

# SC Staff Responsibilities for Performing Standard Construction Activities

## Table of Contents

Table of Contents.....	1
1 - <i>Contract Specifications</i> , Section and Title.....	4
1-1    CS, Section 1-1.09, General – Freeze-Thaw Areas.....	4
1-2    CS, Section 2-1.06B, Bidding – Bid Documents – Supplemental Project Information.....	5
1-3    CS, Section 2-1.07, Bidding – Job Site and Document Examination .....	5
1-4    CS, Section 4-1.05, Scope of Work – Changes and Extra Work .....	6
1-5    CS, Section 4-1.06, Scope of Work – Differing Site Conditions (23 CRF 635.109).....	6
1-6    CS, Section 4-1.07, Scope of Work – Value Engineering .....	6
1-6.01 Proposal Concept Stage .....	7
1-6.02 VECP Investigation Stage .....	7
1-7    CS, Section 5-1.01, Control of Work – General .....	7
1-8    CS, Section 5-1.02, Control of Work – Contract Components .....	7
1-9    CS, Section 5-1.03, Control of Work – Engineer’s Authority .....	8
1-10   CS, Section 5-1.09, Control of Work – Partnering .....	8
1-11   CS, Section 5-1.17, Control of Work – Character of Workers .....	8
1-12   CS, Section 5-1.20C, Control of Work – Coordination with Other Entities – Railroad Relations .....	8
1-13   CS, Section 5-1.23, Control of Work – Submittals .....	9
1-14   CS, Section 5-1.24, Control of Work – Construction Surveys.....	10
1-15   CS, Section 5-1.30, Control of Work – Noncompliant and Unauthorized Work .....	10
1-16   CS, Section 5-1.36, Control of Work – Property and Facility Preservation .....	11
1-17   CS, Section 5-1.37B, Control of Work – Maintenance and Protection – Load Limits .....	12
1-17.01 Contract Specifications for Weight Limitations.....	13
1-17.02 Overloads .....	13

1-17.03	Processing Requests for Construction Equipment Overloads .....	19
1-18	CS, Section 5-1.38, Control of Work – Maintenance and Protection Relief .....	20
1-19	CS, Section 5-1.42, Control of Work – Requests for Information.....	21
1-20	CS, Section 5-1.43A-D, Control of Work – Potential Claims and Dispute Resolution.....	21
1-21	CS, Section 5-1.43E, Control of Work – Alternative Dispute Resolution..	21
1-22	CS, Section 5-1.46, Control of Work – Final Inspection and Contract Acceptance .....	21
1-23	CS, Section 6-1.04, Control of Materials – Buy America .....	22
1-24	CS, Section 6-1.06, Control of Materials – Buy Clean California Act .....	23
1-25	CS, Section 6-2, Control of Materials – Quality Assurance .....	23
1-26	CS, Section 7-1.02K(1-5), Legal Relations and Responsibility to the Public – Labor Code – Labor Compliance .....	24
1-27	CS, Section 7-1.02K(6)(a), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – General .....	24
1-28	CS, Section 7-1.02K(6)(c), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – Tunnel Safety.....	24
1-29	CS, Section 7-1.02K(6)(d), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – Confined Space Safety .....	24
1-30	CS, Section 7-1.02K(6)(j), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – Lead Safety.....	24
1-31	CS, Section 7-1.02M(2), Legal Relations and Responsibility to the Public – Public Resources Code – Fire Protection .....	25
1-32	CS, Section 7-1.04, Legal Relations and Responsibility to the Public – Public Safety .....	25
1-33	CS, Section 8-1.02, Prosecution and Progress – Schedule.....	26
1-34	CS, Section 8-1.03, Prosecution and Progress – Preconstruction Conference .....	26
1-35	CS, Section 8-1.05, Prosecution and Progress – Time.....	26
1-36	CS, Section 8-1.06, Prosecution and Progress – Suspensions .....	26

1-37	CS, Section 9-1.02C, Payment – Measurement – Final Pay Item Quantities.....	27
1-38	CS, Section 9-1.03, Payment – Payment Scope .....	27
1-39	CS, Section 9-1.04, Payment – Force Account.....	27
1-40	CS, Section 9-1.05, Payment – Extra Work Performed by Specialists ....	27
1-41	CS, Section 9-1.06, Payment – Changed Quantity Payment Adjustments .....	27
1-42	CS, Section 9-1.15, Payment – Work-Character Changes .....	27
1-43	CS, Section 9-1.16, Payment – Progress Payments .....	27
1-44	CS, Section 9-1.17, Payment – Payment After Contract Acceptance.....	27
1-45	CS, Section 12-4. Temporary Traffic Control – Maintaining Traffic.....	28
1-46	CS, Section 13-2, Water Pollution Control – Water Pollution Control Program .....	29
1-47	CS, Section 13-3, Water Pollution Control – Stormwater Pollution Prevention Plan .....	29
1-48	CS, Section 13-4, Water Pollution Control – Job Site Management .....	29
1-49	CS, Section 14, Environmental Stewardship .....	30
1-50	CS, Section 14-11, Environmental Stewardship – Hazardous Waste and Contamination.....	30

SC staff support the Resident Engineer (RE) with contract administration. This attachment identifies the responsibilities of Structure Construction (SC) staff when performing standard construction activities in Division I, *General Provisions*, and Division II, *General Construction*, of the [Contract Specifications](#) (CS).

Sections 1 through 9 of the CS address Division I, *General Provisions*, processes for a construction project. Division I provides the framework for the general working relationship and responsibilities between the Department and the Contractor. SC staff are expected to be aware of these standard construction activities and to support the RE with contract administration by performing standard construction activities in cooperation with the RE. Below are responsibilities that SC staff perform arranged by the first two divisions of the CS that SC staff are to perform, regardless that these processes are established by others. These non-technical construction administration activities are owned by the Division of Construction. The *Construction Manual (CM)*, [Chapter 3](#), *General Provisions*, describes what needs to be done and how to perform these activities. These activities should be performed timely, accurately, and in accordance with the provisions of the [contract documents](#), the [CM](#), SC guidance, and additional guidelines set by the individual Districts.

Sections 10 through 16 of the CS address Division II, *General Construction*, processes for a construction project. The *CM*, [Chapter 4](#), *Construction Details*, describes what needs to be done and how to perform these activities.

## **1 - Contract Specifications, Section and Title**

Prior to reviewing the sections below, it is essential to review the corresponding section of the CS. The information in the CS typically will not be repeated in the text of this Bridge Construction Memo (BCM).

### **1-1 CS, Section 1-1.09, General – Freeze-Thaw Areas**

Verify the construction project is accurately categorized for freeze/thaw by field verification, having knowledge of the area from previously completed projects, and reviewing Caltrans Structure Technical Policy 5.1 ([STP 5.1](#)), *Corrosion Protection for Structural Concrete Elements*. STP 5.1 identifies severe climate areas that can be exposed to freeze-thaw conditions. The severe climate areas are listed by County, State Route, and post mile limits. STP 5.1 is used to verify that a project is in a severe weather area and requires additional design consideration, such as the use of corrosion resistant reinforcing steel, modifications to the concrete mix design, and curing methods. A structure located near severe weather areas may be exposed to deicing chemicals that are carried by vehicle traffic. Discuss any discrepancies regarding freeze-thaw classification, or lack thereof, with the Bridge Design Structure Project Engineer and prepare a change order, if necessary.

Freeze-thaw requirement references include the following:

- *Contract Specifications:*
  - Section 1-1.09, *General – Freeze-Thaw*
  - Section 90-1.02I, *Concrete – General – Materials – Concrete in Freeze-Thaw Areas*
- [Concrete Technology Manual](#)
- [BCM 90-1](#), *Concrete – General*

Discuss freeze-thaw requirements, such as epoxy coated reinforcement samples for Materials Engineering and Testing Services (METS), or curing requirements of concrete barriers, with the Contractor at the pre-construction conference.

Verify all concrete mix designs meet the requirements for freeze-thaw areas.

## **1-2 CS, Section 2-1.06B, Bidding – Bid Documents – Supplemental Project Information**

Review the supplemental project information included in the *Special Provisions*. These items are part of the contract documents. Critical project information may be included such as permits, foundation reports, and logs of test borings. If supplemental project information is provided, a copy is stored in the “OE Plans and Specs” folder of the Files tab for the project in [VISION](#).

## **1-3 CS, Section 2-1.07, Bidding – Job Site and Document Examination**

The Contractor is required to review the contract documents and verify preconstruction jobsite conditions prior to bidding. SC staff are responsible for doing the same and 1) identifying any constructability issues or inconsistencies in the plans, and 2) documenting the original site conditions per the CS, Section 5-1.36, *Control of Work – Property and Facility Preservation*. For additional guidance review:

- a. CM, Chapter 3, [Section 3-404B](#), *General Provisions – Scope of Work – Differing Site Conditions – Procedure*
- b. BCM C-7, [Attachment 5](#), *Daily and Weekly Reports – Construction Photos and Videos*.

## **1-4 CS, Section 4-1.05, Scope of Work – Changes and Extra Work**

Any changes to the project plans, specifications, or scope of work require a Change Order (CO). Adhere to procedures specified in [BCM C-10, Change Orders](#), and the *CM*, Chapter 3, [Section 3-403, General Provisions – Scope of Work – Changes and Extra Work](#).

## **1-5 CS, Section 4-1.06, Scope of Work – Differing Site Conditions (23 CRF 635.109)**

SC staff must review all contract documents, supplemental project information, and perform a field investigation should a differing site condition arise. Notify the Structure Representative (SR) and the Bridge Construction Engineer (BCE), referred to as the SC Supervisor in this Attachment, when a Contractor suggests there may be a differing site condition. Adhere to procedures specified in the *CM*, Chapter 3, [Section 3-404, General Provisions – Scope of Work – Differing Site Conditions](#), and [Section 3-404C, Management Review Committee](#), in assisting the RE if requested.

## **1-6 CS, Section 4-1.07, Scope of Work – Value Engineering**

Value engineering change proposals (VECPs) are usually initiated by the Contractor. SC staff must take the lead in VECPs for structure related items or when arranged with the RE. SC staff should be prepared and aware of procedures specified in the contract documents to address this should it arise on a project. For structure related items, the review times required by the Division of Engineering Services (DES) will vary depending upon the complexity of the VECP. Multiple functional units within DES may need to review and provide input on the VECP. Convey to the RE the review times required by DES for their discussion with the Contractor. Current DES practice requires management review prior to denying a VECP. Adhere to the procedure specified in the *CM*, [Section 3-405, General Provisions – Scope of Work – Value Engineering](#), for VECPs. Keep the SC Supervisor and the Area Construction Manager (ACM), referred to as the SC Manager in this Attachment, informed of all above mentioned items.

Per the *CS*, the Contractor must meet with the Engineer to discuss the proposal concept prior to submission of the VECP. When the Contractor presents the proposal concept, the appropriate DES representatives (SR, SC Supervisor, Bridge Design (BD) Structure Project Engineer, and BD Branch Chief) and Structure Maintenance & Investigations (SM&I) should participate in the meeting between the Contractor and the Engineer to ensure there is an adequate understanding of the Contractor's proposal concept. It is important that fatal flaws in the proposal concept be discussed early before the Contractor prepares a VECP.

## 1-6.01 Proposal Concept Stage

The DES representatives must confer and concur with the District on the proposal concept. If a proposal concept is found to be unacceptable, the SC Manager and BD Office Chief must review it with their counterparts. If they concur with the rejection, the proposal concept and VECP analysis report should be forwarded to the DES Deputy Division Chiefs for review. The DES Deputy Division Chiefs for SC, BD, and METS/GS meet with the District to determine whether the VECP proposal concept is acceptable.

The decision to accept or deny a VECP must be submitted in writing to RE and must be documented in a VECP analysis report. Refer to [Attachment 3](#), *Sample Letter and Report*, for a *Sample of a VECP Analysis Report*, for completing the VECP analysis report.

## 1-6.02 VECP Investigation Stage

During the VECP investigation stage, the SC Supervisor will facilitate the review by all DES functional units and SM&I to ensure all stakeholders have provided input and to ensure timely completion of the investigation.

The DES functional unit representatives confer and concur as to the DES decision for the VECP. If the representatives find the VECP to be unacceptable, the SC Manager/Office Chief review the VECP; if they concur with the rejection, the SC Supervisor arranges for a meeting between the DES Deputy Division Chiefs for BD, SC, GS, and METS to review the VECP. Prior to the meeting, provide the *DES VECP Analysis Report* to the Deputy Division Chiefs.

The *DES VECP Analysis Report* will provide:

1. All pertinent contract information along with a description of the VECP
2. Structures affected
3. Positive aspects of the VECP
4. Reasons the VECP should be accepted or rejected
5. The recommendation(s) of the SR and Project Engineer.

## **1-7 CS, Section 5-1.01, Control of Work – General**

## **1-8 CS, Section 5-1.02, Control of Work – Contract Components**

## **1-9 CS, Section 5-1.03, Control of Work – Engineer’s Authority**

The Contractor is responsible for quality control (QC). The Contractor is required to provide safe access for SC staff inspection; if safe access is not provided, request it. SC staff must understand contract component hierarchy and are responsible for making technical decisions on structures activities. Means and methods of construction are the Contractor’s decision. Except for rare occasions, SC staff should not direct the Contractor activities except on CO at force account work. Some exceptions include imminent hazards to life. Discuss with the SR or SC Supervisor prior to directing activities. The Contractor may protest the Engineer’s decision. If this occurs, the Contractor must follow the procedure of submitting a request for information (RFI) per CS, Section 5-1.42, *Control of Work – Requests for Information*, of the CS.

Relevant sections in the CM are:

- [Section 3-501](#), *General Provisions – Control of Work – General*
- [Section 3-502](#), *General Provisions – Control of Work – Engineer’s Authority*
- [Section 3-503](#), *General Provisions – Control of Work – Protests*

## **1-10 CS, Section 5-1.09, Control of Work – Partnering**

Review the Caltrans [Field Guide to Partnering on Caltrans Construction Projects](#) and the CM, [Section 3-504](#), *General Provisions – Control of Work – Partnering*. Attend and participate in the required project-specific partnering meetings and workshops. Partnering is working cooperatively with all contractors to make long-term commitments to achieve mutual goals. This requires changing traditional adversarial relationships into team-based relationships. Partnering promotes open communication, trust, understanding, and teamwork among participants.

## **1-11 CS, Section 5-1.17, Control of Work – Character of Workers**

Understand the definition of incompetent, disorderly, or improper behavior. Report and work in conjunction with the RE as needed. Refer to the CM, [Section 3-509](#), *General Provisions – Control of Work – Character of Workers*, for more information.

## **1-12 CS, Section 5-1.20C, Control of Work – Coordination with Other Entities – Railroad Relations**

When contracts involve railroads, the CS will indicate that a railroad company is involved and that the *Railroad Relations and Insurance Requirements* will be available in the *Information Handout*. A copy of the *Information Handout* is stored in the



“OE Plans and Specs” folder of the Files tab for the project in [VISION](#). 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 a modification is needed, immediately notify the RE and Regional/District Railroad Agents. Change orders that involve railroads are coordinated through the RE to the Regional/District Railroad Agents. If notifications are received from the Contractor pertaining to the railroads, immediately forward these to the RE for processing through the Regional/District Railroad Agents.

Process all railroad paperwork and issues through the RE 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, follow the appropriate procedures outlined in:

- *Falsework Manual*, Chapter 2, [Section 2-4.02B](#), *Review of Shop Drawings – Review – Review Procedure when Railroad Company is Involved*
- *Bridge Construction Records and Procedures Manual*:
  - [BCM C-11](#), *Shop Drawing Review of Temporary Structures*
  - [BCM 60-2.02A\(3&4\)](#), *Existing Structures – Structure Removal – Bridge Removal – General – Submittals and Quality Assurance*, and [Attachment 2](#), *Bridge Removal Over and/or Adjacent to Railroad Tracks*

The railroad must be notified prior to any construction that affects clearance to railroad property. Temporary construction clearances and notification requirements for railroads will be specified in the *Railroad Relations and Insurance Requirements* and range from 15 to 30 days; advance planning is necessary. As stated above, notification must be given to the Regional/Railroad Agents through the RE.

The minimum permanent vertical and horizontal clearances to the railroad tracks must be noted on the General Plan sheet of the as-built project plans. 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.

## **1-13 CS, Section 5-1.23, Control of Work – Submittals**

Review the CM, [Section 3-511](#), *General Provisions – Control of Work – Submittals*.

## **1-14 CS, Section 5-1.24, Control of Work – Construction Surveys**

SC staff must know the responsibilities and procedures for establishing survey control for construction of structures. Per the contract documents, construction staking for structural elements is performed by Caltrans survey crews at the request of the Contractor and is limited to line and grade. The Contractor is responsible for transferring line and grade from the stakes to structural elements. SC staff shall independently perform quality assurance (QA) to verify elements are formed correctly. SC staff are not to set line and grade for the Contractor unless specified in the contract documents. SC staff may set additional control stakes in accordance with the requirements of the Caltrans [Surveys Manual](#), Chapter 12, Section 12.1-1(c), *Construction Surveys – Responsibilities – Structure Representative*, and Section 12.5, *Typical Department-Furnished Construction Stakes*.

It is good practice to be present when Caltrans survey crews establish line and grade controls. SC staff must monitor survey marks and know when they have been moved or damaged and the information is no longer reliable. The Contractor is responsible for protecting the survey points.

SC staff provides deck elevation control points per CS, Section 51-1.03F(5), *Concrete Structures – General – Construction – Finishing Concrete – Finishing Roadway Surfaces*. SC staff shall transfer temporary benchmark elevations as needed to maintain grade control through substructure and superstructure construction. During construction of the superstructure, it is a good idea to set temporary benchmarks on the column vertical reinforcement or other stable elements, for use during falsework, deck dowel, and overhang grading. For additional information refer to Chapter 7, *Bridge Deck Construction*, of the [Reinforced Concrete Construction Manual](#).

## **1-15 CS, Section 5-1.30, Control of Work – Noncompliant and Unauthorized Work**

SC staff assists the RE with administration and resolution of noncompliant or unauthorized structure work as set forth in the CM, [Section 3-514](#), *General Provisions – Control of Work – Noncompliant and Unauthorized Work*.

Perform applicable QA tests or review QC test results in a timely matter. Tests SC staff perform include, but are not limited to, visual inspection, profilograph, chaining of the bridge deck, measuring, surveying, or a straightedge. A review of test results could include compressive strength, aggregate tests, skid tests, or compaction results. Notify the Contractor in writing of the failed results. Request a repair plan from the Contractor.

## 1-16 CS, Section 5-1.36, Control of Work – Property and Facility Preservation

SC staff assist the RE with administration of preservation of existing property and facilities per the CM:

- Chapter 3, [Section 3-518](#), *General Provisions – Control of Work – Property and Facility Preservation*
- Chapter 4, [Section 4-1501](#), *Construction Details – Existing Facilities – General*
- Chapter 4, [Section 4-1502](#), *Construction Details – Existing Facilities – Before Work Begins*
- Chapter 4, [Section 4-1503](#), *Construction Details – Existing Facilities – During the Course of Work*

Existing property and facilities include, but are not limited to the following:

1. Highway improvements and facilities
2. Adjacent property
3. Waterways
4. Environmentally sensitive areas
5. Land administered by other agencies
6. Railroads and railroad equipment
7. Nonhighway facilities, including utilities
8. Survey monuments
9. Department's instrumentation
10. Temporary work
11. Survey benchmarks
12. High water marks
13. Objects of archeological or historical significance
14. Roadside vegetation not to be removed.

SC 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 in the contract documents. There are occasions, however, when utilities or improvements are not shown or are shown in a location other than where they are found in the field. At the beginning of the project, SC staff must document the condition of, and photograph the existing facilities.

Conduct a visual inspection of the project limits to verify location of existing facilities and document facilities not identified in the contract documents. Lights, utility markings, electrical panels, and conduits, are all indications of utilities present. If the Contractor discovers underground facilities not identified on the contract documents, the Contractor must immediately provide the Engineer written notification. Such facilities shall be relocated or protected from damage and paid for as extra work.

The CM, [Section 3-518](#), *General Provisions – Control of Work – Property and Facility Preservation*, covers utility relocation 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 Division of Right of Way and Land Surveys, [Office of Railroad and Utility Coordination](#).

Caltrans is required by the *Professional Land Surveyor's Act*, [Section 8771](#), *Setting of Monuments in General; Monument Perpetuation*, 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 benchmarks will be handled by the District. The SR should notify the RE when survey monuments are encountered and need to be relocated.

If existing structures with high water marks are to be 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.

Permanent 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.

## **1-17 CS, Section 5-1.37B, Control of Work – Maintenance and Protection – Load Limits**

Assist the RE with enforcement of load limits on all projects including paving only projects when equipment is to cross existing or newly constructed structures.

The following guidance is to ensure SC performs uniform review and proper allowance for movement of construction equipment over structures that are within the project limits and are not open to traffic.

For structures that are either open to traffic or partially open to traffic, within the project limits, these guidelines can also be used for reinforced concrete slab bridges and culverts, and for reinforced concrete bridges with girders provided that:

1. The bridge has three or more girders. Non-redundant 2-girder systems or bridges with girder spacing greater than 14 feet must be forwarded as specified below for further analysis.
2. Clear spacing between overload vehicle and the edge of travelled way open to adjacent traffic must be a minimum of 10 feet or actual girder spacing, whichever is greater.

Overload cases that vary from the guidelines provided herein must be forwarded to:

1. The Bridge Design (BD) Structure Project Engineer for new structures or structures being modified by contract.
2. Structure Maintenance & Investigations (SM&I), Permit/Rating Office for existing structures.

### 1-17.01 Contract Specifications for Weight Limitations

The CS, Section 5-1.37B, sets forth weight limitations for earthmovers, trucks, and truck and trailer combinations. It identifies what vehicles will be permitted to cross the existing, new, partially completed, or partially demolished bridge structures that are not open to traffic. Other construction equipment may be permitted to cross bridge structures subject to the weight limitations and conditions of the California Department of Transportation Permit Policy, whether open to the public or not. Refer to the [Transportation Permits \(Oversize/Overweight Vehicles\) webpage](#), and the [Transportation Permits Manual](#).

The provisions in the CS, Section 5-1.37B, applies only within the project limits. The *California Vehicle Code*, [Division 15](#), *Size, Weight and Load*, governs operation of vehicles (including construction equipment) on State highways beyond the project limits.

### 1-17.02 Overloads

Overloads on bridge structures within construction contracts may be either repetitive, occasional, or stationary. When reviewing overloads, consideration should be made for the potentially reduced capacity of a partially completed or partially demolished structure. Listed below are guidelines for evaluating common overloads:

#### *1-17.02A Repetitive Overloads*

Repetitive overloads usually occur in connection with an earthmoving operation and its' associated equipment. Some considerations for repetitive overloads include:

**1. Bridge Structures Designed and Rated for HS20, HS20-44, and HS20-S16-44, and Permit Live Loading or for HL93 and Permit Live Loading:**

According to the CS, Section 5-1.37B(1), load limits are only applicable for bridges that have the capacity to handle HS20 live loading. Any new structure that is designed for either HS20 and permit live loading or HL93 and permit live loading and any existing structure that has an inventory level load rating factor of 1.00 or higher for either HS20 or HL93 loading and permit ratings of “PPPPP,” has adequate capacity for the load limits.

To verify design loading, design or as-built plans must be reviewed. To verify bridge load rating Inventory/Operating loading, bridge inspection reports or bridge load rating summary sheets must be reviewed. Ratings are based on HS20 loading wherever Load Factor (LF) is indicated under Rating Method, and HL-93 ratings will be identified as a Load and Resistance Factor Rating (LRFR) Rating Method.

The following must be submitted for review when using earthmoving equipment on:

- a. A new or partially completed structure that exceeds the limitations specified in the CS, Section 5-1.37B(1), *Load Limits – General*.
- b. An existing structure that:
  - i. Does not have an HS20 Operating Rating Factor of 1.67 or an HL93 Operating Rating Factor of 1.30 or higher, and
  - ii. Does not have permit ratings of “PPPPP”.

**2. Structures Designed for Overloads:**

Under the requirements of the CS, Section 5-1.37B(2), *Increased Load Carrying Capacity*, the Contractor may request the redesign of a structure to increase its load carrying capacity to accommodate heavy construction vehicles such as earthmoving equipment. The Contractor must be willing to pay for the cost of redesign and increased cost of construction, and the Contractor’s equipment cannot produce stresses that exceed the permissible redesigned stress limits produced by the following construction (design vehicle). Additional information relative to construction overload design is given in Structure Technical Policy 3.1 ([STP 3.1](#)), *Design for Material Hauling Equipment Lane on Bridges*.

At the present time, the design vehicles used to represent the construction equipment loading are:

- a. A three-axle vehicle having a maximum axle load of 130 kips and a total gross load of 330 kips for spans greater than 54 feet.

- b. A two-axle vehicle having a maximum axle load of 130 kips and a total gross load of 200 kips for spans of 24 to 54 feet.
- c. For spans under 24 feet, the design is based on a single 130-kip axle.

The following are the procedures to be followed when the Contractor requests a redesign of a structure, or structures, to increase the load carrying capacity:

- The Contractor submits a letter to the RE requesting that the structure be designed to increase its load carrying capacity. In this letter, the Contractor must name the structure or structures to be redesigned, give specific details of the loads, and the positioning of the loads on the structure. The Contractor must also state that they are willing to pay the cost of redesign and the increased cost of construction.
- The SR submits a copy of the Contractor's letter to the Deputy Division Chief of Structure Construction and, if appropriate, forwards it to Bridge Design along with a memo requesting that the structure be redesigned. The SR should also request that the Contractor be advised of the estimated cost of redesigning the structure. Reach written agreement for the redesign costs in writing prior to proceeding with the redesign.
- After the redesign has been completed, and upon receiving revised contract documents and the estimated maximum cost of redesigning the structure, the SR will prepare a change order (CO). The CO will authorize the structural alterations to accommodate the construction overloads. If the final cost to the Contractor for the redesign is known, then the credit to the State should be included. Otherwise, a supplemental CO should be written when the final costs are completed. To follow is sample verbiage of this type of CO:

As provided in the CS, Section 5-1.37B(2), *Increased Load Carrying Capacity*, modify substructure of the Van Koevering Avenue Undercrossing, Bridge 54-1001, as shown on Sheets 2 and 3 of this change order to accommodate construction overloads.

It is agreed that the Contractor will furnish all labor, equipment and material, and perform all work required to accomplish the structural alterations at no cost to the State.

It is further agreed that the State will be credited by means of a supplemental change order for the actual cost for redesigning the Van Koevering Avenue Undercrossing to accommodate construction overloads. The design costs shall be a maximum of \$10,000.



## 1-17.02B Occasional Overloads

Occasional overloads will include the movement of construction equipment (concrete trucks, cranes, paving equipment, pavement grinders, excavators, etc.) across structures from one work site to another. Examples of occasional overloads include:

### 1. Concrete Trucks:

Concrete trucks traveling on the highway with full loads generally need to use booster axles to meet the axle weight requirements in [Division 15](#) of the *California Vehicle Code (CVC)*. When discharging concrete, the booster wheels need to be raised, which increases the loads on the remaining axles, resulting in axle loads that exceed the legal load allowed by the permit policy. The CS, Section 5-1.37B, *Load Limits*, allows trucks over legal (exceeding CVC weight limitations) limit on bridges, not open to traffic, with up to 28,000 pounds for single axles and 48,000 pounds for tandem axles. This limits most trucks to hauling a maximum of 7 cubic yards of concrete. These trucks should be weighed to confirm allowable specification loading if there is reason to suspect the trucks are being overloaded. See Section 3, Processing Requests for Construction Equipment Overloads, below for further details.

### 2. Cranes and Concrete Pumps:

Provided they conform to [permit policy](#), fully equipped truck cranes are permitted to cross bridges on construction projects when rated for the following:

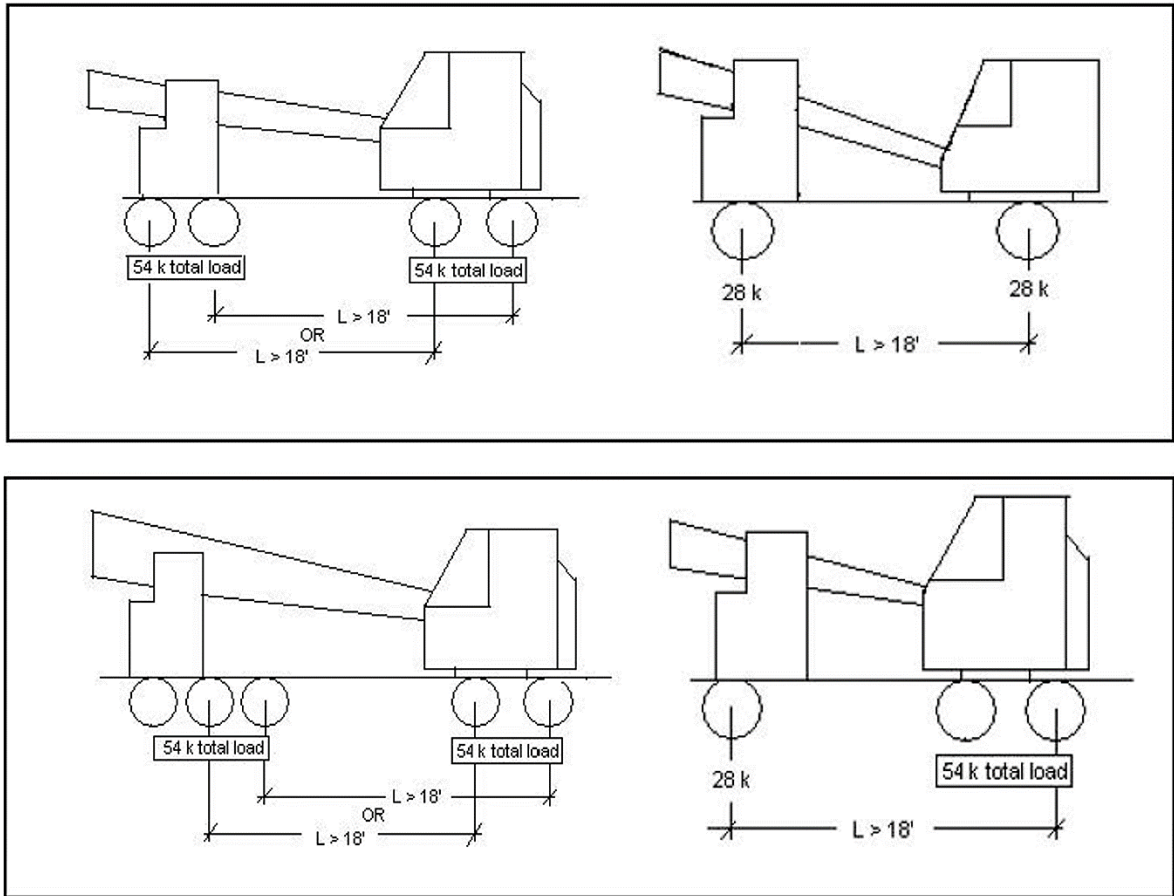
- HS20, Operating Rating Factor of 1.67; or
- HL93, Operating Rating Factor of 1.3 or greater; and
- Full purple rated permit capacity rated (PPPPP) bridge structures.

Full purple rated permit capacity must be for all 5, 7, 9, 11, and 13 axle vehicles. The following general guidelines may be used to determine if truck cranes or concrete pumpers traveling on the bridge meet permit policy, as follows:

- a. Tandem axle weights less than 54,000 pounds.
- b. Single axle weight less than 28,000 pounds.
- c. No group of three axles within an 18-foot distance (see Figure 1 below).
- d. Three axle groups less than 18 feet are treated as a tandem axle group limited to 54,000 pounds.

Large cranes are typically broken down (counterweights and other components removed) and the boom is supported on a trailer to achieve allowable permit weights. The Engineer should verify that the crane is configured in its traveling condition when moving on the bridge.





**Figure 1. Illustration Depicting the Limitation of Three Axles within an 18-foot Distance**

### 3. Track Equipment:

Track equipment, such as pavement grinders and excavators, occasionally needs to cross or work on a bridge. For bridges designed and/or rated for HS20 or HL93 loading, the Engineer may approve this equipment, provided that the following conditions are met:

- a. Maximum gross weight is less than 66,000 pounds.
- b. Maximum load on 12-inch wide, or larger, tracks is less than 6,000 lb per foot.
- c. Maximum load on 10-inch tracks is less than 5,000 lb per foot.

When track equipment crosses or works on a bridge, consider the track type and its effect on the deck surface. Protective covers may be required to protect the deck surface.

#### 4. Material Transfer Vehicles (MTVs):

The CM, [Section 3-519B](#), *General Provisions – Control of Work – Maintenance and Protection – Load Limits*, discuss the RE's responsibility to protect Caltrans' structural assets when the contract requires the use of MTVs or other types of heavy paving equipment.

The most used MTVs have axle loading double the legal limit when empty and triple the legal limit when loaded. MTVs typically exceed the load limits specified in the CS, Section 5-1.37B(1), *Load Limits – General*, and must be submitted for review. Field review and approval may be allowed provided that the request from the Contractor meets the following conditions:

- a. MTV is either a Roadtec SB2500 or a Weiler E2850 or lighter.
- b. MTV carrying a maximum of 5 Tons of asphalt in hopper.
- c. MTV is traveling 5 mph or less when crossing the bridge.
- d. MTV is the only construction equipment on the bridge. Adjacent legal traffic is not allowed.
- e. Bridge(s) to be crossed are rated to meet or exceed HS20 Operating Rating Factor of 1.67 or HL93 Operating Rating Factor of 1.30 and a 5-axle permit P5 permit rating of 1.00 or greater. Any new structure that is designed for permit loading will meet this requirement.
- f. The bridge structure is an RC slab, an RC culvert-type structure, or a multi-girder type where girder spacing is between 7 and 9 feet.
- g. If the bridge is a multi-girder type structure meeting the 7 to 9 feet girder spacing, the MTV wheel lines must be aligned with the bridge's girder lines during the crossing.

The MTV models noted above are assumed to have an 8-foot center-to-center wheel gage. Wheel lines should be equally spaced off girder lines within the allowable 7-to-9-foot range. Girder lines must be determined and marked out on the deck by the SR or Assistant Structure Representative (ASR) prior to the MTV crossing(s) and must be monitored by Caltrans (CT) field personnel.

#### 1-17.02C Stationary Crane and Concrete Pumps

Cranes are also used in a stationary position to do work from bridges, including pile driving, lowering falsework, and lifting girders. Cranes lifting in a stationary position cause high outrigger loading. Outrigger loads greater than 40,000 pounds should be referred to:

- The BD Structure Project Engineer for new structures or structures being modified by contract, or
- The SM&I, Permit/Rating Office for existing structures

See Section 3, *Processing Requests for Construction Equipment Overloads*, below for further details. The Engineer may review proposals for outrigger loads less than 40,000 pounds provided that the bridge is designed for permit loads and/or has full permit capacity (PPPPP). The Contractor must be required to provide calculations for outrigger loads. Outrigger loads may be distributed in one of three methods:

1. Outriggers that produce loads less than 25,000 pounds may be placed on timber mats. The mats should be 12" by 12" minimum and placed parallel to the girders. The minimum length of the mat is 5 feet; the minimum width must be equal to or greater than the outrigger plate width.
2. Outriggers that produce loads greater than 25,000 pounds should be placed on beams that distribute the load equally to two girders.
3. Outriggers placed upon concrete bent caps of box girder bridges do not require mats or beams to distribute loads.

Submittals for stationary loading to be referred to BD or SM&I should include the following information:

- a. Location of crane outriggers tied into reference locations (CL bent or abutment, CL bridge, or edge of deck etc.).
- b. Calculations for outrigger loads.
- c. Manufacturer's information for the crane and a description of how the crane will be outfitted and configured (boom length and counterweights).
- d. Weight of what will be lifted and maximum extension of the boom.
- e. Proposed method for distribution of outrigger loads.
- f. How the configured crane will be moved into position while complying with CS, Section 5-1.37B, *Load Limits*.

### 1-17.03 Processing Requests for Construction Equipment Overloads

As previously noted, requests from Contractors to utilize construction equipment not exceeding the limitations presented above may be approved at the job level by the SR. All other requests are to be forwarded by the SR to the BD Structure Project Engineer for new structures or structures being modified by contract, and the SM&I Design Engineer, Permit/Rating Office, for existing structures.

Prior to referring the request to either the BD Structure Project Engineer or SM&I Design Engineer, complete the appropriate *Bridge Overload Analysis Transmittal* form, which is either:

- [Form SC-1201-01](#), *Bridge Overload Analysis Transmittal (Stationary)*, or
- [Form SC-1201-02](#), *Bridge Overload Analysis Transmittal (Moving)*.

Include a letter requesting overload analysis and a complete description of the equipment. The Contractor's request must be explicit as to the nature of the overload and the conditions under which it will be moved. The information required includes:

- a. The type, the make, and the model of equipment.
- b. The axle spacing, axle width out and out of tires.
- c. The axle loads, which are obtained by scale weight if possible.
- d. The width and number of tires.
- e. Operating conditions, etc.

SC Staff and the Contractor must submit any overload request in a timely manner. Review time of an overload submittal can take from several days to several weeks or more depending on the completeness of the submittal and the complexity of the overload scenario. There is no contractual language regarding overload review time.

Construction overloads will often affect areas of responsibility of both the District and SC. The SR must ensure that copies of all correspondence related to overloads are furnished to the appropriate District personnel. Refer to [Attachment 3, Sample Letter and Report](#), for a sample letter to the Contractor from the Resident Engineer granting permission to cross bridge structures with construction equipment that does not exceed specified limitations.

## **1-18 CS, Section 5-1.38, Control of Work – Maintenance and Protection Relief**

Under the provisions of the CS, 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 RE. If structures are involved, the RE will request that the SR provide information regarding the status of completion of the involved structures. The SR will then advise the RE if the structures are complete. If the structures are not complete, the SR will advise the RE of the work remaining to be done in writing. Relief from maintenance for structures cannot be granted unless the structure is complete.

For general discussion of Caltrans policy regarding relief from maintenance and responsibility, see the CM, [Section 3-520, General Provisions – Control of Work – Maintenance and Protection Relief](#).

## **1-19 CS, Section 5-1.42, Control of Work – Requests for Information**

Adhere to specification requirements for the response time requirements to RFIs. When the topic is related to a differing site condition (DSC), which may develop into a claim, timely response is critical. When an RFI has the potential to develop into a potential claim, keep the RE, SC Supervisor, and SC Manager informed of the issue. For additional guidance refer to the CM, [Section 3-521](#), *General Provisions – Control of Work – Requests for Information and Potential Claim Records*.

## **1-20 CS, Section 5-1.43A-D, Control of Work – Potential Claims and Dispute Resolution**

Adhere to specification requirements for the response time for reviewing and responding to potential claims. Assist the RE with the preparation of a claim report involving structure items. For additional guidance refer to the CM, [Section 5-4](#), *Contract Administration – Disputes*.

## **1-21 CS, Section 5-1.43E, Control of Work – Alternative Dispute Resolution**

For projects containing structure work, recommend to the RE during the Dispute Resolution Advisor (DRA) and Dispute Resolution Board (DRB) member selection for a member with relevant structure experience. Should a potential claim arise, remind the Contractor of specification timeline for filing RFIs, Initial Potential Claim Record, initial claim documents, supplemental claim documents, etc. Support the RE in writing position papers and preparing presentations. For additional information, refer to the CM:

- [Section 3-522](#), *General Provisions – Control of Work – Alternative Dispute Resolution*
- [Section 5-404](#), *Contract Administration – Alternative Dispute Resolution*

## **1-22 CS, Section 5-1.46, Control of Work – Final Inspection and Contract Acceptance**

The RE files the notice of completion, and the work is accepted by the District Director in each District. Communicate to the RE the status of structure inspection and completion and ensure all punch-list work and final inspection of structures item work is accepted prior to the RE granting relief from maintenance and contract acceptance.

When the structure work is complete, submit the *Report of Completion* per [BCM C-6](#), *Required Documents to be Submitted During Construction*.

Near the completion of a building project, it is best practice for the SR to arrange for a joint review of the project with representatives of other organizations who have a vested interest in the facility. The purpose of this review is to accomplish the following:

1. Review the operation of the facility.
2. Inform the Maintenance Regional Manager or the operators of the facility of the beginning date of the one-year guarantee period and who to contact for guarantee work.
3. Discuss manufacturer's warranties, service instructions, etc.
4. Discuss work that may be required after contract acceptance.
5. Review all design features that should be handled differently on future projects. These features should also be noted in the comprehensive letter which gives suggestions for improving the design or construction of building projects.

The SR should arrange for the following to attend the review:

- Maintenance Regional Manager or his representative for building projects which will be operated and maintained by State Maintenance forces.
- A representative of the organization that will be operating and maintaining the facility for building projects not operated and maintained by State Maintenance forces.
- The project architect. The architect will arrange for Headquarters representation at the review in accordance with instruction in the *Transportation Architecture Manual*.

At his discretion, the SC Supervisor may determine that minor construction projects, including Minor B contracts, do not warrant this joint review. If the review is not held, it is still required that input is obtained from Bridge Design, and that the appropriate people are informed about the operation of the facility and about the guarantee provisions, as well as who to contact for guarantee work.

It is important that the Maintenance Regional Manager be kept informed regarding job progress on building projects which will be operated and maintained by State Maintenance forces. Contact the Maintenance Regional Manager prior to the start of the project work and encourage periodic site visits as the work progresses.

## **1-23 CS, Section 6-1.04, Control of Materials – Buy America**

Review the CM, [Section 3-604](#), *General Provisions – Control of Materials – Buy America*.

## 1-24 CS, Section 6-1.06, Control of Materials – Buy Clean California Act

Review the project *Special Provisions* to verify if the Buy Clean California Act is required for the project. For additional guidance regarding quantities and types of materials included in the act, review the following:

- a. *Construction Procedure Directive 22-4 ([CPD 22-4](#)), Buy Clean California Act – Update*
- b. *CM:*
  - i. Chapter 3, [Section 3-606](#), *General Provisions – Control of Materials – Buy Clean California Act*
  - ii. Chapter 4, [Section 4-5201](#), *Construction Details – Reinforcement – General*
  - iii. Chapter 4, [Section 4-5501](#), *Construction Details – Steel Structures – General*
  - iv. Chapter 6, [Section 6-202A\(2\)](#), *Sampling and Testing – Acceptance of Manufactured or Fabricated Materials and Products – Responsibilities for Acceptance of Manufactured or Fabricated Materials and Products – Certificates of Compliance, Mill Test Reports, Buy America and Buy Clean California Act Requirements.*

## 1-25 CS, Section 6-2, Control of Materials – Quality Assurance

Be aware of contract requirements for the “Buy America” clause during review of material to be used on the project. Obtain all materials certification with “Buy America” clause from the field, Contractor, or manufacturer and file them in the appropriate category of the project records so that they can easily be retrieved should an audit be conducted.

In coordination with the RE, SC staff must verify materials incorporated into the finished structure work conform to the requirements of the contract documents. Understand the meaning of quality assurance, quality control, and Department acceptance – and who is responsible for each per the CM, Chapter 3, [Section 3-607](#), *General Provisions – Control of Materials – Quality Assurance*. When required, verify materials are received from authorized facilities, [Authorized Materials Lists](#) (AML), or authorized materials source lists per the CM, Chapter 6, [Section 6-202](#), *Sampling and Testing – Acceptance of Manufactured or Fabricated Materials and Products – Responsibilities for Acceptance of Manufactured or Fabricated Materials and Products*. Adhere to the sampling and testing requirements for materials stated in the tables in the CM, Chapter 6, [Section 6-107](#), *Sampling and Testing – Sample Types and Frequencies – Materials Acceptance Sampling and Testing*.



Additional relevant reference documents include:

- CM, Chapter 6, [Section 6-3](#), *Sampling and Testing – Field Tests*
- SC [Outline of Field Construction Practices](#), Section 48, *Materials*

## **1-26 CS, Section 7-1.02K(1-5), Legal Relations and Responsibility to the Public – Labor Code – Labor Compliance**

Write accurate and factual daily reports and do regular mandated labor compliance interviews of various trades on project per the CM, Chapter 8, [Section 8-102A\(3\)](#), *Employment Practices – Labor Compliance – Labor Compliance Responsibilities – Resident Engineer – Interviews with Contractor Personnel*.

## **1-27 CS, Section 7-1.02K(6)(a), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – General**

## **1-28 CS, Section 7-1.02K(6)(c), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – Tunnel Safety**

## **1-29 CS, Section 7-1.02K(6)(d), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – Confined Space Safety**

## **1-30 CS, Section 7-1.02K(6)(j), Legal Relations and Responsibility to the Public – Laws – Labor Code – Occupational Safety and Health Standards – Lead Safety**

For the four sections of the CS grouped above:

Comply with the Cal/OSHA *Safety Orders*.

Resources to review include:

1. SC [Code of Safe Practices](#)
2. District [Code of Safe Practices](#)



3. *CM*:
  - a. Chapter 2, [Section 2-102B](#), *Safety and Traffic – Safety – Duties and Responsibilities – District Construction Safety Coordinator*
  - b. Chapter 2, [Section 2-102D](#), *Safety and Traffic – Safety – Duties and Responsibilities – Resident Engineer*
  - c. Chapter 2, [Section 2-104B](#), *Safety and Traffic – Safety – Division of Occupational Safety and Health – Citations and Civil Penalties*
  - d. Chapter 2, [Section 2-106B](#), *Safety and Traffic – Safety – Caltrans-Specific Safe Practices – Tailgate Safety Meetings*
  - e. Chapter 3, [Section 3-501](#), *General Provisions – Control of Work – General*
  - f. [Section 3-510B](#), *General Provisions – Control of Work – Coordination with Other Entities – Contractor-Property Owner Agreement*
  - g. Chapter 3, [Section 3-701D\(2\)](#), *General Provisions – Legal Relations and Responsibility to the Public – Laws to be Observed – Occupational Safety and Health Standards – Tunnel Safety*
  - h. Chapter 7, [Section 7-107B](#), *Environmental Stewardship – Environmental Rules and Requirements – Hazardous Waste and Contamination – Aerially Deposited Lead*
4. *Caltrans Employee Health and Safety Manual*, Chapter 14, [Confined Spaces](#)

## **1-31 CS, Section 7-1.02M(2), Legal Relations and Responsibility to the Public – Public Resources Code – Fire Protection**

See *Caltrans Code of Safe Practices* and comply with [California Public Resource Code – Fire Protection](#).

## **1-32 CS, Section 7-1.04, Legal Relations and Responsibility to the Public – Public Safety**

Safety is a priority on all projects for project personnel and the traveling public. SC staff are responsible for assisting the RE in reviewing the Contractor's Injury and Illness Prevention Program when requested. SC Supervisors ensure that staff are provided training for relevant safety topics such as confined spaces, ladder safety, and fall protection. For lead safety, fire protection, and tunnel safety, review the Contractor's Injury and Illness Prevention Program to ensure topics are addressed if applicable to the contract.

The RE completes a weekly safety inspection using [Form CEM 0606](#), *Construction Safety Checklists*. Assist the RE by providing input for the weekly safety inspection.

Refer to the *CM*, Chapter 2, [Section 2-109](#), *Safety and Traffic – Safety – Project Safety Reviews*. Topics relevant to structure work include, but are not limited to, the following:

1. Heavy equipment including cranes
2. Excavations
3. Structures work
4. Work over or near water
5. Tools and equipment
6. Power actuated tools
7. Scaffolding
8. Ladder safety
9. Work with chemicals, such as polyester concrete and methacrylate.

See Chapter 4, [Section 4-12](#), *Design Considerations – Falsework Over or Adjacent to Roadways or Railroads*, of the *Falsework Manual* for guidance on changes of structure clearances due to placement of falsework.

### **1-33 CS, Section 8-1.02, Prosecution and Progress – Schedule**

See Chapter 3, Section 3-801, *General Provisions – Prosecution and Progress – Schedule*, of the *CM*.

### **1-34 CS, Section 8-1.03, Prosecution and Progress – Preconstruction Conference**

See Chapter 3, Section 3-802, *General Provisions – Prosecution and Progress – Preconstruction Conference*, of the *CM*.

### **1-35 CS, Section 8-1.05, Prosecution and Progress – Time**

See Chapter 3, Section 3-804, *General Provisions – Prosecution and Progress – Time*, of the *CM*.

### **1-36 CS, Section 8-1.06, Prosecution and Progress – Suspensions**

SC Staff are responsible for assisting the RE's review of the Contractor's submitted baseline critical path method (CPM) and periodic updates of the CPM schedule with the RE for structures related work. Prepare for and participate in the preconstruction conference. For structures related work, assist the RE with review of the initial construction progress schedule and all subsequent updates. Assist the RE, if requested,

to analyze viability of project suspension and time impact analysis schedules related to structure claims and COs.

### **1-37 CS, Section 9-1.02C, Payment – Measurement – Final Pay Item Quantities**

### **1-38 CS, Section 9-1.03, Payment – Payment Scope**

### **1-39 CS, Section 9-1.04, Payment – Force Account**

### **1-40 CS, Section 9-1.05, Payment – Extra Work Performed by Specialists**

### **1-41 CS, Section 9-1.06, Payment – Changed Quantity Payment Adjustments**

### **1-42 CS, Section 9-1.15, Payment – Work-Character Changes**

### **1-43 CS, Section 9-1.16, Payment – Progress Payments**

### **1-44 CS, Section 9-1.17, Payment – Payment After Contract Acceptance**

The above sections contain payment related clauses in the [contract documents](#).

Review [BCM C-9](#), *Preparation of Progress Pay Documents*. SC staff must understand the different payment methods and be able to:

1. Determine where and how items of work are paid for.
2. Prepare payment estimates using a schedule of values.
3. Administer force account work.
  - a. Be aware of the Equipment Rental Hours chart in CS, Section 9-1.04D(3), *Payment – Force Account – Equipment Rental – Equipment Not on the Job Site and Not Required for Original-Contract Work*. Hours paid do not equal hours operated for equipment in this situation. Intermittently used equipment can be considered as full-time work.
4. Prepare the required documentation for force account work.
5. Determine if specialists are needed for extra work.
6. Determine if work-character changes exist.

7. Prepare payment withholds for outstanding items of work (missing shop drawings, as-builts project plans, etc.).
8. Assist the RE in the preparation of final estimates.

References related to the above sections in the CM are:

- [Section 5-306C\(3b\)](#), *Contract Administration – Change Orders – Change Order Content – Methods of Payment – Extra Work – Extra Work at Force Account*
- [Section 5-306C\(2d\)](#), *Contract Administration – Change Orders – Change Order Content – Methods of Payment – Payment Adjustment – Adjustments for Work-Character Changes*, and Section 3-403A *Work-Character Changes*
- [Section 5-306C\(2\)](#) *Payment Adjustment and 3-904A *Changed Quantity Payment Adjustments**
- [Section 3-907](#), *General Provisions – Payment – Payment After Contract Acceptance*.

## **1-45 CS, Section 12-4. Temporary Traffic Control – Maintaining Traffic**

For structure work that requires temporary lane closures, coordinate with the RE regarding the administration of temporary traffic control. Be aware of temporary traffic control requirements and review the CS:

- Section 12-4.02A(3)(b), *Temporary Traffic Control – Maintaining Traffic – Traffic Control Systems – General – Submittals – Closure Schedules*, for requirements for restricting horizontal and vertical clearances (also referenced in Section 7-1.04 of this attachment).
- Section 12-4.02C(3)(a), *Temporary Traffic Control – Maintaining Traffic – Traffic Control Systems – Construction – Closure Requirements and Charts – General*, for lane buffer requirements when work is within 6 feet of the traveled way.

Review temporary lane closure charts and know lane closure restrictions for structure work. Coordinate with the RE and be aware of temporary traffic control contingency requirements and penalties for work that exceeds temporary lane closure time limits. For falsework, be aware of the falsework traffic opening dimensions specified in the [contract documents](#) for vehicles and pedestrians. Additional information for temporary traffic control procedures is in the:

1. *CM*:
  - a. Chapter 2, [Section 2-12](#), *Safety and Traffic – Traffic*
  - b. Chapter 4, [Section 4-12](#), *Construction Details – Temporary Traffic Control*
2. [Temporary Pedestrian Access Routes Handbook](#)

3. *COZEEP/MAZEEP Pocket Guide*
4. *Flagging Instruction Handbook*
5. *Code of Safe Practices*
6. SC [Outline of Field Construction Practices](#):
  - a. Section 16, *Falsework*
  - b. Section 44, *Bridge Removal*
  - c. Section 56, *Safety*
7. [California Manual on Uniform Traffic Control Devices \(MUTCD\)](#), Part 6, *Maintaining Traffic Control*
8. [Construction Procedure Directive \(CPD\) 01-11](#), *Hoisting Operations near Public Traffic and Pedestrians*.

## **1-46 CS, Section 13-2, Water Pollution Control – Water Pollution Control Program**

## **1-47 CS, Section 13-3, Water Pollution Control – Stormwater Pollution Prevention Plan**

## **1-48 CS, Section 13-4, Water Pollution Control – Job Site Management**

Stormwater pollution prevention plan (SWPPP) and water pollution control program (WPCP) administration is the responsibility of the RE. Assist the RE in the administration of SWPPP/WPCP for structure related work.

1. Structure Representatives responsibilities include the following:
  - a. Review and discuss work methods with the RE for structure items that may affect the quality of stormwater discharges prior to the pre-construction conference.
  - b. Understand the approved SWPPP/WPCP.
  - c. Stay informed about any critical dates or any potential amendments to the SWPPP/WPCP that may affect structure work.
  - d. Verify SC staff have received SWPPP training offered to District personnel.
  - e. Ensure that the appropriate best management practices (BMPs), as indicated in the approved SWPPP/WPCP, are in place prior to the performance of the related work.
  - f. Report noncompliance and/or violations of the SWPPP to the RE.

2. Structure work that may affect the quality of stormwater might include, but not be limited to, the following:
  - a. Operations related to concrete and grouting operations; clean out, leakage, priming and pumping concrete.
  - b. Water removed from footings, cofferdams, and piles.
  - c. Water runoff from deck curing operations, especially if the flow is great enough to cause a disturbance to the surrounding ground.
  - d. Residue from sprayed on resins, concrete curing compound, and coatings.
  - e. General site cleanup and trash removal.
  - f. Potential heavy metal contamination from operations such as welding, grinding, sawing, and sandblasting.
  - g. Runoff from high pressure water wash.
  - h. Vehicle tracking.
  - i. Maintenance of concrete washouts.

Contractor proposed changes to the SWPPP will be reviewed and approved by the RE. Structure Representatives are not to approve changes to the SWPPP.

## **1-49 CS, Section 14, Environmental Stewardship**

### **1-50 CS, Section 14-11, Environmental Stewardship – Hazardous Waste and Contamination**

1. Review the contract documents and assist the RE with environmental stewardship activities. Activities include, but are not limited to, the following:
  - a. Discovery of unanticipated asbestos and hazardous substances
  - b. Hazardous waste management
  - c. Disturbance of existing paint systems on bridges
  - d. Treated wood waste
  - e. Native species relocation or mitigations around a structure
  - f. Water diversion or implementation of turbidity curtains around bridge piers
  - g. Proper review of equipment submittals to comply with environmental requirements for emissions or compliance, and
  - h. Any other review and enforcement of activities requested by the RE around structure sites.

2. Relevant references include:
- a. [BCM B-2](#), *SC Lead Compliance Plan*
  - b. [BCM 59-2](#), *Structural Steel Coatings – Painting Structural Steel*
  - c. [BCM 60-2.02C](#), *Existing Structures – Structure Removal – Bridge Removal – Construction*
  - d. [Concrete Technology Manual](#):
    - i. Chapter 6, *Structure Concrete Repair and Rehabilitation*
  - e. [Construction Manual](#):
    - i. Chapter 2, Section, 2-108, *Safety and Traffic – Safety – Hazardous Materials*
    - ii. Chapter 5, Section 2-102C, *Contract Administration – Project Records and Reports – Organization of Project Documents – Description of Categories, Category 19, Hazardous Waste and Hazardous Materials*
    - iii. Chapter 7, Section 7-106, *Environmental Stewardship – Environmental Rules and Requirements – Hazardous Materials*
    - iv. Chapter 7, Section 7-107, *Environmental Stewardship – Environmental Rules and Requirements – Hazardous Waste and Contamination.*