

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

1727 30<sup>th</sup> Street MS-43

P.O. BOX 168041

SACRAMENTO, CA 95816-8041

FAX (916) 227-6214

TTY 711

*Flex your power!  
Be energy efficient!*

June 6, 2012

04-SF-80-12.6/13.9  
04-0120T4  
Project ID 0400000027

Addendum No. 3

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN THE CITY AND COUNTY OF SAN FRANCISCO FROM THE YERBA BUENA TUNNEL TO 1.3 KM EAST OF THE YERBA BUENA TUNNEL.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Tuesday, September 25, 2012.

This addendum is being issued to revise the Project Plans, the Notice to Bidders and Special Provisions, the Bid book, and the Information Handout.

Project Plan Sheets 3, 16, 18, 38, 76, 111, 125, 132, 137, 143,, 258, 259, 260, 261, 322, 323, 325, 339, 341, 353, 361, 454, 483, 508, 525, 536, 540, 637, 648, 652, 653, 654, 655, 666, 667, 672, 681, 682, 683. 811, 812, 813, 814, 816, 818, and 819 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheet 144 is deleted.

In the Special Provisions, Section 2-1.03, "SUBMITTALS WITH BID," is revised as attached.

In the Special Provisions, Section 2-1.045, "SSPC QP CERTIFICATION PREAWARD QUALIFICATION," is added as attached.

In the Special Provisions, Section 5-1.025, "SUBCONTRACTING," is added as attached.

In the Special Provisions, Section 5-1.12, "PAYMENTS," the first paragraph is deleted.

In the Special Provisions, Section 5-1.13, "SUPPLEMENTAL PROJECT INFORMATION," is revised as attached.

In the Special Provisions, Section 5-1.35, "PROJECT SAFETY," is added as attached.

In the Special Provisions, Section 10-1.08, "CONSTRUCTION SITE MANAGEMENT," is revised as attached.

04-SF-80-12.6/13.9  
04-0120T4  
Project ID 0400000027

In the Special Provisions, Section 10-1.27, "TEMPORARY SUPPORTS (CANTILEVER TRUSS)," subsection "REMOVING TEMPORARY SUPPORTS," the second paragraph is revised as follows:

"Full compensation for designing, constructing, maintaining, and removing the temporary supports, including jacking the existing structure and monitoring displacements, shall be considered as included in the contract lump sum price paid for Bridge Removal (Portion) Location G and no separate payment will be made therefor."

In the Special Provisions, Section 10-1.58, "BRIDGE REMOVAL, PORTION (CANTILEVER TRUSS)," is revised as attached.

In the Special Provisions, Section 10-3.275, "LIGHT EMITTING DIODE," is added as attached.

In the Special Provisions, Section 10-3.33, "REMOVING, REINSTALLING OR SALVAGING ELECTRICAL EQUIPMENT," the following is added to the list in the first paragraph:

"12. Traveler motors (total 4)"

In the Special Provisions, Section 12-16.02, "BASIC MATERIALS AND METHODS," subsection "RECEPTACLES AND SWITCHES," subsection "Dimming Switch," the second paragraph is revised as follows:

**"Dimming Switch**

Dimming switch shall be a complete solid-state dimmer switch suitable for 120 volt ac input. Switch shall provide full to 5 percent light output control. Dimming switches using knob type control shall not be acceptable. Dimming switch shall be compatible with the LED dimming driver(s) provided for the LED light fixtures and shall be of adequate capacity to control the fixtures as shown on the plans. Dimming switch shall incorporate on/off switch and an integral radio frequency filter. Dimming switch shall be UL listed."

In the Special Provisions, Section 12-16.04, "LIGHTING," is revised as attached.

In the Bid Book, "PRE-AWARD QUALIFICATIONS QUESTIONNAIRE (PAQQ)" is revised as attached.

In the Bid book, in the "Bid Item List," Item 4 is revised and Item 157 is deleted as attached.

To Bid book holders:

Replace page 4 and 12 of the "Bid Item List" in the Bid book with the attached revised page 4 and 12 of the Bid Item List. The revised Bid Item List is to be used in the bid.

Attached is a copy of the Information Handout.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

Addendum No. 3  
Page 3  
June 6, 2012

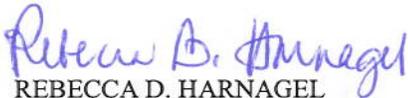
04-SF-80-12.6/13.9  
04-0120T4  
Project ID 0400000027

This addendum, attachments and the modified wage rates are available for the Contractors' download on the Web site:

**[http://www.dot.ca.gov/hq/esc/oe/project\\_ads\\_addenda/04/04-0120T4](http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-0120T4)**

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,



REBECCA D. HARNAGEL  
Chief, Office of Plans, Specifications & Estimates  
Office Engineer  
Division of Engineering Services

Attachments

### 2-1.03 SUBMITTALS WITH BID

The Contractor shall perform a complete 3-D computer analysis and evaluation of the Cantilever Truss for the planned removal procedure. The following documentation regarding removal of the Cantilever Truss shall be submitted with the bid:

1. Detailed drawings illustrating the planned removal procedure that meet the following minimum requirements:
  - a. The removal sequence shall conform to the removal sequence shown on plan sheet titled "Existing Cantilever Truss Demolition, Demolition Limits Plan".
  - b. Temporary supports will not be allowed in the water between Pier E2 and Pier E3.
  - c. Temporary supports shall be used between Pier E1 and E2 and between Pier E3 and E4.
  - d. The drawings shall clearly show a longitudinal connection that transfers the longitudinal load of the partially demolished structure to the adjacent superstructure at Pier E4. The assumed longitudinal load to be used shall be the sum of the actual horizontal loads due to equipment, construction sequence or other causes, and the wind loads shown on the plans, but in no case shall the assumed longitudinal load to be resisted be less than 5 percent of the total dead load of the structure to be removed.
  - e. The drawings shall clearly illustrate the vertical, lateral and longitudinal structural load paths at each stage of removal.
  - f. The drawings shall be signed and stamped by the Contractor's engineer and shall be independently checked, stamped and signed by another registered Civil Engineer. The check engineer shall not be an employee of the Contractor and shall not be employed by the same firm as the Contractor's engineer.

The drawings shall be submitted on 279x432 paper and text and details shall be legible and suitable for photocopying. Only one set of drawings is required. Drawings shall be as complete and comprehensive as possible to demonstrate a clear plan for removal.

2. The Contractor's registered engineer and the check engineer shall provide certification that the submittal complies with all contract requirements and is adequate for the purpose intended.

The Contractor's engineer shall be registered as a Civil Engineer in California. The engineer shall have at least 5 years experience as a registered Civil Engineer. The engineer shall (1) have performed sequential erection analysis and shall have prepared, signed and stamped approved erection plans for at least three completed bridge erection projects or (2) have performed sequential dismantling analysis and have prepared, signed and stamped approved dismantling plans for at least three completed bridge removal projects. Any combination of a total of three bridge erection and dismantling projects is acceptable qualifying experience. At least one of the projects shall be a continuous steel truss bridge with a main span length of at least 80 meters. Alternatively, acceptable qualifying experience for one of the three required bridge projects may be met by having performed sequential seismic retrofit analysis and prepared, signed and stamped approved plans for a completed continuous steel truss bridge with a main span length of at least 80 meters. Sequential analysis performed for the three specified projects shall have shown state of the structure, including stress and displacement and stability evaluation for each stage of construction or removal, considering locked-in forces from previous stages. The bridges in the above bridge erection, dismantling or retrofit projects shall carry or have carried highway truck traffic or railroad traffic or equivalent loading. Blasting shall not have been used as a removal method for the above projects. The above qualifying experience may have been performed as a licensed Civil Engineer or under the supervision of a licensed Civil Engineer who stamped and signed the approved erection, dismantling or retrofit plans.

The check engineer shall have at least the same experience and qualifications as the Contractor's engineer as specified above.

The Contractor's engineer and the check engineer shall provide resumes that meet the above requirements. The resumes shall include qualifying project information including the name of each project, project owner's name, address and telephone number. At the Engineer's request, Documentation shall be provided to verify each engineer's qualifications including copy of complete set of approved plans stamped by the engineer used for the construction of the qualifying erection, dismantling or retrofit projects. If the approved plans were stamped by others, the engineer shall submit a copy of complete, signed design calculations for the qualifying projects and a copy of the approved plans stamped by others.

The check engineer shall not be an employee of the Contractor and shall not be employed by the same firm as the Contractor's engineer.

3. The Contractor's engineer and the check engineer shall provide certifications that the information in the Supplemental Project Information was reviewed, understood and considered in preparation of the submittal including the following:
  - a. Original bridge plans, specifications and construction testing reports
  - b. Existing bridge plans, specifications and construction testing reports for modifications to the existing bridge.
  - c. Original construction sequence
  - d. Bridge maintenance and inspection reports

Bid submittals that do not meet the above requirements will be considered non-responsive and will be rejected.

The Department's acceptance of the submittals with bid does not relieve bidders of the responsibility for work of the quality specified in these special provisions and shown on the plans.

Attention is directed to "Bidder's Compensation" of these special provisions. The contract provisions in this section shall be considered as part of the cost of preparing bids and no separate payment will be made therefor.

**2-1.045 SSPC QP CERTIFICATION PRE-AWARD QUALIFICATION**

Submit proof of each required SSPC QP certification with your bid or fax it to (916) 227-6282 no later than 4:00 p.m. on the 2nd business day after bid opening. Failure to do so results in a nonresponsive bid.

### **5-1.025 SUBCONTRACTING**

Comply with the provisions in Subsection 5-1.055A, "General," of Section 5-1.05, "Subcontracting," of the Standard Specifications, and these special provisions.

Perform work equaling at least 30 percent of the value of the original total bid with your employees and with equipment owned or rented by you, with or without operators, excluding the work for Bridge Removal (Portion), Location G listed in the Engineer's estimate.

### 5-1.13 SUPPLEMENTAL PROJECT INFORMATION

Supplemental project information attached to the project plans are:

1. Log of Test Borings

Supplemental project information included in the Information Handout, and Information available for Inspection are:

#### INFORMATION HANDOUT

##### Structure Information Handout

1. San Francisco-Oakland Bay Bridge Design Criteria, dated July 15, 2002 by T. Y. Lin International/Moffatt & Nichol Engineers, a Joint Venture
2. Mass Concrete Report dated January 25, 2001 by Ric Maggenti, P.E. Materials & Research Engineer of Caltrans
3. Appendix to Mass Concrete Report: Mass Concrete Pours at Dublin 580/680 Interchange
4. Test Method for Coefficient of Linear Thermal Expansion of Concrete, dated June 1, 1988
5. Notification of California Department of Transportation Qualification Requirement for Ultrasonic Testing Personnel Form
6. Recommendations of CEB-FIP Model Code 1978 for Concrete Structures
7. NCHRP Report 402
8. Integrated Shop Drawing (ISDs) for EB On-Ramp
9. SFOBB Cantilever Truss Inspection Reports
10. Cantilever Truss Original Construction Sequence
11. Eye-Bar Condition Survey
12. SFOBB East Span Design Specifications – Superstructure Circa 1933
13. SFOBB East Span Cantilever Construction Sequence Photographs (1935/1936)
14. Updated Foundation Recommendation for Temporary EB On-Ramp, Yerba Buena Island, SFOBB
15. Existing Bridge Modification Contract 4011 Resident Engineers Report on Deck Paving –East Bay July 19 1963 (Testing Reports and Contract Specifications)
16. Existing Bridge Modification Contract 4030 Resident Engineers Report on Steel Work –East Bay Sept 18 1963 (Testing Reports and Contract Specifications)
17. Original Bridge Caltrans Journal Article – Closure of Gap April 1936 (Original Construction Sequence)
18. Original Bridge Contract 4 & 4A East Bay Substructure January 11 1935 (Contract Specifications)
19. Original Bridge Contract 5 Yerba Buena Crossing March 28 1933 (Contract Specifications)
20. Original Bridge Contract 7 Superstructure East Bay Crossing Final Report March 24 1937 (Material Specifications and Testing Reports)
21. Original Bridge Contract 7 Superstructure East Bay Crossing Specifications March 8 1933 (Contract Specifications and Cantilever Erection Procedure)
22. Original Bridge Tests of Heavy Riveted Joints – Second Progress Report (1936)
23. Original Bridge Tests of Heavy Riveted Joints – Special Report on Manganese Steel Specimens (1936)
24. Original Bridge Tests on Riveted Tension Members and Their Connections (1934)
25. SFOBB East Span Floor System Original Design Calculations (1933)
26. SFOBB East Span Cantilever Original Construction Photographs from Caltrans SM&I
27. SFOBB East Span Original Construction Photographs from Bancroft Library
28. SFOBB East Span Cantilever Original Design Calculations (1933)

##### Geotechnical Information Handout

1. Pile Installation Demonstration Project (PIDP) Geotechnical Report: Main Text & Appendices
2. Ground Motion Report: Main Text and Appendices
3. Final Marine Geophysical Survey Report:

Volume-1, Main Text and Appendices

Volume-2, Maps

4. Final Marine Geotechnical Site Characterization Report:  
Volume-1, Main Text and Illustrations. Volume-2A through Volume-2H
5. Phase-I Subcontractor Reports - Preliminary Geotechnical Site Characterization:  
Volume-1 through Volume-4
6. Phase-II Subcontractor Reports - Preliminary Geotechnical Site Characterization:  
Volume-1 through Volume-3
7. Final Yerba Buena Island Geotechnical Site Characterization Report:  
Volume-1, Main Text, Volume-2 through 4
8. Geotechnical Foundation Report for the Yerba Buena Island Approach and Self-Anchored Suspension Bridge
9. Geotechnical Report for Design and Construction of Retaining Walls No. 51 and 50A, YBITS#1, Eastern Tunnel Approach (Goat) Slopes, Yerba Buena Island (YBI)
10. Geotechnical Report for Design and Construction of Retaining Walls No. 50, 52, 53, and 55, YBITS#1, Eastern Tunnel Approach (Goat) Slopes, Yerba Buena Island (YBI)
11. Analysis and Design Procedures for Pile Foundations Supporting Temporary Towers Skyway Structures: Main Text & Appendices dated March 2001
12. Revised Final Oakland Shore Approach Geotechnical Site Characterization Report, dated March 2001: Volumes 1, 2A, 2B, 3, and 4
13. Geotechnical Foundation Report for South-South Detour (04-0120R4) Contract
14. Supplemental Geotechnical Data for Design and Construction of Foundations in Eastern Tunnel Approach Slopes, SFOBB, Yerba Buena Island
15. Subsurface Items Constructed in YBITS Advance and Detour work
16. Foundation Report for Access Stairway and Guard Booths, YBI Approach Structure
17. Foundation Recommendation for Shoring Wall, YBI W7 Drainage CCO #75
18. Supplement to Foundation Report for Access Stairway and Guard Booths, YBI Approach Structure
19. Supplement No. 2 to Foundation Report for Access Stairway and Guard Booths, YBI Approach Structure
20. 1920 Geology Reports
21. 1930 Boring Logs for Original Bay Bridge

#### **District Information Handout**

1. Permits, Letters and Agreements, including, but not limited to:
  - 1.1. California Department of Fish and Game (CDFG), Incidental Take Permit No 2081-2001-021-03, Issued November 19, 2001 and Amendments.
  - 1.2. California Regional Water Quality Control Board (RWQCB), Issued January 23, 2002 and RWQCB Order 01-120, Issued October 17, 2001
  - 1.3. United States Army Corps of Engineers (ACOE), Permit No 023013-S, issued December 04, 2001 and Letters of Modification
  - 1.4. San Francisco Bay Conservation Development Commission (BCDC), Permit 8-01, Issued November 20, 2001, and Amendments
  - 1.5. United States Coast Guard, (USCG), Bridge Permit, Bridge Permit No 3-01-11, Dated December 11, 2001
  - 1.6. United States Fish and Wildlife Service (USFWS), Biological Opinion, issued October 29, 2001
  - 1.7. National Marine Fisheries Service (NMFS), Biological Opinion, Issued October 30, 2001, all Supplemental Biological and Conference Opinions

- 1.8. National Marine Fisheries Service (NMFS), Incidental Harassment Authorizations, and Letters of Authorization
- 1.9. USCG License No. DTCG-Z71111-03-RP-010L and DTCG Z7111-03-RP-002L dated December 2002, and USCG License No. HSCG-Z71111-09-RP-060L dated July 2009
- 1.10. Memorandum of Agreement Between the United States Coast Guard and the Department dated June 21, 2001
- 1.11. Memorandum of Agreement among the Federal Highway Administration, United States Coast Guard, CSHP, and ACHP for the SFOBB project, dated June 2002

The latest versions of environmental permits can be found at the following website:

[www.biomitigation.org](http://www.biomitigation.org)

2. San Francisco-Oakland Bay Bridge East Span Underwater Debris Diagram, dated May 2001
3. SFOBB East Span Survey Information, Control Diagram Dated December 30, 2002
4. USCG Private Aid to Navigation Sample Application Form
5. Geotechnical & Material Report for YBI
6. Site Investigation Report, SFOBB East Span Seismic Safety Project, Yerba Buena Island," Geocon, June 2001
7. Supplemental Site Investigation Report, Yerba Buena Island Duct Bank," Geocon, March 2007
8. Ground Penetration Report No. 6488-01, GEO Vision, November 2006
9. Historical Maps (1917, 1932, 1933)
10. Construction Vibration Monitoring Field Data Form
11. Plot Map titled, Pier 7-Area for Contractor's Use, Quitclaim Easement Deed, and Settlement Agreement
12. Pedestrian Turnstile Installation Manual
13. Contract No. 04-0120Q4 As-Built Plans, regarding USCG guard booth and reinforced concrete canopy, and existing soldier pile retaining wall
14. Pier E1 As-Built Plans
15. USCG Gabion Wall As-Built Plans
16. USCG Parking Canopy As-Built Plans
17. USCG Guard Booth (Entrance Canopy) As-Built Plans
18. Interim Seismic Retrofit-East Bay Cantilever Truss (Contract No. 04-043004)
19. Cantilever Structure-Lower Chord Damage Repair (Contract No. 04-035104)
20. Reconstruction Steel Work East Bay
21. Storm Water Information Handout
22. Bird Management Plan for Bridge Dismantling
23. Underground Classifications No. C091-075-11T (dated February 18, 2011), and Nos. C157-075-11T thru C158-075-11T
24. Archaeological Survey Reports
  - 24.1. Phase 1 Archaeological Survey Report- Maritime Archaeology, September 1999
  - 24.2. Addendum to Archaeological Survey Report-Maritime Archeology, December 6, 1999
  - 24.3. Addendum to Archaeological Survey Report-Maritime Archeology, March 2000
  - 24.4. Addendum to Archaeological Survey Report-Maritime Archeology, August 17, 2000
25. Correspondence with United States Custom Service regarding Jones Act and use of crane/barge, 2002 and 2005
26. Amendment to Pier 7 Settlement Agreement

## **INFORMATION AVAILABLE FOR INSPECTION**

Items available for inspection, upon written request, at the office of the Duty Senior at the District 4 Office, 111 Grand Avenue, Oakland, CA 94612, email: [duty\\_senior\\_district04@dot.ca.gov](mailto:duty_senior_district04@dot.ca.gov), telephone (510) 286-5209 are as follows:

1. Final Environmental Impact Statement/California Environmental Quality Act (CEQA) Statutory Exemption and Record of Decision
2. Order No. 01-100, NPDES General Permit No. CAG912002 from SFRWQCB
3. Cross sections are available in electronic copy in pdf format
4. Soil samples and rock cores
5. Referee samples equal blend of Federal Standard colors No. 27925 and No. 27880
6. Referee samples of Federal Color No. 26099, "Charcoal Gray" and Federal Color No. 26440, "Light Gray", regarding polyester concrete overlay for the bike path.
7. SFOBB East Span, Bridge No. 33-0025 and 34-0006 As-Built Plans.
8. Temporary Bypass Structure, Bridge No. 34-0006 TEMP As-Built: Viaduct, East Tie In, and West Tie In (Phase I and II)
9. Original Bridge and Existing Bridge Modification Shop Drawings
10. South South Detour Viaduct Bridge 34-0006 (Temp) Shop Drawings

As-built plans of the existing San Francisco-Oakland Bay Bridge East Span, Bridge No. 33-0025 and 34-0006 are available for inspection, upon written request, at the Duty Senior at the District 4 Office, 111 Grand Avenue, Oakland, CA 94612, email: [duty\\_senior\\_district04@dot.ca.gov](mailto:duty_senior_district04@dot.ca.gov), telephone number (510) 286-5209, and fax number (510) 622-1805. Requests shall be made on company letterhead and shall include the information requested, the purpose for the information (include contract or permit numbers), and contact information.

When a request to review, inspect, or copy as built plans is approved by the Duty Senior, the Contractor shall provide photo identification and fill and sign a "Confidentiality Agreement Form" with the Department.

The "Confidentiality Agreement Form" is available at the following Internet address:

[http://www.dot.ca.gov/hq/esc/confidentiality\\_agreement.pdf](http://www.dot.ca.gov/hq/esc/confidentiality_agreement.pdf)

When the Contractor's work is finished, the Contractor shall return all obtained as-built plans back to the office of Duty Senior at the District 4 Office, 111 Grand Avenue, Oakland, California 94612, fax number: (510) 622-1805, email: [duty\\_senior\\_district04@dot.ca.gov](mailto:duty_senior_district04@dot.ca.gov), telephone (510) 286-5209.

### 5-1.35 PROJECT SAFETY

The Contractor shall comply with the provisions in Section 7-1.06, "Safety and Health Provisions," and these special provisions.

The Contractor shall ensure that its employees and the general public be provided a clean, safe environment free of hazards during construction activities. The ultimate responsibility for providing a safe work place shall rest with the Contractor. The Contractor shall develop its own written Site-Specific Safety Program (SSSP) that incorporates known hazards associated with the project. At minimum, the SSSP shall conform to the requirements addressed in the California Code of Regulations, and any other applicable safety regulations. This includes, but is not limited to, all applicable local, state, and federal Safety Standards and Codes.

The SSSP may include the safety program of a subcontractor, provided that program conforms to the requirements for the SSSP.

The SSSP and conforming to the requirements of this section "Project Safety" do not alter or supersede the safety requirements, including safety plans, elsewhere in the specifications.

The Contractor shall allocate a full-time, 100% project dedicated, on-site Safety Quality Control Manager (SQCM) for the duration of this contract. This SQCM must be a competent and qualified person, as defined by CalOSHA, and shall provide oversight on the project. SQCM shall have a minimum of five years of experience in heavy construction safety and knowledge in the area of safety procedures for all types of work being performed on this contract. The SQCM shall be knowledgeable on Caltrans, Cal OSHA, OSHA, CA MUTCD and other safety agency requirements.

The Contractor shall submit a resume of the SQCM for review and approval to the Engineer prior to starting work on the project. If the Engineer determines the SQCM is not meeting the required duties, the SQCM shall be replaced upon 2 weeks written notice by the Engineer. The Contractor may replace the SQCM upon 2 weeks written notice to the Engineer.

The duties of the SQCM shall include but are not limited to:

1. Conducting the onsite new project orientation for each worker assigned to the project
2. Confirming each worker's compliance with the drug testing requirements on this project
3. Reviewing the construction work plans for each subcontractor prior to starting work
4. Conducting or attending pre-planning sessions for high hazard work
5. Conducting weekly jobsite safety meetings. These meetings shall be documented as to content and attendance.
6. Holding weekly project safety coordination meetings with subcontractors to review safety concerns and issues. Document meeting content and attendance.
7. Conducting daily walks of the project site for hazards
8. Investigating any near miss or reported incidents in a timely manner

The SQCM shall submit daily status reports to the Engineer through the Contractor's onsite construction manager on all activities underway to document safety conditions, and if necessary, measures taken to improve safety. All reports shall include the name of the individual preparing the report, date, location, contractor and weather conditions. This provision does not relieve the Contractor of the responsibility to comply with all safety requirements of the contract.

At a minimum, daily status reports shall include:

1. Documentation of daily work activity.
2. Documentation of safety related field activities.
3. Documentation of safety deficiencies and corrective actions taken.
4. Documentation of meetings, conversations, and other communications related to safety issues.
5. Documentation of reported near misses and incidents.
6. Documentation of personnel disciplinary actions taken for violation of safety policies.

The Contractor and its subcontractors of all tiers shall adhere to a 100 percent drug and alcohol-free program. At a minimum pre-employment, probable cause, and post-accident testing is required. Pre-employment testing includes being tested within one year from the start of work on the project. The Contractor is responsible for all costs associated with required testing.

Contractor employees must wear approved Class B hard hats on the job site.

The Contractor shall ensure that employees of the Contractor and subcontractors of all tiers attend a new project orientation and that new hires and personnel transferred to the project receive this orientation prior to starting work. This orientation shall be designed and conducted by the Contractor to communicate all project-specific safety policies, procedures, and expectations of the Department in regard to the construction of the project. The orientation shall be documented and a serialized hardhat sticker issued to identify that personnel have received the orientation.

The Contractor shall require work crews to conduct and document daily pre task safety talk prior to beginning their task. Documents shall be available upon request.

The Contractor is responsible to assure that any accident receives prompt response including prompt care and treatment, prompt reporting, and prompt investigation and analysis.

The Contractor shall ensure that personnel understand the expectation of the project in matters concerning injury and return to work policy.

Full compensation for conforming to the requirements of this section "Project Safety," including on-site Safety Quality Control Manager, shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed therefor.

## **10-1.08 CONSTRUCTION SITE MANAGEMENT**

### **GENERAL**

#### **Summary**

This work includes preventing and controlling spills, dewatering, and managing materials, waste, and nonstormwater. Implement effective handling, storage, usage, and disposal practices to control material pollution and manage waste and nonstormwater at the job site before they come in contact with storm drain systems and receiving waters.

The following abbreviations are used in this special provision:

DTSC: Department of Toxic Substance Control.

ELAP: Environmental Laboratory Accreditation Program.

MCCHP: Material Containment, Collection and Handling Program

WPC: Water Pollution Control.

#### **Submittals**

Before you start dewatering, submit a dewatering and discharge work plan under "Working Drawings," and "Water Pollution Control" of these special provisions. The dewatering and discharge work plan must include:

1. Title sheet and table of contents
2. Description of dewatering and discharge activities detailing locations, quantity of water, equipment, and discharge point
3. Estimated schedule for dewatering and discharge start and end dates of intermittent and continuous activities
4. Discharge alternatives, such as dust control or percolation
5. Visual monitoring procedures with inspection log
6. Copy of written approval to discharge into a sanitary sewer system at least 5 working days before starting discharge activities

Submit the following:

1. Material Safety Data Sheet at least 5 working days before material is used or stored
2. Monthly inventory records for material used or stored

Submit written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system.

#### **Material Containment, Collection and Handling Program**

Submit a written MCCHP no later than 60 days before bridge removal operations begin. Submittal of the MCCHP, including all revisions and addendum shall be stamped by an engineer who is registered as a Civil Engineer in the State of California. Submit 5 hard copies of the MCCHP at initial submittal and all subsequent revisions and addendum thereafter.

Approval of the MCCHP will be contingent upon approval of the debris containment system submittal as specified in "Bridge Removal, Portion (Cantilever Truss)," of these special provisions regarding the requirement of debris containment system.

The Engineer will notify the Contractor of the approval or rejection of the submitted or revised MCCHP within 3 weeks of submittal of the Contractor's program or revised program.

The State will not be liable to the Contractor for failure to approve all or any portion of an originally submitted or revised MCCHP, nor for delays to the work due to the Contractor's failure to submit an acceptable program.

MCCHP Information Requirements shall include, at a minimum, the following:

1. A detailed description of each material containment, cover, collection or handling measure, process and or means intended for use corresponding with each stage and phase of scheduled bridge removal work. This applies to all bridge related structural steel work, roadway work, foundation work or access thereof.
2. A description of intended erection methods and means for all containment, covers and collection structures or devices including sequences of erection. Information on materials and equipment to be used, anchor points, location of attachments, welding requirements or bolting requirement.
3. A description of intended removal methods and means for all erected containment, covers and collection structures or devices including sequences of removal.

4. A description of intended methods and means of removal including sequences of removal for all material generated during bridge removal operations such as structural steel; rebar, asphalt concrete, Portland concrete, treated wood, or other materials. A description of where these materials will be moved to and placed and how they will be managed to prevent impact to the waters of the State including whether these materials will be placed on impervious surfaces or contained in structures or protected from storm-water run-on.
5. A detailed calendar schedule for implementation of the MCCHP separated into each stage and phase of bridge removal listing implementation and removal dates.
6. An example of a Daily Inspection Report (DIR) identifying all containment, collection and handling controls used for that phase and stage of the bridge removal work. This form shall contain at a minimum:
  - 6.1 A field for the name and signature of the inspecting engineer,
  - 6.2 A field for the date of inspection
  - 6.3 A field to list each type of containment, collection or handling structure, device or measure to be inspected
  - 6.4 A field for describing the status of each type of containment, collection or handling structure, device or measure inspected including the status of erection or removal, maintenance or repair required and due date, or corrective action taken and when.
  - 6.5 A field for physical observations including wind direction and velocity, atmospheric conditions, and general degree of housekeeping.
7. A description of cleaning measures and methods to remove any accumulated excess material, debris or residue from the bridge deck or associated working surfaces used for bridge removal work including trestle working surfaces and barge working surfaces. The description shall identify the frequency of cleaning to be no less than once a work shift including specifying that prior to any movement or separation of bridge material to be moved or removed the Contractor's registered engineer will be present and confirm no material is being discharged into the receiving waters. Before the removal of any protective containment, cover, or collection device, this equipment will be cleaned of all debris and fine material and so documented in the DIR. Dispose of all accumulated material under Section 7-1.13, "Disposal of Materials Outside the Highway Right of Way," of the Standard Specifications.
8. A description of how water applied for dust suppression purposes, or storm water that may have become impacted during bridge removal operations is retained for water quality assessment before discharge. The MCCHP shall describe retainment measures and any equipment used thereof including how the water will be stored and assessed for discharge purposes. Dispose of all accumulated water under Section 7-1.13, "Disposal of Materials Outside the Highway Right of Way," of the Standard Specifications.
9. A description of training shall be included in the MCCHP on the contents of MCCHP including identification of personnel to be trained including all personnel that construct, maintain or are responsible for daily housekeeping movement or removal of the measures. A training log will be created including dates for training, personnel attending, topics reviewed, and will be signed by the Contractor's registered engineer. The Training log will be maintained as part of the MCCHP and updated on a weekly basis to reflect all personnel participating in the bridge removal process.
10. A description of the responsibilities assigned Contractor or sub-contractor personnel designated with constructing, maintaining and dismantling all containment, covers, and collection or handling measures. These personnel will be designated in the Training Log including their respective role or responsibility.
11. As part of the MCCHP a definitive Recovery Plan shall be included that defines what specific measures will be taken to recover material that may be dropped or discharged into receiving waters during bridge removal work and to minimize any impact from this event.
  - 11.1 Responsible personnel and contact numbers
  - 11.2 Responsible personnel tasks and duties
  - 11.3 Communication matrix and designated parties to be contacted
  - 11.4 Description of different scenarios and standard accepted responses

- 11.4.1 Structure collapse or debris discharge
- 11.4.2 Liquid spill or discharge
- 11.4.3 Equipment loss into water
- 11.4.4 Vessel sinkage or capsize

11.5 List of emergency on-call contractors with contact numbers

11.6 Recordkeeping and reporting requirements and responsibilities

12. The written program shall be submitted at least every 3 months to reflect the current status of the MCCHP and any revisions, and is required to be submitted to the Engineer no later than 10 days following the end of the 3<sup>rd</sup> month.

## **MATERIALS**

Not Used

## **CONSTRUCTION**

### **Spill Prevention and Control**

#### **General**

Keep material or waste storage areas clean, well organized, and equipped with enough cleanup supplies for the material being stored.

Implement spill and leak prevention procedures for chemicals and hazardous substances stored on the job site. Whenever you spill or leak chemicals or hazardous substances at the job site, you are responsible for all associated cleanup costs and related liability.

Report minor, semi-significant, and significant or hazardous spills to the WPC manager. The WPC manager must notify the Engineer immediately.

As soon as it is safe, contain and clean up spills of petroleum materials and sanitary and septic waste substances listed under 40 CFR, Parts 110, 117, and 302.

#### **Minor Spills**

Minor spills consist of quantities of oil, gasoline, paint, or other materials that are small enough to be controlled by a 1st responder upon discovery of the spill.

Clean up a minor spill using the following procedures:

1. Contain the spread of the spill
2. Recover the spilled material using absorption
3. Clean the contaminated area
4. Dispose of the contaminated material and absorbents promptly and properly under "Waste Management" of these special provisions

#### **Semi-Significant Spills**

Semi-significant spills consist of spills that can be controlled by a 1st responder with help from other personnel.

Clean up a semi-significant spill immediately using the following procedures:

1. Contain the spread of the spill.
2. On paved or impervious surfaces, encircle and recover the spilled material with absorbent materials. Do not allow the spill to spread widely.
3. If the spill occurs on soil, contain the spill by constructing an earthen dike and dig up the contaminated soil for disposal.
4. If the spill occurs during precipitation, cover the spill with 10-mil plastic sheeting or other material to prevent contamination of runoff.
5. Dispose of the contaminated material promptly and properly under "Waste Management" of these special provisions.

### **Significant or Hazardous Spills**

Significant or hazardous spills consist of spills that cannot be controlled by job site personnel. Immediately notify qualified personnel of a significant or hazardous spill. Take the following steps:

1. Do not attempt to clean up the spill until qualified personnel have arrived
2. Notify the Engineer and follow up with a report
3. Obtain the immediate services of a spill contractor or hazardous material team
4. Notify local emergency response teams by dialing 911 and county officials by using the emergency phone numbers retained at the job site
5. Notify the California Emergency Management Agency State Warning Center at (916) 845-8911
6. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities under 40 CFR 110, 119, and 302
7. Notify other agencies as appropriate, including:
  - 7.1. Fire Department
  - 7.2. Public Works Department
  - 7.3. Coast Guard
  - 7.4. Highway Patrol
  - 7.5. City Police or County Sheriff's Department
  - 7.6. Department of Toxic Substances
  - 7.7. California Division of Oil and Gas
  - 7.8. Cal/OSHA
  - 7.9. Regional Water Resources Control Board

Prevent a spill from entering stormwater runoff before and during cleanup activities. Do not bury or wash the spill with water.

### **Material Management**

The storage of any chemical or petroleum products on the closed bridge structure is prohibited. Minimize or eliminate discharge of material into the air, storm drain systems, and receiving waters while taking delivery of, using, or storing the following materials:

1. Hazardous chemicals, including acids, lime, glues, adhesives, paints, solvents, and curing compounds
2. Soil stabilizers and binders
3. Fertilizers
4. Detergents
5. Plaster
6. Petroleum materials, including fuel, oil, and grease
7. Asphalt and concrete components
8. Pesticides and herbicides

Employees trained in emergency spill cleanup procedures must be present during the unloading of hazardous materials or chemicals.

Use less hazardous materials if practicable.

The following activities must be performed at least 30.48 meters from concentrated flows of stormwater, drainage courses, and inlets if within the floodplain and at least 15.24 meters if outside the floodplain, unless otherwise approved by the Engineer:

1. Stockpiling materials
2. Storing pile-driving equipment and liquid waste containers
3. Washing vehicles and equipment in outside areas
4. Fueling and maintaining vehicles and equipment

## **Material Storage**

If materials are stored:

1. Store liquids, petroleum materials, and substances listed in 40 CFR 110, 117, and 302 and place them in secondary containment facilities as specified by US DOT for storage of hazardous materials.
2. Secondary containment facilities must be impervious to the materials stored there for a minimum contact time of 72 hours.
3. Cover secondary containment facilities during non-working days and whenever precipitation is forecasted. Secondary containment facilities must be adequately ventilated.
4. Keep secondary containment facilities free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, collect accumulated liquid and place it into drums within 24 hours. Handle the liquid as hazardous waste under "Waste Management" of these special provisions unless testing confirms that the liquid is nonhazardous.
5. Do not store incompatible materials, such as chlorine and ammonia, in the same secondary containment facility.
6. Store materials in their original containers with the original material labels maintained in legible condition. Immediately replace damaged or illegible labels.
7. Secondary containment facilities must have the capacity to contain precipitation from a 24-hour-long, 25-year storm, plus 10 percent of the aggregate volume of all containers or the entire volume of the largest container within the facility, whichever is greater.
8. Store bagged or boxed material on pallets. Protect bagged or boxed material from wind and rain during non-working days and whenever precipitation is forecasted.
9. Provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas must be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.
10. Repair or replace perimeter controls, containment structures, covers, and liners as necessary. Inspect storage areas before and after precipitation and at least weekly during other times.

## **Stockpile Management**

The storage of any dismantled bridge material or debris on the bridge is prohibited and must be removed by the end of each working shift. Minimize stockpiling of materials within other areas of the job site.

Implement water pollution control practices within 72 hours of stockpiling material or before a forecasted storm event, whichever occurs first. If stockpiles are being used, do not allow soil, sediment, or other debris to enter storm drains, open drainages, and watercourses.

Active and inactive soil stockpiles must be:

1. Covered with soil stabilization material or a temporary cover
2. Surrounded with a linear sediment barrier

Stockpiles of asphalt concrete and PCC rubble, HMA, aggregate base, or aggregate subbase must be:

1. Covered with a temporary cover
2. Surrounded with a linear sediment barrier

Stockpiles of pressure-treated wood must be:

1. Placed on pallets
2. Covered with impermeable material

Stockpiles of cold mix asphalt concrete must be:

1. Placed on an impervious surface
2. Covered with an impermeable material
3. Protected from stormwater run-on and runoff

Control wind erosion year round under Section 14-9.02, "Dust Control," of the Standard Specifications.

Repair or replace linear sediment barriers and covers as needed to keep them functioning properly. Whenever sediment accumulates to 1/3 of the linear sediment barrier height, remove the accumulated sediment.

## **Waste Management**

### **Solid Waste**

Do not allow litter, trash, or debris to accumulate anywhere on the job site, including storm drain grates, trash racks, and ditch lines. Pick up and remove litter, trash, and debris from the job site daily on the bridge structure and at least once a week at other locations. The WPC manager must monitor solid waste storage and disposal procedures on the job site.

If practicable, recycle nonhazardous job site waste and excess material. If recycling is not practicable, dispose of it under Section 7-1.13, "Disposal of Materials Outside the Highway Right of Way," of the Standard Specifications.

Furnish enough closed-lid dumpsters of sufficient size to contain the solid waste generated by work activities. When refuse reaches the fill line, empty the dumpsters. Dumpsters must be watertight. Do not wash out dumpsters at the job site. Furnish additional containers and pick up dumpsters more frequently during the demolition phase of construction.

Solid waste includes:

1. Brick
2. Mortar
3. Timber
4. Metal scraps
5. Sawdust
6. Pipe
7. Electrical cuttings
8. Nonhazardous equipment parts
9. Styrofoam and other packaging materials
10. Vegetative material and plant containers from highway planting
11. Litter and smoking material, including litter generated randomly by the public
12. Other trash and debris

Furnish and use trash receptacles in the job site yard, field trailers, and locations where workers gather for lunch and breaks.

### **Hazardous Waste and Contamination**

If hazardous waste is, or will be, generated on the job site, the WPC manager must be thoroughly familiar with proper hazardous waste handling and emergency procedures under 40 CFR § 262.34(d)(5)(iii) and must have successfully completed training under 22 CA Code of Regs § 66265.16.

The WPC manager must:

1. Oversee and enforce hazardous waste management practices
2. Inspect all hazardous waste storage areas daily, including all temporary containment facilities and satellite collection locations
3. Oversee all hazardous waste transportation activities on the job site

Submit a copy of uniform hazardous waste manifest forms to the Engineer within 24 hours of transporting hazardous waste.

Submit receiving landfill documentation of proper disposal to the Engineer within 5 working days of hazardous waste transport from the project.

### **Unanticipated Discovery of Asbestos and Hazardous Substances**

Upon discovery of asbestos or a hazardous substance, comply with Section 7-1.01L, "Asbestos and Hazardous Substances," of the Standard Specifications.

### **Hazardous Waste Management Practices**

Handle, store, and dispose of hazardous waste under 22 CA Code of Regs Div 4.5.

Use the following storage procedures:

1. Store hazardous waste and potentially hazardous waste separately from nonhazardous waste at the job site.
2. For hazardous waste storage, use metal containers approved by the United States Department of Transportation for the transportation and temporary storage of hazardous waste.
3. Store hazardous waste in sealed, covered containers labeled with the contents and accumulation start date under 22 CA Code of Regs, Div 4.5. Labels must comply with the provisions of 22 CA Code of Regs, Div 4.5 § 66262.31 and § 66262.32. Immediately replace damaged or illegible labels.
4. Handle hazardous waste containers such that no spillage occurs.
5. Store hazardous waste away from storm drains, watercourses, moving vehicles, and equipment.
6. Furnish containers with adequate storage volume at convenient satellite locations for hazardous waste collection. Immediately move these containers to secure temporary containment facilities when no longer needed at the collection location or when full.
7. Store hazardous waste and potentially hazardous waste in secure temporary containment enclosures having secondary containment facilities impervious to the materials stored there for a minimum contact-time of 72 hours. Temporary containment enclosures must be located away from public access. Acceptable secure enclosures include a locked chain link fenced area or a lockable shipping container located within the project limits.
8. Design and construct secondary containment facilities with a capacity to contain precipitation from a 24-hour-long, 25-year storm; and 10 percent of the aggregate volume of all containers, or the entire volume of the largest container within the facility, whichever is greater.
9. Cover secondary containment facilities during non-working days and if a storm event is predicted. Secondary containment facilities must be adequately ventilated.
10. Keep secondary containment facility free of accumulated rainwater or spills. After a storm event, or in the event of spills or leaks, collect accumulated liquid and place into drums within 24 hours. Handle these liquids as hazardous waste unless testing determines them to be nonhazardous.
11. Do not store incompatible wastes, such as chlorine and ammonia, in the same secondary containment facility.
12. Provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas must be kept clean, well organized, and equipped with cleanup supplies appropriate for the wastes being stored.
13. Repair or replace perimeter controls, containment structures, covers, and liners as necessary. Inspect storage areas before and after a storm event, and at least weekly during other times.

Do not:

1. Overfill hazardous waste containers
2. Spill hazardous waste or potentially hazardous waste
3. Mix hazardous wastes
4. Allow hazardous waste or potentially hazardous waste to accumulate on the ground

Dispose of hazardous waste within 90 days of the start of generation. Use a hazardous waste manifest and a transporter registered with the DTSC and in compliance with the CA Highway Patrol Biennial Inspection of Terminals Program to transport hazardous waste to an appropriately permitted hazardous waste management facility.

### **Dust Control for Hazardous Waste or Contamination**

Excavation, transportation, and handling of material containing hazardous waste or contamination must result in no visible dust migration. Have a water truck or tank on the job site at all times while clearing and grubbing and performing earthwork operations in work areas containing hazardous waste or contamination.

### **Stockpiling of Hazardous Waste or Contamination**

Do not stockpile material containing hazardous waste or contamination unless ordered. Stockpiles of material containing hazardous waste or contamination must not be placed where affected by surface run-on or run-off. Cover stockpiles with 13 mils minimum thickness of plastic sheeting or 1 foot of nonhazardous material. Do not place stockpiles in environmentally sensitive areas. Stockpiled material must not enter storm drains, inlets, or waters of the State.

### **Contractor-Generated Hazardous Waste**

You are the generator of hazardous waste generated as a result of materials you bring to the job site. Use hazardous waste management practices if you generate waste on the job site from the following substances:

1. Petroleum materials
2. Asphalt materials
3. Concrete curing compound
4. Pesticides
5. Acids
6. Paints
7. Stains
8. Solvents
9. Wood preservatives
10. Roofing tar
11. Road flares
12. Lime
13. Glues and adhesives
14. Materials classified as hazardous waste under 22 CA Code of Regs, Div 4.5

If hazardous waste constituent concentrations are unknown, use a laboratory certified by the ELAP under the California Department Of Public Health to analyze a minimum of 4 discrete representative samples of the waste to determine whether it is a hazardous waste and to determine safe and lawful methods for storage and disposal. Perform sampling and analysis in compliance with US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) and under 22 CA Code of Regs, Div 4.5.

Use your US EPA Generator Identification Number and sign hazardous waste manifests for the hazardous waste you generate.

Identify contaminated soil resulting from spills or leaks by noticing discoloration, or differences in soil properties. Immediately notify the Engineer of spills or leaks. Clean up spills and leaks under the Engineer's direction and to the satisfaction of the Engineer. Soil with evidence of contamination must be sampled and analysis performed by a laboratory certified by ELAP.

If sampling and analysis of contaminated soil demonstrates that it is a hazardous waste, handle and dispose of the soil as hazardous waste. You are the generator of hazardous waste created as the result of spills or leaks for which you are responsible.

Prevent the flow of water, including ground water, from mixing with contaminated soil by using one or a combination of the following measures:

1. Berms
2. Cofferdams
3. Grout curtains
4. Freeze walls
5. Concrete seal course

If water mixes with contaminated soil and becomes contaminated, sample and analyze the water using a laboratory certified by the ELAP. If analysis results demonstrate that the water is a hazardous waste, manage and dispose of the water as hazardous waste.

### **Department-Generated Hazardous Waste**

If the Department is the generator of hazardous waste during the work performed on this project, use hazardous waste management practices.

Labels must comply with the provisions of 22 CA Code of Regs § 66262.31 and § 66262.32. Mark labels with:

1. Date the hazardous waste is generated
2. The words "Hazardous Waste"
3. Composition and physical state of the hazardous waste (for example, asphalt grindings with thermoplastic or paint)
4. The word "Toxic"
5. Name, address, and telephone number of the Engineer
6. Contract number
7. Contractor or subcontractor name

Handle the containers such that no spillage occurs.

### **Hazardous Waste Transport and Disposal**

Dispose of hazardous waste within California at a disposal site operating under a permit issued by the DTSC.

The Engineer will obtain the US EPA Generator Identification Number for hazardous waste disposal.

The Engineer will sign all hazardous waste manifests. Notify the Engineer 5 working days before the manifests are to be signed.

The Department will not consider you a generator of the hazardous waste and you will not be obligated for further cleanup, removal, or remedial action for such material if handled or disposed of under these specifications and the appropriate State and federal laws and regulations and county and municipal ordinances and regulations regarding hazardous waste.

### **Paint Waste**

Clean water-based and oil-based paint from brushes or equipment within a contained area in a way that does not contaminate soil, receiving waters, or storm drain systems. Handle and dispose of the following as hazardous waste: paints, thinners, solvents, residues, and sludges that cannot be recycled or reused. When thoroughly dry, dispose of the following as solid waste: dry latex paint, paint cans, used brushes, rags, absorbent materials, and drop cloths.

All concrete waste generated and located on the bridge structure is required to be removed at the end of each work shift. Use practices to prevent the discharge of asphalt concrete, PCC, and HMA waste into storm drain systems and receiving waters.

Collect and dispose of asphalt concrete, PCC, and HMA waste generated at locations where:

1. Concrete material, including grout, is used
2. Concrete dust and debris result from demolition
3. Sawcutting, coring, grinding, grooving, or hydro-concrete demolition creates a residue or slurry
4. Concrete trucks or other concrete-coated equipment is cleaned at the job site

### **Sanitary and Septic Waste**

Do not bury or discharge wastewater from a sanitary or septic system within the highway. A sanitary facility discharging into a sanitary sewer system must be properly connected and free from leaks. Place a portable sanitary facility at least 15.24 meters away from storm drains, receiving waters, and flow lines.

Comply with local health agency provisions if using an on-site disposal system.

## **Liquid Waste**

All liquid waste generated and located on the bridge structure is required to be removed at the end of each work shift. Use practices that will prevent job-site liquid waste from entering storm drain systems and receiving waters. Liquid waste include the following:

1. Drilling slurries or fluids
2. Grease-free and oil-free wastewater and rinse water
3. Dredgings, including liquid waste from cleaning drainage systems
4. Liquid waste running off a surface, including wash or rinse water
5. Other nonstormwater liquids not covered by separate permits

Hold liquid waste in structurally sound, leak-proof containers, such as roll-off bins or portable tanks.

Liquid waste containers must be of sufficient quantity and volume to prevent overflow, spills, and leaks.

Store containers at least 15.24 meters from moving vehicles and equipment.

Remove and dispose of deposited solids from sediment traps unless the Engineer approves another method.

Liquid waste may require testing to determine hazardous material content before disposal.

Dispose of drilling fluids and residue.

If a location approved by the Engineer is available within the job site, fluids and residue exempt under 23 CA Code of Regs § 2511(g) may be dried by evaporation in a leak-proof container. Dispose of the remaining as solid waste.

## **Nonstormwater Management**

### **Water Control and Conservation**

Manage water used for work activities in a way that will prevent erosion and the discharge of pollutants into storm drain systems and receiving waters. Obtain authorization before washing anything at the job site with water that could discharge into a storm drain system or receiving waters. Report discharges immediately.

Implement water conservation practices if water is used at the job site. Inspect irrigation areas. Adjust watering schedules to prevent erosion, excess watering, or runoff. Shut off the water source to broken lines, sprinklers, or valves and repair breaks within 24 hours. Reuse water from waterline flushing for landscape irrigation if practicable. Sweep and vacuum paved areas. Do not wash paved areas with water.

Direct runoff water, including water from water line repair, from the job site to areas where it can infiltrate into the ground. Do not allow runoff water to enter storm drain systems and receiving waters. Do not allow spilled water to escape filling areas for water trucks. Direct water from off-site sources around the job site if practicable. Minimize the contact of off-site water with job site water.

### **Illegal Connection and Discharge Detection and Reporting**

Before starting work, inspect the job site and the job site's perimeter for evidence of illicit connections, illegal discharges, and dumping. After starting work, inspect the job site and perimeter on a daily schedule for illicit connections and illegal dumping and discharges.

Whenever illegal connections, discharges, or dumping are discovered, notify the Engineer immediately. Do not take further action unless ordered. Assume that unlabeled or unidentifiable material is hazardous.

Look for the following evidence of illicit connections, illegal discharges, and dumping:

1. Debris or trash piles
2. Staining or discoloration on pavement or soils
3. Pungent odors coming from drainage systems
4. Discoloration or oily sheen on water
5. Stains and residue in ditches, channels, or drain boxes
6. Abnormal water flow during dry weather
7. Excessive sediment deposits
8. Nonstandard drainage junction structures
9. Broken concrete or other disturbances at or near junction structures

### **Vehicle and Equipment Cleaning**

Vehicle and equipment cleaning on the bridge structure is prohibited at any time. Limit vehicle and equipment cleaning or washing at other areas of the job site except what is necessary to control vehicle tracking or hazardous waste. Notify the Engineer before cleaning vehicles and equipment at the job site with soap, solvents, or steam. Contain and recycle or dispose of resulting waste under "Waste Management" of these special provisions, whichever is applicable. Do not use diesel to clean vehicles or equipment. Minimize the use of solvents.

Clean or wash vehicles and equipment in a structure equipped with disposal facilities. You may wash vehicles in an outside area if the area is:

1. Paved with asphalt concrete, HMA, or PCC
2. Surrounded by a containment berm
3. Equipped with a sump to collect and dispose of wash water

Use as little water as practicable whenever washing vehicles and equipment with water. Hoses must be equipped with a positive shutoff valve.

Discharge liquid from wash racks to a recycling system or to another system approved by the Engineer. Remove liquids and sediment as necessary.

### **Vehicle and Equipment Fueling and Maintenance**

If practicable, perform maintenance on vehicles and equipment off-site. Vehicle and equipment fueling and maintenance is strictly prohibited on the bridge structure unless specifically authorized in writing by the Engineer. If authorized, specific protective measures shall be submitted in writing to Engineer to prevent spills and respond to any spills or leaks.

If fueling or maintenance must be done at the job site, assign a site or sites, and obtain authorization before using them. Minimize mobile fueling and maintenance activities. Fueling and maintenance activities must be performed on level ground in areas protected from stormwater run-on and runoff.

Use containment berms or dikes around fueling and maintenance areas. Keep adequate quantities of absorbent spill-cleanup material and spill kits in the fueling or maintenance area and on fueling trucks. Dispose of spill-cleanup material and kits immediately after use under "Waste Management" of these special provisions. Use drip pans or absorbent pads during fueling or maintenance.

Do not leave fueling or maintenance areas unattended during fueling and maintenance activities. Fueling nozzles must be equipped with an automatic shutoff control. Nozzles must be equipped with vapor-recovery fueling nozzles where required by the Air Quality Management District. Secure nozzles in an upright position when not in use. Do not top off fuel tanks.

Recycle or properly dispose of used batteries and tires under "Waste Management" of these special provisions.

If leaks cannot be repaired immediately, remove the vehicle or equipment from the job site.

### **Material and Equipment Used Over Water**

Provide and implement MCCHP during the bridge removal, portion (Cantilever Truss). Place drip pans and absorbent pads under vehicles and equipment used over water. Keep an adequate supply of spill-cleanup material with vehicles and equipment. Place drip pans or plastic sheeting under vehicles and equipment on docks, barges, or other surfaces over water whenever vehicles or equipment will be idle for more than 1 hour.

Furnish watertight curbs or toe boards on barges, platforms, docks, or other surfaces over water to contain material, debris, and tools. Secure material to prevent spills or discharge into the water due to wind.

Report discharges to receiving waters immediately upon discovery. Submit a discharge notification to the Engineer.

### **Structure Removal Over or Adjacent to Water**

Provide and implement MCCHP during the bridge removal, portion (Cantilever Truss). Do not allow demolished material to enter storm drain systems and receiving waters. Use the debris containment system and other measures as necessary to contain all debris. The WPC Manager must inspect demolition and bridge dismantling sites within 15 meters of storm drainage systems or water courses daily.

### **Paving, Sealing, Sawcutting, Grooving, and Grinding Activities**

Prevent material from entering storm drain systems and receiving waters including:

1. Cementitious material
2. Asphaltic material
3. Aggregate or screenings
4. Sawcutting, grooving, and grinding residue
5. Pavement chunks
6. Shoulder backing
7. Methacrylate
8. Sandblasting residue

Cover drainage inlets and use linear sediment barriers to protect downhill receiving waters until paving, sealing, sawcutting, grooving, and grinding activities are completed and excess material has been removed. Cover drainage inlets and manholes during the application of seal coat, tack coat, slurry seal, or fog seal.

Whenever precipitation is forecasted, limit paving, sawcutting, and grinding to places where runoff can be captured.

Do not start seal coat, tack coat, slurry seal, or fog seal activities whenever precipitation is forecasted during the application and curing period. Do not excavate material from existing roadways during precipitation.

Use a vacuum to remove slurry immediately after slurry is produced. Do not allow the slurry to run onto lanes open to traffic or off the pavement.

Collect the residue from PCC grooving and grinding activities with a vacuum attachment on the grinding machine. Do not leave the residue on the pavement or allow the residue to flow across pavement.

You may stockpile material excavated from existing roadways under "Material Management" of these special provisions if approved by the Engineer.

Do not coat asphalt trucks and equipment with substances that contain soap, foaming agents, or toxic chemicals.

Park paving equipment over drip pans or plastic sheeting with absorbent material to catch drips if the paving equipment is not in use.

### **Thermoplastic Striping and Pavement Markers**

Do not preheat, transfer, or load thermoplastic within 15.24 meters of drainage inlets and receiving waters.

Do not unload, transfer, or load bituminous material for pavement markers within 15.24 meters of drainage inlets and receiving waters.

Collect and dispose of bituminous material from the roadway after removing markers under "Waste Management" of these special provisions.

### **Pile Driving**

Keep spill kits and cleanup materials at pile driving locations. Park pile driving equipment over drip pans, absorbent pads, or plastic sheeting with absorbent material. Protect pile driving equipment by parking on plywood and covering with plastic whenever precipitation is forecasted.

Store pile driving equipment on level ground and protect it from stormwater run-on when not in use. Use vegetable oil instead of hydraulic fluid if practicable.

### **Concrete Curing**

Do not overspray chemical curing compounds. Minimize the drift by spraying as close to the concrete as practicable. Do not allow runoff of curing compounds. Cover drainage inlets before applying the curing compound.

Minimize the use and discharge of water by using wet blankets or similar methods to maintain moisture when concrete is curing.

### **Concrete Finishing**

Collect and dispose of water and solid waste from high-pressure water blasting under "Waste Management" of these special provisions. Collect and dispose of sand and solid waste from sandblasting under "Waste Management" of these special provisions. Before sandblasting, cover drainage inlets within 15.24 meters of sandblasting. Minimize the drift of dust and blast material by keeping the nozzle close to the surface of the concrete. If the character of the blast residue is unknown, test it for hazardous materials and dispose of it properly.

Inspect containment structures for concrete finishing for damage before each day of use and before forecasted precipitation. Remove liquid and solid waste from containment structures after each work shift.

CONTRACT NO. 04-0120T4

REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2012

### **Concrete Finishing**

Collect and dispose of water and solid waste from high-pressure water blasting under "Waste Management" of these special provisions. Collect and dispose of sand and solid waste from sandblasting under "Waste Management" of these special provisions. Before sandblasting, cover drainage inlets within 15.24 meters of sandblasting. Minimize the drift of dust and blast material by keeping the nozzle close to the surface of the concrete. If the character of the blast residue is unknown, test it for hazardous materials and dispose of it properly.

Inspect containment structures for concrete finishing for damage before each day of use and before forecasted precipitation. Remove liquid and solid waste from containment structures after each work shift.

### **Sweeping**

Sweep by hand or mechanical methods, such as vacuuming. Do not use methods that use only mechanical kick brooms. Sweep paved roads at construction entrance and exit locations and paved areas within the job site:

1. During clearing and grubbing activities
2. During earthwork activities
3. During trenching activities
4. During roadway structural-section activities
5. When vehicles are entering and leaving the job site
6. After soil-disturbing activities
7. After observing off-site tracking of material

Monitor paved areas and roadways within the project. Sweep within:

1. 1 hour whenever sediment or debris is observed during activities that require sweeping
2. 24 hours whenever sediment or debris is observed during activities that do not require sweeping

Remove collected material, including sediment, from paved shoulders, drain inlets, curbs and dikes, and other drainage areas.

Stockpiling or disposal of collected material during sweeping activities is not allowed at the job site.

Keep dust to a minimum during street sweeping activities. Use water or a vacuum whenever dust generation is excessive or sediment pickup is ineffective.

Remove and dispose of trash collected during sweeping under "Waste Management" of these special provisions.

### **Dewatering**

Dewatering consists of discharging accumulated stormwater, groundwater, or surface water from excavations or temporary containment facilities.

Perform dewatering work as specified for the work items involved, such as temporary active treatment system or dewatering and discharge.

If dewatering and discharging activities are not specified under a work item and you perform dewatering activities:

1. Conduct dewatering activities under the Department's Field Guide for Construction Site Dewatering.
2. Ensure that any dewatering discharge does not cause erosion, scour, or sedimentary deposits that could impact natural bedding materials.
3. Discharge the water within the project limits. If the water cannot be discharged within project limits due to site constraints or contamination, dispose of the water as directed by the Engineer.
4. Do not discharge stormwater or nonstormwater that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface. Notify the Engineer immediately upon discovering any such condition.

### **MEASUREMENT AND PAYMENT**

The contract lump sum price paid for construction site management (excluding debris containment system) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in spill prevention and control, material management, waste management, nonstormwater management, and dewatering activities, including identifying, sampling, testing, handling, and disposing of hazardous waste resulting from your activities, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as ordered by the Engineer.

Full compensation for MCCHP (excluding debris containment system) shall be considered as included in the contract lump sum price paid for construction site management and no additional compensation will be allowed therefor.

CONTRACT NO. 04-0120T4

REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2012

#### **10-1.58 BRIDGE REMOVAL, PORTION (CANTILEVER TRUSS)**

Removing bridges or portions of bridges shall conform to the provisions in Section 15-4, "Bridge Removal," of the Standard Specifications and these special provisions.

The Contractor is directed to the requirements in "Construction Site Management," of these special provisions during the bridge removal.

Attention is directed to "Relations to United States Coast Guard," of these special provisions.

Attention is directed to "Permits, Licenses, Agreements, and Certifications," "Species Protection," and "Bird Protection," of these special provisions.

Attention is directed to "Temporary Supports" and "Falsework" of these special provisions.

#### BRIDGE REMOVAL (PORTION) LOCATION G CANTILEVER TRUSS DEMOLITION (Bridge No. 33-0025)

Remove existing cantilever truss bridge portion of the East Bay Bridge, Br. No. 33-0025 as shown on the plans.

Existing travelers shall be removed and disposed of except that traveler motors shall be salvaged in accordance with the provisions in "Removing, Reinstalling or Salvaging Electrical Equipment," of these special provisions.

Removed materials that are not to be salvaged or used in the reconstruction shall become the property of the Contractor and shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Welding to existing bridge members will not be permitted. Only high strength bolted connections to existing bridge members will be allowed.

The use of existing fenders for temporary support of the existing bridge, equipment or materials loading will not be permitted.

Expansive cracking agents may be used for concrete removal, as approved by the Engineer.

The Contractor shall submit a complete bridge removal plan to the Engineer for review and comment. The bridge removal plan shall detail the procedures, sequences, and all features required to perform the removal in a safe and controlled manner.

The bridge removal plan shall conform to the following minimum requirements:

1. The removal sequence shall conform to the removal sequence shown on the plans sheet titled "Existing Cantilever Truss Demolition, Index To Plans".
2. Temporary supports will not be allowed in the water between Pier E2 and Pier E3.
3. Temporary supports shall be used between Pier E1 and E2 and between Pier E3 and E4.
4. The drawings shall clearly show a longitudinal connection that transfers the longitudinal load of the partially demolished structure to the adjacent superstructure at Pier E4. The assumed longitudinal load to be used, shall be the sum of the actual horizontal loads due to equipment, construction sequence or other causes, and the wind loads shown on the plans, but in no case shall the assumed longitudinal load to be resisted be less than 5 percent of the total dead load of the structure to be removed.
5. The drawings shall clearly illustrate the vertical, lateral and longitudinal structural load paths at each stage of removal.

The bridge removal plan shall include, but not be limited to the following:

1. Complete 3-D structural computer analysis and evaluation of the bridge for the removal procedure to be used.
2. Report with a summary of input and output files, including, but not limited to, a table showing demand/capacity ratios for all stages of bridge removal and all associated calculations.
3. The removal sequence, including staging of removal operations.
4. Methods and details for member or connection strengthening.
5. Methods and details for supporting or stiffening requirements.
6. Equipment locations on the structure during removal operations.
7. Temporary supports including lifting apparatus, temporary support shoring or temporary bracing.
8. Locations where work is to be performed over waterway.

9. Measures to assure that people, property, and utilities will not be endangered.
10. Methods and description of shipment plan for removed bridge.
11. Methods of hazardous paint removal to ensure that the allowable threshold limits for air quality are not exceeded.
12. Independent check calculations
13. Certifications by the Contractor's engineer and the check engineer.

The bridge removal plan shall be prepared, signed and stamped by an engineer who is registered as a Civil Engineer in California. The engineer shall have at least 5 years experience as a registered Civil Engineer. The engineer shall have (1) performed sequential erection analysis and shall have prepared approved erection plans for at least three completed bridge erection projects or (2) have performed sequential dismantling analysis and have prepared approved dismantling plans for at least three completed bridge removal projects. Any combination of a total of three bridge erection and dismantling projects is acceptable qualifying experience. At least one of the projects shall be a continuous steel truss bridge with a main span length of at least 80 meters. Alternatively, sequential seismic retrofit analysis and preparation of approved plans for a completed continuous steel truss bridge with a main span length of at least 80 meters is acceptable qualifying experience for one of the three required bridge projects. Sequential analysis performed for the three specified projects shall have shown state of the structure, including stress and displacement and stability evaluation for each stage of construction or removal, considering locked-in forces from previous stages. The bridges in the above bridge erection, dismantling or retrofit projects shall carry or have carried highway truck traffic or railroad traffic or equivalent loading. Blasting shall not have been used as a removal method for the above projects. The above qualifying experience may have been performed as a licensed Civil Engineer or under the supervision of a licensed Civil Engineer who stamped and signed the approved erection, dismantling or retrofit plans.

The removal plan shall be independently checked, stamped and signed by another registered Civil Engineer with at least the same experience and qualifications as the Contractor's engineer as specified above. The independent check shall include all analysis and calculations necessary to independently check all aspects of the removal plan. The check engineer shall not be an employee of the Contractor and shall not be employed by the same firm as the design engineer.

The Contractor's engineer and the check engineer shall provide resumes that meet the above requirements. The resumes shall include qualifying project information including the name of the project, project owner's name, address and telephone number. At the Engineer's request, documentation shall be provided to verify each engineer's qualifications including copies of complete set of approved, stamped plans used for the construction of the qualifying erection, dismantling or retrofit projects.

The bridge removal plan shall conform to the provisions in "Working Drawings," of these special provisions except the Engineer's approval will not be required.

The Contractor's engineer and the check engineer shall provide certification that the removal plan complies with all contract requirements and is adequate for the purpose intended. The Contractor shall allow 60 days for the Engineer's review and comment. The design calculations and details shall be adequate to demonstrate the stability of the structure during all stages of the removal operations. Calculations shall be provided for each stage of bridge removal and shall include dead and live loads and the wind load values shown on the plans. At a minimum, a stage will be considered to be removal of the deck, the deck framing, or any truss members, in any span; or pier framing, or steel towers at support locations. Member stresses shall not exceed operating allowable stress limits during application of temporary construction loads and during all phases of demolition.

Temporary support shoring, temporary bracing, and containment systems, as required, shall be designed and constructed in conformance with the provisions in Section 51-1.06, "Falsework," of the Standard Specifications and these special provisions.

The assumed horizontal load to be resisted by the temporary support shoring and temporary bracing, for removal operations only, shall be the sum of the actual horizontal loads due to equipment, construction sequence or other causes, and the wind loads shown on the plans, but in no case shall the assumed horizontal load to be resisted in any direction be less than 5 percent of the total dead load of the structure to be removed.

### **Debris Containment System**

Prior to beginning bridge removal work, the Contractor shall construct a debris containment system to prevent any materials, equipment, or debris from falling onto the waterway or the ground below.

The debris containment system shall be designed and constructed in conformance with the provisions in Section 51-1.06, "Falsework," of the Standard Specifications and these special provisions.

At least 60 days prior to beginning bridge removal work, the Contractor shall submit a debris containment plan to the Engineer for approval in accordance with the provisions in "Working Drawings" of these special provisions. The debris containment plan shall be submitted along with the Material Containment, Collection and Handling Program (MCCHP) in "Construction Site Management," of these special provisions.

The debris containment working drawings shall include, but not be limited to, the following:

1. Detailed description of the containment system and materials to be used.
2. Locations, and types of containment systems to be used.
3. Complete details including section and elevation views of the containment system.
4. Details of connections to the existing structure.
5. Detailed erection and removal methods including erection and removal sequences.
6. Dead and live load values assumed for designing the containment system.
7. A description of bridge removal methods supported by calculations with sufficient details to substantiate live loads used in the containment system design.
8. Methods and description of debris removal methods.

The debris containment system shall conform to the following minimum requirements:

1. The debris containment system shall be constructed before beginning bridge removal work. The containment system shall be supported by shoring, falsework, or members of the existing structure. The Contractor shall be responsible for designing and constructing safe and adequate containment systems, shoring, and falsework with sufficient strength and rigidity to support the entire load to be imposed.
2. The debris containment system shall prevent any materials, equipment, or debris from falling onto the waterway or the ground. The containment system shall have a minimum strength equivalent to that provided by good, sound Douglas fir planking having a nominal thickness of 50 mm. Additional layers of material shall be furnished as necessary to prevent fine materials or debris from sifting down upon the waterway or on the ground. The bottom of the containment system shall be made of a non-flammable material that will prevent burning metal debris from falling into the waterway or on the ground. The sides of the containment system shall extend vertically from the bottom of the containment system along the sides of the bridge a sufficient height above the point of removal to contain all debris. The containment system shall extend longitudinally beyond the point of removal a sufficient length to contain all debris. The seams or joints of the containment system shall be sealed or double layered to prevent fine material from sifting through the cracks.
3. During bridge removal work, the lower deck maybe used for the bottom of the containment system provided it complies with the requirements for the containment system as specified herein.
4. The debris containment system shall extend beyond the outside face of the truss as necessary to accommodate bridge removal and containment of all debris.
5. Before removal of the containment system, the Contractor shall clean the containment system of all debris and fine material to ensure that no material falls into the waterway or on the ground.
6. The construction of the containment system as specified herein shall not relieve the Contractor of responsibilities specified in Section 7-1.12A, "Indemnification," and Section 7-1.12B, "Insurance," of the Standard Specifications.
7. The debris containment system shall not encroach on required navigational clearances.

The Contractor's registered engineer shall be present at all times when bridge removal operations are in progress. The Contractor's registered engineer shall inspect the bridge removal operation and report in writing on a daily basis the progress of the operation and the status of the remaining structure. A copy of the daily report shall be available at the site of the work at the end of each shift and at all times. Should an unplanned event occur or the bridge operation deviate from the bridge removal plan, the Contractor's registered engineer shall submit immediately to the Engineer for approval, the procedure of operation proposed to correct or remedy the occurrence. The plan shall be signed by the design and check engineer and shall be submitted to the Engineer for review.

Full compensation for member or connection strengthening, supporting or stiffening requirements, and temporary bracing shall be considered as included in the contract lump sum price paid for bridge removal (portion), location G and no additional compensation will be allowed therefor.

Full compensation for debris containment system as specified herein shall be considered as included in the contract lump sum price paid for bridge removal (portion), location G and no additional compensation will be allowed therefor.

## 10-3.275 LIGHT EMITTING DIODE LUMINAIRES

### GENERAL

#### Summary

This work includes furnishing and installing Light Emitting Diode (LED) luminaires for street and parking lot, basketball court, and stairs lighting. Comply with Section 86, "Electrical Systems," of the Standard Specifications

#### Definitions

**CALiPER:** Commercially available LED product evaluation and reporting. A United States Department of Energy (US DOE) program for the testing and monitoring of commercially available LED luminaires and lights.

**correlated color temperature:** The absolute temperature in Kelvin of a blackbody whose chromaticity most nearly resembles that of the light source.

**house side lumens:** Lumens from a luminaire directed to light up areas between the fixture and the pole (e.g., sidewalks at intersection or areas off of the shoulders on freeways).

**junction temperature:** The temperature of the electronic junction of the LED device. The junction temperature is critical in determining photometric performance, estimating operational life, and preventing catastrophic failure of the LED.

**L70:** The extrapolated life in hours of the luminaire when the luminous output depreciates 30 percent from initial values.

**LM-79:** A test method from the Illumination Engineering Society of North America (IESNA) specifying test conditions, measurements, and report format for testing solid state lighting devices including LED luminaires.

**LM-80:** A test method from the IESNA specifying test conditions, measurements, and report format for testing and estimating the long term performance of LEDs for general lighting purposes.

**National Voluntary Laboratory Accreditation Program (NVLAP):** A US DOE program that accredits independent testing laboratories to qualify.

**power factor:** Ratio of the real power component to the complex power component.

**street side lumens:** Lumens from a luminaire directed to light up areas between the fixture and the roadway (e.g., traveled ways, freeway lanes).

**surge protection device (SPD):** A subsystem or component that can protect the unit against short duration voltage and current surges.

**total harmonic distortion:** The ratio of the root-mean-square (rms) value of the sum of the squared individual harmonic amplitudes to the rms value of the fundamental frequency of a complex waveform.

**International Electrotechnical Commission (IEC):** The organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

#### Submittals

Submit a sample luminaire to the Transportation Laboratory for testing after the manufacturer's testing is completed. Include the manufacturer's testing data.

Product submittals must include the following:

1. LED luminaire checklist.
2. Product specification sheets, including:
  - 2.1. Maximum power in watts.
  - 2.2. Maximum designed junction temperature.
  - 2.3. Heat sink area in square millimeters.
  - 2.4. Designed junction to ambient thermal resistance calculation with thermal resistance components clearly defined.
  - 2.5. L70 in hours when extrapolated for the average nighttime operating temperature.
3. IES LM-79 and IES LM-80 compliant test reports from a CALiPER-qualified or NVLAP-approved testing laboratory for the specific model submitted.
4. Photometric file based on LM-79 test report.

5. Initial and depreciated isofootcandle diagrams showing the specified minimum illuminance for that particular application. The diagrams must be calibrated to meters and show a 12 by 12 meter grid. The diagrams must be calibrated to the mounting height specified for that particular application. The depreciated isofootcandle diagrams must be calculated at the minimum operational life.
6. Test report showing SPD performance as tested under ANSI/IEEE C62.41.2 and ANSI/IEEE C62.45.
7. Test report showing mechanical vibration test results as tested under California Test 611 or equal.
8. Datasheets from the LED manufacturer that include information on life expectancy based on junction temperature.
9. Datasheets from power supply manufacturer that include life expectancy information.

## **Quality Control and Assurance**

### **General**

Production quality assurance must be performed by the luminaire manufacturer and must include statistically-controlled routine tests to ensure minimum performance levels of the modules built to comply with this specification and a documented process for resolving problems. The manufacturer must keep the process and test results documentation on file for a minimum of 7 years.

The Department may perform random sample testing on the shipments. Testing will be completed within 30 days after delivery to the Transportation Laboratory. Luminaires will be tested under California Test 678 and as specified. All parameters of the specification may be tested on the shipment sample. When testing is complete, you will be notified. You must pick up the equipment from the test site and deliver to the job site.

One sample luminaire must be fitted with a thermistor or thermo-couple temperature sensor. A temperature sensor must be mounted on the LED solder pad as close to the LED as possible. Another temperature sensor must be mounted on the power supply case. Light bar or modular systems must have 1 sensor for each module mounted as close to the center of the module. Other configurations must have at least 5 sensors per luminaire. Contact the Transportation Laboratory for advice on sensor location. Thermocouples must be either Type K or C. Thermistors must be a negative temperature coefficient type with a nominal resistance of 20 k $\Omega$ . The appropriate thermocouple wire must be used. The leads must be a minimum of 1.8 m. Documentation must accompany the test unit that details the type of sensor used.

The sample luminaires must be energized for a minimum of 24 hours, at 100 percent on-time duty cycle, at a temperature of +21 °C before performing any testing.

The luminaire lighting performance must be depreciated for the minimum operating life by using the LED manufacturer's data or the data from the LM-80 test report, whichever results in a higher lumen depreciation.

Failure of the luminaire that renders the unit noncompliant with the specification will be cause for rejection. If a unit is rejected, you must allow 30 days for retesting. Retesting period starts when the replacement luminaire is delivered to test site. You must pay for all retesting costs. Delays resulting from submittal of noncompliant materials do not relieve you from executing the Contract within the allotted time.

If a luminaire submitted for testing does not comply with the specifications, remove the unit from the Transportation Laboratory within 5 business days after notification that it is rejected. If the unit is not removed within that period, it may be shipped to you at your expense.

You must pay for all shipping, handling, and transportation costs related to testing and retesting.

### **Warranty**

Provide a 7-year replacement warranty from the manufacturer of the luminaires from the date of installation against any defects or failures. Replacement luminaires must be provided within 10 days after receipt of the failed luminaire at no cost to the Department. All warranty documentation must be submitted to the Engineer before installation. Replacement luminaires must be delivered to the District Electrical Maintenance Station at 30 Rickard Street, San Francisco, CA 94134, (415) 330-6509.

## **MATERIALS**

### **General**

The luminaire includes an assembly that uses LEDs as the light source. The assembly includes a housing, an LED array, and an electronic driver (i.e., power supply). The luminaire must comply with the following requirements:

1. UL listed under UL 1598 for luminaires in wet locations or an equivalent standard from a recognized testing laboratory
2. Have a minimum operational life of 63,000 hours
3. Expected to operate at an average operating time of 11.5 hours per night
4. Designed to operate at an average nighttime operating temperature of 21 °C
5. Have an operating temperature range from -40 to +54 °C.

The individual LEDs must be connected such that a catastrophic loss or a failure of 1 LED will not result in the loss of more than 20 percent of the luminous output of the luminaire.

### **Luminaire Identification**

Each luminaire must have the following identification permanently marked inside the unit and outside of its packaging box:

1. Manufacturer's name
2. Trademark
3. Model number
4. Serial number
5. Date of manufacture (month-year)
6. Lot number
7. Project/Contract number
8. Rated voltage
9. Rated wattage
10. Rated power in VA

### **Electrical**

The luminaire must operate from a  $60 \pm 3$  Hz AC power line over a minimum voltage range of 95 to 250 V(ac). The fluctuations of line voltage must have no visible effect on the luminous output. The standard operating voltages are 120 and 240 V(ac). The power factor of the luminaire must be 0.90 or greater. Total harmonic distortion, current and voltage, induced into an AC power line by a luminaire must not exceed 20 percent.

### **Surge Suppression and Electromagnetic Interference**

The luminaire on-board circuitry must include an SPD to withstand high repetition noise transients because of utility line switching, nearby lightning strikes, and other interference. The SPD must protect the luminaire from damage and failure for transient voltages and currents as defined in ANSI/IEEE C64.41.2 (Tables 1 and 4) for Location Category C-High. SPD must comply with UL 1449 depending on the components used in the design. SPD performance must be tested under ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for Location Category C-High.

The luminaires and associated on-board circuitry must comply with the Class A emission limits provided in FCC title 47, subpart B, section 15 regulations concerning the emission of electronic noise.

### **Photometric Requirements**

The luminaire must maintain a minimum illuminance level throughout the minimum operating life. The L70 of the luminaire must be the minimum operating life or greater. The measurements must be calibrated to standard photopic calibrations.

## 12-16.04 LIGHTING

**GENERAL.**--This work shall consist of furnishing, installing and connecting all lighting equipment in accordance with the details shown on the plans and these special provisions.

**SUBMITTALS.**--Manufacturer's descriptive information, photometric curves, catalog cuts, and installation instructions shall be submitted for approval. Any other data as requested by the Engineer shall also be submitted for approval.

### PRODUCTS

#### Lighting Fixture Lamps

Lighting fixture lamps shall be type and size as shown on the plans.

#### Lighting Fixtures

Lighting fixtures shall be as shown on the plans and as specified herein. Outdoor luminaires shall be listed and labeled "Fixture Suitable For Wet Locations."

#### L1

Outdoor rated surface mounted canopy LED fixture shall be low profile cast aluminum housing with high brightness LEDs, 7500 minimum initial delivered lumens at up to 6000K color temperature, with symmetric light distribution pattern and minimum 70 CRI. Fixture shall come with fused and surge protected integral driver with maximum drive current of 450 mA, be suitable for wet locations and have powder coat white finish. Fixture shall come with all associated hardware for surface mounting below the soffit. Fixture manufacturer shall be on the approved LED Manufacturers list of the Design lights Consortium. Fixture shall be Acuity Brands, catalog number TLRPG15-8600-SYM-MVOLT-SR-SF-DWH; LSI Industries, catalog number XPG3P-S-LED-68-450-NW-UE-WHT; Beta LED, catalog number CAN-EDG-PS-DM-10-C-UL-WH; or equal.

#### L2

Outdoor surface mounted linear LED fixture shall be at least 1220 mm long, low profile cast aluminum or polycarbonate housing with high brightness LEDs, 5000 minimum initial delivered lumens at a maximum of 4100K color temperature, with symmetric light distribution pattern, and minimum 70 CRI. Fixture shall come with fused and surge protected integral driver(s) with maximum drive current of 525 mA, 80 watts maximum power input and be suitable for wet locations. Fixture shall come with all associated hardware for surface mounting below the exterior guard booth ceiling. Fixture shall be Lithonia Lighting, catalog number VAP 79 LED SYM; Cooper Lighting Fail-safe, catalog number HVL12-4-5000-7-40-120-ED; or equal.

#### L3

Indoor recessed linear LED fixture shall be 1220 mm long, low profile cold rolled steel housing with powder coated paint, high brightness LEDs, 2200 minimum initial delivered lumens at a maximum of 4100K color temperature, with symmetric light distribution pattern, and at 82 CRI. Fixture shall come with fused and surge protected integral driver with maximum drive current of 525 mA, 25 watts maximum power input. Fixture shall come with all associated hardware for recessed mounting in the guard booth restroom ceiling. Fixture shall be Lithonia Lighting, catalog number RTL4 25L D24 LP840; Columbia Lighting, catalog number LEDC14-4022 with flange kit for recessed ceiling installation; or equal.

#### **L4**

Indoor recessed linear LED fixture shall be 1220 mm long by 600 mm wide, low profile cold rolled steel housing with powder coated paint, high brightness LEDs, 5000 initial delivered lumens at a maximum of 4000K color temperature, with symmetric light distribution pattern, and at a minimum 75 CRI. Fixture shall come with fused and surge protected integral driver with maximum drive current of 525 mA, 71 watts maximum power input and shall come with driver for complete dimming from 100% down to 5%. Fixture shall come with all associated hardware for recessed mounting in the guard booth ceiling as shown on the plans. Fixture shall be CREE Lighting, catalog number CR24-50L-40-10V; Columbia Lighting, catalog number LSER24-40-HLG-C-ED with flange kit for recessed ceiling installation; or equal.

#### **Photoelectric Unit, PC**

Photoelectric unit shall be cadmium sulfide photoelectric control with capacity of 600-watt incandescent or 600-watt inductive or fluorescent load, mounting adapter, and EEI-NEMA twist lock receptacle; Fisher-Pierce, Ripley, or equal.

#### **Outside Lighting Control Station, OLCS**

Outside lighting control station shall consist of a lighting contactor, bypass timer switch, selector switches, disconnect switch, time clock and terminal blocks in a surface mounted NEMA-12 enclosure with a hinged door.

#### **Lighting Contactor, LC**

Lighting contactor shall be electrically held, 2-pole combination lighting contactor with 120-volt AC coil and 30-ampere, double-break, silver alloy contacts; Square D Company, I.T.E., Westinghouse, or equal.

#### **Bypass Timer Switch**

Bypass timer switch shall be the same as timer switches elsewhere in these general conditions.

#### **Time Clock**

Time clock shall be a 120-volt, AC, solid-state programmable timer with power, on-off and manual override features. Time clock shall be able to program for a minimum of 3 independent schedules for any days of the week, in addition to being able to skip selected days. Time clock shall have a single-pole, double throw output contact rated at not less than 16-ampere, 120-volt, AC.

#### **Selector Switch, SS1 and SS2**

Selector switch shall be rotary action, double-pole, 2-position, 10-ampere, 120-volt switch. Switch contacts shall have an inductive pilot duty rating of 60 amperes (make), 6 amperes (break) and 10 amperes (continuous) at 120 volts and 35 percent power factor. Selector switch shall have legend plate marked MANUAL-AUTO.

#### **Disconnect Switch, DS**

Disconnect switch shall be a 20 ampere rated snap switch as specified elsewhere in these General Conditions.

#### **Outside Lighting Control Station Enclosure**

Outside lighting control station enclosure shall be a single door NEMA Type 12, 355 mm high x 305 mm wide x 200 mm deep enclosure, conforming to the joint industry conference standards.

#### **Terminal Block, TB**

Terminal block shall be 20-ampere, 240-volt, molded plastic with two or more mounting holes and two or more terminals in each cast block. The molded plastic shall have a high resistance to heat, moisture, mechanical shock, and electrical potential and shall have a smooth even finish. Each block shall have a molded marking strip attached with screws. Terminal blocks shall have tubular, high pressure clamp connectors.

## **FABRICATION**

**Component Mounting.**--The following electrical components shall be mounted on the back panel of the Outside Lighting Control Panel enclosure, OLCS:

Terminal Block, TB  
Lighting Contactor, LC  
Time Clock  
Neutral Buss

The following electrical components shall be mounted on the hinged door of the Outside light control Panel enclosure, OLCS:

Bypass Timer Switch, BTS1  
Disconnect Switch, DS

## **EXECUTION**

**Lighting Fixtures.**--Lighting fixtures shall be mounted securely in accordance with the manufacturer's recommendations. Mounting methods shall be suitable for the particular type of ceiling or support at each location.

The Contractor shall provide all supports, hangers, spacers, channels, fasteners and other hardware necessary to support the fixtures.

Fixtures shall be set at the mounting heights shown on the plans, except heights shown shall be adjusted to meet conditions.

## **PRE-AWARD QUALIFICATIONS QUESTIONNAIRE (PAQQ)**

CANTILEVER TRUSS REMOVAL  
(BRIDGE NO. 33-0025)

### **BIDDERS SHALL SUBMIT INFORMATION WITH THE PROPOSAL REGARDING THE FOLLOWING AS A CONDITION FOR AWARD OF THE PROJECT.**

**(See Section 2, "BIDDING" and Section 3, "CONTRACT AWARD AND EXECUTION" of the special provisions)**

This questionnaire applies specifically to the removal of the Cantilever Truss. Whenever the word "bidder" is used in the questionnaire, the response shall include the prime contractor and all proposed subcontractors involved in the removal of the Cantilever Truss, including but not limited to joint ventures, subsidiaries, and subcontractors.

1. Provide a summary of the bidder's experience in sequential dismantling or sequential erection of steel truss bridges, including a minimum of one project comparable in scope and type to the removal of the Cantilever Truss. Include names and telephone numbers of the project owner for each project cited. Designate the name of any engineer or consulting firm that provided design or other engineering services to you connected with the work, and describe those services. List the following factors as they apply to each project:
  - a. in navigable waterways with oceangoing traffic lanes
  - b. under the jurisdiction of the United States Coast Guard, or similar units in other countries
  - c. subject to tides and strong currents, high winds, and fog similar to or more extreme than those found in the project limits
  - d. subject to environmental restrictions, permits, and utilities
  - e. immediate proximity to adjacent structures and other construction projects
  - f. debris collection and containment, and handling of hazardous materials on the bridge
2. Provide anticipated functional and staff personnel organizational chart for the demolition work. Provide names of individuals and describe roles and responsibilities, including with respect to compliance with safety and environmental requirements.
3. Provide resumes for management staff, superintendents, design and construction engineers, and administrators. Describe roles and responsibilities on projects of similar scope. Provide resumes of the design and check engineer that meet the experience and license requirements as required for preparation of bridge removal working drawings.

### **ADDITIONAL QUESTIONS:**

1. Has any Contractor's State License Board license, or contractor license of another state, held by your firm or its Responsible Managing Employee (RME) or Responsible Managing Officer (RMO) been suspended within the last 5 years?

If yes, please explain on a separate signed sheet.

2. In the last 5 years has your firm, or any firm with which any of your company's owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?

CONTRACT NO. 04-0120T4

1

REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2012

If yes, explain on a separate signed sheet. State whether the firm involved was the firm applying for prequalification here or another firm. Identify by name of the company, the name of the person within your firm who was associated with that company, the year of the event, the owner of the project and the basis for the action.

3. Has Cal-OSHA, safety agency of another state, or the Federal Occupational Safety and Health Administration cited and assessed penalties against your firm for any serious, willful or repeat violations of its safety or health regulations in the past 5 years?

If yes attach a separate signed sheet describing the citations, including information about the dates of the citations, the nature of the violations, the projects on which the citations were issued, the amount of penalties paid, if any, and specific actions your firm has taken to prevent recurrence of the listed alleged or actual safety violations. If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

**BID ITEM LIST**  
**04-0120T4**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	043670	ESTABLISH MARINE ACCESS	LS	LUMP SUM	LUMP SUM	
2	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM	LUMP SUM	
3	022834	DOCUMENT DATA MANAGEMENT SYSTEM ELECTRONIC DATA DELIVERY	LS	LUMP SUM	LUMP SUM	
4	070018	TIME-RELATED OVERHEAD	WDAY	1120		
5	022835	CONTRACTOR SUPPLIED BIOLOGIST	LS	LUMP SUM	LUMP SUM	
6	022836	TRANSPORTATION FOR ENGINEER	LS	LUMP SUM	LUMP SUM	
7	022837	ENGINEER'S INSPECTION FACILITY	LS	LUMP SUM	LUMP SUM	
8	022838	TEMPORARY SHUTTLE VAN	LS	LUMP SUM	LUMP SUM	
9	022839	TEMPORARY FENCE (TYPE CL-2.4, BLACK VINYL-CLAD WITH BARBED WIRE EXTENSION ARM)	M	480		
10	071325	TEMPORARY FENCE (TYPE ESA)	M	1,530		
11	043671	SHORING TOWERS	LS	LUMP SUM	LUMP SUM	
12	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
13	074018	HEALTH AND SAFETY PLAN	LS	LUMP SUM	LUMP SUM	
14	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
15	022840	TURBIDITY CONTROL	LS	LUMP SUM	LUMP SUM	
16	074022	DEWATERING AND NON-STORM WATER DISCHARGE CONTROL	LS	LUMP SUM	LUMP SUM	
17	074028	TEMPORARY FIBER ROLL	M	8,230		
18	074029	TEMPORARY SILT FENCE	M	2,720		
19	074031	TEMPORARY GRAVEL BAG BERM	M	1,700		
20	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	8		

**BID ITEM LIST****04-0120T4**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141	500050	TIEBACK ANCHOR	EA	96		
142 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	M3	582		
143 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	M3	3,019		
144 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	M3	897		
145 (F)	510072	STRUCTURAL CONCRETE, BARRIER SLAB	M3	138		
146 (F)	043677	STRUCTURAL CONCRETE, APPROACH SLAB, (TYPE EQ (3) MOD)	M3	4		
147 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	198		
148	510526	MINOR CONCRETE (BACKFILL)	M3	50		
149 (F)	511064	FRACTURED RIB TEXTURE	M2	465		
150 (F)	511106	DRILL AND BOND DOWEL	M	119		
151 (F)	043678	FURNISH PRECAST CONCRETE SLAB (BIKEPATH)	EA	36		
152 (F)	043679	ERECT PRECAST CONCRETE SLAB (BIKEPATH)	EA	36		
153	515041	FURNISH POLYESTER CONCRETE OVERLAY	M3	132		
154	515042	PLACE POLYESTER CONCRETE OVERLAY	M2	6,350		
155	043680	FURNISH POLYESTER CONCRETE OVERLAY (12MM)	M3	28		
156	043681	PLACE POLYESTER CONCRETE OVERLAY (12MM)	M2	2,310		
157	BLANK					
158 (F)	515072	CORE CONCRETE (0 - 50 MM)	M	59		
159 (F)	518051	PTFE SPHERICAL BEARING	EA	4		
160	043683	BIKEPATH EXPANSION JOINT	M	18		