

**STATE HIGHWAY 10 AT DATE PALM DRIVE
FROM 6.4 km EAST OF PALM DRIVE/ GENE AUTRY TRAIL
TO 6.2 km WEST OF RAMON ROAD
PROJECT NO. A8-0373
FEDERAL AID NO. STPLN-5956(196)**

Book 2 of 3

SECTION 9. DESCRIPTION OF BRIDGE WORK

The bridge work to be done, in general, consists of widening the existing structure on both sides in variable width, including but not limited to, constructing two tieback walls at the abutments, installing column casings, removing asphalt concrete surfacing, preparing concrete bridge deck surface, and placing polyester concrete overlay, as shown on the plans, and as briefly described as follows:

Date Palm Drive Overcrossing (Widen)
(Bridge No. 56-0560)

The bridge consists of a continuous 4-span cast-in-place reinforced concrete box girder, approximately 91 meters in length and 41 meters in width.

SECTION 10. CONSTRUCTION DETAILS

10-1.01 CONSTRUCTION SURVEY AND MATERIAL TESTING:

The County shall provide construction survey services, Quality Assurance and Quality Control material testing for this project. The Contractor shall be responsible to provide and pay for Acceptance Testing for imported material.

10-1.02 FEDERAL REQUIREMENT TRAINING:

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training to develop full journeymen in the types of trades or job classification involved.

The goal for the number of trainees or apprentices to be trained under the requirements of these Special Provision will be 17.

In the event the Contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees or apprentices are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by these Special Provision. The Contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of trainees or apprentices in each occupation shall be in their first year of apprenticeship or training.

The number of trainees or apprentices shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing work, the Contractor shall submit to the

Department for approval the number of trainees or apprentices to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee or apprentice employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees or apprentices as provided hereinafter.

Training and upgrading of minorities and women toward journeymen status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority and women trainees or apprentices (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees or apprentices) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee or apprentice in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by both the Department and the Federal Highway Administration. The Department and the Federal Highway Administration will approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee or apprentice for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with the State of California, Department of Industrial Relations, Division of Apprenticeship Standards recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the County prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided

that significant and meaningful training is provided and approved by the division office. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees or apprentices are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or apprentice or pays the trainee's or apprentice's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee or apprentice as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee or apprentice will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. It is not required that all trainees or apprentices be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees or apprentices specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Only trainees or apprentices registered in a program approved by the State of California's State Administrator of Apprenticeship may be employed on the project and said trainees or apprentices shall be paid the standard wage specified under the regulations of the craft or trade at which they are employed.

The Contractor shall furnish the trainee or apprentice a copy of the program he will follow in providing the training. The Contractor shall provide each trainee or apprentice with a certification showing the type and length of training satisfactorily completed.

The Contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

Payment – Full compensation, except as otherwise provided herein, for conforming to the requirements of this article shall be paid for on a lump sum basis for Federal Trainee Program and no additional compensation will be allowed therefor.

10-1.03 CONSTRUCTION PROJECT INFORMATION SIGNS:

Before any major physical construction work readily visible to highway users is started on this contract, the Contractor shall furnish and erect 2 Type 2 Construction Project Information signs, 2 construction funding signs at the locations designated by the Engineer (See appendix for detail on the construction funding signs).

The signs and overlays shall be of a type and material consistent with the estimated time of completion of the project and shall conform to the details shown on the plans.

The sign letters, border and the Department's construction logos shall conform to the colors (non-reflective) and details shown on the plans, and shall be on a white background (non-reflective). The colors blue and orange shall conform to PR Color Number 3 and Number 6, respectively, as specified in the Federal Highway Administration's Color Tolerance Chart.

The sign message to be used for fund types shall consist of the following, in the order shown:

FEDERAL HIGHWAY TRUST FUNDS
TRANSPORTATION UNIFORM MITIGATION FEE/MEASURE A

The sign message to be used for type of work shall consist of the following:

BRIDGE CONSTRUCTION

The sign message to be used for the Year of Completion of Project Construction will be furnished by the Engineer. The Contractor shall furnish and install the "Year" sign overlay within 10 working days of notification of the year date to be used.

The letter sizes to be used shall be as shown on the plans. The information shown on the signs shall be limited to that shown on the plans.

The signs shall be kept clean and in good repair by the Contractor.

Upon completion of the work, the signs shall be removed and disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13 of the Standard Specifications.

Full compensation for furnishing, erecting, maintaining, and removing and disposing of the construction project information signs and construction funding signs shall be considered as included in the contract lump sum price paid for "Construction Area Signs" and no additional compensation will be allowed therefor.

10-1.04 ORDER OF WORK:

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work" of the Standard Specifications and these Special Provisions.

A Traffic Safety Team will be required for this project. The Contractor shall plan to have no less than a Superintendent attend two such meetings per month for a minimum of one hour each. The Engineer will arrange the meetings as determined necessary. Full compensation for preparing for and attending Traffic Safety Team meetings shall be considered as included in the contract lump sum price paid for Traffic Control System and no further compensation will be allowed.

Attention is directed to "Pavement Concrete Mix Proportions", "Prepaving Conference", "Just-In-Time Training" and "Test Strip" of these Special Provisions.

Attention is directed to construction of structure approach slabs (Type R). The approach slabs shall be complete in place before placement of polyester concrete overlay on the existing bridge deck.

Attention is directed to the stage construction of tieback walls as shown on the plans. The Contractor shall complete a wall lift, including placing shotcrete, tieback anchors, and testing tieback anchors, prior to excavating for subsequent lifts. Shotcrete panels in the same lift shall be constructed in horizontal stages, as shown on the plans, to stabilize the existing bridge abutments.

Attention is directed to "Architectural Surface (Textured Concrete)" of these Special Provisions regarding constructing a 1.25 m x 1.25 m test panel of fractured rib texture prior to beginning work on the architectural texture.

Attention is directed to "Ceramic Tile" of these Special Provisions regarding furnishing a full-size mock-up of tile selection and placement for the cathedral window shape at the bridge abutments prior to beginning work on ceramic tile.

Attention is directed to "Shotcrete" of these Special Provisions regarding constructing 2 preconstruction shotcrete test panels prior to performing shotcrete work for tieback walls.

Attention is directed to "Prepare and Stain Concrete" of these Special Provisions regarding constructing 1.0 m x 1.0 m test panels for staining concrete before beginning work on architectural texture or staining concrete.

Attention is directed to "Architectural Finish (Exposed Colored Glass Rock)" of these Special Provisions regarding constructing 1.25 m x 1.25 m test panels of architectural finish prior to beginning work on median paving.

Attention is directed to "Chain Link Railing (Cathedral)" of these Special Provisions regarding furnishing preconstruction chain link fabric test panels and 2 sample color chips prior to fabricating chain link railings.

Attention is directed to "Miscellaneous Concrete Construction" of these Special Provisions regarding constructing a 600-mm by 600-mm test panel prior to constructing curb ramps with detectable warning surfaces.

Attention is directed to "Environmentally Sensitive Area" and "Temporary Fence (Type ESA)" of these Special Provisions. Prior to beginning work, the boundaries of the Environmentally Sensitive Areas (ESA) shall be clearly delineated in the field. The boundaries shall be delineated by the installation of temporary fence (Type ESA).

All native soil disturbing activities on the project are to be monitored by the Engineer for biological disturbance. The Contractor shall notify the Engineer a minimum of 10 days in advance of any soil disturbing activity for which biological monitoring will be required.

All conduits less than 300-mm nominal diameter at the job site shall be capped overnight or during periods in excess of 8 hours when no work is in progress.

Pits, trenches and other excavations shall be covered and provided with escape ramps for small animals overnight or during periods in excess of 8 hours when no work is in progress.

Hours of construction activities as identified in the Riverside County Municipal Code, Section 15.04.020, General Regulations shall be limited to hours specified. The permissible hours for construction are 7 am to 6 pm from October 1 through May 30 and from 6 am to 6 pm from June 1 through September 30. Limited exceptions will be permitted for those activities requiring lane closures that are only allowed during the restricted times. Such activities are to be conducted in accordance with "Maintaining Traffic" of the Standard Specifications and these Special Provisions and as directed by the Engineer.

Erosion control shall be applied to disturbed soil areas as soon as final grading is completed.

Attention is directed to "Move In/Move Out (Erosion Control)" of these Special Provisions regarding the expectation that several move in/ move outs will be required.

The first order of work shall be to place the order for the electrical equipment and other state furnished materials, as well as securing power/service from the serving utilities for Traffic Signal and Lighting where necessary. The Engineer shall be furnished with a statement from the vendor that the electrical equipment and the state furnished materials have been ordered. It is the Contractor's responsibility to update the Resident Engineer of any unforeseen issues that they may have in obtaining the electrical equipment and state furnished materials in a timely manner to cause no delays in the project.

The uppermost layer of new pavement shall not be placed until all underlying conduits and loop detectors have been installed.

Prior to commencement of the traffic signal functional test at any location, all items of work related to signal control shall be completed and all roadside signs, pavement delineation, and pavement markings shall be in place at that location.

Attention is directed to "Maintaining Traffic" and "Temporary Pavement Delineation" of these Special Provisions and to the stage construction sheets of the plans.

Attention is directed to "Progress Schedule (Critical Path Method)" of these Special Provisions regarding the submittal of a general time-scaled logic diagram within 10 days after approval of the contract. The diagram shall be submitted prior to performing any work that may be affected by any proposed deviations to the construction staging of the project.

The work shall be performed in conformance with the stages of construction shown on the plans. Nonconflicting work in subsequent stages may proceed concurrently with work in preceding stages, provided satisfactory progress is maintained in the preceding stages of construction.

In each stage, after completion of the preceding stage, the first order of work shall be the removal of existing pavement delineation as directed by the Engineer. Pavement delineation removal shall be coordinated with new delineation so that lane lines are provided at all times on traveled ways open to public traffic.

Before obliterating any pavement delineation (traffic stripes, pavement markings, and pavement markers) that is to be replaced on the same alignment and location, as determined by the Engineer, the pavement delineation shall be referenced by the Contractor, with a sufficient number of control points to reestablish the alignment and location of the new pavement delineation. The references shall include the limits or changes in striping pattern, including one- and 2-way barrier lines, limit lines, crosswalks and other pavement markings. Full compensation for referencing existing pavement delineation shall be considered as included in the contract prices paid for new pavement delineation and no additional compensation will be allowed therefor.

Prior to applying hot mix asphalt, the Contractor shall cover all manholes, valve and monument covers, grates, or other exposed facilities located within the area of application, using a plastic or oil resistant construction paper secured to the facility being covered by tape or adhesive. The covered facilities shall be referenced by the Contractor, with a sufficient number of control points to relocate the facilities after the hot mix asphalt has been placed. After completion of the hot mix asphalt placement operation, all covers shall be removed and disposed of in a manner satisfactory to the Engineer. Full compensation for covering manholes, valve and monument covers, grates, or other exposed facilities, referencing, and removing temporary cover shall be considered as included in the contract price paid per tonne for "Hot Mix Asphalt (Type A or Type C)", and no additional compensation will be allowed therefor.

At the end of each working day if a difference in excess of 0.1 meter exists between the elevation of the existing pavement and the elevation of excavations within 2.4 m of the traveled way, material shall be placed and compacted against the vertical cuts

adjacent to the traveled way. During excavation operations, native material may be used for this purpose; however, once placing of the structural section commences, structural material shall be used. The material shall be placed to the level of the elevation of the top of existing pavement and tapered at a slope of 1:4 (vertical:horizontal) or flatter to the bottom of the excavation. Treated base shall not be used for the taper. Full compensation for placing the material on a 1:4 slope, regardless of the number of times the material is required, and subsequent removing or reshaping of the material to the lines and grades shown on the plans shall be considered as included in the contract price paid for the materials involved and no additional compensation will be allowed therefor. No payment will be made for material placed in excess of that required for the structural section.

At those locations exposed to public traffic where guard railings or barriers are to be constructed, reconstructed, or removed and replaced, the Contractor shall schedule operations so that at the end of each working day there shall be no post holes open nor shall there be any railing or barrier posts installed without the blocks and rail elements assembled and mounted thereon.

10-1.05 AIR QUALITY – BASIC NESHAP ASBESTOS NOTIFICATION:

In compliance with Standard Specifications Section 7-1.01F, the Contractor shall notify the air pollution control district or air quality management district identified below as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR Part 61, Subpart M, and California Health and Safety Code section 39658(b)(1). A copy of the notification form and attachments shall be provided to the Engineer prior to submittal. Notification shall take place a minimum of 10 working days prior to starting demolition or renovation activities as defined in the NESHAP regulations.

The Contractor shall mail or otherwise deliver the original notification form with any necessary attachments to:

The Contractor shall also notify the South Coast Air Quality Management District, (21865 E. Copley Drive, Diamond Bar, California 91765-4182, E-Mail: bwallerstein@aqmd.gov, Phone: (909) 396-2000) other local permit agencies and utility companies prior to starting any demolition activities.

Full compensation for complying with requirements of this section shall be considered as included in the contract price paid for the items involved, and no additional compensation will be allowed therefor.

10-1.06 SUPPLEMENTAL PROJECT INFORMATION:

Supplemental project information attached to the project plans are:

- A. Log of test borings.

Supplemental project information included in these Special Provisions are:

- A. Programmatic Biological Opinion (September 23, 2004)
- B. Appended Biological Opinion (November 7, 2005).

Supplemental project information available for inspection at the County of Riverside Office are:

- A. Reference sample color chips for concrete stain.
- B. A referee sample elastomeric form liner of striated flute texture.
- C. Artist sketches for tile color and architectural pattern of the cathedral window shape at bridge abutements.
- D. Referee samples for exposed colored glass rock finish on median paving.
- E. Cross sections.
- F. "LIMITED ASBESTOS SURVEY REPORT, Two I-10 Interchanges Palm Drive/Gene Autry Trail and Date Palm Drive".

Bridge as-built drawings are available.

10-1.07 RELATIONS WITH CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD:

This project lies within the boundaries of the Colorado River Basin Regional Water Quality Control Board (RWQCB).

The State Water Resources Control Board (SWRCB) has issued to the Department a permit that governs storm water and non-storm water discharges from the Department's properties, facilities, and activities. The Department's permit is entitled "Order No. 99 - 06 - DWQ, NPDES No. CAS000003, National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans)". Copies of the Department's permit are available for review from the SWRCB, Storm Water Permit Unit, 1001 "I" Street, P.O. Box 1977, Sacramento, California 95812-1977, Telephone: (916) 341-5254, and may also be obtained at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/

The Department's permit references and incorporates by reference the current statewide general permit issued by the SWRCB entitled "Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity" that regulates discharges of storm water and non-storm water from construction activities disturbing one acre or

more of soil in a common plan of development. Sampling and analysis requirements as specified in SWRCB Resolution No. 2001-46 are added to the statewide general permit. Copies of the statewide permit and modifications thereto are available for review from the SWRCB, Storm Water Permit Unit, 1001 "I" Street, P.O. Box 1977, Sacramento, California 95812-1977, Telephone: (916) 341-5254 and may also be obtained at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/

The Colorado River Basin RWQCB has issued a permit which governs storm water and non-storm water discharges resulting from construction activities in the project area that are not within State right of way. The RWQCB permit is entitled "National Pollutant Discharge Elimination System (NPDES) Permit Order No. R-2008-0001, Permit No. CAS617002".

The NPDES permits that regulate this project, as referenced above, are collectively referred to in this section as the "permits".

This project shall conform to the permits and modifications thereto. The Contractor shall maintain copies of the permits at the project site and shall make them available during construction.

The Contractor shall know and comply with provisions of Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from the project site and areas of disturbance outside the project limits during construction. Attention is directed to Sections 7-1.01, "Laws to be Observed", 7-1.11, "Preservation of Property" and 7-1.12, "Indemnification and Insurance" of the Standard Specifications.

The Contractor shall be responsible for penalties assessed on the Contractor or the Department as a result of the Contractor's failure to comply with the provisions in "Water Pollution Control" of these Special Provisions or with the applicable provisions of the Federal, State, and local regulations and requirements.

Penalties as used in this section shall include fines, penalties, and damages, whether proposed, assessed, or levied against the Department or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Control Act, by governmental agencies or as a result of citizen suits. Penalties shall also include payments made or costs incurred in settlement for alleged violations of applicable laws, regulations, or requirements. Costs incurred could include sums spent instead of penalties, in mitigation or to remediate or correct violations.

WITHHOLDS

The Department will withhold money due the Contractor, in an amount estimated by the Department, to include the full amount of penalties and mitigation costs proposed, assessed, or levied as a result of the Contractor's violation of the permits, or Federal or State law, regulations, or requirements. Funds will be withheld by the Department until final disposition of these costs has been made. The Contractor shall remain liable for the full amount until the potential liability is finally resolved with the entity

seeking the penalties. Instead of the withhold, the Contractor may provide a suitable bond in favor of the Department to cover the highest estimated liability for any disputed penalties proposed as a result of the Contractor's violation of the permits, law, regulations, or requirements.

If a regulatory agency identifies a failure to comply with the permits and modifications thereto, or other Federal, State, or local requirements, the Department will withhold money due the Contractor, subject to the following:

- A. The Department will give the Contractor 30 days notice of the Department's intention to withhold funds from payments which may become due to the Contractor before acceptance of the contract. Funds withheld after acceptance of the contract will be made without prior notice to the Contractor.
- B. No withholds of additional amounts out of payments will be made if the amount to be withheld does not exceed the amount being withheld from partial payments in accordance with Section 9-1.06, "Partial Payments" of the Standard Specifications.
- C. If the Department has withheld funds and it is subsequently determined that the State is not subject to the entire amount of the costs and liabilities assessed or proposed in connection with the matter for which the withhold was made, the Department will return the excess amount withheld to the Contractor in the progress payment following the determination. If the matter is resolved for less than the amount withheld, the Department will pay interest at a rate of 6 percent per year on the excess withhold.

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. The Contractor and the Department shall provide copies of correspondence, notices of violation, enforcement actions, or proposed fines by regulatory agencies to the requesting regulatory agency.

10-1.08 CULTURAL RESOURCES:

Contractor shall protect all known and identified historic or prehistoric sites, buildings, objects, and properties related to American history, architecture, archaeology, and culture against destruction, obliteration, removal, or damage during Contractor's operations. Measures needed to protect such areas shall be approved by the Engineer prior to implementation. Contractor shall immediately notify Engineer if disturbance occurs to any known site and shall immediately halt operations in the vicinity of the site until the Engineer authorizes Contractor to proceed.

If human remains are found at the project site during excavation of the project, work shall be suspended in the immediate area of the find and the Resident Engineer will notify the Riverside County Coroner's Office. Standard guidelines set by California

law for the treatment of human remains shall be followed (Public Resources Code § 5097.98 et seq., Health and Safety Code § 7050.5, and others).

PAYMENT

In the event that any damage occurs to any cultural resource, the Contractor shall bear the full cost of resource damage evaluation and restoration, and such payment shall not relieve Contractor from civil or criminal remedies otherwise provided by law.

Full compensation for compliance with this section shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

10-1.09 WATER CONSERVATION:

Attention is directed to the various sections of the Standard Specifications and these Special Provisions which require the use of water for the construction of this project. Attention is directed to Section 7, "Legal Relations and Responsibility" of the Standard Specifications with regards to the Contractor's responsibilities for public convenience, public safety, preservation of property, indemnification, and insurance.

Nothing in this section "Water Conservation" shall relieve the Contractor from furnishing an adequate supply of water required for the proper construction of this project in conformance with the provisions in the Standard Specifications or these Special Provisions or relieve the Contractor from the legal responsibilities defined in Section 7.

The Contractor shall, whenever possible and not in conflict with the above requirements, minimize the use of water during construction of the project. Watering equipment shall be kept in good working order; water leaks shall be repaired promptly; and washing of equipment, except when necessary for safety or for the protection of equipment, shall be discouraged.

Concrete slope protection, minor structures, and miscellaneous concrete construction shall not be cured by using water. The water cure for bridge decks shall be accomplished with the use of a moisture retaining medium in conformance with the provisions in Section 90-7.01A, "Water Method" of the Standard Specifications.

When ordered by the Engineer, a dust palliative conforming to the provisions in Section 18, "Dust Palliative" of the Standard Specifications shall be used to control dust on this project. Dust palliative ordered by the Engineer will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications.

Attention is directed to Section 17-1.025, "Chemical Additives" of the Standard Specifications. When ordered by the Engineer, a chemical additive shall be added to water used for compaction. The additive shall be approved by the Engineer and shall be used in conformance with instructions issued by the Engineer. Chemical additive ordered by the Engineer will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications.

10-1.10 BIOLOGICAL MONITOR:

The County of Riverside Transportation Department (CRTD) will have available a qualified biologist as specified in these Special Provision for a pre-construction survey of the project site, on site monitoring, if required, and all Endangered species handling that may be required. "Biologist" or "Monitor" referenced in these specifications refers to the biologist provided by the CRTD. The Contractor shall request this service from the Engineer at least 10 days prior to the initial performance of work activities.

10-1.11 ENVIRONMENTALLY SENSITIVE AREA:

An environmentally sensitive area (ESA) exists within or near the limits of the job site where access is limited or prohibited.

The ESA boundaries shown are approximate; the County of Riverside marks the exact ESA boundaries on the ground.

Before starting work, protect the ESA by installing temporary fence (Type ESA) or wildlife exclusion fence.

Do not enter the ESA unless authorized. Vehicle access, storage or transport of materials or equipment, or other job related activities are prohibited within the boundaries of the ESA. Limited access to the ESA will be allowed for daily trash and debris pickup. Store collected trash in sealed containers to prevent scavaging by animals.

Equipment and material storage and staging areas shall be approved by the biological monitor.

All trash shall be stored in covered trash receptacles and shall be removed from the project site weekly. The Contractor shall police the construction site for food-related trash at the end of each construction day and properly dispense.

The Contractor shall clean all construction equipment of foreign soil prior to use in construction area.

No pets shall be permitted on the construction site. No weapons shall be permitted on the construction site with the exception of those carried by peace officers.

All sand removal and storage operations will be restricted to the project footprint.

If the Contractor damage the ESA, the Department determines the efforts necessary to mitigate the damage. If the Engineer determines mitigation work will be performed by others or if mitigation fees are assessed on the Department, the Contractor are responsible for mitigation costs and fees.

Vehicle speeds on unpaved access roads and in the construction area shall not exceed 15 miles per hour.

All culverts, bridges, and associated drainage structures shall be maintained to allow water drainage and the preconstruction level passage of wildlife.

Attention is directed to "Water Pollution Control" of these Special Provisions. All stormwater best management practices (BMP) shall be maintained in accordance with these Special Provisions and shall be regarded as a component of the environmental protection for this project.

ESAs will be designated by erecting protective fencing delineating the project impact boundary and sensitive habitats. This barrier fencing will be constructed in such a way as to restrict the movement of reptiles into impacted areas. Fencing materials can vary; however, it should consist of a cloth-like material that can withstand high winds, sun, and heat. This fence should be buried 610-mm below the surface, to prevent terrestrial species from burrowing underneath, and extend above the ground at least 610-mm.

10-1.12 PRESERVATION OF NATIVE PLANTS:

Attention is directed to Section 7-1.11, "Preservation of Property" of the Standard Specifications.

The term "native plant," and "native tree" in these Special Provisions, refers to as any tree, shrub, cacti, or other plant that is native and endemic to the region or project site, as determine by the Engineer.

Native trees, and native shrubs, cacti, and other native plants (native plants) located outside of the Temporary Fence (Type Wildlife), that are not to be removed as shown on the plans or specified in these Special Provisions, that are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor in accordance with Section 7-1.11 "Preservation of Property" of the Standard Specifications. Native trees shall be planted at a ratio of five new trees for each tree injured or damaged. Native plants shall be planted at a ratio of ten new native plants for each native plant injured or damaged. The minimum size of native tree replacement shall be No. 5 container. The minimum size of native plant replacement shall be 100-mm pot.

Replacement planting shall conform to the requirements in Section 20-4.07, "Replacement" of the Standard Specifications. The Contractor shall water replacement plants in conformance with the provisions in Section 20-4.06, "Watering" of the Standard Specifications.

Replacement trees shall be installed with 25 grams of polyacrylamide crystals for each No. 5 tree. Replacement shrubs, cacti, and other plants shall be installed with 5 grams of polyacrylamide crystals for each 100-mm pot. Polyacrylamide crystals shall be mixed thoroughly into the backfill mix for each plant.

Damaged or injured native plants shall be reduced to chips. The chipped material shall be spread within the highway right of way at locations designated by the Engineer.

Replacement planting of native plants and trees shall be performed within 30 days of injury or damage but not less than 20 working days prior to acceptance of the contract. Replacement plants shall be watered sufficiently, but no more than necessary, to maintain the plants in a healthy condition.

10-1.13 NONNATIVE PLANT PRECLUSION:

Nonnative Plant Preclusion shall consist of protecting construction sites and adjacent natural habitats against contamination from non-native seeds and plants. The Contractor shall guard against the contamination of construction site soil from the unplanned importation of non-native seeds and plant material.

Attention is directed to "Construction Site Management" of these Special Provisions regarding vehicle and equipment cleaning.

Attention is directed to "Control of Materials" in the standard specifications regarding the source of supply, inspection of materials, certificates of compliance, and local materials.

The Contractor shall clean all equipment and vehicles with water to remove dirt, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds before or upon arriving to, and leaving the project site.

The Contractor shall notify the Engineer a minimum of 14 days prior to obtaining material from a commercial or state-furnished borrow site. The Engineer will inspect the site or stockpile for the presence of noxious weeds or invasive plants.

As directed by the Engineer, the Contractor shall chemically or mechanically treat the borrow material to kill existing nonnative weeds and invasive plants.

As directed by the Engineer, the Contractor shall remove 150-mm of the surface material at the borrow site prior to transporting borrow site soil to the project. As directed by the Engineer, material removed from the surface of the borrow site will be disposed of in accordance with Section 7-1.13 of the Standard Specifications.

The treatment, removal, and disposal of rejected borrow site material will be paid for as extra work in accordance with Section 4-1.03D of the Standard Specifications.

Soil from the borrow site shall not be transported to the project until approved in writing by the Engineer.

KILLING AND DISPOSAL OF NONNATIVE WEEDS FROM THE PROJECT SITE

As directed by the Engineer, the contractor shall kill and dispose of nonnative weeds from the project site. Weeds shall be disposed of in accordance with Section 7-1.13 "Disposal of Material Outside the Highway Right of Way".

The killing and disposal of nonnative weeds from the project site will be paid for as extra work in accordance with Section 4-1.03D of the Standard Specifications.

PAYMENT

Full compensation, except as otherwise provided in these Special Provision, for conforming to the requirements of this article shall be paid for on a lump sum basis and no additional compensation will be allowed.

10-1.14 ENDANGERED SPECIES PROTECTION:

The Contractor shall comply with the laws, rules, regulations, and conditions regarding Coachella Valley fringe-toed lizard as specified in these Special Provisions, and shall conduct all work operations accordingly.

APPLICABLE LAWS

This project is within or near an identified endangered species habitat. The laws applicable to protection of these endangered species are: Federal Endangered Species Act of 1973 (16 USC 1531-1543) 50 CFR Part 402 and 50 CFR Part 17.3, and the California Department of Fish and Game Code Section 2080 and Section 2081.

BIOLOGICAL MONITOR

Attention is directed to Biological Monitor found elsewhere in these Special Provisions. Biologist and monitor, when used in the Endangered Species Protection, refer to Biological Monitor found in these Special Provisions.

PRE-CONSTRUCTION ACTIVITIES

The Contractor shall notify the Engineer at least 10 days prior to any construction activities. Contractor shall notify the Engineer at least 3 business days in advance of any soil disturbing activity.

CONSTRUCTION ACTIVITY IN HABITAT AREA

The endangered species habitat includes areas within the Department of Transportation's (DOT) right of way. All construction activity shall be confined within the identified work area as shown on the plans. At no time shall equipment or personnel be allowed outside the identified work area except for biological monitoring or relocation purposes or if approved by the Engineer. Construction

activity includes, but is not limited to, temporary haul and access roads, staging/storage areas and batch plants unless otherwise approved by the Engineer.

The Contractor shall notify the Engineer and the Chief of Construction Monitoring, Maintenance and Mitigation (CM3), District 8, located at 464 West 4th Street, San Bernardino (909 388-1252), California at least 72 hours prior to resuming construction activity following any break in construction activity of 14 or more consecutive days.

If an endangered species is discovered within the work area during construction activities, the Contractor shall immediately stop work and notify the Engineer.

Work shall be stopped until the Coachella Valley fringe-toed lizard leaves of its own accord.

TEMPORARY SILT FENCE

Attention is directed to Temporary Silt Fence of these Special Provisions. The silt fence shall be installed immediately following the pre-construction endangered species sweep and prior to the commencement of on-site work. The Contractor shall not install the silt fence unless a biologist is present. A biologist shall have the authority to temporarily delay or redirect work to avoid harm to any endangered species.

TRAINING

The Contractor shall make all employees, subcontractors and the Contractor's representatives on the project site in connection with the Contractor's work activities available for endangered species training within two weeks of starting work on the project. This endangered species training will be conducted by the biological monitor and follow DOT guidelines.

A copy of the brochure produced by the biological monitor for training will be given by the Contractor to laborers, tradesman, material suppliers, equipment maintenance personnel, supervisors, foremen, office personnel, food vendors, and all other personnel that stay on projects longer than thirty minutes.

The Contractor shall forewarn employees prior to the beginning of work that the endangered species seeking shade may crawl beneath parked vehicles or equipment. The Contractor shall direct all construction and maintenance workers to inspect the ground beneath all parked vehicles prior to moving vehicles or equipment to avoid crushing an endangered species.

Each employee shall receive training within two weeks of arriving at the project site. Each employee shall receive training in the following:

- A. The occurrence of listed species in the area.
- B. The general ecology of listed species.
- C. The sensitivity of these species to construction and other human activities.

- D. Statutory protections afforded these species.
- E. Penalties for violations of Federal and state laws pertaining to the protection of listed species.
- F. Reporting requirements.
- G. Abiding by project avoidance and minimization features contained in these Special Provisions and applicable permits.
- H. Identifying work area markers.
- I. Equipment movement restrictions.
- J. How to notify the Engineer and monitor when a listed species is seen.
- K. Never to touch or move a listed species, unless it appears to be under imminent threat of injury or death from highway traffic.
- L. Procedures to move to safety a listed species.

TRAINING MANUAL

The monitor shall prepare a training manual of the above information and distribute a copy of this manual to each employee. The manual shall be contained in a three ring binder.

The manual shall contain color photographs of the listed species. The photographs shall be a minimum of 8" x 11", mounted, and protected by a clear plastic envelope.

The monitor shall provide two copies each of the manual to the Contractor and the Engineer.

The monitor shall assure that a copy of the photographs is conspicuously displayed in the Contractor's field office during construction.

All workers shall be trained to recognize work area markers and to understand equipment movement restrictions. The training will include appropriate handling guidelines to allow the Contractor's representatives and subcontractors to move to safety an endangered species that is observed in the immediate vicinity of the project area and which appears to be under imminent threat of injury or mortality from existing traffic. This circumstance does not apply to vehicles or equipment used in construction activities within the project site. The training will specify under which conditions this action will be permitted to occur and if a qualified or authorized biologist is required. The Engineer shall be notified at the time of or subsequent to this action.

The County of Riverside will provide the "Caltrans Information Brochure: Protection of the Coachella Valley fringe-toed lizard Limited Scope Projects" and provide the training to subcontractors and the Contractor's representatives on the project site in connection with the Contractor's work activities. This includes laborer, tradesman, material suppliers, equipment maintenance personnel, supervisors, foremen, office personnel, food vendors, and all other personnel that stay on projects longer than thirty minutes or anytime that cross-country travel through the endangered species habitat is required.

The Contractor shall submit to the Engineer in writing a request for the endangered species training at least 10 days prior to the performance of initial work activities or when new crew members are going to be used.

PRE-CONSTRUCTION SURVEY

The Contractor shall notify the Engineer 10 days prior to clearing any vegetation. The Contractor shall not perform clearing and grubbing work until the County of Riverside has completed a pre-construction survey.

SPECIES MONITORING

A biological monitor will ensure that clearing and grubbing of vegetation and grading activity is contained within the fencing of the Environmentally Sensitive Areas shown on the plans and is performed according to specifications.

The biologist will oversee the Contractor's compliance with all avoidance and protective measures for the listed species. The monitor will observe and report to the Engineer on the Contractor's compliance with the ESA SSP. The monitor will stop all associated Contractor operations if the contractor fails to comply with the conditions set forth in these Special Provisions or the permits associated with this contract and will report this failure to the Engineer and United States Fish and Wildlife Service (USFWS) within 24 hours.

Attention is directed to Water Pollution Control contained in these Special Provisions. The monitor shall coordinate with the project Stormwater Pollution Prevention Manager and ensure that the stormwater pollution prevention BMPs satisfies the requirements of the programmatic biological opinion. The monitor shall report all missing, damaged, and nonfunctional BMP's to the Engineer within 24 hours.

The biological monitor will review all contract change orders that arise during construction.

The biologist monitoring the project will monitor installation and removal of Temporary Silt Fence.

A CRTD biologist monitoring the project site shall have the authority to direct Contractor movements to avoid harm to the endangered species. This includes, but is not limited to, fencing, core drilling, sampling, material drops, or any movement of equipment.

LITTER CONTROL PROGRAM

Attention is directed to Construction Site Management of these Special Provisions. This litter control program specification shall supplement all solid waste management best management practice requirements of the WPCP.

The Contractor shall place into effect a litter program. The Contractor shall provide closeable trash containers in appropriate locations, as approved by the Engineer, for the use of project personnel. At least one trash container shall be placed at the Contractor's yard and at each major work area. All remnants of food, food packaging, and food wrappers shall be removed from the ground and placed in trash containers by the end of each work shift.

These trash containers shall be kept closed and covered at all times and routinely serviced before full to 75% of capacity, no less than once per week, to remove trash from the job site. The Contractor shall require that all personnel, including food vendors allowed on site, dispose of food scraps, wrappers, cans, bottles, cigarette butts, and related debris.

Employees who are unable to use the trash cans due to the location or type of work being performed shall secure such items and remove them from the job site at the end of their work shift.

STORAGE OF ASPHALT CONCRETE GRINDINGS AND CONCRETE WASTE

Attention is directed to Construction Site Management of these Special Provisions. Grindings and asphaltic-concrete waste shall be stored only within previously disturbed areas, in accordance with the requirements of the Best Practices Management (BMP) manual, except that Grindings and asphaltic-concrete waste shall not be stored within 150 feet of any culvert, wash, or stream crossing.

TIME EXTENSION

If suspension of a work activity is ordered by the Engineer due to an encounter with an endangered species and if, in the opinion of the Engineer, the Contractor's current controlling operation is delayed or interfered with by reason of the suspension, 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.

PAYMENT

The lump sum price paid for Endangered Species Protection shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, not otherwise provided for, and for doing all the work involved in implementing a litter control program, and conforming to the provisions of these Special Provisions.

10-1.15 NON-HIGHWAY FACILITIES (INCLUDING UTILITIES):

The utility owner will relocate a utility shown in the following table before the corresponding date shown:

Utility Relocation and Date of the Relocation		
Utility	Location	Date
Coachella Valley Water District 762-mm water line	Near EB off-ramp	10/31/2010
SCE 12-KV overhead line	Near EB off-ramp	1/1/2011

The utilities shown in the following table may interfere with pile driving, drilling activities, or subsurface construction, but the utility owner will not rearrange them. If the Contractor wants any of them rearranged or temporary deactivated, make arrangements with the utility owner.

Utility	Location
Southern California Gas Company	Under and east of Date Palm Drive – to be protected in place

Utilities under roadways are to be relocated after subgrade has been finished but prior to placement of base and surfacing.

10-1.16 FORCE ACCOUNT PAYMENT:

Payment for extra work at force account shall conform to Sections 5-1.15 and 10-1.19, "Force Account Payment" of these Special Provisions. determined by either non-subcontracted or subcontracted force account payment unless otherwise specified.

To the total of the direct costs for work performed on a force account basis, computed as provided in Sections 9-1.03A(1), "Labor", 9-1.03A(2), "Materials" and 9-1.03A(3), "Equipment Rental" of the Standard Specifications, there will be added the following markups:

Cost	Percent Markup
Labor	30
Materials	10
Equipment Rental	10

The above markups shall be applied to work performed on a force account basis, regardless of whether the work revises the current contract completion date.

The above markups shall constitute full compensation for all overhead costs for work performed on a force account basis. These overhead costs shall be deemed to include all items of expense not specifically designated as cost or equipment rental in conformance with the provisions in Sections 9-1.03A(1), "Labor", 9-1.03A(2), "Materials" and 9-1.03A(3), "Equipment Rental" of the Standard Specifications. The total payment made as provided above and in the first paragraph of Section 9-1.03A, "Work Performed by Contractor" of the Standard Specifications shall be deemed to

be the actual cost of the work performed on a force account basis, and shall constitute full compensation therefor.

Full compensation for overhead costs for work performed on a force account basis shall be considered as included in the markups specified above, and no additional compensation will be allowed therefor.

10-1.17 AREAS FOR CONTRACTOR'S USE:

Attention is directed to the provisions in Section 7-1.19, "Rights in Land and Improvements" of the Standard Specifications and these Special Provisions.

The highway right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right of way, or allow others to occupy the right of way, for purposes which are not necessary to perform the required work.

Areas available for the exclusive use of the Contractor are designated on the plans. Use of the Contractor's work areas and other State/County-owned property shall be at the Contractor's own risk, and the State/County shall not be held liable for damage to or loss of materials or equipment located within these areas.

The Contractor shall obtain encroachment permits prior to occupying State/County-owned parcels outside the contract limits. The required encroachment permits may be obtained from the Department of Transportation, Permit Engineer, 464 W 4th Street, San Bernardino, CA 92401-1400.

Residence trailers will not be allowed within the highway right of way, except that one trailer will be allowed for yard security purposes.

The Contractor shall remove equipment, materials, and rubbish from the work areas and other State/County-owned property which the Contractor occupies. The Contractor shall leave the areas in a presentable condition in conformance with the provisions in Section 4-1.02, "Final Cleaning Up" of the Standard Specifications.

The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials or for other purposes, if sufficient area is not available to the Contractor within the contract limits, or at the sites designated on the plans outside the contract limits.

10-1.18 PAYMENT ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS:

GENERAL

Summary

This section applies to asphalt contained in materials for pavement structural sections and surface treatments such as hot mix asphalt (HMA), tack coat, asphaltic emulsions, bituminous seals, asphalt binders, and modified asphalt binders placed in the work. This section does not apply if you opted out of payment adjustment for price index fluctuations at the time of bid.

The Engineer adjusts payment if the California Statewide Crude Oil Price Index for the month the material is placed is more than 5 percent higher or lower than the price index at the time of bid.

The California Statewide Crude Oil Price Index is determined each month on or about the 1st business day of the month by the Department using the average of the posted prices in effect for the previous month as posted by Chevron, ExxonMobil, and ConocoPhillips for the Buena Vista, Huntington Beach, and Midway Sunset fields.

If a company discontinues posting its prices for a field, the Department determines the index from the remaining posted prices. The Department may include additional fields to determine the index.

For the California Statewide Crude Oil Price Index, go to:
<http://www.dot.ca.gov/hq/construc/crudeoilindex/>

If the adjustment is a decrease in payment, the Department deducts the amount from the monthly progress payment.

The Department includes payment adjustments for price index fluctuations when making adjustments under Section 4-1.03B, "Increased or Decreased Quantities" of the Standard Specifications.

If the Contractor does not complete the work within the contract time, payment adjustments during the overrun period are determined using the California Statewide Crude Oil Price Index in effect for the month in which the overrun period began.

If the price index at the time of placement increases:

- A. 50 percent or more over the price index at bid opening, notify the Engineer.
- B. 100 percent or more over the price index at bid opening, do not furnish material containing asphalt until the Engineer authorizes you to proceed with that work. The Department may decrease Bid item quantities, eliminate Bid items, or terminate the contract.

Submittals

Before placing material containing asphalt, submit the current sales and use tax rate in effect in the tax jurisdiction where the material is to be placed.

Submit certified weight slips for HMA, tack coat, asphaltic emulsions, and modified asphalt binders, including those materials not paid for by weight, as specified in Section 9-1.01, "Measurement of Quantities" of the Standard Specifications. For slurry seals, submit certified weight slips separately for the asphaltic emulsion.

ASPHALT QUANTITIES

General

Interpret the term "ton" as "tonne" for projects using metric units.

Hot Mix Asphalt

The Engineer calculates the quantity of asphalt in HMA using the following formula:

$$Q_h = \text{HMATT} \times [X_a / (100 + X_a)]$$

where:

- Q_h = quantity in tons of asphalt used in HMA
- HMATT = HMA total tons placed
- X_a = theoretical asphalt content from job mix formula expressed as percentage of the weight of dry aggregate

Rubberized Hot Mix Asphalt

The Engineer calculates the quantity of asphalt in rubberized HMA (RHMA) using the following formula:

$$Q_{rh} = \text{RHMATT} \times 0.80 \times [X_{arb} / (100 + X_{arb})]$$

where:

- Q_{rh} = quantity in tons of asphalt in asphalt rubber binder used in RHMA
- RHMATT = RHMA total tons placed
- X_{arb} = theoretical asphalt rubber binder content from the job mix formula expressed as percentage of the weight of dry aggregate

Modified Asphalt Binder in Hot Mix Asphalt

The Engineer calculates the quantity of asphalt in modified asphalt binder using the following formula:

$$Q_{mh} = MHMATT \times [(100 - X_{am}) / 100] \times [X_{mab} / (100 + X_{mab})]$$

where:

- Q_{mh} = quantity in tons of asphalt in modified asphalt binder used in HMA
- $MHMATT$ = modified asphalt binder HMA total tons placed
- X_{am} = specified percentage of asphalt modifier
- X_{mab} = theoretical modified asphalt binder content from the job mix formula expressed as percentage of the weight of dry aggregate

Hot Mix Asphalt Containing Reclaimed Asphalt Pavement (RAP)

The Engineer calculates the quantity of asphalt in HMA containing RAP using the following formulas:

$$Q_{rap} = HMATT \times [X_{ma} / (100 + X_{ma})]$$

where:

$$X_{ma} = X_{ta} - [(100 - X_{new}) \times (X_{ra} / 100)]$$

and

- Q_{rap} = quantity in tons of asphalt used in HMA containing RAP
- $HMATT$ = HMA total tons placed
- X_{ma} = asphalt content of HMA adjusted to account for the asphalt content in RAP expressed as percentage of the weight of dry aggregate
- X_{ta} = total asphalt content of HMA expressed as percentage of the weight of dry aggregate
- X_{new} = theoretical percentage of new aggregate in the HMA containing RAP determined from RAP percentage in the job mix formula
- X_{ra} = asphalt content of RAP expressed as percentage

Tack Coat

The Engineer calculates the quantity of asphalt in tack coat (Q_{tc}) as either:

- A. Asphalt binder using the asphalt binder total tons placed as tack coat.
- B. Asphaltic emulsion by applying the formula in "Asphaltic Emulsion" to the asphaltic emulsion total tons placed as tack coat.

Asphaltic Emulsion

The Engineer calculates the quantity of asphalt in asphaltic emulsions, including fog seals and tack coat, using the following formula:

$$Q_e = AETT \times X_e$$

where:

- Q_e = quantity in tons of asphalt used in asphaltic emulsions
- AETT = undiluted asphaltic emulsions total tons placed
- X_e = minimum percent residue specified in Section 94, "Asphaltic Emulsions," of the Standard Specifications based on the type of emulsion used

The Contractor may, as an option, determine "X_e" by submitting actual daily test results for asphalt residue for the asphaltic emulsion used. If the Contractor choose this option, the Contractor must:

- A. Take 1 sample every 200 tons but not less than 1 sample per day in the presence of the Engineer from the delivery truck, at midload from a sampling tap or thief, and in the following order:
 - 1. Draw and discard the 1st gallon.
 - 2. Take two separate 1/2-gallon samples.
- B. Submit 1st sample at the time of sampling.
- C. Provide 2nd sample within 3 business days of sampling to an independent testing laboratory that participates in the AASHTO Proficiency Sample Program.
- D. Submit test results from independent testing laboratory within 10 business days of sample date.

Slurry Seal

The Engineer calculates the quantity of asphalt in slurry seals (Q_{ss}) by applying the formula in "Asphaltic Emulsion" to the actual quantity of asphaltic emulsion used in producing the slurry seal mix.

Modified Asphalt Binder

The Engineer calculates the quantity of asphalt in modified asphalt binder using the following formula:

$$Q_{mab} = MABTT \times [(100 - X_{am}) / 100]$$

where:

- Q_{mab} = quantity in tons of asphalt used in modified asphalt binder
- MABTT = modified asphalt binder total tons placed
- X_{am} = specified percentage of asphalt modifier

Other Materials

For other materials containing asphalt not covered above, the Engineer determines the quantity of asphalt (Qo).

PAYMENT ADJUSTMENTS

The Engineer includes payment adjustments for price index fluctuations in progress pay estimates. If material containing asphalt is placed within 2 months during 1 estimate period, the Engineer calculates 2 separate adjustments. Each adjustment is calculated using the price index for the month in which the quantity of material containing asphalt subject to adjustment is placed in the work. The sum of the 2 adjustments is used for increasing or decreasing payment in the progress pay estimate.

The Engineer calculates each payment adjustment as follows:

$$PA = Q_t \times A$$

where:

PA = Payment adjustment in dollars for asphalt contained in materials placed in the work for a given month.

Q_t = Sum of all quantities of asphalt-contained materials in pavement structural sections and pavement surface treatments placed (Q_h + Q_{rh} + Q_{mh} + Q_{rap} + Q_{tc} + Q_e + Q_{ss} + Q_{mab} + Q_o).

A = Adjustment in dollars per ton of asphalt used to produce materials placed in the work rounded to the nearest \$0.01.

For US Customary projects, use:

$A = [(I_u / I_b) - 1.05] \times I_b \times [1 + (T / 100)]$ for an increase in the crude oil price index exceeding 5 percent

$A = [(I_u / I_b) - 0.95] \times I_b \times [1 + (T / 100)]$ for a decrease in the crude oil price index exceeding 5 percent

For metric projects, use:

$A = 1.1023 \times [(I_u / I_b) - 1.05] \times I_b \times [1 + (T / 100)]$ for an increase in the crude oil price index exceeding 5 percent

$A = 1.1023 \times [(I_u / I_b) - 0.95] \times I_b \times [1 + (T / 100)]$ for a decrease in the crude oil price index exceeding 5 percent

I_u = California Statewide Crude Oil Price Index for the month in which the quantity of asphalt subject to adjustment was placed in the work.

Ib = California Statewide Crude Oil Price Index for the month in which the bid opening for the project occurred

T = Sales and use tax rate, expressed as a percent, currently in effect in the tax jurisdiction where the material is placed. If the tax rate information is not submitted timely, the statewide sales and use tax rate is used in the payment adjustment calculations until the tax rate information is submitted.

10-1.19 PAYMENTS:

In determining the partial payments to be made to the Contractor, only the following listed materials will be considered for inclusion in the payment as materials furnished but not incorporated in the work:

- A. Progress Schedule (Critical Path Method).
- B. Metal sign structures.
- C. Prestressing steel for cast-in-place members (sealed packages only).
- D. Prestressing ducts and anchorages.
- E. Joint seals.
- F. Steel piling.
- G. Culvert pipe.
- H. Sign panels.
- I. Tieback anchors.
- J. Column casing.
- K. Isolation casing.
- L. Metal bridge railing, cable railing and guard railing.
- M. Bar reinforcing steel, miscellaneous bridge metal and miscellaneous iron and steel.
- N. Chain link railing (cathedral).
- O. Signal and lighting standards.
- P. Signal heads and mounting brackets.

10-1.20 COURSE OF CONSTRUCTION INSURANCE:

The Contractor shall provide evidence of insurance and the required endorsements in accordance with these Special Provisions and shall declare all terms, conditions, coverage, limits, and policy deductible.

The Contractor shall provide All Risk Builder's Risk (Course of Construction) insurance, including earthquake and flood, property at off-site storage locations and while in transit. Coverage shall include collapse, faulty workmanship debris removal, expediting expense, Fire Department Service charges, valuable papers and records, trees, grass, shrubbery and plants. Policy shall be written on a completed value form. Policy shall also provide coverage for temporary structures (onsite offices, etc.), fixtures, machinery and equipment being installed as part of the construction project and Business Interruption coverage.

The occurrence limit of the Course of Construction Insurance shall be for the full value of the contract. Course of Construction insurance shall include coverage for earth movement and flood damage, for the full value of the contract.

Course of Construction coverage shall be for all work included in the construction contract, as awarded by the County of Riverside.

Full compensation shall be considered as included in the lump sum price for Course of Construction Insurance, and no additional compensation will be allowed therefor.

10-1.21 RELIEF FROM MAINTENANCE AND RESPONSIBILITY:

The Contractor may be relieved of the duty of maintenance and protection for those items not directly connected with plant establishment work in conformance with the provisions in Section 7-1.15, "Relief From Maintenance and Responsibility" of the Standard Specifications. Water pollution control, maintain existing planted areas, maintain existing irrigation facilities, transplant trees, and transplant palm trees shall not be relieved of maintenance.

10-1.22 INSURANCE:

In addition to the requirements of Section 3-1.01B, "Insurance – Hold Harmless" of the contract documents, the Contractor's Certificate of Insurance and endorsements for the project shall name the following listed entities as additional insured under the Contractor's general liability, excess liability, and auto liability insurance policies, and each listed entity shall be named on the Waiver of Subrogation for the Contractor's Workers Compensation policy.

1. "State of California, Transportation Department, its officers, directors, agents and employees".
2. "Coachella Valley Association of Governments, its officers, directors, agents and employees".
3. The Cathedral City, its officers, directors, agents and employees".

Each of the above listed entities shall also be held harmless, in accordance with the requirements of subsection IV, "Hold Harmless" of Section 3-1.01B, "Insurance – Hold Harmless" of the contract documents.

Full compensation for compliance with the requirements of this section shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

10-1.23 ENCROACHMENT PERMIT:

It shall be the responsibility of the Contractor to obtain a duplicate State of California Department of Transportation (Caltrans) Encroachment Permit for the work done within State Right Of Way prior to commencing any work. The Encroachment Permit from Caltrans is at no cost to the Contractor.

It shall be the responsibility of the Contractor to obtain an Encroachment Permit from the Cathedral City to perform any work in the city right-of-way. The Encroachment Permits from the cities are at no cost to the Contractor.

10-1.24 RESIDENT ENGINEER'S OFFICE:

The Contractor shall furnish and maintain a Resident Engineer's Office (Field Office), suitable for the intended purpose, for the exclusive use of the Engineer and his staff in accordance with the following provisions.

The Field Office shall be maintained in a clean, neat and sanitary manner at all times. All sanitary paper products required for the restroom shall be supplied by the Contractor and shall be included in the contract unit price bid.

The Field Office shall be a 55 square meter (minimum) office facility with required utility hook up including electricity, potable water, 2 telephone lines, multi-line speaker phones and air conditioning. The facility will have 1 restroom and partitions creating 3 interior rooms. Contractor will pay monthly rental fees and shall obtain all rights of entry necessary.

The Contractor shall be fully responsible to provide all utility hook-ups for the Resident Engineer's Office, including electrical power, telephone, potable water and sewage disposal. The Contractor shall obtain all necessary permits and pay all fees.

The Field Office shall be provided with a facsimile machine with a separate phone line and a copying machine capable of photocopying 11" x 17" size paper for the exclusive use of the Engineer and his staff for the entire duration of the project. Contractor shall be aware that theft and vandalism at the job site may be a problem. Contractor shall be responsible for the security of the Field Office.

If for any reason, the phone, copier, facsimile machine, any office furniture, and/or sanitary facility is vandalized, stolen, or in need of repair, the Contractor, upon receipt of written notice by Engineer, shall have a maximum of five (5) working days to replace or repair the items to full working order. If Contractor fails to comply with the five (5) working days specified, the County may at its option withhold monthly progress payments until Field Office is returned to full and complete working order.

Contractor shall meet with the Engineer prior to construction (and at any other time circumstances warrant), and together, shall mutually agree on a location for the field office. Approval of the proposed Field Office by the Engineer shall be obtained prior to implementation.

The following shall be furnished and supplied by the contractor for the duration of the contract:

1. Furnish, service and maintain office.

The following office furniture, in new or near-new condition, shall be furnished, at a minimum:

- 2 ea. 30" x 60" desks with lockable drawers
- 2 ea. task swivel chairs
- 1 ea. conference table to accommodate 8 conference chairs.
- 8 conference chairs
- 1 ea. 60"H x 40"W x 16"D book shelf
- 1 ea. 60" x 36" drafting table and chair

2. Supply utilities for office, including electricity, phone (2 lines), potable water, and DSL internet service for the duration of the contract, including fees.
3. Supply, service and maintain sanitary facility.
4. Facsimile machine (separate phone line).
5. Furnish two current model personal computers for the duration of the contract, suitable and capable for office use, internet connected utilizing DSL service, and complete with necessary software including Microsoft Office, latest version.
6. Two color laser printers, HP Color Laserjet Model 2605DN (also known as Q7822A) or approved alternate. One color flatbed scanner, HP Scanjet 5590 or approved alternate. All supplies and necessary maintenance for the use of the above equipment by the Engineer shall be furnished and supplied by the Contractor for the duration of the contract.
7. Copying machine (11" x 17").
8. Installation of 4 designated public parking spaces.
9. Installation of appropriate number of designated parking spaces for the construction manager, inspectors, general Contractors, workers, material suppliers, subcontractors and other support personnel.
10. Installation of 1 large sized unit commercial trash bin with cover and regularly scheduled pick up.
11. Field office shall have a 24" x 36" sign, white color, affixed near the door. The sign text shall read "COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT" and shall have County seals affixed to it. Contractor will be supplied the seals by the County.
12. Remove office from job site at the completion of the project.
13. Security.
14. If office is located on private property, all property rental costs and right of entry.

No monthly progress payments will be due to the Contractor until all provisions and requirements of "Resident Engineer's Office" are complete and in place.

The contract lump sum price paid for Resident Engineer's Office shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in furnishing and maintaining Resident Engineer's Office, including furnishing and maintaining the listed equipment and furniture, and providing of all necessary supplies for the listed equipment for the duration of the contract work, as specified in these Special Provisions, and as directed by the Engineer, and no additional compensation will be allowed therefor.

10-1.25 MONITORING CAMERA (POLE AND ELECTRIC SERVICE):

It is anticipated that the County of Riverside will contract with a commercial construction site monitoring company, hereinafter referred to as "Vendor" for the installation and maintenance of a construction monitoring camera system. This camera system is intended to be operational and in-place for the duration of construction.

The Contractor shall comply with the requirements set forth herein. Attention is directed to Section 7-1.14, "Cooperation" of the Standard Specifications.

The Contractor shall coordinate and cooperate with the Vendor to establish a suitable location for the camera support pole that will meet the requirements of the camera system, and which will require the fewest number of relocations during the course of construction. Because of the availability of power, the north quadrant of the interchange is assumed to be a logical location. A single camera mounting location that is outside of the limits of grading, and which can remain in place for the duration of construction is preferred.

The Contractor shall meet with the Engineer and the Vendor to determine the best location for the camera system, and to determine the best electric service option. After installation, and throughout the course of construction, the Contractor shall protect the camera system, support pole, and electrical service facilities in-place.

If necessary, the camera system may be relocated, up to three times, during the course of construction, as determined by the Engineer, in consultation with the Contractor and the Vendor. However, a single location that can be protected in-place for the duration of construction is preferred. The decisions of the Engineer shall be final.

The Contractor shall install a camera system support pole that meets the requirements of the Vendor for the intended equipment. A mounting height of up to 60 feet above the grade at the location of the pole shall be provided. The pole shall be adequately and safely installed to avoid any possibility of collapse, for the duration of construction.

The Contractor shall provide for electric service to the camera system support pole. Electric service is anticipated to be provided in one of the following ways, as determined by the Engineer:

- A. Service Option 1: Existing Caltrans owned service equipment enclosure, located on the north quadrant of the interchange, if approved by Caltrans. Underground Schedule 40 conduit shall be installed between service equipment enclosure and camera support pole. Contractor shall connect conduit and conductors to Caltrans equipment as directed by the Caltrans electrical maintenance personnel. Contractor shall install riser and connect Schedule 80 conduit to the support pole. Contractor shall coordinate with the Vendor to make the necessary electric connections. A subpanel shall be installed if directed by the Engineer to meet the needs of the Vendor.
- B. Service Option 2: Nearest SCE distribution pole, as designated by the Edison Company. Contractor shall arrange for temporary service from the Southern California Edison Company, and shall provide all aerial or underground equipment between the service point and camera support pole. Contractor shall coordinate with the Vendor to make the necessary electric connections. A subpanel shall be installed if directed by the Engineer to meet the needs of the Vendor. Contractor will be responsible for all fees and service payments to the Edison Company. Contractor shall provide Engineer with a copy of the invoices received from the Edison Company.
- C. Service Option 3: Solar equipment, to be provided and maintained by the Vendor.
- D. Other service options, if feasible. Fuel powered generators will not be considered a viable service option.

All equipment that is the property of the Vendor shall be protected during the course of construction, and shall be returned to the Vendor upon completion of the contract work. All temporary poles, conductors, conduits and associated equipment shall be removed from the project site, and shall remain the property of the Contractor, upon completion of the contract work.

Full compensation for providing and installing a camera mounting pole and for providing electric service to the camera system, including the protection of the facilities for the duration of construction, and including removal of all associated poles, conduits, conductors, and associated equipment, including all labor, equipment, materials and incidentals, shall be paid for on a lump sum basis, and no additional compensation will be allowed therefor.

10-1.26 WATER POLLUTION CONTROL:

GENERAL

Summary

Discharges of storm water from a project must comply with NPDES General Permit for "Storm Water Discharges Associated with Construction and Land Disturbance Activities" (Order No. 2009-009-DWQ, NPDES No. CAS000002). Manage work

activities to reduce the discharge of pollutants to surface waters, groundwater, or municipal separate storm sewer systems including work items shown in the verified Bid Item List for:

- A. Prepare Storm Water Pollution Prevention Plan. SWPPP preparation includes obtaining SWPPP acceptance, amending the SWPPP, preparing a CSMP and a SAP, and monitoring and inspecting WPC practices at the job site.
- B. Storm Water Sampling and Analysis. Storm Water Sampling and Analysis includes reporting of storm water quality per qualifying rain event. If specified for the risk level, the work includes preparation, collection, analysis, and reporting of stormwater samples for turbidity, pH, and other constituents.
- C. Storm Water Annual Report. Storm Water Annual Report preparation includes certifications, monitoring and inspection results, and obtaining Storm Water Annual Report acceptance.
- D. Rain Event Action Plan. If specified for the project risk level, REAP preparation includes preparing and submitting REAP forms and monitoring weather forecasts.

Do not start work until:

- A. SWPPP is accepted.
- B. WDID is issued.
- C. SWPPP has been reviewed by the RWQCB. If the RWQCB requires time for SWPPP review, allow enough time for the RWQCB to review the SWPPP as specified under "Submittals" of these Special Provisions.

This job is Risk Level 1.

Definitions and Abbreviations

active and inactive areas: (1) Active areas have soil disturbing work activities occurring at least once within 14 days, and (2) Inactive areas are areas that have not been disturbed for at least 15 days.

BMPs: Best Management Practices are water pollution control practices.

construction phase: Construction phases are (1) Highway Construction including work activities for building roads and structures, (2) Plant Establishment including maintenance on vegetation installed for final stabilization, and (3) Suspension where work activities are suspended and areas are inactive.

CSMP: Construction Site Monitoring Program.

NAL: Numeric Action Level.

NPDES: National Pollutant Discharge Elimination System.

NEL: Numeric Effluent Limit.

NOI: Notice of Intent

Preparation Manual: The Department's "Storm Water Pollution Prevention Plan and Water Pollution Control Program Preparation Manual".

QSD: Qualified SWPPP Developer.

QSP: Qualified SWPPP Practitioner.

REAP: Rain Event Action Plan.

RWQCB: Regional Water Quality Control Board.

SAP: Sampling and Analysis Plan.

SSC: Suspended Sediment Concentration.

SWRCB: State Water Resources Control Board.

SWPPP: Storm Water Pollution Prevention Plan.

WDID: Waste Discharge Identification Number.

WPC: Water Pollution Control.

WPC Manager: Water Pollution Control Manager. The WPC Manager implements water pollution control work described in the SWPPP and oversees revisions and amendments to the SWPPP.

Submittals

Within 20 days after contract approval, start the following process for SWPPP acceptance:

- A. Submit 3 copies of the SWPPP and allow 20 days for the Engineer's review. If revisions are required, the Engineer provides comments and specifies the date that the review stopped.
- B. Change and resubmit the SWPPP within 15 days of receipt of the Engineer's comments. The Engineer's review resumes when the complete SWPPP is resubmitted.
- C. When the Engineer accepts the SWPPP, submit an electronic and 4 printed copies of the accepted SWPPP.

- D. If the RWQCB reviews the accepted SWPPP, the Engineer submits one copy of the accepted SWPPP to the RWQCB for their review and comment. RWQCBs requiring 30 days to review SWPPPs include:
 - 1. Lahontan for jobs in the Lake Tahoe Hydrologic Unit and the Mammoth Lakes Hydrologic Unit.
- E. If the Engineer requests changes to the SWPPP based on RWQCB comments, amend the SWPPP within 10 days.

Submit:

- A. Storm water training records including training dates and subjects for employees and subcontractors. Include dates and subjects for ongoing training, including tailgate meetings.
- B. Employee training records:
 - 1. Within 5 days of SWPPP acceptance for existing employees.
 - 2. Within 5 days of training for new employees.
 - 3. At least 5 days before subcontractors start work for subcontractor's employees.

Prepare a Storm Water Annual Report for the reporting period from July 1st to June 30th:

- A. If construction occurs from July 1st through June 30th, submit the report no later than July 15th for the prior reporting period.
- B. If construction ends before June 30th, submit the report within 15 days after contract acceptance.

Submit the Storm Water Annual Report as follows:

- A. Submit 2 copies of the Storm Water Annual Report and allow 10 days for the Engineer's review. If revisions are required, the Engineer provides comments and specifies the date that the review stopped.
- B. Change and resubmit the Storm Water Annual Report within 5 days of receipt of the Engineer's comments. The Engineer's review resumes when the complete Storm Water Annual Report is resubmitted.
- C. When the Engineer accepts the Storm Water Annual Report, insert the WPC Manager's signed certification and the Engineer's signed certification.

Submit an electronic copy and 2 printed copies of the accepted Storm Water Annual Report.

Submit as required:

- A. NAL Exceedance Reports.
- B. NEL Exceedance Reports.

- C. Visual Monitoring Reports.
- D. Inspection Reports.
- E. BMP Status Report.

At least 5 days before operating any construction support facility:

- A. Submit a plan showing the location and quantity of WPC practices associated with the construction support facility.
- B. If you will be operating a batch plant or a crushing plant under the General Industrial Permit, submit a copy of the NOI approved by the RWQCB and the SWPPP approved by the RWQCB.

Quality Control and Assurance

Training

Provide storm water training for:

- A. Project managers.
- B. Supervisory personnel.
- C. Employees involved with WPC work.

Train all employees, including subcontractor's employees, in the following subjects:

- A. WPC rules and regulations.
- B. Implementation and maintenance for:
 - 1. Temporary Soil Stabilization.
 - 2. Temporary Sediment Control.
 - 3. Tracking Control.
 - 4. Wind Erosion Control.
 - 5. Material pollution prevention and control.
 - 6. Waste management.
 - 7. Non-storm water management.
 - 8. Identifying and handling hazardous substances.
 - 9. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances.

Employees must receive initial WPC training before working on the job.

Conduct weekly training meetings covering:

- A. WPC BMPs deficiencies and corrective actions.
- B. BMPs that are required for work activities during the week.
- C. Spill prevention and control.
- D. Material delivery, storage, use, and disposal.
- E. Waste management.
- F. Non-storm water management procedures.

Training for personnel to collect water quality samples must include:

- A. SAP review.
- B. Health and safety review.
- C. Sampling simulations.

If you operate construction support facilities, protect storm water systems or receiving waters from the discharge of potential pollutants by using WPC practices.

Construction support facilities include:

- A. Staging areas.
- B. Storage yards for equipment and materials.
- C. Mobile operations.
- D. Batch plants for PCC and HMA.
- E. Crushing plants for rock and aggregate
- F. Other facilities installed for your convenience such as haul roads.

If the Contractor operates a batch plant to manufacture PCC, HMA, or other material; or a crushing plant to produce rock or aggregate; obtain coverage under the General Industrial General Permit. The Contractor must be covered under the General Industrial Permit for batch plants and crushing plants located:

- A. Outside of the job site.
- B. Within the job site that serve one or more contracts.

Discharges from manufacturing facilities such as batch plants must comply with the general waste discharge requirements for Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, issued by the SWRCB for "Discharge of Stormwater Associated with Industrial Activities Excluding Construction Activities". The General Industrial Permit is available at: <http://www.waterboards.ca.gov/>

The Contractor may obtain copies of the Preparation Manual from the Publication Distribution Unit. The mailing address for the Publication Distribution Unit is:

State of California
Department of Transportation
Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento, California 95815
Telephone: (916) 445-3520

For the Preparation Manual and other WPC references, go to the Department's "Construction Storm Water and Water Pollution Control" web site at: <http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm>

Water Pollution Control Manager

Assign one WPC Manager to implement the SWPPP. The WPC Manager must comply with the Permit (Order No. 2009-009-DWQ, NPDES No. CAS000002) qualifications for a QSP and a QSD. The Contractor may assign a different QSD to prepare the SWPPP.

The QSD must have the following qualifications:

- A. Department approved storm water management training described in the Department's "Construction Storm Water and Water Pollution Control" web site.
- B. Registration or certification described in the Permit (Order No. 2009-009-DWQ, NPDES No. CAS000002).

The QSP must meet the qualifications of the QSD or have the following certifications:

- A. Department approved storm water management training described in the Department's "Construction Storm Water and Water Pollution Control" web site.
- B. Certification described in the Permit.

At the job site, the WPC Manager must:

- A. Be responsible for WPC work.
- B. Be the primary contact for WPC work.
- C. Oversee the maintenance of WPC practices.
- D. Oversee and enforce hazardous waste management practices.
- E. Have the authority to mobilize crews to make immediate repairs to WPC practices.
- F. Ensure that all employees have current water pollution control training.
- G. Implement the accepted SWPPP and amend the SWPPP when required.

WPC Manager must oversee:

- A. Inspections of WPC practices identified in the SWPPP.
- B. Inspections and reports for visual monitoring.
- C. Preparation and implementation of REAPs.
- D. Sampling and analysis.
- E. NAL exceedance reports.
- F. NEL exceedance reports.
- G. SWPPP annual certification.
- H. Annual reports.
- I. BMP status reports.

STORM WATER POLLUTION PREVENTION PLAN

The work includes preparing a SWPPP including a CSMP, obtaining SWPPP acceptance, amending the SWPPP, inspecting and reporting on WPC practices at the job site. If specified by the risk level, the work includes preparing REAPs. The SWPPP must comply with the Preparation Manual and the Permit. The SWPPP must be submitted in place of the water pollution control program under Section 7-1.01G, "Water Pollution" of the Standard Specifications.

The Contractor may request, or the Engineer may order, changes to the WPC work. Changes may include the addition of new WPC practices. Additional WPC work is change order work.

The SWPPP must include sections as specified for the project risk level as follows:

- A. For risk level 1:
 - 1. Schedule.
 - 2. CSMP.

- B. For risk level 2:
 - 1. Schedule.
 - 2. CSMP.
 - 3. Adherence to Effluent Standards for NALs.
 - 4. REAP.

- C. For risk level 3:
 - 1. Schedule.
 - 2. CSMP.
 - 3. Adherence to Effluent Standards for NALs and NELs.
 - 4. REAP.

The SWPPP must include WPC practices:

- A. For storm water and non-stormwater from areas outside of the job site related to project work activities such as:
 - 1. Staging areas.
 - 2. Storage yards.
 - 3. Access roads.

- B. For activities or mobile operations related to contractor obtained NPDES permits.

- C. Construction support facilities.

The SWPPP must include a copy of permits obtained by the Department such as Fish & Game permits, US Army Corps of Engineers permits, RWQCB 401 Certifications, and RWQCB Waste Discharge Requirements for Aerially Deposited Lead Reuse.

Amend the SWPPP annually and resubmit it by July 15th.

Amend the SWPPP if:

- A. Changes in work activities could affect the discharge of pollutants.
- B. WPC practices are added by change order work.
- C. WPC practices are added by your discretion.
- D. Changes in the amount of disturbed soil are substantial.
- E. Objectives for reducing or eliminating pollutants in storm water discharges have not been achieved.
- F. There is a Permit violation.

Whenever you amend the SWPPP, follow the same process specified for SWPPP acceptance.

Retain a printed copy of the accepted SWPPP at the job site.

SWPPP Schedule

The SWPPP schedule must:

- A. Describe when work activities will be performed that could cause the discharge of pollutants into storm water.
- B. Describe WPC practices associated with each construction phase.
- C. Identify soil stabilization and sediment control practices for disturbed soil areas.

Construction Site Monitoring Program (CSMP)

The QSD must prepare a CSMP as part of the SWPPP. The CSMP must be developed before starting work and be revised to reflect current construction activities as necessary.

The CSMP must include sections for the project risk level as follows:

- A. For risk level 1:
 - 1. Visual Monitoring.
 - 2. SAP for Non-Visible Pollutants.
- B. For risk level 2:
 - 1. Visual Monitoring.
 - 2. SAP for Non-Visible Pollutants.
 - 3. SAP for sediment and turbidity.
 - 4. SAP for Ph.

C. For risk level 3:

1. Visual Monitoring.
2. SAP for Non-Visible Pollutants.
3. SAP for sediment and turbidity.
4. SAP for Ph.
5. Receiving Water Sampling.
6. SAP for temporary active treatment systems.

Visual Monitoring

The WPC Manager must oversee the performance of visual inspections for qualifying rain events. A qualified rain event is a storm that produces at least 0.5 inches of precipitation with a 48 hour or greater period between storms.

For each qualifying rain event, perform visual inspections and record observations during working hours as follows:

- A. Record the time, date, and rain gauge reading.
- B. Observe:
 1. Within 2 days before the storm:
 - 1.1. Drainage areas for spills, leaks, or uncontrolled pollutants.
 - 1.2. Proper implementation of WPC practices.
 - 1.3. Storm water storage areas for leaks and adequate freeboard.
 2. Every 24 hours during the storm:
 - 2.1. WPC practices for effective operation.
 - 2.2. WPC practices needing maintenance and repair.
 3. Within 2 days after the storm event:
 - 3.1. Discharge locations.
 - 3.2. WPC practices to evaluate the design, implementation, and effectiveness.
 - 3.3. To identify where additional WPC practices may be needed.

Perform non-stormwater discharge visual inspections as follows:

- A. At least once during each of the following periods:
 1. January through March.
 2. April through June.
 3. July through September.
 4. October through December.

- B. Observe flowing and contained storm water for the presence of floating and suspended materials, sheen on the surface, discoloration, turbidity, odors, and sources of observed pollutants.
- C. Observe the job site for the presence of authorized and unauthorized non-stormwater discharges and their sources.

The WPC Manager must prepare visual inspection reports that include the following:

- A. Name of personnel performing the inspection, inspection date and date inspection report completed.
- B. Storm and weather conditions.
- C. Locations and observations.
- D. Corrective actions taken.

Maintain visual inspections reports at the job site as part of the SWPPP.

Sampling and Analysis

General

Include a SAP in the CSMP to monitor the effectiveness of WPC practices.

The SAP must comply with the Preparation Manual.

Assign trained personnel to collect water quality samples. Document their training in the SAP.

Describe the following water quality sampling procedures in the SAP:

- A. Sampling equipment.
- B. Sample preparation.
- C. Collection.
- D. Field measurement methods.
- E. Analytical methods.
- F. Quality assurance and quality control.
- G. Sample preservation and labeling.
- H. Collection documentation.
- I. Sample shipping.
- J. Chain of custody.
- K. Data management and reporting.
- L. Precautions from the construction site health and safety plan.
- M. Laboratory selection and certifications.

Whenever assigned field personnel take samples, comply with the equipment manufacturer's recommendation for collection, analysis methods, and equipment calibration.

Samples taken for laboratory analysis must follow water quality sampling procedures and be analyzed by a State-certified laboratory under 40 CFR Part 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants".

The SAP must identify the State-certified laboratory, sample containers, preservation requirements, holding times, and analysis method. For a list of State-certified laboratories go to: <http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx>

Obtain, install, and maintain a rain gauge at the job site. Observe and record daily precipitation.

Document sample collection during precipitation.

The Contractor are not required to physically collect samples under the following conditions:

- A. During dangerous weather conditions such as flooding or electrical storms.
- B. Outside of scheduled working hours.

Retain water quality sampling documentation and analytical results with the SWPPP at the job site.

Show pollutant sampling locations on SWPPP drawings.

If discharges or sampling locations change because of changed work activities or knowledge of site conditions, amend the SAP.

If the job is risk level 2 or risk level 3, collect and analyze at least 3 samples for each day of each qualifying rain event. Collect effluent samples at all locations where the storm water is discharged off-site.

Analytical Results and Evaluation

Submit an electronic copy and a printed copy of water quality analytical results, and quality assurance and quality control within 48 hours of field analysis sampling, and within 30 days for laboratory analysis. Also provide an evaluation of whether the downstream samples show levels of the tested parameter that are higher than the control sample.

Electronic results (in file format .xls, .txt, .csv, .dbs, or .mdb) must have the following information:

- A. Sample identification number.
- B. Contract number.
- C. Constituent.
- D. Reported value.
- E. Analytical method.
- F. Method detection limit.
- G. Reported limit.

If downstream samples show increased levels, assess WPC practices, site conditions, and surrounding influences to determine the probable cause for the increase.

SAP for Non-Visible Pollutants

The SAP must include a description of the sampling and analysis strategy for monitoring non-visible pollutants.

The SAP must identify potential non-visible pollutants present at the job site associated with any of the following:

- A. Construction materials and wastes.
- B. Existing contamination due to historical site usage.
- C. Application of soil amendments, including soil stabilization materials, with the potential to change pH or contribute toxic pollutants to storm water.

SWPPP drawings must show the locations planned for storage and use of potential non-visible pollutants.

The SAP must include sampling procedures for the following conditions when observed during a storm water visual inspection. For each of the following, collect at least one sample for each qualifying storm event:

- A. Materials or wastes containing potential non-visible pollutants that are not stored under watertight conditions.
- B. Materials or wastes containing potential non-visible pollutants that are stored under watertight conditions, but a breach, leakage, malfunction, or spill is observed; the leak or spill has not been cleaned up before precipitation; and material or waste could discharge non-visible pollutants to surface waters or drainage system.
- C. Chemical applications, including fertilizer, pesticide, herbicide, methyl methacrylate concrete sealant, or non-pigmented curing compound that occurred during precipitation or within 24 hours preceding precipitation, and could discharge pollutants to surface waters or drainage system.
- D. Applied soil amendments, including soil stabilization materials that could change pH levels or contribute toxic pollutants to storm water runoff and discharge pollutants to surface waters or drainage system, unless available independent test data indicates acceptable concentrations of non-visible pollutants in the soil amendment.
- E. Storm water runoff from an area contaminated by historical usage of the site that could discharge pollutants to surface waters or drainage systems.

The SAP must provide sampling procedures and schedule for:

- A. Sample collection during the first 2 hours of rain events that generate runoff.
- B. Sample collection during working hours.
- C. Each non-visible pollutant source.
- D. Uncontaminated control sample.

The SAP must identify locations for sampling downstream and control samples, and reasons for selecting those locations. Select control sample locations where the sample will not come in contact with materials, wastes or areas associated with potential non-visible pollutants or disturbed soil areas.

SAP for sediment and Turbidity

If the job is risk level 2 or risk level 3, sample and analyze for turbidity:

Parameter	Test Method	Detection Limit (Min)	Unit
Turbidity	Field test with calibrated portable instrument	1	NTU

If the job is risk level 3 and the turbidity NEL has been exceeded, sample and analyze for SSC:

Parameter	Test Method	Detection Limit (Min)	Unit
SSC	ASTM Method D3977-97	5	Mg/L

SAP for pH

If the job is risk level 2 or risk level 3, sample and analyze for pH:

Parameter	Test Method	Detection Limit (Min)	Unit
pH	Field test with calibrated portable instrument	0.2	pH units

Receiving Water Sampling

If the job is risk level 3, obtain samples from representative and accessible locations:

- A. Upstream of the discharge point.
- B. Downstream of the discharge point.

Show receiving water sampling locations on SWPPP drawings.

If there are several discharge points, obtain samples from a single upstream and a single downstream location.

Rain Event Action Plan (REAP)

The WPC Manager must submit a REAP to protect the job site at least 48 hours before a predicted rain event.

Prepare a REAP when National Weather Service is predicting at least a 50 percent probability of precipitation within 72 hours.

For the REAP, use approved forms and include:

- A. Site location.
- B. Risk level.
- C. Contact information including 24-hour emergency phone numbers for:
 - 1. WPC Manager.
 - 2. Erosion and sediment control providers or subcontractors.
 - 3. Storm water sampling providers or subcontractors.
- D. Storm Information.
- E. Construction phase information for:
 - 1. Highway Construction including active and inactive areas for work activities for building roads and structures.
 - 2. Plant Establishment including maintenance on vegetation installed for final stabilization where areas are inactive.
 - 3. Suspension where work activities are suspended and areas are inactive.
- F. Construction phase information including:
 - 1. Construction activities.
 - 2. Subcontractors and trades on the job site.
 - 3. Pre-storm activities including:
 - 3.1. Responsibilities of the WPC Manager.
 - 3.2. Responsibilities of the crew and crew size.
 - 3.3. Stabilization for active and inactive disturbed soil areas.
 - 3.4. Stockpile management.
 - 3.5. Corrective actions taken for deficiencies identified during pre-storm visual inspection.
 - 4. Activities to be performed during storm events including:
 - 4.1. Responsibilities of the WPC Manager.
 - 4.2. Responsibilities of the crew and crew size.
 - 4.3. BMP maintenance and repair.
 - 5. Description of flood contingency measures.

The Contractor must have the REAP onsite at least 24 hours before a predicted rain event. A printed copy of each REAP must be at the job site as part of the SWPPP.

Implement the REAP including mobilizing crews to complete activities no later than 24 hours before precipitation occurs.

IMPLEMENTATION REQUIREMENTS

Monitor the National Weather Service Forecast Office on a daily basis. For forecasts, go to: <http://www.srh.noaa.gov/forecast>

Whenever the Contractor or the Engineer identifies a deficiency in the implementation of the accepted SWPPP:

- A. Correct the deficiency immediately, unless the Engineer authorizes an agreed date for correction.
- B. Correct the deficiency before precipitation occurs.

If the Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation, the Department may correct the deficiency and deduct the cost of correcting the deficiency from payment.

If the Contractor fails to comply with "Water Pollution Control" of these Special Provisions, the Engineer will order a suspension of work until the project complies with the requirements of "Water Pollution Control" of these Special Provisions.

Continue SWPPP implementation during any temporary suspension of work activities.

Install WPC practices within 15 days or before predicted precipitation, whichever occurs first.

Numeric Action Levels (NALs)

If the job is risk level 2 or risk level 3, then it is subject to NALs:

Parameter	Test Method	Detection Limit (Min)	Unit	Numeric Action Level
pH	Field test with calibrated portable instrument	0.2	pH units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	Field test with calibrated portable instrument	1	NTU	250 NTU

Numeric Effluent Limits (NELs)

If the job is risk level 3, then it is subject to NELs:

Parameter	Test Method	Detection Limit (Min)	Unit	Numeric Effluent Limit
pH	Field test with calibrated portable instrument	0.2	pH units	Lower NEL = 6.0 Upper NEL = 9.0
Turbidity	Field test with calibrated portable instrument	1	NTU	500 NTU

The storm event daily average for storms up to the 5-year, 24-hour storm, must not exceed the NEL for turbidity.

The daily average sampling results must not exceed the NEL for pH.

Inspection

The WPC Manager must oversee inspections for WPC practices identified in the SWPPP:

- A. Before a forecasted storm.
- B. After precipitation that causes site runoff.
- C. At 24-hour intervals during extended precipitation.
- D. On a predetermined schedule, a minimum of once a week.

The WPC Manager must oversee daily inspections of:

- A. Storage areas for hazardous materials and wastes.
- B. Hazardous waste disposal and transporting activities.
- C. Hazardous material delivery and storage activities.
- D. WPC practices specified under "Construction Site Management" of these Special Provisions.

The WPC Manager must use the Storm Water Site Inspection Report provided in the Preparation Manual.

The WPC Manager must prepare BMP status reports that include the following:

- A. Location and quantity of installed WPC practices.
- B. Location and quantity of disturbed soil for the active or inactive areas.

Within 24 hours of finishing the weekly inspection, the WPC Manager must submit:

- A. Copy of the completed site inspection report.
- B. Copy of the BMP status report.

REPORTING REQUIREMENTS

Storm Water Annual Report

The WPC Manager must prepare a Storm Water Annual Report. The report must:

- A. Use an approved report format.
- B. Include project information including description and location.
- C. Include storm water monitoring information including:
 - 1. Summary and evaluation of sampling and analysis results including laboratory reports.
 - 2. Analytical methods, reporting units, detections limits for analytical parameters.
 - 3. Summary of corrective actions.
 - 4. Identification of corrective actions or compliance activities that were not implemented.
 - 5. Summary of violations.
 - 6. Names of individuals performing storm water inspections and sampling.
 - 7. Logistical information for inspections and sampling including location, date, time, and precipitation.
 - 8. Visual observations and sample collection records.
- D. Include documentation on training for:
 - 1. Individuals responsible for NPDES permit compliance.
 - 2. Individuals responsible for BMP installation, inspection, maintenance, and repair.
 - 3. Individuals responsible for preparing, revising, and amending the SWPPP.

NAL Exceedance Report

If the job is risk level 2 or risk level 3 and an effluent sample exceeds a NAL, notify the Engineer and submit a NAL Exceedance Report no later than 48 hours after the conclusion of the storm event. The report must:

- A. Include the following field sampling results and inspections:
 - 1. Analytical methods, reporting units, and detection limits.
 - 2. Date, location, time of sampling, visual observation and measurements.
 - 3. Quantity of precipitation of the storm event.
- B. Description of BMPs and corrective actions taken to manage NAL exceedance.

NEL Violation Report

If the job is risk level 3 and an NEL is exceeded, notify the Engineer and submit a NEL Violation Report within 6 hours. The report must:

- A. Include the following field sampling results and inspections:
 - 1. Analytical methods, reporting units, and detection limits.
 - 2. Date, location, time of sampling, visual observations and measurements.
 - 3. Quantity of precipitation of the storm event.
- B. Description of BMPs and corrective actions taken to manage NEL exceedance.

If the job is risk level 2 or risk level 3, submit all sampling results to the Engineer no later than 48 hours after the conclusion of a storm event.

PAYMENT

If the Contractor fails to comply with "Water Pollution Control" of these Special Provisions or fail to implement WPC practices during each estimate period, the County withholds 25 percent from progress payment.

Withholds for failure to perform WPC work are in addition to all other withholds provided for in the contract. The County returns performance-failure withholds in the progress payment following the correction for noncompliance.

The contract lump sum price paid for Water Pollution Control includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing, obtaining acceptance of, and amending the SWPPP and CSMP, inspecting water pollution control practices, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Payments for SWPPP are made as follows:

- A. After the Engineer accepts the SWPPP, the Department includes up to 50 percent of the bid item price in the monthly progress estimate.
- B. The Department pays 40 percent of the bid item price over the life of the contract.
- C. After contract acceptance, the Department pays for the remaining 10 percent of the bid item.

Full compensation for Rain Event Action Plan submitted shall be considered as included in the lump sum paid for Water Pollution Control and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparation and submittal of REAP forms, and monitoring weather forecasts as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer. Failure to submit any Storm Water Annual Report is considered a performance failure.

Full compensation for each Storm Water Annual Report submitted shall be considered as included in the lump sum price paid for Water Pollution Control and shall include full compensation for doing all the work involved in submitting the completed Storm Water Annual Report. Failure to submit any Storm Water Annual Report is considered a performance failure.

For each failure to submit a completed Storm Water Annual Report, the County withholds \$10,000.

Full compensation for storm water sampling and analysis shall be considered as included in the lump sum price paid for Water Pollution Control and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparation, collection, analysis, and reporting of storm water samples per qualifying rain event as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

The Engineer adjusts payment and contract time under Section 8-1.09, "Delays" whenever:

- A. The Engineer fails to comply with a specification within a specified time.
- B. The RWQCB fails to review the SWPPP within the specified time.

10-1.27 CONSTRUCTION SITE MANAGEMENT:

GENERAL

Summary

This work includes controlling potential sources of water pollution before they come in contact with storm water systems or watercourses.

Control material pollution and manage waste and non-stormwater at the job site by implementing effective handling, storage, use and disposal practices.

For information on documents specified in these Special Provisions, refer to the Department's Preparation Manual, Dewatering Guide, and BMP Manual.

Preparation Manual, Dewatering Guide, and BMP Manual are available from the Department's Construction Storm Water and Water Pollution Control web site at: <http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm>

Definitions and Abbreviations

active and inactive areas: (1) Active areas have soil disturbing work activities occurring at least once within 14 days, and (2) Inactive areas are areas that have not been disturbed for at least 15 days.

BMP Manual: The Department's Construction Site Best Management Practices (BMP) Manual.

CDPH: California Department of Public Health.

Dewatering Guide: The Department's Field Guide to Construction Site Dewatering.

ELAP: Environmental Laboratory Accreditation Program.

Minor spills: Small quantities of oil, gasoline, paint, or other material that are small enough to be controlled by a first responder upon discovery of the spill.

MSDS: Material Safety Data Sheet.

Preparation Manual: The Department's Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual.

Semi-significant spills: Spills that can be controlled by a first responder with help from other personnel.

Significant or hazardous spills: Spills that cannot be controlled by construction personnel.

WPC: Water Pollution Control.

WPC Manager: Water Pollution Control Manager as defined under "Water Pollution Control" of these Special Provisions.

Submittals

Submit the following:

- A. MSDS at least 5 days before material is used or stored.
- B. Monthly inventory records for material used or stored.
- C. Copy of written approval to discharge into a sanitary sewer system at least 5 days before beginning discharge activities.

CONSTRUCTION

Spill Prevention and Control

Implement spill and leak prevention procedures for chemicals and hazardous substances stored at the job site. If the Contractor spills or leaks chemicals or hazardous substances at the job site, the Contractor is responsible for all associated cleanup costs and related liability.

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

Minor Spills

Clean up minor spills using the following procedures:

- A. Contain the spread of the spill.
- B. Recover the spilled material by absorption.
- C. Clean the contaminated area.
- D. Dispose of the contaminated material promptly and properly.

Semi-Significant Spills

Clean up semi-significant spills immediately by the following procedures:

- A. Contain the spread of the spill.
- B. Recover the spilled material using absorption whenever a spill occurs on a paved surface or an impermeable surface.
- C. Contain the spill with an earthen dike and dig up the contaminated soil for disposal whenever a spill occurs on soil.
- D. If the spill occurs during precipitation, cover the spill with plastic or other material to prevent contaminated runoff.
- E. Dispose of the contaminated material promptly and properly.

Significant or Hazardous Spills

Immediately notify qualified personnel of significant or hazardous spills. Do not let construction personnel attempt to clean up the spill until qualified staff have arrived.

Do the following:

- A. Notify the Engineer and follow up with a written report.
- B. Obtain the services of a spills Contractor or hazardous material team immediately.
- C. Notify the local emergency response team by dialing 911 and county officials at the emergency phone numbers kept at the job site.
- D. Notify the Governor's Office of Emergency Services Warning Center at (805) 852-7550.
- E. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities under CFR Title 40, Parts 110, 119, and 302.
- F. Notify other agencies as appropriate, including:
 - 1. Fire Department.
 - 2. Public Works Department.
 - 3. Coast Guard.
 - 4. Highway Patrol.
 - 5. City Police or County Sheriff Department.
 - 6. Department of Toxic Substances.
 - 7. California Division of Oil and Gas.
 - 8. Cal OSHA.
 - 9. Regional Water Resources Control Board.

Report minor, semi-significant, and significant spills to the WPC Manager. The WPC Manager must notify the Engineer immediately. The WPC Manager must oversee and enforce proper spill prevention and control measures.

Prevent spills from entering storm water runoff before and during cleanup. Do not bury spills or wash spills with water.

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

Material Management

Material must be delivered, used, and stored for this job in a way that minimizes or eliminates discharge of material into the air, storm drain systems, and watercourses.

Implement the practices described under "Material Management" of these Special Provisions while taking delivery of , using, or storing any of the following materials:

- A. Hazardous chemicals including acids, lime, glues, adhesives, paints, solvents, and curing compounds.
- B. Soil stabilizers and binders.
- C. Fertilizers.
- D. Detergents.
- E. Plaster.
- F. Petroleum materials including fuel, oil, and grease.
- G. Asphalt components and concrete components.
- H. Pesticides and herbicides.

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

If practicable, use less hazardous materials.

Material Storage

Use the following material storage procedures:

- A. Store liquids, petroleum materials, and substances listed in CFR Title 40, Parts 110, 117, and 302 as specified by the Department, and place them in secondary containment facilities.
- B. Secondary containment facilities must be impervious to the materials stored there for a minimum contact time of 72 hours.
- C. Cover secondary containment facilities during non-working days and when precipitation is predicted. Secondary containment facilities must be adequately ventilated.
- D. Keep secondary containment facility free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, collect accumulated liquid and place into drums within 24 hours. Handle these liquids as hazardous waste

under "Hazardous Waste" of these Special Provisions unless testing determines them to be nonhazardous.

- E. Do not store incompatible materials, such as chlorine and ammonia, in the same secondary containment facility.
- F. Store materials in the original containers with the original material labels maintained in legible condition. Replace damaged or illegible labels immediately.
- G. Secondary containment facilities must have the capacity to contain precipitation from a 24-hour-long, 25-year storm, and 10 percent of the aggregate volume of all containers, or entire volume of the largest container within the facility, whichever is greater.
- H. Store bagged or boxed material on pallets. Protect bagged or boxed material from wind and rain during non-working days and while precipitation is predicted.
- I. Provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas must be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.
- J. Repair or replace perimeter controls, containment structures, covers, and liners as necessary. Inspect storage areas before and after precipitation, and at least weekly during other times.

Stockpile Management

Use the following stockpile management procedures:

- A. Reduce or eliminate potential water pollution from stockpiled material including soil, paving material, and pressure treated wood.
- B. Locate stockpiles:
 - 1. If within the floodplain, at least 30 m from concentrated flows of storm water, drainage courses, and inlets unless approved.
 - 2. If outside the floodplain, at least 15 m from concentrated flows of storm water, drainage courses, and inlets unless approved.

Install WPC practices within 15 days or before predicted precipitation, whichever occurs first.

Active and inactive soil stockpiles must be:

- A. Covered with soil stabilization measures, plastic sheeting, or geosynthetic fabric.
- B. Surrounded with a linear sediment barrier.

Portland cement concrete rubble, AC, HMA, AC and HMA rubble, aggregate base or aggregate sub-base stockpiles must be:

- A. Covered with plastic sheeting, or geosynthetic fabric.
- B. Surrounded with a linear sediment barrier.

Pressure treated wood stockpiles must be:

- A. Placed on pallets.
- B. Covered with impermeable material.

Cold mix asphalt concrete stockpiles must be:

- A. Placed on impervious surface.
- B. Covered with impermeable material.
- C. Protected from run-on and runoff.

Control wind erosion year round under Section 10, "Dust Control" of the Standard Specifications.

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

Waste Management

Solid Waste

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

If practicable, recycle nonhazardous job site waste and excess material. If recycling is not practicable, disposal must comply with Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

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

Solid waste includes:

- A. Brick.
- B. Mortar.
- C. Timber.
- D. Metal scraps.
- E. Sawdust.
- F. Pipe.
- G. Electrical cuttings.
- H. Non-hazardous equipment parts.
- I. Styrofoam and other packaging materials.
- J. Vegetative material and plant containers from highway planting.

- K. Litter and smoking material, including litter generated randomly by the public.
- L. Other trash and debris.

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

Hazardous Waste

Use hazardous waste management practices if waste is generated at the job site from the following substances:

- A. Petroleum products.
- B. Asphalt products.
- C. Concrete curing compound.
- D. Pesticides.
- E. Acids.
- F. Paints.
- G. Stains.
- H. Solvents.
- I. Wood preservatives and treated posts.
- J. Roofing tar.
- K. Road flares.
- L. Lime.
- M. Glues and adhesives.
- N. Materials classified as hazardous by California Code of Regulations, Title 22, Division 4.5; or listed in CFR Title 40, Parts 110, 117, 261, or 302.

The WPC Manager must oversee and enforce hazardous waste management practices. Minimize the production of hazardous materials and hazardous waste at the job site. If damaged, repair or replace perimeter controls, containment structures, and covers.

If hazardous material levels are unknown, use a laboratory certified by ELAP under CDPH to sample and test waste to determine safe methods for storage and disposal.

Separate potentially hazardous waste from nonhazardous waste at the job site. Hazardous waste must be handled, stored, and disposed of under California Code of Regulations, Title 22, Division 4.5, Section 66262.34; and in CFR Title 49, Parts 261, 262, and 263.

Store hazardous waste in sealed containers constructed and labeled with the contents and date accumulated under California Code of Regulations, Title 22, Division 4.5; and in CFR Title 49, Parts 172, 173, 178, and 179. Keep hazardous waste containers in temporary containment facilities under "Material Storage" of these Special Provisions.

Furnish containers with adequate storage volume at convenient locations for hazardous waste collection. Do not overfill hazardous waste containers. Do not mix hazardous wastes. Do not allow potentially hazardous waste to accumulate on the ground. Store containers of dry waste that are not watertight on pallets. Store

hazardous waste away from storm drains, watercourses, moving vehicles, and equipment.

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

Dispose of hazardous waste within 90 days of being generated. Use a licensed hazardous waste transporter to take hazardous waste to a Class I Disposal Site. Submit a copy of uniform hazardous waste manifest forms within 24 hours of transporting hazardous waste.

The WPC Manager must inspect the following daily:

- A. Storage areas for hazardous materials and wastes.
- B. Hazardous waste disposal and transporting activities.
- C. Hazardous material delivery and storage activities.

Contaminated Soil

Identify contaminated soil from spills or leaks by noticing discoloration, odors, or differences in soil properties. Soil with evidence of contamination must be sampled and tested by a laboratory certified by ELAP.

If levels of contamination are found to be hazardous, handle and dispose of the soil as hazardous waste.

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

- A. Berms.
- B. Cofferdams.
- C. Grout curtains.
- D. Freeze walls.
- E. Concrete seal course.

If water mixes with contaminated soil and becomes contaminated, sample and test the water using a laboratory certified by ELAP. If levels of contamination are found to be hazardous, handle and dispose of the water as hazardous waste.

Concrete Waste

Use practices that will prevent the discharge of Portland cement concrete, AC, or HMA waste into storm drain systems or watercourses.

Collect and dispose of Portland cement concrete, AC, or HMA waste at locations where:

- A. Concrete material, including grout, is used.
- B. Concrete dust and debris result from demolition.
- C. Sawcutting, coring, grinding, grooving, or hydro-concrete demolition of Portland cement concrete, AC, or HMA creates a residue or slurry.
- D. Concrete truck or other concrete-coated equipment is cleaned at the job site.

Sanitary and Septic Waste

Do not bury or discharge wastewater from sanitary or septic systems within Department right-of-way. The WPC Manager must inspect sanitary or septic waste storage and monitor disposal procedures at least weekly. Sanitary facilities that discharge to the sanitary sewer system must be properly connected and free from leaks. Place sanitary facilities at least 15 m away from storm drains, watercourses, and flow lines.

Obtain written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, and submit a copy to the Engineer. Comply with local health agency provisions while using an on-site disposal system.

Liquid Waste

Use practices that will prevent job site liquid waste from entering storm drain systems or watercourses. Liquid wastes include the following:

- A. Drilling slurries or fluids.
- B. Grease-free or oil-free wastewater or rinse water.
- C. Dredgings, including liquid waste from drainage system cleaning.
- D. Liquid waste running off a surface including wash or rinse water.
- E. Other non-stormwater liquids not covered by separate permits.

Hold liquid waste in structurally sound, leak proof containers such as:

- A. Roll-off bins.
- B. Portable tanks.

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

Store containers:

- A. At least 15 m from moving vehicles and equipment.
- B. If within the floodplain, at least 30 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.
- C. If outside the floodplain, at least 15 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.

Remove and dispose of deposited solids from sediment traps under "Solid Waste" of these Special Provisions unless the Engineer approves another method.

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

Drilling fluids and residue must be disposed of outside the highway right-of-way.

If an approved location is available within the job site, fluids and residue exempt under California Code of Regulations, Title 23, Section 2511(g) may be dried by evaporation in a leak proof container. Dispose of remaining solid waste under "Solid Waste" of these Special Provisions.

Non-Storm Water Management

Water Control and Conservation

Manage water used for work activities to prevent erosion or discharge of pollutants into storm drain systems or watercourses. Obtain approval before washing anything at the job site with water that could discharge into a storm drain system or watercourse. Report discharges immediately.

If water is used at the job site, implement water conservation practices. Inspect irrigation areas. Adjust watering schedules to prevent erosion, excess watering, or runoff. Shut off water source to broken lines, sprinklers, or valves, and repair breaks within 24 hours. If possible, reuse water from waterline flushing for landscape irrigation. Sweep and vacuum paved areas; do not wash them with water.

Direct job site water runoff, including water from water line repair, to areas where it can infiltrate into the ground and not enter storm drain systems or watercourses. Do not allow spilled water to escape water truck filling areas. If possible, direct water from off-site sources around the job site. Minimize the contact of off-site water with job site water.

Illegal Connection and Discharge Detection and Reporting

Inspect the job site and the site perimeter before starting work for evidence of illegal connections, discharges, or dumping. After starting work, inspect the job site and perimeter on a daily schedule.

Whenever illegal connections, discharges, or dumping are discovered, notify the Engineer immediately. Take no further action unless ordered by the Engineer. Assume unlabeled or unidentifiable material is hazardous.

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

- A. Debris or trash piles.
- B. Staining or discoloration on pavement or soils.
- C. Pungent odors coming from drainage systems.
- D. Discoloration or oily sheen on water.
- E. Stains or residue in ditches, channels or drain boxes.
- F. Abnormal water flow during dry weather.
- G. Excessive sediment deposits.
- H. Nonstandard drainage junction structures.
- I. Broken concrete or other disturbances near junction structures.

Vehicle and Equipment Cleaning

Limit vehicle and equipment cleaning or washing at the job site except what is necessary to control vehicle tracking or hazardous waste. Notify the Engineer before cleaning vehicles and equipment at the job site with soap, solvents, or steam. Contain and recycle or dispose of resulting waste under "Liquid Waste" or "Hazardous Waste" of these Special Provisions, whichever is applicable. Do not use diesel to clean vehicles or equipment, and minimize the use of solvents.

Clean or wash vehicles and equipment in a structure equipped with disposal facilities. If using a structure is not possible, clean or wash vehicles and equipment in an outside area. The outside area must be:

- A. Paved with AC, HMA, or concrete paving.
- B. Surrounded by a containment berm.
- C. Equipped with a sump to collect and dispose of wash water.
- D. If within the floodplain, located at least 30 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.
- E. If outside the floodplain, located at least 15 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.

When washing vehicles or equipment with water, use as little water as possible. Hoses must be equipped with a positive shutoff valve.

Discharge liquid from wash racks to a recycle system or to another approved system. Remove liquids and sediment as necessary.

The WPC Manager must inspect vehicle and equipment cleaning facilities:

- A. Daily if vehicle and equipment cleaning occurs daily.
- B. Weekly if vehicle and equipment cleaning does not occur daily.

Vehicle and Equipment Fueling and Maintenance

If practicable, perform maintenance on vehicles and equipment off the job site.

If fueling or maintenance must be done at the job site, designate a site, or sites, and obtain approval before using. Minimize mobile fueling or maintenance.

If vehicle and equipment fueling and maintenance must be done at the job site, areas for the following activities must be:

- A. On level ground.
- B. Protected from storm water run-on.
- C. If within the floodplain, located at least 30 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.
- D. If outside the floodplain, located at least 15 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.

Use containment berms or dikes around the fueling and maintenance area. Keep adequate quantities of absorbent spill cleanup material and spill kits in the fueling and maintenance area and on fueling trucks. Dispose of spill cleanup material and kits immediately after use. Use drip pans or absorbent pads during fueling or maintenance.

Fueling or maintenance activities must not be left unattended. Fueling nozzles must be equipped with an automatic shutoff control. Vapor recovery fueling nozzles must be used where required by the Air Quality Management District. When not in use, nozzles must be secured upright. Do not top-off fuel tanks.

Recycle or properly dispose of used batteries and tires.

The WPC Manager must inspect vehicle and equipment maintenance and fueling areas:

- A. Daily when vehicle and equipment maintenance and fueling occurs daily.
- B. Weekly when vehicle and equipment maintenance and fueling does not occur daily.

The WPC Manager must inspect vehicles and equipment at the job site for leaks and spills on a daily schedule. Operators must inspect vehicles and equipment each day of use.

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

Material and Equipment Used Over Water

Place drip pans and absorbent pads under vehicles or equipment used over water. Keep an adequate supply of spill cleanup material with the vehicle or equipment. If the vehicle or equipment will be idle for more than one hour, place drip pans or plastic sheeting under the vehicle or equipment on docks, barges, or other surfaces over water.

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

Structure Removal Over or Adjacent to Water

Do not allow demolished material to enter storm water systems or watercourses. Use approved covers and platforms to collect debris. Use attachments on equipment to catch debris on small demolition activities. Empty debris catching devices daily and handle debris under "Waste Management" of these Special Provisions.

The WPC Manager must inspect demolition sites within 15 m of storm water systems or watercourses daily.

Paving, Sealing, Sawcutting, Grooving, and Grinding Activities

Prevent the following materials from entering storm drain systems or water courses:

- A. Cementitious material.
- B. Asphaltic material.
- C. Aggregate or screenings.
- D. Grinding grooving, or sawcutting residue.
- E. Pavement chunks.
- F. Shoulder backing.
- G. Methacrylate.

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

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

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

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

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

If approved, material excavated from existing roadways may be stockpiled under "Stockpile Management" of these Special Provisions.

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

When paving equipment is not in use, park over drip pans or plastic sheeting with absorbent material to catch drips.

Thermoplastic Striping and Pavement Markers

Thermoplastic striping and preheating equipment shutoff valves must work properly at all times. Do not preheat, transfer, or load thermoplastic within 15 m of drainage inlets or watercourses. Do not fill a preheating container above a level that is 150-mm below the top. Truck beds must be cleaned daily of scraps or melted thermoplastic.

Do not unload, transfer, or load bituminous material for pavement markers within 15 m of drainage inlets or watercourses. Release all pressure from a melting tank before removing the lid to fill or service. Do not fill a melting tank above a level that is 150-mm below the top.

Collect bituminous material from the roadway after marker removal.

Pile Driving

Keep spill kits and cleanup material at pile driving locations. Pile driving equipment must be parked over drip pans, absorbent pads, or plastic sheeting with absorbent material. If precipitation is predicted, protect pile driving equipment by parking on plywood and covering with plastic.

Store pile driving equipment when not in use. Stored pile driving equipment must be:

- A. Kept on level ground.
- B. Protected from storm water run-on.
- C. If within the floodplain, at least 30 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.
- D. If outside the floodplain, at least 15 m from concentrated flows of storm water, drainage courses, watercourses, and storm drain inlets unless approved.

If practicable, use vegetable oil instead of hydraulic fluid.

The WPC Manager must inspect the pile driving area for leaks and spills:

- A. Daily when pile driving occurs daily.
- B. Weekly when pile driving does not occur daily.

Concrete Curing

Do not overspray chemical curing compound. Minimize the drift by spraying as close to the concrete as possible. Cover drainage inlets before applying the curing compound.

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

Concrete Finishing

Collect and dispose of water and solid waste from high-pressure water blasting. Cover drainage inlets within 15 m before sandblasting. Minimize drift of dust and blast material by keeping the nozzle close to the surface of the concrete. The blast residue may contain hazardous material.

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

Sweeping

Sweeping must be done using hand or mechanical methods such as vacuuming.

Monitor paved areas and roadways within the job site for sediment and debris generating activities such as:

- A. Clearing and grubbing.
- B. Earthwork.
- C. Trenching.
- D. Roadway structural section work.
- E. Vehicles entering and leaving the job site.
- F. Soil disturbing work.
- G. Work that causes offsite tracking of material.

If sediment or debris is observed, perform sweeping:

- A. Within:
 - 1. 8 hours of predicted rain.
 - 2. 24 hours unless the Engineer approves a longer period.
- B. On paved roads at job site entrances and exit locations.
- C. On paved areas within the job site that flow to storm drains or receiving waters.

The Contractor may stockpile collected material at the job site. Remove collected material including sediment from paved shoulders, drain inlets, curbs and dikes, and other drainage areas. If stockpiled, dispose of collected material at least once per week.

The Contractor may dispose of sediment within the job site that you collected during sweeping activities. Protect disposal areas against erosion.

Remove and dispose of trash collected during sweeping under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Dewatering

Dewatering consists of discharging accumulated storm water, ground water, or surface water from excavations or temporary containment facilities.

If dewatering and discharging activities are specified under a work item such as "Temporary Active Treatment System" or "Dewatering and Discharge", perform dewatering work as specified in the section involved.

If dewatering and discharging activities are not specified under a work item and the Contractor will be performing dewatering activities, the Contractor must:

- A. Submit a Dewatering and Discharge Plan under Section 5-1.02, "Plans and Working Drawings" of the Standard Specifications and "Water Pollution Control" of these Special Provisions at least 10 days before starting dewatering activities. The Dewatering and Discharge Plan must include:
 1. Title sheet and table of contents.
 2. Description of dewatering and discharge activities detailing locations, quantity of water, equipment, and discharge points.
 3. Estimated schedule for dewatering and discharge (start and end dates, intermittent or continuous).
 4. Discharge alternatives such as dust control or percolation.
 5. Visual monitoring procedures with inspection log.
- B. Conduct dewatering activities under the County's "Field Guide for Construction Dewatering".
- C. Ensure that any dewatering discharge does not cause erosion, scour, or sedimentary deposits that could impact natural bedding materials.
- D. Discharge the water within the project limits. Dispose of the water in the same way as specified for material in Section 7-1.13 "Disposal of Material Outside the Highway Right of Way" of the Standard Specification if it cannot be discharged within project limits due to site constraints.
- E. Do not discharge storm water or non-stormwater that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface. Notify the Engineer immediately upon discovering any such condition.

The WPC manager must inspect dewatering activities:

- A. Daily when dewatering work occurs daily.
- B. Weekly when dewatering work does not occur daily.

Graffiti Removal

Graffiti that appears at the construction site will be painted over or removed within twenty-four hours. Paint, if used to cover graffiti will match the color of the surface to which it is applied and will be suitable for the intended purpose. Should graffiti damage traffic control devices, traffic control devices shall be replaced at Contractor's expense.

Full compensation for graffiti removal, including labor, equipment, materials, and incidentals, including the replacement of traffic control devices, shall be paid as a part of the lump sum contract for Construction Site Management and no additional compensation will be allowed therefor.

PAYMENT

The contract lump sum price paid for Construction Site Management includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in spill prevention and control, material management, waste management, non-stormwater management, and dewatering and identifying, sampling, testing, handling, and disposing of hazardous waste resulting from your activities, as specified in the Standard Specifications and these Special Provisions, and as ordered by the Engineer.

10-1.28 SAMPLING AND REMOVAL OF ASBESTOS CONTAINING MATERIALS – BRIDGES AND OPEN STRUCTURES:

Asbestos containing materials (ACM), as defined in Section 1529, "Asbestos" of the Construction Safety Orders, Title 8, of the California Code of Regulations may be present in the structure proposed for demolition or renovation.

In compliance with Standard Specifications Section 7-1.01F, the Contractor shall notify the South Coast Air Quality Management District (AQMD) as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61, Subpart M, California Health and Safety Code section 39658(b)(1), and the California Air Resources Board regulations. A copy of the notification form and attachments shall be provided to the Engineer prior to submittal. Notification shall take place a minimum of 10 working days prior to starting demolition or renovation activities.

ASBESTOS SURVEY

All suspected structural members have tested negative for asbestos-containing material. Portions of the survey report are included in the "Information Handout". The complete report entitled "LIMITED ASBESTOS SURVEY REPORT, Two I-10 Interchanges Palm Drive/Gene Autry Trail and Date Palm Drive" is available for inspection at the Riverside County Department of Transportation Office, located at 3525 14th Street, Riverside, CA 92502.

ASBESTOS SAMPLING AND ANALYSIS WORKPLAN

Removal

Removal and management of ACM shall be performed by a Contractor who is registered pursuant to Section 6501.5 of the Labor Code and certified pursuant to Section 7058.6 of the Business and Professions Code. Asbestos removal shall conform to Cal/OSHA requirements in Title 8 Sections 1529 and 341. All friable material shall be removed in a manner that conforms to OSHA work practice requirements. All non-friable ACM shall be removed and handled to prevent breakage. Non-friable ACM such as asbestos cement pipe shall be disposed of to a landfill facility permitted to take regulated asbestos containing material. The removal of ACM encased in concrete or other similar structural material is not required prior to demolition, but such material shall be adequately wetted whenever exposed during demolition. Packaging, storage, transporting, and disposing of ACM, shall conform to Title 22, Division 4.5, Chapters 11, 12 and 13 of the California Code of Regulations. The handling, removal, transportation, and disposal of ACM shall result in no visible dust.

Asbestos removal procedures shall include, but not be limited to:

- A. Installing asbestos warning signs at perimeters of abatement work areas.
- B. Wetting asbestos materials with sprayers.
- C. Containing large volumes of asbestos materials in disposal bins for temporary storage until removed from the site.
- D. Providing manifests for waste disposal upon completion for the Engineer to sign.
- E. Providing transporters registered to transport hazardous waste in the State of California in accordance with the provisions of Chapter 6.5, Division 20 of the Health and Safety Code and Title 22 of the California Code of Regulations, Division 4.5.
- F. Disposing of asbestos materials at a permitted disposal facility, which accepts such materials.
- G. Working in accordance with Federal, State, and Local requirements for asbestos work.

All vehicles used to transport ACM shall be marked as specified below, or an equivalent warning:

**DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

Handling

The Contractor shall comply with CCR Title 22, Division 4.5, Chapter 12, Article 3 requirements for packaging and labeling removed ACM, and shall place such removed material in approved plastic containers (double ply, 0.15-mm minimum thickness, plastic bags) with caution labels affixed to bags. Such caution labels shall have conspicuous, legible lettering, which spells out the following, or equivalent warning:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

At the option of the Contractor, the removed materials containing asbestos may be placed directly into a covered roll off or drop box, which shall have the same caution label, affixed on all sides.

Transporting

All haulers of friable asbestos containing material shall be currently registered with the State Department of Toxic Substances Control (DTSC), and shall have a U.S. Environmental Protection Agency Identification Number (U.S. EPA I.D. Number). All vehicles used to transport hazardous waste material shall carry a valid registration issued by DTSC.

Disposal

The Engineer will obtain the required EPA generator identification numbers, and will sign the hazardous waste manifests for disposal of friable asbestos containing material. The Contractor shall dispose of friable and non-friable waste containing asbestos at a disposal facility permitted to accept such material and that meets all the requirements specified by Federal, State, and Local regulations. The Contractor shall notify the proper authorities at the disposal site in advance of delivery of asbestos containing material to the disposal site. The Contractor shall conduct additional sampling deemed necessary by the owner of the disposal facility for acceptance of the material.

ASBESTOS COMPLIANCE PLAN

The Contractor shall prepare an Asbestos Compliance Plan (ACP) to prevent or minimize exposure to asbestos. Attention is directed to Title 8, California Code of Regulations, Construction Safety Orders, Section 5192 (b) and Section 1529, "Asbestos", Occupational Safety and Health Guidance Manual published by the National Institute of Occupational Safety and Health (NIOSH) and the USEPA for elements of the ACP. The ACP shall contain as a minimum but not be limited to: identification of key personnel for the project, job hazard analysis for work

assignments, summary of risk assessment, personal protective equipment, delineation of work zones on-site, decontamination procedures, general safe work practices, security measures, emergency response plans and worker training. The ACP shall be approved in writing by an industrial hygienist certified in the practice of industrial hygiene by the American Board of Industrial Hygiene before submission to the Engineer for review and acceptance. The plan shall be submitted to the Engineer at least 15 days prior to beginning work in areas containing or suspected to contain asbestos.

TRAINING

Prior to performing work in areas containing or suspected to contain asbestos, personnel who have no prior training or are not current in their training status, including State personnel, shall complete a safety training program provided by the Contractor, which meets the requirement of Title 8, California Code of Regulations, Section 1529. The Contractor shall provide a written certification of completion of safety training to the Engineer for trained personnel prior to performing work in areas containing or suspected to contain asbestos.

EQUIPMENT AND MEDICAL SURVEILLANCE

The Contractor shall provide personnel protective equipment, training, and medical surveillance required by the Contractor's Asbestos Compliance Plan to State personnel. The number of State personnel will be 3.

PAYMENT

The contract lump sum price paid for Asbestos Compliance Plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing the Asbestos Compliance Plan, including paying the Certified Industrial Hygienist, and for providing personal protective equipment, training and medical surveillance, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Preparation of a Sampling and Analysis Workplan, and an Asbestos Sampling and Analysis report, identifying and determining the extent of asbestos prior to and during demolition or alteration work, including sampling and testing of this material and will be paid as extra work in accordance with section 4-1.03D of the Standard Specifications.

10-1.29 STREET SWEEPING:

GENERAL

Summary

This work includes street sweeping.

The SWPPP must describe and include the use of street sweeping as a water pollution control practice for sediment control and tracking control.

Submittals

At least 5 business days before starting clearing and grubbing, earthwork, or other activities with the potential for tracking sediment or debris, submit:

- A. Number of sweepers described in the SWPPP.
- B. Type of sweeper technology.

Quality Control and Assurance

Retain and submit records of street sweeping including:

- A. Quantity of sweeping waste disposal.
- B. Sweeping times and locations.

CONSTRUCTION

Street Sweepers

Sweepers must use one of these technologies:

- A. Mechanical sweeper followed by a vacuum-assisted sweeper.
- B. Vacuum-assisted dry (waterless) sweeper.
- C. Regenerative-air sweeper.

Operation

Street sweeping must be done at:

- A. Paved roads at job site entrance and exit locations.
- B. Paved areas within the job site that flow to storm drains or water bodies.

Street sweeping must be done:

- A. During clearing and grubbing activities.
- B. During earthwork activities.
- C. During trenching activities.
- D. During roadway structural section activities.

- E. When vehicles are entering and leaving the job site.
- F. After soil disturbing activities.
- G. After observing offsite tracking of material.

Monitor paved areas and roadway within the jobsite. Street sweeping must be done:

- A. Within 1 hour, if sediment or debris is observed during activities that require sweeping.
- B. Within 24 hours, if sediment or debris is observed during activities that do not require sweeping.

At least 1 sweeper must be on the job site at all times when sweeping work is required. The sweeper must be in good working order.

Perform street sweeping to minimize dust. If dust generation is excessive or sediment pickup is ineffective, use water or a vacuum.

The Contractor may stockpile collected material on the jobsite according to the approved SWPPP. Dispose of collected material at least once per week.

Material collected during street sweeping must be removed and disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

The WPCM must inspect paved roads at job site access points:

- A. Daily if earthwork and other sediment or debris generating activities occur daily.
- B. Weekly if earthwork and other sediment or debris generating activities do not occur daily.
- C. When the National Weather Service predicts precipitation with a probability of at least 30 percent.

MEASUREMENT AND PAYMENT

The contract lump sum price paid for Street Sweeping includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in street sweeping, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these Special Provisions, and as directed by the Engineer.

10-1.30 TEMPORARY CONCRETE WASHOUT BIN:

GENERAL

Summary

This work includes removal and disposal of concrete waste by furnishing, maintaining, and removing temporary concrete washout bins.

The SWPPP must describe and include the use of temporary concrete washout bins as a water pollution control practice for waste management and materials pollution control.

Submittals

At least 5 business days before concrete operations start, submit:

- A. Location of the washout bins.
- B. Name and location of the off-site concrete waste disposal facility to receive concrete waste.
- C. Copy of the permit issued by RWQCB for the off-site commercial disposal facility.
- D. Copy of the license for the off-site commercial disposal facility.
- E. Copy of the permit issued by the State or local agency having jurisdiction over the disposal facility if the disposal site is located outside of the State of California.

Quality Control and Assurance

Retain and submit records of disposed concrete waste including:

- A. Weight tickets.
- B. Delivery and removal of concrete washout bins.

MATERIALS

Concrete Washout Bin

Concrete washout bin must:

- A. Be a commercially available watertight container.
- B. Have sufficient capacity to contain all liquid and concrete waste generated by washout operations without seepage or spills.
- C. Be not less than 4.2 cubic meters of capacity.
- D. Be a roll-off bin and may include folding steel ramps.
- E. Be labeled for the exclusive use as a concrete waste and washout facility.

Concrete Washout Sign

Concrete washout sign must:

- A. Comply with the provisions in Section 12-3.06B, "Portable Signs" of the Standard Specifications.
- B. Be approved by the Engineer.
- C. Consist of a base, framework and a sign panel.
- D. Be made out of plywood.
- E. Be a minimum size of 610-mm by 1200- mm.
- F. Read "Concrete Washout" with black letters, 75-mm high, on a white background.

CONSTRUCTION

Placement

Place concrete washout bins at the job site:

- A. Before concrete placement activities begin.
- B. In the immediate area of the concrete work as approved by the Engineer.
- C. No closer than 15 m from storm drain inlets, open drainage facilities, ESAs, or watercourses.
- D. Away from construction traffic or public access areas.

Install a concrete washout sign adjacent to each temporary concrete washout bin location.

Operation

Use concrete washout bins for:

- A. Washout from concrete delivery trucks .
- B. Slurries containing Portland cement concrete or hot mix asphalt from sawcutting, coring, grinding, grooving, and hydro-concrete demolition.
- C. Concrete waste from mortar mixing stations.

Relocate concrete washout bins as needed for concrete construction work.

Replace concrete washout bins when filled to capacity. Do not fill higher than 150-mm below rim.

The WPCM must inspect concrete washout bins:

- A. Daily if concrete work occurs daily.
- B. Weekly if concrete work does not occur daily.

Maintenance

When relocating or transporting a concrete washout bin within the project site, secure the concrete washout bin to prevent spilling of concrete waste material. If any spilled material is observed, remove the spilled material and place it into the concrete washout bin.

Removal

Dispose of concrete waste material at a facility specifically licensed to receive solid concrete waste, liquid concrete waste, or both. Remove and dispose of concrete waste within 2 days of the concrete washout bin becoming filled to capacity.

MEASUREMENT AND PAYMENT

Temporary concrete washout bin is measured by the actual count of concrete washout bins in place.

The contract unit price paid per each for Temporary Concrete Washout Bin includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing, maintaining, and removing the concrete washout bin, including removal and disposal of concrete waste, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

10-1.31 TEMPORARY SILT FENCE:

GENERAL

Summary

This work includes installing, maintaining, and removing temporary silt fence.

The SWPPP must describe and include the use of temporary silt fence as a water pollution control practice for sediment control.

Submittals

Submit a Certificate of Compliance as specified in Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for silt fence fabric.

MATERIALS

Silt Fence Fabric

Geosynthetic fabric for temporary silt fence must consist of one of the following:

- A. Polyester.

- B. Polypropylene.
- C. Combined polyester and polypropylene.

Sample under ASTM D 4354, Procedure C.

Test under ASTM D 4759. All properties must be based on Minimum Average Roll Value (MARV).

Identify, store, and handle under ASTM D 4873.

Protect geosynthetics from moisture, sunlight, and damage during shipping and storage. Label each unit with the manufacturer's name, identifying information, and product identification.

Silt fence fabric must comply with:

Property	ASTM Designation	Specification	
		Woven	Non-woven
Grab breaking load 25-mm grip, Newtons, min. in each direction	D 4632	530	530
Apparent elongation percent, min., in each direction	D 4632	15	50
Water Flow Rate max. average roll value, liters per minute/square meter	D 4491	400-2000	4000-6000
Permittivity 1/sec., min.	D 4491	0.05	0.05
Apparent opening size max. average roll value, microns	D 4751	800	800
Ultraviolet Degradation percent of original unexposed grab breaking load 500 hr, minimum	D 4595	70	

Posts

Posts must be wood or metal.

Wood posts must be:

- A. Untreated fir, redwood, cedar, or pine and cut from sound timber.
- B. Straight and free of loose or unsound knots and other defects that would render the stakes unfit for use.
- C. Pointed on the end to be driven into the ground.
- D. At least 38-mm x 38-mm in size, and 1.2 m long.

Metal posts must:

- A. Be made of steel.
- B. Have a "U," "T," "L," or other cross sectional shape that can resist failure from lateral loads.
- C. Be pointed on the end to be driven into the ground.

- D. Have mass of at least 1.1 kg/m.
- E. Be at least 1.2 m long.
- F. Have a safety cap attached to the exposed end. The safety cap must be orange or red plastic and fit snugly to the metal post.

CONSTRUCTION

Silt fence must be:

- A. Constructed with silt fence fabric, posts, and fasteners.
- B. Prefabricated or assembled at the job site.

Silt fence fabric must be attached to posts using these methods:

- A. If prefabricated silt fence is used, posts must be inserted into sewn pockets.
- B. If assembled on the job site:
 - 1. If wood posts are used, fasteners must be staples or nails.
 - 2. If steel posts are used, fasteners must be tie wires or locking plastic fasteners.
 - 3. Spacing of the fasteners must be no more than 8 inches apart.

Place silt fence approximately parallel to the slope contour. For any 15 m section of silt fence, do not allow the elevation at the base of the fence to vary more than 1/3 of the fence height.

Install silt fence by:

- A. Placing the bottom of the fabric in a trench that is 6 inches deep.
- B. Securing with posts placed on the downhill side of the fabric.
- C. Backfilling the trench with soil and hand or mechanically tamping to secure the fabric in the trench.

If the Contractor reinforces the silt fence fabric with wire or plastic mesh, the Contractor may increase the post spacing to a maximum of 3 m. The field-assembled reinforced silt fence must be able to retain saturated sediment without collapsing.

Connect silt fence sections by:

- A. Joining separate sections of silt fence to form reaches that are no more than 150 m long.
- B. Securing the end posts of each section by wrapping the tops of the posts with at least two wraps of 1.5-mm diameter tie wire.
- C. Ensuring that each reach is a continuous run of silt fence from end to end or from an end to an opening, including joined panels.

If the Contractor mechanically pushes the silt fence fabric vertically through the soil, the Contractor must demonstrate that the silt fence fabric will not be damaged and will not slip out of the soil, resulting in sediment passing under the silt fence fabric.

MAINTENANCE

Maintain temporary silt fence to provide sediment holding capacity and to reduce runoff velocities.

Remove sediment deposits, trash, and debris from temporary silt fence as needed or when directed by the Engineer. If removed sediment is deposited within project limits, it must be stabilized and not subject to erosion by wind or water. Trash and debris must be removed and disposed of as specified in Section 7-1.13, "Disposal of Material Outside the Highway Right of way" of the Standard Specifications.

Maintain temporary silt fence by:

- A. Removing sediment from behind the silt fence when sediment is 1/3 the height of the silt fence above ground.
- B. Repairing or adjusting the silt fence when rills and other evidence of concentrated runoff occur beneath the silt fence fabric.
- C. Repairing or replacing the silt fence fabric when it become split, torn, or unraveled.

Repair temporary silt fence within 24 hours of discovering damage unless the Engineer approves a longer period.

If the Contractor's vehicles, equipment, or activities disturb or displace temporary silt fence, repair temporary silt fence at the Contractor's expense.

The County does not pay maintenance costs for cleanup, repair, removal, disposal, or replacement due to improper installation or your negligence.

REMOVAL

When the Engineer determines that temporary silt fence is not required, remove and dispose of fence under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Ground disturbance, including holes and depressions, caused by the installation and removal of the temporary silt fence must be backfilled and repaired under Section 15-1.02, "Preservation of Property" of the Standard Specifications.

MEASUREMENT AND PAYMENT

Temporary silt fence is measured by the meter along the centerline of the installed fence.

The contract price paid per meter for Temporary Silt Fence includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the temporary silt fence, maintaining, repairing and complete in place, including removal of materials, cleanup and disposal of retained sediment and debris, and backfilling and repairing holes,

depressions and other ground disturbance, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

10-1.32 TEMPORARY FENCE (TYPE ESA):

GENERAL

Summary

This work includes constructing, maintaining, and removing temporary fence (Type ESA). Temporary fence (Type ESA) provides a visible boundary adjacent to protected areas such as an environmentally sensitive area.

Signs are required for temporary fence (Type ESA).

Submittals

Submit a Certificate of Compliance as specified in Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for:

- A. High visibility fabric.
- B. Safety cap for metal posts.

MATERIALS

High Visibility Fabric

High visibility fabric for temporary fence (Type ESA) must consist of one of the following:

- A. Polyethylene.
- B. Polypropylene.
- C. Combined polyethylene and polypropylene.

Sample under ASTM D 4354, Procedure C.

Test under ASTM D 4759. All properties must be based on Minimum Average Roll Value.

Identify, store, and handle under ASTM D 4873.

High visibility fabric must:

- A. Contain ultraviolet inhibitors.
- B. Comply with the following:

Property	Specifications	Requirements
Width, mm, Min	Measured	1200
Opening size mm	Measured	25 x 25 (Min) 50 x 50 (Max)
Color	Observed	Orange
Grab breaking load 25-mm grip, Newtons, Min. in each direction	ASTM D4632	1150
Apparent elongation percent, Min., in each direction	ASTM D4632	5
Ultraviolet Degradation percent of original unexposed grab breaking load 500 hr, minimum	ASTM D4355	70

Posts

Posts must be wood or steel.

Wood posts must be:

- A. Untreated fir, redwood, cedar, or pine and cut from sound timber.
- B. Straight and free of loose or unsound knots and other defects that would render the stakes unfit for use.
- C. Pointed on the end to be driven into the ground.
- D. At least 50-mm x 50-mm in size and 2.4 m long.

Steel posts must:

- A. Have a "U," "T," "L," or other cross sectional shape that can resist failure from lateral loads.
- B. Be pointed on the end to be driven into the ground.
- C. Have a mass of at least 1.1 kg/m.
- D. Be at least 2.4 m long.
- E. Have a safety cap attached to the exposed end. The safety cap must be yellow, orange or red plastic and fit snugly to the metal post.

CONSTRUCTION

General

Install temporary fence (Type ESA):

- A. With high visibility fabric, posts, and fasteners as follows:
 - 1. If wood posts are used, fasteners must be staples or nails.
 - 2. If steel posts are used, fasteners must be tie wires or locking plastic fasteners.

3. Spacing of the fasteners must be no more than 200-mm apart.
- B. Before clearing and grubbing activities.
 - C. From outside of the protected area.
 - D. With posts spaced 2.4 m apart and embedded at least 400-mm in the soil.

If specified, signs must be:

- A. Attached with the top of the sign panel flush with the top of the high visibility fabric
- B. Placed 30 m apart along the length and at each end of the fence

If trees and other plants need protection, install fence to:

- A. Enclose the foliage canopy (drip line) of protected plants.
- B. Protect visible roots from encroachment.

Maintenance

Maintain temporary fence (Type ESA) by:

- A. Keeping posts in a vertical position.
- B. Reattaching fabric to posts.
- C. Replacing damaged sections of fabric.
- D. Replacing and securing signs.

Removal

When the Engineer determines that temporary fence (Type ESA) is no longer required, remove and dispose of it under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Backfill and repair ground disturbance caused by the installation and removal of temporary fence (Type ESA), including holes and depressions, under Section 15-1.02, "Preservation of Property" of the Standard Specifications.

MEASUREMENT AND PAYMENT

Temporary fence (Type ESA) is measured and paid for by the meter in the same manner specified for fence (Type BW or WM) in Section 80, "Fences" of the Standard Specifications.

The contract price paid per meter for Temporary Fence (Type ESA) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the temporary fence (Type ESA), complete in place, including maintenance, removal of materials, and backfilling and repairing holes, depressions and other ground disturbance, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as ordered by the Engineer.

10-1.33 TEMPORARY CONSTRUCTION ENTRANCE:

GENERAL

Summary

This work includes constructing, maintaining, and removing temporary construction entrance to provide temporary access.

The SWPPP must describe and include the use of temporary construction entrance as a water pollution control practice for tracking control.

Temporary construction entrance may be Type 1 or Type 2.

Submittals

Submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for:

- A. Temporary entrance fabric.
- B. Rock.

Submit details for alternatives at least 5 business days before installation. The Contractor may propose alternatives for the following items:

- A. Alternative sump.
- B. Alternative corrugated steel panels.

If the Engineer approves, the Contractor may eliminate the sump.

MATERIALS

Temporary Entrance Fabric

Temporary entrance fabric must comply with Section 88-1.04, "Rock Slope Protection Fabric" of the Standard Specifications and be woven Type B or non-woven Type B.

Rock

Rock must be Type A or Type B.

Rock (Type A) must comply with:

- A. Requirements under Section 72-2.02, "Materials" of the Standard Specifications.

B. Following sizes:

Square Screen Size (mm)	Percentage Passing	Percentage Retained
150	100	0
75	0	100

Rock (Type B) must be Railway Ballast Number 25. Do not use blast furnace slag. Railway Ballast Number 25 must comply with:

- A. Description in AREMA Manual for Railway Engineering.
- B. Following sizes:

Nominal Size Square Opening	Percentage Passing								
	75-mm	64-mm	50 m	38-mm	25-mm	19-mm	12-mm	9.5-mm	6-mm
64-mm – 9.5-mm	100	80-100	60-85	50-70	25-50	-	5-20	0-10	0-3

C. Following properties:

Specification	Requirements
Percent material passing 120 micron sieve, max. ASTM: C 117	1.0
Bulk specific gravity, min. ASTM: C 127	2.60
Absorption, percent min. ASTM: C 127	1.0
Clay lumps and friable particles, percent max. ASTM: C 142	0.5
Degradation, percent max. ASTM: C 535	30
Soundness (Sodium Sulfate), percent max. ASTM: C 88	5.0
Flat, elongated particles, or both, percent max. ASTM: D 4791	5.0

Corrugated Steel Panels

Corrugated steel panels must:

- A. Be made of steel.
- B. Be pressed or shop welded.
- C. Have a slot or hook for connecting panels together.

CONSTRUCTION

Prepare location for temporary construction entrance by:

- A. Removing vegetation to ground level and clear away debris.
- B. Grading ground to uniform plane.
- C. Grading ground surface to drain.
- D. Removing sharp objects that may damage fabric.

E. Compacting the top 0.5 m of soil to at least 90 percent relative compaction

If temporary entrance (Type 1) is specified, use rock (Type A).

If temporary construction entrance (Type 2) is specified, use Rock (Type B) under corrugated steel panels. Use at least 6 corrugated steel panels for each entrance. Couple panels together.

Install temporary construction entrance by:

- A. Positioning fabric along the length of the entrance.
- B. Overlapping sides and ends of fabric by at least 300-mm.
- C. Spreading rock over fabric in the direction of traffic.
- D. Covering fabric with rock within 24 hours.
- E. Keeping a 150-mm layer of rock over fabric to prevent damage to fabric by spreading equipment.

Do not drive on fabric until rock is spread.

Unless the Engineer eliminates the sump, install a sump within 6 m of each temporary construction entrance.

Repair fabric damaged during rock spreading by placing a new fabric over the damaged area. New fabric must be large enough to cover damaged area and provide at least 450 mm overlap on all edges.

Maintenance

Maintain temporary construction entrance to minimize generation of dust and tracking of soil and sediment onto public roads. If dust or sediment tracking increases, place additional rock unless the Engineer approves another method.

Repair temporary construction entrance if:

- A. Fabric is exposed.
- B. Depressions in the entrance surface develop.
- C. Rock is displaced.

Repair temporary construction entrance within 24 hours of discovering damage unless the Engineer approves a longer period.

During use of temporary construction entrance, do not allow soil, sediment, or other debris tracked onto pavement to enter storm drains, open drainage facilities, or watercourses. When material is tracked onto pavement, remove it within 24 hours unless the Engineer approves a longer period.

If the Contractor's vehicles, equipment, or activities disturb or displace the temporary construction entrance, repair it at the Contractor's expense.

The County does not pay maintenance costs for cleanup, repair, removal, disposal, or replacement due to improper installation or the Contractor's negligence.

Removal

When the Engineer determines that temporary construction entrance is not required, remove and dispose of it under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Backfill and repair ground disturbance, including holes and depressions, caused by installation and removal of temporary construction entrance under Section 15-1.02, "Preservation of Property" of the Standard Specifications.

MEASUREMENT AND PAYMENT

Temporary construction entrance is determined from actual count in place. Temporary construction entrance is measured one time only and no additional measurement will be recognized.

The contract price paid for Temporary Construction Entrance includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing temporary construction entrance, complete in place, including removal of temporary construction entrance, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

No additional compensation will be made if the temporary construction entrance is relocated during the course of construction.

10-1.34 TEMPORARY DRAINAGE INLET PROTECTION:

GENERAL

Summary

This work includes constructing, maintaining, and removing temporary drainage inlet protection. Drainage inlet protection settles and filters sediment before stormwater runoff discharges into storm drainage systems.

The SWPPP must describe and include the use of temporary drainage inlet protection as a water pollution control practice for sediment control.

Provide temporary drainage inlet protection to meet the changing conditions around the drainage inlet. Temporary drainage inlet protection must be:

- A. Appropriate type to meet the conditions around the drainage inlet.
- B. Type 4A, Type 4B, or Type 5.

Submittals

Submit a Certificate of Compliance as specified in Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for:

- A. Erosion control blanket.
- B. Fiber rolls.
- C. Safety cap for metal posts.
- D. Silt fence fabric.
- E. Sediment filter bag.
- F. Foam barrier.
- G. Rigid plastic barrier.
- H. Gravel-filled bag fabric.

If the Contractor substitute the steel wire staple with an alternative attachment device, submit a sample of the device for approval at least 5 business days before installation.

MATERIALS

Geosynthetic Fabrics

Geosynthetic fabrics for temporary drainage inlet protection must consist of one of the following:

- A. Polyester.
- B. Polypropylene.
- C. Combined polyester and polypropylene.

Geosynthetic fabrics for temporary drainage inlet must comply with the specifications for water pollution control in Section 88-1.05, "Water Pollution Control" of the Standard Specifications.

Foam barrier must comply with:

Foam Barrier

Property	ASTM Designation	Specification
Grab breaking load 25-mm grip, N, min. in each direction	D 4632	900
Apparent elongation percent, min., in each direction	D 4632	15
Water Flow Rate max. average roll value, liters per minute/square meter	D 4491	4000-6000
Permittivity l/sec., min.	D 4491	0.05
Apparent opening size max. average roll value, microns	D 4751	600
Ultraviolet Degradation percent of original unexposed grab breaking load 500 hr, minimum	D 4595	70

Sample under ASTM D 4354, Procedure C.

Test under ASTM D 4759. All properties are based on Minimum Average Roll Value (MARV).

Identify, store, and handle under ASTM D 4873.

Erosion Control Blanket

Erosion control blanket must be:

- A. Described as a rolled erosion control product (RECP).
- B. Classified as temporary and degradable or long-term and non-degradable.
- C. Machine-made mats.
- D. Provided in rolled strips.
- E. Classified by the Erosion Control Technology Council (ECTC).

Erosion control blanket classified as temporary and degradable must be one of the following:

- A. Double net excelsior blanket:
 - 1. Classified as ECTC Type 2D.
 - 2. Classified as an erosion control blanket.
 - 3. Designed to last for at least one year after installation.
 - 4. With a Universal Soil Loss Equation (USLE) C-Factor of not more than 0.20 at a 2:1 (horizontal:vertical) slope.
 - 5. With 80 percent of the wood excelsior fibers being 150-mm or longer.
 - 6. Capable to withstand a maximum shear stress of 85 N per square meter under ASTM D 6460.

7. With a minimum tensile strength of 1.1 kN per meter under ASTM D 5035.
8. With top and bottom surfaces covered with extruded photodegradable plastic netting or lightweight non-synthetic netting.

B. Double net straw and coconut blanket:

1. Classified as ECTC Type 2D.
2. Classified as an erosion control blanket.
3. Designed to last for at least one year after installation.
4. With a USLE C-Factor of not more than 0.20 at a 2:1 (horizontal:vertical) slope.
5. Comprised of 70 percent straw and 30 percent coconut fiber.
6. Capable to withstand a maximum shear stress of 85 N per square meter under ASTM D 6460.
7. With a minimum tensile strength of 1.1 kN per meter under ASTM D 5035.
8. With top and bottom surfaces covered with extruded photodegradable plastic netting or lightweight non-synthetic netting.

C. Jute netting:

1. Classified as ECTC Type 3B.
2. Classified as an open weave textile and have from 45 to 65 strands per meter in each direction.
3. Designed to last for at least one year after installation.
4. With a USLE C-Factor of not more than 0.25 at a 1.5:1 (horizontal:vertical) slope.
5. Comprised of 100 percent unbleached and undyed spun yarn made of jute fiber.
6. With an average open area from 63 to 70 percent.
7. From 1.2 to 1.8 m in width .
8. Capable to withstand a maximum shear stress of 100 N per square meter under ASTM D 6460.
9. With a minimum tensile strength of 1.45 kN pounds per meter under ASTM D 5035.
10. Mass of from 0.5 to 0.65 kg per square meter.

D. Coir netting:

1. Classified as ECTC Type 4.
2. Classified as an open weave textile and from 42 to 59 strands per meter in each direction.
3. Designed to last for at least three years after installation.
4. With a USLE C-Factor of not more than 0.25 at a 1:1 (horizontal:vertical) slope.
5. Comprised of 100 percent unbleached and undyed spun coir yarn made of coconut fiber.
6. With an average open area from 63 to 70 percent.

7. From 1.8 to 4.0 m inches in width.
8. Capable to withstand a maximum shear stress of 110 N per square meter under ASTM D6460.
9. With a minimum tensile strength of 1.8 kN per meter under ASTM D 5035.
10. Mass from 0.65 to 0.90 kg per square meter.

Erosion control blanket classified as long-term and non-degradable must:

- A. Be a geosynthetic fabric.
- B. Comply with the following specifications for rock slope protection fabric (Class 8).

Rock slope protection (RSP) fabric (Class 8) must be a permeable, nonwoven, needle-punched geotextile. RSP fabric consists of 1 of the following:

- A. Polyester.
- B. Polypropylene.
- C. Combined polyester and polypropylene.

Polymers must be either virgin compounds or clean reworked material. Do not subject virgin compounds to use or processing other than required for initial manufacture. Clean reworked material must be previously processed material from the processor's own production that has been reground, pelletized, or solvated. RSP fabric must not consist of more than 20 percent by weight of clean reworked material. Do not use recycled materials from either post-consumer or post-industrial sources.

Class 8 RSP fabric must comply with:

Rock Slope Protection Fabric

Property	ASTM	Specification
		Class 8
Mass, kg/m ² minimum	D 5261	0.25
Grab breaking load, N 25-mm grip, min. in each direction	D 4632	900
Apparent elongation, percent min., in each direction	D 4632	50
Permittivity, sec ⁻¹ , Minimum	D 4491	1.0
Apparent opening size, microns minimum and maximum	D 4751	250-360
Ultraviolet resistance, percent minimum retained grab breaking load, 500 hr.	D4355	70

Staples

The Contractor may use an alternative attachment device such as a geosynthetic pins or plastic pegs to install erosion control blanket.

Rock

Rock must comply with:

- A. Requirements under Section 72-2.02, "Materials" of the Standard Specifications.
- B. Following sizes:

Square Screen Size (mm)	Percentage Passing	Percentage Retained
150	100	0
75	0	100

Rope

Rope for fiber rolls must be:

- A. Biodegradable, such as sisal or manila.
- B. At least 6-mm in diameter.

Fiber Rolls

Fiber rolls must:

- A. Last for at least one year after installation.
- B. Be Type 1 or Type 2.

For Type 1, fiber rolls must be:

- A. Made from an erosion control blanket classified as temporary and degradable.
- B. Rolled along the width.
- C. Secured with natural fiber twine every 2 m from each end.
- D. Finished to be either:
 - 1. From 200 to 250-mm in diameter, from 3 to 6 m long, and at least 0.9 kg per linear meter.
 - 2. From 250 to 300-mm in diameter, at least 3 m long, and at least 3.5 kg per linear meter.

For Type 2, fiber rolls must:

- A. Be filled with rice or wheat straw, wood excelsior, or coconut fiber.
- B. Be covered with photodegradable plastic netting, biodegradable jute, sisal, or coir fiber netting.
- C. Have netting secured tightly at each end.
- D. Be finished to be either:
 - 1. From 200 to 250-mm in diameter, from 3 to 6 m long, and at least 1.6 kg per linear meter.

2. From 250 to 300-mm in diameter, at least 3 m long, and at least 4.5 kg per linear meter.

Wood Stakes

Wood stakes must be:

- A. Untreated fir, redwood, cedar, or pine and cut from sound timber.
- B. Straight and free of loose or unsound knots and other defects which would render the stakes unfit for use.
- C. Pointed on the end to be driven into the ground.

For fiber rolls, wood stakes must be at least:

- A. 25-mm x 25-mm x 600-mm in size for Type 1 installation.
- B. 25-mm x 50-mm x 600-mm in size for Type 2 installation.

Posts

Posts must be wood or metal.

Wood posts must be:

- A. Untreated fir, redwood, cedar, or pine and cut from sound timber.
- B. Straight and free of loose or unsound knots and other defects that would render the stakes unfit for use.
- C. Pointed on the end to be driven into the ground.
- D. At least 50-mm x 50-mm in size, and 1.2 m long.

Metal posts must:

- A. Be made of steel.
- B. Have a "U," "T," "L," or other cross sectional shape that can resist failure from lateral loads.
- C. Be pointed on the end to be driven into the ground.
- D. Mass at least 1.1 kg per meter.
- E. Be at least 1.2 m long.
- F. Have a safety cap attached to the exposed end. The safety cap must be orange or red plastic and fit snugly to the metal post.

Silt Fence

Silt fence must be:

- A. Constructed with silt fence fabric, posts, and fasteners.
- B. Prefabricated or assembled at the job site.

Silt fence fabric must be attached to posts using these methods:

- A. If prefabricated silt fence is used, posts must be inserted into sewn pockets.
- B. If assembled on the job site:
 - 1. If wood posts are used, fasteners must be staples or nails.
 - 2. If steel posts are used, fasteners must be tie wires or locking plastic fasteners.
 - 3. Spacing of the fasteners must be at least 200-mm.

Gravel-Filled Bags

Gravel-filled bags must:

- A. Be made from fabric.
- B. Have inside dimensions from 600-mm to 810-mm in length, and from 400-mm to 500-mm in width.
- C. Have the opening bound to retain the gravel. The opening must be sewn with yarn, bound with wire, or secured with a closure device.
- D. Have mass of from 14 to 23 kg when filled with gravel.

Gravel for gravel-filled bags must be:

- A. From 9.5 to 19-mm in diameter.
- B. Clean and free from clay balls, organic matter, and other deleterious materials.

Sediment Filter Bag

Sediment filter bag must:

- A. Be made of fabric.
- B. Be sized to fit the catch basin or drainage inlet.
- C. Include a high-flow bypass.

Sediment filter bag may include a metal frame. Sediment filter bags that do not have a metal frame and are deeper than 0.45 m must:

- A. Include lifting loops and dump straps.
- B. Include a restraint cord to keep the sides of the bag away from the walls of the catch basin.

Foam Barriers

Foam barriers must:

- A. Be filled with a urethane foam core.
- B. Have a geosynthetic fabric cover and flap.
- C. Have a triangular, circular, or square shaped cross section.
- D. Have a vertical height of at least 125-mm after installation.

- E. Have a horizontal flap of at least 200-mm in width.
- F. Have a length of at least 1.2 m per unit.
- G. Have the ability to interlock separate units into a longer barrier so that water does not flow between the units.
- H. Be secured to:
 1. Pavement with 25-mm concrete nails with 25-mm washers and solvent-free adhesive.
 2. Soil with 150-mm nails with 25-mm washers.

Rigid Plastic Barriers

Rigid plastic barriers must:

- A. Have an integrated filter.
- B. Have a formed outer jacket of perforated high density polyethylene (HDPE) or polyethylene terephthalate (PET).
- C. Have a flattened tubular shaped cross section.
- D. Be made from virgin or recycled materials.
- E. Be free from biodegradable filler materials that degrade the physical or chemical characteristics of the finished filter core or outer jacket.
- F. Have a length of at least 1.2 m per unit.
- G. Have the ability to interlock separate units into a longer barrier so that water does not flow between the units.
- H. Be secured to:
 1. Pavement with 25-mm concrete nails with 25-mm washers and solvent-free adhesive, with gravel-filled bags, or a combination.
 2. Soil with 150-mm nails with 25-mm washers and wood stakes.
- I. Comply with the following properties:

Specification	Requirements
Grab tensile strength of outer jacket material, MPa, min. in each direction ASTM D 4632*	27.5
Break strength of outer jacket, MPa ASTM D 4632*	9.0
Permittivity of filter core, l/sec., min. ASTM D 4491	0.38
Flow rate of filter core, liters per minute per square meter, ASTM D 4491	4000 min. 8000 max.
Filter core aperture size, max., Average Opening Size (AOS), microns	425
Ultraviolet stability (outer jacket & filter core), percent tensile strength retained after 500 hours, min. ASTM D 4355 (xenon-arc lamp and water spray weathering method)	90

* or appropriate test method for specific polymer

If used at a curb inlet without a grate, rigid plastic barriers must:

- A. Have a horizontal flap of at least 150-mm with an under-seal gasket to prevent underflows.
- B. Include a high-flow bypass.
- C. Have a vertical height of at least 175-mm after installation.
- D. Be sized to fit the catch basin or drainage inlet.

If used at a grated catch basin without a curb inlet, rigid plastic barriers must:

- A. Cover the grate by at least 50-mm on each side and have an under-seal gasket to prevent underflows .
- B. Include a high-flow bypass.
- C. Have a vertical height of at least 38-mm after installation.
- D. Be sized to fit the catch basin or drainage inlet.

If used at a curb inlet with a grate, rigid plastic barriers must:

- A. Have a horizontal flap that covers the grate by at least 50-mm on the 3 sides away from the curb opening and have an under-seal gasket to prevent underflows.
- B. Include a high-flow bypass.
- C. Have a vertical section that covers the curb opening by at least 125-mm after installation.
- D. Be sized to fit the catch basin or drainage inlet.

If used as a linear sediment barrier, rigid plastic barriers:

- A. Must have an installed height of at least 150-mm.
- B. May have a horizontal flap of at least 100-mm.

Linear Sediment Barrier

Linear sediment barriers must consist of one or more of the following:

- A. Silt fence.
- B. Gravel-filled bags.
- C. Fiber roll.
- D. Rigid plastic barrier.
- E. Foam barrier.

Flexible Sediment Barrier

Flexible sediment barriers consist of one or more of the following:

- A. Rigid plastic barrier.
- B. Foam barrier.

CONSTRUCTION

For drainage inlet protection at drainage inlets in paved and unpaved areas:

- A. Prevent ponded runoff from encroaching on the traveled way or overtopping the curb or dike. Use linear sediment barriers to redirect runoff and control ponding.
- B. Clear the area around each drainage inlet of obstructions including rocks, clods, and debris greater than one inch in diameter before installing the drainage inlet protection.
- C. Install a linear sediment barrier up-slope of the existing drainage inlet and parallel with the curb, dike, or flow line to prevent sediment from entering the drainage inlet.

Erosion Control Blanket

To install erosion control blanket and geosynthetic fabric:

- A. Secure blanket or fabric to the surface of the excavated sediment trap with staples and embed in a trench adjacent to the drainage inlet.
- B. Anchor the perimeter edge of the erosion control blanket in a trench.

Silt Fence

If silt fence is used as a linear sediment barrier:

- A. Place fence along the perimeter of the erosion control blanket, with the posts facing the drainage inlet.
- B. Install fence with the bottom edge of the silt fence fabric in a trench. Backfill the trench with soil and compact manually.

Gravel Bag Berm

If gravel bag berm is used as a linear sediment barrier:

- A. Place gravel-filled bags end-to-end to eliminate gaps.
- B. Stack bags in a way that the bags in the top row overlap the joints in the lower row.

If gravel bag berms are used for Type 3A and Type 3B:

- A. Place gravel-filled bags end-to-end to eliminate gaps.
- B. Stack bags in a way that the bags in the top row overlap the joints in the lower row.
- C. Arrange bags to create a spillway by removing one or more gravel-filled bags from the upper layer.

If used within shoulder area, place gravel-filled bags behind temporary railing (Type K).

Fiber Rolls

If fiber rolls are used as a linear sediment barrier:

- A. Place fiber rolls in a furrow.
- B. Secure fiber rolls with stakes installed along the length of the fiber rolls. Stakes must be installed from 150-mm to 300-mm from the end of the rolls.

If fiber rolls are used as a linear sediment barrier for Type 4A, place them over the erosion control blanket.

Foam Barriers

If foam barriers are used as a linear sediment barrier:

- A. Install barriers with the horizontal flap in a 75-mm deep trench and secured with nails and washers placed no more than 1.2 m apart.
- B. Secure barriers with 2 nails at the connection points where separate units overlap.
- C. Place barriers without nails or stakes piercing the core.

Flexible Sediment Barriers

If flexible sediment barriers are used:

- A. Secure barriers to the pavement with nails and adhesive, gravel-filled bags, or a combination.
- B. Install barriers flush against the sides of concrete, asphalt concrete, or hot mix asphalt curbs or dikes.
- C. Place barriers to provide a tight joint with the curb or dike and anchored in a way that runoff cannot flow behind the barrier.

If flexible sediment barriers are used for Type 4B:

- A. Secure barriers to the pavement according to the angle and spacing shown on the plans.
- B. Place barriers to provide a tight joint with the curb or dike. Cut the cover fabric or jacket to ensure a tight fit.

Rigid Sediment Barriers

If rigid sediment barriers are used at a grated catch basin without a curb inlet:

- A. Place barriers using the gasket to prevent runoff from flowing under the barrier.
- B. Secure barriers to the pavement with nails and adhesive, gravel-filled bags, or a combination.

If rigid sediment barriers are used for linear sediment barriers:

- A. Install barriers in a trench. Backfill the trench with soil and compact manually.
- B. Place barrier with separate units overlapping at least 4 inches.
- C. Reinforce barriers with a wood stake at each overlap.
- D. Fasten barriers to the wood stakes with steel screws, 1.57-mm galvanized steel wire, or with UV stabilized cable ties that are from 125-mm to 175-mm in length.

Sediment Filter Bags

Install sediment filter bags for Type 5 by:

- A. Removing the drainage inlet grate.
- B. Placing the sediment bag in the opening.
- C. Replacing the grate to secure the sediment filter bag in place.

MAINTENANCE

Maintain temporary drainage inlet protection to provide sediment holding capacity and to reduce runoff velocities.

Remove sediment deposits, trash, and debris from temporary drainage inlet protection as needed or when directed by the Engineer. If removed sediment is deposited within project limits, it must be stabilized and not subject to erosion by wind or water. Trash and debris must be removed and disposed of as specified in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Maintain temporary drainage inlet protection by removing sediment from:

- A. Behind flexible sediment barriers when sediment exceeds 25-mm in depth.
- B. Surface of the erosion control blanket when sediment exceeds 25-mm in depth.
- C. Sediment trap for Type 2 when the volume has been reduced by approximately one-half.
- D. Behind silt fence when the sediment is 1/3 the height of the silt fence fabric above ground.
- E. Sediment filter bags when filled or when the restraint cords are no longer visible.

If rills and other evidence of concentrated runoff occur beneath the linear sediment barrier, repair or adjust the barrier.

If silt fence fabric becomes split, torn, or unraveled, repair or replace silt fence.

If geosynthetic fabric becomes split, torn, or unraveled, repair or replace foam barriers.

Repair or replace sagging or slumping linear sediment barriers with additional stakes. Replace broken or split wood stakes.