCRETE PER LOAD IN CUBIC FT.}}{W}$$

$$S = \frac{Wa + Wx + W_{11} + W_{12} + W_{C1} + W_{C2} + W_{W1} + W_{W2} + W_{W3}}{W} = \text{\#DIV/0!} \text{ cf}$$

CY = VOLUME OF CONCRETE PER LOAD IN CUBIC YARD = S/27 = #DIV/0! cy

CC = CEMENT CONTENT IN LB PER CUBIC YARD OF CONCRETE = W_a/CY #DIV/0! lbs/cy

CEMENTITIOUS MATERIAL CONTENT IN LBS PER CUBIC YARD OF CONCRETE = (Wa + Wx) / CY = _____ lbs/cy

FILE CATEGORY 37 _____

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

MATERIALS RELEASE SUMMARY

SC-4101 (Formerly DH-OS C52) (Rev.12/17/13) or CEM4101

JOB STAMP

SHEET _____ OF _____

MATERIAL _____

CONTRACT ITEM NO. _____

SOURCE OF MATERIAL (SUPPLIER) _____

MATERIAL RELEASED BY LAB HMR-R29 QUANTITIES DETERMINED FROM DH-TL29 OR OTHER LAB RELEASES					**MATERIAL RECEIVED ON PROJECT** QUANTITIES DETERMINED BY ACTUAL COUNT, WEIGHTS, BILLS OF LADING, ETC					**REMARKS**		
DATE OF RELEASE	QUANTITY RELEASED	(UNIT)	ACCUMULATED QUANTITY TO DATE	LOT NUMBERS	DATE OF RELEASE	QUANTITY RELEASED	(UNIT)	ACCUMULATED QUANTITY TO DATE	LOT NUMBERS	CERTIFICATE OF COMPLIANCE	MILL CERTIFICATE	NOTES

FILE CATEGORY _____

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

MATERIAL INSPECTED AND RELEASED ON JOB

SC-4102 (Formerly DH-OS C53) (Rev.12/17/13) or CEM4102

JOB STAMP

MATERIAL: _____

ITEM NO.: _____

SUPPLIER: _____

DATE OF INSPECTION	AMOUNT INSPECTED	REMARKS (DESCRIPTION, LOCATION OF USE, ETC.)

THE ABOVE LISTED MATERIAL HAS BEEN INSPECTED ON THE JOB

AND FOUND SATISFACTORY IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS

INSPECTED BY

TITLE

FILE CATEGORY 41._____

Department of Transportation

REPORT OF FALSEWORK CLEARANCE

Form No. SC-4103 (Formerly SC-12.6.1) (Rev. 12/17/13)

Job Stamp:

Date:

Bridge name:

Br. No. :

Co/Rte/PM:

Direction of travel:

Determination of falsework clearance:

a) Calculated or Measured Minimum vertical clearance: _____

Allowances:

b) Pavement elevation changes (- or 0) _____

c) Adjustment of Falsework grades (- or 0) _____

d) Falsework settlement (-) _____

e) Falsework stringer deflection (-) _____

f) Release of sand jacks (wedging) (-) _____

g) Calculated ultimate actual clearance[1]

h) Clearance to report[2] _____

[1] This value must be greater than that given in the Special Provisions.

[2] Calculated ultimate actual clearance rounded down to the nearest 3”

The clear horizontal opening is _____ feet wide.

Remarks:

Form No. SC-4103 (Formerly SC 12.6.1) (Rev. 12/17/13)

Instructions for Determination of Falsework Clearance

Use this form as an aid in determining the clearance at falsework openings. Reference BCM 120-2.0.

a) Prior to falsework erection this value is calculated by subtracting the falsework depth (soffit plywood, joist, nailers, and stringer) below the bridge soffit from the difference in elevation between the bridge soffit and roadway.

   After falsework erection this value is the measured distance between the roadway and the lowest edge of the falsework (generally the bottom flange of the stringer).

b) If there are plans to pave the roadway under the structure prior to removal of the falsework, the net thickness of the overlay will need to be subtracted from the clearance. The net thickness is used to account for any grinding that may take place prior to the placement of the final surfacing.

c) If the falsework is adjusted upwards a value of zero can be used to provide a slight buffer to the clearance.

d) The probable or anticipated settlement of the falsework.

e) Although the stringer deflection is generally compensated by the use of camber strips, the stringer itself will still deflect.

f) If traffic will be allowed under the structure between the time sand jacks (wedging) is blown (removed) and stringers are removed, this allowance needs to be included.

g) This is equal to the value of: value *a)* minus the summation of values *b)* through *f)*.

h) This is the value of *g)* rounded down to the nearest 3″, i.e. 16'-5.75″ would become 16'-3″ and 16'- 1″ would become 16' - 0″.

This is the value that should be used in form TR-0029, *Notice of Change in Clearance or Bridge Weight Rating*, when reporting to the Resident Engineer.

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORTATION

JOB STAMP

POST-TENSIONING FIELD MONITORING CHART

SC-4301 (Formerly DC-C87) (REV 12/17/13)

BRIDGE NAME _____ BRIDGE NUMBER _____

CONTRACT NUMBER _____ NAME OF SYSTEM _____

DATE TENDONS PLACED _____

DATE TENDONS STRESSED _____

STESSING SEQUENCE										
TENDON NO.										
JACK & GAGE NO.										
DATE STRESSED										
DATE GROUTED										
P_J / # OF STRANDS										
GAGE @ P_J										
20% P_J/GAGE										
MEAS. ELONG. @ P_J - 1/4"										
MEAS. ELONG. @ 20% P_J										
ELONGATION (ΔL)										
MEAS. AFTER SEATING										
ANCHOR SET										
TOTAL MEAS. ELONG.										
THEOR. 80% ELONG.										
% DEV. FROM THEOR. (±)										

Notes:

1. Subtracting ¼" from the measured elongation is due to the strand elongation inside the jack. This is calculated by multiplying 1/12 inch per foot of strand between the anchor and pulling wedges at Pjack.
2. For two end stressing, use a second form for the second end. Summarize the data in the last three lines on one of the two forms.
3. For non-simultaneous two-end stressing, the anchor load will be in excess of 20% Pj at the second end. However, it is suggested that the measurement be taken at 20%Pj to be consistent.

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

PRESTRESS CALIBRATION

MONITORING SHEET

JOB STAMP

SC-4302 (Formerly DS-C86) (REV 12/17/13)

DATE _____ BRIDGE _____

NAME OF SYSTEM _____ INSPECTOR(S) _____

JACK NO. _____ _____

GAGE NO. _____ _____

STRESSING FOREMAN _____ _____

	(K)	X	(#STRANDS / TENDON)	=	(Pj)
FOR 1/2 " 270 KSI STRAND ABSOLUTE MAX…Pj 31^K X #STRANDS/TENDON =	31	X		=	
FOR 0.6" 270 KSI STRAND ABSOLUTE MAX…..Pj 44^K X #STRANDS/TENDON =	44	X		=	

CONTRACT REQUIRED….Pj

THEORETICAL MAX GAGE PRESSURE…Pj / RAM AREA = _____ / _____ = _____

MAX GAGE PRESSURE FROM LATEST CONTRACTOR'S CALIBRATION _____

STRAIN GAGE INDICATOR _____

ELECTRO HYDRAULIC CELL NO. _____

NUMERICAL DISPLAY SETTING _____

ACTUAL GAGE FACTOR _____

MEASURABLE ELONGATION = 8 TOTAL ELONGATION = _____

GAGE READING	LOAD FROM INDICATOR	LOAD FROM CALIBRATION CHART			REMARKS
2000					
3000					
4000					

BY _____

REPORTING PARTY

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

PRESTRESS CALIBRATION

GAGE PRESSURE vs. JACKING FORCE

JOB STAMP

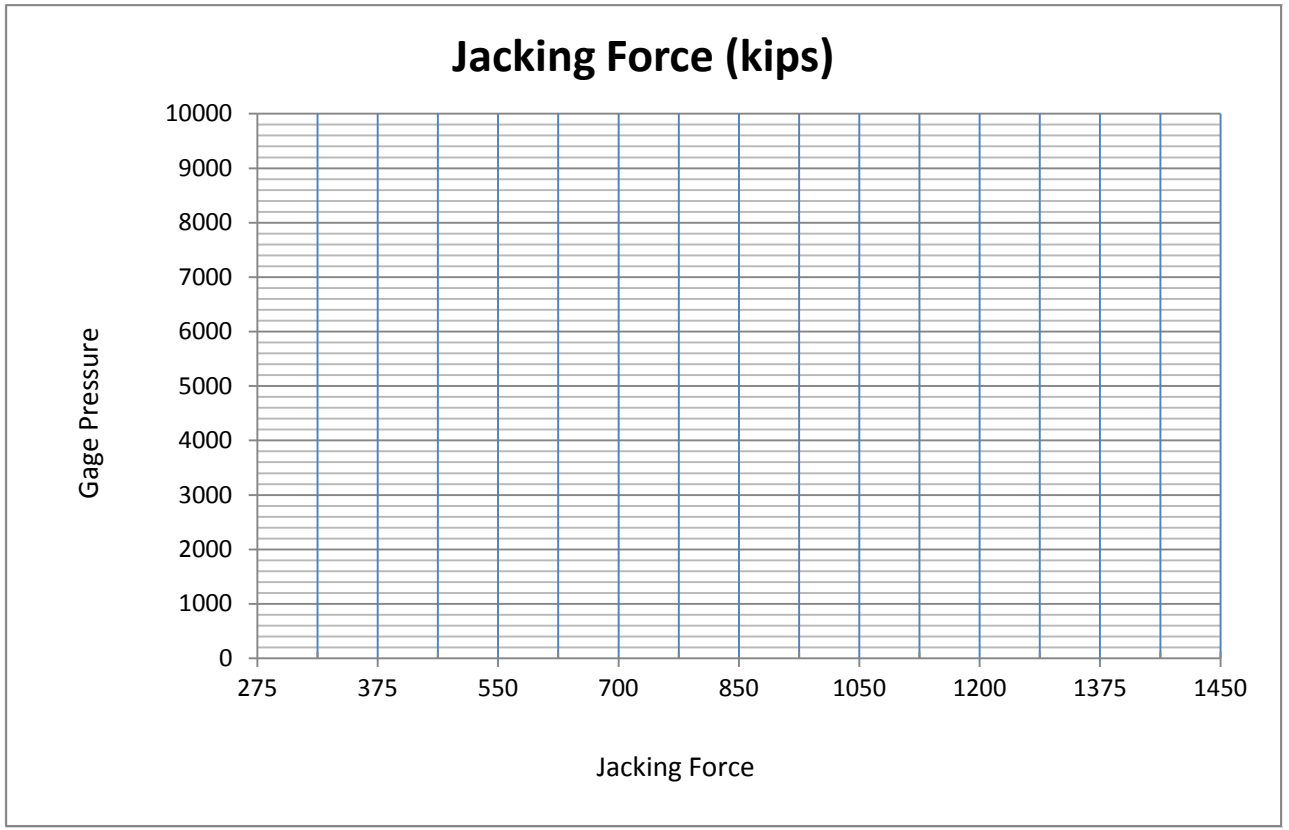
SC-4302A (Formerly DH-OS C86A) (REV 12/17/13)

Contract:

Data Entered By:

Date:

Jacking Force	Gage Pressure
275	1500
375	2000
550	3000
700	4000
850	5000
1050	6000
1200	7000
1375	8000
1450	8800



STATE OF CALIFORNIA . DEPARTMENT OF TRANSPTORATION

CONCRETE MIX DESIGN SUBMITTAL CHECKLIST

FORM SC-4303 (REV. 09/30/14)

The mix design check program requires detailed material information that could be overlooked when the submittal is prepared. The review process can be shortened by giving the following checklist to the Contractor at the preconstruction meeting and using the checklist as an initial check when a mix design submittal is received.

A) CONCRETE USAGE

- ◯ Yes ◯ No — Is the concrete designated by compressive strength?
- ◯ Yes ◯ No — If the concrete is for approach slab or bridge deck, is shrinkage data available?
- ◯ Yes ◯ No — Is certified test data or trial batch test result data available?
- ◯ Yes ◯ No — Does the data include:
  - ☐ Date of mixing,
  - ☐ Mixing equipment and procedures used,
  - ☐ The size, weight, type and source of all ingredients used,
  - ☐ Penetration or slump, if applicable,
  - ☐ The air content,
  - ☐ The age at testing and strength of all tested cylinders.

B) CEMENT

- ◯ Yes ◯ No — On Authorized Material List?
- ◯ Yes ◯ No — Conforms to ASTM C-150?
- ◯ Yes ◯ No — If Type II, III, or V Portland Cement does it contain more than .60% by mass of alkali materials?
- ◯ Yes ◯ No — Autoclave Expansion > .50%?
- ◯ Yes ◯ No — If Type II Portland Cement does Tricalcium Silicate Content exceed 65%?

C) BLENDED CEMENT

- ◯ Yes ◯ No — Blended Cement used? (If No, skip to D)
- ◯ Yes ◯ No — Blended Cement Materials on Authorized Material List?

D) SUPPLEMENTARY CEMENTITIOUS MATERIALS (SCM's)

- ◯ Yes ◯ No — All SCM's on Authorized Material List?

D-1) FLYASH

- ◯ Yes ◯ No — Is Flyash Used? (If No, skip to D-2)
- ◯ Yes ◯ No — Meets AASHTO M295, Class F?
- ◯ Yes ◯ No — Alkali total (expressed as equivalent $Na_2O+0.658\ Ka_2$) included?
- ◯ Yes ◯ No — CaO content included?

D-2) ULTRA FINE FLYASH

- ◯ Yes ◯ No — Is Ultra Fine Flyash used? (If No, skip to D-3)
- ◯ Yes ◯ No — Meets AASHTO M295, Class F?
- ◯ Yes ◯ No — Sulfur Trioxide (SO_3) content included?
- ◯ Yes ◯ No — Loss on ignition % included?

D-2) ULTRA FINE FLYASH	
◯ Yes ◯ No	Alkali total (expressed as equivalent $Na_2O+0.658\ Ka_2$) included?
◯ Yes ◯ No	Particle size distribution included?
◯ Yes ◯ No	Strength Activity Index included?
◯ Yes ◯ No	Expansion at 16 days via ASTM C1567 included?
D-3) RAW OR CALCINED NATURAL POZZOLAN	
◯ Yes ◯ No	Is Raw or Calcined Natural Pozzolan used? (If No, skip to D-4)
◯ Yes ◯ No	Meets AASHTO M295, Class N?
◯ Yes ◯ No	Alkali total (expressed as equivalent $Na_2O+0.658\ Ka_2$) included?
◯ Yes ◯ No	CaO content included?
D-4) METAKAOLIN	
◯ Yes ◯ No	Is Metakaolin used? (If No, skip to D-5)
◯ Yes ◯ No	Meets AASHTO M295, Class N?
◯ Yes ◯ No	Silicon dioxide (SiO_2) and Aluminum Oxide (Al_2O_3) content included?
◯ Yes ◯ No	Calcium Oxide (CaO) content included?
◯ Yes ◯ No	Sulfur trioxide (SO_3) content included?
◯ Yes ◯ No	Loss on ignition included?
◯ Yes ◯ No	Alkali total (expressed as equivalent $Na_2O+0.658\ Ka_2$) included?
◯ Yes ◯ No	Particle size distribution included?
◯ Yes ◯ No	Strength Activity Index included?
D-5) GROUND GRANULATED BLAST FURNACE SLAG (GGBFS)	
◯ Yes ◯ No	Is Ground Granulated Blast Furnace Slag Used? (If No, skip to D-6)
◯ Yes ◯ No	AASHTO M302 Grade 100 or 120?
D-6) SILICA FUME	
◯ Yes ◯ No	Is Silica Fume used?
◯ Yes ◯ No	Meets AASHTO M307?
◯ Yes ◯ No	Reduction in mortar expansion included?
E) AGGREGATE	
◯ Yes ◯ No	Are the coarse and fine aggregates on the innocuous aggregates list?
◯ Yes ◯ No	Are proposed gradation(s) included?
◯ Yes ◯ No	Aggregates on Innocuous Aggregates List? (If Yes, reduced "X" allowed in the 2010 *Standard Specifications*, Section 90-1.02B(3), *Supplementary Cementitious Materials*)
E-1) COARSE AGGREGATE	
◯ Yes ◯ No	Loss via CT 214 included?
◯ Yes ◯ No	Loss in Los Angeles Rattler included (CT 211)?
◯ Yes ◯ No	Cleanness Value included (CT 227)?

E-2) FINE AGGREGATE	
◯ Yes ◯ No	Loss via CT 214 included (*waived if durability index of fine aggregate is 60 or greater)?
◯ Yes ◯ No	Durability Index via CT 229 included (*only necessary if CT 214 does not meet qualifications)?
◯ Yes ◯ No	Organic Impurities Results Included (CT 213)?
◯ Yes ◯ No	Sand Equivalent Included (CT 217)?
F) CHEMICAL ADMIXTURES	
◯ Yes ◯ No	Chemical Admixture(s) Used (If No, skip to G)
◯ Yes ◯ No	On Authorized Material List?
◯ Yes ◯ No	Dosage verified per plans or manufacturer's recommendations?
G) AIR ENTRAINING ADMIXTURE	
◯ Yes ◯ No	Air-Entraining Admixture(s) Specified or Used?
◯ Yes ◯ No	On Authorized Material List?
◯ Yes ◯ No	Dosage verified per plans or manufacturer's recommendations?

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORTATION

WORKSHEET FOR CALIFORNIA TEST 518 UNIT WEIGHT OF FRESH CONCRETE

FORM SC-4304 (REV. 05/17/16)

JOB STAMP

TEST NO. _____ TEST BY _____ DATE _____

MIX NO. _____ POUR NO. _____ LOAD CY _____

DELIVERY SLIP NO. _____ PENETRATION (KELLY BALL) _____

F = CALIBRATION FACTOR FOR MEASURE. _____

1. GROSS WT. OF MEASURE CONCRETE AND COVERPLATE.	lbs
2. WT. OF MEASURE AND COVERPLATE.	lbs
3. NET WT. OF CONCRETE SAMPLE (line 1 minus line 2).	0 lbs
W = UNIT WT. OF CONCRETE SAMPLE (line 3 times F).	0 lbs/cf

LA = TOTAL VOLUME OF LIQUID ADMIXTURE.	oz
W_a = TOTAL WT. OF CEMENT MATERIAL PER LOAD, AS BATCHED.	lbs
W_x = TOTAL WT. OF SUPPLEMENTARY CEMENTITIOUS PER LOAD AS BATCHED.	lbs
W_{11} = TOTAL WT. OF FINE AGGREGATE #1 PER LOAD, INCL MOISTURE, AS BATCHED.	lbs
W_{12} = TOTAL WT. OF FINE AGG. #2 PER LOAD, INCL MOISTURE, AS BATCHED.	lbs
W_{C1} = TOTAL WT. OF COARSE AGG. #1 PER LOAD, INCL MOISTURE, AS BATCHED.	lbs
W_{C2} = TOTAL WT. OF COARSE AGG. #2 PER LOAD, INCL MOISTURE, AS BATCHED.	lbs
W_{W1} = TOTAL WT. OF WATER PER LOAD AS ADDED AT PLANT (8.33 lbs/gal).	lbs
W_{W2} = TOTAL WT. OF WATER PER LOAD AS ADDED AT JOB SITE (8.33 lbs/gal).	lbs
W_{W3} = TOTAL WT. OF LIQUID ADMIXTURE PER LOAD (128 oz/gal & 8.33 lbs/gal).	
W_{W3} = LA x 8.33/128	lbs

S = **VOLUME OF CONCRETE PER LOAD IN CUBIC FT.**

$$S = \frac{Wa + Wx + W_{11} + W_{12} + W_{C1} + W_{C2} + W_{W1} + W_{W2} + W_{W3}}{W} =$$ #DIV/0! cf

CY = VOLUME OF CONCRETE PER LOAD IN CUBIC YARD = S/27 =	#DIV/0! cy
CC = CEMENT CONTENT IN LB PER CUBIC YARD OF CONCRETE = W_a/CY	#DIV/0! lbs/cy
CEMENTITIOUS MATERIAL CONTENT IN LBS PER CUBIC YARD OF CONCRETE = (Wa + Wx) / CY =	#DIV/0! lbs/cy

FILE CATEGORY 37 _____

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

DAILY CLEAN & PAINT RECORD

SC-4601 (Formerly DH-OS M8) (REV. 12/17/13)

JOB STAMP:

☐ CLEANING
☐ UNDERCOATS
☐ FINISH COATS

SHEET NO _____
BRIDGE NO _____
BRIDGE NAME _____

HOURS LABOR						EQUIPMENT						MATERIALS			
RATE												TYPE			MFG CO LOT & BATCH NO
MONTH:															
YEAR:															
MON															
TUE															
WED															
THUR															
FRI															
SAT															
SUN															
TOTAL															
PREVIOUS															
TOTAL TO DATE															

	AVG TEMP	RH	LOCATION AND REMARKS
MON			
AM	78		
mid day	100	99	
PM	90		
TUE			
WED			
THUR			
FRI			
SAT			
SUN			

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

CONCRETE POUR RECORD

SC-4801 (Formerly DS-C73) (REV 12/17/13)

Sheet No. _____ of _____

File No. _____

File Category - Item # - Payment #

File Category _____
Item Number _____
Pour # _____
Bridge Identification _____

Job Stamp

Bridge Name _____ Bridge No. _____

Item No. and Description _____

Date _____ Mix No. _____ Cert. Of Compliance No. _____

Pour Location _____

Admixture Used _____ Amount _____

Air Entrainment Agent _____ Amount _____ % Air Required _____

Pour Inspected By _____ Samples Taken By _____

Sample Numbers _____

Time	Load No.	Truck No.	Air Tem.	Conc Tem.	Individual Penetration Readings	Aver. Penet.	% Air	Tests By	Remarks

Remarks: _____

WASTE OUTSIDE FORMS - EXPLAIN

WASTE INSIDE FORMS - SUBSTANTIATE

Plan Pay Quant. - This Item - This Br. _____ Cy
+ or - Due to CCO's _____ Cy
Final Pay Quant. - This Item - This Br. _____ Cy
Quant. Prev. Paid - This Item - This Br. _____ Cy
Pay Quantity - This Pour _____ Cy
Total Quant. To Date - This Item - This Br. _____ Cy

Quantity Delivered _____ Cy
Quantity Rejected _____ Cy
Waste in Forms _____ Cy
Waste Outside Forms _____ Cy
Net - Pay Quant.
This Pour _____ Cy

Pour Record Info Entered By _____

Sheet No. _____
Line No. _____
Date _____
By _____

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

BAR REINFORCING STEEL PLACING RECORD

SC-4802 (Formerly DS-C78) (Rev.12/17/13)

SHEET NO: 48 -

File Category - Item # - Sheet # - Bridge ID

JOB STAMP

Bridge Name _____ Bridge No. _____

Item No. and Description _____

Location of In-Place Reinf Steel _____

Certificate of Compliance #s _____

In-Place Reinforcing Steel Inspected By _____ Date _____

Reinforcing Steel Factor (# Reinf Steel/CM Conc) _____

Calculation or Other Substantiation For Pay Quantity _____

(List the Location-Description-#s of steel) _____

Tot Qty of Reinforcing Steel for locations noted above _____ lb

(A)	Amount Paid This Estimate	0	lb
(B)	Amount Paid up to Previous Estimate		lb
(C)	Total Amount Paid To Date (A)+(B)		lb
(D)	Planned Pay Amount for this Item		lb
(E)	+ or - due to CCO's		lb
(F)	Total CCO Adjusted Planned Pay Amount (D)+(E)		lb

CCO # _____

Information Above was entered by: _____

Posted By: _____ *Posted TO: Page:* _____

Date: _____ *Line:* _____

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORATION

PILE QUANTITY & DRIVING RECORD (DRIVEN PILES)

FORM SC-4803 (Formerly DS-SC78) (REV. 12/17/13)

JOB STAMP

SHEET NO. 48 ____________

BRIDGE NO. ____________ ITEM DESCRIPTION ____________ PILING

BRIDGE NAME ____________ TYPE PILE USED ____________

ABUT OR BENT NO. ____________ FTG ____________ FTG TYPE ____________ BOTTOM FTG. ELEV. ____________

HAMMER MAKE ____________ MODEL ____________ E= ____________

DESIGN BRNG. ____________ REQUIRED BRNG. ____________ BLOW/FT AT REQUIRED BRNG ____________

PILE DRIVING INSPECTED BY ____________ PILE QUANTITY CALC BY ____________ DATE ____________

PILE CONCRETE PLACING INSP. BY ____________ PILE QUANTITY CHECK BY ____________ DATE ____________

PILE NO.	DATE PILE DRIVEN	BLOWS PER FOOT	DATE PILE CONC. PLACED	(1) SPEC. TOP OF PILE ELEV.	(2) SPEC. TIP ELEV.	(3) LENGTH IN LEADS	(4) LENGTH OF CUT-OFF	(5) ACTUAL LENGTH IN GROUND (3-4)	(6) ACTUAL TIP ELEV. (1-5)	(7) PAY LENGTH * SEE NOTE BELOW	REMARKS	PRE DRILL HOLE DEPTH	LENGTH OF REBAR REQ.

SHEET TOTALS	ITEM NO. EA.	ITEM NO. LF.

FILE CATEGORY 48

* THE PAY LENGTH IS THE ACTUAL LENGTH IN THE GROUND, EXCEPT THAT NO PAY WILL BE MADE FOR THAT LENGTH OF PILE DRIVEN BELOW THE ELEVATION WHERE SPECIFIED TIP AND/OR SPECIFIED BEARING (WHICHEVER IS LOWER) WAS OBTAINED. ALSO, WHEN STEEL PILES ARE SUBSTITUTED FOR CLASS 45-1, 45-2, OR 70 PILING, THE LOWER LIMIT FOR PAMENT WILL BE NO LOWER THAN THE SPECIFIED TIP ELEVATION

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORTATION

PILE QUANTITY & DRILLING RECORD (CIDH PILES)

FORM SC-4804 (Formerly DS-SC78A) (REV. 12/17/13)

JOB STAMP

SHEET NO. 48 _____

BRIDGE NO. _____ ITEM DESCRIPTION _____ CIDH PILING

BRIDGE NAME _____

ABUT OR BENT NO. _____ FTG _____ FTG TYPE _____ BOTTOM FTG. ELEV. _____

PILE DRILLING INSPECTED BY _____

REINFORCING STEEL INSPECTED BY _____

CONCRETE PLACING INSPECTED BY _____

PILE CONCRETE PLACING INSP. BY _____

QUANTITY CALCULATIONS BY _____ DATE _____

QUANTITY CALCULATIONS CHECKED BY _____ DATE _____

PILE NO.	DATE PILE DRILLED	DATE REBAR PLACED	DATE CONC. PLACED	(1) SPEC. TOP OF PILE ELEV.	(2) SPEC. PILE TIP ELEV.	(3) THEOR LENGTH OF PILE (1-2)	(4) MEAS. LENGTH OF PILE	(5) ACTUAL PILE TIP ELEV. (1-4)	(6) PAY LENGTH * SEE NOTE BELOW	REMARKS	LENGTH OF REBAR REQ.

SHEET TOTAL ITEM NO. _____ _____ LF FILE CATEGORY 48 ___

* THE PAY LENGTH (6) IS THE THEORETICAL LENGTH (3) EXCPEPT THAT IF THE MEASURED LENGTH (4) IS LESS THAN THE THEORETICAL LENGTH (3) THE MEASURED LENGTH (4) WILL BE THE PAY LENGTH (6)

JOB STAMP

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

LOG PILE SHEET

SC-4805 (Formerly DH-OS C79) (REV. 12/17/13)

Bridge Name ______ Sheet No. ______

Bridge No. ______ Abut/Bent No. ______ Pile No. ______

Hammer Make ______ Model ______ Energy (ft-lbs) = ______

Reference Descr ______ Reference Elev ______ Pile Type ______

Pile Length ______ Pile Tip Elev ______ Pile Cutoff Elev ______

Date(s) Driven ______ Inspected by ______

Penetration (ft)	Tip Elev (ft)	Blows/ft	Blows/Min	Equiv Stroke	Time	Remarks

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

PILE LAYOUT SHEET

SC-4806 (Formerly DH-OS C80) (REV. 12/17/13)

JOB STAMP

DRAWN BY _____ DATE _____ SHT NO _____

CHECKED BY _____ DATE _____

BRIDGE NO. _____ FTG _____

ABUTMENT OR BENT NO _____ FTG TYPE _____

BOTTOM FTG ELEV _____

SCALE:

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

SPOT - SANDBLASTING REPORT

SC-4807 (Formerly DH-OS M78) (REV. 12/17/13)

BRIDGE NAME	BRIDGE NUMBER	DIST - CO - RTE - PM	DATES COVERED - THIS RPT (INC)
CONTRACT NUMBER	STRUCTURE REP	CONTRACTOR	SUB-CONTRACTOR

DATE	AREA SQ FT PAY QUANTITY	REMARKS	I ACCEPT THE AREA IN SQUARE FEET OF SPOT SANDBLASTING FOR THE DATE SHOWN AS CORRECT FOR PAY PURPOSES
MON			CONTRACTOR RESIDENT INSPECTOR
TUE			CONTRACTOR RESIDENT INSPECTOR
WED			CONTRACTOR RESIDENT INSPECTOR
THUR			CONTRACTOR RESIDENT INSPECTOR
FRI			CONTRACTOR RESIDENT INSPECTOR
SAT			CONTRACTOR RESIDENT INSPECTOR
SUN			CONTRACTOR RESIDENT INSPECTOR
TOTAL THIS WEEK			
TOTAL PREVIOUS			
TOTAL TO DATE			
REMARKS			

CC:

RESIDENT INSPECTOR SIGNATURE	DATE

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

SC-4808 (Formerly DAS-CS-144) (Rev.12/17/13)

JOB STAMP

Address		Batch			Source		Charge		Expenditure Authorization	Special Designation
Dist	Gr				Dist	Unit	Dist	Unit		

Subtotals	Item	Size	No. or Wt/Ft of	Length to 1/10 ft	Total Length - Each Size									
					No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	No. 14	No. 18

NOTE: For computing steel in Standard Retaining Walls from charts, use 99 for size. Show wt./ft. to nearest pound.

Total Lengths (ft)										
Wt. Per Foot	0.688	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Total Wt. Per Size										
Total Wt. Per Sheet										

Remarks: ______________________

____

By: ______________________

Check: ______________________

Date: ______________________

In Case of Questions Contact:

Name ______________ Date ______________

Phone ______________ Verify ______________ Page ________ of ________

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

STRUCTURE CONSTRUCTION CONCURRENCE
FOR CHANGE ORDERS INVOLVING STRUCTURES WORK

SC-4901 (Formerly DS-OS C93) (Rev. 12/17/13)

Date:
CCO#:
Contract #:
EFIS ID:
County & Route:

TO: , Structure Representative

☐ This authorizes you to give Structure Construction Concurrence to proceed with the work prior to an approved change order.

☐ This represents an acknowledgement that I am in concurrence with this change order, which should be approved prior to any work being done.

Requested By:

Description of Work:

Reason for Change:

Discussed with persons noted below:

FHWA:	Br. Constr.:
District:	Br. Design:
Other:	Br. Geology:
Other:	Br. Maint.:

Estimated Cost: $

Recommended Method of Payment:

☐ Contract Items
☐ Extra Work at Force Account
☐ Agreed Price
☐ Other:

Recommended Time Adjustment:
Signed, Bridge Construction Engineer:

State of California
DEPARTMENT OF TRANSPORTATION
SC-4902 (Formerly CCO Template) (Rev 07/21/15)

California State Transportation Agency

M e m o r a n d u m

Serious drought.
Help Save Water!

To: STEVE ALTMAN
DEPUTY DIVISION CHIEF
STRUCTURE CONSTRUCTION
DIVISION OF ENGINEERING SERVICES

Date: Month Day, Year

File: (leave blank if not used)

From: BRANCH CHIEF NAME
Chief Design Branch 1
Office of Design and Technical Services
Division of Engineering Services, MS

Subject: **REQUEST FOR CHANGE ORDER**

This is to initiate a Change Order request for Structure Name(s) and No(s) to change to the following (please check all applicable boxes):

☐ Superstructure ☐ Deck ☐ Soffit ☐ Hinges ☐ Joint	☐ Building Work ☐ Electrical ☐ Mechanical ☐ Structural ☐ Architectural
☐ Substructure ☐ Columns ☐ Footings ☐ Abutment	☐ Specification ☐ Amendment ☐ Delete ☐ Addition
☐ Piles ☐ CIDH ☐ CISS ☐ Precast ☐ Steel ☐ Micropile ☐ Pile Tip	☐ Steel ☐ Reinforcing ☐ Stressing ☐ Misc Metal ☐ Structural ☐ Couplers
☐ Walls ☐ Retaining ☐ Tieback ☐ Soil Nail ☐ MSE ☐ Sound	☐ Other Short description of OTHER or for short clarification remark of checked areas if subcategory is not available
☐ Barriers and Overhead Sign Structures ☐ Barrier ☐ OHSS	

Brief Description of Work:

This Change Order is necessary due to the following:

Per this Change Order, attach one copy of each of the following plan sheets:

☐ Revision: _____
☐ Supplemental: _____
☐ Additional: _____

The following additional documents are attached: Quantity calculations, addtional information, e-mail...

This Change Order has been discussed with the Structure Representative –
Structure Representative Name ☐YES ☐NO

Electronic submittal of Change Orders to SC.Office.Associates@dot.ca.gov is preferred. If there are any questions or more information is needed, please contact Who? at (916) 227-XXXX.

Design cc: Name, Title, Company, Division
Design Branch Chief
Designer
Other

Offices of Structure Construction Concurrence: John Babcock, Office Chief

Const. cc: Name, Title, Company, Division
District PM
ACM
BCE
Struct Rep
Office Chief
FILE
Other

Author/Typist

STATE OF CALIFORNIA . DEPARTMENT OF TRANSPORTATION

SUMMARY OF ESTIMATE DATA

SC-5901 (Formerly DH-OS C42) (Rev.12/17/13)

JOB STAMP

SHEET _____ OF _____

ITEM DESCRIPTION _____ ITEM NO. _____

ENGINEERS QUANTITY _____ UNIT PRICE _____

FILE CATEGORY _____

LINE	LOCATION OF WORK	VERIFICATION REFERENCE	QUANTITY THIS LOCATION THIS ESTIMATE	QUANTITY THIS ITEM THIS ESTIMATE	TOTAL QUANTITY TO DATE THIS TIME	POSTING REF DATE	POSTED BY	REMARKS
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

ENGINEERS QUANTITY (FINAL PAY OR ESTIMATED)

ITEM

UNIT PRICE

ITEM NO.

FILE CATEGORY 59. _____

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORATION

Division of Engineering Services

Structure Construction

PROJECT RECORD REVIEW FORM

SC-6301 (scored) (Formerly DSC 110 Scored)

DSC110 in CEFS (Rev. 11/27/13)

Date:

Str. Rep:

Reviewer:

Job Stamp:

EA
Description
Description

1A

SUBJECT	DESCRIPTION	Score	Critical
Category 1- PERSONNEL			
1. Is the Division of Structure Construction Leave Record (DH-OS C20) maintained for all employees?	N/A	n	
2. Is a record maintained showing the expiration date of Certificates of Proficiency for project personnel? (TL-108)	Up to date records are kept by the District 11 Materials Lab and available online	5	x
Category 2- EQUIPMENT			
1. Is the inventory of structure field equipment maintained? (refer BCM 16-0.0)	Structure field equipment inventory records are maintained through SC HQ and available online	5	
2. Is the structure field equipment properly store and secure?	N/A	n	
Category 5- CORRESPONDENCE			
1. Has contract address and phone number been forwarded to Sacramento (DC OS C1)? (BCM 2-5.0)	N/A	n	
2. Has a memo designating Bridge Work been sent to the District / file? (BCM 2-3.0)	N/A	n	
3. Has the letter about footing and seal courses revisions been sent to the contractor? (BCM2-9.0)	N/A	n	x
4. Has the amount of Bridge work been entered into SCEMS? (BCM6-2.1)	N/A	n	
Category 6- SAFETY			
1. Are safety meetings regularly scheduled, and meeting minutes on file (PM-S-0110)?	N/A	n	x
2. Has the Senior signed the Safety sheet (PM-S-0110)? Is attendance monitored?	N/A	n	
3. Is the Code of Safe Practice on file and complete? Have all Project Personnel signed it?	N/A	n	x
4. Are the appropriate Material Safety Data Sheets (MSDS) on file?	N/A	n	
Category 9- WELDING (Std. Specs 11-3)			
1. Is there welding for the project? (BCM-180) (yes/no)	N/A	n	
2. Is the approved Contractors Quality Control Plan(s) for welding on file for each type on the job?	N/A	n	x
a.) Are the Weld Procedure Spec (WPS) on file?	N/A	n	x
b.) Are all welder qualifications test (WQR) included?	N/A	n	x
c.) Are certified copies of test reports for electrodes on file? (Std. Specs. 52-1.08B)	N/A	n	x

1A

SUBJECT	DESCRIPTION	Score	Critical
d.) Is the QCP approval letter from DMETS on file?	N/A	n	x
3. Are the Contractor's QM CWI production reports filed?	N/A	n	x

Category 11- INFORMATION AT BEGINNING OF JOB

1. Does the Structure Rep. Have the RE Pending file?	N/A	n	
2. Have the foundation reports been reviewed and filed?	N/A	n	
3. Have the deck contours been received (drawn), checked, and a copy sent to the Contractor?	N/A	n	
4. Is there a record of the Notice of Change in Clearance or Bridge Weight Rating (Form TR-0019, and/or TR-0029)?	N/A	n	x
5. Is there a record of the Notice of Change in Vertical Clearance for overhead signs (Form TR-0020)?	N/A	n	x

Category 12.5 - SHOP PLANS

1. BRIDGE REMOVAL (Std. Specs. 15-4)

a.) Are the approved set of removal plans properly stamped?	N/A	n	x
b.) Are the As-Built plans on file?	N/A	n	
c.) Has the complete package been forwarded to DSC with transmittal memo?	N/A	n	

2. SHORING (Std. Specs. 15-4, 48-2)

a.) Are the approved set of shoring calculations properly stamped?	N/A	n	x
b.) Is the Contractor's competent person on record?	N/A	n	x
c.) Is there a letter of approval?	N/A	n	x
d.) Has the complete package been forwarded to HQ with transmittal memo?	N/A	n	

3. CIDH PILES

a.) Are the CIDH Pile placing plans in accordance with the Special Provisions for pile shafts?	N/A	n	x

4. GUYING PLANS (Std. Specs. 48-3)

a.) Are there Guying plans approved for columns, etc.?	N/A	n	x
b.) Is the sequence of installation included?	N/A	n	x
c.) Are Contractors and States calculations complete?	N/A	n	x

Division of Engineering Services
Structure Construction
PROJECT RECORD REVIEW FORM
SC-6301 (scored) (Formerly DSC 110 Scored)
DSC110 in CEFS (Rev. 11/27/13)

Date:
Str. Rep:
Reviewer:

Job Stamp:

EA
Description
Description

1A

SUBJECT	DESCRIPTION	Score	Critical
d.) Is there a letter of approval?	N/A	n	x

Division of Engineering Services
Structure Construction
PROJECT RECORD REVIEW FORM
SC-6301 (scored) (Formerly DSC 110 Scored)
DSC110 in CEFS (Rev. 11/27/13)

Date:
Str. Rep:
Reviewer:

Job Stamp:
EA
Description
Description

1A

SUBJECT	DESCRIPTION	Score	Critical

Category 12.6 - FALSEWORK PLAN

1. FALSEWORK (Std. Specs. 48-2)

a.) Is the falsework log on file?	N/A	n	x
b.) Are the approved set of falsework plans properly stamped?	N/A	n	x
c.) Are erection and removal plans included?	N/A	n	x
d.) Are Contractor's and State's calculations complete?	N/A	n	x
e.) Is there a letter of approval?	N/A	n	x
f.) Is there a letter of Certification from the Contractor's Engineer of record prior to pour?	N/A	n	x
g.) Is there copy of the Notice of Change in Clearance or Bridge Weight Rating (Form TR-0019 and/or TR-0029) on file? Has this form been submitted to the RE and HQ?	N/A	n	x
h.) Has the complete package been forwarded to HQ with transmittal memo?	N/A	n	

Category 14- PHOTOS

1. Are recent job photos filed, labeled, and copies sent to HQ?	N/A	n	
2. Are digital photos backed-up with descriptive file names?	N/A	n	

Category 37- Initial Tests and Acceptance Tests (BCM 4-5.4)

1. Are all required tests listed in the index?	N/A	n	
2. Is an up-to date test result summary in place for each type of test (Items) ?	N/A	n	
3. Are failures, corrective actions, and retests properly recorded?	N/A	n	x
4. Are trail batch test results properly identified and acceptable?	N/A	n	x
5. Is the frequency of tests being monitored, and required compression strengths achieved?	N/A	n	x
6. Are all Form TL-101's properly filled out?	N/A	n	
7. Are couplers used on the project?		n	
a.) Are the prequalification tests for Ultimate Splice and Service	N/A	n	x
b.) Splice couplers filed?		n	x
c.) Are METS test reports on file?	N/A	n	x

Division of Engineering Services
Structure Construction
PROJECT RECORD REVIEW FORM
SC-6301 (scored) (Formerly DSC 110 Scored)
DSC110 in CEFS (Rev. 11/27/13)

Date:
Str. Rep:
Reviewer:

Job Stamp:

EA
Description
Description

1A

SUBJECT	DESCRIPTION	Score	Critical

Category 41 - REPORT OF INSPECTION OF MATERIALS (BCM 4-5.6)

1. Are all the various materials required for the project listed in the index (by items)?	N/A	n	
2. Are all Reports of Inspection of Material (TL-29) matched with the inspection tags (TL-624) by Lot #?	N/A	n	x
3. Do all Certificates of Compliance contain the required information? (Std.Specs 6-3.05E)	N/A	n	x
4. Are Certificates of Compliance present for those items where TL-624 tags are not utilized? (rebar/cement)	N/A	n	x
5. Are the buy America requirements being monitored for Federally Funded projects?	N/A	n	
6. Do the material release Summary Sheets for each item show totals consistent with amounts incorporated in the work and paid for ?	N/A	n	x

Category 43 - CONCRETE RECORDS (BCM 4-5.7)

1. Are all approved concrete mixes on file? Is there a summary sheet listing all approved mixes showing where they can be used?	N/A	n	x
2. Was a letter of approval written for all approved mixes?	N/A	n	x

Category 48 - PAYMENTS TO CONTRACTOR

1. Follow the paperwork trail back from an estimate payment to the back-up data for several items.	N/A	n	
2. Are all tests being recorded on pour records?	N/A	n	x
3. Are load slips for PCC being checked, and plant inspection reports filed? (BCM 100-3.0)	N/A	n	x

Category 49 - CONTRACT CHANGE ORDERS

1. Are Construction Bridge Engineer concurrences on file for each CCO?	N/A	n	
2. Are calculations on file for quantity changes, cost analysis, etc.?	N/A	n	x
3. Has the change in bridge work dollars been properly input?	N/A	n	
4. Are appropriate copies being sent to Sacramento?	N/A	n	

Category 51 - MATERIALS ON HAND

1. Are only materials listed in the Specifications being authorized for MOH payments?	N/A	n	x

Division of Engineering Services
Structure Construction
PROJECT RECORD REVIEW FORM
SC-6301 (scored) (Formerly DSC 110 Scored)
DSC110 in CEFS (Rev. 11/27/13)

Date:
Str. Rep:
Reviewer:

Job Stamp:

EA
Description
Description

1A

SUBJECT	DESCRIPTION	Score	Critical
2. Check the invoices and inspection reports for Materials on Hand payments. (Are quantities updated? Any double payments?)	N/A	n	x

Division of Engineering Services
Structure Construction
PROJECT RECORD REVIEW FORM
SC-6301 (scored) (Formerly DSC 110 Scored)
DSC110 in CEFS (Rev. 11/27/13)

Date:
Str. Rep:
Reviewer:

Job Stamp:

EA
Description
Description

1A

SUBJECT	DESCRIPTION	Score	Critical

Category 62 - CLAIMS

1. Has a claim file been established?	N/A	n	x
2. Is there a summary sheet listings the status of all claims on the job?	N/A	n	
3. Have all letters of potential claim been answered?	N/A	n	x

FINAL RECORDS

1. Are As-Builts changes being currently maintained on a set of plans, or in a file?	N/A	n	x
2. Is a set of shop drawings being currently maintained for submittal to Sacramento HQ?	N/A	n	x
3. Is data for the Report of Completion being compiled in a separate file?	N/A	n	x
4. Have pile driving records been forwarded to Sacramento	N/A	n	
5. Is a letter on file accepting piles not attaining Specified Tip?	N/A	n	
6. Are the Joint Seal Calculations being properly filled out and sent to Sacramento HQ?	N/A	n	x
7. Is a set of paint records currently being maintained for submittal to Sacramento HQ?	N/A	n	x
8. Is the progress schedule (CPM) for structure work being maintained for submission to Sacramento HQ?	N/A	n	x
9. Has the the Project Status Final form been submitted? (BCM 6-2.1)	N/A	n	x

INSTRUCTIONS:

This form is only slightly modified from the original combined project record review form, per Bridge Construction Memo 3-3.0. The form may be used by printing out and reviewing the project records as normal. If numeric scores are desired, the form may be scored by hand or entered into the spreadsheet. The spreadsheet is designed to evaluate overall record keeping and provide a comparison to "critical" categories. Critical categories may vary by project type. Generally an item is considered "Critical" if failure to have this information in the records would cause untold grief; for example, not having a claim file.

A copy of all completed Project Record Reviews shall be filed in Category 11, "Project Information" of the contract records and a copy shall be sent to the Offices of Structure Construction Headquarters in Sacramento. Additionally, it is recommended that Senior Bridge Engineers place a copy of the review in their working file.

Generally, entry should be confined to the comment area and the scoring area highlighted in light blue. The exception if the comment area.

The scoring parameters are set up in the upper top right of the form. There are three parameters set; the Base Value, Critical Base Point, and the Failed Value.

- The Base Value sets how much each item reviewed is worth. The default value is set at “5” per OSC HQ. If you want a wider range, say 0-10, enter a "10". The maximum cannot be greater then "10". Fractional scoring is allowed. The scores are converted to percentages so a score of “2.5” with a Base Value of “5” is the same as a “5” with a “10” as a Base Value.
- The Critical Base Point determines the percentage at which the rater would consider a group (with in a category) of Critical Items as "Failed". For example, if set to 70% (0.70), the grouped Critical Items would be flagged as "Failed" if the points scored divided by the points possible for those Critical Items equates below 70%. A “Failed” group of affects the Letter Grading of the form (see below).
- The Failure Value determines how many percentage points are taken off the cumulated average score for all the Critical Items for each "Failed" group. For example if the averaged score of the Critical Items is 85%, but one Critical section Failed, a Failed Value of "-1" reduce the score 10% to a 75%. Thus the corresponding letter score changes from a "B" to a “B-." If the Failed Value is set to "-0.5", the average Critical Score is reduced 5%. When the Failed Value is set to zero, no adjustment is made.

The "X" in Column J designates this evaluated item as “Critical.” Critical categories may vary by project type. These categories can be modified by placing or removing an "X" in Column J of the spreadsheet. The default Critical Items were set by OSC HQ and should only be changed with concurrence from the local ACM. Columns 'I' and 'L' are only used to do math and so are hidden.

Scores are entered in Column 'H'. Use the comment area to the left to document reasons for the scores as needed. As previously the score rates the completeness of that review item. If the score area is left blank, zero (0) points are given to that item. Therefore if the item is not needed for the project enter a "N/A" into the score box (Column H). This is particularly important for critical items. Some items may not be critical early in a project but will be needed later on. Do not leave the item blank (scored as zero points) in this case but mark the item as not needed by entering a "N/P" (Not Presently) into the score box. Do not leave any score box blank. The spreadsheet looks for the “N” and will ignore that item when it is found in the score area.

The Summary Sheet lists the scores of each section, including the Critical Item category scores. The Critical Items "Failed" are also shown. The two-part (e.g. 1A) rating is based on these summaries. The "Overall Score" is given a numeric value and the Critical Items a letter value. An "Overall Score" above 80% are given "1". Lower scores are given a "2", and so on as set up in the Score Lookup Table at the bottom. The Critical Items are similar.

Currently the scoring scheme is such:

Score (Overall / Critical)									
100%	1 A	85%	2 B	65%	2--- C	45%	3--D	30%	4 D-
95%	1 A	80%	2 B	60%	2--- C	40%	3--- D	25%	4- D--
90%	1- A-	75%	2- B-	55%	3 C-	35%	3--- D-	20%	4-- D--
		70%	2-- B--	50%	3- C--				

If inadequacies are found during a project record review, the reviewer shall conduct a follow up review to verify that noted problems have been corrected as necessary.

STATE OF CALIFORNIA.DEPARMENT OF TRANSPORTATION

CLEAN AND PAINT COST SUMMARY

SC-6302 (Formerly DH-OS M5) (REV. 12/17/13)

JOB STAMP

SHEET_____ OF _____

☐ CLEANING
☐ UNDERCOATS
☐ FINISH COATS

LABOR:	FOREMAN	HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
	SUB-TOTAL			$	
	INSURANCE AND TAXES	@ %		$	
	FRINGE BENEFITS	HRS@		$	
	SUBSISTENCE	DAYS@	PER DAY	$	
				$	
	TOTAL COST OF LABOR				$
EQUIPMENT RENTAL:		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
		HRS @ $	PER HR	$	
	TOTAL COST OF EQUIPMENT RENTAL				$
MATERIALS:		$	PER	$	
		$	PER	$	
	TOTAL COST OF MATERIALS				$
☐ CLEANING	$ /	SQ FT =$		PER SQ FT	
☐ UNDERCOATS	$ /	TONS = $		PER TON	
☐ FINISH COATS	TOTAL COST				$
COST OF CLEANING	$ /	SQ FT =$		PER SQ FT	
AND PAINTING	$ /	TONS = $		PER TON	
	TOTAL COST				$

STATE OF CALIFORNIA.DEPARTMENT OF TRANSPORTATION

PAINT RECORD

SC-6305 (Formerly DH-OS M11) (REV. 12/17/13)

BRIDGE NAME	BRIDGE NUMBER	DIST - CO - RTE - PM	DATES COVERED - THIS RPT (INC)
CONTRACT NUMBER	COST OF JOB (PAINT ONLY)	PAINT INSPECTOR	
CONTRACTOR	SUBCONTRACTOR		
DATE STARTED	DATE COMPLETED	WORKING DAYS ALLOWED	
DAYS WORKED	DAYS LOST-WEATHER	DAYS LOST-OTHER	DAYS OVERRUN

TYPE OF STRUCTURE - NUMBER AND LENGTH OF SPANS

TOTAL AREA SQFT	AREA BLASTED SQFT	TOTAL TONS

DESCRIPTION OF PAINT SYSTEM

REMARKS

OPERATION	METHOD	SUPPLIER	SPEC NO	AMOUNT USED	SQ FT AREA	SQ FT GAL	TOTAL COST	SQ FT COST
STEAM CLEAN								
BLAST CLEAN								
VINYL WASH PRIMER								
UNDER COATS								
FINISHING COATS								
SPECIAL APPLICATIONS								
			TOTALS:	0	0	0	0	0

REPORT BY	TITLE	DATE

DEPARTMENT OF TRANSPORTATION

CONCRETE MIX DESIGN - AGGREGATE GRADATION

DS-OS C70A (REV. 1/86)

MIX NO. _____ DESIGNED BY _____ DATE _____

(SEE DS-OS C70B FOR MIX DESIGN CALCULATIONS)

JOB STAMP

MATERIAL	NOMINAL SIZE	GRADATION OF PRIMARY AGGREGATE – PERCENT PASSING												SPECIFIC GRAVITY g	DENSITY 62.4 x g lb/cf
		200	100	50	30	16	8	4	⅜	¾	1	1-½	2		
FA #1															
FA #2															
CA #1															
CA #2															
CA #3															

MATERIAL	NOMINAL SIZE	% USED	GRADATION OF COMBINED AGGREGATE – PERCENT PASSING											
			200	100	50	30	16	8	4	⅜	¾	1	1-½	2
FA #1														
FA #2														
CA #1														
CA #2														
CA #3														
GRADATION OF COMBINED AGG.														
SPECIFICATION LIMITS 1" MAX. AGG.			0-2	1-5	5-15	12-25	20-35	27-45	35-60	45-75	55-100	90-100	100	—
SPECIFICATION LIMITS 1-½" MAX. AGG.			0-2	1-3	4-10	10-22	17-33	23-38	30-45	38-55	45-75	50-86	90-100	100
SPECIFICATION LIMITS OTHER AGG.														

MATERIAL	DESCRIPTION AND SOURCE
AGGREGATES	
CEMENT	
WATER	
CHEMICAL ADMIXTURES	
MINERAL ADMIXTURES	
AIR ENTRAINING ADMIXTURE	

REMARKS

FILE CATEGORY 43.2 _____

DEPARTMENT OF TRANSPORTATION

CONCRETE MIX DESIGN - MIX DESIGN CALCULATIONS

DS-OS C70B (REV. 1/86)

JOB STAMP

MIX NO. _____ DESIGNED BY _____ DATE _____

(SEE DS-OS C70A FOR AGGREGATE GRADA

DESIGNED FOR _____ % ENTRAINED AIR DESIGNED FOR _____ INCH PENETRATION

SPEC. GR. TYPE II MODIFIED CEMENT 3.15 SPEC. GR. TYPE IP(MS) MODIFIED CEMENT _____ SPEC. GR. MINERAL ADMIX. _____

W = TOTAL WEIGHT OF WATER = _____ lb/cy (MAXIMUM ALLOWABLE = _____ lb/cy)

C = TOTAL WEIGHT OF TYPE II MODIFIED CEMENT _____ lb/cy OR TYPE IP (MS) MODIFIED CEMENT _____

X = TOTAL WEIGHT OF MINERAL ADMIXTURE USED TO REPLACE REQUIRED PORTLAND CEMENT _____

V_W = ABSOLUTE VOLUME OF WATER = $\frac{W_{lb/cy}}{62.4\ lb/cf}$ = _____

V_C = ABSOLUTE VOLUME OF CEMENT = $\frac{C_{lb/cy}}{(\text{SPEC. GRAVITY CEMENT})(62.4\ lb/cf)}$ = _____ cf/cy

V_X = ABSOLUTE VOLUME OF MINERAL ADMIXTURE = $\frac{X\ lb/cy}{(\text{SPEC. GRAVITY MINERAL ADMIX.})(62.4\ lb/cf)}$ = _____ cf/cy

V_A = ABSOLUTE VOLUME OF AIR = (% AIR) 27 cf/cy) = _____ cf/cy

K = ABSOLUTE VOLUME OF AGGREGATES (SSD) = $27.0 - V_W - V_C - V_X - V_A$ = _____ cf/cy

TYPE AND AMOUNT OF CHEMICAL OR AIR ENTRAINING ADMIXTURE USED _____

	1	2	3	4	5	6	7	8
MATERIAL	NOMINAL SIZE	USED %	ABSOLUTE VOLUME (1 x K) cf/cy	DENSITY lb/cf	SSD WEIGHT (2 x 3) lb/cy	MOISTURE %	WATER IN AGGEGATE (4 x 5)/100 lb/cy	AGGREGATE STOCKPILE WEIGHT (4 + 6) lb/cy	SCALE WEIGHT W, C, X OR 7 lb/cy
FA #1									
FA #2									
CA #1									
CA #2									
CA #3									
TOTAL WEIGHT OF ADDED MIXER WATER = (W − Σ6) =									= _____ gal/cy
TOTAL WEIGHT OF CEMENT = C =									
TOTAL WEIGHT OF MINERAL MIXTURES = X =									
TOTAL WEIGHT OF ONE CY MIX =									

FILE CATEGORY 43.2 _____

DEPARTMENT OF TRANSPORTATION

MOVING AVERAGE AND TEST RESULT SUMMARY
(For Concrete Having Specified Strength Requirement)

DH-OS C100 (REV. 11 73)

JOB STAMP

☐ CIP PRESTRESS (GRADE 35-50)

☐ STRUCT. CONCRETE (GRADE 35-50)

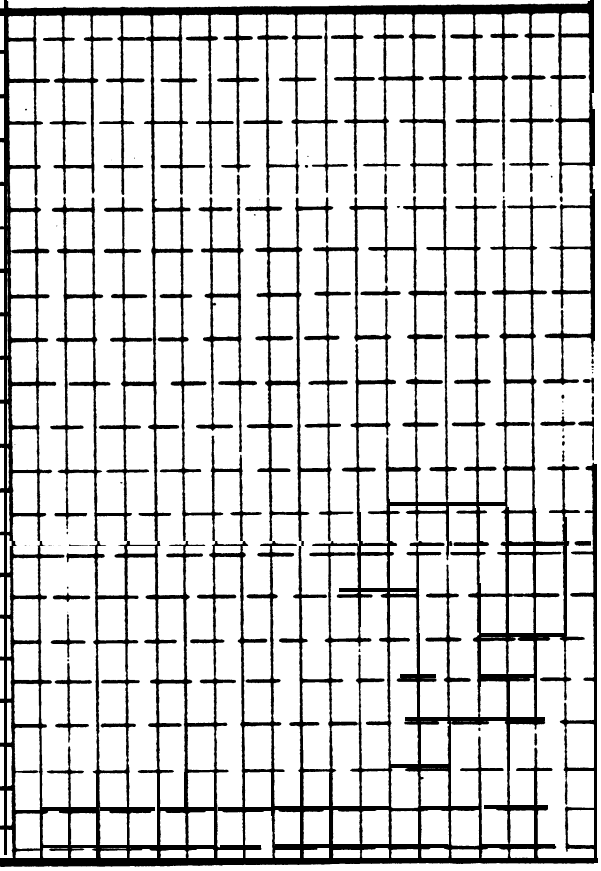
☐

f'_c @ 28 days = psi 0.95 f'_c = psi 0.85 f'_c = psi

Trial Batch = f_c + 600 = + 600

SAMPLE NO	DATE TAKEN	BRIDGE NUMBER AND LOCATION	TEST RESULT	SUM ÷ BY	MOVING AVERAGE
TRIAL BATCH				— —	— —

Graphical Summary



Remarks

FILE 37.

REQUEST FOR PORTABLE SKID TEST

CY

Pavement Testing Branch

Request Number:

(TO BE FILLED IN BY THE PORTABLE SKID TEST REQUESTER)				**Req. Tracking No.:**			
Requester:		**Requester Phone No.:**					
Back-up person:		Back-up phone No.:					
Other No. (Fax or Cell):		Other No. (Fax or Cell):					
Date & time of request:		E-FIS Project/Phase:					
Req. District & Unit:		Requested completion date:					
Send report to (Address):							
Dist-Co-Rte:		PM:		Br Name:		Br #:	
Lanes to test (and/or postmiles, shoulders, etc.):							
Accessible and ready for testing when the crew arrives?				Date surface was placed:			
Pavement type (AC, PCC, Polyester Conc., Methacrylate, etc.):							
Brief description of the requested job, and limits:							

Lane closure schedule:	**Shadow vehicle?**
If structures: Are they clean?	**Is the area under construction?**
SEND FORM VIA E-MAIL TO SKIDTESTING.REQUEST@DOT.CA.GOV	

(TO BE FILLED IN BY THE PAVEMENT TESTING BRANCH COORDINATOR OR SUPERVISOR)		
Work assigned to:		**Travel days:**
Request received by:	Date received:	
Date the requester was notified of the approved work:		
Itinerary:		
Type of transportation to be used:		
Special Instructions: **Maximum of 12 hours per work day.**		

Schedule prepared by:	Approved by:		
Dave Sawko	Cathrina Barros	on	
Coordinator (916) 227-5814	Supervisor (916) 227-7162		Date

(TO BE FILLED IN BY THE PAVEMENT TESTING BRANCH ENGINEERING TECHNICIAN)		
Date test completed:		
General test results:		
Preliminary report sent to:	By:	Date:
Final report sent to:	By:	Date:

Things to keep in mind when filling out the Skid Test Request form (as used by TransLab)

To request Portable Skid Tests in the North Region (District 1, 2, 3) and Central Region (District 5, 6, 9, 10), contact SkidTesting Request at Translab and use the following information:

1. Please note that the requester only needs to fill out the upper portion of the form.
2. We use the form to track our work, so, please do not change the format (i.e., keep it in the .xls format).
3. Please use the EFIS codes for Unit # and Project ID, including the Phase.
4. DO NOT put “ASAP” on the form, it does not have any meaning to us. We need to set our schedule with dates and geographic location considerations.
5. When finished filling out the form, please save it with your unique file name in Excel format and send it as an e-mail attachment to "**SkidTesting.Request@dot.ca.gov**"
6. To see our schedule, simply go to Microsoft Outlook and open the calendar for "SkidTesting Request". It will give you an idea as to how far into the calendar year the requests are already booked. Keep in mind that there may have been some requests that came in ahead of yours, so, you might not be able to get the next week available. We schedule on a “first come, first served” basis as well as date needed and geographic location. Someone from our office will contact you to offer the next available date.

We look forward to working with you. Have a great construction season.
To request Portable Skid Tests in District 4, contact "Pamela.Brown@dot.ca.gov"
To request Portable Skid Tests in Districts 7, 8, and 12, contact "John.Barrett@dot.ca.gov"
To request Portable Skid Tests in District 11, contact "Javad.Rhezaii@dot.ca.gov"

Form created by METS and posted to OSC Intranet January 2012, revised February 2015.

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TABLE OF CONTENTS

DOLORES M. VALLS, Deputy Division Chief
Offices of Structure Construction

*Denotes the document is a Bridge Construction Bulletin

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Staff Efficiency Report Users Guide

The Staff Efficiency Report is a management report that contains information on how efficiently field employees are utilized on projects where contract payments are made through the Construction Accounting System (CAS). Totals are calculated for each Bridge Construction Engineer and Area Construction Manager.

The Staff Efficiency Report has been available since January 1998.

The Staff Efficiency Report is available to Area Construction Managers and Bridge Construction Engineers on the OSC Seniors and Managers Intranet website on a monthly basis. You will be required to furnish a User ID and password to access the Staff Efficiency Report. Area Construction Managers are responsible for reviewing the data contained in the Staff Efficiency Report and for making adjustments in project staffing as they see fit.

The Staff Efficiency Report contains information on the cumulative staff efficiency by Bridge Construction Engineer and Area Construction Manager. Staff efficiency values for individual projects appear on the Construction Schedule. Staff efficiencies are calculated only for projects that are in the PISA system.

What is staff efficiency and how is it calculated? Before this can be answered, other terms must be defined. The first is Hourly Engineering Production, or HEP. HEP is defined as the structure dollars paid to the Contractor for a project divided by the number of hours charged to the project by Office of Structure Construction employees and is expressed in dollars per hour.

HEP_{goal} is defined as the Structure cost estimate divided by the estimated resources (in hours) required for the Office of Structure Construction to staff the project. For example, if the Structure cost estimate for a project is $4,000,000 and the calculated resource requirement to staff the project is 6,500 hours, then the HEP rate would be $4,000,000 divided by 6,500 hours, or 615.38 dollars per hour. HEP_{goal} is always calculated prior to project advertisement and is used as the baseline for determining the staff efficiency for the project.

HEP_{actual} is defined in a similar manner as HEP_{goal}. However, HEP_{actual} uses the actual contract payments for structure work and actual employee charges. For example, if the contractor performed $500,000 of contract work to date, and the amount of OSC employee time charged to inspect this work was 1,000 hours to date, then the HEP rate would be $500,000 divided by 1,000 hours, or 500 dollars per hour. HEP_{actual} can be calculated at any time during the life of a project after a monthly progress payment to the contractor has been authorized. HEP_{actual} is only as valid as the structure data entered into PISA and the OSC employee time charges entered into TRS.

To determine how closely the actual project charges and costs compare to the anticipated project charges and costs, simply compare HEP_{goal} and HEP_{actual}. Staff efficiency is defined

as the value of HEP_{actual} divided by HEP_{goal}, and is expressed as a percentage. Using the examples from the two preceding paragraphs, the staff efficiency for the project would be 500 dollars per hour divided by 615.38 dollars per hour, or 81%.

The value calculated for staff efficiency can be used as a performance indicator, indicating how efficiently OSC employees are being used on a project, by a Bridge Construction Engineer, by an Area Construction Manager, or by the Office of Structure Construction as a whole. Currently, the Staff Efficiency Report is used as a performance measure for the Office of Structure Construction.

What staff efficiency value should you attempt to achieve on your projects or in your area? In the ideal world, a staff efficiency value of 100% would be just right for all projects and all areas. This would mean that OSC employees are being used exactly as anticipated, without overrunning the available resources. In the real world, the staff efficiency value for your projects or areas should be between 85% and 115%. A staff efficiency value of less than 85% generally means there are too many OSC employees on the project or in the area and that these employees are being under-utilized. A staff efficiency value of more than 115% generally means there are not enough OSC employees on the project or in the area and that these employees on the project or in the area are being "run ragged".

Naturally, there are exceptions to these generalizations. A project that has lots of problems with the plans and specifications will generally have a low staff efficiency value, sometimes 50% or less due to the "extra attention" required of OSC employees. Other factors that may influence the staff efficiency value include the following:

- Projects with inexperienced State staff will generally have a lower staff efficiency value. These employees require additional on-the-job training and it takes them a longer period of time to perform their work than the "average" employee would take.
- Projects with highly experienced State staff will generally have a higher staff efficiency value. These employees are generally very efficient and "can do the work of two or three employees".
- Projects with inexperienced contractors will generally have a lower staff efficiency value. In these cases, State staff may spend a lot of time guiding the contractor through the process, in addition to handling their own administrative engineering responsibilities.
- Projects with highly experienced contractors will generally have a higher staff efficiency value. These contractors usually require less attention since they usually know what the specifications and plans require.
- Projects with a high turnover of OSC employees will generally have a lower staff efficiency value. This is because it takes each new employee some time to "get up to speed" when they arrive on a going project.
- Projects with new construction techniques or new specifications will generally have a lower staff efficiency value. This is because OSC employees have to spend more time learning how to administer the new construction techniques or new specifications. Examples of new construction techniques and specifications include alternative piling, DRB specifications, and SWPPP specifications, among others.
- Projects with a large amount of regulatory agency input will generally have a lower staff efficiency value. This is because it takes more OSC employee time to administer the requirements of these agencies. In addition, regulatory agency requirements generally mean construction windows and complex construction staging, which affects the "flow" of the project.

When projects begin, there are usually a lot of OSC employee charges to the project for reviewing submittals, shop plans, etc. before any contract payments have been made. This could result in a staff efficiency value of 0% for the project, which will drag down the staff efficiency value for the responsible unit and area. The staff efficiency calculation recognizes this situation

and artificially adjusts HEP_{goal} by multiplying it by an adjustment factor. Adjustment factors are made based on two scenarios; one for projects with a Structure cost estimate of less than $40,000 in 1967 dollars, and one for projects with a Structure cost estimate of more than $40,000 in 1967 dollars. Conversions from today's dollars are made by dividing the contractor's bid price by the Bridge Cost Index at the time bids were opened. The adjustment factors are also based upon how much of the work is complete, as measured by contract payments to date. Adjustment factors for projects with a Structure Cost estimate of less than $40,000 in 1967 dollars are calculated as shown on Attachment No. 1. Adjustment factors for projects with a Structure Cost estimate of more than $40,000 in 1967 dollars are calculated as shown on Attachment No. 2.

Think of this report as a tool to help you decide how to staff projects and areas. You know best how each project or projects in an area are going. If the staff efficiency value for a project is slipping or has gotten too high without good reason, then this report will help you to know when it is time to adjust the staff level of the project.

The Staff Efficiency Report consists of a single report that is produced for all construction areas. The letters shown in the following correspond to the data fields shown on the sample Staff Efficiency Report shown in Attachment No. 3.

A. **Report Header.** This contains the date of the report. All data used to calculate the values shown on the Staff Efficiency Report is through the date shown in the Report Header.

B. **Branch:** This section header shows the Construction Branch and the responsible Area Construction Manager for the Bridge Construction Engineers listed.

C. **Unit:** This data field header contains a list of the Responsible Units for the construction office.

D. **Senior:** This data field header contains a list of the responsible Bridge Construction Engineers for the area.

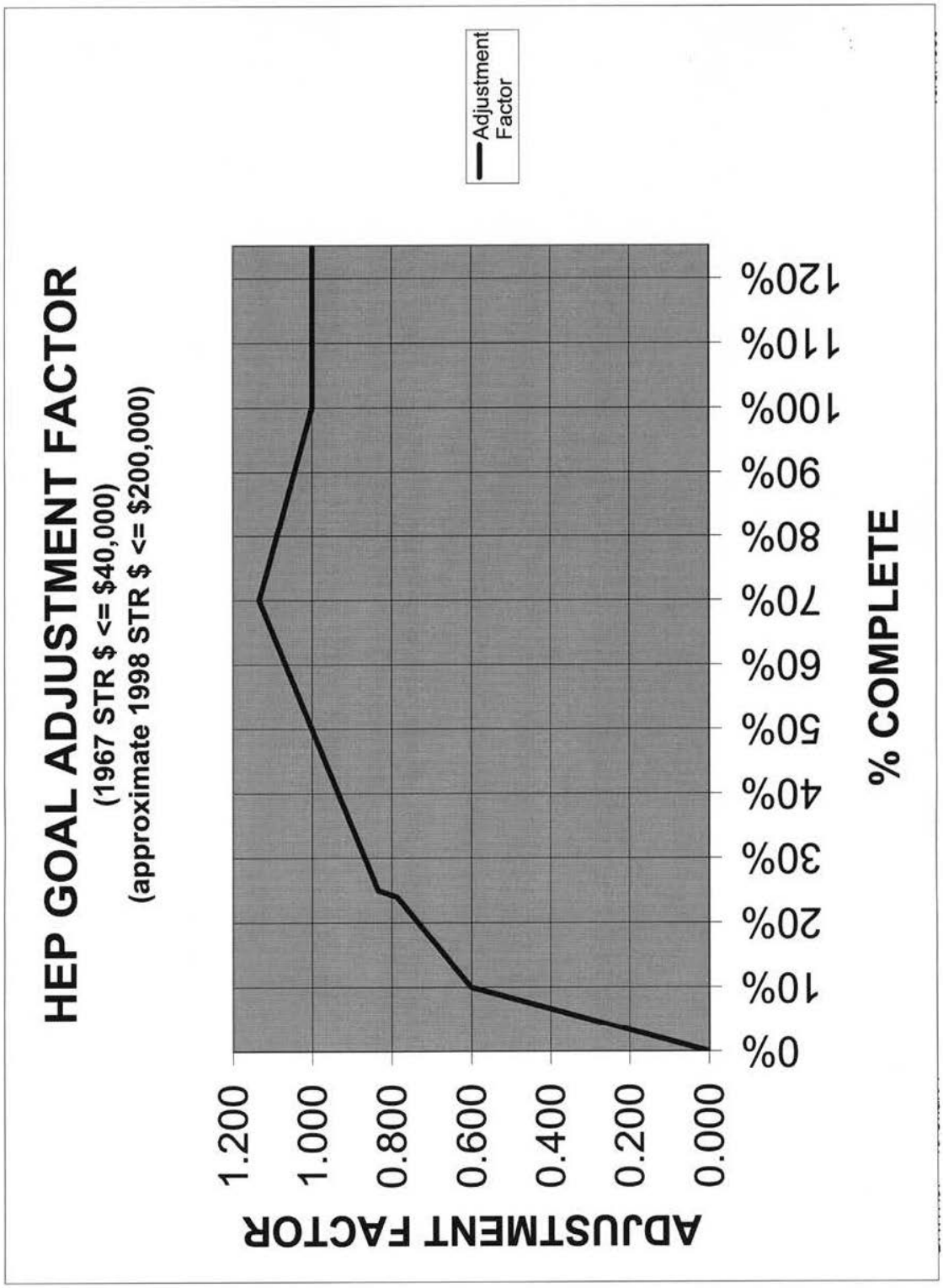
E. **Efficiency – Going Projects**: This data field header contains a list of the calculated staff efficiency values for each Bridge Construction Engineer. The staff efficiency value is calculated as the sum total of HEP_{actual} divided by the sum total of HEP_{goal} for all projects assigned to the Bridge Construction Engineer that are going as of the date of the report.

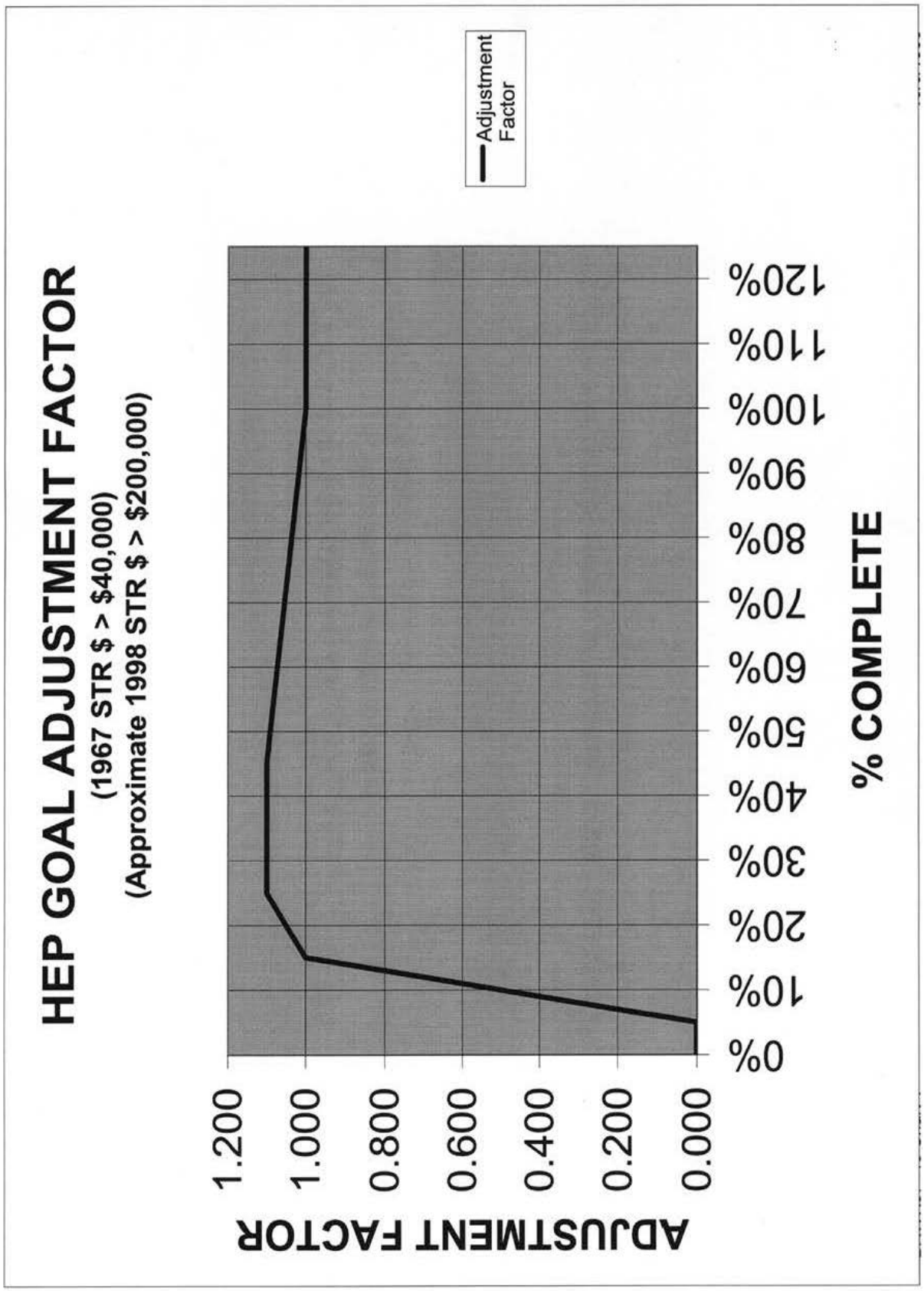
F. **Efficience – Going Projects and Projects Completed Within the Last Twelve Months**: This data field header contains a list of the calculated staff efficiency values for each Bridge Construction Engineer. The staff efficiency value is calculated as the sum total of HEP_{actual} divided by the sum total of HEP_{goal} for all projects assigned to the Bridge Construction Engineer that are going as of the date of the report or have been accepted within the last twelve months of the date of the report.

G. **Branch x Totals**: This section footer contains the calculated staff efficiency for the construction branch. The staff efficiency value is calculated as the sum total of HEP_{actual} divided by the sum total of HEP_{goal} for all projects assigned to the Area Construction Manager.

H. **OSC Totals**: This report footer contains the calculated staff efficiency for the Office of Structure Construction. The staff efficiency value is calculated as the sum total of

HEP_{actual} divided by the sum total of HEP_{goal} for all projects assigned to the Office of Structure Construction.


HEP GOAL ADJUSTMENT FACTOR
(1967 STR $ <= $40,000)
(approximate 1998 STR $ <= $200,000)
Adjustment Factor
ADJUSTMENT FACTOR
1.200
1.000
0.800
0.600
0.400
0.200
0.000
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
110%
120%
% COMPLETE


HEP GOAL ADJUSTMENT FACTOR
(1967 STR $ > $40,000)
(Approximate 1998 STR $ > $200,000)
Adjustment Factor
ADJUSTMENT FACTOR
1.200
1.000
0.800
0.600
0.400
0.200
0.000
% COMPLETE
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
110%
120%

A STAFF EFFICIENCY REPORT - OFFICE OF STRUCTURE CONSTRUCTION

Mar 2001

B BRANCH: A THOMAS,D.

C UNIT	D SENIOR	E EFFICIENCY - GOING PROJECTS		F EFFICIENCY - GOING PROJECTS AND PROJECTS COMPLETED WITHIN THE LAST TWELVE MONTHS	
502	THOMPSON,R.	137%	(12 projects)	124%	(16 projects)
503	FEREIRA,N.	55%	(10 projects)	52%	(19 projects)
504	NELSEN,B.	54%	(14 projects)	56%	(19 projects)
505	KEIM,D.	50%	(3 projects)	50%	(3 projects)
G BRANCH A TOTALS:		**61%**	(39 projects)	**59%**	(57 projects)

BRANCH: B WILDER,D.

UNIT	SENIOR	EFFICIENCY - GOING PROJECTS		EFFICIENCY - GOING PROJECTS AND PROJECTS COMPLETED WITHIN THE LAST TWELVE MONTHS	
592	PLAAS,G.	62%	(4 projects)	96%	(8 projects)
595	STULTZ,H.	11%	(3 projects)	11%	(3 projects)
597	NICKERSON,N.	59%	(4 projects)	59%	(4 projects)
598	MORGAN,W.	122%	(5 projects)	117%	(6 projects)
599	YEE,S.	75%	(10 projects)	75%	(11 projects)
BRANCH B TOTALS:		**76%**	(26 projects)	**74%**	(32 projects)

BRANCH: C BROWN,M.

UNIT	SENIOR	EFFICIENCY - GOING PROJECTS		EFFICIENCY - GOING PROJECTS AND PROJECTS COMPLETED WITHIN THE LAST TWELVE MONTHS	
562	KENNEDY,S.	145%	(13 projects)	93%	(18 projects)
572	BROWN,T.	92%	(6 projects)	83%	(7 projects)
573	JOHNSON,W.	78%	(8 projects)	90%	(9 projects)
574	PONZI,A.	125%	(14 projects)	105%	(19 projects)
BRANCH C TOTALS:		**121%**	(41 projects)	**97%**	(53 projects)

EFFICIENCY VALUES SHOULD BE BETWEEN 85% AND 115%

A

STAFF EFFICIENCY REPORT - OFFICE OF STRUCTURE CONSTRUCTION

Mar 2001

H	E		F	
	EFFICIENCY - GOING PROJECTS		EFFICIENCY - GOING PROJECTS AND PROJECTS COMPLETED WITHIN THE LAST TWELVE MONTHS	
OSC TOTALS:	**92%**	(243 projects)	**93%**	(308 projects)

EFFICIENCY VALUES SHOULD BE BETWEEN 85% AND 115%