

DEPARTMENT OF TRANSPORTATION

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November 16, 2001

04-Nap-29-12.0,18.5/21.7
04-120614
ACSTP-P029(089)E

Addendum No. 3

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in NAPA COUNTY IN NAPA ON ROUTE 29 FROM FIRST STREET OVERCROSSING TO SIERRA AVENUE.

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 December 11, 2001. The original bid opening date was previously postponed indefinitely under Addendum No. 2 dated September 25, 2001.

This addendum is being issued to set a new bid opening date as shown herein and revise the Project Plans, the Notice to Contractors and Special Provisions, the Proposal and Contract, and the Federal Minimum Wages with Modification Number 14 dated 11-9-01. A copy of the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

Project Plan Sheets 1, 2, 6, 13, 18, 19, 20, 22, 23, 37, 53, 91, 92, 93, 94, 95, 96, 120, 125, 126, 137, 143, 146, 149, 150, 158, 159, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 195, 196, 241, 242, 244, 246, 248, 273, 277, 282, 283, 284, 443, 444, 445, 446, 447, 448, 449, 452, and 453 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

In the Special Provisions, Section 5-1.17, "PAYMENT," the following is added after the fourth paragraph:

MM. "Railroad Track Steel Rails"
NN. "Railroad Cross Ties"
PP. "Railroad Precast Panels"

In the Special Provisions, Section 5-1.21, "RELATIONS WITH CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD," the second sentence in the first paragraph is revised as follows:

"Regional Water Quality Control Board Order No. 01-100, NPDES Permit No. CAG912002 and Water Quality Certification have been issued covering work to be performed under this contract."

In the Special Provisions, Section 5-1.23, "MANDATORY DISPOSAL SITE (NON-HAZARDOUS MATERIAL)," the second paragraph "telephone (707) 253-4471" is replaced with "telephone (707)253-4274."

04-Nap-29-12.0,18.5/21.7
04-120614
ACSTP-P029(089)E

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the following paragraph is added after the third paragraph:

"Existing emergency roadside call boxes may be in conflict with the 1050 mm pipe to be installed for drainage System No. 11. The Contractor shall notify the Engineer, in writing, a minimum of 60 working days prior to commencing any work requiring the removal of existing emergency roadside call boxes."

In the Special Provisions, Section 10-1.10, "ORDER OF WORK," the following paragraph is added after the ninth paragraph:

"Attention is directed to "Piling" and "Concrete Structures" of these Special Provisions and to Retaining Wall No. 2 as shown on the plans. The Contractor shall notify Orchard Hardware Supply and the Engineer, in writing, a minimum of 21 calendar days prior to performing any work related to Retaining Wall No. 2, from Station D 142+85 to Station D 144+25. The Contractor shall have a maximum of 90 consecutive calendar days to complete the Retaining Wall No. 2 work, including backfill, except for Concrete Barrier and Sound Wall (Barrier) (Masonry Block) work, from Station D 142+85 to Station D 144+25. It is anticipated that PG&E will be reinstalling the 12 KV overhead power lines and poles to their original location after the expiration of the 90-calendar day working period. The contractor shall cooperate with PG&E during the reinstallation work."

In the Special Provisions, Section 10-1.02, "WATER POLLUTION CONTROL (STORM WATER POLLUTION PREVENTION PLAN)," is revised as attached.

In the Special Provisions, Section 10-1.03, "CONSTRUCT RAILROAD TRACKS," the subsection "RAILROAD MATERIALS," the following paragraph is added after the second paragraph:

"At the Contractor's option, the rubber flangeway inserts shall be either EPFlex Rail Seal by Epton or Performance Polymer Rail Seal or equal."

In the Special Provisions, Section 10-1.13, "TEMPORARY FENCE AND GATE (TYPE CL-1.8)," is replaced with Section 10-1.13, "TEMPORARY FENCE AND GATE (TYPE CL-1.8 AND TYPE CL-2.4)," as attached.

In the Special Provisions, Section 10-1.15, "COOPERATION," the following paragraph is added after the fourth paragraph:

"Attention is directed to "Order of Work" and "Alternative Pipe Culverts" of these Special Provisions. The Contractor shall coordinate all work requiring the removal or reinstallation of existing emergency roadside call boxes, through the Engineer, as specified in "Order of Work" of these Special Provisions."

In the Special Provisions, Section 10-1.18, "OBSTRUCTIONS," the first sentence in the sixth paragraph is revised as follows:

"The following utility facilities will be temporarily relocated for a period of 90 calendar days, during the progress of the contract."

In the Special Provisions, Section 10-1.22, "MAINTAINING TRAFFIC," Shoulder Closure Chart No. 10 and Ramp Lane Closure Chart No. 11 are added as attached.

04-Nap-29-12.0,18.5/21.7
04-120614
ACSTP-P029(089)E

In the Special Provisions, Section 10-1.30, "EXISTING HIGHWAY FACILITIES," the subsection "REMOVE CONCRETE," the first paragraph is revised as follows:

"Concrete pavement, sidewalk and driveway, curb and gutter, planter curb and island paving, where shown on the plans to be removed, shall be removed."

In the Special Provisions, Section 10-1.33, "EARTHWORK," is revised as attached.

In the Special Provisions, Section 10-1.37, "HEALTH & SAFETY PLAN (RESTRICTED MATERIAL)," the subsection "SAFETY," the fourth and fifth paragraphs are deleted.

In the Special Provisions, Section 10-1.38, "MATERIAL CONTAINING AERIALY DEPOSITED LEAD," the third paragraph is revised as follows:

"Type Y material contains aerially deposited lead in average concentrations greater than or equal to 5.0 mg/L Soluble Lead and between 0 - 350 mg/kg (inclusive) Total Lead, as tested using the California Waste Extraction Test. Type Y material exists between 0.0 and 4.0 m, measured horizontally from the edges of existing pavement, on "OF" Line from Station 10+18.25 to Station 23+30, "M" Line from Station 131+80 to Station 148+61.99, "O" Line from Station 131+80 to Station 148+61.99, and from a depth of 0.0 to 0.61 m below existing grade, or as shown on the plans. These materials shall be placed at the mandatory disposal site(s) for aerially deposited lead as shown on the plans, unless otherwise directed by the Engineer, and covered with a minimum 0.61 m layer of non-hazardous soil or pavement. These materials are hazardous waste regulated by the State of California that may be reused as permitted under the Variance of the Department of Toxic Substances Control. Temporary surplus material may be generated on this project due to the requirements of stage construction. Temporary surplus material shall not be transported outside the project limits. In order to conform to the requirements of these provisions, it may be necessary to stockpile materials for subsequent stages or construct some embankments out of stage or handle temporary surplus material more than once."

In the Special Provisions, Section 10-1.39, "TEMPORARY ALTERNATIVE EARTH RETAINERS," the following paragraphs are added after the fourth paragraph:

"All components of any selected retainers shall not extend outside of the temporary construction easement obtained for the project. Tiebacks shall not extend outside of the permanent highway right of way.

All components of temporary earth retainers located outside of the permanent highway right of way shall be removed when their use is no longer required."

In the Special Provisions, Section 10-1.40, "TEMPORARY SHEET PILE WALL (GALVANI WINES)," the subsection "PAYMENT," is revised as follows:

"PAYMENT

Full compensation for the installation, maintenance, and removal of the temporary sheet pile wall (Galvani Wines), from "A" Line Stations 139+33 to 139+75 to a depth of 10 meters below the original ground surface, including preparation and submittal of working drawings, shall be considered to be included in the contract unit price paid per cubic meter for roadway excavation, and no additional compensation will be allowed therefor. "

04-Nap-29-12.0,18.5/21.7
04-120614
ACSTP-P029(089)E

In the Special Provisions, Section 10-1.42, "NON-STORM WATER DISCHARGES," the subsection "PERMIT REQUIREMENT," the second paragraph "Order No. 96-078" is replaced with "Order No. 01-100".

In the Special Provisions, Section 10-1.43, "SURVEY OF EXISTING NON-HIGHWAY FACILITIES," the subsection "PHOTO AND ELEVATION SURVEY AND CRACK MONITORING (Exterior & Interior)," is revised as follows:

"PHOTO AND ELEVATION SURVEY AND CRACK MONITORING (Exterior & Interior)"

Address/Description

3385 California Boulevard		Hemphill's Lounge & Card Room
3381 California Boulevard	-	Yoshi Shige Restaurant
3367 California Boulevard	-	All State Insurance
3369 California Boulevard	-	Omega Lending Inc.
3371 - 3373 California Boulevard	-	Liliais
3285 California Boulevard		Gelvani Wines
3265 California Boulevard		Humane Society of Napa County
3916 Bel Aire Plaza		Orchard Supply Hardware (tenant)
4000 Trancas Street		Target Store (Old Montgomery Wards)"

In the Special Provisions, Section 10-1.54, "CONSTRUCTION RAILROAD TRACKS," is deleted.

In the Special Provisions, Section 10-1.65, "CONCRETE STRUCTURES," is revised as attached.

In the Special Provisions, Section 10-1.67, "PRECAST CONCRETE BOX CULVERTS," is revised as attached.

In the Special Provisions, Section 10-1.83, "JACKED 300 MM TEMPORARY CULVERT," is replaced with Section 10-1.83, "JACKED 300 MM TEMPORARY CULVERT AND 1050 MM REINFORCED CONCRETE PIPE (JACKED)," as follows:

10-1.83 JACKED 300 MM TEMPORARY CULVERT AND 1050 MM REINFORCED CONCRETE PIPE (JACKED)

The jacked 300 mm temporary reinforced concrete pipe culvert and 1050 mm reinforced concrete pipe (jacked) shall conform to Section 65, "Reinforced Concrete Pipe," of the Standard Specifications.

In the Special Provisions, Section 10-1.94, "PERMEABLE MATERIAL," is revised as attached.

In the Proposal and Contract, the Engineer's Estimate Items 9, 16, 32, 33, 48, 81, 130, 131, 140, 143, 155, 157, 161, 170, 177, 190, and 196 are revised, Items 262, 263, 264 and 265 are added, and Items 2, 167, 168, 169, 171, 172, and 261 are deleted as attached.

Addendum No. 3
Page 5
November 16, 2001

04-Nap-29-12.0,18.5/21.7
04-120614
ACSTP-P029(089)E

To Proposal and Contract book holders:

Replace the entire Engineer's Estimate in the Proposal with the attached revised Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

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

Submit bids in the Proposal and Contract 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.

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it.

If you are not a Proposal and Contract 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,

ORIGINAL SIGNED BY

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

Attachments

10-1.02 WATER POLLUTION CONTROL (STORM WATER POLLUTION PREVENTION PLAN)

Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications and these special provisions.

This project lies within the boundaries of the San Francisco Bay Area Regional Water Quality Control Board and shall conform to the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit for General Construction Activities No. CAS000002, Order No. 99-08-DWQ, including State Water Resources Control Board (SWRCB) Resolution No. 2001-046, and the NPDES Permit for the State of California Department of Transportation Properties, Facilities, and Activities, No. CAS000003, Order No. 99-06-DWQ issued by the SWRCB. These permits, hereafter referred to as the "Permits," regulate storm water discharges associated with construction activities.

Water pollution control work shall conform to the requirements in the "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual" and the "Construction Site Best Management Practices (BMPs) Manual," and addenda thereto issued up to, and including, the date of advertisement of the project, hereafter referred to respectively as the "Preparation Manual" and the "Construction Site BMP Manual" and collectively as the "Manuals." In addition, water pollution control work shall conform to the requirements in the Sampling and Analysis Bulletin. Copies of the Manuals and the Permits may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815, Telephone: (916) 445-3520. Copies of the Manuals and the Sampling and Analysis Bulletin may also be obtained from the Department's Internet Web Site at: <http://www.dot.ca.gov/hq/construc/stormwater.html>.

In addition, a Conceptual Storm Water Pollution Prevention Plan (CSWPPP) has been prepared for this project by the Department and is available for review at 111 Grand Avenue, Oakland, California 94612. Please call the Construction Office Duty Senior, telephone number (510) 286-5209, to reserve a copy of the documents at least 24 hours in advance. This document may be used by the Contractor for developing the actual contract Storm Water Pollution Prevention Plan (SWPPP).

The Contractor shall know and fully comply with the applicable provisions of the Manuals, Permits, and Federal, State, and local regulations that govern the Contractor's operations and storm water discharges from both the project site and areas of disturbance outside the project limits during construction. The Contractor shall maintain copies of the Permits at the project site and shall make the Permits available during construction.

Unless arrangements for disturbance or use of areas outside the project limits are made by the Department and made part of the contract, it is expressly agreed that the Department assumes no responsibility for the Contractor or property owner with respect to any arrangements made between the Contractor and property owner. The Contractor shall implement, inspect and maintain all necessary water pollution control practices to satisfy all applicable Federal, State, and Local laws and regulations that govern water quality for areas used outside of the highway right-of-way or areas arranged for the specific use of the Contractor for this project. Installing, inspecting, and maintaining water pollution control practices on areas outside the highway right-of-way not specifically arranged for and provided for by the Department for the execution of this contract will not be paid for.

The Contractor shall be responsible for the costs and for liabilities imposed by law as a result of the Contractor's failure to comply with the provisions set forth in this section "Water Pollution Control (Storm Water Pollution Prevention Plan)", including but not limited to, compliance with the applicable provisions of the Manuals, Permits and Federal, State and local regulations. Costs and liabilities include, but are not limited to, fines, penalties, and damages whether assessed against the State or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne Water Quality Act.

In addition to the remedies authorized by law, money due the Contractor under the contract, in an amount determined by the Department, may be retained by the State of California until disposition has been made of the costs and liabilities.

When a regulatory agency or other third party identifies a failure to comply with the permit or any other local, State, or federal requirement, the Engineer may retain money due the Contractor, subject to the following:

- A. The Department will give the Contractor 30 days notice of the Department's intention to retain funds from partial payments which may become due to the Contractor prior to acceptance of the contract. Retention of funds from payments made after acceptance of the contract may be made without prior notice to the Contractor.
- B. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications.
- C. If the Department has retained funds and it is subsequently determined that the State is not subject to the costs and liabilities in connection with the matter for which the retention was made, the Department shall be liable for interest on the amount retained for the period of the retention. The interest rate payable shall be 6 percent per annum.

Conformance with the provisions of this section "Water Pollution Control (Storm Water Pollution Prevention Plan)" shall not relieve the Contractor from the Contractor's responsibilities, as provided in Section 7, "Legal Relations and Responsibility," of the Standard Specifications.

The Contractor shall notify the Engineer immediately upon request from the regulatory agencies to enter, inspect, sample, monitor or otherwise access the project site or the Contractor's records pertaining to water pollution control work.

STORM WATER POLLUTION PREVENTION PLAN PREPARATION, APPROVAL AND AMENDMENTS

As part of the water pollution control work, a Storm Water Pollution Prevention Plan, hereafter referred to as the "SWPPP," is required for this contract. The SWPPP shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications, the requirements in the Manuals, the requirements of the Permits, and these special provisions. Upon the Engineer's approval of the SWPPP, the SWPPP shall be considered to fulfill the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications for development and submittal of a Water Pollution Control Program.

No work having potential to cause water pollution, as determined by the Engineer, shall be performed until the SWPPP has been approved by the Engineer.

The Contractor shall designate a Water Pollution Control Manager. The Water Pollution Control Manager shall be responsible for the preparation of the SWPPP and any required modifications or amendments and shall be responsible for the implementation and adequate functioning of the various water pollution control practices employed. The Water Pollution Control Manager shall serve as the primary contact for all issues related to the SWPPP or its implementation. The Contractor shall submit to the Engineer a statement of qualifications, describing the training, previous work history and expertise of the individual selected by the Contractor to serve as Water Pollution Control Manager. The Engineer will reject the Contractor's submission of a Water Pollution Control Manager if the submitted qualifications are deemed to be inadequate.

Within 30 days after the approval of the contract, the Contractor shall submit 3 copies of the draft SWPPP to the Engineer. The Engineer will have 15 days to review the SWPPP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the SWPPP within 15 days of receipt of the Engineer's comments. The Engineer will have 5 days to review the revisions. Upon the Engineer's approval of the SWPPP, 3 approved copies of the SWPPP, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the SWPPP while minor revisions are being completed. If the Engineer does not review or approve the SWPPP within the time specified, compensation will be made in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The SWPPP shall apply to all areas that are directly related to construction including, but not limited to, staging areas, storage yards, material borrow areas, and access roads within or outside of the highway right-of-way.

The SWPPP shall incorporate water pollution control practices in the following six categories:

- A. Soil stabilization;
- B. Sediment control;
- C. Wind erosion control;
- D. Tracking control;
- E. Non-storm water control; and
- F. Waste management and material pollution control.

The Contractor shall develop a Water Pollution Control Schedule that shall describe the timing of grading or other work activities that could affect water pollution. The Water Pollution Control Schedule shall be updated by the Contractor to reflect any changes in the Contractor's operations that would affect the necessary implementation of water pollution control practices.

The Contractor shall incorporate the "Minimum Requirements" presented in the Preparation Manual into the SWPPP. In addition to the "Minimum Requirements" presented in the Preparation Manual, the Contractor shall complete the BMP Consideration Checklist presented in the Preparation Manual. The Contractor shall identify and incorporate into the SWPPP the water pollution control practices selected by the Contractor or as directed by the Engineer.

In addition to the Minimum Requirements presented in the Preparation Manual, special requirements shall be incorporated into the SWPPP and the Water Pollution Control Cost Break-Down as follows:

Special Requirement(s)

Category	BMP, location and quantity
Soil Stabilization Practices	SS-10 Outlet Protection/Velocity Dissipation Devices
Sediment Control Practices	SC-4 Check Dam
Wind Erosion Control	
Tracking Control Practices	
Non-Storm Water Control	NS-2 Dewatering Operations NS-3 Paving and Grinding Operations
Waste Management & Materials Pollution Control	WM-3 Stockpile Management WM-6 Hazardous Waste Management WM-7 Contaminated Soil Management WM-8 Concrete Waste Management WM-10 Liquid Waste Management

The following contract items of work, shall be incorporated into the SWPPP as "Temporary Water Pollution Control Practices": Temporary Concrete Washout Facility; Non-Storm Water Discharges, Temporary Cover, Temporary Drainage Inlet Protection, Temporary Entrance/Exit, Temporary Erosion Control, Temporary Silt Fence. The Contractor's attention is directed to these special provisions provided for each temporary water pollution control practice. The SWPPP shall include, but not be limited to, the items described in the Manuals, Permits, and related information contained in the contract documents. The SWPPP shall include also a copy of the following:

1. Notification of Construction
2. U.S. Army Corps of Engineers,
3. 401 Certification from SFRWQCB,
4. Waste Discharge Requirements, order No. 01-100 from SFRWQCB
5. CA Dept of Fish and Game 1601

The Contractor shall prepare an amendment to the SWPPP when there is a change in construction activities or operations which may affect the discharge of pollutants to surface waters, ground waters, municipal storm drain systems, or when the Contractor's activities or operations violate any condition of the Permits, or when directed by the Engineer. Amendments shall show additional water pollution control practices or revised operations, including those areas or operations not shown in the initially approved SWPPP. Amendments to the SWPPP shall be prepared, and submitted for review and approval in the same manner as specified for the SWPPP approval. Subsequent amendments shall be submitted within a time approved by the Engineer, but in no case longer than the time specified for the initial submittal and review of the SWPPP. At a minimum, the SWPPP shall be amended annually and submitted to the Engineer 25 days prior to the defined rainy season.

The Contractor shall keep one copy of the approved SWPPP and approved amendments at the project site. The SWPPP shall be made available upon request by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency or of the local storm water management agency. Requests by the public shall be directed to the Engineer.

COST BREAK-DOWN

The Contractor shall submit to the Engineer a cost break-down for the contract lump sum item of water pollution control, together with the SWPPP.

The cost break-down shall be completed and furnished in the format shown in the cost break-down example included in this section. Unit descriptions and quantities shall be designated by the Contractor, except for the specified special requirements shown in the example. The units and quantities given in the example, if provided, are special requirements specified for the SWPPP, and shall be included in the cost break-down furnished to the Engineer. The Contractor shall verify the estimated quantities of the special requirements and submit revised quantities in the cost break-down.

The Contractor shall determine the quantities required to complete the work of water pollution control. The quantities and their values shall be included in the cost break-down submitted to the Engineer for approval. The Contractor shall be responsible for the accuracy of the quantities and values used in the cost break-down submitted for approval. The cost break-down shall not include water pollution control practices which are shown on the plans and for which there is a separate contract item.

The sum of the amounts for the work listed in the cost break-down table shall be equal to the contract lump sum price paid for water pollution control. Overhead and profit shall be included in each individual item listed in the cost break-down. The cost break-down shall be submitted and approved within the same time specified for the SWPPP. Partial payment for the water pollution control will not be made until the cost break-down is approved, in writing, by the Engineer.

Adjustments in the items of work and quantities listed in the approved cost break-down shall be made when required to address amendments to the SWPPP, except when the adjusted items are paid for as extra work.

No adjustment in compensation will be made to the contract lump sum price paid for water pollution control due to differences between the quantities shown in the approved cost break-down and the quantities required to complete the work as shown on the approved SWPPP. No adjustment in compensation will be made for ordered changes to correct SWPPP work resulting from the Contractor's own operations or from the Contractor's negligence.

The approved cost break-down will be used to determine partial payments during the progress of the work and as the basis for calculating the compensation adjustment for the item of water pollution control due to increases or decreases of quantities ordered by the Engineer. When an ordered change increases or decreases the quantities of an approved cost break-down item, the adjustment in compensation will be determined in the same manner specified for increases and decreases in the quantity of a contract item of work in conformance with the provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications. If an ordered change requires a new item which is not on the approved cost break-down, the adjustment in compensation will be determined in the same manner specified for extra work in conformance with Section 4-1.03D, "Extra Work," of the Standard Specifications.

If requested by the Contractor and approved by the Engineer, changes to the water pollution control practices listed in the approved cost break-down, including addition of new water pollution control practices, will be allowed. Changes shall be included in the approved amendment of the SWPPP. If the requested changes result in a net cost increase to the lump sum price for water pollution control, an adjustment in compensation will be made without change to the water pollution control item. The net cost increase to the water pollution control item will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

WATER POLLUTION CONTROL COST BREAK-DOWN

Contract No. 04-120611

UNIT DESCRIPTION	UNIT	APPROXIMATE QUANTITY	VALUE	AMOUNT
SS-1 Scheduling	LS	Lump Sum		
SS-2 Preservation of Existing Vegetation	LS	Lump Sum		
SS-3 Hydraulic Mulch	M ²			
SC-1 Silt Fence	M			
SC-7 Street Sweeping and Vacuuming	LS	Lump Sum		
SC-10 Storm Drain Inlet Protection	EA			
WE-1 Wind Erosion Control				
NS-2 Dewatering Operations	LS	Lump Sum		
NS-3 Paving and Grinding Operations	LS	Lump Sum		
NS-6 Illicit Connection/Illegal Discharge Detection and Reporting	LS	Lump Sum		
NS-8 Vehicle and Equipment Cleaning	LS	Lump Sum		
NS-9 Vehicle and Equipment Fueling	LS	Lump Sum		
NS-10 Vehicle and Equipment Maintenance	LS	Lump Sum		
WM-1 Material Delivery and Storage	LS	Lump Sum		
WM-2 Material Use	LS	Lump Sum		
WM-3 Stockpile Management				
WM-4 Spill Prevention and Control	LS	Lump Sum		
WM-5 Solid Waste Management	LS	Lump Sum		
WM-6 Hazardous Waste Management	LS	Lump Sum		
WM-7 Contaminated Soil Management	LS	Lump Sum		
WM-8 Concrete Waste Management	LS	Lump Sum		
WM-10 Liquid Waste Management	LS	Lump Sum		

TOTAL _____

SWPPP IMPLEMENTATION

Upon approval of the SWPPP, the Contractor shall be responsible throughout the duration of the project for installing, constructing, inspecting, maintaining, removing, and disposing of the water pollution control practices specified in the SWPPP and in the amendments. Unless otherwise directed by the Engineer, the Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. Requirements for installation, construction, inspection, maintenance, removal, and disposal of water pollution control practices are specified in the Manuals and these special provisions.

If the Contractor or the Engineer identifies a deficiency in any aspect of the implementation of the approved SWPPP or amendments, the deficiency shall be corrected immediately. The deficiency may be corrected at a later date and time if requested by the Contractor and approved by the Engineer in writing, but not later than the onset of precipitation. If the Contractor fails to correct the identified deficiency by the date agreed or prior to the onset of precipitation the project shall be in noncompliance. Attention is directed to Section 5-1.01, "Authority of the Engineer," of the Standard Specifications and the payment sections of these special provisions for possible noncompliance penalties.

If the Contractor fails to conform to the provisions of "Water Pollution Control (Storm Water Pollution Prevention Plan)," the Engineer may order the suspension of construction operations which create water pollution.

Implementation of water pollution control practices may vary by season. The Construction Site BMP Manual and these special provisions shall be followed for control practice selection of year round, rainy season and non-rainy season water pollution control practices.

Year-Round Implementation Requirements

The Contractor shall have a year-round program for implementing, inspecting and maintaining water pollution control practices for wind erosion control, tracking control, non-storm water control, and waste management and materials pollution control.

The National Weather Service weather forecast shall be monitored and used by the Contractor on a daily basis. An alternative weather forecast proposed by the Contractor may be used if approved by the Engineer. If precipitation is predicted, the necessary water pollution control practices shall be deployed prior to the onset of the precipitation.

Disturbed soil areas shall be considered active whenever the soil disturbing activities have occurred, continue to occur or will occur during the ensuing 21 days. Non-active areas shall be protected as prescribed in the Construction Site BMP Manual within 14 days of cessation of soil disturbing activities or prior to the onset of precipitation, whichever occurs first.

In order to provide effective erosion control the Contractor may be directed to apply permanent erosion control in small or multiple units as disturbed soil areas are deemed substantially complete by the Engineer. The Contractor's attention is directed to "Erosion Control (Type C) (Type D)" and "Move-In/Move-Out (Erosion Control)" of these special provisions.

The Contractor shall implement, maintain, and inspect the following temporary sediment control practices on a year-round basis. The listed practices shall remain in place until their use is no longer needed, as determined by the Engineer.

Year-Round Sediment Control Practices	Location used
Temporary Entrance/Exit	At Interface between private and public roadway

Rainy Season Requirements

Soil stabilization and sediment control practices conforming to the requirements in the Special Requirements and applicable Preparation Manual Minimum Requirements, shall be provided throughout the rainy season, defined as between October 15 and April 15

An implementation schedule of required soil stabilization and sediment control practices for disturbed soil areas shall be completed no later than 20 days prior to the beginning of each rainy season. The implementation schedule shall identify the soil stabilization and sediment control practices and the dates when the implementation will be 25 percent, 50 percent, and 100 percent complete, respectively. Construction activities beginning during the rainy season shall implement applicable soil stabilization and sediment control practices. The Contractor shall implement soil stabilization and sediment control practices a minimum of 10 days prior to the start of the rainy season.

Throughout the defined rainy season, the active disturbed soil area of the project site shall be not more than 2 hectares. The Engineer may approve, on a case-by-case basis, expansions of the active disturbed soil area limit. Soil stabilization and sediment control materials shall be maintained on site sufficient to protect the unprotected disturbed soil area. A detailed plan for the mobilization of sufficient labor and equipment shall be maintained to deploy the water pollution control practices required to protect the project site prior to the onset of precipitation events.

Non-Rainy Season Requirements

The non-rainy season shall be defined as all days outside the defined rainy season. The Contractor's attention is directed to the Construction Site BMP Manual for soil stabilization and sediment control implementation requirements on disturbed soil areas during the non-rainy season. Disturbed soil areas within the project shall be protected in conformance with the requirements in the Construction Site BMP Manual with an effective combination of soil stabilization and sediment control.

MAINTENANCE

To ensure the proper implementation and functioning of water pollution control practices, the Contractor shall regularly inspect and maintain the construction site for the water pollution control practices identified in the SWPPP. The construction site shall be inspected by the Contractor as follows:

- A. Prior to a forecast storm;
- B. After a precipitation event which causes site runoff;
- C. At 24 hour intervals during extended precipitation events;
- D. Routinely, a minimum of once every week outside of the defined rainy season;
- E. Routinely, a minimum of once every week during the defined rainy season.

The Contractor shall use the Storm Water Quality Construction Site Inspection Checklist provided in the CSWPPP or an alternative inspection checklist provided by the Engineer. One copy of each site inspection record shall be submitted to the Engineer within 24 hours of completing the inspection.

REPORTING REQUIREMENTS

Report of Discharges, Notices or Orders

If the Contractor identifies any discharge into receiving waters in a manner causing, or potentially causing, a condition of pollution, or if the project receives a written notice or order from any regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within 7 days of the discharge event, notice, or order. The report shall include the following information:

- A. The date, time, location, nature of the operation, and type of discharge, including the cause or nature of the notice or order.
- B. The water pollution control practices deployed before the discharge event, or prior to receiving the notice or order.
- C. The date of deployment and type of water pollution control practices deployed after the discharge event, or after receiving the notice, or order, including additional measures installed or planned to reduce or prevent reoccurrence.
- D. An implementation and maintenance schedule for any affected water pollution control practices.

Report of First-Time Non-Storm Water Discharge

The Contractor shall notify the Engineer at least 3 days in advance of each first-time non-storm water discharge event, excluding exempted discharges. The Contractor shall notify the Engineer of each different operation causing a non-storm water discharge and shall obtain field approval for each first-time non-storm water discharge. Non-storm water discharges shall be monitored at each first-time occurrence and routinely thereafter.

Annual Certifications

By June 15 of each year, the Contractor shall complete and submit an Annual Construction Activity Certification as contained in the Preparation Manual to the Engineer.

PAYMENT

The contract lump sum price paid for prepare storm water pollution prevention plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising, and amending the SWPPP, including the sampling and analysis plan, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Attention is directed to Section 9-1.06, "Partial Payments," and Section 9-1.07, "Payment After Acceptance," of the Standard Specifications. Payments for prepare storm water pollution prevention plan will be made as follows:

- A. After the SWPPP has been approved by the Engineer, 75 percent of the contract item price for prepare storm water pollution prevention plan will be included in the monthly partial payment estimate; and
- B. After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, payment for the remaining 25 percent of the contract item price for prepare storm water pollution prevention plan will be made in conformance with the provisions in Section 9-1.07.

The contract lump sum price paid for water pollution control shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing, constructing, removing, and disposing of water pollution control practices, including non-storm water and waste management and materials pollution water pollution control practices, except those shown on the plans and for which there is a contract item of work, and except developing, preparing, obtaining approval of, revising, and amending the SWPPP, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Storm water sampling and analysis will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

The cost of maintaining the temporary water pollution control practices shall be divided equally by the State and the Contractor as follows:

Soil Stabilization

All temporary water pollution control practices except:

- SS-1 Scheduling
- SS-2 Preservation of Existing Vegetation

Sediment Control

All temporary water pollution control practices.

Tracking Control

All temporary water pollution control practices except:

- SC-7 Street Sweeping and Vacuuming

Wind Erosion Control

All temporary water pollution control practices.

Non-Storm Water Control

No sharing of maintenance costs will be allowed.

Waste Management & Material Control

No sharing of maintenance costs will be allowed.

The division of cost will be made by determining the cost of maintaining temporary water pollution control practices in conformance with the provisions in Section 9-1.03, "Force Account Payment," of the Standard Specifications and paying to the Contractor one-half of that cost. Clean-up, repair, removal, disposal, improper installation, and replacement of temporary water pollution control practices damaged by the Contractor's negligence shall not be considered as included in the cost for performing maintenance.

The provisions for sharing maintenance costs shall not relieve the Contractor from the responsibility for providing appropriate maintenance on items with no shared maintenance costs.

Full compensation for non-shared maintenance costs of water pollution control practices, as specified in these special provisions, shall be considered as included in the contract lump sum price paid for water pollution control and no additional compensation will be allowed therefor.

Water pollution control practices which are shown on the plans and for which there is a contract item of work will be measured and paid for as that contract item of work.

The Engineer will retain an amount equal to 25 percent of the estimated value of the contract work performed during periods in which the Contractor fails to conform to the provisions in this section "Water Pollution Control (Storm Water Pollution Prevention Plan)," as determined by the Engineer.

Retention for failure to conform to the provisions in this section "Water Pollution Control (Storm Water Pollution Prevention Plan)" shall be in addition to the other retention amounts required for the contract. The amounts retained for the Contractor's failure to conform to provisions in this section will be released for payment on the next monthly estimate for partial payment following the date when an approved SWPPP has been implemented and maintained, and when water pollution has been adequately controlled, as determined by the Engineer.

10-1.13 TEMPORARY FENCE AND GATE (TYPE CL-1.8 AND TYPE CL-2.4)

Temporary fence (Type CL-1.8 and Type CL-2.4) and gate (Type CL-1.8 and Type CL-2.4) shall be furnished, constructed, maintained, and later removed as shown on the plans, as specified in these special provisions and as directed by the Engineer.

Except as otherwise specified in this section, temporary fence (Type CL-1.8 and Type CL-2.4) and gate (Type CL-1.8 and Type CL-2.4) shall conform to the plan details and the specifications for permanent fence of similar character as provided in Section 80, "Fences," of the Standard Specifications.

Used materials may be installed provided the used materials are good, sound and are suitable for the purpose intended, as determined by the Engineer.

Materials may be commercial quality provided the dimensions and sizes of the materials are equal to, or greater than, the dimensions and sizes shown on the plans or specified herein.

Galvanizing and painting of steel items will not be required.

Treating wood with a wood preservative will not be required.

Concrete footings for posts will not be required except for the portion of the temporary fence from Station D 142+85 to Station D 144+25.

Temporary fence (Type CL-1.8 Type CL-2.4) and gate (Type CL-1.8 and Type CL 2.4) that is damaged during the progress of the work shall be repaired or replaced by the Contractor at the Contractor's expense.

When no longer required for the work, as determined by the Engineer, temporary fence (Type CL-1.8 and Type CL-2.4) and gate (Type CL-1.8 and Type CL-2.4) shall be removed. Removed facilities shall become the property of the Contractor and shall be removed from the site of the work, except as otherwise provided in this section.

Removed temporary fence and gate (Type CL-1.8 and Type CL-2.4) materials that are not damaged may be constructed in the permanent work provided the materials conform to the requirements specified for the permanent work and such materials are new when used for the temporary fence.

Holes caused by the removal of temporary fence and gate (Type CL-1.8 and Type CL-2.4) shall be backfilled in conformance with the provisions in the second paragraph of Section 15-1.02, "Preservation of Property," of the Standard Specifications.

The various types and kinds of temporary fence will be measured and paid for in the same manner specified for permanent fence of similar character as provided in Section 80, "Fences," of the Standard Specifications.

Full compensation for maintaining, removing, and disposing of temporary fence and gate (Type CL-1.8 and Type CL-2.4) shall be considered as included in the contract prices paid per meter for temporary fence and gate (Type CL-1.8 and Type CL-2.4) and no additional compensation will be allowed therefor.

**Chart No 10
Shoulder Closure Requirements**

LOCATION: ON RTE 29 – FROM NAPA CREEK BRIDGE TO APPROXIMATELY 95 METERS SOUTH OF TRANCAS STREET.

DIRECTION: NORTHBOUND.

FROM HOUR TO HOUR	a.m.												p.m.											
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Mondays through Thursdays	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				2	2	2	2	2
Fridays	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					2	2	2	2	2
Saturdays	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Sundays	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Day before designated legal holiday	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					2	2	2	2	2
Designated legal holidays	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Legend:

2 Freeway right shoulder closure permitted; provide two traffic lanes.

No freeway shoulder closure permitted.

REMARKS:

(NAP-29-KP18/120611/10.01/10.99/A)

**Chart No. 11
Ramp Lane Requirements**

Location: RTE. 29 – NORTHBOUND- LINCOLN AVE. OFF AND ON RAMP, NAPA COUNTY.

FROM HOUR TO HOUR	a.m.											p.m.													
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Mondays through Thursdays	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X
Fridays	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X
Saturdays	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sundays	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Day before designated legal holiday	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X
Designated legal holidays	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Legend:



A minimum of one paved ramp lane not less than 3 meter wide shall be open for use by public traffic. ramp shoulder may be closed.



No ramp closure, shoulder closure, or work that interferes with public traffic will be allowed.

REMARKS:

(F=NAP 29-KP18/120611/10.01/ 96 ADJ RAMP)

10-1.33 EARTHWORK

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Surplus excavated material not designated or determined to contain aurally deposited lead, not designated or determined to be hazardous, not designated or determined to be restricted and not designated to be disposed of as specified in "Mandatory Disposal Facility (Non-Hazardous Material)" elsewhere in these special provisions, shall become the property of the Contractor and shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Where a portion of the existing surfacing is to be removed, the outline of the area to be removed shall be cut on a neat line with a power-driven saw to a minimum depth of 50 mm before removing the surfacing. Full compensation for cutting the existing surfacing shall be considered as included in the contract price paid per cubic meter for roadway excavation and no additional compensation will be allowed therefor.

Settlement at the abutment embankments of Trancas Street Overcrossing (Br. No. 21-0101), North Napa Underpass (Br. No. 21-0102), North Napa Pedestrian Overcrossing (Br. No. 21-0107) shall be monitored after the roadway construction begins. At least 2 weeks prior to ordering the abutment piles the contractor shall submit the settlement measurements to the Engineer.

At the locations and to the limits shown on the plans, material below the bottom of retaining wall footings at Retaining Wall No. 1 (Br. No. 21-RETW1) and Retaining Wall No. 3 (Br. No. 21-RETW3) shall be removed and replaced with Class 2 aggregate base material in conformance with the placing and compacting requirements for structure backfill. The relative compaction shall be not less than 95 percent. Removal of the material will be measured and paid for by the cubic meter as structure excavation (retaining wall) and furnishing, placing, and compacting the replacement material will be measured and paid for by the cubic meter as Class 2 aggregate base.

At the locations and to the limits shown on the plans, material below the bottom of inverted siphon concrete box footings at Trancas Street Inverted Siphon (Br. No. 21-101W) shall be removed and replaced with Class 2 aggregate base material in conformance with the placing and compacting requirements for structure backfill. The relative compaction shall be not less than 95 percent. Removal of the material will be measured and paid for by the cubic meter as structure excavation, inverted siphon. Furnishing, placing, and compacting the replacement material will be measured and paid for by the cubic meter as Class 2 aggregate base.

The geocomposite drain shall conform to the details shown on the plans and the following:

- A. Attention is directed to "Engineering Fabrics" under "Materials" of these special provisions.
- B. Geocomposite drain shall consist of a manufactured core not less than 6.35 mm thick nor more than 50 mm thick with one or both sides covered with a layer of filter fabric that will provide a drainage void. The drain shall produce a flow rate, through the drainage void, of at least 25 liters per minute per meter of width at a hydraulic gradient of 1.0 and a minimum externally applied pressure of 168 kPa.
- C. A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications shall be furnished for the geocomposite drain certifying that the drain produces the required flow rate and complies with these special provisions. The Certificate of Compliance shall be accompanied by a flow capability graph for the geocomposite drain showing flow rates for externally applied pressures and hydraulic gradients. The flow capability graph shall be stamped with the verification of an independent testing laboratory.
- D. Filter fabric for the geocomposite drain shall conform to the provisions for fabric for underdrains in Section 88, "Engineering Fabrics," of the Standard Specifications.
- E. The manufactured core shall be either a preformed grid of embossed plastic, a mat of random shapes of plastic fibers, a drainage net consisting of a uniform pattern of polymeric strands forming 2 sets of continuous flow channels, or a system of plastic pillars and interconnections forming a semirigid mat.
- F. The core material and filter fabric shall be capable of maintaining the drainage void for the entire height of geocomposite drain. Filter fabric shall be integrally bonded to the side of the core material with the drainage void. Core material manufactured from impermeable plastic sheeting having nonconnecting corrugations shall be placed with the corrugations approximately perpendicular to the drainage collection system.
- G. The geocomposite drain shall be installed with the drainage void and the filter fabric facing the embankment. The fabric facing the embankment side shall overlap a minimum of 75 mm at all joints and wrap around the exterior edges a minimum of 75 mm beyond the exterior edge. If additional fabric is needed to provide overlap at joints and wrap-around at edges, the added fabric shall overlap the fabric on the geocomposite drain at least 150 mm and be attached thereto.
- H. Should the fabric on the geocomposite drain be torn or punctured, the damaged section shall be replaced completely or repaired by placing a piece of fabric that is large enough to cover the damaged area and provide a minimum 150-mm overlap.

- I. Plastic pipe shall conform to the provisions for edge drain pipe and edge drain outlets in Section 68-3, "Edge Drains," of the Standard Specifications.
- J. Treated permeable base to be placed around the slotted plastic pipe at the bottom of the geocomposite drain shall be cement treated permeable base conforming to the provisions for cement treated permeable base in Section 29, "Treated Permeable Bases," of the Standard Specifications and these special provisions.
- K. The treated permeable base shall be enclosed with a high density polyethylene sheet or PVC geomembrane, not less than 250 μm thick, which is bonded with a suitable adhesive to the concrete and geocomposite drain. Surfaces to receive the polyethylene sheet shall be cleaned before applying the adhesive. The treated permeable base shall be compacted with a vibrating shoe type compactor.

If geocomposite drain involved at Trancas Street Overcrossing (Br. No. 21-0101) is not otherwise designated by type, and payment for the geocomposite drain has not otherwise been provided for in the Standard Specifications or these special provisions, the geocomposite drain will be paid for at the contract price per cubic meter for concrete, approach slab (Type N).

If geocomposite drain involved at North Napa Underpass (Br. No. 21-0102) is not otherwise designated by type, and payment for the geocomposite drain has not otherwise been provided for in the Standard Specifications or these special provisions, the geocomposite drain will be paid for at the contract price per cubic meter for concrete, approach slab (Type railroad).

Full compensation for the geocomposite drain at North Napa Pedestrian Overcrossing (Br. No. 21-0107) shall be considered as included in the contract price paid per cubic meter for structural backfill (bridge) and no additional compensation will be allowed therefor.

Full compensation for the geocomposite drain at Retaining Wall No. 1 (Br. No. 21-RETW1), Retaining Wall No. 2 (Br. No. 21-RETW2) and Retaining Wall No. 3 (Br. No. 21-RETW3) shall be considered as included in the contract price paid per cubic meter for structural backfill (retaining wall) and no additional compensation will be allowed therefor.

If structure excavation or structure backfill involved in bridges is not otherwise designated by type, and payment for the structure excavation or structure backfill has not otherwise been provided for in the Standard Specifications or these special provisions, the structure excavation or structure backfill will be paid for at the contract price per cubic meter for structure excavation (bridge) or structure backfill (bridge).

Structure excavation designated as (Type D), for footings at the locations shown on the plans, will be measured and paid for by the cubic meter as structure excavation (Type D) and structure excavation, retaining wall (Type D). Ground water or surface water is expected to be encountered at these locations, but seal course concrete is not shown or specified. Structure excavation for footings at locations not designated on the plans as structure excavation (Type D), and where ground or surface water is encountered, except locations where seal course concrete is shown or specified, will be measured and paid for by the cubic meter as structure excavation (bridge) and structure excavation, inverted siphon.

10-1.65 CONCRETE STRUCTURES

Portland cement concrete structures shall conform to the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

The sixth paragraph in Section 51-1.09, "Placing Concrete," of the Standard Specifications is amended to read:

- Vibrators used to consolidate concrete containing epoxy-coated bar reinforcement or epoxy-coated prestressing steel shall have a resilient covering to prevent damage to the epoxy-coating on the reinforcement or prestressing steel.

Shotcrete shall not be used as an alternative construction method for reinforced concrete members unless otherwise specified.

Neoprene strip shall be furnished and installed at abutment backwall joint protection of Trancas Street Overcrossing (Br. No. 21-0101) in conformance with the details shown on the plans, the provisions in the Standard Specifications, and these special provisions.

Furnishing and installing neoprene strip shall conform to the requirements for strip waterstops as provided in Section 51-1.145, "Strip Waterstops," of the Standard Specifications, except that the protective board will not be required.

Materials for access opening covers in soffits of new cast-in-place concrete box girder bridges shall conform to the provisions for materials in Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications.

Plastic pipe located at vertical drains used behind retaining walls, including horizontal or sloping drains down slopes and across sidewalk areas shall be polyvinyl chloride (PVC) plastic pipe, Schedule 80, conforming to the provisions for pipe for edge drains and edge drain outlets in Section 68-3.02, "Materials," of the Standard Specifications. The vertical drain pipe shall be rigidly supported in place during backfilling operations.

Vertical, horizontal, radial, or normal dimensions shown on the Typical Section in the plans, are for zero percent cross-slope. At the Contractor's option, the Typical Section of superelevated concrete box girder structures with (1) sloping exterior girders, (2) a straight uninterrupted cross slope between edges of deck, and (3) a single profile grade line, may be rotated around the profile grade line in superelevation areas. The horizontal distances between the profile grade line and the edges of deck shall remain unchanged. The planned girder widths and slab thicknesses shall remain unchanged and the interior girder stems shall remain vertical at the planned locations.

Junction structures for Drainage System No. 11 shall conform to the provisions in Section 51-1.02, "Minor Concrete," and Section 70-1.02H, "Precast Concrete Structures," of the Standard Specifications and these special provisions.

Reinforcing bars for junction structures for Drainage System No. 11 shall be low-alloy steel deformed bars conforming to the requirements in ASTM Designation: A 706/A 706M or of ASTM Designation: A 615/A 615M, Grade 60.

Conduits and expansion fitting for future utility shall conform to the Section 86, "Signals, Lighting and Electrical Systems" of the Standard Specifications.

FALSEWORK

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

Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications is amended to read:

51-1.06A Falsework Design and Drawings

- The Contractor shall submit to the Engineer working drawings and design calculations for falsework proposed for use at bridges. For bridges where the height of any portion of the falsework, as measured from the ground line to the soffit of the superstructure, exceeds 4.25 m; or where any individual falsework clear span length exceeds 4.85 m; or where provision for vehicular, pedestrian, or railroad traffic through the falsework is made; the drawings shall be signed by an engineer who is registered as a Civil Engineer in the State of California. Six sets of the working drawings and 2 copies of the design calculations shall be furnished. Additional working drawings and design calculations shall be submitted to the Engineer when specified in "Relations and Insurance" of the special provisions.
- The falsework drawings shall include details of the falsework erection and removal operations showing the methods and sequences of erection and removal and the equipment to be used. The details of the falsework erection and removal operations shall demonstrate the stability of all or any portions of the falsework during all stages of the erection and removal operations.
- Attention is directed to Section 5-1.02, "Plans and Working Drawings."
- For falsework over railroads, approval by the Engineer of the falsework drawings will be contingent upon the drawings being satisfactory to the railroad company involved.

- Except for placement of foundation pads and piles, the construction of any unit of falsework shall not start until the Engineer has reviewed and approved the drawings for that unit.
- Except as otherwise provided in the special provisions, the Contractor shall allow 3 weeks after complete drawings and all support data are submitted, for the review of any falsework plan.
- In the event that several falsework plans are submitted simultaneously, or an additional plan is submitted for review before the review of a previously submitted plan has been completed, the Contractor shall designate the sequence in which the plans are to be reviewed. In such event, the time to be provided for the review of any plan in the sequence shall be not less than the review time specified above for that plan, plus 2 weeks for each plan of higher priority which is still under review. A falsework plan submittal shall consist of plans for a single bridge or portion thereof. For multi-frame bridges, each frame shall require a separate falsework plan submittal.
- Should the Engineer fail to complete the review within the time allowance, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in falsework plan review, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays."
- The Contractor may revise approved falsework drawings provided sufficient time is allowed for the Engineer's review and approval before construction is started on the revised portions. The additional time will not be more than that which was originally allowed.
- If structural composite lumber is proposed for use, the falsework drawings shall clearly identify the structural composite lumber members by grade (E value), species, and type. The Contractor shall provide technical data from the manufacturer showing the tabulated working stress values of the composite lumber. The Contractor shall furnish a certificate of compliance as specified in Section 6-1.07, "Certificates of Compliance," for each delivery of structural composite lumber to the project site.
- The falsework drawings shall include a superstructure placing diagram showing the concrete placing sequence and construction joint locations. When a schedule for placing concrete is shown on the contract plans, no deviation will be permitted.
- The maximum length of falsework spans used to support T-beam girder bridges shall not exceed 4.3 m plus 8.5 times the depth of the T-beam girder.
- When footing type foundations are to be used, the Contractor shall determine the bearing value of the soil and shall show the values assumed in the design of the falsework on the falsework drawings.
- When pile type foundations are to be used, the falsework drawings shall show the maximum horizontal distance that the top of a falsework pile may be pulled in order to position the falsework pile under its cap. The falsework plans shall also show the maximum allowed deviation of the top of the pile, in its final position, from a vertical line through the point of fixity of the pile.
- For falsework piles with a calculated loading capacity greater than 900 kN, the falsework piles shall be designed by an engineer who is registered as either a Civil Engineer or a Geotechnical Engineer in the State of California, and the calculations shall be submitted to the Engineer.
- Anticipated total settlements of falsework and forms shall be shown on the falsework drawings. These should include falsework footing settlement and joint take-up. Anticipated settlements shall not exceed 25 mm. Falsework supporting deck slabs and overhangs on girder bridges shall be designed so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete.
- Falsework footings shall be designed to carry the load imposed upon the footings without exceeding the estimated soil bearing values and anticipated settlements.
- Foundations for individual steel towers where the maximum leg load exceeds 130 kN shall be designed and constructed to provide uniform settlement under all legs of each tower under all loading conditions.
- The support systems for form panels supporting concrete deck slabs and overhangs on girder bridges shall also be considered to be falsework and designed as such.
- Temporary bracing shall be provided, as necessary, to withstand all imposed loads during erection, construction, and removal of any falsework. The falsework drawings shall show provisions for the temporary bracing, or methods to be used to conform to this requirement during each phase of erection and removal. Wind loads shall be included in the design of the bracing or methods.
- The falsework design calculations shall show the stresses and deflections in load supporting members.
- The design of falsework will not be approved unless it is based on the use of loads and conditions which are no less severe than those described in Section 51-1.06A(1), "Design Loads," and based on the use of stresses and deflections which are no greater than those described in Section 51-1.06A(2), "Design Stresses, Loadings, and Deflections." The Contractor is responsible for the proper evaluation of the falsework materials and design of the falsework to safely carry the actual loads imposed.

Section 51-1.06A(1), "Design Loads," of the Standard Specifications is amended to read:

51-1.06A(1) Design Loads

- The design load for falsework shall consist of the sum of dead and live vertical loads, and an assumed horizontal load. The minimum total design load for any falsework, including members that support walkways, shall be not less than 4800 N/m² for the combined live and dead load regardless of slab thickness.
- Dead loads shall include the loads due to the mass of concrete, reinforcing steel, forms, and falsework. The loads due to the mass of concrete, reinforcing steel, and forms shall be assumed to be not less than 25 kN/m³ for normal concrete and not less than 20 kN/m³ for lightweight concrete.
- Live loads shall consist of the actual load of any equipment to be supported by falsework applied as concentrated loads at the points of contact, and a uniform load of not less than 960 N/m² applied over the area supported, plus 1100 N/m applied at the outside edge of deck overhangs.
- The assumed horizontal load to be resisted by the falsework bracing system shall be the sum of the actual horizontal loads due to equipment, construction sequence, or other causes, and an allowance for wind, but in no case shall the assumed horizontal load to be resisted in any direction be less than 2 percent of the total dead load. The falsework shall be designed so that it will have sufficient rigidity to resist the assumed horizontal load without considering the load due to the concrete.
- The minimum horizontal load to be allowed for wind on heavy-duty steel shoring or steel pipe column falsework having a vertical load carrying capacity exceeding 130 kN per leg or column shall be the sum of the products of the wind impact area, shape factor, and applicable wind pressure value for each height zone. The wind impact area is the total projected area of all the elements in the tower face or falsework bent normal to the direction of the applied wind. The shape factor shall be taken as 2.2 for heavy-duty shoring and 1.0 for pipe column falsework. Wind pressure values shall be determined from the following table:

Height Zone (Meters above ground)	Wind Pressure Value (Pa)	
	Shores or Columns Adjacent to Traffic	At Other Locations
0-9	960	720
9-15	1200	960
15-30	1440	1200
over 30	1675	1440

- The minimum horizontal load to be allowed for wind on all other types of falsework, including falsework supported on heavy-duty shoring or pipe column falsework, shall be the sum of the products of the wind impact area and applicable wind pressure value for each height zone. The wind impact area is the gross projected area of the falsework and any unrestrained portion of the permanent structure, excluding the areas between falsework bents or towers where diagonal bracing is not used. Wind pressure values shall be determined from the following table:

Height Zone (Meters above ground)	Wind Pressure Value (Pa)	
	For Members Over and Bents Adjacent to Traffic Opening	At Other Locations
0 to 9	2.0 Q	1.5 Q
9 to 15	2.5 Q	2.0 Q
15 to 30	3.0 Q	2.5 Q
Over 30	3.5 Q	3.0 Q

Q = 48 + 31.4 W; but shall not be more than 479 Pa.

W = width of the falsework system, in meters, measured in the direction of the wind force being considered.

- The entire superstructure cross-section, except railing, shall be considered to be placed at one time except as provided herein. Girder stems and connected bottom slabs, if placed more than 5 days prior to the top slab, may be considered to be self supporting between falsework posts at the time the top slab is placed provided that the distance between falsework posts does not exceed 4 times the depth of the portion of the girder placed in the first pour.

- In addition to the minimum requirements specified in this Section 51-1.06A, falsework for box girder structures with internal falsework bracing systems using flexible members capable of withstanding tensile forces only, shall be designed to include the vertical effects caused by the elongation of the flexible member and the design horizontal load combined with the dead and live loads imposed by concrete placement for the girder stems and connected bottom slabs. Falsework comprised of individual steel towers with bracing systems using flexible members capable of withstanding tensile forces only to resist overturning, shall be exempt from these additional requirements.
- If the concrete is to be prestressed, the falsework shall be designed to support any increased or readjusted loads caused by the prestressing forces.

Section 51-1.06A(2), "Design Stresses, Loadings, and Deflections," of the Standard Specifications is amended to read:

51-1.06A(2) Design Stresses, Loadings, and Deflections

- The maximum allowable design stresses and loadings listed in this Section 51-1.06A(2), are based on the use of undamaged, high-quality materials, and such stresses and loadings shall be reduced by the Contractor if lesser quality materials are to be used.
- The maximum allowable stresses, loadings, and deflections used in the design of the falsework shall be as follows:

Timber:

Compression perpendicular to the grain	3.1 MPa
Compression parallel to the grain	$3310 \div (L/d)^2$ MPa; not to exceed 11 MPa
Flexural stress	12.4 MPa; 10.3 MPa for members with a nominal depth of 205 mm or less
Horizontal shear	1.0 MPa
Axial tension	8.3 MPa
Deflection due to concrete loading only	0.0042 of the span, irrespective of deflection compensated for by camber strips
Modulus of elasticity (E)	11×10^3 MPa
Timber piles	400 kN

L = unsupported length (mm).

d = least dimension of a square or rectangular column, or the width of a square of equivalent cross-sectional area for round columns (mm).

- Timber connections shall be designed in conformance with the procedures, stresses, and loads permitted in the Falsework Manual as published by the Department of Transportation.

Steel:

- For identified grades of steel, design stresses, except stresses due to flexural compression, shall not exceed those specified in the Manual of Steel Construction as published by the AISC.
- When the grade of steel cannot be positively identified, design stresses, except stresses due to flexural compression, shall not exceed either those specified in the AISC Manual for ASTM Designation: A 36/A 36M steel or the following:

Tension, axial and flexural	152 MPa
Compression, axial	$110 - 300 - 2.62(L/r)^2$ kPa; except L/r shall not exceed 120
Shear on gross section of web of rolled shapes	100 MPa
Web crippling for rolled shapes	186 MPa

- For all grades of steel, design stresses and deflections shall not exceed the following:

Compression, flexural	83 000 MPa, but not to exceed 152 MPa for unidentified steel or steel conforming to the requirements in ASTM Designation: A 36/A 36M nor $0.6F_y$ for other identified steel
Deflection due to concrete loading only	0.0042 of the span, irrespective of deflection compensated for by camber strips

- In the foregoing formulas, L is the unsupported length; d is the least dimension of rectangular columns, or the width of a square of equivalent cross-sectional area for round columns, or the depth of beams; b is the width and t is the thickness of the compression flange; and r is the radius of gyration of the member. All dimensions are expressed in millimeters. F_y is the specified minimum yield stress, in MPa, for the grade of steel used.
- The modulus of elasticity (E) used for steel shall be 20.7×10^4 MPa.

Manufactured Assemblies:

- The maximum loadings and deflections used on jacks, brackets, columns, joists, and other manufactured devices shall not exceed the manufacturer's recommendations except that the dead load deflection of the joists used at locations other than under deck slabs between girders shall not exceed 0.0042 of their spans. If requested by the Engineer, the Contractor shall furnish engineering data from the manufacturer verifying the manufacturer's recommendations, or shall perform tests as necessary to demonstrate the adequacy of the devices proposed for use.

Welding and Nondestructive Testing

Welding of steel members, except for when fillet welds are used where load demands are less than or equal to 175 N/mm for each 3 mm of fillet weld, shall conform to AWS D1.1 or other recognized welding standard. The welding standard to be utilized shall be specified by the Contractor on the working drawings.

Splices made by field welding of steel beams at the project site shall undergo nondestructive testing (NDT). At the option of the Contractor, either ultrasonic testing (UT) or radiographic testing (RT) shall be used as the method of NDT for each field weld and any repair made to a previously welded splice in a steel beam. Testing shall be performed at locations selected by the Contractor. The length of a splice weld where NDT is to be performed, shall be a cumulative weld length equal to 25 percent of the original splice weld length. The cover pass shall be ground smooth at the locations to be tested. The acceptance criteria shall conform to the requirements of AWS D1.1, Section 6, for cyclically loaded nontubular connections subject to tensile stress. If repairs are required in a portion of the weld, additional NDT shall be performed on the repaired sections. The NDT method chosen shall be used for an entire splice evaluation including any required repairs.

For all field welded splices and previously welded splices, the Contractor shall furnish to the Engineer a letter of certification which certifies that all welding and NDT, including visual inspection, are in conformance with the specifications and the welding standard shown on the approved working drawings. The letter of certification shall be signed by an engineer who is registered as a Civil Engineer in the State of California and shall be provided prior to placing any concrete for which the falsework is being erected to support.

Section 51-1.06A(3), "Special Locations," of the Standard Specifications is amended to read:

51-1.06A(3) Special Locations

- In addition to the minimum requirements specified in this Section 51-1.06A, falsework over or adjacent to roadways or railroads which are open to traffic shall be designed and constructed so that the falsework will be stable if subjected to impact by vehicles. Falsework posts which support members that cross over a roadway or railroad shall be considered as adjacent to roadways or railroads. Other falsework posts shall be considered as adjacent to roadways or railroads only if they are located in the row of falsework posts nearest to the roadway or railroad, and the horizontal distance from the traffic side of the falsework to the edge of pavement, or to a point 3 m from the centerline of track, is less than the total height of the falsework and forms. The Contractor shall provide any

additional features for the work needed to ensure that falsework will be stable if subjected to impact by vehicles and to comply with the provisions in Section 7-1.09, "Public Safety." The falsework design at these locations shall include, but not be limited to, the following minimum provisions:

The vertical load used for the design of falsework posts and towers, but not footings, which support the portion of the falsework over openings, shall be the greater of the following:

- (1) 150 percent of the design load calculated in conformance with the provisions for design load previously specified but not including any increased or readjusted loads caused by the prestressing forces, or
- (2) the increased or readjusted loads caused by the prestressing forces.

Falsework posts adjacent to roadways or railroads shall consist of either steel with a minimum section modulus about each axis of $156 \times 10^3 \text{ mm}^3$, or sound timbers with a minimum section modulus about each axis of $4.1 \times 10^6 \text{ mm}^3$.

Each falsework post adjacent to roadways or railroads shall be mechanically connected to its supporting footing at its base, or otherwise laterally restrained, so as to withstand a force of not less than 9 kN applied at the base of the post in any direction except toward the roadway or railroad track. The posts also shall be mechanically connected to the falsework cap or stringer. The mechanical connection shall be capable of resisting a load in any horizontal direction of not less than 4.5 kN.

For falsework spans over roadways, all exterior falsework stringers, and stringers adjacent to the ends of discontinuous caps, the stringer or stringers over points of minimum vertical clearance and every fifth remaining stringer, shall be mechanically connected to the falsework cap or framing. The mechanical connections shall be capable of resisting a load in any direction, including uplift on the stringer, of not less than 2.2 kN. The connections shall be installed before traffic is allowed to pass beneath the span. For falsework spans over railroads, all falsework stringers shall be so connected to caps.

When timber members are used to brace falsework bents which are located adjacent to roadways or railroads, all connections for the timber bracing shall be of the bolted type using 16-mm diameter or larger bolts.

The falsework shall be located so that falsework footings or piles are at least 75 mm clear of railing posts and barriers, and all other falsework members are at least 0.3-m clear of railing members and barriers.

Falsework bents within 6 m of the center line of a railroad track shall be sheathed solid in the area between 1 m and 5 m above the track elevation on the side facing the track. Sheathing shall consist of plywood not less than 16-mm thick or lumber not less than 19-mm thick. Bracing on these bents shall be adequate so that the bent will resist the required assumed horizontal load or 22 kN, whichever is greater.

The dimensions of the clear openings to be provided through falsework for roadways shall be as specified in "Maintaining Traffic," of the special provisions.

The dimensions of clear openings to be provided through the falsework for railroads shall be as specified in "Railroad Relations and Insurance," of the special provisions.

Section 51-1.06B, "Falsework Construction," of the Standard Specifications is amended to read:

51-1.06B Falsework Construction

- The falsework shall be constructed to substantially conform to the falsework drawings. The materials used in the falsework construction shall be of the quality necessary to sustain the stresses required by the falsework design. When manufactured assemblies are used in falsework, the Contractor shall furnish to the Engineer a letter of certification which certifies that all components of these manufactured assemblies are used in conformance with the manufacturer's recommendations. The workmanship used in falsework construction shall be of such quality that the falsework will support the loads imposed on the falsework without excessive settlement or take-up beyond that shown on the falsework drawings.
- Falsework shall be founded on a solid footing safe against undermining, protected from softening, and capable of supporting the loads imposed on the falsework. When requested by the Engineer, the Contractor shall demonstrate by suitable load tests that the soil bearing values assumed for the design of the falsework do not exceed the supporting capacity of the soil.
- When falsework is supported on piles, the piles shall be driven and the actual bearing value assessed in conformance with the provisions in Section 49, "Piling."

- For falsework piles with a calculated loading capacity greater than 900 kN, the Contractor shall conduct dynamic monitoring of pile driving and conduct penetration and bearing analyses based on a wave equation analysis. These analyses shall be signed by an engineer who is registered as a Civil Engineer in the State of California and submitted to the Engineer prior to completion of falsework erection.
- When falsework is over or adjacent to roadways or railroads, all details of the falsework system which contribute to horizontal stability and resistance to impact, except for bolts in bracing, shall be installed at the time each element of the falsework is erected and shall remain in place until the falsework is removed.
- Prior to the placement of falsework members above the stringers, the final bracing system for the falsework shall be installed.
- Temporary railing (Type K), conforming to the provisions in Section 12-3, "Traffic-Handling Equipment and Devices," shall be installed on both sides of all vehicular openings through falsework and, when ordered by the Engineer, at all other falsework less than 3.6 m from the edge of a traffic lane. Temporary railings shall begin approximately 46 m in advance of the falsework and shall extend past the falsework, in the direction of adjacent traffic flow. For 2-way traffic openings, the temporary railing shall extend at least 18 m past the falsework, in the direction of adjacent traffic flow. The location and length of railing and the type of flare to be used shall be as ordered by the Engineer. The clear vehicular opening between temporary railings shall be not less than that specified in the special provisions.
- The installation of temporary railing shall be complete before falsework erection is begun. Temporary railing at falsework shall not be removed until the removal is approved by the Engineer.
- Temporary railing (Type K) installed as specified above will be measured and paid for as provided in Section 12-4, "Measurement and Payment," except that when the Engineer's Estimate does not include a contract item for temporary railing (Type K), full compensation for furnishing, placing, maintaining, repairing, replacing, and removing the temporary railing at falsework locations as specified in this Section 51-1.06B, shall be considered as included in the contract prices paid for the various items of work requiring falsework, and no separate payment will be made therefor.
- Camber strips shall be used where directed by the Engineer to compensate for falsework deflection, vertical alignment, and anticipated structure deflection. The Engineer will furnish to the Contractor the amount of camber to be used in constructing the falsework.
- The Contractor shall provide tell-tales attached to the soffit forms and readable from the ground in enough systematically placed locations to determine the total settlement of the entire portion of the structure where concrete is being placed.
- Deck slab forms between girders shall be constructed with no allowance for settlement relative to the girders.
- Dead loads, other than those due to forms and reinforcing steel, shall not be applied to any falsework until authorized by the Engineer.
- Should unanticipated events occur, including settlements that deviate by more than ± 10 mm from those indicated on the falsework drawings, which in the opinion of the Engineer would prevent obtaining a structure conforming to the requirements of these specifications, the placing of concrete shall be discontinued until corrective measures satisfactory to the Engineer are provided. In the event satisfactory measures are not provided prior to initial set of the concrete in the affected area, the placing of concrete shall be discontinued at a location determined by the Engineer. All unacceptable concrete shall be removed.

Section 51-1.06C, "Removing Falsework," of the Standard Specifications is amended to read:

51-1.06C Removing Falsework

- Falsework supporting any span of a simple span bridge shall not be released before 10 days after the last concrete, excluding concrete above the bridge deck, has been placed. Unless otherwise permitted by the Engineer, falsework supporting any span of a continuous or rigid frame bridge shall not be released before 10 days after the last concrete, excluding concrete above the bridge deck, has been placed in that span and in the adjacent portions of each adjoining span for a length equal to at least one-half the length of the span where falsework is to be released.
- Falsework for cast-in-place prestressed portions of structures shall not be released until after the prestressing steel has been tensioned.
- Falsework supporting any span of a continuous or rigid frame bridge shall not be removed until all required prestressing has been completed in that span and in the adjacent portions of each adjoining span for a length equal to at least one-half the length of the span where falsework is to be released.

- Falsework for arch bridges shall be removed uniformly and gradually, beginning at the crown and working toward the springing, to permit the arch to take its load slowly and evenly. Falsework for adjacent arch spans shall be struck simultaneously.
- Falsework supporting overhangs, deck slabs between girders, and girder stems which slope 45 degrees or more off vertical shall not be released before 7 days after the deck concrete has been placed.
- Falsework supporting the sides of the girder stems which slope less than 45 degrees off vertical may be removed prior to placing deck slab concrete, providing a reshoring system is installed. The reshoring system shall consist of lateral supports which are designed to resist all rotational forces acting on the stem, including those caused by the placement of deck slab concrete. The lateral supports shall be installed immediately after each form panel is removed and prior to the release of supports for the adjacent form panel.
- Falsework for bent caps which will support steel or precast concrete girders shall not be released before 7 days after the cap concrete has been placed. Girders shall not be erected onto the bent caps until the concrete in the cap has attained a compressive strength of 18 MPa or 80 percent of the specified strength, whichever is higher.
- Unless otherwise specified, removing falsework supporting any span of structural members subject to bending, shall conform to the requirements for removing falsework supporting any span of a simple span bridge.
- In addition to the above requirements, no falsework for bridge spans shall be released until the supported concrete has attained a compressive strength of 18 MPa or 80 percent of the specified strength, whichever is higher.
- Falsework for box culverts and other structures with decks lower than the roadway pavement and with span lengths of 4.25 m or less shall not be released until the last placed concrete has attained a compressive strength of 11 MPa, provided that curing of the concrete is not interrupted. Falsework removal for other box culverts shall conform to the requirements for release of bridge falsework.
- Falsework for arch culverts shall not be released before 40 hours after the supported concrete has been placed.
- The falsework removal operation shall be conducted in such a manner that any portion of the falsework not yet removed remains in a stable condition at all times.
- All falsework materials shall be completely removed. Falsework piling shall be removed at least 0.6-m below the surface of the original ground or original streambed. When falsework piling is driven within the limits of ditch or channel excavation areas, the falsework piling within those areas shall be removed to at least 0.6-m below the bottom and side slopes of the excavated areas.
- All debris and refuse resulting from the work shall be removed and the premises left in a neat and presentable condition.

In addition to the provisions in Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications, the time to be provided for the Engineer's review of the working drawings for specific structures, or portions thereof, shall be as follows:

Structure	Total Review Time - Weeks
Trancas Street Overcrossing (Br. No. 21-0101)	5
North Napa Underpass (Br. No. 21-0102)	5
North Napa Pedestrian Overcrossing (Br. No. 21-0107)	5

Temporary crash cushion modules, as shown on the plans and conforming to the provisions in "Temporary Crash Cushion Module" of these special provisions, shall be installed at the approach end of temporary railings which are located less than 4.6 m from the edge of a traffic lane. For 2-way traffic openings, temporary crash cushion modules shall be installed at the departing end of temporary railings which are located less than 1.8 m from the edge of a traffic lane.

COST REDUCTION INCENTIVE PROPOSALS FOR CAST-IN-PLACE PRESTRESSED BOX GIRDER BRIDGES

Except as provided herein, cast-in-place prestressed box girder bridges shall be constructed in conformance with the details shown on the plans and the provisions in Section 50, "Prestressing Concrete," and Section 51, "Concrete Structures," of the Standard Specifications.

If the Contractor submits cost reduction incentive proposals for cast-in-place prestressed box girder bridges, the proposals shall be in conformance with the provisions in Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications and these special provisions.

The Engineer may reject any proposal which, in the Engineer's judgment, may not produce a structure which is at least equivalent to the planned structure.

At the time the cost reduction incentive proposal (CRIP) is submitted to the Engineer, the Contractor shall also submit 4 sets of the proposed revisions to the contract plans, design calculations, and calculations from an independent checker for all changes involved in the proposal, including revisions in camber, predicted deck profile at each construction stage, and falsework requirements to the Office of Structure Design, Documents Unit, P.O. Box 942874, Sacramento, CA 94274-0001 (1801 30th Street, Sacramento, CA 95816), telephone (916) 227-8230. When notified in writing by the Engineer, the Contractor shall submit 12 sets of the CRIP plan revisions and calculations to the Office of Structure Design for final approval and use during construction. The calculations shall verify that all requirements are satisfied. The CRIP plans and calculations shall be signed by an engineer who is registered as a Civil Engineer in the State of California.

The CRIP plans shall be either 279 mm x 432 mm, or 559 mm x 864 mm in size. Each CRIP plan sheet and calculation sheet shall include the State assigned designations for the contract number, bridge number, full name of the structure as shown on the contract plans, and District-County-Route-Kilometer Post. Each CRIP plan sheet shall be numbered in the lower right hand corner and shall contain a blank space in the upper right hand corner for future contract sheet numbers.

Within 3 weeks after final approval of the CRIP plan sheets, one set of the corrected good quality prints on 75-g/m² (minimum) bond paper, 559 mm x 864 mm in size, of all CRIP plan sheets prepared by the Contractor for each CRIP shall be furnished to the Office of Structure Design, Documents Unit.

Each CRIP shall be submitted prior to completion of 25 percent of the contract working days and sufficiently in advance of the start of the work that is proposed to be revised by the CRIP to allow time for review by the Engineer and correction by the Contractor of the CRIP plans and calculations without delaying the work. The Contractor shall allow a minimum of 12 weeks for the review of a CRIP. In the event that several CRIPs are submitted simultaneously, or an additional CRIP is submitted for review before the review of a previously submitted CRIP has been completed, the Contractor shall designate the sequence in which the CRIPs are to be reviewed. In this event, the time to be provided for the review of any proposal in the sequence shall be not less than the review time specified herein for that proposal, plus 2 weeks for each CRIP of higher priority which is still under review.

Should the review not be complete by the date specified in the Contractor's CRIP, or such other date as the Engineer and Contractor may subsequently have agreed to in writing and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in review of CRIP plans and calculations, an extension of time commensurate with the delay in completion of the work thus caused will be granted as provided in Section 8-1.07, "Liquidated Damages," of the Standard Specifications except that the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications shall not apply.

Permits and approvals required of the State have been obtained for the structures shown on the plans. Proposals which result in a deviation in configuration may require new permits or approvals. The Contractor shall be responsible for obtaining the new permits and approvals before the Engineer will reach a decision on the proposal. Delays in obtaining permits and approvals will not be reason for granting an extension of contract time.

All proposed modifications shall be designed in conformance with the bridge design specifications and procedures currently employed by the Department. The proposal shall include all related, dependent or incidental changes to the structure and other work affected by the proposal. The proposal will be considered only when all aspects of the design changes are included for the entire structure. Changes, such as but not limited to, additional reinforcement and changes in location of reinforcement, necessary to implement the CRIP after approval by the Engineer, shall be made at the Contractor's expense.

Modifications may be proposed in (1) the thickness of girder stems and deck slabs, (2) the number of girders, (3) the deck overhang dimensions as specified herein, (4) the amount and location of reinforcing steel, (5) the amount and location of prestressing force in the superstructure, and (6) the number of hinges, except that the number of hinges shall not be increased. The strength of the concrete used may be increased but the strength employed for design or analysis shall not exceed 42 MPa.

Modifications proposed to the minimum amount of prestressing force which must be provided by full length draped tendons are subject to the provisions in "Prestressing Concrete" of these special provisions.

No modifications will be permitted in (1) the foundation type, (2) the span lengths or (3) the exterior dimensions of columns or bridge superstructure, except that the overhang dimension from face of exterior girder to the outside edge of roadway deck may be uniformly increased or decreased by 25 percent on each side of the box girder section. Fixed connections at the tops and bottoms of columns shown on the plans shall not be eliminated.

The Contractor shall be responsible for determining construction camber and obtaining the final profile grade as shown on the plans.

The Contractor shall reimburse the State for the actual cost of investigating CRIPs for cast-in-place prestressed box girder bridges submitted by the Contractor. The Department will deduct this cost from any moneys due, or that may become due the Contractor under the contract, regardless of whether or not the proposal is approved or rejected.

SLIDING BEARINGS

Sliding bearings consisting of elastomeric bearing pads lubricated with grease and covered with sheet metal shall conform to the following requirements:

- A. Grease shall conform to the requirements of Military Specification: MIL-S-8660. A uniform film of grease shall be applied to the upper surface of the pads prior to placing the sheet metal.
- B. Sheet metal shall be commercial quality galvanized sheet steel. The sheet metal shall be smooth and free of kinks, bends, or burrs.
- C. Construction methods and procedures shall prevent grout or concrete seepage into the sliding bearing assembly.

ELASTOMERIC BEARING PADS

Elastomeric bearing pads shall conform to the provisions in Section 51-1.12H, "Elastomeric Bearing Pads," of the Standard Specifications and these special provisions, except that elastomeric bearing pads for the North Napa Underpass (Br. No. 21-0102) railroad underpass shall conform to the details shown on the plans and to the requirements of Chapter 8, Part 18, of the AREA Manual for Railway Engineering.

The table in the ninth paragraph of Section 51-1.12H(1), "Plain and Fabric Reinforced Elastomeric Bearing Pads," of the Standard Specifications is amended to read:

Tensile strength, percent	-15
Elongation at break, percent	-40; but not less than 300% total elongation of the material
Hardness, points	+10

ACCESS GATES

Access gates for Retaining Wall No. 1 (Br. No. 21-RETW1) shall conform to the details shown on the plans and these special provisions.

Timber members shall be tongue and groove Douglas fir sub-flooring free of knotholes. The location of knots of adjoining boards shall be staggered. The construction of the gate shall be with the tongue placed in the up position. The tongue of the top board and the groove of the bottom board shall be removed.

Timber members, steel frames, channels, anchorage devices, mounting hardware, gate rollers, corrugated steel pipe, nylon washers, and neoprene tubing shall be of commercial quality.

Gate rollers shall be rigid casters with self-lubricating bearings and hard rubber wheels.

All metal parts and hardware shall be hot-dip galvanized.

Timber surfaces of the access gates shall be primed and then stained with 2 coats of stain to match the adjacent retaining wall. Primer and stain shall be of the top grade primer and stain from an established manufacturer. An established manufacturer is one who has manufactured industrial paints and stains to meet custom specifications for at least 10 years.

MEASUREMENT AND PAYMENT

Measurement and payment for concrete in structures shall conform to the provisions in Section 51-1.22, "Measurement," and Section 51-1.23, "Payment," of the Standard Specifications and these special provisions.

Full compensation for furnishing and installing access opening covers in soffits of new cast-in-place box girder bridges shall be considered as included in the contract price paid per cubic meter for structural concrete, bridge and no separate payment will be made therefor.

Full compensation for furnishing and installing plastic pipe located at vertical drains used behind retaining walls, including horizontal or sloping drains, shall be considered as included in the contract price paid per cubic meter for the various items of concrete work involved and no separate payment will be made therefor.

Full compensation for furnishing and installing access gate at Retaining Wall No. 1 (Br. No. 21-RETW1) shall be considered as included in the contract price paid per cubic meter for structural concrete, retaining wall and no separate payment will be allowed therefor.

The lower box portion of the Junction Structures for Drainage System No. 11 will be measured and paid for by the cubic meter of minor concrete (minor structure) as provided in Section 51-1.22, "Measurement," and Section 51-1.23, "Payment", of the Standard Specifications. No deduction in pay quantities for minor concrete (minor structure) for manholes will be made for the volume of structural concrete occupied by pipe collars or pipe openings.

The upper structure of the Junction Structures for Drainage System No. 11 will be measured and paid for by the linear meter of reinforced concrete pipe riser as provided in Section 70-1.04, "Measurement," and Section 70-1.05, "Payment," of the Standard Specifications.

The frame and cover of the Junction Structure for Drainage System No. 11 shall be measured and paid for by the kilogram for miscellaneous iron and steel as provided in Section 75-1.06, "Measurement," and Section 75-1.07, "Payment," of the Standard Specifications.

Full compensation for furnishing and installing conduits and expansion fitting shall be considered as included in the contract price paid for cubic meter for structural concrete, bridge and no separate payment will be allowed therefor.

10-1.67 PRECAST CONCRETE BOX CULVERTS

If the Contractor elects to use the "Precast Concrete Box Culvert" alternative where permitted on the plans, the precast concrete box culvert shall conform to the details shown on the plans and the following:

- A. Earthwork, including sand bedding, shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications.
- B. Reinforcement shall conform to the requirements in welded wire fabric of ASTM Designation: A 185 or A 497, at the Contractor's option.
- C. A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications shall be provided to the Engineer for each precast member shipment. The certificate shall be signed by the manufacturer's quality control representative and shall state that all materials and workmanship comply in all respects with the specification requirements and all approved submittals.
- D. The dry cast method of construction will be permitted when designated on the working drawings. When the dry cast method is used, the results shall be equal in all respects to those obtained by conformance with the provisions in Section 51 and adequate arrangements shall be made and carried out for curing, finishing and protecting the concrete. External vibrators shall be used and the forms shall be sufficiently rigid to resist displacement or damage. The dry casting forms may be removed at any time after consolidating the concrete providing no slumping of the concrete occurs.
- E. Working drawings shall be submitted to the Engineer for approval in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. Working drawings shall show the construction method, precast unit dimensions, configuration of the reinforcement (including splice type and location), and height of earth cover.
- F. The Contractor shall select the allowable combination of concrete dimensions and reinforcement, where more than one allowable combination of concrete dimensions and reinforcement for precast concrete box culvert is shown on the plans.
- G. Concrete for precast units shall be sampled and tested by the precast manufacturer for compressive strength at least once every production shift and not less often than once daily. Test result records shall be available to the Engineer at all times during regular work shifts.
- H. Each precast unit shall be clearly marked by indentation, waterproof paint, or other approved means. Markings shall include the State contract number, date of manufacture, name or trademark of the manufacturer, and design earth cover. Each precast unit shall be clearly marked by indentation on either the inner or outer surface during the process of manufacture so that the location of the top will be evident immediately after the forms are stripped. In addition, the word "top" shall be lettered with waterproof paint on the inside and outside surfaces of the top of each precast unit.
- I. Manufacturing tolerances for precast concrete box culvert sections shall conform to the requirements in Section 11, "Permissible Variations," of AASHTO Specification: M 259M.
- J. The ends of the precast members shall be so formed that the sections can be laid together to make a continuous line of box sections with a smooth interior free of appreciable irregularities in the flow line.
- K. Handling devices or holes will be permitted in each member for the purpose of handling and laying. Cored and handling holes shall be plugged and sealed so the members meet all the requirements in the specification.
- L. Splices in circumferential reinforcement shall be made by lapping. Welded connections at splices for the outside apron of steel will be allowed only in the splice area shown on the plans. The wall reinforcement on the inside of the box may be lapped and welded at any location or connected by welding at the corners to the slab reinforcement at the inside of the box.
- M. The exposure of spacers, standoffs or the ends of longitudinals used to position the reinforcement shall not be a cause for rejection. Spacers or standoffs shall not be welded to circumferential reinforcement. Spacers or standoffs may be welded to longitudinal reinforcement.
- N. Laying of precast concrete box culvert shall conform to the provisions for laying reinforced concrete pipe in Section 65-1.07, "Laying Pipe," of the Standard Specifications and these special provisions.
- O. Joints shall conform to the requirements for cement mortar or resilient material joints in Section 65-1.06, "Joints," of the Standard Specifications. An external sealing band conforming to ASTM Designation: C 877 may be used in lieu of the joint material in said Section 65-1.06.

10-1.94 PERMEABLE MATERIAL

Permeable material shall conform with the details shown on the plans, and to the provisions in Section 68-1, "Underdrains," of the Standard Specifications, and these special provisions. Class 3 permeable material shall conform to the following grading requirements:

Grading Requirements

Sieve Sizes	Percentage Passing
37.5-mm	100
25-mm	90-100
19-mm	40-100
9.5-mm	0-50
4.75-mm	0-15
2.36-mm	0-5

Class 3 permeable material shall have a Durability Index of not less than 40.

At least 90 percent by mass of Class 3 permeable material shall be crushed particles as determined by California Test 205.

Filter fabric for use with permeable material shall conform to the provisions for filter fabric for underdrains in Section 88, "Engineering Fabrics," of the Standard Specifications and the following:

- A. The subgrade and trench to receive the filter fabric, immediately prior to placing, shall conform to the compaction and elevation tolerance specified for the material involved.
- B. Filter fabric shall be handled and placed in conformance with the manufacturer's recommendations.
- C. The fabric shall be aligned and placed in a wrinkle-free manner.
- D. Within 72 hours after the filter fabric has been placed, the fabric shall be covered with the planned thickness of overlying material as shown on the plans.

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	022065	CONSTRUCT RAILROAD TRACKS	LS	LUMP SUM	LUMP SUM	
2	BLANK					
3	022067	SURVEY OF EXISTING NON-HIGHWAY FACILITIES	LS	LUMP SUM	LUMP SUM	
4	022068	VIBRATION MONITORING	EA	650		
5	022069	TEMPORARY MONITORING WELLS	M	190		
6	022070	TEMPORARY DECKING	LS	LUMP SUM	LUMP SUM	
7	070010	PROGRESS SCHEDULE (CRITICAL PATH)	LS	LUMP SUM	LUMP SUM	
8	070018	TIME-RELATED OVERHEAD	WDAY	910		
9	071322	TEMPORARY FENCE (TYPE CL-1.8)	M	1300		
10	022071	4.3 M TEMPORARY GATE (TYPE CL-1.8)	EA	2		
11	073026	300 MM TEMPORARY CULVERT	M	154		
12	022072	300 MM TEMPORARY AFES	EA	3		
13	022073	JACKED 300 MM TEMPORARY CULVERT	M	13		
14	073028	450 MM TEMPORARY CULVERT	M	3		
15	073031	900 MM TEMPORARY CULVERT	M	35		
16	073034	1350 MM TEMPORARY CULVERT	M	120		
17	022074	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
18	022075	NON-STORM WATER DISCHARGE	LS	LUMP SUM	LUMP SUM	
19	022076	HEALTH AND SAFETY PLAN (HAZARDOUS MATERIAL)	LS	LUMP SUM	LUMP SUM	
20	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21 (S)	074020	WATER POLLUTION CONTROL	LS	LUMP SUM	LUMP SUM	
22 (S)	022077	TEMPORARY COVER	LS	LUMP SUM	LUMP SUM	
23 (S)	022078	TEMPORARY DRAINAGE INLET PROTECTION	EA	40		
24 (S)	022079	TEMPORARY CONCRETE WASHOUT FACILITY	LS	LUMP SUM	LUMP SUM	
25 (S)	022080	TEMPORARY FENCE (TYPE ESA)	M	270		
26	022081	TEMPORARY ENTRANCE/EXIT	LS	LUMP SUM	LUMP SUM	
27 (S)	074023	TEMPORARY EROSION CONTROL	M2	100 000		
28 (S)	074029	TEMPORARY SILT FENCE	M	300		
29 (S)	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
30 (S)	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
31 (S)	128650	PORTABLE CHANGEABLE MESSAGE SIGN	EA	3		
32 (S)	129000	TEMPORARY RAILING (TYPE K)	M	10 750		
33 (S)	129100	TEMPORARY CRASH CUSHION MODULE	EA	250		
34	150205	ABANDON REINFORCED CONCRETE BOX	EA	1		
35	150206	ABANDON CULVERT	EA	3		
36	150221	ABANDON INLET	EA	3		
37	150305	OBLITERATE SURFACING	M2	11 300		
38	150608	REMOVE CHAIN LINK FENCE	M	1320		
39	022082	RECONSTRUCT STEEL GATE	LS	LUMP SUM	LUMP SUM	
40	150662	REMOVE METAL BEAM GUARD RAILING	M	200		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41	150668	REMOVE FLARED END SECTION	EA	1		
42	150711	REMOVE PAINTED TRAFFIC STRIPE	M	4250		
43	150713	REMOVE PAVEMENT MARKING	M2	120		
44	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	M	230		
45	022083	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE	M	1050		
46	150722	REMOVE PAVEMENT MARKER	EA	490		
47	150771	REMOVE ASPHALT CONCRETE DIKE	M	130		
48	150805	REMOVE CULVERT	M	530		
49	150820	REMOVE INLET	EA	9		
50	150821	REMOVE HEADWALL	EA	5		
51	150826	REMOVE MANHOLE	EA	5		
52	150860	REMOVE BASE AND SURFACING	M3	160		
53	151265	SALVAGE SINGLE THRIE BEAM BARRIER	M	700		
54	151266	SALVAGE DOUBLE THRIE BEAM BARRIER	M	610		
55	151281	SALVAGE ROADSIDE SIGN	EA	50		
56	151540	RECONSTRUCT CHAIN LINK FENCE	M	278		
57	152390	RELOCATE ROADSIDE SIGN	EA	3		
58 (S)	153153	COLD PLANE ASPHALT CONCRETE PAVEMENT (45 MM MAXIMUM)	M2	6650		
59 (S)	153154	COLD PLANE ASPHALT CONCRETE PAVEMENT (60 MM MAXIMUM)	M2	540		
60	022084	REMOVE CONCRETE PAVEMENT	M3	90		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	153211	REMOVE CONCRETE SIDEWALK AND DRIVEWAY	M3	76		
62	153215	REMOVE CONCRETE (CURB AND GUTTER)	M3	11		
63	153222	REMOVE CONCRETE ISLAND (PORTIONS)	M3	110		
64	153239	REMOVE CONCRETE (CURB, GUTTER, AND SIDEWALK)	M3	180		
65	153250	REMOVE SOUND WALL	LS	LUMP SUM	LUMP SUM	
66	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
67	170101	DEVELOP WATER SUPPLY	LS	LUMP SUM	LUMP SUM	
68	190101	ROADWAY EXCAVATION	M3	411 000		
69	190103	ROADWAY EXCAVATION (TYPE Y) (AERIALY DEPOSITED LEAD)	M3	9000		
70	022085	ROADWAY EXCAVATION (TYPE R)	M3	1350		
71 (F)	048659	STRUCTURE EXCAVATION, INVERTED SIPHON	M3	2220		
72 (F)	192020	STRUCTURE EXCAVATION (TYPE D)	M3	3170		
73 (F)	192026	STRUCTURE EXCAVATION (PUMPING PLANT)	M3	4550		
74 (F)	048660	STRUCTURE EXCAVATION, RETAINING WALL (TYPE D)	M3	5825		
75 (F)	192027	STRUCTURE BACKFILL (PUMPING PLANT) (TYPE A)	M3	1800		
76 (F)	048661	STRUCTURE BACKFILL, INVERTED SIPHON	M3	950		
77 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	M3	2090		
78 (F)	193013	STRUCTURE BACKFILL (RETAINING WALL)	M3	7000		
79	193114	SAND BACKFILL	M3	27		
80	194001	DITCH EXCAVATION	M3	500		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81	198200	SUBGRADE ENHANCEMENT FABRIC	M2	7240		
82 (S)	203001	EROSION CONTROL (BLANKET)	M2	5010		
83 (S)	203026	MOVE IN/MOVE OUT (EROSION CONTROL)	EA	6		
84 (F)	022131	MOVE IN/MOVE OUT (TEMPORARY EROSION CONTROL)	EA	6		
85 (S)	203003	STRAW (EROSION CONTROL)	TONN	45		
86 (S)	203014	FIBER (EROSION CONTROL)	KG	7170		
87 (S)	203021	FIBER ROLLS	M	5170		
88 (S)	203024	COMPOST (EROSION CONTROL)	KG	20 700		
89 (S)	022086	PURE LIVE SEED-TYPE 1 (EROSION CONTROL)	KG	330		
90 (S)	022087	PURE LIVE SEED-TYPE 2 (EROSION CONTROL)	KG	87		
91 (S)	022088	PURE LIVE SEED-TYPE 3 (EROSION CONTROL)	KG	14		
92 (S)	022089	PURE LIVE SEED-TYPE 4 (EROSION CONTROL)	KG	170		
93 (S)	022090	PURE LIVE SEED-TYPE 5 (EROSION CONTROL)	KG	91		
94 (S)	203061	STABILIZING EMULSION (EROSION CONTROL)	KG	1580		
95 (S)	022091	INITIAL SITE WORK	LS	LUMP SUM	LUMP SUM	
96 (S)	022092	MAINTAIN EXISTING PLANTING	LS	LUMP SUM	LUMP SUM	
97 (S)	022093	WATER METER	EA	2		
98	022094	150 MM PLASTIC PIPE SCH 40 SUPPLY LINE	M	79		
99 (S)	208731	200 MM CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT	M	150		
100	250401	CLASS 4 AGGREGATE SUBBASE	M3	10 800		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101	260201	CLASS 2 AGGREGATE BASE	M3	455		
102	260301	CLASS 3 AGGREGATE BASE	M3	16 900		
103	290201	ASPHALT TREATED PERMEABLE BASE	M3	4080		
104	373900	ASPHALTIC EMULSION	TONN	5.4		
105	390152	ASPHALT CONCRETE	TONN	37 500		
106	390165	ASPHALT CONCRETE (OPEN GRADED)	TONN	3030		
107	394002	PLACE ASPHALT CONCRETE (MISCELLANEOUS AREA)	M2	1480		
108	394040	PLACE ASPHALT CONCRETE DIKE (TYPE A)	M	3190		
109	394048	PLACE ASPHALT CONCRETE DIKE (TYPE E)	M	940		
110	490706	FURNISH PILING (CLASS 900C)	M	3042		
111 (S)	490707	DRIVE PILE (CLASS 900C)	EA	220		
112	490757	FURNISH PILING (CLASS 625C)	M	1995		
113 (S)	490758	DRIVE PILE (CLASS 625C)	EA	153		
114	490759	FURNISH PILING (CLASS 400C)	M	9285		
115 (S)	490760	DRIVE PILE (CLASS 400C)	EA	963		
116 (S)	498030	600 MM CAST-IN-DRILLED-HOLE CONCRETE PILING (SOUND WALL)	M	1871		
117 (S)	500001	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
118 (S)	500060	TIEDOWN ANCHOR	EA	50		
119	510000	SEAL COURSE CONCRETE	M3	640		
120	022095	STRUCTURAL CONCRETE, BOX CULVERT	M3	180		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
121 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	M3	567		
122 (F)	048662	STRUCTURAL CONCRETE, INVERTED SIPHON	M3	620		
123 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	M3	2930		
124 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	M3	2663		
125 (F)	510069	STRUCTURAL CONCRETE (PUMPING PLANT)	M3	900		
126 (F)	048663	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE RAILROAD)	M3	17		
127 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	M3	155		
128	510217	CLASS 3 CONCRETE	M3	140		
129	022096	MINOR CONCRETE (BROOM FINISH)	M2	2330		
130 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	1010		
131	510526	MINOR CONCRETE (BACKFILL)	M3	2550		
132 (F)	048664	ARCHITECTUAL TREATMENT (CHISELED LIMESTONE)	M2	280		
133 (F)	048665	ARCHITECTUAL TREATMENT (FRACTURED RIB/GRAPEVINE PATTERN)	M2	815		
134 (F)	511064	FRACTURED RIB TEXTURE	M2	760		
135 (S-F)	517961	SOUND WALL (BARRIER) (MASONRY BLOCK)	M2	1255		
136 (S-F)	518002	SOUND WALL (MASONRY BLOCK)	M2	1960		
137 (S)	518205	MASONRY BLOCK VENEER	M2	310		
138 (S)	519124	JOINT SEAL ASSEMBLY (MR 60 MM)	M	10		
139 (S)	519142	JOINT SEAL (MR 40 MM)	M	66		
140 (F)	520101	BAR REINFORCING STEEL	KG	18 200		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141 (S-F)	048666	BAR REINFORCING STEEL, INVERTED SIPHON	KG	56 200		
142 (S-F)	520102	BAR REINFORCING STEEL (BRIDGE)	KG	566 700		
143 (S-F)	520103	BAR REINFORCING STEEL (RETAINING WALL)	KG	234 700		
144	520107	BAR REINFORCING STEEL (BOX CULVERT)	KG	180		
145 (S-F)	520113	BAR REINFORCING STEEL (PUMPING PLANT)	KG	95 300		
146 (S-F)	540104	WATERPROOFING AND COVER	M2	1342		
147 (F)	560218	FURNISH SIGN STRUCTURE (TRUSS)	KG	11 410		
148 (S-F)	560219	INSTALL SIGN STRUCTURE (TRUSS)	KG	11 410		
149	561008	760 MM CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	M	12		
150	561009	920 MM CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	M	5		
151	566011	ROADSIDE SIGN - ONE POST	EA	49		
152	566012	ROADSIDE SIGN - TWO POST	EA	13		
153	568001	INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	6		
154	620910	450 MM ALTERNATIVE PIPE CULVERT (TYPE A)	M	2820		
155	620913	600 MM ALTERNATIVE PIPE CULVERT	M	360		
156	620924	900 MM ALTERNATIVE PIPE CULVERT	M	5		
157	620930	1050 MM ALTERNATIVE PIPE CULVERT	M	2090		
158	620940	1500 MM ALTERNATIVE PIPE CULVERT	M	96		
159	650067	300 MM REINFORCED CONCRETE PIPE	M	6		
160	650068	375 MM REINFORCED CONCRETE PIPE	M	300		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	650069	450 MM REINFORCED CONCRETE PIPE	M	90		
162	650075	600 MM REINFORCED CONCRETE PIPE	M	110		
163	650077	750 MM REINFORCED CONCRETE PIPE	M	92		
164	664008	300 MM CORRUGATED STEEL PIPE	M	1		
165	022097	450 MM CORRUGATED STEEL PIPE	M	62		
166	022098	450 MM CORRUGATED STEEL PIPE WITH MEC	M	12		
167	BLANK					
168	BLANK					
169	BLANK					
170	681134	80 MM PLASTIC PIPE (EDGE DRAIN)	M	4900		
171	BLANK					
172	BLANK					
173	681990	FILTER FABRIC	M2	109 000		
174	682045	CLASS 3 PERMEABLE MATERIAL	M3	16 300		
175	685067	200 MM ALTERNATIVE PIPE UNDERDRAIN	M	5346		
176	703450	WELDED STEEL PIPE CASING (BRIDGE)	M	47		
177	703543	300 MM WELDED STEEL PIPE (3.40 MM THICK)	M	6		
178	703568	450 MM WELDED STEEL PIPE (3.40 MM THICK)	M	180		
179	022104	450 MM STEEL SPIRAL RIB PIPE (2MM THICK)	M	11		
180	022105	1350 MM TEMPORARY WSP	M	17		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
181	703699	1500 MM WELDED STEEL PIPE (9.53 MM THICK)	M	30		
182	703716	1800 MM WELDED STEEL PIPE (6.35 MM THICK)	M	230		
183	705336	450 MM ALTERNATIVE FLARED END SECTION	EA	2		
184	705575	1800 MM AUTOMATIC DRAINAGE GATE	EA	2		
185	705659	1800 MM SLIDE HEADGATE	EA	2		
186	022106	600 MM KNIFE GATE VALVE	EA	4		
187	707479	900 MM REINFORCED CONCRETE PIPE RISER	M	62		
188	022107	CITY MANHOLE	EA	6		
189	022108	DRAINAGE PULL BOX	EA	5		
190	721810	SLOPE PAVING (CONCRETE)	M3	70		
191	731502	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	M3	70		
192 (F)	731517	MINOR CONCRETE (GUTTER)	M	395		
193	731530	MINOR CONCRETE (TEXTURED PAVING)	M2	95		
194 (S)	740500	DRAINAGE PUMPING EQUIPMENT	LS	LUMP SUM	LUMP SUM	
195 (S)	741001	PUMPING PLANT ELECTRICAL EQUIPMENT	LS	LUMP SUM	LUMP SUM	
196 (F)	750001	MISCELLANEOUS IRON AND STEEL	KG	32 000		
197 (S-F)	750501	MISCELLANEOUS METAL (BRIDGE)	KG	5050		
198 (S-F)	750520	PUMPING PLANT METAL WORK	KG	5600		
199 (S-F)	048667	INVERTED SIPHON METAL WORK	KG	15 000		
200	800391	CHAIN LINK FENCE (TYPE CL-1.8)	M	400		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
201	022109	INSTALL TEMPORARY GATE	LS	LUMP SUM	LUMP SUM	
202	802592	2.4 M CHAIN LINK GATE (TYPE CL-1.8)	EA	2		
203	802671	4.3 M CHAIN LINK GATE (TYPE CL-1.8)	EA	2		
204	820107	DELINEATOR (CLASS 1)	EA	50		
205	820141	OBJECT MARKER (TYPE K-1)	EA	1		
206 (S)	832003	METAL BEAM GUARD RAILING (WOOD POST)	M	370		
207 (S-F)	833032	CHAIN LINK RAILING (TYPE 7)	M	682		
208 (S-F)	833034	CHAIN LINK RAILING (TYPE 7L)	M	272		
209 (S-F)	833088	TUBULAR HANDRAILING	M	19		
210 (S-F)	833128	CONCRETE BARRIER (TYPE 25 MODIFIED)	M	296		
211 (S-F)	833142	CONCRETE BARRIER (TYPE 26 MODIFIED)	M	147		
212 (F)	833161	CONCRETE BARRIER (TYPE 27A)	M	300		
213 (F)	833184	CONCRETE BARRIER (TYPE 27SV MODIFIED)	M	318		
214 (S)	839302	SINGLE THRIE BEAM BARRIER (WOOD POST)	M	720		
215 (S)	839311	DOUBLE THRIE BEAM BARRIER (WOOD POST)	M	1320		
216 (S-F)	839521	CABLE RAILING	M	422		
217 (S)	839545	RETURN SECTION (THRIE BEAM BARRIER)	EA	2		
218 (S)	839552	TERMINAL SECTION (TYPE C)	EA	7		
219	839559	TERMINAL SYSTEM (TYPE ET)	EA	1		
220	839565	TERMINAL SYSTEM (TYPE SRT)	EA	7		

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
221 (S)	839569	TERMINAL ANCHOR ASSEMBLY (TYPE CA)	EA	3		
222	839631	CRASH CUSHION MODULE, SAND FILLED	EA	42		
223	839704	CONCRETE BARRIER (TYPE 60D)	M	670		
224 (F)	048668	CONCRETE BARRIER (TYPE 60D MODIFIED)	M	202		
225 (S)	840515	THERMOPLASTIC PAVEMENT MARKING	M2	610		
226 (S)	840561	100 MM THERMOPLASTIC TRAFFIC STRIPE	M	11 600		
227 (S)	840562	150 MM THERMOPLASTIC TRAFFIC STRIPE	M	180		
228 (S)	022110	150 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 2.44 M - 1.22 M)	M	390		
229 (S)	840563	200 MM THERMOPLASTIC TRAFFIC STRIPE	M	1630		
230 (S)	840564	200 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 3.66 M - 0.92 M)	M	460		
231 (S)	840567	100 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 1.83 M - 0.30 M)	M	270		
232 (S)	840571	100 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 5.18 M - 2.14 M)	M	1430		
233 (S)	840656	PAINT TRAFFIC STRIPE (2-COAT)	M	13 200		
234 (S)	840666	PAINT PAVEMENT MARKING (2-COAT)	M2	320		
235 (S)	022111	PAVEMENT MARKER (NON-REFLECTIVE TYPE A)	EA	1200		
236 (S)	850110	PAVEMENT MARKER (RETROREFLECTIVE-SPECIAL TYPE C)	EA	20		
237 (S)	022111	PAVEMENT MARKER (RETROREFLECTIVE-SPECIAL TYPE D)	EA	340		
238 (S)	850112	PAVEMENT MARKER (RETROREFLECTIVE-SPECIAL TYPE G)	EA	1120		
239 (S)	850113	PAVEMENT MARKER (RETROREFLECTIVE-SPECIAL TYPE H)	EA	710		
240 (S)	022113	SIGNAL AND LIGHTING (STAGE CONSTRUCTION)	LS	LUMP SUM	LUMP SUM	

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
241 (S)	860251	SIGNAL AND LIGHTING (LOCATION 1)	LS	LUMP SUM	LUMP SUM	
242 (S)	860252	SIGNAL AND LIGHTING (LOCATION 2)	LS	LUMP SUM	LUMP SUM	
243 (S)	860253	SIGNAL AND LIGHTING (LOCATION 3)	LS	LUMP SUM	LUMP SUM	
244 (S)	860254	SIGNAL AND LIGHTING (LOCATION 4)	LS	LUMP SUM	LUMP SUM	
245 (S)	860402	LIGHTING (CITY STREET)	LS	LUMP SUM	LUMP SUM	
246 (S)	022114	LIGHTING (POC)	LS	LUMP SUM	LUMP SUM	
247 (S)	860460	LIGHTING AND SIGN ILLUMINATION	LS	LUMP SUM	LUMP SUM	
248 (S)	022115	TRAFFIC OPERATIONS SYSTEM	LS	LUMP SUM	LUMP SUM	
249	022116	305 MM DIP WATER MAIN INSIDE BRIDGE	M	59		
250	022117	305 MM DIP WATER MAIN-BURIED	M	66		
251	022118	305 MM BUTTERFLY VALVE	EA	2		
252	022119	305 MM FLEXIBLE EXPANSION JOINT	EA	2		
253	022120	TIE-IN TO EXISTING 305 MM WATER MAIN	EA	2		
254	022121	203 MM DIP WATER MAIN (BURIED)	M	420		
255	022122	FIRE HYDRANT	EA	3		
256	022123	WATER SERVICES	EA	2		
257	022124	TIE-IN TO EXISTING 203 MM WATER MAIN	EA	4		
258	022125	TRASH RACK	EA	2		
259	BLANK					
260	022677	ELECTRONIC MOBILE DAILY DIARY SYSTEM DATE DELIVERY	LS	LUMP SUM	LUMP SUM	

**ENGINEER'S ESTIMATE
04-120614**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
261	BLANK					
262	022893	80 MM PLASTIC PIPE (EDGE DRAIN OUTLET)	M	435		
263	022894	1050 MM REINFORCED CONCRETE PIPE (JACKED)	M	26		
264	022895	TEMPORARY FENCE (TYPE CL-2.4) WITH CONCRETE FOOTING FOR POSTS	M	140		
265	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID: _____