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**** WARNING ** WARNING ** WARNING ** WARNING ****
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October 21, 2005

04-Son-101,12-31.4/36.0,R24.9/R25.7
04-245414
ACNH-Q101(107) E
CML-6204(059)

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SONOMA COUNTY IN SANTA ROSA ON ROUTE 12 FROM SOUTH SANTA ROSA OVERHEAD TO ROUTE 12/101 SEPARATION AND ON ROUTE 101 FROM EARLE STREET PEDESTRIAN OVERCROSSING TO 0.2 KM SOUTH OF BICENTENNIAL WAY OVERCROSSING.

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 November 1, 2005.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, and the Proposal and Contract.

Project Plan Sheet 671 is revised. In the "CONCRETE STRENGTH AND TYPE LIMITS" diagram, the concrete compressive strength for the superstructure portion is changed from 35 MPA at 28 days to 38 MPA at 28 days.

Project Plan Sheet 686 is revised. In the "CONCRETE STRENGTH AND TYPE LIMITS" diagram, the concrete compressive strength for the superstructure portion is changed from 28 MPA at 28 days to 35 MPA at 28 days.

Project Plan Sheet 694 is revised. In the "PRESTRESSING NOTES," the concrete compressive strength, f_c , is changed from 28 MPA @ 28 days to 35 MPA @ 28 days.

In the Special Provisions, Section 2, "PROPOSAL REQUIREMENTS AND CONDITIONS," Section 2-1.03, "ESCROW OF BID DOCUMENTATION," is added as attached.

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In the Special Provisions, Section 5-1.14, "COMPENSATION ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS", the first paragraph is revised as follows.

"The provisions of this section shall apply only to the following contract items:

ITEM CODE	ITEM
390155	ASPHALT CONCRETE (TYPE A)
390165	ASPHALT CONCRETE (OPEN GRADED)
390175	ASPHALT CONCRETE (LEVELING)
391031	PAVING ASPHALT (BINDER-PAVEMENT REINFORCING FABRIC)"

In the Special Provisions, Section 8-1.05, "ASPHALT," is added as attached.

In the Special Provisions, Section 10-1.46, "ASPHALT CONCRETE," the following is added after the second paragraph:

"Asphalt binder to be mixed with the aggregate for Type A asphalt concrete shall be either PG Grade or AR Grade. Asphalt shall conform to the provisions in "Asphalt" of these special provisions."

In the Special Provisions, Section 10-1.50, "PILING," after the Subsection "Water Slurry", subsection "Construction" and "Acceptance Testing and Mitigation" are added as attached.

In the Special Provisions, Section 10-1.575, "CLEAN EXPANSION JOINTS," is added as attached.

In the Special Provisions, Section 11, "MODIFIED STANDARD SPECIFICATION SECTIONS," in Section 11-1, "QUALITY CONTROL / QUALITY ASSURANCE," the subsection 39-2.01, "ASPHALTS," is replaced as follows:

"39-2.01 ASPHALTS

Asphalt binder to be mixed with aggregate shall conform to the provisions in "Asphalt," of these special provisions. The grade of asphalt binder shall be designated in "Asphalt Concrete" in Section 10-1, "General," of these special provisions.

Liquid asphalt for prime coat shall conform to the provisions in Section 93, "Liquid Asphalts," of the Standard Specifications and shall be the grade designated by the contract item or conform to the provisions in "Asphalt Concrete," in Section 10-1, "General," of these special provisions.

Asphalt emulsion for paint binder (tack coat) shall conform to the provisions in Section 94, "Asphaltic Emulsions," of the Standard Specifications for the rapid-setting or slow-setting type and grade approved by the Engineer.

Paving asphalt to be used as a binder for pavement reinforcing fabric shall conform to the provisions in "Asphalt," of these special provisions and the grade shall be ordered by the Engineer in designated in "Asphalt Concrete" in Section 10-1, "General," of these special provisions."

In the Special Provisions, Section 11, "MODIFIED STANDARD SPECIFICATION SECTIONS," Section 11-2, "ASPHALTS," is added as attached.

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In the Proposal and Contract, the Engineer's Estimate Item 140 is revised as attached.

To Proposal and Contract book holders:

Replace page 10 of the Engineer's Estimate in the Proposal with the attached revised page 10 of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

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

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the 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 confirmed facsimile to all book holders to ensure that each receives it. A copy of this addendum and 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

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

2-1.03 ESCROW OF BID DOCUMENTATION

Bid documentation shall consist of all documentary and calculated information generated by the Contractor in preparation of the bid. The bid documentation shall conform to the requirements in these special provisions, and shall be submitted to the Department and held in escrow for the duration of the contract.

The escrowed bid documents will be the only documents accepted from the Contractor regarding preparation of the bid.

In signing the proposal, the bidder certifies that the material submitted for escrow constitutes all the documentary information used in preparation of the bid and that he has personally examined the contents of the container and that they are complete.

Nothing in the bid documentation shall be construed to change or modify the terms or conditions of the contract.

Escrowed bid documentation will not be used for pre-award evaluation of the Contractor's anticipated methods of construction, nor to assess the Contractor's qualifications for performing the work.

Bid documentation shall clearly itemize the Contractor's estimated costs of performing the work. The documentation submitted shall be complete and so detailed as to allow for an in-depth analysis of the Contractor's estimate.

The Contractor shall submit its bid documentation which shall include, but not be limited to:

- quantity takeoffs;
- rate schedules for the direct costs and the time- and nontime-related indirect costs for
- labor (by craft),
- plant and equipment ownership and operation,
- permanent and expendable materials,
- insurance and subcontracted work;
- estimated construction schedules, including sequence and duration and development of production rates;
- quotations, terms and limitations of quotes, and subcontracts related to subcontractors, manufacturers and suppliers;
- estimates of field and home office overhead;
- contingency and margin for each contract item of work;
- names of the persons responsible for preparing the bidder's estimate, and other reports, calculations, assumptions and supplemental information used by the bidder to arrive at the estimate submitted with the proposal.
- bid documentation for each subcontractor, manufacturer and supplier whose total subcontract or purchase orders exceeds or is expected to exceed \$250,000. Bid documentation for other subcontractors, manufacturers, and suppliers may be submitted, if required by the Contractor or requested by the subcontractor, manufacturer, or supplier.

If required by the Contractor or requested by the subcontractor, manufacturer, or supplier, additional information may be submitted by the subcontractor, manufacturer, or supplier. Subcontractor, manufacturer and supplier bid documentation shall conform to the requirements for the Contractor's documentation and shall be enclosed with the Contractor's submittal, regardless of whether or not subcontracts or purchase orders have been executed or entered into on the date that bid documentation is submitted for escrow. If at the time that bid documentation is submitted for escrow, the subcontractor, manufacturer or supplier does not have a executed subcontract or purchase orders, and a subcontract or purchase orders is subsequently executed, then a copy of the executed subcontract or purchase orders shall be submitted into escrow within 14 days of the execution of the respective subcontract or purchase orders. The examination of subcontractors', manufacturers' and suppliers' bid documentation will be accomplished in the same manner as for the Contractor's bid documentation. If a subcontractor, manufacturer or supplier is replaced, bid documentation for the new subcontractor, manufacturer or supplier shall be submitted for review and escrow before authorization for the substitution will be granted. Upon request of a subcontractor, manufacturer or supplier, the bid documentation from that subcontractor, manufacturer or supplier shall be reviewed only by the subcontractor, manufacturer or supplier and the Department.

If the bidder is a joint venture, the bid documentation shall include the joint venture agreement, the joint venture estimate comparison and final reconciliation of the joint venture estimate.

Copies of the proposals submitted by the first, second and third low bidders will be provided to the respective bidders for inclusion in the bid documentation to be escrowed.

The first, second, and third apparent low bidders shall present the bid documentation for escrow at the District 4 Office, 111 Grand Avenue, Oakland, CA, (510) 286-5209, on the first Tuesday between 1:00 p.m. and 2:00 p.m., following the time indicated in the "Notice to Contractors" for the opening of bids. The fourth and subsequent apparent low bidders shall present the bid documentation for escrow if requested by the Department to do so. Bid documentation shall be submitted as a paper copy in a sealed container, clearly marked with the bidder's name, date of submittal, project contract number and the words, "Bid Documentation for Escrow."

Failure to submit the actual and complete bid documentation as specified herein within the time specified shall be cause for rejection of the proposal.

Upon submittal, the bid documentation of the apparent low bidder will be examined and inventoried by the duly designated representatives of the Contractor and the Department to ensure that the bid documentation is authentic, legible, and in accordance with the terms of this section "Escrow of Bid Documentation." The examination will not include review of, nor will it constitute approval of, proposed construction methods, estimating assumptions or interpretation of the contract. The examination will not alter any conditions or terms of the contract. The acceptance or rejection by the Department that the submitted bid documents are in compliance with this section "Escrow of Bid Documentation" shall be completed within 48 hours of the time the bid documentation is submitted by the Contractor.

At the completion of the examination, the bid documents will be sealed and jointly deposited at an agreed commercial business in Oakland, CA.

Bid documentation submitted by the second and third apparent low bidders will be jointly deposited at agreed commercial businesses. If the apparent low bid is withdrawn or rejected, the bid documentation of the second low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. If the second low bid is withdrawn or rejected, the bid documentation of the third low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. Bid documentation from subsequent bidders, if requested, will be examined and inventoried in the same manner as specified above, then sealed and deposited in escrow. Upon execution and final approval of the contract or rejection of all bids, the bid documentation will be returned to any remaining unsuccessful bidders.

Any and all components of the escrowed bid documentation may be examined by the designated representatives of both the Department and the Contractor, at any time deemed necessary by either the Department or the Contractor to assist in the negotiation of price adjustments and change orders, or to assist in the potential resolution or in the settlement of claims or disputes. Such a joint review shall be performed within 15 days of receipt of a written request to do so by either party. If the Contractor refuses to participate in the joint examination of any and all components of the escrowed bid documentation as provided herein, such refusal shall be considered as a failure by the Contractor to exhaust administrative claim remedies with respect to the particular protest, notice of potential claim, or claim. In addition, this refusal by the Contractor shall constitute a bar to future arbitration with respect to the protest, potential claim or claim as provided by Section 10240.2 of the California Public Contract Code.

If requested by a Disputes Review Board, the escrowed bid documentation may be utilized to assist the Board in its recommendations.

The bid documentation submitted by the Contractor will be held in escrow until the contract has been completed, the ultimate resolution of all disputes and claims has been achieved and receipt of final payment has been accepted by the Contractor. The escrowed bid documentation will then be released from escrow to the Contractor.

The bid documentation submitted by the bidder is, and shall remain, the property of the bidder, and is subject to only joint review by the Department and the bidder. The Department stipulates and expressly acknowledges that the submitted bid documentation constitutes trade secrets and will not be deemed public records. This acknowledgment is based on the Department's express understanding that the information contained in the bid documentation is not known outside the bidder's business, is known only to a limited extent and only by a limited number of employees of the bidder, is safeguarded while in the bidder's possession, is extremely valuable to the bidder and could be extremely valuable to the bidder's competitors by virtue of it reflecting the bidder's contemplated techniques of construction. The Department acknowledges that the bid documentation includes a compilation of information used in the bidder's business, intended to give the bidder an opportunity to obtain an advantage over competitors who do not know of or use the contents of the documentation. The Department agrees to safeguard the bid documentation, and all information contained therein, against disclosure, including disclosure of subcontractor bid documentation to the Contractor and other subcontractors to the fullest extent permitted by law. However, in the event of arbitration or litigation, the bid documentation shall be subject to discovery, and the Department assumes no responsibility for safeguarding the bid documentation unless the Contractor has obtained an appropriate protective order issued by the arbitrator or the court.

Full compensation for preparing the bid documentation, presenting it for escrow and reviewing it for escrow and upon request of the Engineer shall be considered as included in the contract prices paid for the various items of work, and no additional compensation will be allowed therefor.

The direct cost of depositing the bid documentation in escrow at the agreed commercial business will be paid by the State.

8-1.05 ASPHALT

Asphalt shall conform to the provisions in Section 92 of Section 11-2, "Asphalts," of these special provisions and these special provisions.

The grade of asphalt to be used will be specified in the various sections of these special provisions.

If steam-refined paving asphalt (AR) is specified, the asphalt shall conform to the following:

Steam-Refined Paving Asphalts

Specification Designation	AASHTO Test Method	Viscosity Grade				
		AR 1000	AR 2000	AR 4000	AR 8000	AR 16000
Tests on Residue from RTFO Procedure: (California Test 346) ^a						
Absolute Viscosity at 60°C, pascal second (x10 ⁻¹)	T202	750-1250	1500-2500	3000-5000	6000-10000	12000-20000
Kinematic Viscosity at 135°C, min., square meter per second (x10 ⁻⁶)	T201	140	200	275	400	550
Pen. at 25°C, 100 g/5 sec., min.	T49	65	40	25	20	20
% of orig. Pen. ^b at 25°C, min.	—	—	40	45	50	52
Ductility at 25°C, mm, min.	T51	1000 ^c	1000 ^c	750	750	750
Tests on Original Asphalt:						
Flash Point, C.L.O.C.°C, min.	T48	205	215	225	230	235
Solubility in Trichloroethylene, % min.	T44	99	99	99	99	99

a TFO (AASHTO Test Method T179) may be used but the RTFO shall be the referee method.

b Original penetration as well as penetration after the RTFC loss will be determined by AASHTO Test Method T49.

c If the ductility at 25°C is less than 1000 mm, the material will be acceptable if its ductility at 15°C is more than 1000 mm.

If the Department determines the mass of asphalt from volumetric measurements in conformance with the provisions in Section 92-1.04 of Section 11-2, "Asphalts," of these special provisions, the Engineer will use the Conversion Table in Section 93, "Liquid Asphalts," of the Standard Specifications and the following table:

Average Mass and Volumes of Paving Asphalt

Grade	Liters per Tonne at 15°C	Grams per Liter at 15°C
AR-1000	997	1002
AR-2000	989	1011
AR-4000	981	1020
AR-8000	981	1020
AR-16000	981	1020
PG 58-22	981	1020
PG 64-10	981	1020
PG 64-16	981	1020
PG 64-28	981	1020
PG 70-10	981	1020
PBA 6a	981	1020
PBA 6a (mod)	981	1020
PBA 6b	981	1020
PBA 7	981	1020

(ADD TO 10-1.50 PILING)

Construction

The Contractor shall submit a placing plan to the Engineer for approval prior to producing the test batch for cast-in-drilled-hole concrete piling and at least 10 working days prior to constructing piling. The plan shall include complete descriptions, details, and supporting calculations as listed below:

- A. Requirements for all cast-in-drilled hole concrete piling:
 - 1. Concrete mix design, certified test data, and trial batch reports.
 - 2. Drilling or coring methods and equipment.
 - 3. Proposed method for casing installation and removal when necessary.
 - 4. Plan view drawing of pile showing reinforcement and inspection pipes, if required.
 - 5. Methods for placing, positioning, and supporting bar reinforcement.
 - 6. Methods and equipment for accurately determining the depth of concrete and actual and theoretical volume placed, including effects on volume of concrete when any casings are withdrawn.
 - 7. Methods and equipment for verifying that the bottom of the drilled hole is clean prior to placing concrete.
 - 8. Methods and equipment for preventing upward movement of reinforcement, including the Contractor's means of detecting and measuring upward movement during concrete placement operations.

- B. Additional requirements when concrete is placed under slurry:
 - 1. Concrete batching, delivery, and placing systems, including time schedules and capacities therefor. Time schedules shall include the time required for each concrete placing operation at each pile.
 - 2. Concrete placing rate calculations. When requested by the Engineer, calculations shall be based on the initial pump pressures or static head on the concrete and losses throughout the placing system, including anticipated head of slurry and concrete to be displaced.
 - 3. Suppliers' test reports on the physical and chemical properties of the slurry and any proposed slurry chemical additives, including Material Safety Data Sheet.
 - 4. Slurry testing equipment and procedures.
 - 5. Methods of removal and disposal of excavation, slurry, and contaminated concrete, including removal rates.
 - 6. Methods and equipment for slurry agitating, recirculating, and cleaning.

In addition to compressive strength requirements, the consistency of the concrete to be deposited under slurry shall be verified before use by producing a test batch. The test batch shall be produced and delivered to the project under conditions and in time periods similar to those expected during the placement of concrete in the piles. Concrete for the test batch shall be placed in an excavated hole or suitable container of adequate size to allow for testing as specified herein. Depositing of test batch concrete under slurry will not be required. In addition to meeting the specified nominal penetration, the test batch shall meet the following requirements:

- A. For piles where the time required for each concrete placing operation, as submitted in the placing plan, will be 2 hours or less, the test batch shall demonstrate that the proposed concrete mix design achieves either a penetration of at least 50 mm or a slump of at least 125 mm after twice that time has elapsed.
- B. For piles where the time required for each concrete placing operation, as submitted in the placing plan, will be more than 2 hours, the test batch shall demonstrate that the proposed concrete mix design achieves either a penetration of at least 50 mm or a slump of at least 125 mm after that time plus 2 hours has elapsed.

The time period shall begin at the start of placement. The concrete shall not be vibrated or agitated during the test period. Penetration tests shall be performed in conformance with the requirements in California Test 533. Slump tests shall be performed in conformance with the requirements in ASTM Designation: C 143. Upon completion of testing, the concrete shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

The concrete deposited under slurry shall be carefully placed in a compact, monolithic mass and by a method that will prevent washing of the concrete. Concrete deposited under slurry need not be vibrated. Placing concrete shall be a continuous operation lasting not more than the time required for each concrete placing operation at each pile, as submitted in the placing plan, unless otherwise approved in writing by the Engineer. The concrete shall be placed with concrete pumps and delivery tube system of adequate number and size to complete the placing of concrete in the time specified. The delivery tube system shall consist of one of the following:

- A. A tremie tube or tubes, each of which are at least 250 mm in diameter, fed by one or more concrete pumps.
- B. One or more concrete pump tubes, each fed by a single concrete pump.

The delivery tube system shall consist of watertight tubes with sufficient rigidity to keep the ends always in the mass of concrete placed. If only one delivery tube is utilized to place the concrete, the tube shall be placed near the center of the drilled hole. Multiple tubes shall be uniformly spaced in the hole. Internal bracing for the steel reinforcing cage shall accommodate the delivery tube system. Tremies shall not be used for piles without space for a 250-mm tube.

Spillage of concrete into the slurry during concrete placing operations shall not be allowed. Delivery tubes shall be capped with a watertight cap, or plugged above the slurry level with a good quality, tight fitting, moving plug that will expel the slurry from the tube as the tube is charged with concrete. The cap or plug shall be designed to be released as the tube is charged. The pump discharge or tremie tube shall extend to the bottom of the hole before charging the tube with concrete. After charging the delivery tube system with concrete, the flow of concrete through a tube shall be induced by slightly raising the discharge end. During concrete placement, the tip of the delivery tube shall be maintained as follows to prevent reentry of the slurry into the tube. Until at least 3 m of concrete has been placed, the tip of the delivery tube shall be within 150 mm of the bottom of the drilled hole, and then the embedment of the tip shall be maintained at least 3 m below the top surface of the concrete. Rapid raising or lowering of the delivery tube shall not be permitted. If the seal is lost or the delivery tube becomes plugged and must be removed, the tube shall be withdrawn, the tube cleaned, the tip of the tube capped to prevent entrance of the slurry, and the operation restarted by pushing the capped tube 3 m into the concrete and then reinitiating the flow of concrete.

When slurry is used, a fully operational standby concrete pump, adequate to complete the work in the time specified, shall be provided at the site during concrete placement. The slurry level shall be maintained within 300 mm of the top of the drilled hole.

A log of concrete placement for each drilled hole shall be maintained by the Contractor when concrete is deposited under slurry. The log shall show the pile location, tip elevation, dates of excavation and concrete placement, total quantity of concrete deposited, length and tip elevation of any casing, and details of any hole stabilization method and materials used. The log shall include a 215 mm x 280 mm sized graph of the concrete placed versus depth of hole filled. The graph shall be plotted continuously throughout placing of concrete. The depth of drilled hole filled shall be plotted vertically with the pile tip oriented at the bottom and the quantity of concrete shall be plotted horizontally. Readings shall be made at least at each 1.5 m of pile depth, and the time of the reading shall be indicated. The graph shall be labeled with the pile location, tip elevation, cutoff elevation, and the dates of excavation and concrete placement. The log shall be delivered to the Engineer within one working day of completion of placing concrete in the pile.

After placing reinforcement and prior to placing concrete in the drilled hole, if drill cuttings settle out of the slurry, the bottom of the drilled hole shall be cleaned. The Contractor shall verify that the bottom of the drilled hole is clean.

If temporary casing is used, concrete placed under slurry shall be maintained at a level at least 1.5 m above the bottom of the casing. The withdrawal of casings shall not cause contamination of the concrete with slurry.

Material resulting from using slurry shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Acceptance Testing and Mitigation

Vertical inspection pipes for acceptance testing shall be provided in all cast-in-drilled-hole concrete piles that are 600 mm in diameter or larger, except when the holes are dry or when the holes are dewatered without the use of temporary casing to control ground water.

Inspection pipes shall be Schedule 40 polyvinyl chloride pipes with a nominal inside diameter of 50 mm. Each inspection pipe shall be capped top and bottom and shall have watertight couplers to provide a clean, dry and unobstructed 50-mm diameter clear opening from 1.0 m above the pile cutoff down to the bottom of the reinforcing cage.

If the Contractor drills the hole below the specified tip elevation, the reinforcement and the inspection pipes shall be extended to 75 mm clear of the bottom of the drilled hole.

Inspection pipes shall be placed around the pile, inside the outermost spiral or hoop reinforcement, and 75 mm clear of the vertical reinforcement, at a uniform spacing not exceeding 840 mm measured along the circle passing through the centers of inspection pipes. A minimum of 2 inspection pipes per pile shall be used. When the vertical reinforcement is not bundled and each bar is not more than 26 mm in diameter, inspection pipes may be placed 50 mm clear of the vertical reinforcement. The inspection pipes shall be placed to provide the maximum diameter circle that passes through the centers of the inspection pipes while maintaining the clear spacing required herein. The pipes shall be installed in straight alignment, parallel to the main reinforcement, and securely fastened in place to prevent misalignment during installation of the reinforcement and placing of concrete in the hole.

The Contractor shall log the location of the inspection pipe couplers with respect to the plane of pile cut off, and these logs shall be delivered to the Engineer upon completion of the placement of concrete in the drilled hole.

After placing concrete and before requesting acceptance tests, each inspection pipe shall be tested by the Contractor in the presence of the Engineer by passing a 48.3-mm diameter rigid cylinder 610 mm long through the complete length of pipe. If the 48.3-mm diameter rigid cylinder fails to pass any of the inspection pipes, the Contractor shall attempt to pass a 32.0-mm diameter rigid cylinder 1.375 m long through the complete length of those pipes in the presence of the Engineer. If an inspection pipe fails to pass the 32.0-mm diameter cylinder, the Contractor shall immediately fill all inspection pipes in the pile with water.

The Contractor shall replace each inspection pipe that does not pass the 32.0-mm diameter cylinder with a 50.8-mm diameter hole cored through the concrete for the entire length of the pile. Cored holes shall be located as close as possible to the inspection pipes they are replacing and shall be no more than 150 mm inside the reinforcement. Coring shall not damage the pile reinforcement. Cored holes shall be made with a double wall core barrel system utilizing a split tube type inner barrel. Coring with a solid type inner barrel will not be allowed. Coring methods and equipment shall provide intact cores for the entire length of the pile concrete. The coring operation shall be logged by an Engineering Geologist or Civil Engineer licensed in the State of California and experienced in core logging. Coring logs shall include complete descriptions of inclusions and voids encountered during coring, and shall be delivered to the Engineer upon completion. Concrete cores shall be preserved, identified with the exact location the core was recovered from within the pile, and made available for inspection by the Engineer.

Acceptance tests of the concrete will be made by the Engineer, without cost to the Contractor. Acceptance tests will evaluate the homogeneity of the placed concrete. Tests will include gamma-gamma logging. Tests may also include crosshole sonic logging and other means of inspection selected by the Engineer. The Contractor shall not conduct operations within 8.0 m of the gamma-gamma logging operations. The Contractor shall separate reinforcing steel as necessary to allow the Engineer access to the inspection pipes to perform gamma-gamma logging or other acceptance testing. After requesting acceptance tests and providing access to the piling, the Contractor shall allow 3 weeks for the Engineer to conduct these tests and make determination of acceptance if the 48.3-mm diameter cylinder passed all inspection pipes, and 4 weeks if only the 32.0-mm diameter cylinder passed all inspection pipes. Should the Engineer fail to complete these tests 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 inspection, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

All inspection pipes and cored holes in a pile shall be dewatered and filled with grout after notification by the Engineer that the pile is acceptable. Placement and removal of water in the inspection pipes shall be at the Contractor's expense. Grout shall conform to the provisions in Section 50-1.09, "Bonding and Grouting," of the Standard Specifications. The inspection pipes and holes shall be filled using grout tubes that extend to the bottom of the pipe or hole or into the grout already placed.

If acceptance testing performed by the Engineer determines that a pile does not meet the requirements of the specifications, then that pile will be rejected and all depositing of concrete under slurry or concrete placed using temporary casing for the purpose of controlling groundwater shall be suspended until written changes to the methods of pile construction are approved in writing by the Engineer.

The Contractor shall submit to the Engineer for approval a mitigation plan for repair, supplementation, or replacement for each rejected cast-in-drilled-hole concrete pile, and this plan shall conform to the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. Prior to submitting this mitigation plan, the Engineer will hold a repair feasibility meeting with the Contractor to discuss the feasibility of repairing rejected piling. The Engineer will consider the size of the defect, the location of the defect, and the design information and corrosion protection considerations for the pile. This information will be made available to the Contractor, if appropriate, for the development of the mitigation plan. If the Engineer determines that it is not feasible to repair the rejected pile, the Contractor shall not include repair as a means of mitigation and shall proceed with the submittal of a mitigation plan for replacement or supplementation of the rejected pile.

If the Engineer determines that a rejected pile does not require mitigation due to structural, geotechnical, or corrosion concerns, the Contractor may elect to 1) repair the pile per the approved mitigation plan, or 2) not repair anomalies found during acceptance testing of that pile. For such unrepaired piles, the Contractor shall pay to the State, \$400 per cubic meter for the portion of the pile affected by the anomalies. The volume, in cubic meters, of the portion of the pile affected by the anomalies, shall be calculated as the area of the cross-section of the pile affected by each anomaly, in square meters, as determined by the Engineer, multiplied by the distance, in meters, from the top of each anomaly to the specified tip of the pile. If the volume calculated for one anomaly overlaps the volume calculated for additional anomalies within the pile, the calculated volume for the overlap shall only be counted once. In no case shall the amount of the payment to the State for any such pile be less than \$400. The Department may deduct the amount from any moneys due, or that may become due the Contractor under the contract.

Pile mitigation plans shall include the following:

- A. The designation and location of the pile addressed by the mitigation plan.
- B. A review of the structural, geotechnical, and corrosion design requirements of the rejected pile.
- C. A step by step description of the mitigation work to be performed, including drawings if necessary.
- D. An assessment of how the proposed mitigation work will address the structural, geotechnical, and corrosion design requirements of the rejected pile.
- E. Methods for preservation or restoration of existing earthen materials.
- F. A list of affected facilities, if any, with methods and equipment for protection of these facilities during mitigation.
- G. The State assigned contract number, bridge number, full name of the structure as shown on the contract plans, District-County-Route-Kilometer Post, and the Contractor's (and Subcontractor's if applicable) name on each sheet.
- H. A list of materials, with quantity estimates, and personnel, with qualifications, to be used to perform the mitigation work.
- I. The seal and signature of an engineer who is licensed as a Civil Engineer by the State of California.

For rejected piles to be repaired, the Contractor shall submit a pile mitigation plan that contains the following additional information:

- A. An assessment of the nature and size of the anomalies in the rejected pile.
- B. Provisions for access for additional pile testing if required by the Engineer.

For rejected piles to be replaced or supplemented, the Contractor shall submit a pile mitigation plan that contains the following additional information:

- A. The proposed location and size of additional piling.
- B. Structural details and calculations for any modification to the structure to accommodate the replacement or supplemental piling.

All provisions for cast-in-drilled-hole concrete piling shall apply to replacement piling.

The Contractor shall allow the Engineer 3 weeks to review the mitigation plan after a complete submittal has been received.

Should the Engineer fail to review the complete pile mitigation submittal within the time specified, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the pile mitigation plan, an extension of time commensurate with the delay in completion of the work thus caused will be granted in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

When repairs are performed, the Contractor shall submit a mitigation report to the Engineer within 10 days of completion of the repair. This report shall state exactly what repair work was performed and quantify the success of the repairs relative to the submitted mitigation plan. The mitigation report shall be stamped and signed by an engineer that is licensed as a Civil Engineer by the State of California. The mitigation report shall show the State assigned contract number, bridge number, full name of the structure as shown on the contract plans, District-County-Route-Kilometer Post, and the Contractor (and Subcontractor if applicable) name on each sheet. The Engineer will be the sole judge as to whether a mitigation proposal is acceptable, the mitigation efforts are successful, and to whether additional repairs, removal and replacement, or construction of a supplemental foundation is required."

10-1.575 CLEAN EXPANSION JOINTS

All deck joints shown on the plans to be cleaned, shall be cleaned as specified herein.

Cleaning shall include removal of all existing seal material, dirt, debris, and joint filler, and shall be accomplished by methods which do not damage existing sound concrete surfaces.

Joint size shall be verified after the joint has been cleaned.

The Contractor shall take necessary precautions to ensure that material removed from expansion joints does not fall onto public traffic, or private property beneath the bridges. The Contractor shall submit for the Engineer's approval, details for preventing material, equipment, or debris from falling onto traffic.

Joints without waterstops with existing damage or damage caused by the Contractor, shall be cleaned down to the hinge seat, unless otherwise directed by the Engineer.

All joint damage shall be repaired as directed by the Engineer.

Repairing existing joint damage will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications. The cost of repairing damage caused by the Contractor's operations shall be borne by the Contractor.

Materials removed from the expansion joint, except for surface dust, shall be recovered and disposed of away from the site in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Cleaning expansion joints will be measured by the meter for the length of the deck hinge joint as shown on the plans.

The contract price paid per meter for clean expansion joint shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in cleaning expansion joints, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

SECTION 11-2. ASPHALTS

Asphalt shall conform to the provisions in this Section 11-2, "Asphalts." Section 92, "Asphalts," of the Standard Specifications shall not apply.

SECTION 92: ASPHALTS

92-1.01 DESCRIPTION

Asphalt shall consist of refined petroleum or a mixture of refined liquid asphalt and refined solid asphalt, prepared from crude petroleum. Asphalt shall be:

- A. Free from residues caused by the artificial distillation of coal, coal tar, or paraffin.
- B. Free from water.
- C. Homogeneous.

92-1.02 MATERIALS

92-1.02(A) GENERAL

The Contractor shall furnish asphalt in conformance with the Department's "Certification Program for Suppliers of Asphalt." The Department maintains the program requirements, procedures, and a list of approved suppliers at:

<http://www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm>.

The Contractor shall ensure the safe transportation, storage, use, and disposal of asphalt.

The Contractor shall prevent the formation of carbonized particles caused by overheating asphalt during manufacturing or construction.

92-1.02(B) GRADES

Performance graded (PG) asphalt binder shall conform to the following:

Performance Graded Asphalt Binder

Property	AASHTO Test Method	Specification				
		Grade				
		PG 58-22 ^a	PG 64-10	PG 64-16	PG 64-28	PG 70-10
Original Binder						
Flash Point, Minimum °C	T48	230	230	230	230	230
Solubility, Minimum % ^b	T44	99	99	99	99	99
Viscosity at 135°C, ^c Maximum, Pa·s	T316	3.0	3.0	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T315	58 1.00	64 1.00	64 1.00	64 1.00	70 1.00
RTFO Test ^e , Mass Loss, Maximum, %	T240	1.00	1.00	1.00	1.00	1.00
RTFO Test Aged Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T315	58 2.20	64 2.20	64 2.20	64 2.20	70 2.20
Ductility at 25°C Minimum, cm	T51	75	75	75	75	75
PAV ^f Aging, Temperature, °C	R28	100	100	100	100	110
RTFO Test and PAV Aged Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T315	22 ^d 5000	31 ^d 5000	28 ^d 5000	22 ^d 5000	34 ^d 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, MPa Minimum M-value	T313	-12 300 0.300	0 300 0.300	-6 300 0.300	-18 300 0.300	0 300 0.300

Notes:

- a. For use as asphalt rubber base stock for high mountain and high desert area.
- b. The Engineer will waive this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."
- c. The Engineer will waive this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
- d. Test the sample at 3°C higher if it fails at the specified test temperature. G*/sin(delta) shall remain 5000 kPa maximum.
- e. "RTFO Test" means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T240 or ASTM Designation: D 2827.
- f. "PAV" means Pressurized Aging Vessel.

Performance based asphalt (PBA) binder shall conform to the following:

Performance Based Asphalt Binder

Property	AASHTO Test Method	Specification			
		Grade			
		PBA 6a	PBA 6a(mod)	PBA 6b	PBA 7
Absolute Viscosity (60°C), Pa·s(x10 ⁻¹) ^a Original Binder, Minimum RTFO Test Aged Residue ^b , Minimum	T202	2000 5000	2000 5000	2000 5000	1100 3000
Kinematic Viscosity (135°C), m ² /s(x10 ⁻⁶) Original Binder, Maximum RTFO Test Aged Residue, Minimum	T201	2000 275	2000 275	2000 275	2000 275
Absolute Viscosity Ratio (60°C), Maximum RTFO Test Visc./Orig. Visc.	—	4.0	4.0	4.0	4.0
Flash Point, Cleveland Open Cup, °C Original Binder, Minimum	T48	232	232	232	232
Mass Loss After RTFO Test, %	T240	0.60	0.60	0.60	0.60
Solubility in Trichloroethylene, % ^c Original Binder, Minimum	T44	Report	Report	Report	Report
Ductility (25°C, 5 cm/min), cm RTFO Test Aged Residue ^b , Minimum	T51	60	60	60	75
On RTFO Test Aged Residue, °C 1 to 10 rad/sec: SSD ^e ≥ 0 and Phase Angle (at 1 rad/sec) < 72°	f	—	35	—	—
On Residue from: PAV ^g at temp., °C Or Residue from Tilt Oven ^f (@113°C), hours	R28	100 36	100 36	100 36	110 72
^c SSD ≥ -115(SSV)-50.6, °C	f	—	—	—	25
Stiffness, Test Temperature, °C Maximum S-value, MPa Minimum M-value	T313	-24 300 0.300	-24 300 0.300	-30 300 0.300	-6 300 0.300

Notes:

- Absolute viscosity (60°C) will be determined at one sec⁻¹ using ASTM Designation: D 4957 with Asphalt Institute vacuum capillary viscometers.
- "RTFO Test Aged Residue" means the asphaltic residue obtained using the Rolling Thin Film Oven Test (RTFO Test), AASHTO Test Method T240 or ASTM Designation: D 2827.
- There is no requirement; however results of the test shall be part of the copy of test results furnished with the Certificate of Compliance.
- "Residue from Tilt Oven" means the asphalt obtained using California Test 374, Method B, "Method for Determining Asphalt Durability Using the California Tilt-Oven Durability Test."
- "SSD" means Shear Susceptibility of Delta; "SSV" means Shear Susceptibility of Viscosity.
- California Test 381.
- "PAV" means Pressurized Aging Vessel.

92-1.02(C) SAMPLING

The Contractor shall provide a sampling device in the asphalt feed line connecting the plant storage tanks to the asphalt weighing system or spray bar. The sampling device shall be accessible between 600 and 750 mm above the platform. The Contractor shall provide a receptacle for flushing the sampling device.

The sampling device shall include a valve:

- A. With a diameter between 10 and 20 mm.
- B. Manufactured in a manner that a one-liter sample may be taken slowly at any time during plant operations.
- C. Maintained in good condition.

The Contractor shall replace failed valves.

In the presence of the Engineer, the Contractor shall take 2 one-liter samples per operating day. The Contractor shall provide round friction top containers with one-liter capacity for storing samples.

92-1.03 APPLYING ASPHALT

Unless otherwise specified, the Contractor shall heat and apply asphalt in conformance with the provisions in Section 93, "Liquid Asphalts."

The Contractor shall apply paving asphalt at a temperature between 120° and 190°C. The Engineer will determine the exact temperature of paving asphalt.

92-1.04 MEASUREMENT

If asphalt is paid as a contract work item on a mass basis, the Department will measure asphalt by the tonne under the provisions for determining the mass for payment of liquid asphalt in Section 93, "Liquid Asphalt."

The Engineer will determine the mass of asphalt from volumetric measurements if the Contractor:

- A. Uses partial loads of asphalt.
- B. Uses asphalt at locations other than a mixing plant and no suitable scales are available within 35 km.
- C. Delivers asphalt meeting either of the following:
 - 1. In calibrated trucks and each tank is accompanied by its measuring stick and calibration card.
 - 2. In trucks equipped with a calibrated thermometer that determines the asphalt temperature at the time of delivery and equipped with a vehicle tank meter meeting Section 9-1.01, "Measurement of Quantities," for weighing, measuring, and metering devices.

If the Contractor furnishes asphalt concrete from a mixing plant producing material for only one project, the Department will determine the amount of asphalt from volumetric measurements by measuring the amount in the tank at the start and the end of the project provided the tank is calibrated and equipped with its measuring stick and calibration card. The Engineer will determine pay quantities in conformance with the following:

- A. Before converting the volume to mass, the Engineer will reduce the volume measured to that which the asphalt would occupy at 15°C.
- B. The Engineer will use the Conversion Table in Section 93, "Liquid Asphalts," and the following table:

Average Mass and Volumes of Paving Asphalt

Grade	Liters per Tonne at 15°C	Grams per Liter at 15°C
PG 58-22	981	1020
PG 64-10	981	1020
PG 64-16	981	1020
PG 64-28	981	1020
PG 70-10	981	1020
PBA 6a	981	1020
PBA 6a (mod)	981	1020
PBA 6b	981	1020
PBA 7	981	1020

ENGINEER'S ESTIMATE
04-245414

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
121 (S)	490583	DRIVE STEEL PIPE PILE (406 MM)	EA	527		
122 (S)	490665	1.8 M CAST-IN-DRILLED-HOLE CONCRETE PILING	M	475		
123 (S)	498027	400 MM CAST-IN-DRILLED-HOLE CONCRETE PILING (SOUND WALL)	M	3080		
124	040023	FURNISH CISS CONCRETE PILING (1524MM)	M	168		
125 (S)	040024	DRIVE CISS CONCRETE PILING (1524MM)	EA	6		
126 (S)	500001	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
127 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	M3	917		
128 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	M3	9625		
129 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	M3	4178		
130 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	M3	951		
131	510087	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	M3	135		
132	510129	CLASS 2 CONCRETE (BOX CULVERT)	M3	117		
133	510135	CLASS 2 CONCRETE (HEADWALL)	M3	5		
134 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	320		
135	510526	MINOR CONCRETE (BACKFILL)	M3	130		
136	510800	PAVING NOTCH EXTENSION	M3	4		
137 (F)	511035	ARCHITECTURAL TREATMENT	M2	712		
138 (F)	511064	FRACTURED RIB TEXTURE	M2	3996		
139	511106	DRILL AND BOND DOWEL	M	326		
140	511118	CLEAN EXPANSION JOINT	M	45		