http://www.rctlma.org/trans/con_bid_advertisements.html

LIQUIDATED DAMAGES:

The Contractor shall diligently prosecute the work to completion before the expiration of **40** working days from the date stated in the "Notice to Proceed". The Contractor shall pay to the County of Riverside the sum of **$2,500.00** per day, for each and every calendar days delay in finishing the work in excess of the number of working days prescribed above.

Additional Liquidated Damages:

In addition to the Liquidated damages set forth above, the Contractor shall diligently prosecute the work to completion of final paving of **66th Avenue** before the expiration of **10** working days from the date Grind Asphalt in place begins. The Contractor shall pay to the County of Riverside the sum of **$1,500.00** per day, for each and every calendar days delay in finishing this work in excess of the number of working days prescribed above.

In addition to the Liquidated damages set forth above, the Contractor shall diligently prosecute the work to completion of final paving of **Harrison Street** before the expiration of **10** working days from the date Cold Plane begins. The Contractor shall pay to the County of Riverside the sum of **$1,500.00** per day, for each and every calendar days delay in finishing this work in excess of the number of working days prescribed above.

In addition to the Liquidated damages set forth above, the Contractor shall diligently prosecute the work to completion of final paving of **Tyler Street** before the expiration of **10** working days from the date Grind Asphalt in place begins. The Contractor shall pay to the County of Riverside the sum of **$1,500.00** per day, for each and every calendar days delay in finishing this work in excess of the number of working days prescribed above.

In addition to the Liquidated damages set forth above, the Contractor shall diligently prosecute the work to completion of shoulder backing, signing, striping and pavement markings before the expiration of **15** working days from the date Grind Asphalt in place begins. The Contractor shall pay to the County of Riverside the sum of **$1,000.00** per day, for each and every calendar days delay in finishing this work in excess of the number of working days prescribed above.

In addition to the Liquidated damages set forth above, refer to Special Provisions section entitled "PROJECT APPEARANCE" for additional Liquidated damages.

PARTIAL PAYMENT RESTRICTIONS:

Attention is direct to Section 9 1.06, "Partial Pavements," and 9 1.07, "Payment After Acceptance," of the Stand Specif6ations and these special provisions.

For the purpose of making partial payments pursuant to Section 9-1.06, "Partial Payments" of the Standard Specifications, the amount set forth for all Lump Sum items of work, shall be deemed to

be maximum total value of said contract item of work which will be recognized for progress payment purposes:

A. Develop Water Supply	$ 7,000
B. Clearing and Grubbing	$ 5,000

After acceptance of the contract pursuant to Section 7-1.17, "Acceptance of Contract" of the Standard Specifications, the amount, if any, payable for a contract item of work in excess of the maximum value for progress payment purposes herein above listed for said item, will be included for payment in the first estimate made after acceptance of the contract.

PROJECT APPEARANCE:

The Contractor shall maintain a neat appearance to the worksite. The parkway between the pavement and property line will be maintained free of trash and debris. The Contractor shall inform all workers to be respectful of the local residents and maintain the parkways. The following shall apply:

Prior to the leaving the project site daily, the Contractor shall collect and dispose of any trash or debris within the project area.

When practicable, broken concrete and debris developed during clearing and grubbing shall be disposed of concurrently with its removal. If stockpiling is necessary, the material shall be covered daily and removed or disposed of weekly.

The Contractor shall furnish covered trash bins for all debris from construction. All debris shall be placed in the covered trash bins daily. Trash bins must be able to fully close at the end of the workday.

Additional Liquidated Damages:

In addition to the Liquidated damages set forth in section "Liquidated Damages", if the Contractor fails to comply with the requirements of this section, the Contractor shall pay to the County of Riverside the sum of **$500.00** per day for each and every calendar days delay after the expiration of 48 hours notification from the Engineer.

Method of Payment:
Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

GRAFFITI REMOVAL AND CLEANING:

The Contractor shall remove existing graffiti within the project limits and any new graffiti produced during the construction period of the project.

Contractor shall submit a method of graffiti removal plan to the Engineer for approval. Sand blasting will not be allowed. Methods may include but not limited to power washing, solvent washing, and painting over graffiti, as appropriate for the surface to be cleaned.

All graffiti shall be completely removed or obliterated and the area feathered out to hide any imperfections.

Graffiti shall be removed from, but not limited to, the surfaces listed as follows: bricks, cinder blocks, concrete sidewalks, pavement, bridge under passes, overhead structures, drainage channels, roadside signs, temporary construction signs, barricades, k-railing, traffic control devices, and all types of poles, and other objects within the project limits as directed by the Engineer. Painting of k-railing for the purposes of graffiti removal shall not be considered as repainting as outlined in paragraph one of Section 12-3.08 and shall not be paid for as extra work.

Graffiti to be removed may include, but shall not be limited to: paint, signs, wood, metal, plastic, decals, gum, markers, crayons, ropes, chains, strings, wires, and tapes of any kind on an as needed basis.

All painting over graffiti must be done with exact color matches, so as not to show any blocking or shadowing of colors. Painting over graffiti is the preferred option on previously painted surfaces, and where solvents are unsuccessful at removing graffiti. Painting services shall be done on an as needed basis on the following types of surfaces, but not limited to: walls, hardscapes, poles, fences, bollards, railings, and buildings.

Paint shall be exact color match. Paint types may include oil base, water base and enamels as approved by the Engineer. Graffiti cover-up by paint will be allowed with appropriate type of paint at locations where graffiti cannot be removed only upon direction by the Engineer. All paint applications shall adhere to the manufacture's recommendations. All material and solutions shall be safe and biodegradable and approved by the Engineer.

Regional Water Quality Control Board (RWQCB) and Air Quality Management District (AQMD) regulations, as well as all NPDES required best management practices shall be complied with and followed.

The Contractor shall so conduct his operation as to cause the least possible obstruction and inconvenience to public traffic. The Contractor shall provide, erect and maintain barricades, lights, danger signals, and warning signs as deemed appropriate by the Engineer.

When necessary, the Contractor shall provide and erect safe and adequate scaffolding and equipment, barriers, and masking, required for the proper execution of the work. All scaffolding shall be properly braced and erected to insure the safety of the workmen and meet all appropriate OSHA regulations.

The Contractor shall respond and provide manpower for any urgent graffiti removal and cleaning notifications within two (2) working days.

Urgent graffiti will be classified as any graffiti that causes a safety hazard for motorists and affects the traffic flow as determined by the Resident Engineer.

This work will be monitored/controlled by the construction Resident Engineer. The Contractor must coordinate the work with the Resident Engineer during the construction.

Method of Payment:
Full compensation for conformance with these Graffiti Removal and Cleaning requirements, including labor, equipment, materials, necessary traffic control, and incidentals, shall be paid at the lump sum price for Traffic Control System, and no additional compensation will be allowed therefor.

DISPOSAL OF EXCESS EXCAVATION OR MATERIALS:

Excess earth excavation, pavement grindings and other excess materials resulting from construction operations shall be disposed of by the Contractor outside of the highway right of way, as provided in Section 7-1.13 of the Standard Specifications.

The second paragraph of Section 7-1.13 of the Standard Specifications is modified to read as follows:

> When any material is to be disposed of outside the highway right of way, and the County of Riverside has not made arrangements for the disposal of such material, the Contractor shall first obtain written authorization from the property owner on whose property the disposal is to be made, and obtain all required permits from the jurisdictional agency(s) for said work, and he shall file with the Engineer said authorization or a certified copy thereof together with a written release from the property owner absolving the County of Riverside from any and all responsibility in connection with the disposal of material on said property. If the disposal of materials is to be made at an established disposal facility that is available for public use, the Contractor shall retain all authorizations and receipts from said disposal facility and shall provide copies to the Engineer upon request.

Method of Payment:
Full compensation for all costs involved in disposing of materials as specified in this section, including all costs of hauling, shall be considered as included in the various contract items of work and no additional compensation will be allowed therefor.

RECORD DRAWINGS:

The Contractor shall keep one clean set of bond originals to note any changes which take place during construction. These changes to the original plans and/or specifications shall be noted at the appropriate locations with the appropriate changes indicated in red pencil or ink. The Contractor shall note in large letters "RECORD DRAWINGS" on the Title Sheet of the plans. The job will not be finalized by the Engineer until these record drawings have been completed to the satisfaction of the Engineer. The changes shall be noted on the plans as the changes occur. The record drawings shall be submitted to the Resident Engineer, and become the property of the County at conclusion of the project.

Method of Payment:
Full compensation for maintaining and compiling the record drawings shall be considered to be included in other items of work and no additional compensation will be allowed therefor.

SURVEY STAKING:

County surveyors will establish external primary survey control marks and/or monuments to be used throughout the construction period. These control marks are to be protected by the contractor and will be used to set construction stakes. The control marks will also be used to make verification surveys at various stages of work.

Survey stakes and marks are set per the County's Survey Manual.

Contractor must submit a written request for County furnished construction staking before or once area to receive staking is ready for the installation of the construction stakes. The County will provide Contractor with a survey request form. Survey staking requests must be received from the Contractor a minimum of 2 business days prior to the installation of the requested construction staking. The County shall receive survey request from the contractor on normal business days, Monday through Thursday, 7:00 A.M. to 4:00 P.M. Requests received after 4:00 PM or on any day not previously noted, shall be considered as submitted at 7:00 AM the next business day.

A "business day" is defined by County Ordinance 358 (County Holidays, open and closed days, and hours of operation, etc.) and as revised by Board of Supervisor's resolution to alter days and/or hours for which a County office may be open for transaction of business.

Contractor must preserve primary and construction stakes and marks placed by the County. If the contractor fails to protect and/or destroys the primary and construction stakes and marks, the County shall replace them at the County's earliest convenience and deduct the cost of replacement from monies due the contractor.

FUNDING AWARENESS SIGNS:

The Contractor shall furnish and install **six (6)** Construction Project Funding Identification Signs (4' X 8'); the sign shall be installed at locations to be determined by the Engineer, within or near

the project limits, in accordance with the relevant requirements of Section 56-2 of the Standard Specifications and the appropriate details of Standard Plans RS1 through RS4 for two post installation of sign, and as directed by the Engineer.

A reference exhibit displaying the text and colors of the sign will be provided to the Contractor prior to construction. The Contractor shall submit a copy of the final sign design for approval by the resident Engineer prior to fabrication.

The Contractor shall submit to the Engineer the final sign design in the form of an editable picture file in .eps format – Encapsulated PostScript file.

At the completion of the project, the signs will become property of the County. When directed by the Engineer, the Contractor shall remove all hardware from the sign. Posts and hardware shall become the property of the Contractor. The Contractor shall deliver and off-load the sign to the nearest County yard.

Method of Payment:
The contract unit price per each for Project Funding Identification Sign shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals and for doing all the work including sign installation, transportation, maintenance, removal, delivery, excavation and backfill as specified in the Standard Specification and these Special Provisions and no additional compensation will be allowed therefor.

COOPERATION:

Attention is directed to Section 7-1.14, "Cooperation" of the Standard Specifications and these Special Provisions.

The Contractor is hereby advised to cooperate with utility companies (Coachella Valley Water District, Southern California Gas Company, Time Warner Cable, Imperial Irrigation District and/or others) for adjusting water valves, and other facilities to grade.

The Contractor is advised to cooperate with property owners when working in front of their property.

Should construction be under way by other forces or by other Contractors within or adjacent to those limits, the Contractor shall cooperate with all the other Contractors or other forces to the end in order to avoid any delay or hindrance of work. The right is reserved to perform other or additional work at or near the site (including material sources) at any time, by the use of other forces.

ITEMS OF WORK:

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.

Attention is directed to "Public Convenience" of these Special Provisions regarding access to driveways, access roads and the business in the vicinity of the projects. For all driveways and access locations adjacent to the construction area, the Contractor shall coordinate with these residents and businesses to provide clearly marked, unobstructed access to the residents and business.

Attention is directed to "Public Safety" of these Special Provisions regarding access for emergency vehicles. The Contractor shall provide continual 12 feet drivable access for emergency vehicles through the construction zones.

Attention is directed to "Public Convenience" of these Special Provisions regarding access for bus traffic to SunLine Transit Agency. The Contractor shall provide continual drivable access for bus traffic through the construction zone.

Attention is directed to "Obstructions" of these Special Provisions regarding grate and water valves. Contractor shall be responsible to remove the existing concrete collars, temporally remove or lower facility, adjust to new finish grade and install concrete collars that are consistent with the existing condition. Contractor shall coordinate the work required for the water valves with CVWD and obtain a permit if necessary. All costs for this work shall be included in the price for "Hot Mix Asphalt".

Attention is directed to "Grind Asphalt Concrete Pavement in Place" provision of these Special Provisions regarding non-working hours driving conditions. The contractor shall grind asphalt pavement the full roadway width and have no ground edges or vertical drops between lanes during non working hours.

Attention is directed to "Hot Mix Asphalt" provision of these Special Provisions regarding non-working hours driving conditions. The contractor shall place asphalt pavement the full roadway width and have no vertical drops between lanes during non working hours.

WATER POLLUTION CONTROL (COLORADO RIVER BASIN REGION):

Throughout the term of this contract, the total land disturbance area of the project site is less than 1 acre. The Contractor shall comply with the Area-Wide Municipal Stormwater Permit NPDES No. CAS617002, hereafter referred to in this section as the "Municipal Permit", issued by the California Regional Water Quality Control Board (CRWQCB) – Colorado River Basin Region. This permit regulates both stormwater and non-stormwater discharges associated with Contractor's construction activities. A copy of the Permit may be obtained at the office of the County of Riverside Transportation Department, 14th Street Transportation Annex, 3525 14th

Street, Riverside, California. (951) 955-6780, or may be obtained on the internet at: http://www.swrcb.ca.gov/rwqcb7

The Contractor shall comply with the requirements of the Municipal Permit, and all other applicable federal, state and local laws, ordinances, statutes, rules, and regulations concerning water pollution control.

Contractor's Water Pollution Control Program (WPCP) shall be prepared by a Qualified SWPPP Developer in accordance with Section 3, "Preparing a Water Pollution Control Program (WPCP)", of the *Caltrans Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual (June 2011)*, which is available as a free download from:

http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm

WATER POLLUTION CONTROL MEASURES

A. Work having the potential to cause water pollution shall not commence until the Contractor's WPCP has been reviewed and approved by the Engineer. The Engineer's review and approval of the Contractor's WPCP shall not waive any contractual requirements and shall not relieve the Contractor from achieving and maintaining compliance with all federal, state, and local laws, ordinances, statues, rules, and regulations. A copy of Contractor's WPCP shall be maintained onsite. When the WPCP or access to the construction site is requested by a representative of a federal, state, or local regulatory agency, Contractor shall make the WPCP available and Contractor shall immediately contact the Engineer. Requests from the public for the Contractor's WPCP shall be directed to the Engineer.

B. Contractor's WPCP shall describe the Contractor's plan for managing runoff during each construction phase. Contractor's WPCP shall describe the Best Management Practices (BMPs) that will be implemented to control erosion, sediment, tracking, construction materials, construction wastes, and non-stormwater flows. BMP details shall be based upon California Stormwater Quality Association's (CASQA) California Stormwater Quality BMP Handbook Subscription Portal (http://www.cabmphandbooks.com) or the Caltrans Construction Site BMP Manual (http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm). Contractor's WPCP shall describe installation, operation, inspection, maintenance, and monitoring activities that will be implemented for compliance with the Municipal Permit and all applicable federal, state, and local laws, ordinances, statutes, rules, and regulations related to the protection of water quality.

C. The Contractor's WPCP preparer shall have been trained to prepare WPCPs or SWPPPs and shall have previous experience with preparing SWPPP or WPCP requirements on a previous project.

The Contractor shall designate a Water Pollution Control Manager that shall have been trained to implement WPCP or SWPPP requirements. Contractor's Water Pollution Control Manager shall:

1. Be responsible for all water pollution control work.
2. Be the Engineer's primary contact for all water pollution control work.

3. Have the authority to mobilize resources (crews, supplies, equipment, etc.) to make immediate repairs of water pollution control measures or to supplement water pollution control measures to maintain compliance with all federal, state, and local laws, ordinances, and regulations related to the protection of water quality, including the Municipal Permit.

The WPCP shall contain all required and applicable certifications and evidence of training for the Water Pollution Control Manager, WPCP Developer, and all other employees working on the project receiving formal training or certification.

D. Water Pollution Control Training: Contractor shall provide water pollution control training to Contractor's employees and subcontractors prior to their performing work on the work site. The water pollution control training shall be appropriate to the employee or subcontractor function and area of responsibility and shall address (as applicable):
    1. Erosion Control (water and wind)
    2. Sediment Control
    3. Tracking Control
    4. Materials & Waste Management
    5. Non-Stormwater Discharge Management
    6. Run-on and Run-off Control

E. Monitoring and Reporting: Observations and inspections conducted by the Contractor's Water Pollution Control Manager shall be documented on the Construction Site Inspection Checklist included in Contractor's WPCP. A copy of each completed Construction Site Inspection Checklist shall be submitted to the Engineer within 24 hours of conducting the inspection.

General Requirements:

In the event the County incurs any Administrative Civil Liability (fine) imposed by the CRWQCB – Colorado River Basin Region, the State Water Resources Control Board, or EPA, as a result of Contractor's failure to fully implement the provisions of "Stormwater and Non-Stormwater Pollution Control", the Engineer, may, in the exercise of his sole judgment and discretion, withhold from payments otherwise due Contractor a sufficient amount to cover the Administrative Civil Liability including County staff time, legal counsel, consultant support costs and all other associated cost.

The Contractor shall be responsible for all costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in "Water Pollution Control", including but not limited to, compliance with the applicable provisions of the Caltrans Handbooks, Municipal Permit, Federal, State, and local regulations. For the purpose of this paragraph, costs and liabilities include, but not limited to, fines, penalties, damages, and costs associated with defending against enforcement actions whether taken against the County or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Act.

Within fifteen (15) working days after the award of the contract, the Contractor shall submit two (2) copies and one pdf. file of the WPCP to the Engineer for review and approval. The Contractor shall allow ten (10) working days for the Engineer to review the WPCP. If revisions are required

as determined by the Engineer, the Contractor shall revise and resubmit the WPCP within three (3) working days of receipt of the Engineer's comments and shall allow ten (10) working days for the Engineer to review the revisions. The Contractor shall submit four (4) copies of the approved WPCP and one pdf. file to the Engineer prior to notice to proceed. The Contractor must have an approved WPCP prior to the notice to proceed.

Unless otherwise directed by the Engineer or specified in these Special Provisions, the Contractor's responsibility for WPCP implementation shall continue throughout any temporary suspension of work ordered in accordance with Section 8-1.05, "Temporary Suspension of the Work", of the Standard Specifications. The Engineer may withhold progress payments or order the suspension of construction operations without an extension of the contract time, if the Contractor fails to comply with the requirements of "Water Pollution Control" as determined by the Engineer.

All BMP repairs shall be implemented by the Contractor within 72 hrs.

Method of Payment:
Payment for Water Pollution Control shall be on a lump sum basis and shall include full compensation for the work performed, including, developing, preparing, revising, obtaining approval of, and amending the WPCP, implementing, installing, constructing, operating, maintaining, and removing and disposing of temporary BMPs, performing the observations, inspections, sampling, analysis, reporting, and street sweeping, and as specified in the Caltrans Handbooks, Municipal Permit and these Special Provisions, and as directed by the Engineer.

STREET SWEEPING:

GENERAL

Summary

This work includes street sweeping.

The WPCP shall describe and include the use of street sweeping as a Water Pollution Control practice for sediment control and tracking control. Street sweeping shall also conform to all applicable AQMD requirements.

Submittals

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

A. The number of street sweepers that will be used as described in the SWPPP/MP.
B. Type of sweeper technology (or technologies).

Quality Control and Assurance

Retain the following records related to street sweeping and submit weekly to Engineer:

A. Tracking Inspection Log
B. Sweeping times and locations.
C. Quantity of sweeping waste disposal.

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 shall be conducted 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 shall be conducted, and sweeper(s) shall be available on site or within four hours at any given time, for the following:

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.

Contractor's Water Pollution Control Manager shall inspect adjacent paved areas at job site entrances and exits and paved roadways within the job site on a minimum daily basis, and more frequently when activities that require street sweeping are being performed. Contractor's Water Pollution Control Manager shall maintain a "Tracking Inspection Log." Street sweeping shall be conducted:

A. Within 4 hours, if sediment or debris is observed on paved areas or paved roadways.

At least one sweeper, in good working order, must be on the job site at all times when sweeping work may be required.

Perform street sweeping to minimize dust. If dust generation is excessive or sediment pickup is ineffective, water may be used but shall be contained, collected (e.g. vacuum), and properly disposed.

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.

Method of Payment:
Full compensation to conform with the requirements of this section shall be considered as included the contract lump sum price paid for Water Pollution Control including 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. Therefore, no additional compensation will be allowed for street sweeping.

TRAFFIC CONTROL SYSTEM/ PUBLIC CONVENIENCE/ PUBLIC SAFETY:

Contractor shall prepare construction staging and traffic control plans for review and approval by the Transportation Department.

Proposed plans shall be submitted by the Contractor for review and approval by the Transportation Department at least two weeks prior to the start of construction. The construction staging and traffic control plans shall be prepared, signed and stamped by a Civil Engineer or Traffic Engineer who is registered as such in the State of California, unless otherwise specifically allowed by the Engineer. The Contractor shall revise and implement the plans as directed by the Construction Engineer. Construction shall not begin until the Engineer provides Contractor with County approval of the plans.

Construction staging and traffic control plans shall be in accordance with the appropriate standards and specifications for construction staging, detour roads, traffic control, including the State of California Highway Design Manual, the manual on Uniform Traffic Control Devices 2012 Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation, Standard Plans and Standard Specifications, and the Work Area Traffic Control Handbook (WATCH), as published by Building News, Inc. Any requests for deviation from the established design standards or specifications are to be submitted to the Construction Engineer for review and approval prior to submission of the required plans.

With regard to the preparation and implementation of the plans, attention is especially directed to Sections 7-1.06, 7-1.08, 7-1.09, 7-1.11, 7-1.12 and Section 12 of the State of California Standard Specifications. Section 12-2.02 of the Standard Specifications is deleted.

Maintaining traffic shall conform to the provisions in 7-1.02 "Load Limitations", 7-1.06 "Safety and Health Provisions", 7-1.08 "Public Convenience", 7-1.09 "Public Safety", and 12-3.04 "Portable Delineators" of the Standard Specifications, the Manual on Uniform Traffic Control Devices 2012 Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation, the Section of these contract documents entitled "Insurance - Hold Harmless", and these Special Provisions.

All existing traffic control signs and street name signs shall be maintained in visible locations as directed by the Engineer.

No detours will be allowed, unless specifically allowed herein. The Contractor will be required to conduct his operations in such a manner that traffic will be permitted to pass through the work area with as little delay as possible.

All warning lights, signs, flares, barricades and other facilities for the sole convenience and direction of public traffic shall be furnished and maintained by the Contractor. All traffic control devices shall conform to and be placed in accordance with the Manual on Uniform Traffic Control Devices 2012 Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation.

All construction signs shall be either covered or removed when not required by the nature of the work or if no present hazard to the motorist exists.

The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to commencing excavation for construction area sign posts. The regional notification centers include, but not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert-Southern California (USA)	1-800-422-4133 1-800-227-2600 or 811

Excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes.

In regards to Flagging, no payment for extra work will be allowed for work performed. Flagging costs will be borne entirely by the Contractor and shall include costs for furnishing flaggers, including transporting flaggers, for passage of public traffic through the work under the provision in Sections 7-1.08, "Public Convenience," and 7-1.09, "Public Safety."

The Contractor shall be responsible to distribute an information letter pertaining to the planned work to all affected residences and businesses, at least one week prior to commencing work adjacent to those residences and businesses. It shall be the responsibility of the Contractor to design the information letter, obtain design approval from the Engineer, print sufficient copies, and distribute the letter. The Transportation Department logo shall be included on the letter. A computer file of the logo may be obtained from the Engineer in .WPG, .DXF, .DGN or .DWG format. The letter shall be similar to the sample provided by the Engineer, and shall include a project description, the scope of work, the anticipated construction schedule, and other information as appropriate.

The Contractor shall post temporary no parking signs on affected streets 24 hours prior to work on those streets. The temporary no parking signs shall state the anticipated dates and hours of work on those streets.

Method of Payment:
Full compensation, except as otherwise provided herein, for conforming to the requirements of this article, including furnishing, installing and maintaining all traffic control devices shown on the construction staging and traffic control plans, including construction area signs, channelizers, portable changeable message signs, temporary pavement markers, temporary traffic stripes, shall be considered as included in the contract lump sum price paid for Traffic Control System, and no additional compensation will be allowed therefor.

MAINTAINING TRAFFIC:

Maintaining traffic shall conform to the provisions in Section 7-1.08, "Public Convenience", Section 7-1.09, "Public Safety" and Section 12, "Construction Area Traffic Control Devices" of the Standard Specifications and "Public Safety" of these Special Provisions.

Daily working hours shall be between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, except legal holidays, as approved by the Engineer. Exceptions and specific work schedules shall be submitted to the Engineer for consideration.

Closure is defined as the closure of a traffic lane or lanes, including shoulder, ramp or connector lanes, within a single traffic control system. Lane closure is allowed only during contractor's work hours. All traveled lanes must be opened to traffic during non working hours excluding reconstruction area.

Closure shall conform to the provisions in "Traffic Control System" of these Special Provisions.

Local authorities shall be notified at least five (5) business days before work begins. The Contractor shall cooperate with local authorities to handle traffic through the work area and shall make arrangements to keep the work area clear of parked vehicles.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders including sections closed to public traffic.

When work vehicles or equipment are parked on the shoulder within six (6) feet of a traffic lane, the shoulder area shall be closed.

When work vehicles or equipment are parked on the shoulder within six (6) feet of a traffic lane, the shoulder area shall be closed with fluorescent orange traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 25-foot intervals to a point not less than 25 feet past the last vehicle or piece of equipment. A minimum of 9 traffic cones or portable delineators shall be used for the taper. A W20-1 (ROAD WORK AHEAD) or W21-5b (RIGHT/LEFT SHOULDER CLOSED AHEAD) or C24 (CA) (SHOULDER WORK AHEAD) sign shall be mounted on a crashworthy portable sign support with flags. The sign shall be placed where designated by the Engineer. The sign shall be a minimum of 48" x 48" in size. The Contractor shall immediately restore to the original position and location a traffic cone or delineator that is displaced or overturned, during the progress of work.

If minor deviations from the lane requirement chart are required, a written request shall be submitted to the Engineer at least 15 days before the proposed date of the closure. The Engineer may approve the deviations if there is no significant increase in the cost to the County and if the work can be expedited and better serve the public traffic.

Designated County legal holidays are January 1st, the third Monday in January, February 12th, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, the second Monday in October, November 11th, Thanksgiving Day, the Friday following Thanksgiving Day, December 24th and 31st when they fall on Monday, December 25th, December 26th and January 2nd when they fall on Friday, When a designated legal holiday falls on a Sunday, the following Monday shall be a designated legal holiday. When January 1st, February 12th, July 4th, November 11th, or December 25th fall on a Saturday, the preceding Friday shall be a designated legal holiday.

Method of Payment:
Full compensation for furnishing, erecting, maintaining, removing and disposing of the C43 (CA), W20-1, W21-5b and C24 (CA) signs shall be considered as included in the contract lump sum price paid for Traffic Control System and no additional compensation will be allowed therefor.

PORTABLE CHANGEABLE MESSAGE SIGN:

Six (6) portable changeable message signs shall be furnished, placed, operated, and maintained at locations shown on the plans or where designated by the Engineer and shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices" of the Standard Specifications and these Special Provisions. Messages displayed on the portable changeable message signs shall be as specified on the plans, or as directed by the Engineer, and shall conform to Section 12 3.12 "Portable Changeable Message Signs" of the Standard Specifications and "Maintaining Traffic" of these Special Provisions".

A portable changeable message sign shall be placed in advance of the first warning sign for each stationary lane closure.

A portable changeable message sign shall be placed during speed zone reductions. When used in conjunction with a lane closure, use one portable changeable message sign, with both the speed zone reduction and the lane closure messages.

Method of Payment:
Full compensation for portable changeable message signs shall include all labor, materials, tools, equipment and incidentals, and for doing all work involved in furnishing, placing, operating, maintaining, repairing, transporting from location to location and removing portable changeable message signs as directed by the Engineer shall be considered as included in the contract price paid per each for Portable Changeable Message Sign and no additional compensation will be allowed therefor.

MAILBOX RELOCATION/ MAIL DELIVERY:

Coordination

Contractor shall notify the local Post Master at least 15 business days in advance of the start of construction. Contractor shall coordinate with the Post Master the method of mail delivery after construction begins. If mail delivery will be disrupted, rescheduled or held by the local post office, Contractor shall notify all affected residences at least 5 days in advance of the start of construction, in writing, disclosing any changes in delivery of the mail. The notice to residents shall be approved by the Engineer is advance of distribution.

Relocation

Relocate mailbox shall conform to the approved plans and as directed by the Engineer. Existing mailbox shall be removed and reset on temporary portable mount, typically a timber post supported in five gallon can or bucket, in accordance with Section 15 of the Standard Specifications and these Special Provisions, or as directed by the Engineer. During construction operations, the portable mount shall be moved as necessary to clear the Contractor's operations, but at all times shall be easily accessible for mail delivery. When construction is complete, the mailbox shall reset at its final position as directed by the Engineer.

Temporary Mailbox Relocation

Temporary Mailbox Relocation is defined as the temporary relocation of mailbox by contractor to facilitate construction activities or construction methods used by the contractor. All provisions under "Mailbox Relocation/Mail Delivery" shall apply to Temporary Mailbox Relocation except payment. Payment for Temporary Mailbox Relocation shall be paid for under Clearing and Grubbing.

Replacement

At the direction of the Engineer, and prior to final placement, any damaged mailbox or support in result of contractor's operation may require replacement of existing mailbox with standard mailbox and/or a new single, 4" x 4" wooden post or a 2"x2" metal post. The cost of a new mailbox and support, shall be at the Contractor's expense. Mailboxes with non-standard supports shall be relocated as directed by the Engineer.

New mailboxes locations shall conform to the approved plans and as directed by the Engineer.

Method of Payment:

Full compensation for relocating mailboxes shall be considered as included in the contract unit bid price paid per lump sum for Clearing and Grubbing and shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals and for doing all the work involved including removing and temporarily relocating the existing boxes, installation to final locations including all necessary concrete, excavation, and backfill, metal post, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

DEVELOP WATER SUPPLY:

Develop water supply shall conform to the provisions of Section 17 of the Standard Specifications and these Special Provisions.

Method of Payment:
Full compensation for developing water supply and furnishing watering equipment shall be considered as included in the lump sum price paid for Develop Water Supply and no additional compensation will be allowed therefor.

CLEARING AND GRUBBING:

Clearing and grubbing (**including but not limited to tree removal, trimming of trees, removing debris from pavement and shoulders, cleaning culverts pipes and grade them to drain, grade dirt driveways, mailbox relocation**) shall conform to the provisions in Section 16 of the Standard Specifications.

Trees and bushes including tree stumps and roots, and rocks shall be removed as shown on the plans and as directed by the Engineer.

Any other trees that need to be removed not called out on the plans as tree removal will be included in the contract price paid for Clearing and Grubbing and no separate payment will be allowed therefor.

Removed tree trimmings, vegetation, and debris shall be the property of the Contractor and shall be disposed of by the Contractor, as provided in Section 7-1.13 of the Standard Specifications.

Regulatory Requirements

Attention is directed to the Federal Migratory Bird Treaty Act (15 USC 703-711) 50 CFR Part 21 and 50 CFR Part 10, and the California Department of Fish and Game Code Sections 3503, 3513 and 3800, that protect migratory birds, their occupied nests, and their eggs from disturbance or destruction.

Construction

Ground disturbance, tree, shrub and/or vegetation removal that occurs between March 1st and September 15th will not commence until a preconstruction survey for nesting birds has verified that no active nests have been located or the Engineer has approved the beginning of work. If an active nest is located, construction within 500 feet of the nest must be avoided until the nest has been vacated and the young are independent of their parents.

Between March 1st and September 15th, the Contractor shall notify the Engineer 15 working days prior to beginning work disturbing structures, the ground or vegetation. The Engineer will approve the beginning of work disturbing the ground or vegetation between March 1st and September 15th.

The Contractor shall use exclusion techniques directed by the Engineer to prevent migratory birds from nesting on the ground, on structures or in trees, shrubs or other vegetation within the project limits.

If evidence of bird nesting is discovered, the Contractor shall not disturb the nesting birds or nests until the birds have naturally left the nests. If evidence of migratory bird nesting is discovered after beginning work, the Contractor shall immediately stop work within 500 feet of the nests and notify the Engineer. Work shall not resume until the Engineer provides a written notification that work may begin at or adjacent areas of the discovered bird nest locations.

Attention is directed to Section 8-1.05, "Temporary Suspension of Work" of the Standard Specifications.

Nothing in this section shall relieve the Contractor from providing for public safety in conformance with the provisions in Section 7-1.09, "Public Safety" of the Standard Specifications.

For the purpose of making partial payments pursuant to Section 9-1.06, "Partial Payments" of the Standard Specifications, the amount set forth for the contract item of work hereinafter listed shall be deemed to be maximum total value of said contract item of work which will be recognized for progress payment purposes:

Clearing and Grubbing - $ 9,500.00

After acceptance of the contract pursuant to Section 7-1.17, "Acceptance of Contract" of the Standard Specifications, the amount, if any, payable for a contract item of work in excess of the maximum value for progress payment purposes herein above listed for said item, will be included for payment in the first estimate made after acceptance of the contract.

Method of Payment:
Full compensation, except as otherwise provided herein, for conforming to the requirements of this article including all labor, equipment, materials and incidentals, for performing clearing and grubing **including but not limited to tree removal, trimming of trees, removing debris from pavement and shoulders, cleaning culverts pipes and grade them to drain, grade dirt driveways, mailbox relocation,** shall be considered as included in the contract price paid per lump sum for Clearing and Grubbing and no additional compensation will be allowed therefor.

GRINDING ASPHALT CONCRETE IN PLACE (PULVERIZE):

The Contractor shall pulverize the asphalt concrete pavement to the depths as shown on the plans or as directed by the Engineer to pass a one inch screen. However up to five (5) percent of the material may be retained on the one inch screen, provided that the oversized material is not large enough to adversely affect the stability and hamper the shaping and compacting operation.

The excess of the pulverized material and any material in excess of five (5) percent not passing the one inch screen shall be removed and disposed of outside of the right of way as provided in Section 7-1.13 of the Standard Specifications.

The material shall be of such sizes that the percentage composition by weight of materials shall conform to the following grading using Test Method Calif. 202.

Sieve Size	Percent Passing Sieve
1 inch	95-100
3/4 inch	85-100
No. 4	40-65
No. 30	10-30
No. 200	2-9

Material not conforming to the above grading may be used, subject to other tests as prescribed by the Materials Engineer.

The pulverized asphalt concrete shall be stock piled if necessary, and placed as shown on the plans, graded to a smooth even ride and compacted (95 percent minimum) in conformance with Section 26-1.05 of the Standard Specifications.

Method of Payment:
The contract unit bid price paid per square yard for Grinding Asphalt Concrete in Place shall include full compensation for furnishing all labor, tools, materials, equipment including cold planing the existing asphalt concrete pavement as directed by the Engineer and no additional compensation will be allowed therefor.

COLD PLANE ASPHALT CONCRETE PAVEMENT:

The Contractor shall cold plane the asphalt concrete pavement to a depth as shown on the approved plans or as directed by the Engineer.

The cold plane machine shall have a cutter head at least 72 inches wide and shall be operated so as not to produce fumes or smoke.

The depth, width and shape of the cut shall be as indicated on the plans. The outside lines of the planed area shall be neat and uniform. The road surfacing to remain in place shall not be damaged in any way.

The material planed from the roadway surface, including material deposited in existing gutters or on the adjacent traveled way shall become the property of the Contractor and shall be immediately removed from the site of the work and disposed of as provided in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way", of the Standard Specifications.

The removal crew shall follow within 50 feet of the planer, unless otherwise directed by the Engineer.

Nothing in these Special Provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.09, "Public Safety" of the Standard Specifications.

During the pavement operation, no vertical drops are permitted between lanes during non-working hours. Transitions between lifts shall not exceed 2% or as approved by Engineer during non-working hours.

Header Cut:
At road connections and at limits of asphalt paving, existing pavement shall be header cut as shown on the plans or as directed by the Engineer. Full compensation for furnishing all labor, tools and doing all the work necessary including grinding, and sawcutting shall be considered as included in the contract prices paid per square yard for Cold Plane Asphalt Concrete Pavement and no additional compensation will be allowed therefor.

Method of Payment:
The contract unit bid price paid per square yard for Cold Plane Asphalt Concrete Pavement shall include full compensation for providing all labor, tools, equipment and disposing of the grindings, and no additional compensation will be allowed therefor.

PREPARING EXISTING ROADBED FOR RESURFACING:

When asphalt concrete is to be spread over existing pavement, the existing pavement shall first be cleaned of all dirt and extraneous material. The area shall be sprayed with paint binder prior to resurfacing.

The area to which paint binder has been applied shall be closed to public traffic. Care shall be taken to avoid tracking binder material onto existing pavement surfaces beyond the limits of construction. Full compensation for furnishing all labor, tools, and materials necessary to clean tracked paint binder shall be considered as included in the contract price paid per ton for Asphalt Concrete.

Asphalt concrete shall be placed on all existing surfacing, including curve widening, public road connections, and left turn pockets, unless otherwise directed by the Engineer.

All raised pavement markers shall be removed prior to the application of paint binder.

The Contractor will be required to place and remove temporary pavement markings as directed by the Engineer.

At the end of each day's work, preceding a non-working day or a day on which the Contractor does not work, the distance between the ends of the adjacent surfaced lanes shall not be greater than 10 feet nor less than 5 feet.

Method of Payment:
Except as otherwise provided, full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in preparing existing roadbed as shown on the plans, as specified herein, and as directed by the Engineer shall be considered as included in the contract prices paid for the various asphalt concrete items.

HOT MIX ASPHALT:

Asphalt concrete shall be Type "A" and shall conform to the requirements of Section 39 of the Standard Specifications and the following:

Aggregate grading shall be three-quarter inch (3/4") maximum.

The asphalt lift thickness table, as shown in Section 39-6.01, "General Requirements" of the Standard Specifications, is revised as follows:

Total Thickness Shown on Plans	Minimum No. of Layers	Top Layer Thickness (foot)		Next Lower Layer Thickness (foot)		All Other Lower Layer Thickness (foot)	
		Min.	Max.	Min.	Max.	Min.	Max.
0.24-foot or less[a]	1	-	-	-	-	-	-
0.25-foot	2[b]	0.12	0.13	0.12	0.13	-	-
0.26 - 0.46 foot	2	0.12	0.21	0.14	0.25	-	-
0.47-foot or more	3 or more	0.15	0.21	0.15	0.25	0.17	0.25

Footnotes to asphalt thickness table are revised as follows:
a. No Change.
b. One layer of 0.25 foot thick may be placed as approved by the Engineer. When the Traffic Index specified is 5.5 or below, two layers shall be placed.

Asphalts:

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

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

1. Free from residues caused by the artificial distillation of coal, coal tar, or paraffin;

2. Free from water;
3. Homogeneous.

General:

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

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

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

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

Grade:

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

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

Notes:

a. Not used.

b. The Engineer will waive this specification if the supplier is a Quality Supplier as defined by Department's "Certification Program for Suppliers of Asphalt".

c. The Engineer will waive this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.

d. Test the sample at 3 °C higher if it fails at the specified test temperature. G*sin(delta) shall remain 5000 kPa maximum.

e. "RTFO Test" means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T240 or ASTM Designation: D2827.

f. "PAV" means Pressurized Aging Vessel.

Performance graded polymer modified asphalt binder (PG Polymer Modified) is:

Performance Graded Polymer Modified Asphalt Binder [a]

Property	AASHTO Test Method	Specification Grade		
		PG 58-34 PM	PG 64-28 PM	PG 76-22 PM
Original Binder				
Flash Point, Minimum °C	T 48	230	230	230
Solubility, Minimum % [b]	T 44[c]	98.5	98.5	98.5
Viscosity at 135°C, [d] Maximum, Pa·s	T 316	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	58	64	76
Minimum G*/sin(delta), kPa		1.00	1.00	1.00
RTFO Test , Mass Loss, Maximum, %	T 240	1.00	1.00	1.00
RTFO Test Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	58	64	76
Minimum G*/sin(delta), kPa		2.20	2.20	2.20
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	Note e	Note e	Note e
Maximum (delta), %		80	80	80
Elastic Recovery[f], Test Temp., °C	T 301	25	25	25
Minimum recovery, %		75	75	65
PAV[g] Aging, Temperature, °C	R 28	100	100	110
RTFO Test and PAV Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	16	22	31
Maximum G*sin(delta), kPa		5000	5000	5000
Creep Stiffness, Test Temperature, °C	T 313	-24	-18	-12
Maximum S-value, MPa		300	300	300
Minimum M-value		0.300	0.300	0.300

Notes:

a. Do not modify PG Polymer Modifier using acid modification.
b. The Engineer waives this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt".
c. The Department allows ASTM D5546 instead of AASHTO T44.
d. The Engineer waives this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
e. Test temperature is the temperature at which G*/sin(delta) is 2.2 kPa. A graph of log G*/sin(delta) plotted against temperature may be used to determine the test temperature when G*/sin(delta) is 2.2 Kpa. A graph of (delta) versus temperature may be used to determine delta at the temperature when G*/sin(delta) is 2.2 kPa. The Engineer also accepts direct measurement of (delta) at the temperature when G*/sin(delta) is 2.2 kPa.
f. Test without a force ductility clamp may be performed.
g. "PAV" means Pressurized Aging Vessel.

Sampling:

The Contractor shall provide a sampling device in the asphalt feed line connecting the plant storage tanks to the asphalt weighing system or spray bar. The sampling device shall be accessible between 24 and 30 inches above the platform. The Contractor shall provide a receptacle for flushing the sampling device.

The sampling device shall include a valve:

1. With a diameter between 1/2 and 3/4 inches;

2. Manufactured in a manner that a one-quart sample may be taken slowly at any time during plant operations;

3. Maintained in good condition.

The Contractor shall replace failed valves.

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

Applying Asphalt:

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

Section 39-2.01, "Asphalts" is replaced in its entirety with the followings:

> Asphalt binder to be mixed with aggregate shall conform to the provisions in "Asphalts" of these Special Provisions.
>
> The grade of asphalt binder shall be: PG 70-10 (Desert).
>
> Liquid asphalt for prime coat shall conform to the provisions in Section 93, "Liquid Asphalts" of the Standard Specifications and shall be the Grade 70-10 unless otherwise designated by the contract item or otherwise specified in these Special Provisions.
>
> Asphaltic emulsion for paint binder (tack coat) shall conform to the provisions in Section 94, "Asphaltic Emulsion" of the Standard Specifications for the rapid-setting or slow-setting type and grade approved by the Engineer.

Section 39-3.01B (1) shall be amended to include:

> Aggregate of the 3/4 inch or 1/2 inch maximum size and aggregate for asphalt concrete base shall be separated into 3 or more sizes and each size shall be stored in separate bins.

If 3 sizes are used, one bin shall contain that portion of the material which will pass the maximum size specified and be retained on a 3/8 inch sieve; one bin shall contain that portion of the material which will pass a 3/8 inch sieve and be retained on a No. 8 sieve; and one bin shall contain that portion of the material which will pass a No. 8 sieve.

Aggregate of 3/8 inch maximum size shall be separated into 2 sizes and each size shall be stored in separate bins. One bin shall contain that portion of the material which will pass the maximum size specified and be retained on a No. 8 sieve and one bin shall contain that portion of the material which will pass a No. 8 sieve.

The bin containing the fine material shall not contain more than 15 percent of material retained on the No. 8 sieve. The material in any of the other bins shall not contain more than 15 percent of material passing a No. 8 sieve. Failure to comply with this requirement shall be corrected immediately, and the material in the bins not meeting these requirements shall be re-screened or wasted.

All asphalt concrete for this project shall be supplied from one source unless approved by the Engineer. Said source shall be listed on the Contractors Source of Materials List as required in Section 6 of the Standard Specifications.

Asphaltic emulsion shall be furnished and applied as provided in Section 39-4.02.

Asphalt concrete driveway approaches shall be reconstructed to match existing as directed by the Engineer.

Unless otherwise specified on the plans, asphalt concrete placed on driveways shall be two and a half inches (2 ½") in thickness and will be paid for at the same unit price as for material placed on the roadbed.

In addition to the provisions in Section 39-5.01, "Spreading Equipment" of the Standard Specifications, asphalt paving equipment shall be equipped with automatic screed controls and a sensing device or devices.

When placing asphalt concrete to the lines and grades established by the Engineer, the automatic controls shall control the longitudinal grade and transverse slope of the screed. Grade and slope references shall be furnished, installed, and maintained by the Contractor. The Contractor shall use a ski device with a minimum length of 30 feet or as directed by the Engineer. The ski device shall be a rigid one piece unit and the entire length shall be utilized in activating the sensor.

When placing the initial mat of asphalt concrete on existing pavement, the end of the screed nearest the centerline shall be controlled by a sensor activated by a ski device not less than 30 feet. The end of the screed farthest from centerline shall be controlled by an automatic transverse slope device set to reproduce the cross slope designated by the Engineer, by a sensor activated by a similar ski device or as directed by the Engineer.

When paving contiguously with previously placed mats, the end of the screed adjacent to the previously placed mat shall be controlled by a sensor that responds to the grade of the previously placed mat and will reproduce the grade in the new mat within a 0.12 inch tolerance. The end of

the screed farthest from the previously placed mat shall be controlled in the same way it was controlled when placing the initial mat.

Should the methods and equipment furnished by the Contractor fail to produce a layer of asphalt concrete conforming to the provisions, including straightedge tolerance, of Section 39-6.03, "Compacting" of the Standard Specifications or elsewhere in these Special Provisions, the paving operations shall be discontinued and the Contractor shall modify the equipment or methods, or furnish substitute equipment.

Should the automatic screed controls fail to operate properly during a day's work, the Contractor may manually control the spreading equipment for the remainder of that day. However, the equipment shall be corrected or replaced with alternative automatically controlled equipment conforming to the provisions in this section before starting another day's work.

General Criteria For Profiling:

In addition to the straightedge provisions in Section 39-6.03, "Compacting" of the Standard Specifications, asphalt concrete pavement shall conform to the surface tolerances specified herein.

The uppermost layer of asphalt concrete surfacing shall be profiled in the presence of the Engineer using a California Profilograph or equivalent in conformance with California Test 526 and as specified in these Special Provisions.

The California Profilograph or equivalent will not be required for the following areas of the pavement surface but shall conform to the straightedge requirements in Section 39-6.03, "Compacting" of the Standard Specifications:

1. Pavement with a total thickness less than 0.24 foot;

2. Pavement on horizontal curves with a centerline curve radius of less than 1,000 feet and the pavement within the superelevation transition on those curves;

3. Pavement placed in a single lift when required by the Special Provisions;

4. Pavement with extensive grade or cross slope correction which does not receive advance leveling operations in conformance with the provisions in Section 39-6.02, "Spreading" of the Standard Specifications;

5. Pavement for ramps and connectors with steep grades and high rates of superelevation, as determined by the Engineer;

6. Shoulders and miscellaneous areas.

The Contractor shall conform to California Test 526, except a zero (null) blanking band shall be used for determining the Profile Index. Prior to beginning profiles, the profilograph shall be calibrated in the presence of the Engineer. Two profiles shall be obtained within each traffic lane, 3 feet from and parallel with the edges of the lane.

Pavements profiled shall conform to the following Profile Index requirements:

1. Pavement on tangent alignment and pavement on horizontal curves having a centerline curve radius of 2,000 feet or more shall have a Profile Index of 0.16 foot or less for each 330 feet section profiled;

2. Pavement on horizontal curves having a centerline curve radius of 1,000 feet or more but less than 2,000 feet, including the pavement within the superelevation transition of these curves, shall have a Profile Index of 0.32 foot or less for each 330 feet section profile;

3. Pavement within any 330 feet section, containing high point areas with deviations in excess of 0.025 foot in a length of 25 feet or less, when tested in conformance with the requirements in California Test 526, shall be corrected by the Contractor regardless of the Profile Index.

The Contractor shall complete initial runs of the profilograph prior to opening the pavement to public traffic. If initial profiles cannot made prior to opening the pavement to public traffic, the initial runs of the profilograph shall be made the next day that traffic control is permitted for the area to be profiled.

Areas of the top surface of the uppermost layer of asphalt concrete pavement that do not meet the specified surface tolerances shall be brought within tolerance by abrasive grinding.

Abrasive grinding shall be performed to reduce individual deviations in excess of 0.025 foot, and to reduce the Profile Index of the pavement to be within the specified tolerance. Areas which have been subjected to abrasive grinding shall receive a seal coat. Deviations in excess of 0.025 foot which cannot be brought into specified tolerance by abrasive grinding shall be corrected by either (1) removal and replacement or (2) placing an overlay of asphalt concrete. The corrective method for each area shall be selected by the Contractor and shall be approved by the Engineer prior to beginning the corrective work. Replacement or overlay pavement not meeting the specified tolerances shall be corrected by the methods specified above. Corrective work shall be at the Contractor's expense. The Contractor shall run profilograms on the areas that have received abrasive grinding or corrective work until the final profilograms indicate the Profile Index of the area is within the specifed tolerance.

When abrasive grinding is used to bring the top surface of the uppermost layer of asphalt concrete surfacing within the specified surface tolerances, additional abrasive grinding shall be performed as necessary to extend the area ground in each lateral direction so that the lateral limits of grinding are at a constant offset from, and parallel with, the nearest lane line or pavement edge, and in each longitudinal direction so that the grinding begins and ends at lines normal to the pavement centerline, within a ground area. Ground areas shall be neat rectangular areas of uniform surface appearance.

The original of the final profilograms that indicate the pavement surface is within the Profile Index specified shall become the property of the County and shall be delivered to the Engineer prior to acceptance of the contract.

Method of Payment:
Hot Mix Asphalt will be paid for at a unit price per ton as a combined item, including mineral aggregate and asphalt binder in place on the roadbed.

Full compensation for furnishing and applying asphaltic emulsion for paint binder (tack coat) shall be considered as included in the contract price paid for Hot Mix Asphalt.

The contract bid price paid per ton for Hot Mix Asphalt shall include full compensation for furnishing all labor, tools, materials, equipment, and incidentals, and for doing all the work involved including the furnishing/application of asphaltic emulsion (paint binder) and header cutting and joining existing pavement as shown on the plans and/or as directed by the Engineer.

ASPHALT RUBBER HOT MIX - GAP GRADED (ARHM-GG) (Wet Process):

ARHM-GG, shall conform to the provisions for Type "A" asphalt concrete in Section 39, "Asphalt Concrete" of the Standard Specifications and these Special Provisions with the exception that ARHM-GG shall be spread at a temperature of not less than 285^0 F and not more than 350^0 F, measured in the hopper of the paving machine.

Binder for ARHM-GG shall be Type 2 asphalt-rubber binder with an asphalt modifier as specified in these Special Provisions.

The grade of asphalt-rubber binder shall be PG 70-10 (Desert).

The asphalt modifier will be a resinous, high flash point, aromatic hydrocarbon compound and shall conform to the requirements following:

REQUIREMENTS FOR ASPHALT MODIFIER

Property	ASTM Test Method	Value
Flash Point, C.L.O.C., *^{0}C (*^{0}F)	D92	207 (405) min
Viscosity,cSt @ 100^0C (212^0F)	D445	X±3*
Molecular Analysis Asphaltenes, percent by mass Aromatics, percent by mass	 D2007 D2007	 0.1 max 55 min

*The symbol "X" is the viscosity of the asphalt modifier the Contractor proposes to furnish. The value "X" which the Contractor proposes shall be between the limits of 19 and 36 and shall be submitted in writing to the Engineer. Any proposed change requested by the Contractor in the value "X" shall require a new asphalt-rubber binder design.

The amount of asphalt-rubber binder to be added to the aggregate shall be between 6.7% and 8.7% by dry weight of the aggregate. The exact amount will be determined by the Engineer. The

temperature of the aggregate at the time the asphalt-rubber binder is added shall be not more than 350^0 F.

Rubber for use in asphalt-rubber binder shall be free of loose fabric, wire and other contaminants except that up to 3% (by weight of rubber) calcium carbonate or talc may be added to prevent rubber particles from sticking together. The rubber shall be sufficiently dry so as to be free flowing and not produce foaming when blended with the hot asphalt.

A sample of the asphalt-rubber binder proposed for use on the project, consisting of four one-quart cans, together with the proposed formulation of the binder shall be furnished to the Engineer at least two weeks before ARHM-GG pavement construction is scheduled to begin.

The method and equipment for combining the rubber and the asphalt shall be so designed and accessible that the Engineer can readily determine the percentage by weight for each material being incorporative into the mixture.

Equipment utilized in the production and proportioning of the asphalt-rubber binder shall include the following:

An asphalt heating tank with hot oil heat transfer to heat the asphalt to the necessary temperature before blending with the granulated rubber. This unit shall be equipped with a thermostatic heat control device.

A mechanical blender for proper proportioning and thorough mixing of the asphalt and rubber. This unit shall have both an asphalt totalizing meter (gallons or liters) and a flow rate meter (gallons per minute or liters per minute).

An asphalt-rubber storage tank equipped with a heating system to maintain the proper temperature of the binder and an internal mixing unit capable of maintaining a homogeneous mixture of asphalt and rubber.

An asphalt-rubber supply system equipped with a pump and metering device capable of adding the binder by volume to the aggregate at the percentage specified or ordered.

The equipment utilized in the manufacture of asphalt rubber binder shall keep the mix in a continuous blend state. The batch method is not acceptable.

The swell, moisture vapor susceptibility, and the stabilometer value requirement in Section 39-2.02, "Aggregate" of the Standard Specifications shall not apply to ARHM-GG.

Before opening a traffic lane to public traffic, when directed by the Engineer, a sand cover shall be spread uniformly over areas where ARHM-GG has been placed.

Sand shall be free from clay or organic material and shall be of such size that from 90% to 100% will pass a No. 4 sieve and not more than 5% will pass a No. 200 sieve.

Sand shall be spread at the approximate rate of from one to two pounds per square yard.

Traffic shall not be allowed on the ARHM-GG for at least one hour after final rolling operations have been completed.

Pneumatic tired rollers shall not be used to compact ARHM-GG.

The asphalt-rubber mixture shall not be used as a binder after it has been retained for more than 48 hours.

Type 2 Asphalt-Rubber Binder

Type 2 asphalt-rubber binder shall be a uniform and reacted mixture of compatible paving grade asphalt, extender oil, and reclaimed vulcanized rubber.

Extender oil shall be a resinous, high flash point aromatic hydrocarbon conforming to the following:

Viscosity, SUS @ 100^0 F (ASTM D 88)	2500 minute
Flash Point, COC, Degree F (ASTM D 92)	405 minute
Molecular Analysis (ASTM D 2007)	
Asphaltenes, % by weight	0.1 maximum
Aromatics, % by weight	55 minimum

The asphalt and extender oil, when combined shall form a material that is chemically compatible with the rubber.

The rubber used in Type 2 asphalt-rubber binder shall be reclaimed vulcanized rubber and shall contain between 22 percent and 39 percent by weight, natural rubber when tested in accordance with ASTM D 297. The rubber shall conform to the following grading when tested in accordance with ASTM C 136:

Sieve Size	Percentage Passing
No. 8	100
No. 10	98-100
No. 16	45-75
No. 30	2-20
No. 50	0-6
No. 100	0-2

The rubber shall contain no particles longer than 3/16 inch in length.

The extender oil shall be added to the asphalt at a rate between 2 percent and 6 percent by weight of the asphalt, the exact amount shall be determined by the asphalt-rubber supplier. The asphalt shall be at a temperature of not less than 350^0 F nor more than 425^0 F when the extender oil is added.

The asphalt-extender oil blend and rubber shall be combined and mixed together in the blender unit to produce a homogeneous mixture.
The amount of rubber to be added to the asphalt-extender oil blend shall be 18 percent and 22 percent by weight of the total combined mixture of asphalt, extender oil, and rubber. The exact amount shall be determined by the asphalt-rubber supplier. The asphalt-extender oil blend shall be at a temperature of not less than 350^0 F nor more than 425^0 F when the rubber is added. After the material has reacted for at least 45 minutes, the asphalt-rubber shall be metered into the mixing chamber of the asphalt concrete production plant at the percentage specified or ordered.

The asphalt-rubber mixture shall be reacted for a minimum of 45 minutes from the time the rubber is added to the asphalt-extender oil blend. The temperature of the asphalt-rubber mixture shall be maintained between 375^0 F and 425^0 F during the reaction period.

The asphalt-rubber mixture shall possess the following physical property after the reaction period:

Viscosity at 400^0 F (ASTM D 2196) (Brookfield)	600-2000 cp

Asphalt-rubber shall consist of the following:

After reacting the PG 64-16, asphalt modifier and rubber, the asphalt-rubber binder shall conform to the following requirements:

Test Parameter	Specification Limits
Field Viscosity, Haake at 375^0 F in centipoise ASTM D 2669	1500-4000
Penetration, Cone at 77^0 F in 1/10 MM ASTM D 217	45 ± 25
Resilience 77^0 F in percent rebound ASTM D 3407	18 Minimum
Field Softening Point in degree F ASTM D 36	145 ± 20

Contractor shall have available a Haake Viscometer conforming to ASTM D 2669.

The asphalt-rubber mixture after reaching the desired consistency shall not be held at temperatures over 375^0 F for more than 4 hours.

General Requirements

The aggregate for ARHM-GG shall conform to the following grading and shall meet the quality requirements for "Type A" as specified in Section 39-2.02, "Aggregate" of the Standard Specifications.

For ½" maximum size aggregate, use the following grading:

Sieve Size	Limits of Proposed Gradation	Operating Range	Contract Compliance
3/4"		100	100
1/2"		90-100	90-100
3/8"	78-92	X±5	X±7
#4	28-42	X±5	X±7
#8	15-25	X±4	X±5
#30	5-15	X±4	X±5
#200		2-7	0-8

The Los Angeles Rattler requirement in Section 39-2.02, "Aggregate" of the Standard Specifications shall be amended to read "40 percent maximum loss at 500 revolutions".

ARHM-GG shall be spread at a temperature of not less than 285^0 F and not more than 350^0 F, measured in the hopper of the paving machine, with ambient temperature of not less than 55^0 F.

Measurement

The mixture of ARHM-GG will be measured by the ton in the same manner specified for asphalt concrete in Section 39-8.01, "Measurement" of the Standard Specifications.

Method of Payment

The contract price paid per ton for Asphalt Rubber Hot Mix shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in placing ARHM-GG complete in place, including header cutting as directed by the Engineer, furnishing and applying asphalt binder, furnishing and spreading sand cover if directed by the Engineer, as shown on the plan, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

COMPENSATION ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS:

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

ITEM CODE	ITEM
390130	Hot Mix Asphalt
013901	Asphalt Rubber Hot Mix

The compensation payable for asphalt binder used in hot mix asphalt will be increased or decreased in conformance with the provisions of this section for paving asphalt price fluctuations exceeding 10 percent (Iu/Ib is greater than 1.10 or less than 0.90) which occur during performance of the work.

The adjustment in compensation will be determined in conformance with the following formulae when the item of asphalt concrete and asphalt rubber hot mix are included in a monthly estimate:

A. Total monthly adjustment = AQ

B. For an increase in paving asphalt price index exceeding 10 percent:

$A = 0.90 (Iu/Ib - 1.10) Ib$

C. For a decrease in paving asphalt price index exceeding 10 percent:

$A = 0.90 (Iu/Ib - 0.90) Ib$

D. Where:

A = Adjustment in dollars per ton of paving asphalt used to produce hot mix asphalt rounded to the nearest $0.01.

Iu = The California Statewide Paving Asphalt Price Index which is in effect on the first business day of the month within the pay period in which the quantity subject to adjustment was included in the estimate.

Ib = The California Statewide Paving Asphalt Price Index for the month in which the bid opening for the project occurred.

Q = Quantity in tons of paving asphalt that was used in producing the quantity of asphalt concrete shown under "This Estimate" on the monthly estimate using the amount of asphalt determined by the Engineer.

The adjustment in compensation will also be subject to the following:

A. The compensation adjustments provided herein will be shown separately on payment estimates. The Contractor shall be liable to the State for decreased compensation

adjustments and the Department may deduct the amount thereof from moneys due or that may become due the Contractor.

B. Compensation adjustments made under this section will be taken into account in making adjustments in conformance with the provisions in Section 4-1.03B, "Increased or Decreased Quantities" of the Standard Specifications.

C. In the event of an overrun of contract time, adjustment in compensation for paving asphalt included in estimates during the overrun period will be determined using the California Statewide Paving Asphalt Price Index in effect on the first business day of the month within the pay period in which the overrun began.

The California Statewide Paving Asphalt Price Index is determined each month on the first business day of the month by the Department using the median of posted prices in effect as posted by Chevron, Mobil, and Unocal for the Buena Vista, Huntington Beach, Kern River, Long Beach, Midway Sunset, and Wilmington fields.

In the event that the companies discontinue posting their prices for a field, the Department will determine an index from the remaining posted prices. The Department reserves the right to include in the index determination the posted prices of additional fields.

The California Statewide Paving Asphalt Price Index is available on the Division of Engineering Services website at: http://www.dot.ca.gov/hq/esc/oe/asphalt_index/astable.html.

EDGE TREATMENT, HOT MIX ASPHALT SAFETY EDGE:

General
This work includes constructing the edges of HMA pavement as shown on the plans.

Materials
HMA for safety edge treatment must comply with Section 39, "Hot Mix Asphalt," of the Standard Specifications and "Hot Mix Asphalt" Section of these Special Provisions.

For the safety edge, use the same type of HMA used for the adjacent lane or shoulder.

Construction
The edge of roadway where the safety edge treatment is to be placed must have a solid base, free of debris such as loose material, grass, weeds, or mud. Grade areas to receive the safety edge as required.

The safety edge treatment must be placed monolithic with the adjacent lane or shoulder and shaped and compacted with a device attached to the paver.

The device must be capable of shaping and compacting HMA to the required cross section as shown on the plans. Compaction must be by constraining the HMA to reduce the cross sectional area by 10 to 15 percent. The device must produce a uniform surface texture without tearing,

shoving, or gouging and must not leave marks such as ridges and indentations. The device must be capable of transition to cross roads, driveways, and obstructions.

For safety edge treatment, the angle of the slope must not deviate by more than ± 5 degrees from the angle shown on the plans. Measure the angle from the plane of the adjacent finished pavement surface.

If paving is done in multiple lifts, the safety edge treatment can be placed either with each lift or with the final lift.

Short sections of hand work are allowed to construct transitions for safety edge treatment.

For more information on the safety edge treatment, go to:

http://safety.fhwa.dot.gov/roadway_dept/pavement/safedge/

A list of commercially available devices can be found at the above Web site under "Frequently Asked Questions" and "Construction Questions."

Method of Payment:
Full compensation for constructing edge treatments (Safety Edge), including grading when required for preparation of the area to receive the safety edge treatment, shall be considered as included in the contract price paid per ton for the various Hot Mix Asphalt items and it shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, and for doing all the work as specified in the Standard Specifications and these Special Provisions and no additional compensation will be allowed.

SHOULDER BACKING:

Shoulder backing shall provide for the grading of the shoulder as shown on the plans, or as directed by the Engineer. Unless otherwise directed, the width of the shoulder backing shall be 6 feet minimum, measured from edge of pavement.

Onsite material may be used to fill in low areas, subject to approval by the Engineer. Ground asphalt concrete will not be used for shoulder backing.

Ground asphalt concrete shall not be placed in or in close proximity to streambeds or drainage courses, the limits of which shall be determined by the Engineer.

Imported material, if required to fill in low areas, shall conform to the provisions of Section 25, "Aggregate Subbases" of the Standard Specifications and these Special Provisions, and the aggregate shall conform to the grading and quality requirements for Class 1 aggregate subbases.

The Aggregate Grading Requirements table, as shown in Section 25-1.02, "Class 1, Class 2, and Class 3 Aggregate Subbases" of the Standard Specifications, is revised as follows:

- For Class 1, Sieve Size No. 4, the Operating Range shall be **35-50**.
- For Class 1, Sieve Size No. 200, the Operating Range shall be **0-15**.

Sub-base material shall be clean and free from roots, vegetable matter and other deleterious substances, and be of such character that when wet it will compact to form a firm stable base. The material shall be of such sizes that the percentage composition by weight of material shall conform to the aggregate grading requirements at the time the material is deposited on the roadbed when determined by Test Method No. Calif. 202.

Dirt Driveways Construction:
Full compensation for constructing and grading dirt driveways shown on the plans, and as directed by the Engineer shall be considered as included in the contract bid price paid per linear foot for Shoulder Backing and shall include furnishing all labor, tools, materials, equipment, and incidentals, and for doing all the work involved and no additional compensation will be allowed therefor.

Method of Payment:
Payment for Shoulder Backing will be paid at the linear foot price bid and shall include full compensation for furnishing all labor, materials, tools, and equipment, including the grading of any existing driveways to match new improvements, other miscellaneous shoulder grading to promote positive drainage, and importing of material and/or handling of onsite material as shown on the plans and/or as directed by the Engineer, and no additional payment will be allowed therefor.

FINISHING ROADWAY:

Finishing roadway shall conform to Section 22 of the Standard Specifications and these Special Provisions.

Method of Payment:
Full compensation, except as otherwise provided herein, for conforming to the requirements of this article shall be considered as included in the various contract items of work and no additional compensation will be allowed therefor.

REMOVE AND SALVAGE ROADSIDE SIGNS:

Existing roadside signs shall be removed and salvaged as shown on the plans.

Existing roadside signs at locations shown on the plans to be removed shall not be removed until replacement signs have been installed or until the existing signs are no longer required for direction of public traffic, unless otherwise directed by the Engineer.

The Contractor shall deliver County owned signs to be salvaged to the nearest County Maintenance Yard as directed by the Engineer.

Method of Payment:
The contract unit price paid per each for remove and Salvage Roadside Signs shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work including excavation and backfill as specified in the Standard Specification and these Special Provisions and no additional compensation will be allowed therefor.

ROADSIDE SIGN - ONE POST:

The Contractor shall furnish and install roadside signs at the locations shown on the plans or as directed by the Engineer, in conformance to the provisions in Section 56-2 "Roadside Signs," of the State Standard Specifications and these Special Provisions.

All Signs shall be installed on new square perforated steel tube posts in accordance with County Standard No. 1222.

Street name signs shall be furnished and installed in conformance with County Standard No. 1221 as shown on the plans, as specified in these Special Provisions and as directed by the Resident Engineer.

All roadway signs shall have retroreflective sheeting. Except as stated below, the retro-reflectivity for all roadway signs, both temporary and permanent installations, shall meet or exceed ASTM Standard D 4956 Type III (3M Co. High Intensity Grade or approved equal). The retroreflectivity for R1-1 ("STOP") signs and W3-1 (Stop Ahead) signs shall meet ASTM Standard D 4956 Type IX (3M Co. Diamond Grade or approved equal).

Method of Payment:
The contract unit price paid per each for Roadside Sign - One Post, including street name signs, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work including all necessary including all necessary concrete excavation and backfill as specified in the Standard Specifications and these Special Provisions and no additional compensation will be allowed therefor.

THERMOPLASTIC CROSSWALK AND PAVEMENT MARKING:

Thermoplastic crosswalk pavement marking shall conform to the provisions in Sections 84-1, "General" and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings" of the Standard Specifications, the plans, these Special Provisions and as directed by the Engineer.

Newly painted pavement markings shall be protected from damage by public traffic or other causes until the thermoplastic is thoroughly dry. Any newly installed traffic markings which are damaged as a result of the construction, including wheel markings by public traffic and the construction equipment, shall be replaced by the Contractor and any associated removals shall be performed as called on these Special Provisions.

Method of Payment:

The contract price paid per square foot for Thermoplastic Crosswalk and Pavement Marking shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work necessary to place the crosswalk and pavement markings complete in place, and no additional compensation will be allowed.

PAINT TRAFFIC STRIPE (2 COATS):

Painting traffic stripes (traffic lanes) shall conform to the provisions in Section 84-1, "General," and 84-3, "Painted Traffic Stripes and Pavement Markings," of the State Standard Specifications and these special provisions.

The Contractor shall furnish the necessary control points for all striping and markings and shall be responsible for the completeness and accuracy thereof to the satisfaction of the Engineer.

The Contractor shall perform all layout, alignment, and spotting for traffic stripes and markings. Traffic striping shall not vary by more than ½ inch in 50 feet from the alignment shown on the plans. The dimensional details of the stripes and markings shall conform to the provisions set forth in the California MUTCD and Maintenance Manual available from Caltrans.

Spotting with cat tracks or dribble lines shall be performed prior to the removal of existing stripes. Cat tracks shall consist of spots of paint not more than 3 inches in width and not more than 5 feet apart along the alignment of the stripe. Paint for the cat tracks shall be the same as that for the intended stripe. Paint for the dribble lines shall be neutral color obtained by mixing approximately two parts white paint with one part black paint.

SPOTTING - Spotting shall be completed prior to the removal of any existing stripes or markings. Existing stripes and markings shall be removed prior to painting new ones, but in no case shall any section of street be left without the proper striping for more than 24 hours, or over weekends or holidays.

No striping or painting work shall start until the Engineer has specifically approved the spotted markings. Existing striping and markings, if any, shall be removed prior to painting new, but in no case shall any section of street be left without the proper striping for more than 24 hours, or over the weekends or holidays.

MATERIALS - Materials shall conform to the provisions in Section 84-3.02, "Materials," of the State Standard Specifications and these Special Provisions. All traffic striping and pavement markings shall be two coats of paint with glass beads unless otherwise approved by the County and City Engineer. A minimum of 7 days and a maximum of 14 days shall elapse between application of the first and second coats of paint.

The paint for traffic striping and markings shall be as follows, or an approved equal:

White - PERVO Paint Co. #9000 ULTRA
Yellow - PERVO Paint Co #9003 ULTRA

Glass beads shall conform to State Specification 8010-21C-22 (Type II).

Newly painted traffic striping shall be protected from damage by public traffic or other causes until the paint is thoroughly dry. Any newly painted traffic striping which are damaged as a result of the construction, including wheel markings by public traffic and the construction equipment, shall be repainted by the Contractor and any associated removals shall be performed as called for in these Special Provisions.

Method of Payment:
The contract unit price paid per linear foot for Paint Traffic Stripe (2 Coats) shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in painting traffic stripe (Regardless of the number, widths, and types of individual stripes involved in each traffic stripe) including any necessary cat tracks, dribble lines any layout work, complete in place as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

PAVEMENT MARKERS:

Pavement markers shall conform to the provisions of Section 85, "Pavement Markers," of the State of California Standard Specifications and these Special Provisions.

Certificates of compliance shall be furnished for pavement markers as specified in "Prequalified and Tested Signing and Delineation Materials," elsewhere in these Special Provisions.

Reflective pavement markers shall comply with the specific intensity requirements for reflectance after abrading the lens surface in accordance with the "Steel Wool Abrasion Procedure," specified for pavement markers placed in pavement recesses in Section 85-1.05, "Reflective Pavement Markers", of the State of California Standard Specifications.

Non-reflective pavement markers shall conform to the requirements of Section 85-1.04 "Non-Reflective Pavement Markers," of the State of California Standard Specifications. The bituminous adhesive used to install the markers shall be a hot melt bituminous adhesive asphaltic material with homogeneously mixed mineral filler and shall conform to the requirements specified in Section 85-1.055, "Adhesives," of the State of California Standard Specifications.

Reflective pavement markers shall be installed at locations as established by the applicable Caltrans striping detail noted on the approved striping Plan, which includes, but is not limited to temporary painted line(s), new striping or existing striping. There shall be one marker for each location. All work necessary to establish satisfactory locations for markers shall be performed by the Contractor.

Existing reflective pavement markers that do not conform to the approved Plan shall be removed by the Contractor.

Reflective pavement markers shall be of the prismatic reflector type (3M model white RP290w and yellow RPM 2912y or equal) as outlined in Subsection 85-1.05, "Reflective Pavement Markers" of the State of California Standard Specifications.

Blue reflective pavement markers designating the location of fire hydrants within project limits shall be replaced after the paving is completed at all fire hydrants locations, whether the blue reflective makers exist or not prior to paving. Installation of blue markers shall comply with the requirements of Riverside County Fire Department, Standard No. 06-11, attached to these Special Provisions.

Method of Payment:
Full compensation for reflective pavement markers, non-reflective pavement markers, and blue pavement markers (at fire hydrants) shall be considered as included in the contract price paid per each for Pavement Marker (Reflective) and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in installing pavement markers (reflective, non-reflective, or blue) complete, in place, as shown on the Plans, as specified in the Standard Specifications and these Special Provisions or as directed by the Engineer.

Section 4-1.03 B(1), Increases of More Than 25 Percent, of the State Standard Specifications will not apply to Pavement Markers (Reflective). No adjustment to the contract unit bid price will be allowed for any excess of over 25 percent of the estimated quantity for Pavement Markers (Reflective).

DETECTOR LOOP:

Detectors shall conform to the provisions in Section 86-5, "Detectors", of the Standard Specifications and these Special Provisions.

Delay timers shall delay calls only during display of the associated red or yellow indications. If a vehicle departs the area of detection prior to expiration of the assigned delay period, the timer shall reset and no call shall be placed upon the controller. During display of the associated green indication, detectors shall operate in the present mode and calls shall not be delayed.

Inductive Loops

Detector loop configuration shall be Type E per Standard Plans ES-5B unless otherwise shown on the construction plan, in the Special Provisions, or as directed by the Engineer.

Limit Line detector loop configuration shall be modified Type E with diagonal saw cuts and wire winding conforming to Type D loop configuration.

Detector loop wire shall be Type 2.

Detector loop lead-in cable shall be Type B.

Detector loop curb terminations shall be Type A in accordance with Standard Plans ES-5D.

Loop sealant shall be the Hot-Melt Rubberized Asphalt sealant type, unless otherwise directed by the Engineer. Loop conductors and sealant shall be installed on the same day the loop slots are cut.

All detector loops shall be tested sequentially by the following methods:

- impedance (measured by megaohms)
- resistance (measured by ohms)
- inductance (measured in microhenries)

Method of Payment:
The contract unit bid price paid per each for Detector Loops including the removal and disposal of existing detector loops as shown on the plans and as specified in the special provisions and as directed by the Engineer shall include full compensation for furnishing all labor, materials, tools, and equipment and no additional compensation will be allowed therefor.

MISCELLANEOUS DIRECTED WORK:

Miscellaneous directed work shall consist of necessary work that is not included in other contract bid items, as determined by the Engineer. Miscellaneous directed work shall be performed as directed by the Engineer and in accordance with the applicable standards and specifications.

Method of Payment:
Payment for implementing miscellaneous directed work will be paid for on a force account basis, in accordance with Section 9-1.03 of the Standard Specifications, up to the fixed bid price, for the work performed.

OBSTRUCTIONS:

Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities", and 15, "Existing Highway Facilities" of the Standard Specifications and these Special Provisions.

Existing utility and privately owned facilities shall be protected in accordance with Section 7-1.11, "Preservation of Property" and these Special Provisions. The Contractor is also responsible to protect those facilities that are to be relocated by others prior to or during construction, and shall protect those facilities in both their existing and their ultimate locations. The Contractor shall cooperate with owners and their Contractors of utility and privately owned facilities, for the relocation of said facilities, in accordance with Section 7-1.14, "Cooperation" of the Standard Specifications.

All water valves and covers, gas valves and covers, sewer manholes, survey monuments, survey markers and any other utility appurtenances shall be protected in place.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of workmen and the public. Facilities requiring special precautions include, but are not limited to:

conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipe lines greater than 6 inches in diameter or pipe lines operating at pressures greater than 60 psi (gage); underground electric supply system conductors or cables either directly buried or in duct or conduit which do not have concentric neutral conductors or other effectively grounded metal shields or sheaths; and underground electrical conductors with potential to ground of more than 300 volts. The Contractor shall notify the Engineer at least twenty-four hours prior to performing any work in the vicinity of such facilities.

Attention is directed to the requirements of Government Code Sections 4216-4216.9 pertaining to existing utility facilities.

The Contractor shall assume that every house, building and lot within the project limits has utility service pipes and conductors (laterals), and that utility main and trunk facilities exist within the project limits. The Contractor shall determine if it is warranted to determine the exact location of these utility service laterals and existing main lines, unless directed by the Engineer to pot-hole at specific locations, or as otherwise required herein. The Contractor will not be directly reimbursed for determining the exact location of the utility main lines or services laterals but shall include any compensation for this work in the contract price paid for the various items of work. Any damage to existing main lines or service laterals for which pot-holing was not performed shall be considered damage due to not using reasonable care and the damage shall be repaired at the Contractor's expense.

The Contractor shall conduct his operations with the assumption that underground utility facilities exist within the project limits. The Contractor shall exercise caution and best construction practices for safety and for protection of underground facilities. The approximate locations of underground utility facilities, as shown on the plans, are based on information provided by the respective owners, listed below. The Contractor shall also utilize the markings of the regional notification center (Underground Service Alert), and above-ground utility appurtenances to determine the existence and approximate location of underground utilities.

No excavation shall be made within 4 feet of any underground utilities, as shown on the plans and/or marked by Underground Service Alert, unless and until such utilities have been positively located as to horizontal and vertical position. This requirement applies to all underground electric, natural gas, toxic or flammable gas, chlorine, oxygen or petroleum facilities.

Forty-eight hours prior to beginning construction, the Contractor shall notify the following agencies:

Underground Service Alert	800-227-2600 or 811
Southern California Gas Company	909-335-7716
Verizon	760-327-8648
Coachella Valley Water District	760-398-2651
Imperial Irrigation District	760-398-5820
Level 3 Communications	720-888-3813
Cable USA	760-767-5607
USA Companies	760-346-2155

Method of Payment

Full compensation for all costs, including labor, equipment, materials and incidentals, required to comply with the requirements of this section above, including protection of water valves and covers, gas valves and covers, sewer manholes, survey monuments, survey markers and any other utility appurtenances, shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

Adjustments to Grade for Obstructions

The Contractor shall adjust to finish grade any valve covers encountered within the project limits, as required, for those utility valves that are provided with slip cans and are adjustable without the replacement of parts or the removal of concrete collars. In cases where the owning utility company insists upon upgrades in the standards, or when additional parts or the removal of concrete collars are required for the adjustment, said adjustment will be the responsibility of the owning utility company.

Communication and coordination with the owning utility company shall be the responsibility of the contractor.

For public safety, traffic shall not be allowed on temporary or permanent pavement until all manholes are either adjusted to grade or otherwise protected, as approved by the Engineer. The Contractor shall adjust to grade manholes and valves when and as necessary for the protection of the traveling public during construction, and shall coordinate all work on said facilities with the owning utility companies. This requirement is intended for traffic that is to be allowed on temporary surfaces during the course of construction. Final adjustment to grade will be the responsibility of the owning utility company, except as provided herein.

Said work shall be performed in accordance with Section 15-2.05A, "Frames, Covers, Grates, and Manholes" of the Standard Specifications. Full compensation for adjustment of valve covers shall be considered as included in the contract price paid for asphalt concrete, or applicable items of work in the event that there is no asphalt concrete bid item, and no additional compensation will be allowed therefor.

All existing utility facilities shall be protected from damage by the Contractor's operations.

Unless otherwise provided herein, the owning utility companies will not be obligated to lower their surface utilities (manholes and valve covers) for Contractor's grading, grinding and/or paving operations. The contractor shall lower surface facilities, including manholes and valve covers, to facilitate construction, and the following shall apply:

1. Contractor shall coordinate all work with the utility owner.

2. Contractor shall be responsible for all costs and shall be responsible for any damage caused to the owner's facilities. If the Contractor observes any pre-existing damage to the utility facilities, the Contractor shall notify the Engineer and the utility owner of that damage prior to performing additional work on the facility.

3. Contractor shall, after removing grade rings and covers, arrange for pickup by, or delivery to, the owner's yard. Any and all concrete collars removed by the Contractor shall become the property of the Contractor, and shall be disposed of as specified elsewhere in these special provisions.

4. The Contractor is advised that he is responsible for ensuring that construction materials do not enter the utility owner's facilities. The Contractor shall install traffic bearing steel plates for this purpose, and provide all coordination and transportation necessary. It is recommended that the Contractor request the utility owner to provide such steel plates. If the Contractor provides steel plates, it shall be the Contractor's responsibility to coordinate with the utility owner for the return of the steel plates to the Contractor after final adjustment to grade. If the Contractor utilizes utility owner's steel plates, and if the Contract items of work include adjustment to final grade, the Contractor shall return the steel plates to the Utility owner's yard, or as otherwise arranged with the Utility owner.

5. Prior to paving or covering the plated utility facility, the Contractor shall tie-out the facility utilizing a method acceptable to the utility owner and provide notes and data of all covered facilities to both the utility owner and the Engineer.

6. The Contractor shall notify the utility owner, upon completion of the Contractor's work, when the utility owner may move in to make the final adjustments to grade.

7. The requirements for lowering of surface facilities shall not apply to vaults. The Contractor shall notify the utility owner of the need to make adjustments to such major facilities.

8. The Contractor is reminded that the utility facilities are owned by public and private utility companies that operate their facilities within public rights of way. The utility owner's preferences with regards to the handling of its facilities shall be complied with to the greatest extent feasible.

Method of Payment

Full compensation for initial lowering of surface utilities facilities shall be considered as included in the contract price paid for asphalt concrete, or applicable items of work in the event that there is no asphalt concrete bid item, and no additional compensation will be allowed therefor.

Appendix A

AQMD Recommendations

Dust Abatement Attachments

Table of Contents

AQMD SIGNAGE RECOMMENDATIONS

November, 2001

Plan holder shall post signage at specified locations on the subject property in accordance with the standards specified below. The exception to the standards is that all letters shall be 4 inches high, with the names and telephone numbers of appropriate contacts and services in bold print, as indicated in the standards. These signs shall also include the SCAQMD toll free complaint line 1-800-CUT-SMOG (1-800-288-7664) and the telephone number for the Environmental Observer. These signs shall be posted within 50 feet of the curb on all four (4) corners of the subject property.

For each Dust Control Plan aggregating less than, or equal to, ten (10) acres:

1. The applicant shall install a sign on such property which is visible to the public that meets the following requirements:

   (a) Such sign shall measure at least four (4) feet wide by four (4) feet high and conform to the specifications in 1 (a) below.

For each Dust Control Plan aggregating over ten (10) acres:

2. The applicant shall install a sign on such property which is visible to the public that meets the following requirements:

   (a) Such sign shall measure at least eight (8) feet wide by four (4) feet high and conform to the specifications in 1 (b) below.

THE SIGN SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

1. **The sign boards shall be constructed with materials capable of withstanding the environment in which they are placed.**

   (a) For 4' x 4' signs, the District recommends the following:

   I. ¾ " A/C laminated plywood board
   II. Two 4" x 4" posts
   III. The posts should be attached to the edges of the plywood board with at least 2 carriage bolts on each post.
   IV. The front surface of the sign board should be painted in the contrasting color of a white background with black lettering.

   (b) For 4' x 8' signs, the District recommends the following:

   I. 1" A/C laminated plywood board
   II. Two 5" x 6" posts
   III. The posts should be attached to the 4' edges of the plywood board with at least 2 carriage bolts on each post.
   IV. The front surface of the sign board should be painted in the contrasting color of a white background with black lettering.

2. **The sign board shall be installed and maintained in a condition such that members of the public can easily view, access, and read the sign at all times until the expiration date of the Dust Control plan.**

   (a) For 4' x 4' signs, the District recommends the following:
   - I. The lower edge of the sign board should be mounted at least 2' above the existing ground surface to facilitate ease of viewing.
   - II. The posts should be set in a hole at least 3' deep with concrete footings to preclude downing by high winds.
   - III. On the construction site, the sign should be positioned such that nothing obstructs the public's view from the primary street access point.
   - IV. For construction projects that are developed in phases, the sign should be moved to the area that is under active construction.
   - V. In situations where all phases of the construction project are completed on a property prior to expiration of the Dust Control Plan, a written request for cancellation of the Dust Control Plan must be submitted to the Engineer.

   (b) For 4' x 8' signs, the District recommends the following:
   - I. The lower edge of the sign board should be mounted at least 2' above the existing ground surface to facilitate ease of viewing.
   - II. The posts should be set in a hole at least 4' deep with concrete footings to preclude downing by high winds.
   - III. On the construction site, the sign should be positioned such that nothing obstructs the public's view from the primary street access point.
   - IV. For construction projects that are developed in phases, the sign should be moved to the area that is under active construction.
   - V. In situations where all phases of the construction project are completed on a property prior to expiration of the Dust Control Plan, a written request for cancellation of the Dust Control Plan must be submitted to the Engineer.

3. **The sign board shall contain the following information:**

   (a) Project Name
   (b) Name of Prime Contractor
   (c) Phone Number of Contractor's Employee Responsible for Dust Control Matters
   (d) County designated phone number (to be provided by the Engineer)
   (e) South Coast Air Quality Management District Phone Number

4. **The sign board shall be designed to the following alpha and numeric text dimensions (sign boards written in longhand are unacceptable).**

   (a) For a permittee subject to the 4' x 4' sign requirement, the District provides the following example: (as modified by the County of Riverside for use on County Public Works projects)

1" UPPERCASE Letters →	PROJECT NAME:		← 3 ½ " Title Case Bold Letters
1" UPPERCASE Letters →	CONTRACTOR		← 3 ½ " Title Case Bold Letters
1" Title Case Letters →	Contractor's Dust Control Phone #		← 3" Bold Numbers
1" Title Case Letters →	County of Riverside Phone #		← 3" Bold Numbers
1" Title Case Letters →	Phone Number:	**SCAQMD 1-800-CUT-SMOG**	← 3 ½ " Bold Numbers

"Title Case" means the first letter of a word is capitalized and subsequent letters are lower case.

(b) For a permittee subject to the 4' x 8' sign requirement, the District provides the following example: (as modified by the County of Riverside)

2" UPPERCASE Letters →	PROJECT NAME:		← 4" Title Case Bold Letters
2" UPPERCASE Letters →	CONTRACTOR		← 4" Title Case Bold Letters
2" Title Case Letters →	Contractor's Dust Control Phone #		← 4" Bold Numbers
2" Title Case Letters →	County of Riverside Phone #	**909-**	← 4" Bold Numbers
2" Title Case Letters →	Phone Number:	**SCAQMD 1-800-CUT-SMOG**	← 4 ½ " Bold Numbers
2" Title Case Letters →	**COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT**		

Section 1

Simplified Sample Site Plan

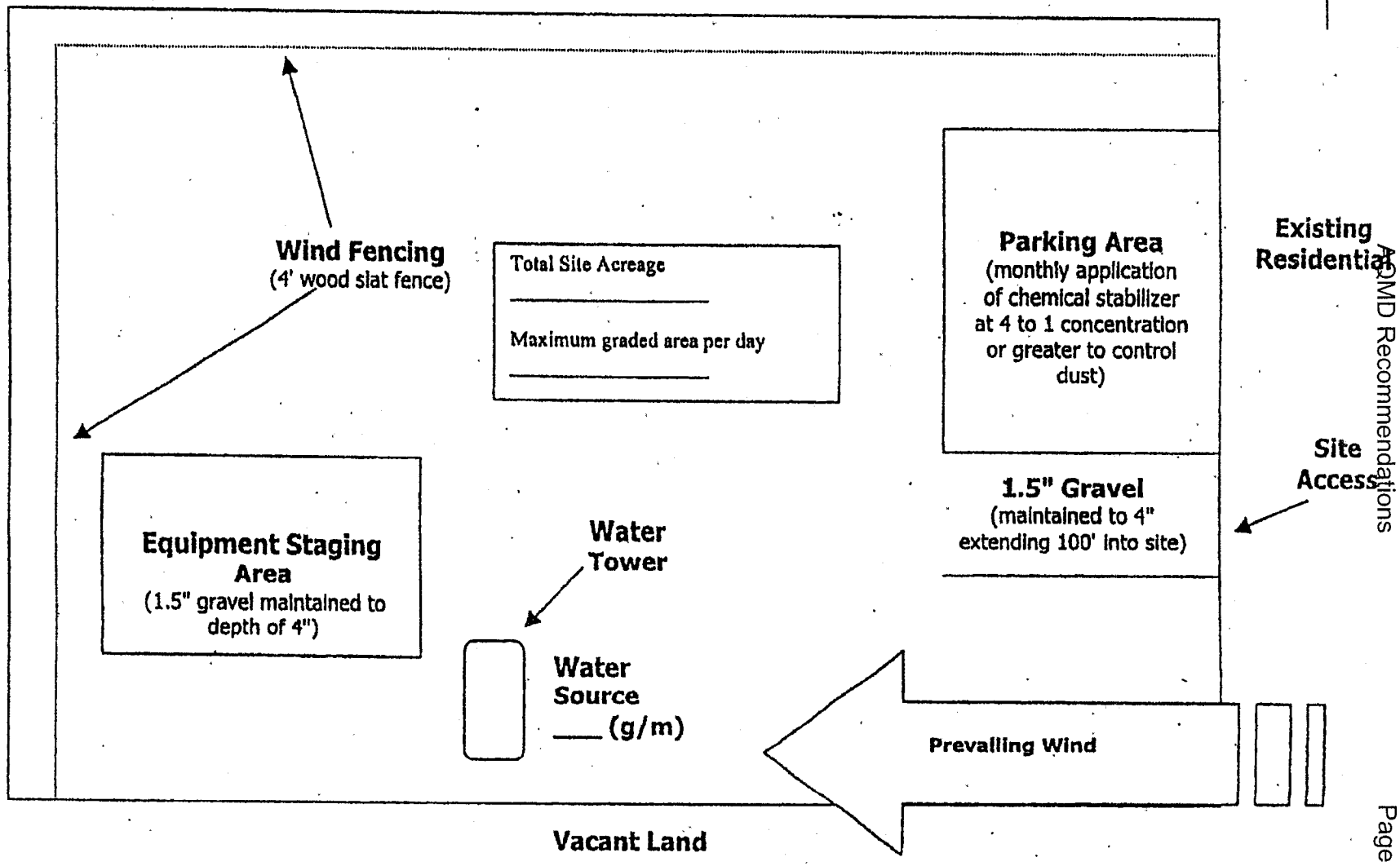
Distance and location of nearest:

Residence _____

Business _____

N

Existing Residential



Remember...
DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK, REGARDLESS OF CONSTRUCTION STATUS

AQMD Recommendations

Plan Review Checklist
Clearing/Grubbing/Mass Grading Phase

☐ If feasible, use grading permit conditions to break the project into phases so that only a portion of the site is disturbed at any given time to ensure control of fugitive dust. This technique is critical for project sites with greater than 100 acres.

☐ Prior to initiating activity, pre-water site through use of portable irrigation lines. At least 72 hours of pre-watering is recommended for each area prior to initiating earth-movement. Require the Applicant to specify water source and available flow rate (g/m).

☐ Water applied continuously to all disturbed portions of the site by means of water truck/water pull as necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour. Also, for cut and fill activities, one 10,000 gallon water pull is estimated to be necessary for each 7,000 cubic yards of daily earth-movement. Multiple 4,000-gallon water trucks may be used in place of one 10,000-gallon water pull. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent visible or fugitive dust. Require the Applicant to specify the number of watering vehicles available for dust control during mass grading and during off-hours as well as availability of back-up water trucks if the site experiences dust control problems.

☐ Water towers are necessary for projects with more than 10 acres of active construction. Without a water tower, it can take up to 30 minutes to fill a 2,000 gallon water truck. Also, multiple water towers are necessary for projects that use water pulls as filling one 10,000 gallon water pull can drain a water tower which takes up to 40 minutes to refill.

☐ Wind fencing is necessary between the site and nearby residences or businesses. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through the site.

☐ A perimeter watering system consisting of portable irrigation equipment may be an effective mitigation system to protect surrounding residences and businesses. The portable watering system may be used in place of or in conjunction with watering trucks. The local jurisdiction may also be provided access to this equipment.

Remember...
DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK, REGARDLESS OF CONSTRUCTION STATUS

AQMD Recommendations

☐ Construction site accesses are to be improved with 1.5" gravel maintained to a depth of 4", at least 20' wide, and extending 100 feet into the site. If the project site is not balanced, a wheel washing system and/or ribbed steel plates should be placed in the roadway before the vehicle enters the graveled area to clean the tires and prevent trackout.

☐ Equipment staging areas are to be treated with 1.5" gravel maintained to a depth of 4".

☐ Employee parking areas are to be covered with 1.5" gravel maintained to a depth of 4" or treated with chemical dust suppressants at a 4 to 1 ratio on at least a monthly basis to prevent fugitive dust.

☐ Chemical dust suppressants are to be mixed at a ratio of 20 to 1 and applied to all disturbed surfaces that are proposed to remain inactive for a period of at least 10 consecutive days. These products are effective in preventing and controlling dust. Recordkeeping is necessary to demonstrate compliance.

☐ All project sites greater than 100 acres shall monitor daily wind speeds and AQMD forecasted wind events (call 1.800.CUT.SMOG, press one for air quality information, and then press five for Coachella Valley wind forecasts). Operators shall maintain these records for review by any local code enforcement officer or AQMD inspector.

☐ An environmental observer whose primary duty is to oversee dust control at the site is to be used for construction projects greater than 100 acres and/or sites with more than 50 acres of active construction. The environmental observer is tasked with monitoring dust abatement measures and authorized to deploy additional water trucks and other dust control actions (i.e., wind fencing, street sweepers, chemical dust suppressants, etc.) as necessary to prevent or control fugitive dust.

☐ Other (specify):_____

_____

_____

_____

_____

_____

_____

Remember...
DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK, REGARDLESS OF CONSTRUCTION STATUS

Plan Review Checklist
Finish Grading Phase

☐ Water applied continuously to all disturbed portions of the site by means of water truck/water pull as necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour. Also, for cut and fill activities, one 10,000 gallon water pull is estimated to be necessary for each 7,000 cubic yards of daily earth-movement. Multiple 4,000-gallon water trucks may be used in place of a 10,000-gallon water pull. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent visible or fugitive dust. Require the Applicant to specify the number of watering vehicles available for dust control during finish grading and during off-hours as well as availability of back-up water trucks if the site experiences dust control problems.

☐ Water towers are necessary for projects with more than 10 acres of active construction. Without a water tower, it can take up to 30 minutes to fill a 2,000 gallon water truck. Also, multiple water towers are necessary for projects that use water pulls as filling one 10,000 gallon water pull can drain a water tower which takes up to 40 minutes to refill.

☐ Wind fencing is necessary between the site and nearby residences or businesses to reduce fugitive dust. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through a site.

☐ Chemical dust suppressants are to be applied at a concentration of at least 10 to 1 to finish graded areas once final elevations have been reached. For areas that will remain inactive for longer periods, vegetation can be a cost-effective alternative to chemical stabilization. Wind fencing or other obstructions can keep the stabilized area free from future disturbances.

☐ Construction site access(es) are to be improved with 1.5" gravel maintained to a depth of at least 4", with a minimum width of at least 20', extending 100 feet into the project site.

☐ Equipment staging areas are to be treated with 1.5" gravel maintained to a depth of 4".

☐ Internal roadway networks are to be treated with chemical dust suppressants at a minimum rate of at least 4 to 1 and retreated on a monthly basis once final roadway elevations have been reached.

☐ Employee parking areas are to be treated with chemical dust suppressants at a mix ratio of at least 4 to 1 and retreated on at least a monthly basis or covered with 1.5" gravel maintained to a depth of 4" to prevent fugitive dust.

☐ Other (specify):_____

_____

_____

_____

Remember...
DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK, REGARDLESS OF CONSTRUCTION STATUS

Plan Review Checklist
Construction Phase

☐ Water applied continuously to all disturbed portions of the site by means of water truck/water pull is necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent visible or fugitive dust. Require the Applicant to specify the number of watering vehicles available for dust control during the construction phase and during off-hours as well as availability of back-up water trucks if the site experiences dust control problems.

☐ Wind fencing is necessary between the site and nearby residences or businesses. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through the site. Block walls, if part of the final project, can replace wind fencing during the construction phase.

☐ Chemical dust suppressants are to be applied at a concentration of at least 20 to 1 to finish graded areas once final elevations have been reached. For areas that will remain inactive for longer periods, vegetation can be a cost-effective alternative to chemical stabilization. Wind fencing or other obstructions can keep the stabilized area free from future disturbances.

☐ Construction site accesses are to be improved with 1.5" gravel, maintained to a depth of 4", with a width of at least 20', extending 100' into the project site. Paving internal roadways can substitute for gravel.

☐ Internal roadway networks are to be paved as early as feasible in the construction phase. Street sweeping of internal and/or external access roads will likely be required to control entrained road dust.

☐ Employee parking areas are to be treated with chemical dust suppressants at a mix ratio of no less than 4 to 1 and retreated on a monthly basis, or more frequently if fugitive dust is observed. If internal roadway is complete, employees are to be instructed to park on paved roads.

☐ Other (specify):_____

_____

_____

_____

_____

_____

_____

Remember...
DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK, REGARDLESS OF CONSTRUCTION STATUS

REASONABLY AVAILABLE CONTROL MEASURES

Paragraph (d)(3) of Rule 403 allows activities outside the South Coast Air Basin (see Figure 2-1) to implement reasonably available control measures in lieu of best available control measures. Additionally, as specified by subparagraph (f)(3)(D) of Rule 403, any person seeking approval of a fugitive dust emissions control plan for projects outside the South Coast Air Basin must demonstrate to the satisfaction of the District that the given activity is employing all reasonably available fugitive dust control measures.

The District has prepared the attached listing of reasonably available fugitive dust control measures for a variety of source categories. This list is based on the U.S. Environmental Protection Agency's reference document entitled, "Control of Open Fugitive Dust Sources," Midwest Research Institute, September 1988.

The District encourages the use of those dust control measures that minimize the use of potable water. When water is needed, reclaimed water should be utilized to the greatest extent feasible.

REASONABLY AVAILABLE CONTROL MEASURES

The left column contains a listing of the sources of fugitive dust which are intended for emission control under District Rule 403 and a listing of control measures and high-wind measures. The right column contains a description of the reasonably available fugitive dust control measures for each of the sources.

Source: (1) Land Clearing/Earth-Moving

CONTROL MEASURES	DESCRIPTION
(A) Watering	(1) Application of water by means of trucks, hoses and/or sprinklers prior to conducting any land clearing. This will increase the moisture content of the soils; thereby increasing its stability. (2) Pre-application of water to depths of proposed cuts. (3) Once the land clearing/earth moving activities are complete, a second application of water can generate a thin crust that stabilizes the disturbed surface area provided that it is not disturbed. (Security fencing can be used to prevent unwanted future disturbances of sites where a surface crust has been created).
(B) Chemical stabilizers	(1) Only effective in areas which are not subject to daily disturbances. (2) Vendors can supply information on product application and required concentrations to meet the specifications established by the Rule.
(C) Wind fencing	(1) Three- to five-foot barriers with 50% or less porosity located adjacent to roadways or urban areas can be effective in reducing the amount of windblown material leaving a site. (2) Would likely be used in conjunction with other measures (e.g., watering, chemical stabilization, etc.) to ensure that visible emissions do not cross a property line.
(D) Cover haul vehicles	(1) Entire surface area of hauled earth should be covered once vehicle is full.
(E) Bedliners in haul vehicles	(1) When feasible, use in bottom-dumping haul vehicles.

HIGH WIND MEASURE

(a) Cease all active operations; or
(b) Apply water within 15 minutes to any soil surface which is being moved or otherwise disturbed.

Source: (2) Unpaved Roads

CONTROL MEASURES	DESCRIPTION
(F) Paving	(1) Requires street sweeping/cleaning if subject to material accumulation.
(G) Chemical stabilization	(1) Vendors can supply information as to application methods and concentrations to meet the specifications established by the Rule (2) Not recommended for high volume or heavy equipment traffic use.
(H) Watering	(1) In sufficient quantities to keep surface moist. (2) Required application frequency will vary according to soil type, weather conditions, and vehicular use.
(I) Reduce speed limits	(1) 15 mile per hour maximum. May need to be used in conjunction with watering or chemical stabilization to prevent visible emissions from crossing the property line.
(J) Reduce vehicular trips	(1) Access restriction or redirecting traffic to reduce vehicle trips by a minimum of 60 percent.
(K) Gravel	(1) Gravel maintained to a depth of four inches can be an effective measure. (2) Should only be used in areas where paving, chemical stabilization or frequent watering is not feasible.

HIGH WIND MEASURE

(c) Apply a chemical stabilizer (to meet the specifications established by the Rule) prior to wind events; or
(d) Apply water once each hour; or
(e) Stop all vehicular traffic.

Source: (3) Storage Piles

CONTROL MEASURES	DESCRIPTION
(L) Wind sheltering	(1) Enclose in silos. (2) Install three-sided barriers equal to height of material, with no more than 50 percent porosity.
(M) Watering	(1) Application methods include: spray bars, hoses and water trucks. (2) Frequency of application will vary on site-specific conditions.
(N) Chemical stabilizers	(1) Best for use on storage piles subject to infrequent disturbances.
(O) Altering load-in/load-out procedures	(1) Confine load-in/load-out procedures to leeward (downwind) side of the material. (2) May need to be used in conjunction with wind sheltering to prevent visible emissions from crossing the property line.
(P) Coverings	(1) Tarps, plastic, or other material can be used as a temporary covering. (2) When used, these should be anchored to prevent wind from removing coverings.

HIGH WIND MEASURE

(f) Apply chemical stabilizers (to meet the specifications established by the Rule) prior to wind events; or
(g) Apply water once per hour; or
(h) Install temporary covers.

Source: (4) Paved Road Track-Out

CONTROL MEASURES	DESCRIPTION
(Q) Chemical stabilization	(1) Most effective when used on areas where active operations have ceased. (2) Vendors can supply information on methods for application and required concentrations.
(R) Sweep/clean roadways	(1) Either sweeping or water flushing may be used.
(S) Cover haul vehicles	(1) Entire surface area should be covered once vehicle is full.
(T) Bedliners in haul vehicles	(1) When feasible, use in bottom dumping vehicles.
(U) Site access improvement	(1) Pave internal roadway system. (2) Most important segment, last 100 yards from the connection with paved public roads

HIGH WIND MEASURE

(i) Cover all haul vehicles; and
(j) Clean streets with water flushing, unless prohibited by the Regional Water Quality Control Board.

Source: (5) Disturbed Surface Areas/ Inactive Construction Sites

CONTROL MEASURES	DESCRIPTION
(Q) Chemical stabilization	(1) Most effective when used on areas where active operations have ceased. (2) Vendors can supply information on methods for application and required concentrations.
(R) Watering	(1) Requires frequent applications unless a surface crust can be developed.
(S) Wind fencing	(1) Three- to five-foot barriers with 50% or less porosity adjacent to roadways or urban areas can be effective in reducing the amount of wind blown material leaving a site.
(T) Vegetation	(1) Establish as quickly as possible when active operations have ceased. (2) Use of drought tolerant, native vegetation is encouraged.

HIGH WIND MEASURES

(k) Apply chemical stabilizers (to meet the specifications established by the Rule); or
(l) Apply water to all disturbed surface areas 3 times per day.

BEST AVAILABLE CONTROL MEASURES

Rule 403, paragraph (d)(2) requires active operations [defined in Rule 403, paragraph (c)(1)] within the South Coast Air Basin (see Figure 2-1) to implement at least one best available control measure for each fugitive dust source type on site. Additionally, as specified by subparagraph (f)(3)(D) of Rule 403, any person seeking approval of a fugitive dust emissions control plan for projects within the South Coast Air Basin must demonstrate to the satisfaction of the AQMD that the given activity is employing all best available fugitive dust control measures.

The AQMD has prepared the attached listing of best available fugitive dust control measures for a variety of source categories. This list is based on the U.S. Environmental Protection Agency's reference document entitled, "Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures," Office of Air and Radiation, September 1992.

The AQMD encourages the use of those dust control measures that minimize the use of potable water. When water is needed, reclaimed water should be utilized to the greatest extent feasible.

BEST AVAILABLE CONTROL MEASURES

The left column contains a listing of the sources of fugitive dust which are intended for emission control under District Rule 403 and a listing of control measures and high-wind measures. The right column contains a description of the best available fugitive dust control measures for each of the sources.

Source: (1) Land Clearing/Earth-Moving

CONTROL MEASURES	DESCRIPTION
(A) Watering (pre-grading)	(1) Application of water by means of trucks, hoses and/or sprinklers prior to conducting any land clearing. This will increase the moisture content of the soils; thereby increasing its stability. (2) Pre-application of water to depths of proposed cuts.
(A-1) Watering (post-grading)	(1) In active earth-moving areas water should be applied at sufficient frequency and quantity to prevent visible emissions from extending more than 100 feet from the point of origin.
(A-2) Pre-grading planning	(1) Grade each phase separately, timed to coincide with construction phase; or (2) Grade entire project, but apply chemical stabilizers or ground cover to graded areas where construction phase begins more than 60 days after grading phase ends.
(B) Chemical stabilizers	(1) Only effective in areas which are not subject to daily disturbances. (2) Vendors can supply information on product application and required concentrations to meet the specifications established by the Rule.
(C) Wind fencing	(1) Three- to five-foot barriers with 50% or less porosity located adjacent to roadways or urban areas can be effective in reducing the amount of windblown material leaving a site. Must be implemented in conjunction with either measure (A-1) or (B).
(D) Cover haul vehicles	(1) Entire surface area of hauled earth should be covered once vehicle is full.
(E) Bedliners in haul vehicles	(1) When feasible, use in bottom-dumping haul vehicles.

HIGH WIND MEASURE

(a) Cease all active operations; or
(b) Apply water within 15 minutes to any soil surface which is being moved or otherwise disturbed.

Source: **(2) Unpaved Roads**

CONTROL MEASURES	DESCRIPTION
(F) Paving	(1) Requires street sweeping/cleaning if subject to material accumulation.
(G) Chemical stabilization	(1) Vendors can supply information as to application methods and concentrations to meet the specifications established by the Rule (2) Not recommended for high volume or heavy equipment traffic use.
(H) Watering	(1) In sufficient quantities to keep surface moist. (2) Required application frequency will vary according to soil type, weather conditions, and vehicular use.
(I) Reduce speed limits	(1) 15 mile per hour maximum. May need to be used in conjunction with watering or chemical stabilization to prevent visible emissions from crossing the property line.
(J) Reduce vehicular trips	(1) Access restriction or redirecting traffic to reduce vehicle trips by a minimum of 60 percent.
(K) Gravel	(1) Gravel maintained to a depth of four inches can be an effective measure. (2) Should only be used in areas where paving, chemical stabilization or frequent watering is not feasible.

HIGH WIND MEASURE

(a) Apply a chemical stabilizer (to meet the specifications established by the Rule) prior to wind events; or
(b) Apply water once each hour; or
(c) Stop all vehicular traffic.

Source: (3) Storage Piles

CONTROL MEASURES	DESCRIPTION
(L) Wind sheltering	(1) Enclose in silos. (2) Install three-sided barriers equal to height of material, with no more than 50 percent porosity.
(M) Watering	(1) Application methods include: spray bars, hoses and water trucks. (2) Frequency of application will vary on site-specific conditions.
(N) Chemical stabilizers	(1) Best for use on storage piles subject to infrequent disturbances.
(O) Altering load-in/load-out procedures	(1) Confine load-in/load-out procedures to leeward (downwind) side of the material. Must be used in conjunction with either measure (L), (M), (N), or (P).
(P) Coverings	(1) Tarps, plastic, or other material can be used as a temporary covering. (2) When used, these should be anchored to prevent wind from removing coverings.

HIGH WIND MEASURE

(a) Apply chemical stabilizers (to meet the specifications established by the Rule) prior to wind events; or
(b) Apply water once per hour; or
(c) Install temporary covers.

Source: (4) **Paved Road Track-Out**

CONTROL MEASURES	DESCRIPTION
Compliance with District Rule 403.	Paragraph (d)(5).

Source: **(5) Disturbed Surface Areas/ Inactive Construction Sites**

CONTROL MEASURES	DESCRIPTION
(Q) Chemical stabilization	(1) Most effective when used on areas where active operations have ceased. (2) Vendors can supply information on methods for application and required concentrations.
(R) Watering	(1) Requires frequent applications unless a surface crust can be developed.
(S) Wind fencing	(1) Three- to five-foot barriers with 50% or less porosity adjacent to roadways or urban areas can be effective in reducing the amount of wind blown material leaving a site. Must be used in conjunction with either measure (Q), (R), or (T).
(T) Vegetation	(1) Establish as quickly as possible when active operations have ceased.*

HIGH WIND MEASURES

(a) Apply chemical stabilizers (to meet the specifications established by the Rule); or
(b) Apply water to all disturbed surface areas 3 times per day.

* Use of drought tolerant, native vegetation is encouraged.

TABLE 1

BEST [REASONABLY]* AVAILABLE CONTROL MEASURES FOR HIGH WIND CONDITIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice [once] per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice [once] per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 1 may be used.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

TABLE 2
DUST CONTROL ACTIONS FOR EXEMPTION FROM PARAGRAPH (d)(4)*

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

TABLE 2 (Continued)*

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 [70] percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 [70] percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 [30] days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

TABLE 2 (Continued)*

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 [70] percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

TABLE 3

TRACK-OUT CONTROL OPTIONS

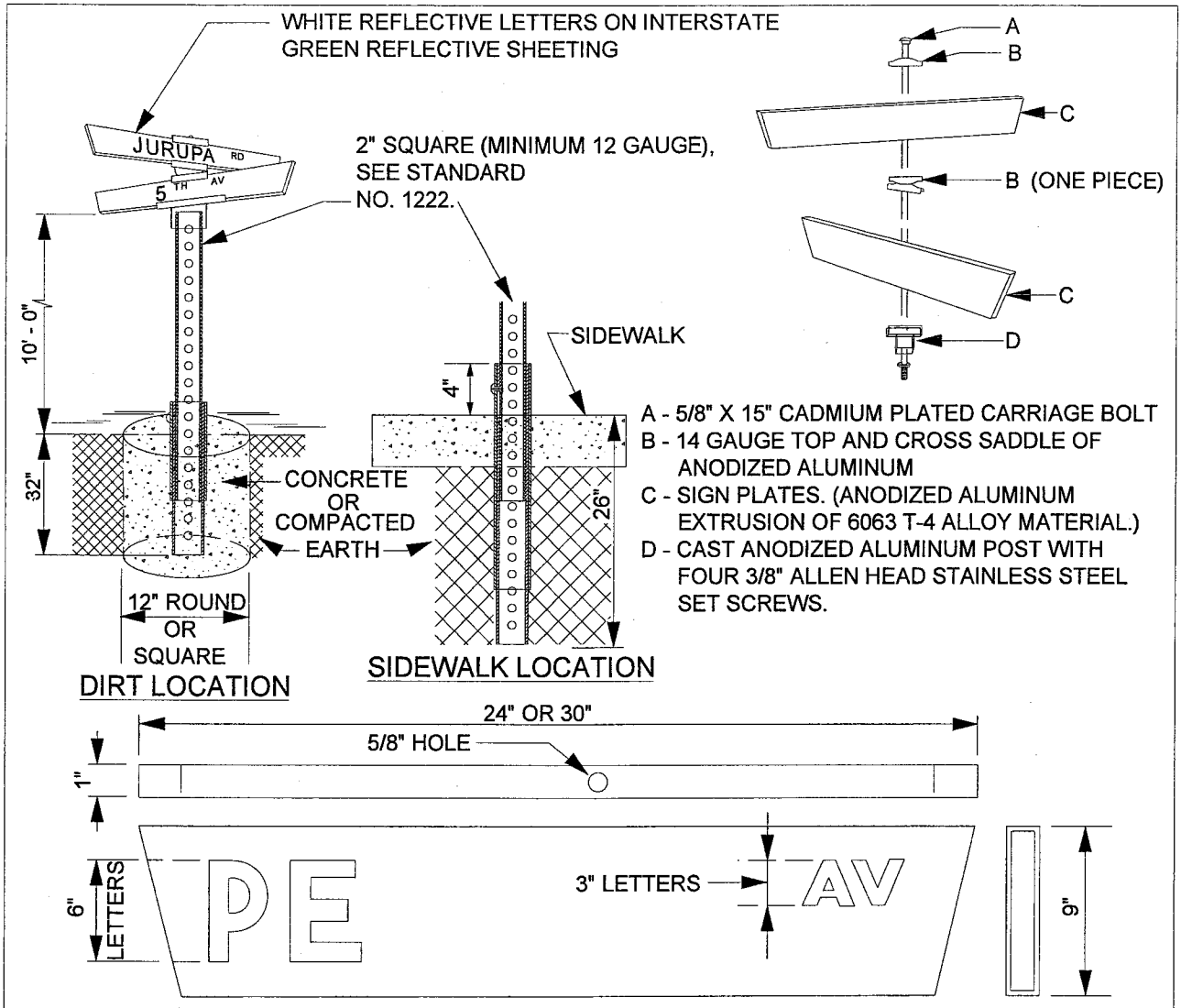
PARAGRAPH (d)(5)(B)

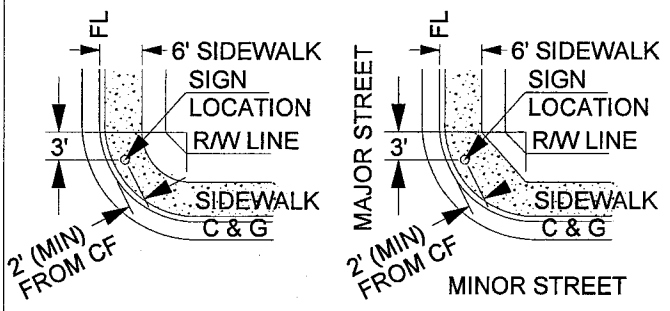
CONTROL OPTIONS

(1)	Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.
(2)	Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
(3)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Appendix B

Reference Drawings





INSIDE OF KNUCKLE INTERSECTION

SIGN INSTALLATION DETAILS

NOTE:

WHEN ONE OF THE INTERSECTING ROADWAYS HAS AN ULTIMATE PAVED WIDTH OR CURBED WIDTH GREATER THAN 40 FEET, STD 1220 SHALL BE USED. TWO SIGN UNITS ARE REQUIRED. THEY SHALL BE ON THE MAJOR STREET, AND ON OPPOSITE CORNERS SO THAT THEY WILL BE ON THE FAR RIGHT-HAND SIDE OF THE INTERSECTION FOR THE TRAFFIC ON THE MAJOR STREET. AT "T" INTERSECTIONS, ONLY ONE STREET NAME SIGN SHALL BE REQUIRED. MORE THAN TWO STREET NAME SIGNS MAY BE REQUIRED AT INTERSECTIONS WITH MORE THAN FOUR LEGS. WHEN ALL INTERSECTING STREETS HAVE ULTIMATE PAVED WIDTHS OR CURBED WIDTHS OF 40 FEET OR LESS, AND THEY ARE NOT GENERAL PLAN ROADS, USE STANDARD 1221.

APPROVED BY:

DIRECTOR OF TRANSPORTATION DATE
JUAN C. PEREZ, RCE 49568

REGISTERED PROFESSIONAL ENGINEER — No. Exp. — CIVIL — STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

STREET NAME SIGN

(CURB TO CURB WIDTH GREATER THAN 40')

STANDARD No. 1220

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
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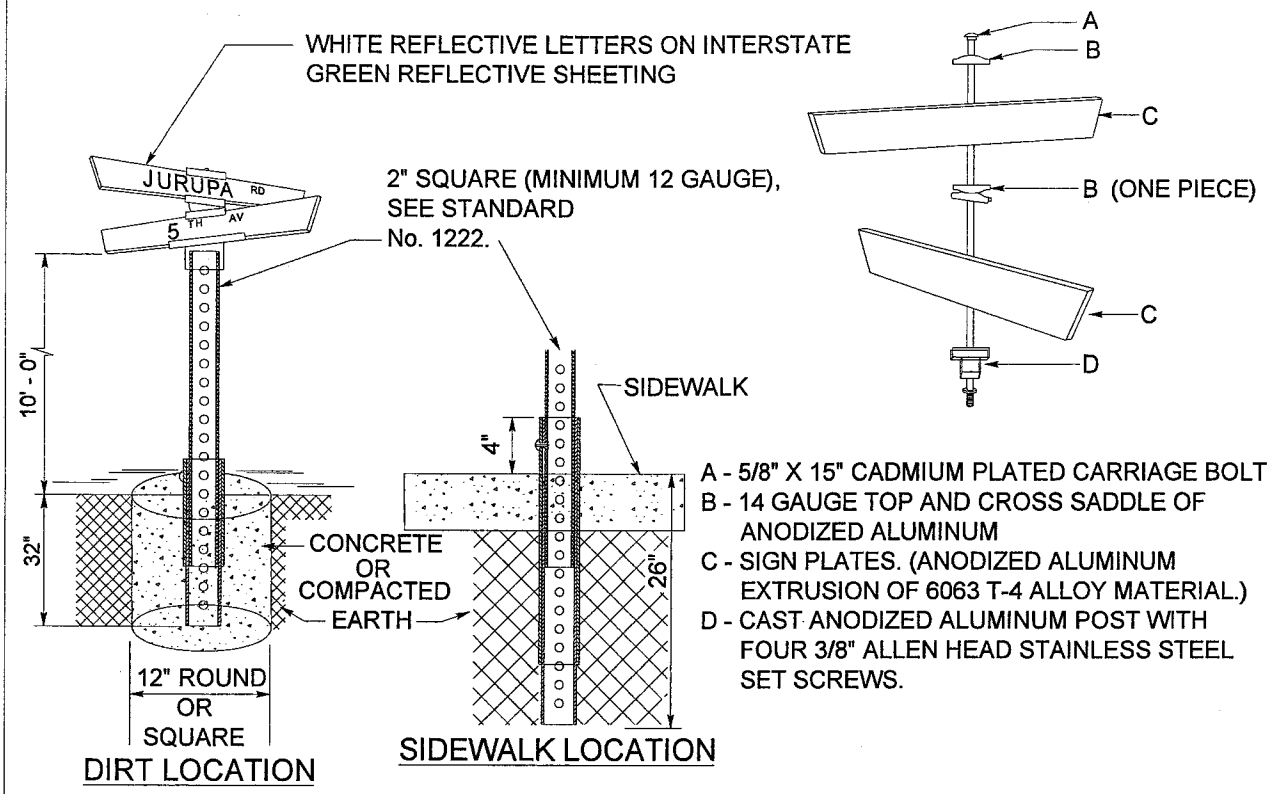
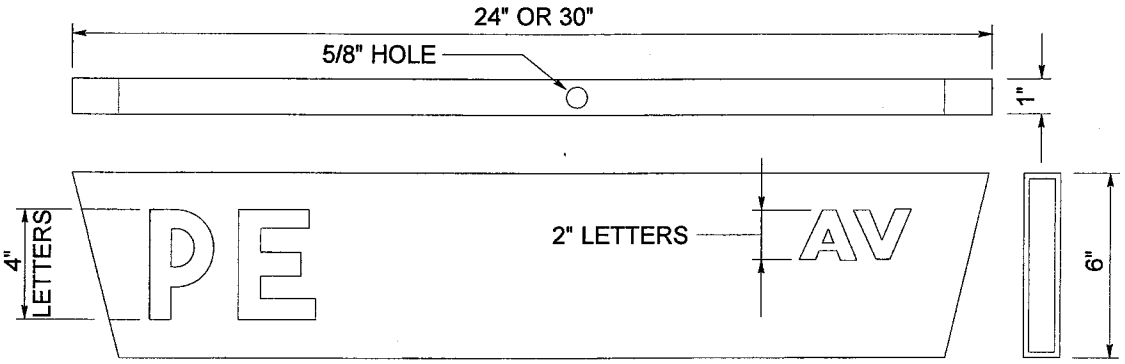
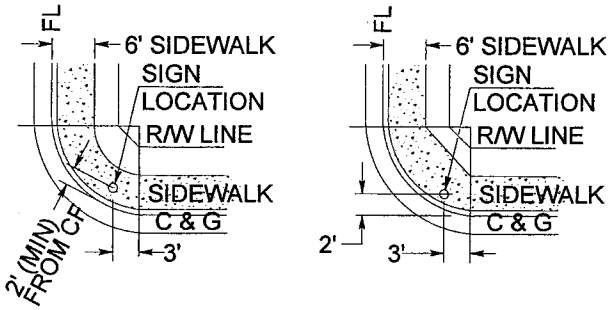
		2				5			
		3				6			







INSIDE OF KNUCKLE INTERSECTION

SIGN INSTALLATION DETAILS

NOTE:

ONE COMPLETE NAME SIGN UNIT IS REQUIRED AT EACH INTERSECTION WHEN PAVED WIDTHS OR CURBED WIDTHS OF ALL INTERSECTING STREETS ARE 40 FEET OR LESS. AT INTERSECTIONS WITH AN ULTIMATE PAVED WIDTH OR CURBED WIDTH GREATER THAN 40 FEET, USE STANDARD 1220. STD 1221 IS INTENDED FOR RESIDENTIAL STREETS WITHIN A TRACT. OTHER TYPES OF INTERSECTIONS, USE STD 1220.

APPROVED BY:

DIRECTOR OF TRANSPORTATION DATE
JUAN C. PEREZ, RCE 49568

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

STREET NAME SIGN

(CURB TO CURB WIDTH LESS THAN OR EQUAL TO 40')

STANDARD No. 1221

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
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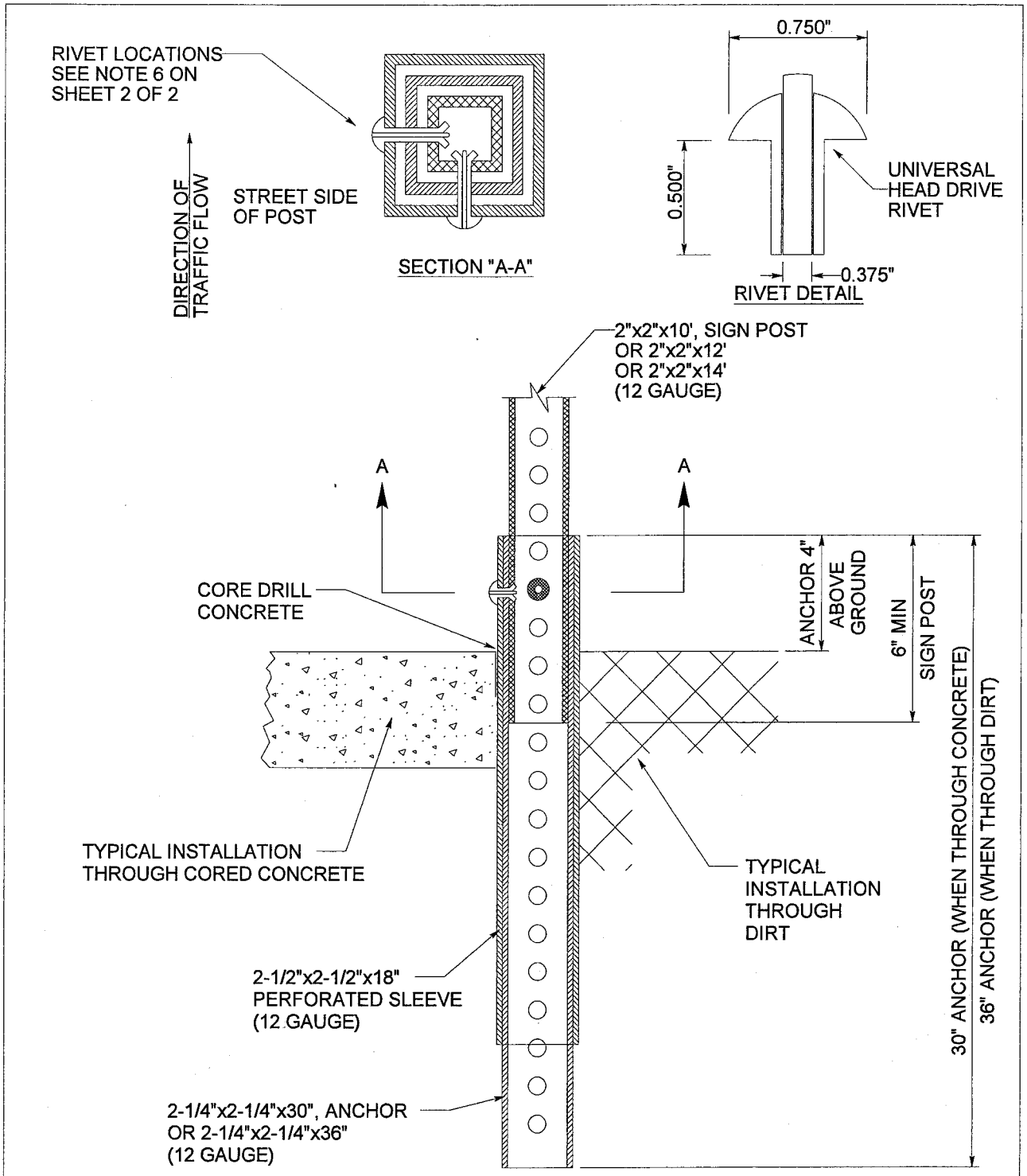


APPROVED BY:

DIRECTOR OF TRANSPORTATION — DATE
JUAN C. PEREZ, RCE 49568

REGISTERED PROFESSIONAL ENGINEER — No. Exp. — CIVIL — STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

SIGN POST INSTALLATION

STANDARD No. 1222 (1 of 2)

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
		1	JK	JP	08-05-10	4			
		2				5			
		3				6			

NOTES:

1. SQUARE PERFORATED STEEL TUBE POST WITH TWO PIECE ANCHOR AND SLEEVE, "TELESPAR", SHALL BE USED FOR ALL TRAFFIC CONTROL AND INFORMATIONAL SIGNS WITHIN ROAD RIGHT-OF-WAY.
2. THE NUMBER OF POSTS REQUIRED FOR SIGN INSTALLATION SHALL BE DETERMINED BY THE AREA OF THE SIGN OR COMBINATION OF SIGNS TO BE INSTALLED. A SINGLE POST SHALL BE USED WHERE BOTH THE LENGTH AND WIDTH ARE 48" OR LESS. DOUBLE POSTS SHALL BE USED WHERE EITHER THE LENGTH OR WIDTH EXCEEDS 48".
3. THE 2 PIECE ANCHOR AND SLEEVE ASSEMBLY SHALL CONSIST OF A 2 1/4" SQUARE BY 30" (THROUGH SIDEWALK) OR 36" (THROUGH SOIL) ANCHOR WITH A 2 1/2" SQUARE BY 18" SLEEVE. ALL SLEEVES AND ANCHORS SHALL BE 12 GAUGE.
4. THE ANCHOR AND SLEEVE ASSEMBLIES SHALL BE DRIVEN SIMULTANEOUSLY UNTIL ONLY 4" REMAINS ABOVE GROUND LEVEL.
5. ALL DIRT SHALL BE REMOVED FROM THE INSIDE TOP 6" MINIMUM OF THE ANCHOR ASSEMBLY TO ALLOW FOR THE INSTALLATION OF THE SIGN POST.
6. INSTALL 2" SQUARE SIGN POST MINIMUM 6" INTO THE ANCHOR ASSEMBLY AND SECURE IN PLACE WITH TWO 3/8" DRIVE RIVETS AS SHOWN. THE RIVETS SHALL BE INSTALLED ON THE SIDE FACING TRAFFIC FLOW AND THE SIDE OF APPROACHING TRAFFIC AS SHOWN IN ORDER TO ACHIEVE THE MAXIMUM BREAK-AWAY EFFECT.
7. INSTALLATION ACCORDING TO THESE REQUIREMENTS IS ESSENTIALTO MAINTAIN BREAK-AWAY CHARACTERISTICS OF THE POST SYSTEM.
8. SEE STANDARD No's. 815 AND 816 FOR PLACEMENT OF SIGN POST.
9. ALL ANCHOR ASSEMBLIES SHALL BE CORE DRILLED THROUGH CONCRETE AND ASPHALT.
10. ALL SIGNS ATTACHED TO PERFORATED POSTS SHALL HAVE ZINC COATED OR S.S. WASHERS BEHIND THE RIVET THAT ARE LARGER THAN THE HEAD OF THE RIVET.
11. ALL REGULATORY, WARNING AND GUIDE SIGNS INSTALLED SHALL BE 0.080 INCHES IN THICKNESS.
12. ALL SIGNS 36" OR LARGER SHALL BE INSTALLED WITH BACK BRACES SPECIFICALLY DESIGNED FOR 2" SQUARE PERFORATED POSTS. (2" RISE)
13. IN SOME INSTANCES CONCRETE FOUNDATION MAY BE REQUIRED TO ENSURE PROPER STABILITY, THIS OPTION IS TO BE USED AT THE DISCRESTION OF THE ENGINEER OR ONSITE INSPECTOR.

APPROVED BY:

DIRECTOR OF TRANSPORTATION DATE
JUAN C. PEREZ, RCE 49568

REGISTERED PROFESSIONAL ENGINEER — No. Exp. — CIVIL — STATE OF CALIFORNIA

COUNTY OF RIVERSIDE

SIGN POST INSTALLATION NOTES

STANDARD No. 1222 (2 of 2)

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
		1	JK	JP	08-05-10	4			
		2				5			
		3				6			

Riverside County Fire Department

Fire Protection Planning Section

Riverside Office: 2300 Market St., Ste. 150, Riverside, CA 92501 Ph. (951) 955-4777 Fax (951) 955-4886
Palm Desert Office: 77-933 Las Montañas Rd., # 201Palm Desert, CA 92211-4131Ph. (760) 863-8886 (760) 863-7072

Fire Prevention Standard

Title: Blue Reflective Pavement Markers			
Standard:# 06-11	**Effective Date: 02/09/2007**		**Revised Date: 06/30/2011**
Code References: 2010 CFC, Sec. 501			
Note: *This standard is a summary of Fire Department clarifications of County and State Codes. Information contained herein applies to typical circumstances and may not address all situations.*			
Author: Committee	Date:	Approved: T. Hobday, FM	Date:
Sign:		Sign: On File	02-09-07

Scope

This standard has been developed to assist development applicants, architects, and contractors in determining the minimum requirements for the proper placement of blue reflective pavement markers for indicating the location and identification of fire hydrants and water supply locations for fire fighting purposes only. Blue markers used for any other purpose should be removed.

The applicant must obtain approval from Caltrans where blue markers are to be placed on roadways/highways regulated and maintained by Caltrans prior to installation. Encroachment permits may be required.

Codes and Standards

This standard has been based upon the 2010 California Fire Code (CFC), Chapter 5.

Plans Required

The location of blue reflective markers shall be indicated on the appropriate water plans that are required to be submitted to the Riverside County Fire Department for the installation of all fire hydrants and water supply locations used for the fire fighting purposes.

Specific Requirements

1) Two-Way Streets and Roads: Markers are to be placed six inches from the edge of the painted centerline on the side nearest the fire hydrant. If the street has no centerline, the marker should be place six inches from the approximate center of the roadway on the side nearest the hydrant. (Ref. Fig. 1 through 3)

2) Streets With Left Turn Lane at Intersection: Markers are to be place six inches from the edge of the painted white channelizing line on the side nearest the hydrant. (Ref. Fig. 4)

3) Streets With Continuous Two-Way Left Turn Lane: Markers are to be placed six inches from the edge of the painted yellow barrier line on the side nearest the fire hydrant. (Ref. Fig. 5)

4) Freeways and Expressways: Because of higher maintenance at these locations, if placed on the roadway, markers are to be placed on the shoulder on-foot to the right of the painted edgeline opposite the off-right of way from the fire hydrant location. (Ref. Fig. 6)

TYPICAL HYDRANT MARKER LOCATION

= Fire Hydrant

= Blue Pavement Marker

Figure 1
Two Lane Streets

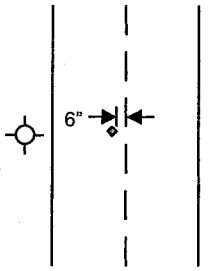


Figure 2
Multi-Lane Streets

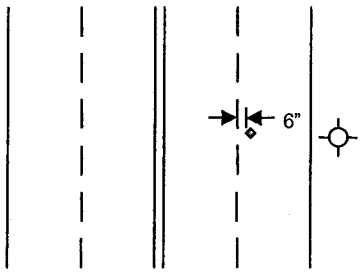


Figure 3
An Intersection

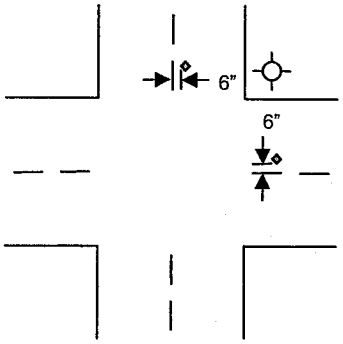


Figure 4
Four Lane Streets with
Turn Lane at Intersection

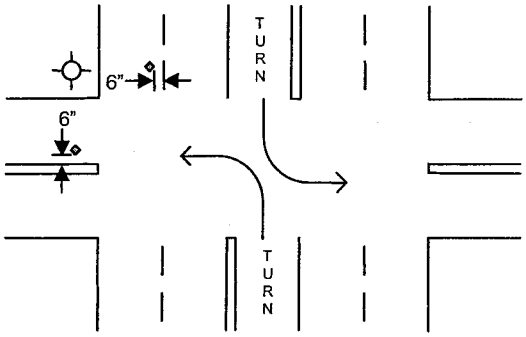


Figure 5
Multi-Lane Streets
With Turn Lane

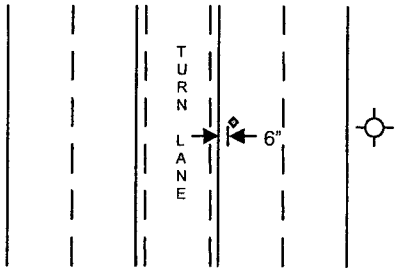
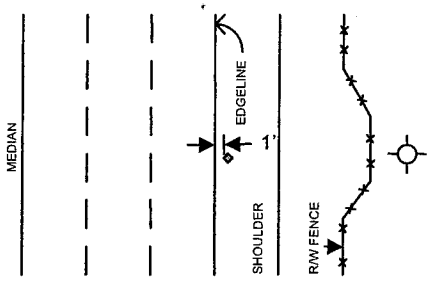


Figure 6
Freeways and Expressways



Riverside County Fire Department
Standard No. 06-11