Fully maintained and operated rental dump trucks used in the performance of extra work paid for on a force account basis will be paid for at the same hourly rate paid by the Contractor for use of fully maintained and operated rental dump trucks in performing contract item work.

In the absence of contract item work requiring dump truck rental, the Engineer will establish an hourly rental rate to be paid. The Contractor shall provide the Engineer with complete information on the hourly rental rates available for rental of fully maintained and operated dump trucks.

The provisions in Section 9-1.03A(1), "Labor" shall not apply to operators of rented dump trucks.

The rental rates listed for dump trucks in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates shall not apply.

To the total of the rental costs for fully maintained and operated dump trucks there will be added a markup of **15%**. No other markups will be made by reason of performance of the work by a subcontractor or for labor.

16. Change Orders – Detail Drawings and Instructions

Reference is made to 4-1.03 and 4-1.03A of the Standard Specifications regarding change orders. Wherever in these subsections the word “Engineer” appears, replace with “County”.

Each approved change order shall be considered as an amendment to the Contract Documents and will not be considered approved until executed by the Board of Supervisors, except when Director of TLMA can approve certain change orders, without the necessity of approval by the Board, as provided in a Resolution of the Board adopted January 11, 2011, Resolution 2011-015.

The above does not limit the ability of Director of TLMA to issue further detail drawings, explanations, and instructions which are customarily given by an Engineer during the course of similar work. Director of TLMA will furnish Contractor, in reasonable promptness, with further detailed explanations, instructions and drawings as may be necessary for the proper execution of the work, and Contractor shall conform to same provided they are consistent with the intent of the Contract Documents. In giving such additional instructions, explanations and drawings Director of TLMA has authority to make minor changes in the work which do not involve extra cost and are not inconsistent with the Contract Documents.

Contractor's acting on such instructions, explanations and drawings of Director of TLMA means that Contractor agrees that such explanations, instructions and drawings are within the scope of the work in accordance with the intent of the Contract Documents and do not constitute a basis for modification of the Contract Documents as to price or time.

17. Final Payment

Within thirty (30) days after the completion of the work and its acceptance by the Board of Supervisors, Director of TLMA will make a proposed final estimate in writing of the quantities of work done under the contract and the value of such work and will submit such estimate to Contractor. Within thirty (30) days thereafter Contractor shall submit to Director of TLMA his written approval of said proposed final estimate or a written statement of all claims which he has for additional compensation claimed to be due under the contract.

On Contractor's approval or if he files no claims within said period of thirty (30) days, Director of TLMA will issue a final written estimate as submitted to Contractor and County shall pay the entire sum so found to be due after deducting there from all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the contract.

If Contractor files claim(s) within said period of thirty (30) days, Director of TLMA will issue as a semi-final estimate the proposed estimate submitted to Contractor and the County will within thirty (30) days pay the sum found due thereon after deducting all prior payments and all amounts to be kept and retained under the provisions of the contract, Director of TLMA shall then consider and investigate Contractor's claims and shall make such revisions in the said estimate as he may find to be due, and shall then make and issue his final written estimate. County will pay the amount so found due after deducting all previous payments and amount to be retained under the contract.

All prior or partial estimates and payments shall be subjected to correction in the final estimate and payment.

The final estimate shall be conclusive and binding against both parties to the contract on all questions relating to the performance of the contract and the amount of work done there under and compensation therefore, except in the case of gross error. Acceptance of final payment constitutes a release of County by Contractor of all claims relating to the work.

18. Assignment of Claims

In submitting a bid on this public works project, or any subcontractor agreeing to supply goods, services, or materials, and entering a contract pursuant thereto, the Contractor and/or subcontractor do offer and agree to assign to the Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with §16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgement by the parties.

19. Arbitrations

Section 9-1.10, "Arbitration" of the Standard Specifications is deleted.

20. Claims Resolution

In accordance with Public Contract Code §20104 through §20104.8 and other applicable law, public works claims of $375,000 or less, which arise between the Contractor and the Owner shall be resolved following the statutory procedure, unless the Owner has elected to resolve the dispute pursuant to Public Contract Code SS 10240 et seq.

A. All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed on or before the date of final payment unless other notice requirements are provided in the contract. "Claim" means a separate demand by the claimant for (1) a time extension, (2) payment of money or damages arising from work done by or on behalf of the claimant and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled, or (3) an amount the payment of which is disputed by the Owner.

1. Claims Under or equal to $50,000

The Owner shall respond in writing to the claim within 45 days of receipt of the claim, or, the Owner may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses of claims the Owner may have. If additional information is needed thereafter, it shall be provided upon mutual agreement of the Owner and the claimant. The Owner's written response shall be submitted 15 days after receiving the additional documentation, or within the same period of time taken by the claimant to produce the additional information, whichever is greater.

2. Claims over $50,000 but less than or equal to $375,000

The Owner shall respond in writing within 60 days of receipt, or, may request in writing within 30 days of receipt of the claim, any additional documents supporting the claim or relating to defenses of claims the Owner may have against the claimant. If additional information is needed thereafter, it shall be provided pursuant to mutual agreement between the Owner and the claimant. The Owner's response shall be submitted within 30 days after receipt of the further documents, or within the same period of time taken by the claimant to produce the additional information or documents, whichever is greater.

B. If the claimant disputes the Owner's response, or if the Owner fails to respond within the statutory time period, the claimant may so notify the Owner within 15 days of the receipt of the response or the failure to respond, and demand an informal conference to meet and

confer for settlement. Upon such demand, the Owner shall schedule a meeting and confer conference within 30 days.

C. If following the meet and confer conference, the claim or any portion thereof remains in dispute, the claimant may file a claim pursuant to Government Code SS 900 et seq. and Government Code SS 910 et seq. For purposes of those provisions, the time within which a claim must be filed shall be tolled from the time the claimant submits the written claim until the time the claim is denied, including any time utilized for the meet and confer conference.

D. If a civil action is filed to resolve any claim, the provisions of Public Contract Code SS 20104.4 shall be followed, providing for non-binding mediation and judicial arbitration.

21. Brand or Trade Name – Substitute of Equals

Reference is made to §3400 of the Public Contracts Code, which is by this reference incorporated herein with like effect as if here set forth in full.

If a potential Bidder believes he knows of an equal to a specified brand or trade name which is not mentioned in the Contract Documents, then such potential bidder may so advise Director of TLMA of such fact, giving all relevant information. If appropriate, an addendum will be issued as to the alleged equal provided that such issuance may be accomplished at least 5 business days before the time fixed for opening bids.

Unless the subject article or product is expressly designated for matching others in use in a particular public improvement either completed or in the course of completion, any bidder may, as part of its bid proposal, include a request for substitution of an item equal to any specified by brand or trade name.

Within 30 calendar days after award of the contract, Contractor may submit to Director of TLMA data substantiating such a request, and the difference, if any, in cost. Director of TLMA shall promptly investigate the request and make a recommendation to County as to equality. The governing body of County shall promptly determine whether the substitute is equal in every respect to the item specified, and approve or deny the request accordingly, and shall notify Director of TLMA of the determination made, who shall advise Contractor in writing of the decision. Unless the request is granted, substitution will not be permitted.

Nothing herein shall authorize a change in the contract price or prevent the use of change orders in the manner provided elsewhere in the Contract Documents.

22. Site Inspection – Effect of Other Improvements Shown and Contractor Procedure

Elsewhere in the Contract Documents reference may be made graphically, descriptively, or both, to the existence or possible existence of other improvements affecting the site and the

prosecution of the work such as surface and subsurface utilities, drainage ditches and courses, buildings, fencing, retaining walls, roadways, curbs, trees, shrubs, and similar matters. Such matters are included to be used by Contractor to the extent he deems appropriate. However, it is expressly understood and agreed:

A. Showing or describing such items does not mean that it is an exhaustive and complete presentation and that as to matters shown or described that they necessarily exist.

B. All graphic presentations are schematic only unless the contrary is clearly set out elsewhere as to a particular matter.

C. Whenever in the plans survey markers are shown, boundaries of the site are shown or contour lines are shown, Contractor may assume that such matters are shown in accordance with acceptable standards.

   All improvements of the nature described above, whether elsewhere shown or described or not, shall, unless the contrary is elsewhere specifically directed, remain in place, undisturbed and suitably protected during the course of the work.

   Whenever, during the course of the work, a subsurface improvement is discovered, which Contractor believes is unknown to County, he shall immediately inform Director of TLMA. Except as elsewhere provided, whenever in the course of the work it becomes apparent that the work cannot proceed without the destruction or relocation of any improvement, whether shown or described or not, Contractor shall immediately cease work affecting such improvements, notify Director of TLMA as to such circumstance, and await instructions as to how to proceed.

D. The Contractor shall be required to cooperate fully with all utility forces or forces of other public agencies engaged in relocation, lowering, altering or otherwise rearranging any facilities interfering with the progress of work or installing any facilities thereon.

   The Contractor will also be required to cooperate fully with any County or State forces working on or near the project, or requiring access to the work in the performance of their duties.

23. Public Safety

The Contractor shall provide for the safety of traffic and the public in conformance with the provisions in Section 7-1.09, "Public Safety" of the Standard Specifications and these Special Provisions.

The Contractor shall install temporary railing (Type K) between a lane open to public traffic and an excavation, obstacle or storage area when the following conditions exist:

A. Excavations

The near edge of the excavation is 12 feet or less from the edge of the lane, except:

1. Excavations covered with sheet steel or concrete covers of adequate thickness to prevent accidental entry by traffic or the public.
2. Excavations less than 1 foot deep.
3. Trenches less than 1 foot wide for irrigation pipe or electrical conduit, or excavations less than 1 foot in diameter.
4. Excavations parallel to the lane for the purpose of pavement widening or reconstruction.
5. Excavations in side slopes, where the slope is steeper than 1:4 (vertical: horizontal).
6. Excavations protected by existing barrier or railing.

B. Temporarily Unprotected Permanent Obstacles

The work includes the installation of a fixed obstacle together with a protective system, such as a sign structure together with protective railing, and the Contractor elects to install the obstacle prior to installing the protective system; or the Contractor, for the Contractor's convenience and with permission of the Engineer, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day.

C. Storage Areas

Material or equipment is stored within 12 feet of the lane and the storage is not otherwise prohibited by the provisions of the Standard Specifications and these Special Provisions.

The approach end of temporary railing (Type K) installed in conformance with the provisions in this Special Provision section "Public Safety" and in Section 7-1.09, "Public Safety" of the Standard Specifications, shall be offset a minimum of 15 feet from the edge of the traffic lane open to public traffic. The temporary railing shall be installed on a skew toward the edge of the traffic lane of not more than 1 foot transversely to 10 feet longitudinally with respect to the edge of the traffic lane. If the 15 feet minimum offset cannot be achieved, the temporary railing shall be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules shall be installed at the approach end of the temporary railing.

Temporary railing (Type K) shall conform to the provisions in Section 12-3.08, "Temporary Railing (Type K)" of the Standard Specifications. Temporary railing (Type K), conforming to the details shown on 1999 Standard Plan T3, may be used. Temporary railing (Type K) fabricated prior to January 1, 1993, and conforming to 1988 Standard Plan B11-30 may be used, provided the fabrication date is printed on the required Certificate of Compliance.

Temporary crash cushion modules shall conform to the provisions in "Temporary Crash Cushion Module" of these Special Provisions, if applicable.

Except for installing, maintaining and removing traffic control devices, whenever work is performed or equipment is operated in the following work areas, the Contractor shall close the adjacent traffic lane unless otherwise provided in the Standard Specifications and these Special Provisions:

Approach Speed of Public Traffic Posted Limit	**Work Areas**
Over 45 Miles Per Hour	Within 6 feet of a traffic lane but not on a traffic lane
35 to 45 Miles Per Hour	Within 3 feet of a traffic lane but not on a traffic lane

The lane closure provisions of this Section shall not apply if the work area is protected by permanent or temporary railing or barrier.

When traffic cones or delineators are used to delineate a temporary edge of a traffic lane, the line of cones or delineators shall be considered to be the edge of the traffic lane, however, the Contractor shall not reduce the width of an existing lane to less than 10 feet without written approval from the Engineer.

When work is not in progress on a trench or other excavation that required closure of an adjacent lane, the traffic cones or portable delineators used for the lane closure shall be placed off of and adjacent to the edge of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.

Suspended loads or equipment shall not be moved nor positioned over public traffic or pedestrians.

Payment

Full compensation for conforming to the provisions in this Section, Public Safety, including furnishing and installing temporary railing (Type K) and temporary crash cushion modules, shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

24. Extra Work

Section 4-1.03D, "Extra Work" of the Standard Specifications is amended by adding the following between the second and third paragraphs:

If, in the opinion of the Engineer, such work cannot reasonably be performed concurrently with other items of work, and if a controlling item of work is delayed thereby, an adjustment of contract time of completion will be made.

25. Sounds Control Requirements

Sound control shall conform to the provisions in Section 7-1.01I, "Sound Control Requirements" of the Standard Specifications and these Special Provisions.

The noise level from the Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dba at a distance of 50 feet. This requirement in no way relieves the Contractor from responsibility for complying with local ordinances regulating noise level.

Said noise level requirement shall apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals must be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

Payment

Full compensation for conforming to the requirements of this Section, Sound Control Requirements, 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.

26. Use, Care and Protection of Premises

At his expense Contractor shall:

A. Take every precaution against injuries to persons or damage to property.

B. Comply with regulations governing the use of the property.

C. Store and suitably protect his apparatus, equipment, materials and supplies in an orderly fashion on site.

D. Place on the work only such loads as are consistent with the safety of the work.

E. Effect all cutting, fitting, or patching of his work required to make it conform to the Plans and Specifications and interrelate with other improvements or except with the consent of Director of TLMA, cut or otherwise alter existing improvements.

F. Protect and preserve established bench marks and monuments, make no changes in the location of such without the prior written approval of County, replace and relocate any of them which may be lost or destroyed, or which require shifting because of necessary changes in grades or locations. All replacement and relocation work shall be accomplished only after approval of County and under the direct supervision and instruction of Director of TLMA.

G. Before final payment remove all surplus materials, false work, temporary structures, debris, and similar matter resulting from his operations from the site and to put the site in an orderly condition.

H. Construct, operate and maintain all passageways, guard fences, lights, barricades and other facilities required for protection by State or municipal laws and regulations and local conditions during the course of the work.

I. Guard County's property from injury or loss.

J. Take all reasonable precautions for dust and noise control and generally conduct operations so as not to constitute a nuisance.

K. The Contractor shall be responsible for the protection of existing signs, fences, concrete curb and gutter and other highway facilities which may be encountered in the roadway. The replacement or repair of any facilities which the County deems necessary as a result of the Contractor's operations shall be done by the Contractor at his own expense and to the satisfaction of the County Transportation Department.

Payment

Full compensation for conforming to the requirements of this Section, Use, Care and Protection of Premises, 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.

27. 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.

In the event that the utility facilities mentioned within the referenced Standard Specifications and/or Special Provisions are not removed or relocated by the times specified and, if in the opinion of the Engineer, the Contractor's operations are delayed or interfered with by reason of the utility facilities not being removed or relocated by said times, the County will compensate the Contractor for such delays to the extent provided in Section 8-1.09, "Right of Way Delays" of the Standard Specifications, except as provided in Section 8-1.10, "Utility and Non-Highway Facilities" of the Standard Specifications.

28. Removal of Asbestos and Hazardous Substances

When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor

reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe. The Contractor shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In conformance with §25914.1 of the Health and Safety Code, removal of asbestos or hazardous substances including exploratory work to identify and determine the extent of the asbestos or hazardous substance will be performed as Extra Work.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for the delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays" of the Standard Specifications.

29. Documents of Contractor

Upon demand, Contractor shall make available to County all documents in its possession relevant to the work accomplished or to be accomplished or any demand or claim of Contractor as to County. This includes copies of documents sent by Contractor or others in its possession. Contractor shall further make available to County conformed copies of all documents submitted to the sureties who executed the Bid Bond, Performance Bond, or Payment Bond for the purpose of obtaining the sureties' signature, including any guarantee or indemnification made to such surety by others for such purpose. Contractor shall maintain in his possession all documents relative to the work for three years after Notice of Completion.

30. Responsibility of Contractor to Act in an Emergency

In case of an emergency which threatens loss or injury to property or life, Contractor shall act without previous instructions as the situation may warrant. Contractor shall notify Director of TLMA immediately thereafter. Any compensation claimed by Contractor, together with substantiating documentation shall be submitted to County via Director of TLMA.

31. Final Inspection – Notice of Completion

When the work is ready for final inspection, County shall cause the work to be inspected and subjected to such tests as seem to it to be required for the purpose of determining if the work is complete in every respect.

At a meeting of the governing body of County held within ten (10) days after final inspection, the governing body shall consider the facts developed at the inspection. If it is found that the work is apparently complete in every respect, County will accept the work and a Notice of Completion will be recorded.

As between the parties, the recordation of the Notice of Completion, unless recorded because of a cessation of labor, means only that the time for final payment and the commencement of the guarantee period commences to run.

32. Dust Abatement

Dust control shall conform to Section 10, "Dust Control", Section 7-1.01F, "Air Pollution Control", Section 17, "Watering", and Section 18, "Dust Palliative" of the Standard Specifications, Rules no. 401, 402, 403 and 403.1 of the South Coast Air Quality Management District (AQMD), Riverside County Code, Chapter 8.52, "Fugitive Dust Reduction Program For Coachella Valley" (if project location is within the Coachella Valley), all other applicable Federal and State laws, and the requirements set forth herein.

The Contractor is cautioned that failure to control fugitive dust may result in fines being levied by the South Coast Air Quality Management District to both the Contractor and the County, as Owner. The Contractor shall be fully responsible for payment of all fines pertaining to air pollution control violations, resulting from Contractor's operations related to the construction contract, which may be levied against both the Contractor and the County by the AQMD or other regulatory agencies. The Contractor's attention is directed to Section 7-1.01, "Laws to be Observed" of the Standard Specifications. The cost of all fines levied against the County will be deducted from any moneys due or which may become due to the Contractor, unless other payment arrangements are made by the Contractor.

Dust control of all of the Contractor's operations is required 24 hours per day, 7 days a week for the duration of the contract, and until the disturbed soil is permanently stabilized. The Contractor shall take every precaution to prevent emissions of fugitive dust from the project site, from locations of stockpiled materials, from unpaved driving surfaces, from haul vehicles, from inactive construction areas, and from all other operations of the Contractor. The Contractor shall plan for and carry out proper and efficient measures to prevent their operations from producing dust in amounts damaging to property or which constitute a public nuisance, or which cause harm to persons living or working in the vicinity of the work. Particular concern of emissions is PM10 particles. PM10 particles are fine particulate matter of 10 microns or less which are associated with sickness and death from respiratory disease.

The Contractor shall furnish and post dust mitigation signs, which shall be, at a minimum, in accordance with the "AQMD Recommendations", attached hereto (See Appendix). Additional copies are available upon request from the Engineer. The sign shall include the Contractor's phone number which shall be maintained on a 24 hour basis. The sign message, size and design, including any deviations from the signage recommendations, shall be approved by the Engineer prior to fabrication.

The Contractor shall respond to complaints by mobilizing equipment and personnel at the construction site within 2 hours of each complaint to control fugitive dust.

Attention is directed to AQMD Rule 403.1, which applies to all contracts within the Coachella Valley Area of Riverside County. That AQMD Rule requires the Contractor to take specified dust control actions when prevailing wind speeds exceed 25 miles per hour. Wind forecasts, AQMD Rules and other related information are provided by AQMD at 1-800-CUT-SMOG and at www.aqmd.gov.

Any days on which the Contractor is prevented from working, due to the requirements of AQMD Rules, will be considered as non-working days, in accordance with Section 8-1.06, "Time of Completion" of the Standard Specifications.

The Contractor shall utilize the "Best Available Control Measures" of controlling fugitive dust, as prepared by the AQMD. For projects within the Coachella Valley, the "Reasonably Available Control Measures" may be employed, if effective within the context of the AQMD rules. However, if fugitive dust crosses the project boundary, more effective control measures, including the "Best Available Control Measures" shall be implemented.

A site-specific fugitive dust control plan shall be submitted to the Engineer for review and approval at least 10 days prior to the start of construction. Additionally, for projects outside of the Coachella Valley which meet the criteria for AQMD plan approval, the Contractor shall submit the dust control plan to AQMD for approval. AQMD plan submittal criteria is defined in AQMD Rule 403 as being for projects that will have disturbed surface area in excess of 100 acres, or for projects with a scope of work which requires the movement of more than 10,000 cubic yards of soil on each of any three working days.

A sample plan and other pertinent information is attached, and additional copies are available from the Engineer upon request. The fugitive dust control plan shall include the "Reasonably Available Control Measures" and "Best Available Control Measures" of controlling fugitive dust, as may be appropriate and necessary, including but not limited to watering, application of chemical dust suppressants, wind fencing, covering of haul vehicles, haul vehicle bed-liners, covering or chemically stabilizing stored materials, phased grading, planting of vegetation, the use of a 24 hour environmental observer, and track-out controls at locations where unpaved construction accesses intersect with paved roads. The use of chemical stabilizers, which are approved by all environmental regulatory agencies, and the use of reclaimed water is encouraged. If water is intended as a primary dust control tool, the dust control plan shall provide for at least one 2,000 gallon water truck for every 4 acres of disturbed soil, unless otherwise approved by the Engineer.

If the Construction Engineer determines that the project scope and the forecasted weather conditions are such that the Contractor's work is unlikely to be a source of dust emissions, the Construction Engineer has the authority to waive the requirements for submittal of a dust control plan and for placement of the dust control signs described herein. However, the Contractors responsibilities for the control of fugitive dust and the other requirements of this Section may not be waived.

A completion notice will not be filed, and the final payment will not be made to the Contractor until the areas of disturbed soil on the construction site, including roadway shoulders, are suitably stabilized for long term control of fugitive dust.

The successful Contractor shall attend an AQMD PM10 Dust Control Program training session, and furnish evidence of attendance to the Engineer. Attendance at AQMD training seminars can be scheduled through AQMD at 1-866-861-DUST (1-866-861-3878) or by email to dustcontrol@aqmd.gov. Current AQMD certification of previous attendance will be accepted.

At that training session, the successful Contractor will be furnished with the AQMD prepared Rule 403 and Rule 403.1 implementation handbooks, which include the "Best Available Control Measures" and "Reasonably Available Control Measures", and other associated information, including a listing of suggested dust control related devices, materials and chemicals.

The signature of the Contractor on the Bid constitutes acknowledgement by the Contractor of the dust control requirements established by law and described herein, and the enforceability of those requirements.

Payment

When the contract includes a bid item for Dust Abatement, full compensation for conformance with these dust abatement requirements, including labor, equipment, materials, developing water supply and incidentals, shall be paid at the lump sum price for Dust Abatement, and no additional compensation will be allowed therefor.

When the contract does not include a bid item for Dust Abatement, full compensation for conformance with these dust abatement requirements, including labor, equipment, materials, developing water supply and incidentals, shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

Table of Contents

RIVERSIDE COUNTY
SLURRY SEAL PROJECT

DISTRICT 1
PROJECT No. C4-0006

DISTRICT 3
PROJECT No. C4-0008

SPECIAL PROVISIONS

DESCRIPTION:

Base Bid:

SLURRY SEAL TREATMENT

In general, this project proposes to provide slurry seal treatment to existing pavement surfaces on various roads located in Riverside County. Slurry seal treatments consist of an application of a mixture of asphalt emulsion, aggregate, water, and other additives over the existing asphalt pavement surface. The treatments are provided as preventative maintenance to extend the life of the pavement and postpone more costly pavement rehabilitation. Slurry seal treatments seal cracks, restores lost flexibility to the pavement surface, provide a new black pavement surface color, and help preserve the underlying pavement structure.

The Chip seal treatment adds a layer of "chips" or small crushed rock, over the slurry seal as a "wearing course" in areas of higher vehicles traffic. The Rubberized Chip seal treatment is the same as the Chip seal but the chips are preheated and precoated with asphalt emulsion, and Micro-surfacing is placed over the rubberized chips. Crumb rubber, generated from processed scrap tires, serves as a "modifier" of the asphalt emulsion. Its addition gives the asphalt emulsion greater viscosity and improves the properties which resist reflective cracking and rutting, and prolongs pavement life.

The work also involves removing and replacing thermoplastic crosswalk, pavement markings, painted traffic stripes and other work as may be required.

ALTERNATE BID SCHEDULES:

Alternate Bid Schedule 1A and 1B (Domenigoni Parkway)

Two options are provided for Domenigoni Parkway. The County may select Alternate Bid Schedule 1A or 1B.

Alternate Bid Schedule 1A is for Rubberized Chip Seal with Microsurfacing.

Alternate Bid Schedule 1B is for 0.12' Rubberized Hot Mix Asphalt Overlay.

Alternate Bid Schedule 2 (Crestmore Manor Parking)

Work to include access road and parking at the Crestmore Manor, Riverside County Regional Park & Open Space District, 4600 Crestmore Road, Riverside is included as Alternate bid schedule 2. The work includes cleaning and sealing cracks, application of fog seal over approximate 92,000 square foot existing asphalt surfaces. Work includes remove and replacement of approx. 3,100 square foot of existing asphalt. Additional work includes removing and replacing wheel stops, new pavement markings, parking striping, accessible parking markings, cross-walks and other work as may be required.

The parking area improvements include placement of AC pavement to patch the missing pavement, reconstruction of a portion to accommodate accessible parking, new wheel stops, stripping, including accessible parking signage and markings, and textured concrete to fill in between the new sidewalk and the existing building.

SPECIFICATIONS:

This project shall conform to the requirements of the Standard Specifications for Public Works Cosntruction 2009 edition or the "Greenbook" and May 2006 edition of the Standard Specifications and Standard Plans as issued by the State of California Department of Transportation.

IRAN CONTRACTING ACT:

The Department of General Services has published a list of companies who are prohibited from contracting with public entities in California as required by Public Contract Code section § 2200-2208.

The Iran Contracting Act Certification/Exemption form is included in the bid proposal section of this document and must be completely filled in, dated, signed and submitted with Proposal bid documents. The bidding Contractor is required to submit the appropriate form with the bid.

PROJECT SCHEDULE:

The work shall be performed **July through October** or as directed by the County of Riverside Transportation Department.

All work shall be performed with due diligence after issuance of the official "Notice to Proceed" letter from the County to the Contractor. This work will be performed in accordance with a schedule to be developed between the County and the Contractor, and as weather permits. No changes are made to the working days allowed.

The prices paid per Ton for slurry seal and per square yard for Screenings shall include all costs for mobilization and coordination and no adjustments will be made to submitted bid prices.

MODIFIED HOURS OF WORK:

Attention is directed to Section "Instruction to Bidders" item 12 "Hours of Work" page A6 of these Specifications.

All application of slurry seal shall be performed between the hours of **8:00 A.M. and 2:00 P.M**., Monday through Friday, except legal holidays, or as approved by the Engineer. All roads shall be sufficiently cured to permit the road to be open by 5:00 p.m. Exceptions and specific work schedules shall be submitted to the Engineer for consideration.

LIQUIDATED DAMAGES:

The Contractor shall diligently prosecute the work to completion before the expiration of **45** working days from the date stated in the "Notice to Proceed". The Contractor shall pay to the County of Riverside the sum of **$2,000.00** per day, for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed above.

Additional Liquidated Damages
Unless otherwise provided in these Special Provisions or directed by the Engineer, the Rubberized Chip seal surfaces shall be applied with slurry seal coat after 3 consecutive calendar days but not to exceed 7 maximum consecutive calendar days of the prescribed maintenance period. Additional liquidated damages of **$500.00** per street shall be paid to the County of Riverside for each calendar day in excess of the 7 maximum consecutive calendar days the chip seal surfaces are not slurry sealed.

AUTHORITY OF ENGINEER:

The Engineer shall decide all questions which may arise as to the quality or acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of the work; all questions as to the acceptable fulfillment of the contract on the part of the Contractor; and all questions as to compensation. His decision shall be final and he shall have authority to enforce and make effective such decisions and orders which the Contractor fails to carry out promptly.

SOURCE OF SUPPLY AND QUALITY OF MATERIALS:

The Contractor shall furnish all materials required to complete the work. Only materials conforming to the requirements of the specifications shall be incorporated in the work.

The materials furnished and used shall be new. The materials shall be manufactured, handled, and used in a workmanlike manner to insure completed work in accordance with the specifications.

Materials to be used in the work will be subject to inspection and tests by the Engineer. The Contractor shall furnish without any charge to County such samples as may be required. The Contractor shall furnish the Engineer a list of his sources of materials and the locations at which such materials will be available for inspection. The list shall be submitted to the Engineer in sufficient time to permit inspecting and testing of materials to be furnished from such listed sources in advance of their use. The Contractor shall assure that the Engineer has free access at all times to the material to be inspected, sampled or tested. It is understood that such inspections and tests if made at any point other than the point of incorporation in the work in no way shall be considered as a guaranty of acceptance of such material nor of continued acceptance of material presumed to be similar to that upon which inspections and tests have been made, and that inspection and testing performed shall not relieve the Contractor or his suppliers of responsibility for quality control.

CERTIFICATES OF COMPLIANCE:

A Certificate of Compliance shall be furnished prior to the use of any materials. The certificate shall be signed by the manufacturer of the material and shall state that the materials involved comply in all respects with the requirements of the specifications.

A Certificate of Compliance shall be furnished with each lot of material delivered to the work.

The County reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance. The form of the Certificate of Compliance and its disposition shall be as directed by the Engineer.

TESTING:

Unless otherwise specified, all tests shall be performed in accordance with the methods referenced in the appropriate section of these Special Provisions.

Whenever a reference is made in the specifications to a test by number, it shall mean the test in effect on the day the contract was awarded.

The Engineer may, at his discretion, select random samples for testing. Test specimens from the random samples, including those required for retest shall be prepared in accordance with the referenced specification and furnished by the Contractor at his expense. The number of such samples and test specimens shall be entirely at the discretion of the Engineer.

When requested by the Engineer, the Contractor shall furnish, without any charge, samples of all materials entering into the work, and no material shall be used prior to approval by the Engineer.

The Contractor will furnish a one quart sample of asphaltic emulsion drawn from each tank load of material to be used on the project. Samples will be obtained in accordance with ASTM Method D140 or such other methods as are approved by the Engineer.

OBTAIN ENCROACHMENT PERMIT:

It shall be the responsibility of the Contractor to obtain an encroachment permit from the adjacent cities for work within or adjacent to their Right-Of-Way. Following are the cities:
City of Hemet for Domenigoni Parkway
City of Lake Elsinore for Ontario Avenue
City of Riverside for Cleaveland Avenue and Colt Street
City of Jurupa for Crestmore Manor Driveway adjacent to Crestmore Road.

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

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.

Public Safety

Emergency access

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.

Public Convenience

Public Awareness Program

Attention is directed to "Public Convenience" of these Special Provisions regarding the Public Awareness Program and responding to communications with the public. The Contractor shall coordinate with the Resident Engineer on project signage, responding to comments and complaints from the public and other public awareness requests as needed.

Business access

Attention is directed to "Public Convenience" of these Special Provisions regarding access to the business adjacent to slurry seal activities. Driveway access must be maintained by closing alternating driveways or partial closure of single driveways. Business driveway closure is not permitted during non-working hours. Contractor shall notify and coordinate with the business in advance of any construction activities that may affect customer access.

School Traffic

Attention is directed to "Public Convenience" of these Special Provisions regarding activities adjacent to or near any school sites. School sites are typically congested prior to the start of school and in the afternoon when classes let out. There may also be special evening and weekend events at the schools. Contractor shall coordinate with the School Administrators and avoid activity in the traffic lanes and road shoulders at the peak hours and when special events are planned.

Signalized intersections

Work within the signalized intersections shall be phased to maintain traffic flow through the intersection. Road closures and detours are not permitted.

Changeable Message Signs

Changeable Message Signs (CMS) are to be provided prior to the start of work on Domenigoni Pky. The road will have two CMS signs setup one week in advance of any lane restrictions. The cost of the CMS shall be included in the various items of work.

Encroachment Permit

Attention is directed to "Encroachment Permit" of these Special Provisions regarding Encroachment Permits. The Contractor shall be responsible to prepare the Traffic Control Plans and submit to the adjacent cities for review and approval for a duplicate permit.

Liquidated Damages

Attention is directed to "Liquidated Damages" of these Special Provisions regarding specific duration times for completion of work. There are substantial liquidated damages for delays.

Mail Delivery

Attention is directed to "Mail Delivery" of these Special Provisions regarding mail delivery. Contractor shall comply with the "Coordination" section that may affect mail delivery.

Landscape Irrigation

Contractor shall be responsible to contract any public entity with landscaped parkways or medians that have possible irrigation runoff and coordinate the work schedule to avoid damage from the irrigation runoff.

Vertical drops

The contractor shall have no vertical drops between drive lanes during non-working hours. In the areas to be graded adjacent to pavement, the Contractor shall place base material before the end of each day to eliminate any vertical drops and provide a smooth transition for residents to access their driveways.

WATER POLLUTION CONTROL:

Throughout the term of this contract, the total land disturbance area of the project site shall be less than 1 acre.

- If work occurs within the Santa Ana Region: The Contractor shall comply with the Area-Wide Municipal Stormwater Permit NPDES No. CAS618033.

- If work occurs within the San Diego Region: The Contractor shall comply with the Area-Wide Municipal Stormwater Permit NPDES No. CAS0108766.

- If work occurs within the Colorado River Region: 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) – Santa Ana Region, San Diego Region, and Colorado River Region, these permits regulate both stormwater and non-stormwater discharges associated with Contractor's construction activities. A copy of the Permits 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.waterboards.ca.gov/santaana/ for Santa Ana Region Municipal Permit

http://www.waterboards.ca.gov/sandiego/ for San Diego Region Municipal Permit

http://www.waterboards.ca.gov/coloradoriver/ for Colorado River Region Municipal Permit

The Contractor shall comply with the requirements of the Municipal Permit, and all applicable federal, state and local laws, ordinances, statues, rules, and regulations.

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, SWPPP 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 – Santa Ana Region, San Diego Region, Colorado River Region 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, Construction General 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 **ten (10)** working days after the award of the contract, the Contractor shall submit two (2) copies of the WPCP to the Engineer for review and approval. The Contractor shall allow **five (5)** 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 **five (5)** working days for the Engineer to review the revisions. The Contractor shall submit four (4) copies of the approved WPCP to the Engineer prior to notice to proceed. The Contractor must have an approved WPCP prior to the notice to proceed. The Engineer may provide a letter of conditional approval of the Contractor's WPCP while minor revisions are made and may allow the Contractor to begin only those certain construction activities identified in the letter of conditional approval. In no case will the conditional approval extend beyond twenty-one (21) calendar days. The Engineer may suspend construction operations until the Contractor submits a revised WPCP that is reviewed and approved by the Engineer.

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.

At the direction of the Engineer the Contractor shall conduct monitoring, sampling and analysis, and report preparation for conformance with the Municipal Permit. The Contractor will not be compensated for sampling and analysis work due to the Contractor's failure to properly implement, inspect, maintain, and repair BMPs in conformance with the approved WPCP and any amendments thereto, or for failing to store construction materials or wastes in watertight conditions.

Method of Payment

Payment for Water Pollution Control shall be considered as included in prices paid for the various contract items of work involved and shall include full compensation for the work performed, including obtaining Permit coverage, 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, De Minimus Permit, Municipal Permit and these Special Provisions, and as directed by the Engineer.

Street Sweeping.

The following special provision regarding "Street Sweeping**"** is being added to the contract document.

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 WPCP.
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.
or
D. Sweeping by hand is acceptable in lieu of A, B, and C above.

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 to operate at all times, 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 1 hour, 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 in the prices paid for the various contract items of work involved 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:

Traffic controls, including but not limited to, vehicular and pedestrian traffic controls, maintenance of vehicular and pedestrian access, detours, and street closures shall be in accordance with the Special Provisions, Traffic Control Plans, the current "Manual on Uniform Traffic Control Devices," and Subsection 7-10, of the current "Standard Specifications for Public Works Construction," including all its subsequent amendments. Nothing in the Special Provisions shall be construed as relieving the Contractor from his or her responsibility to provide for the safety and convenience of traffic and the public during construction.

In the event of conflict, the order of precedence shall be as follows:

1. Special Provisions
2. Traffic Control Plans
3. Manual on Uniform Traffic Control Devices (MUTCD)
4. Standard Specifications

Traffic Control shall be in accordance with the following Special Provisions:

a. All major streets shall remain open to through traffic at all times; unless, when they are being slurry sealed, then use Traffic Control for partial opening. The Contractor shall provide a smooth travel way and either a flagger and/or traffic control signage to direct the traveling public around the work zone during temporary street closures when slurry applications are occurring on the Project. Local streets shall be closed to traffic only as long as it takes for material application and drying time.

b. The Contractor shall be responsible for the preparation of Traffic Control Plans as necessary for the work. The Traffic Control Plans shall indicate the traffic control requirements for the different types of work to be performed and be signed and stamped by a California Registered Traffic Engineer and transmitted to the County for approval no later than fourteen (14) calendar days prior to the scheduled commencement of work. Comments and corrections shall be returned to the Contractor within five (5) working days. The Traffic Control Plans shall conform to the requirements listed in these Technical Provisions, the Manual on Uniform Traffic Control Devices, and the Standard Specifications.

c. All traffic controls and safety devices, equipment and materials, including but not limited to cones, channelizers, delineators, flashing warning lights, barricades, high level warning devices (telescoping flag trees), flags, signs, markers, portable barriers, temporary railing (Type-K), temporary fencing, flashing arrow signs, changeable message sign, markings, and flagging equipment shall be provided and maintained by the Contractor in "like new" condition.

d. The Contractor shall furnish and properly install, construct, erect, use and continuously inspect and maintain, twenty-four (24) hours per day, seven (7) days per week, which includes holidays, all said devices, equipment and materials and all temporary and permanent pedestrian and driving surfaces as necessary to provide for the safety and convenience of, and to properly warn, guide, control, regulate, channelize and protect the vehicular traffic, pedestrian traffic, project workers, and the public throughout the entire limits of the work activity and beyond said limits as necessary to include areas affecting or affected by the work, from the date of Notice to Proceed to the completion and acceptance of the work.

e. High-level warning devices (telescoping flag trees) are required at all times for work being performed within the roadway unless otherwise specifically approved by the Engineer.

f. All barricades shall be equipped with flashing warning lights, and all traffic cones shall be no less than 711mm (28") in height, except that shorter cones, 305 mm (12") minimum height, may be permitted during striping maintenance operations where the only function of the cone is to protect the wet paint from the traffic. The entire area of orange and white stripes for barricades shall be Type I, engineering grade, or Type II, super engineering grade, retro-reflective sheeting conforming to the requirements of ASTM Designation: D 4956-95.

g. Type III barricades, no less than 1.83 m (6') in length and equipped with two (2) Type "N" markers each and two (2) portable flashing beacons each, shall be used to close streets, except as otherwise specifically approved by the Engineer for minor maintenance work of no more than one (1) working day's duration, on weekdays, or on holidays only, and limited to

the hours between 7:00 a.m. and 2:00 p.m. Said barricades shall be placed across the full roadway at each point of closure with the distance between barricades, or between barricades and curbs, not exceeding 914 mm (3') except that one (1) 3.3 m (11') wide gap between barricades shall be provided at the center of the street. Barricades to the right of the street's center, facing the inbound vehicular traffic, shall also be equipped with one (1) Type C2 "Road Closed" sign, one (1) Type C3A, "Road Closed to Thru Traffic," sign, and a Type P warning sign.

h. Except as otherwise approved by the Engineer, two-way vehicular traffic shall be maintained at all times within two (2) eleven-foot (11') wide lanes on streets having an effective roadway width of 44' or more with restricted parking. Other streets of lesser widths may be reduced to one (1) twelve foot (12') wide lane with work activity being limited to one side at a time and one-way vehicular traffic being maintained at all times by properly trained and experienced flaggers.

   No reduction of the traveled way width shall be permitted on any County street before 8:00 a.m. or after 5:00 p.m., or on weekends or holidays, or when active work is not being done, unless otherwise approved by the Engineer.

Arrow boards shall be required for all lane closures on arterial and collector streets.

i. Properly trained and experienced flaggers shall be provided to direct traffic when said traffic is to be interrupted, when two-way traffic is to be reduced to one-way traffic, and at other such times as is necessary to safely pass traffic through or around the work area and when so directed by the Engineer.

j. Vehicular access to occupied residential property may be restricted on weekdays, other than holidays, between the hours of 8:00 a.m. and 2:00 p.m. while essential work activity is taking place, providing the Contractor gives the property owner or resident at least forty-eight (48) hour advance written and oral notice. See Part 2, "Notification of Residents," herein.

   Convenient and safe pedestrian access to occupied residential and business property shall be maintained at all times. Access to mailboxes shall be maintained at all times such that the postal delivery service is not interrupted.

   Access to vacant and unused property may be restricted at the Engineer's discretion. Both vehicular and pedestrian access shall be maintained at all times to all other property except as otherwise specifically authorized in writing by the County's Engineer.

k. Traffic control and safety devices and equipment being used that becomes damaged, destroyed, faded, graffitied, encrusted, soiled, misplaced, worn out, inoperative, lost, or stolen shall be promptly repaired, refurbished, or replaced. Traffic control and safety devices and equipment being used, that is displaced or not in an upright position from any cause, shall be promptly returned or restored to their proper position.

l. An unobstructed view of all signs and warning devices including, but not limited to, stop signs, stop ahead signs, street name signs, and other regulatory, warning and construction signs, markers, and warning devices shall be maintained at all times. All speed limit signs

shall be black on white with signs at either end of the project notifying the motoring public that fines are doubled in construction zones. No trucks or other equipment or materials shall be stopped, parked, or otherwise placed so as to obscure said signs, markers and devices from the view of the vehicular and pedestrian traffic to which it applies.

m. When entering or leaving roadways carrying public traffic, the Contractor's equipment, whether empty or loaded, shall yield to said public traffic at all times, except where the traffic is being controlled by police officers, fire officers, properly trained and experienced flaggers, or at traffic signalized intersections.

n. Stockpiling or storage of materials on any public right-of-way or parking area will not be allowed without the specific written permission of the Engineer. Materials spilled along or on said right-of-way or parking area shall be removed completely and promptly. All stockpile and storage areas shall be maintained in a safe, neat, clean, and orderly condition, and shall be restored to equal or better than original condition upon completion of the work.

o. On projects involving work on, closure of, or partial closure of existing streets, and where vehicular access to the abutting property must be restricted, the work shall be so selected, arranged and scheduled that the person(s) requiring access to said abutting property and residents along said streets affected will be able to park within a reasonable distance typically the closest cross street or the cross street at the beginning of cul-de-sacs. In addition, no two adjoining streets shall be closed at the same time, except as otherwise approved by the Engineer. Residents must be given written notice of such restrictions a minimum of 48 hours in advance.

p. When work has been completed on a particular street or has been suspended or rescheduled, and said street is to be opened to vehicular traffic, all equipment, "NO PARKING", "NO DRIVING" signs, other obstructions, and unnecessary traffic control devices and equipment shall be promptly removed from that street, except as otherwise approved by the Engineer.

   When chip seal has been completed on a particular street and said street is to be opened to vehicular traffic, "LOOSE GRAVEL" signs shall remain in place until said street is applied with slurry seal.

q. Should the Contractor be neglectful, negligent, or refuse, fail, or otherwise be unavailable to promptly, satisfactorily, and fully comply with the provisions specified and referred to herein above, the County reserves the right to correct or mitigate any situation, that in the sole opinion of the Engineer, constitutes a serious deficiency or serious case of noncompliance, by any means at its disposal at the Contractor's or permittee's expense, and shall deduct the cost therefore from the Contractor's progress or final payments. Such corrective action taken by the County shall not reduce or abrogate the Contractor's legal obligations and liability for proper traffic control and safety measures and shall not serve to transfer said obligations and liabilities from the Contractor to the County or the County's agents.

r. Violations of any of the above Provisions or provisions of the referenced publications, unless promptly and completely corrected to the satisfaction of the Engineer, shall, at the sole discretion of the County, be grounds for termination of the Contract, or shut down or partial

shut down of the work, without compensation to the Contractor or permittee, or liability to the County, all as prescribed by contractual obligation or State law, whichever is applicable.

Method of Payment
Traffic control systems shall include but not be limited to, furnishing all labor (including flagging costs), materials (including construction area signs), tools, equipment, traffic control Plans and revisions, and incidentals, and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing and disposing of the components of the traffic control including lights, channelizers (surface mounted), temporary railing (Type K) markers, delineators, temporary striping and pavement marking, barricades, portable flashing beacons, flashing arrow signs, portable changeable message signs, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Full compensation for compliance with the provisions specified and referenced herein above shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

PORTABLE CHANGEABLE MESSAGE SIGN:

Two (2) 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 various items of work and no additional compensation will be allowed therefor.

NOTIFICATION OF RESIDENTS AND POSTING NO PARKING SIGNS:

At least five working days prior to commencing work, the Contractor shall submit his schedule to the County for approval. The Contractor shall give verbal notification, printed notifications (in English and Spanish languages) and copies of the weekly schedules to all firms, institutions,

agencies, residents, utility companies which will be affected by the sealing applications at least fourteen (14) calendar days in advance of and on each occasion of said sealing application. Said firms, institutions, agencies and utility companies include, but are not limited to the following: schools, day care centers, postal service, hospitals, governmental services, Police Department, Fire Department, ambulance services, Transit Authority (Bus service), trash collection firms and County/Private street sweeping operations. Additional printed notifications (in English and Spanish languages) shall be given not less than forty-eight (48) hours prior to performing any work which will restrict property access, close or partially close the street, or which will restrict or disallow street parking or driving.

Coordination with the trash collection firms shall be done such that no street shall be slurried within two (2) days prior to trash collection. Damage occurring to slurry seal from trash trucks shall be repaired at the expense of the Contractor and per the direction of the Engineer. The Contractor is solely responsible for coordination with trash collection firms in scheduling all work and the bid submitted is acknowledgement that any and all scheduling issues have been considered herein, with no disruption of trash collection schedules.

The Contractor shall coordinate his work with all schools located within the slurry area and meet with said schools prior to the start of any work. All work adjacent to schools shall be completed on weekends or on the off schedule of the school that is impacted by the slurry program. Any additional costs associated with weekend work shall be included in the contract price and no additional compensation will be allowed.

Barricades shall have printed notices in large print indicating when the street will be slurried.

The printed handout notices shall contain a general description of the work to be done, the name of the street to be sealed with limits, the day and date of the sealing application, a statement that no on-street parking or driving on the new slurry surface will be allowed between the hours of 7:00 am and 5:00 pm on the day of work, reference to placement of barricades along the street two (2) days in advance of work, a statement that it will be necessary to tow away parked vehicles at the owner's expense per California Vehicle Code CVC 22651L and CVC 22654D; a statement that in the event the street is missed, it will be rescheduled in approximately 1-2 weeks and that the residents will be renotified; the statement that **there will be no disruption of mail service or trash collection schedules,** and the handout shall also include the name and telephone number of the Contractor.

In addition to the foregoing, the notices to residents shall contain a statement that the street to be sealed will be closed to vehicular traffic, and the suggestion that if they require the use of their vehicle on the day of the sealing work, they should consider parking their vehicles on a nearby street which is not scheduled for sealing application.

If, in the event a street scheduled for sealing was missed, the Contractor shall immediately remove all "NO PARKING", "NO DRIVING" signs and notify all residents and others previously notified, in person and with printed notices, that due to unforeseen circumstances, the Contractor was not able to seal the street as previously notified, that the street will be rescheduled in approximately 1 to 2 weeks, and that they will be renotified. The Contractor shall, on the job site prior to the start of each day's work, have an adequate supply of approved letters of notification to residents for missed streets.

The Contractor shall also post pre-approved printed "NO PARKING-TOW WAY" signs on 1" X 2" wood stakes and barricades at one hundred foot (100') maximum spacing along both sides of the street to be sealed and 'NO PARKING" signs at the street corners and at two hundred foot (200') maximum spacing along both sides of the street to be sealed, 48 hours prior to the start of the sealing work. The Contractor shall maintain said signs through the day of work, and shall start the removal of said signs by 4:00 p.m. and complete the removal by 5:00 p.m. on said day of work or as otherwise directed by the Engineer or called for in the preceding paragraph.

The Contractor shall document the day, date and time that the signs are installed because the no parking restriction cannot be enforced until the signs have been in place 24 hours.

Posting of signs on trees, utility poles, light standards and other existing parkway improvement is strictly forbidden.

The "NO PARKING" signs shall contain the day, date and hours that parking will be prohibited on that particular street and a statement that parked vehicles will be towed away at owner's expense per California Vehicle Code CVC 22651L and CVC 22654D.

All printed notices and no parking signs shall be submitted to the Engineer at least 12 calendar days before the first day of work.

Full compensation for compliance with the preceding requirements shall be considered as being included in the various Contract items in the bid schedule and no additional compensation will be allowed therefore.

COOPERATION AND COLLATERAL WORK:

Cooperation shall be in accordance with Subsection 5-6, "Cooperation," and Subsection 7-7 "Cooperation and Collateral Work," of the Standard Specifications (Greenbook) and these Special Provisions.

The Contractor shall be responsible for ascertaining the nature and extent of any simultaneous collateral, and essential work by others and coordinating with the work by others. The County, other contractors and utilities shall have the right to operate within or adjacent to the work site during the performance of such work.

Should construction be under way by other forces or by other contractors within or adjacent to the limits of the work specified or should work of any other nature be under way by other forces within or adjacent to those limits, the Contractor shall cooperate with all the other contractors or other forces so that any delay or hindrance to their work will be avoided. 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.

Each contractor shall be responsible to the other for all damages to work, to persons or property caused to the other by their operations, and for loss caused the other due to unnecessary delays or failure to finish the work within the time specified for completion.

The Contractor shall include in the bid all costs involved as a result of coordinating the work with others. The Contractor will not be entitled to additional compensation from the County for damages resulting from such simultaneous, collateral, and essential work. If necessary to avoid or minimize such damage or delay, the Contractor shall re-deploy its work force to other parts of the work.

Should the Contractor be delayed by the County, and such delay could not have been reasonable foreseen or prevented by the Contractor, the Engineer will determine the extent of the delay, the effect on the project, and any extension of time. Should any agency or utility company's work result in delays to the Contractor's work schedule, the Contractor shall be entitled only to an equivalent extension of time for the completion of the contract, and shall not be entitled to damages due to downtime and idled equipment or additional payments over and above the agreed upon unit price.

Compensation for compliance with all collateral work shall be considered as being included in the various Contract items in the bid schedule and no additional compensation will be allowed therefore.

ROADWAY EXCAVATION (CRESTMORE MANOR PARKING):

Roadway excavation shall conform to the provisions of Section 19 of the Standard Specifications and these Special Provisions.

Roadway excavation shall include:

Existing pavement shall be removed 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 ton for the various asphalt concrete items and no additional compensation will be allowed therefor.

Existing pavement including any base material shall be cut back to neat lines and removed as shown on the plans or as directed by the Engineer. Excess material will become the property of the Contractor and will be disposed of as provided in Section 7-1.13 of the Standard Specifications.

Method of Payment

The contract unit bid price paid per cubic yard for Roadway Excavation shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in Roadway Excavation/Earthwork, including sawcutting, hauling, placement and compaction of the excavated material, removal and disposal of excavated material and as directed by the Engineer and no additional compensation will be allowed therefor.

REPLACE ASPHALT CONCRETE (CRESTMORE MANOR PARKING):

The 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, medium.

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 of 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.

Performance 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 ^{O}C	T48	230	230	230
Solubility, Minimum %[b]	T44	99	99	99
Viscosity at 135 ^{o}C, Maximum, Pa·s	T316	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, ^{o}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, ^{o}C Minimum G*/sin(delta), kPa	T315	64 2.20	64 2.20	70 2.20
Ductility at 25 ^{o}C Minimum, cm	T51	75	75	75
PAV[f] Aging, Temperature, ^{o}C	R28	100	100	110
RTFO Test and PAV Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, ^{o}C Maximum G*/sin(delta), kPa	T315	31[d] 5000	28[d] 5000	34[d] 5000
Creep Stiffness, Test Temperature, ^{o}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 ^{o}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.

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 64-10.

Liquid asphalt for prime coat shall conform to the provisions in Section 93, "Liquid Asphalts" of the Standard Specifications and shall be SC-70 unless otherwise designated by the contract item or otherwise specified in the 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.

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

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.

Smoothness:

Asphalt concrete pavement smoothness shall conform to the surface tolerances specified in the straightedge provisions in Section 39-6.03, "Compacting" of the Standard Specifications.

Method of Payment

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 and applying asphaltic emulsion (paint binder).

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 ton for the various asphalt concrete items and no additional compensation will be allowed therefor.

PREPARING EXISTING ROADBED FOR SLURRY SEAL:

The surfaces shall be thoroughly cleaned, have herbicide applied and all weeds removed, and have the cracks sealed as defined in the Special Provisions.

Herbicide shall be applied prior to the crack sealing operation.

Before placing the sealing material, the pavement surface shall be cleaned by sweeping, or other means necessary to remove all loose particles of paving, all dirt, loose chips, and all other extraneous material.

Before commencing the sealing operations, all surface metal utility covers, survey monuments and survey markers which were uncovered shall be covered by thoroughly covering the surface with an appropriate adhesive and oiled or plastic paper. No adhesive material shall be permitted

to cover, seal or fill the joint between the frame and cover of the structure. Covers are to be uncovered and cleaned by the end of the same work day. Ridges or bumps in the finished surface will not be permitted.

Sealing material shall be placed on all existing surfacing, including curve widening, public road connections, left turn pockets, and other adjacent asphalt surfaces, unless otherwise directed by 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 prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

ROUT AND SEAL RANDOM CRACKS/FILL POTHOLES:

All cracks will be filled with a rubberized asphalt material that has a minimum softening point temperature of 200^0 Fahrenheit and a safe heating temperature of 380^0 Fahrenheit, or as otherwise directed by the Engineer.

1. For cracks in size of 1/8 inch to 3/8 inch in width, the crack shall be widened using a router to form a sealant reservoir which is a minimum of 1/2 inch wide and 3/4 inch to 1 inch deep. The routed crack shall then be cleaned with hot compressed air to remove all dust and free moisture, and then sealed to service level. Pavement surfaces receiving the Chip seal will not require crack sealing for the crack size specified of 1/8 inch to 3/8 inch wide.

2. Cracks that are more than 3/8 inch but less than 3/4 shall be cleaned for the entire crack depth using sandblasting, brushing and hot air blowing techniques, as required to provide a crack free from all debris, dust, loose material and moisture. Gauging or plowing may be required to remove incompressible deep in the crack. The clean crack shall be filled with sealant, from the bottom up to surface level, in a manner which does not result in sealant bridging or entrapped air pockets. With deep cracks, settlement of sealant may occur, thus requiring application of a second layer of sealant material. For cracks with depressed surfaces on each side of the crack shall be over filled beyond level with pavement surface and then squeezed to fill in depressed area. No more than a 2" wide and 1/16" thick strip of material may be applied to the pavement surface. The crack seal for the specified width of 3/8 inch to 3/4 inch shall apply to all pavement surfaces receiving the Chip seal and slurry seal (Type I or Type II).

3. Cracks wider than 3/4 inch and potholes shall be cleaned using sandblasting or other cleaning technique approved by the Engineer. The cracks and/or potholes shall then be filled with pea-gravel size hot mix asphalt concrete as directed by the Engineer. Filling cracks and potholes shall apply to all pavement surfaces receiving the Chip seal and slurry seal and Type I and Type II slurry seal.

4. No rubberized slurry seal or slurry seal material shall be placed until after the crack seal and/or fill material has been in place for a minimum of five (5) calendar days.

Method of Payment

The contract unit bid price paid per lump sum for Rout and Seal Random Cracks/Fill Potholes shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals required for cracks routing, cracks cleaning, crack sealing, crack and pothole filling, sweeping and application of herbicide and sealant, as directed by the Engineer and no additional compensation will be allowed therefor.

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.

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 $\pm$ 25
Resilience 77^0 F in percent rebound ASTM D 3407	18 Minimum
Field Softening Point in degree F ASTM D 36	145 $\pm$ 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.

The contractor shall have no vertical drops between drive lanes during non-working hours. In the areas to be graded adjacent to pavement, the Contractor shall place base material before the end of each day to eliminate any vertical drops and provide a smooth transition for residents to access their driveways.

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 asphaltic emulsion (paint binder/tack coat), 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
390137	Rubberized Hot Mix Asphalt-GG

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 is 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 asphalt 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 asphalt binder that was used in producing the quantity of hot mix asphalt shown under "This Estimate" on the monthly estimate using the amount of asphalt binder 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.

REMOVE THERMOPLASTIC PAVEMENT MARKINGS AND PAVEMENT MARKERS:

Grinding shall be used for the removal of thermoplastic traffic stripes, crosswalk and pavement markings for removal of objectionable material, and such removal operation is being performed within 10 feet of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by wet abrasive blasting, hydro-blasting or vacuum blasting, and shall comply with AQMD regulations.

Pavement markings shall be removed by grinding a rectangular area, rather than just lettering or markings, so the old message cannot be identified.

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.

Crosswalk lines and pavement markings shall be restored by the Contractor no earlier than five-calendar days and no later than ten-calendar days after the slurry application.

For the estimating purposes, the removal quantities will be approximately the same as the new striping and thermoplastic pavement markings and pavement markers quantities. Bidders are responsible for verifying their own quantities.

Method of Payment

The lump sum contract price paid for Remove Thermoplastic Pavement Marking and Pavement Markers shall include full compensation, for furnishing all labor, materials, tools, equipment, and for doing all work involved in removing thermoplastic crosswalks, pavement markings and pavement markers, and no additional compensation will be allowed therefore.

TEST STRIPS:

The Contractor shall construct test strips for evaluation by the Engineer.

Two test strips shall be placed for Type I and Type II slurry. Each test strip shall be 400 to 600 feet long and shall replicate the full production placement of the slurry. The Engineer will evaluate each completed test strip for 72 hours after traffic has been allowed on it to determine if the mix design and placement procedure are acceptable. If the mix design or the placement procedure is determined by the Engineer to be unacceptable, the test strips will be rejected. The Contractor shall make modifications to the mix design or procedure and new test strips shall be constructed. The new test strips will be evaluated by the Engineer as previously specified. Rejected test strips shall be at the Contractor's expense and shall be removed if so directed by the Engineer.

Method of Payment
Full compensation for furnishing all labor, materials, tools, equipment and incidentals required by the placing of Type I and Type II slurry test strips shall be considered as included in the price paid per ton for Slurry Seal Type I and Slurry Seal Type II and no additional compensation will be allowed therefor.

SLURRY SEAL (Type I and Type II):

Slurry seal shall be performed in accordance with Subsections 203-5 and 302-4, "Emulsion-Aggregate Slurry," of the Standard Specifications for Public Works Construction (Green Book) 2009 edition. and noted herein as the Standard Specifications, and the following Provisions. The type of slurry aggregate used shall be the type designated in the Bid.

Modify the following - Subsection 203-5.2, "Materials" of the Standard Specifications;

(2) Admixtures, such as Portland Cement or aluminum sulfate may be mixed into the slurry material to adjust the curing time such that the applied slurry can support vehicular traffic within 60 minutes.

(5) Use of slag shall not be permitted.

(6) Deliveries of aggregate and emulsion shall not be made without the engineer present. Emulsion is not to be transferred to an on-site storage tanker without the sieve test performed by the County.

Modify the first paragraph of Subsection 203-5.4, "Mix Design," of the Standard Specifications to include the following:

The Contractor shall submit a Mix Design for approval within fourteen (14) working days after the Board of Supervisors Approval/Award. The Contractor will receive a "Notice to Proceed with Construction" only after the Mix Design is approved. The Contractor shall provide materials for verification of the Mix Design. Periodically throughout the project, at the direction

of the Engineer, the County will perform further testing as necessary to provide assurance of the Mix Design.

If the Contractor changes sources of material, i.e. aggregate and/or oil, a new Mix Design shall be resubmitted. The cost of all Mix Design retest and testing as a result of changes to the Mix Design shall be borne by the Contractor, and the amount due to the County for said retesting will be deducted from the Contractor's Progress Payments.

Modify the second paragraph of Subsection 203-5.4, "Mix Design," of Standard Specifications to read as follows:

The Contractor shall allow ten (10) working days prior to start of work for calibration and testing at a location designated by the Engineer. The County's testing laboratory will obtain field samples at the time of calibration for Extraction Test (ASTM D 2172), Consistency Test, Wet Track Abrasion Test (ASTM D 3910), a verification of the 60 minute set time previously specified. When the County's testing laboratory has determined that the field samples meet the requirements stipulated in these Specifications, the Engineer will notify the Contractor to start work. In the event that the product does not meet Specification, another testing and calibration date shall be set ten (10) day prior to the start of work for a complete retest of the product at the expense of the Contractor.

Modify the following Subsection 302-4.2.2, "Continuous-Flow Mixers," of the Standard Specifications to read as follows:

All slurry mixing machines shall be equipped with a Fines Feeder for the adding of cement or granular Aluminum Sulfate.

Modify the following Subsection 302-4.3.1, "General," Table 302-4.3.1 (A) of the Standard Specifications:

Slurry Seal	**Min.**	**Max.**
Type I	ELT/1700 ft^2	ELT/2000 ft^2
Type II	ELT/1150 ft^2	ELT/1350 ft^2
Type I (over Chip Seal)	ELT/950 ft^2	ELT/1150 ft^2

The estimated quantity for slurry seal in the Bid Schedule were based on an application rate of 1850 SF/ELT for Type I and 1250 SF/ELT for Type II. The total areas in Slurry Seal Quantity Tables in the appendix, shall be considered as approximate only and no guarantee is made as to the accuracy.

Add the following to Subsection 302-4.3.1, "General" of the Standard Specifications:

The Contractor shall have two slurry trucks or machines and at least one additional mixer as a backup.

Prior to the beginning of slurry operations, the Contractor shall furnish, at no cost to the County, current licensed weigh master's certificates indicating the net weight capacity of the aggregate bin. The Contractor shall provide a drive upon scale at the project site or an alternate site approved by the County. The drive on scale shall show the net weight of the aggregate bin on each slurry machine before the machine and product will be approved for applying slurry on the project.

All slurry machines are to carry, at all times, a calibrated emulsion measuring stick. The emulsion measuring stick is to be calibrated in 10-gallon increments to the slurry machine it is used on. Emulsion measuring sticks from other slurry machines will not be allowed to measure the gallons of emulsions on the slurry machines they were not calibrate to. The emulsion measuring stick is to have the slurry machine number or identification permanently marked on the stick. The gallons of emulsion are to be measured with a calibrated emulsion measuring stick and recorded before leaving and after returning to materials site. Use of a slurry machine will not be allowed if it does not have a calibrated emulsion measuring stick.

The Contractor shall furnish prior to commencing work, a calibrated stick in 10-gallon increments to measure the oil in the trailer storage tanks in gallons. The measuring stick shall be calibrated to the trailer storage tank it is used on. The inspector shall check the oil in each load "in and out" and in the storage tanks at the beginning and end of each day to determine the amount of emulsion used for that day. Emulsion is not to be transferred from delivery tank to on-site storage tank before the County performs the sieve analysis on the emulsion. Aggregate used in the slurry shall not exceed a moisture content of four percent (4%) by weight of dry aggregate.

Contractor may not schedule more than **150 tons of slurry to be placed per day**. Slurry may not be applied at more than 150 feet per minute. Contractor shall not run more than two slurry machines per day.

The Contractor shall provide a self propelled 10 ton pneumatic roller with a tire pressure of 50 PSI and equipped with a water spray system. The Contractor shall roll all the required streets the same day they are slurried. The Contractor will be responsible for proper scheduling of the work such that the rolling can be properly done within the given time constraint. The cost of furnishing the roller and operator shall be included in the price paid for slurry seal.

Prior to storing aggregate on private property, the Contractor shall submit to the Engineer written permission from the property owner for such stockpiling. The County may provide a stockpile location at a County Facility if space is available. The stock pile of material at a County Yard requires prior approval from the County Maintenance Division and the Engineer. The County does not guarantee that space will be available at a County Yard for the stockpile of material for this Project. If the County Yard location is provided for the Project, the notice of termination and final pay estimate will not be processed until the County Facility has been restored to the prior condition before the contractor utilized the site.

Precautions shall be taken to ensure that stockpiles do not become contaminated with oversized rock, clay, silt, or excessive amounts of moisture. The stockpiles shall be kept in areas that drain readily. Segregation of the aggregate will not be permitted.

The stockpile areas shall be thoroughly cleaned of all excess material and left in a neat, orderly appearance upon completion of slurry operations in any area.

The Contactor shall protect the wet slurry from traffic at all times and if damaged or defaced, the Contractor shall repair said damage at no additional cost to the County.

The placement of slurry seal may be suspended with the concurrence of the Engineer due to unsuitable weather, temperature conditions, or other conditions that are considered unfavorable for the prosecution of the work. The Contractor shall immediately comply with the order of suspension by the Engineer, and work shall not be resumed until authorized by the Engineer.

If work cannot resume on the same day to completion as scheduled, then this work shall be rescheduled in one to two weeks and the residents notified that the work will not be done as scheduled and renotified of new work day promptly. All "NO PARKING", "NO DRIVING" signs must be promptly removed. No more than two (2) rescheduled streets shall be scheduled for the same day and they shall be the first order of work for that day.

The days during which the suspension of work is in effect due to unsuitable weather shall not be considered working days and the date of completion shall be extended to allow for work and notification.

In the event of a suspension of work, the Contractor shall remove all barricades, equipment and "No Parking" signs (if appropriate) upon the curing of the completed portion of slurry.

No adjustment of unit prices of any items shall be allowed due to a suspension of work as described above.

Replace the first and second paragraphs of Subsection 302-4.3.2, "Spreading," of the Standard Specifications with the following:

Prior to applying slurry seal, the Contractor shall clean, to the satisfaction of the Engineer, the street surface with a power sweeper, **remove all R.P.M.'s including "Blue Dots", abrasive grind completely all lane lines, street legends, crosswalks or other painted or thermoplastic surfaces. All abrasive grinding shall be flush with the existing surface and not cause indentations into the pavement. This is necessary to provide a good bonding surface for the slurry seal, as well as eliminate "ghosting" of the old striping and markings as the new slurry wears off over time.**

It is anticipated that nuisance water, such as storm water runoff and irrigation water, will run in and across the right-of-way at various time throughout the period of construction. It shall be the responsibility of the Contractor, at their own expense, to provide for and protect the work from such water. In addition, the Contactor's responsibility shall include handling nuisance waters such that their operations do not cause them to damage existing improvements or properties adjacent to or near the site of work.

Slurry shall be applied when the atmospheric temperature is greater than 50^{o}F but not more than 100^{o}F.

The application of slurry shall not commence until after 8:00 a.m., and shall conclude at 2:00 p.m. unless other authorized by the Engineer. The slurry shall be sufficiently cured to be open to traffic by 5:00 p.m. The portions of streets to be slurried shall be closed from the time the application begins until the mixture as achieved sufficient set to be opened to traffic.

The slurry shall be applied in such a manner that no ripples or waves exist. If ripples or waves occur in the slurry during the application, the work shall cease and the Contractor shall correct the situation. The Contractor may use a drag to knock down ridges. If ripples or waves are not corrected to the Engineer's satisfaction, the street shall be reslurried at the Contractor's expense.

The Contractor shall, at the direction of the Engineer, repair the reseal to **the entire street, or complete section thereof, as determined by the Engineer,** which have not been sealed properly (includes areas that have failed to meet yield and mix design specifications) and completely. No compensation will be provided for slurry seal used in repair and reseal work.

Add the following to the third paragraph of the Subsection 302-4.3.2, "Spreading" of the Standard Specifications:

Each slurry crew shall be composed, at a minimum, of a coordinator at the project site at all times, a competent quick-set mixing man, a competent driver, two squeegee men, and sufficient laborers for any handiwork and cleanup.

Surface oil and grease shall be removed or sealed with shellac or an equivalent material approved by the County before the application of the slurry seal. Full compensation for surface oil and grease removal shall be considered as included in the unit cost for slurry seal.

For all cul-de-sacs (the last 250' minimum), the Contractor shall roll the last 250' of dead-end streets and knuckle curves or as otherwise directed by the Engineer. Full compensation for rolling the slurry shall be considered as include in the unit cost for slurry seal.

The start and finish of slurry application shall be a straight line which, unless otherwise approved by the Engineer, shall be obtained by laying a strip of building paper or other material approved by the Engineer on the pavement surface. After application of slurry, the paper is to be removed leaving a straight edge. The entire street surface area shall be sealed the same day.

The grading of the combined aggregate and the percentage of emulsified asphalt shall conform to the requirements of Type I or TYPE II as specified in Subsection 203-5.3, of the Standard Specifications.

Asphalt emulsion shall be a QUICK-SET ANIONIC OR CATIONIC EMULSIFIED ASPHALT conforming to the requirements of Subsection 203-1.3, "Test Reports and Certification," and Subsection 203-3.2, "Testing Requirements" of the Standard Specifications.

The latex additive shall be Ultra Pave 70 (for anionic) or Ultra Pave 65 K (for cationic) or an approved equal. The latex shall be added at the emulsion plant after weighing the asphalt and before the addition of mixing water. The latex shall be added at a rate of **two to two-and-one-half (2 to 2½)** parts to one-hundred (100) parts of emulsion by volume.

The Contractor is hereby advised that County streets, parking lots, or other County-approved property will not be allowed as a site for stockpiling and batching. Arrangements for an acceptable site shall be the sole responsibility of the Contractor. Exception: Stockpiling will be allowed at the County Yard, located at 15670 Perris Boulevard, after arrangements are made with the County's Maintenance and Operations Division, at (909) 413-3160.

The Contractor shall sweep any raveled material on the street one (1) week after the initial placement. One additional sweeping shall occur (1) month after the first initial sweeping or as directed by the Engineer. If the Engineer determines the raveling is excessive, the frequency of sweeping shall be adjusted to the field conditions of the raveling. If excessive raveling, as determined by the Engineer, continues after two (2) weeks of the initial placement, the street shall be swept and reslurried with a Type I mixtures (Local Streets) or a Type II (Arterial/Collector Streets) at no cost to the County.

The Contractor shall remove any and all weeds that are growing through cracks from the project street located within the pavement or growing between the concrete gutter and the pavement and spray a herbicide mixture of either Hyvar mixed with Roundup or Pramatol mixed with Roundup, or approved equal, at least ten (10) working days prior to slurring. The herbicide mixture shall contain Blazon, or approved equal, a purple dye to easily confirm the herbicide has been applied. The work shall be approved by the Engineer or his representative prior to slurrying. Full compensation for plant removal and herbicide treatment shall be considered as included in the unit cost for slurry seal.

The Contractor shall supply the County with licensed weighmaster's certificates of weight for all delivered aggregates to the job during the course of each day. Aggregate shall be delivered to the project only in the presence of a County representative. The Contractor shall also present weighmaster certificates for the amount of such aggregate remaining at the completion of the project at no cost to the County. Payment shall be determined by the amount that is physically placed, which cannot exceed the amount that is delivered to the job site with the certified weighmaster tickets. There shall be no outside work done utilizing materials from the tanks or stockpiles stored for the County's Contract.

Method of Payment

Payment for slurry seal conform to the provisions of Subsection 302-4.5, entitled "Measurement and Payment," of the Standard Specifications for Public Works Construction and shall include payment in full for all work called for in this Article. The unit of measure, as shown in the Proposal, is to be "extra long ton" and shall be paid for by the extra long ton (ELT) .

Full compensation for developing a water supply, for furnishing and placing all water required for work done in the Contract, including extra work shall be included in the prices paid for the various items of work requiring water; and no separate payment will be made therefore.

ASPHALT SEAL COATS:

Asphalt seal coat shall consist of mixing asphaltic emulsion, aggregate, polymer and water and spreading the mixture on pavement surfaces. Asphalt seal coat shall be applied as shown on the plans and in conformance these special provisions.

Attention is directed to "**Replace Asphalt Concrete**" of these special provisions.

Asphaltic emulsion shall be either Grade SS1h or CSS1h and shall conform to the provisions in Section 94, "Asphaltic Emulsions," of the Standard Specifications, except that in Tables 1 and 2, the values for penetration at 25°C, in the tests on residue from distillation, shall be a minimum of 20 to a maximum of 60. Clay stabilized emulsion with a solids content of not less than 45 percent by mass may be used.

Mineral aggregate components shall be clean, hard, durable, uncoated particles that are free from decomposed materials, organic materials and other deleterious substances. The percentage composition, by mass, of the aggregate shall be 100 percent passing the No. 16 sieve.

At least 10 days prior to their intended use, the Contractor shall furnish samples of aggregates from the source the Contractor proposes to use for the project. The samples shall have been processed in a manner representative of that for the material to be used in the work.

Polymer additive shall be a commercial quality polymer formulated for the purpose intended. The Contractor shall submit the manufacturer's product data information for the proposed polymer at least 10 days prior to use.

Water shall be potable and of such quality that the water will not separate from the emulsion before the material is placed in the work.

Oil seal primer shall be a quick-drying emulsion with suitable admixtures manufactured specifically for the purpose of isolating the asphalt seal coat from residual oils, petroleum grease, and gasoline stained pavements. The properties of the oil seal primer shall be compatible with the new asphalt seal coat materials. The Contractor shall submit the manufacturer's product data information of the material proposed for use at least 10 days prior to use.
Crack sealant shall be either a modified asphalt material or a specialty prepared crack sealing material conforming to the requirements in ASTM Designation: D 1190, D 3405 or D 5078.

At least 10 days before asphalt seal coat placement, the Contractor shall submit to the Engineer for approval a laboratory report of tests and proposed mix designs for the specific materials to be used on the project.

A laboratory capable of performing the applicable tests shall perform the tests and mix design. The proposed mixture shall conform to the following requirements of the following tests:

Test Description	Test Method	Requirement	
		Minimum	Maximum
Mass per Liter (lbs/gal)	ASTM Designation: D 244	1.1 kg (9.5)	
Cone Penetration, mm	California Test 413	340	700
% Non-Volatile % Non-Volatile soluble in Tri-clorethylene	ASTM Designation: D 2042*	60 10	 35
Wet Track Abrasion, g/m^2	ASTM Designation: D 3910		380
Dried Film Color		Black	
Viscosity	ASTM Designation: D 562	75KREB	

* Weigh 10 grams of homogenous product into a previously tared, small ointment can. Place in constant temperature oven at 165°C ±5°C for 90 minutes ±3 minutes. Cool, reweigh and calculate non-volatile components as a percent of the original weight.

The laboratory that performs the tests and mix designs shall prepare a signed report that contains the following: results of the tests on individual materials, comparisons of the test results to the specifications, and the amount of water that is allowed to be added on site. Previous laboratory reports covering the same materials may be accepted, provided that the reports were prepared during the same calendar year.

No substitution of other mix designs for asphalt seal coat material will be permitted unless the materials proposed for substitution are tested and a laboratory report is submitted for the substituted design as specified above.

The Contractor shall furnish a Certificate of Compliance to the Engineer in conformance with the provisions in Section 6-1.07, "Certificates of Compliance" of the Standard Specifications. The certificate shall certify that the asphalt seal coat material, conforms to the these special provisions.

Asphalt seal coat mixture shall be produced by uniformly blending asphaltic emulsion, aggregate, water, and admixtures in a central plant capable of producing a finished product conforming to these special provisions. Components shall be measured by electronic or mechanical controls that consistently proportion the additives. Blending the admixtures with the base asphaltic emulsion shall be by mechanical means to provide a uniform mixture.

Asphalt seal coat shall be stored in a tank equipped with power driven mixing or agitation equipment capable of keeping the stored material thoroughly and uniformly mixed. The stored material shall be protected from freezing in cold weather conditions.

Asphalt seal coat shall contain a minimum of 2 percent polymer by volume of the undiluted asphaltic emulsion material. The polymer shall be added on site and verified by the Engineer.

Water may be added at the project site in conformance with the manufacturer's recommendations for consistency and spreadability, but shall not exceed 15 percent by volume.

Pavement surfaces to receive asphalt seal coat shall be cleaned of oil and grease spots, dirt, clay, dust, and other deleterious materials that might adversely affect bonding of the seal coat. Cleaning shall be done by air blowing, vacuum, mechanical sweeper, washing, or other methods approved by the Engineer. Solvents shall not be used for cleaning pavement.

Prior to surface preparation, cracks shall be cleaned and sealed with crack sealant. The properties of the crack sealant shall be such as to be compatible with the asphalt seal coat material. Cracks shall be cleaned by high pressure air blasting or any other method that leaves a clean dry surface. Excess sealant shall be removed with a squeegee. Prior to proceeding with subsequent seal coat or tack coat, the Contractor shall obtain the Engineer's approval that the crack sealant is sufficiently cured to accept the subsequent materials.

Cracks wider than one inch shall be filled with a fine aggregate hot, dense graded asphalt concrete conforming to Section 39 of the California Standard Specification for 3/8" Maximum Asphalt Concrete.

When detergents are used in the washing method for cleaning the pavement surface, the pavement shall be thoroughly rinsed with water before application of the asphalt seal coat. Detergents shall not be used that will adversely affect the pavement surface or the seal coat, as determined by the Engineer. The surface shall not have standing water prior to the application of the seal coat.

After cleaning the existing pavement, remaining oil and grease spots shall be sealed with oil seal primer. The oil seal primer shall be applied in conformance with the manufacturer's recommendations.

Areas where oil or grease has penetrated the existing asphalt concrete, and cleaning, and applying oil seal primer or tack coat are insufficient to produce an acceptable surface to receive the seal coat shall be repaired as directed by the Engineer.

Application of the asphalt seal coat shall be performed by mechanical means using rubber faced squeegees, brooms, distributor bars, spray wands, any combination of these methods, or other techniques approved by the Engineer.

Asphalt seal coat material sampled at the project site shall be sealed within 30 minutes of placement and shall be the finished, undiluted material.

Immediately prior to application of the asphalt seal coat, the pavement surface shall be dampened, as directed by the Engineer. A distributor truck or other equipment approved by the Engineer shall be used to apply the water. The surface shall not have any standing water prior to application of the sealant.

The asphalt seal coat shall be applied in two applications and shall be uniform and free flowing, free of lumps and other inconsistencies. If, after the addition of the maximum allowable water volume, the mixture does not produce a seal coat as specified, the seal coat will be rejected and shall be removed, at the Contractor's expense, from the site in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications. Replacement asphalt seal coat, conforming to the special provisions, shall be furnished and applied.

The asphalt seal coat shall be thoroughly dry prior to application of subsequent coats.

Asphalt seal coat shall be applied uniformly in a continuous manner so that no ridges or uncoated areas shall exist. **Asphalt seal coat shall be applied in 2 coats at a total rate of 0.30 to 0.40 gallons per square yard, not including added water.**

Asphalt seal coat shall not be applied when the ambient temperature is less than 55°F or the surface temperature is less than 60°F. Asphalt seal coat shall not be applied within 24 hours of rain or within 24 hours prior to forecasted rain, freezing temperatures, during rain, or when the surface contains standing water. The Contractor shall notify the Engineer to inactivate the irrigation control system not less than 5 working days prior to applying the seal coat. Irrigation watering will be kept off the area to be seal coated for at least 24 hours prior to and at least 24 hours after the application of the asphalt seal coat.

Upon completion of the final application, the area shall be protected from traffic or equipment for a period of not less than 24 hours.

Striping shall be applied only after the asphalt seal coat has thoroughly dried.

Payment
The contract price paid per square yard for Asphalt Sealcoat used at Crestmore Manor Parking shall include full compensation for furnishing all labor and material, tools and doing all the required work.

MICROSURFACING:

GENERAL
Microsurfacing shall consist of mixing a microsurfacing emulsion (MSE), water, additives, mineral filler, and aggregate; and spreading the mixture on a pavement surface as shown on the Plans.

MATERIALS

Microsurfacing Emulsion (MSE). MSE shall be a quick-traffic, homogeneous, polymer-modified, cationic asphalt emulsion. MSE shall conform to the requirements specified in AASHTO M208 or ASTM D2397 for CSS-1h and the table below. The cement mixing test shall be waived for MSE.

Microsurfacing Emulsion

Test	Test Method	Requirement
Viscosity @ 25°C, SSF	AASHTO T 59	15-90 sec
Sieve Test, max.	AASHTO T 59	0.30%
Settlement, 5 days, max.	ASTM D 244	5%
Storage Stability, 1 day, max.	AASHTO T 59	1%
Residue by Evaporation, min.	California Test 331	64 %
Tests on Residue:		
Test	**Test Method**	**Requirement**
G* @ 20ºC, 10 rad/sec, MPa	AASHTO TP 5	Report Only
Penetration @ 77°F (25ºC)	AASHTO T 49	40-90
Phase Angle @ 50°C, 10 rad/sec, PA (max) - PA base	AASHTO TP 5	Report Only
Softening Point, min.	AASHTO T 53	135°F (57ºC)
Stiffness @ -12°C, MPa, and M-value	AASHTO TP 1	Report Only

Polymers shall be milled or blended into the asphalt or blended into the emulsifier solution prior to the emulsification process. MSE shall contain a minimum of 3 percent polymer solids based on the weight of residual asphalt and shall be certified by the MSE supplier.

The 5-day settlement test may be waived, provided MSE stored for use on the Work site is used within 36 hours from the time of shipment.

A Certificate of Compliance conforming to 6-1.07 shall be furnished with each shipment of MSE and submitted to the Engineer.

Water and Additives

Water shall be potable, free of harmful soluble salts, reactive chemicals, and any other contaminants, and of such quality that the asphalt will not separate from the MSE before the microsurfacing mixture is placed.

If necessary for workability, liquid additives that will not adversely affect the microsurfacing mixture may be used if so approved by the Engineer.

Mineral Filler

Mineral filler shall be non-air entrained portland cement or hydrated lime that is free of lumps. Portland cement shall be Type I, Type II, Type III or a combination thereof. The type of mineral filler shall be determined by the Contractor based on laboratory mix designs. Mineral filler will be considered part of the aggregate gradation requirement. An increase or decrease of 1 percent may be approved by the Engineer if necessary for better consistency or set times.

Aggregate

Aggregate shall be free from vegetable matter and other deleterious substances, lumps and oversize particles.

Aggregate shall conform to the grading and quality requirements prior to the addition of the MSE. If aggregates are blended, each component aggregate shall conform to the sand equivalent and durability index requirements.

The percentage composition by weight of aggregate, including mineral filler, shall conform to the following table.

Aggregate Grading
TYPE III

Sieve Sizes	Percentage Passing
3/8 (9.5 mm)	100
#4 (4.75 mm)	70 – 90
#8 (2.36 mm)	45 – 70
#16 (1.18 mm)	28 – 50
#30 (600 μm)	19 – 34
#200 (75 μm)	5 – 15

The aggregate, excluding mineral filler, shall conform to the requirements shown in the table below.

Aggregate Quality

Test	California Test	Requirement
Sand Equivalent, min.	217	65
Durability Index, min.	229	55
Percentage of Crushed Particles, min.[1]	205	100%
Los Angeles Rattler Loss at 500 Rev., max.[2]	211	35%

Notes:
1. California Test 205, Section D, is amended to read: "Any particle having 2 or more freshly, mechanically fractured faces shall be considered a crushed particle."
2. California Test 211, Los Angeles Rattler, shall be performed on the parent aggregate before crushing

If the results of the aggregate grading do not meet the specified gradation, the in-place microsurfacing represented by the test shall be removed. However, if requested in writing by the Contractor and approved by the Engineer, the microsurfacing may remain in place and the Contractor shall pay to the County $2.00 per ton for the aggregate represented by the tests and left in place. The County may deduct these amounts from any moneys due or to become due the Contractor.

If the results of the sand equivalent test for aggregate do not meet the specified requirement, the in-place microsurfacing represented by the test shall be removed. However, if requested in writing by the Contractor and approved by the Engineer, the microsurfacing may remain in place and the Contractor shall pay to the County $2.00 per ton for the aggregate represented by the tests and left in place. The County may deduct these amounts from any moneys due or to become due the Contractor.

When the results of both the aggregate grading and the sand equivalent tests do not conform to the specified requirements and if the microsurfacing is allowed to remain in place, both payments to the County shall apply. The County may deduct these amounts from any moneys due or to become due the Contractor.

No single aggregate grading or sand equivalent test shall represent more than 275 tons or one day's production, whichever is smaller.

MIX DESIGN The Contractor shall submit a laboratory report of tests and a proposed mix design covering the specific materials proposed for use on the Work. The component materials used in the mix design must be the same materials that will be used during microsurfacing placement. If the mix design consists of the same materials covered by a previous laboratory report, the previous laboratory report may be submitted and shall include material testing data performed within the previous 12 months. If requesting substitute materials, a new laboratory report and mix design shall be submitted at least 10 days before starting placement.

The percentages of each individual material proposed in the mix design shall be shown in the laboratory report. Adjustments may be required during construction based on field conditions. Individual materials shall be within the limits shown in the table below.

Mix Design Proportion Limits

MSE Residual Asphalt	5.5% to 10.5% by dry weight of aggregate
Water and Additives	No Limit
Mineral Filler	0% to 3% by dry weight of aggregate

The mix designs and aggregate tests shall be performed by a laboratory capable of performing the applicable International Slurry Surfacing Association (ISSA) tests. The proposed microsurfacing mixtures shall conform to the specified requirements when tested in conformance with the tests shown in the following table.

Mix Design Tests

Test	ISSA Test Method	Requirements
Wet Cohesion @ 30 Minute (Set), min. @ 60 Minute (Traffic), min.	TB* 139	 12 kg-cm 20 kg-cm
Excess Asphalt, max.	TB* 109	50 g/ft^2 (540 g/m^2)
Wet Stripping, min.	TB* 114	Pass (90% Minimum)
Wet Track Abrasion Loss 6-day Soak, max.	TB* 100	 75g/ft^2 (810 g/m^2)
Displacement Lateral, max. Specific Gravity After 1000 Cycles of 125 lbs (57 kg), Max.	TB* 147A	 5% 2.10
Classification Compatibility, min.	TB* 144	(AAA, BAA) 11 Grade Points Minimum
Mix Time @ 77°F, min.	TB* 113	Controllable to 120 Seconds Minimum

TB* = Technical Bulletin

The laboratory that performed the tests and designed the mixtures shall sign the laboratory

report. The report shall show the results of the tests on individual materials and shall compare their values to those required by these Special Provisions. The report shall clearly show the proportions of aggregate, water (minimum and maximum), additive usage, mineral filler (minimum and maximum), and MSE residual asphalt content (minimum and maximum) based on the dry weight of aggregate. The laboratory shall report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect) in conformance with the requirements of ASTM C29M. Previous laboratory reports covering the same materials may be accepted provided the material test reports were completed within the previous 12 months. The mix design shall further show the recommended changes in water, additive, and mineral filler proportions for high temperature weather conditions by reporting proportions of materials required for 60 seconds of mix time with materials heated to 100°F.

The component materials used in the mix design shall be representative of the microsurfacing materials proposed by the Contractor for use on the Work.

Once the mix design is approved by the Engineer, no substitution of other material will be permitted unless the materials proposed for substitution are first tested and a laboratory report is submitted for the substituted design in conformance with these special provisions. Substituted materials shall not be used until the mix design for those materials has been approved by the Engineer.

The completed mixture, after addition of water and additives, if additives are used, shall be such that the microsurfacing mixture has proper workability. At the expiration of the time allowed for closure of lanes, the microsurfacing mixture shall be sufficiently cured to support unrestricted traffic.

Proportioning

Aggregate, water, additives (if used), mineral filler, and MSE shall be proportioned by volume utilizing the mix design approved by the Engineer. If more than one kind of aggregate is used, the correct amount of each kind of aggregate to produce the required grading shall be proportioned separately, prior to adding the other materials of the mixture, in a manner that will result in a uniform and homogeneous blend.

The aggregate shall be proportioned using a belt feeder operated with an adjustable cutoff gate. The height of the gate opening shall be determinable. The MSE shall be proportioned by a positive displacement pump. Variable rate emulsion pumps, if used, shall be calibrated and sealed in the pump's calibrated condition in conformance with California Test 109 prior to usage. The delivery rate of aggregate and MSE per revolution of the aggregate feeder shall be calibrated at the appropriate gate settings for each mixer-spreader truck used on the project in conformance with California Test 109.

The aggregate belt feeder shall deliver aggregate to the pugmill with such volumetric consistency that the deviation for any individual aggregate delivery rate check-run shall not exceed 2 percent of the mathematical average of 3 runs of a minimum of 3 tons each. The emulsion pump shall deliver MSE to the pugmill with such volumetric consistency that the deviation for any individual delivery rate check-run shall be within 2 percent of the mathematical average of 3 runs of a minimum of 300 gallons each.

The MSE storage tank shall be located immediately before the emulsion pump and shall be equipped with a device which will automatically shut down the power to the emulsion pump and aggregate belt feeder when the MSE level is lowered to a point where the pump suction line is exposed.

A temperature-indicating device shall be installed in the emulsion storage tank at the pump suction level. The device shall indicate the temperature of the MSE and shall be accurate to within 5°F.

The belt delivering the aggregate to the pugmill shall be equipped with a device to monitor the depth of aggregate being delivered to the pugmill. The device for monitoring the depth of aggregate shall automatically shut down the power to the aggregate belt feeder whenever the depth of aggregate is less than the target depth of flow. A second device shall be located where the device will monitor the movement of the aggregate belt by detecting revolutions of the belt feeder. The devices for monitoring no flow or belt movement shall automatically shut down the power to the aggregate belt when the aggregate belt movement is interrupted. The device to detect revolutions of the belt feeder will not be required where the aggregate delivery belt is an integral part of the drive chain. To avoid erroneous shutdown by normal fluctuation, a delay of 3 seconds will be permitted between sensing and shutdown of the operation.

General

Mixing and spreading equipment for micro-surfacing must proportion asphaltic emulsion, water, aggregate, and any set-control additives by volume and mix them in continuous pugmill mixers. Continuous pugmill mixers must be of adequate size and power for the type of materials to be mixed. Mixing and spreading equipment shall be approved by the Engineer prior to the start of the Work. Mixer-spreader machines, if authorized, shall conform to these Special Provisions except that mixer-spreader trucks may be used in the following areas only:

1. Cul-de-sacs.
2. Side streets.
3. Gore areas.
4. Areas requiring hand work.

Continuous Self-Loading Mixing Machine. Continuous self-loading mixing machines shall be automatically sequenced and self-propelled. The mixing machine shall deliver the materials to a double shafted mixer and discharge the mixed product on a continuous flow basis. The mixing machine shall have sufficient storage capacity to maintain a continuous supply of materials to the proportioning controls. The mixing machine shall be self-loading without interrupting placement. The mixing machine operator shall have full control of forward and reverse speeds during placement.

Mixer-Spreader Machines

Mixer-spreader machines (machines) shall be specifically designed and manufactured to place microsurfacing, self-propelled, self-loading, and capable of loading materials while continuing to lay microsurfacing. Machines shall be equipped with a continuous-flow mixing unit capable of accurately proportioning and delivering the aggregate, MSE, mineral filler, water and additives to a revolving double-shafted mixer and discharging the resulting microsurfacing mixture on

continuous-flow basis. Batch machines will not be acceptable. Machines shall have sufficient storage capacity for aggregate, MSE, mineral filler, water and additives to maintain an adequate supply to the proportioning controls. All indicators shall be in working order prior to commencing mixing and spreading operations. Rotating and reciprocating equipment shall be covered with metal guards.

Machines shall not be operated unless low-flow and no-flow devices and revolution counters are in good working condition and functioning and metal guards are in place. The required indicators shall be visible while walking alongside a machine.

Aggregate feeders shall be connected directly to the drive on the emulsion pump. The drive shaft of the aggregate feeder shall be equipped with a revolution counter reading to the nearest one-tenth of a revolution.

The identifying number of each machine shall be a minimum of 3 inches in height, located on the front and rear of the vehicle.

The microsurfacing mixture shall be spread by means of a spreader box. However, when wheel path depressions have a cross section that is deformed 1/2 inch or more, the individual wheel paths shall first be filled utilizing a wheel path depression (rut) box.

Spreader Box

Spreader boxes shall be capable of placing the microsurfacing mixture a minimum of 14 feet wide and preventing loss. Spreader boxes over 8 feet in application width shall have baffles, reversible motor driven augers or other suitable means to insure uniform application on super-elevated sections and shoulder slopes. Spreader boxes shall be maintained in such manner as to prevent chatter (wash boarding) in the finished mat. Spreader boxes shall be clean and free of microsurfacing mixture at the start of each work shift.

Spreader boxes shall have a series of strike-off devices at the rear. The leading strike-off device shall be fabricated of steel, stiff rubber or other suitable material. The number of strike-off devices shall be determined by the Contractor. The first strike-off device shall be designed to maintain close contact with the pavement during the spreading operations, shall obtain the thickness required, and shall be capable of being adjusted to the various pavement cross sections for application of a uniform microsurfacing finished surface. All strike-off devices shall be fabricated of flexible material suitable for the intended use and shall be designed and operated to ensure that a uniform texture is achieved in the finished surface. The final strike-off device shall be cleaned daily and changed if problems with longitudinal scouring occur.

Flexible fabric drags attached to the rear of the spreader box shall not be used.

Wheel Path Depression (Rut) Box. Rut boxes, if used, shall be designed to have adjustable strike-off devices to regulate the depth and shall have a width of between 5 and 6 feet. Hydraulic augers, or similar devices, shall be installed and shall be capable of moving the mixed material from the rear to the front of the filling chamber. These devices shall also be capable of guiding the larger aggregate into the center, deeper section of the wheel path depression, and forcing the finer material toward the outer edges of the spreader box.

In areas inaccessible to a rut box, the microsurfacing mixture may be spread by other methods approval by the Engineer.

PREPARATION FOR MICROSURFACING

Before placing microsurfacing, the pavement surface shall be cleaned by sweeping, flushing or other means necessary to remove loose particles of paving, dirt, and other extraneous material. When required by local conditions, the roadway surface may be fogged with water ahead of the spreader box. The application of the fog spray may be adjusted to suit temperatures, surface texture, humidity, and dryness of pavement.

Thermoplastic striping and pavement markings, raised pavement markers, and raised pavement marker adhesive shall be removed.

Manhole covers, utility vaults and the surfaces of other utility facilities, survey monuments and benchmarks, shall be covered using a material approved by the Engineer. The material and procedure shall result in no adherence of the microsurfacing to the facility and no stripping of the microsurfacing from the adjacent pavement.

PLACEMENT

Microsurfacing shall be uniformly spread on the existing surfacing within the rate specified without spotting, re-handling, or otherwise shifting the mixture.

Microsurfacing shall not be placed when either the ambient or pavement temperature is below 50°F or during unsuitable weather. Microsurfacing shall not be placed if rain is imminent or if there is the possibility that there will be freezing temperatures within 24 hours.

When wheel path depressions have a cross section that is deformed ½ inch or more, the individual wheel paths shall first be filled utilizing a wheel path depression (rut) box. The depth of the wheel path depression shall be determined after adjacent ridges have been removed. The maximum single application for wheel path depressions shall be 1 inch. Wheel path depressions of depths greater than 1 inch shall require multiple applications in each depression.
Wheel path depression repair shall be constructed with a slight crown to allow for initial compaction by traffic on the microsurfacing.

Freshly filled wheel path depressions shall be compacted by traffic for a minimum of 48 hours before additional lifts of microsurfacing are placed for rut filling purposes or as surface courses.

Microsurfacing shall be spread at the rates of pounds of dry aggregate per square yard shown in the following table.

Microsurfacing Spread Rates

Microsurfacing Type	Location	Spread Rate(lbs/yd^2)
Type II	Full Lane Width	18-24
Type III	Full Lane Width	18-30

Longitudinal joints shall correspond with the edges of the final traffic lanes. The Engineer may permit other patterns of longitudinal joints if the patterns will not adversely affect the quality of the finished product.

Through traffic lanes shall be spread in full lane widths only. Longitudinal joints common to 2 traffic lanes shall be butt joints with overlaps not to exceed 3 inches. Building paper shall be placed at the transverse joints to avoid double placement of the microsurfacing. Transverse joints shall be straight, clean and have no variation in surface texture from the rest of the mat. Other suitable methods to avoid double placement of the microsurfacing will be allowed. Hand tools shall be available to remove spillage.

The mixture shall be uniform and homogeneous after placing on the surfacing and shall not show separation of the MSE and aggregate after setting. The completed surface shall be of uniform texture and free from ruts, humps, depressions, or irregularities.

Microsurfacing shall be protected from damage by traffic until such time that the mixture has cured sufficiently so that the microsurfacing will not adhere to or be picked up by the tires of vehicles.

Microsurfacing shall be swept approximately 24 hours after placement to remove loosened or shed aggregate particles. Thereafter, microsurfacing shall be swept, when directed by the Engineer, for up to 10 days after placement to remove loosened or shed aggregate particles. Sweeping shall be performed in such a manner that the microsurfacing will not be damaged.

TEST STRIP

The Contractor shall construct a minimum of 2 test strips for evaluation by the Engineer. Each test strip shall be a minimum of 300 feet long, a minimum of 400 square yards in size, shall replicate the full production placement of microsurfacing, and shall consist of the application courses specified. Each test strip shall be constructed at the same time of day that the full production of microsurfacing will be placed. Each test strip may be constructed in 2 days when multiple course applications are specified. If the microsurfacing is to be placed on a scrub seal, ruuberized chip, or chip seal, the test strips must be placed over the underlying seal coat. The Contractor shall propose adjustments in the mixture to compensate for sudden changes in weather conditions.

The Engineer will evaluate each completed test strip for 48 hours after traffic has been allowed on it to determine if the mix design and placement procedure are acceptable. If the mix design or the placement procedure is determined by the Engineer to be unacceptable, the test strips will be rejected, the Contractor shall make modifications, and new test strips shall be constructed. The new test strips will be evaluated by the Engineer as previously specified. Rejected test strips

shall be removed if so directed by the Engineer.

MEASUREMENT

Microsurfacing will be measured by the combined weight of the tons of dry aggregate and the tons of MSE used in the microsurfacing mixture placed and accepted by the Engineer. The weight of added water, additives, and mineral filler used in the microsurfacing mixture will not be included in the weight measured for payment. No deduction will be made for water in the aggregate and MSE.

The Contractor shall furnish the Engineer with a written plan covering the intended method of delivery, storage and measurement of dry aggregate and MSE. The Contractor shall furnish the Engineer with licensed weigh master tickets for each load of dry aggregate and MSE delivered to the stockpile site or directly to each mixer-spreader machine.

Prior to starting the microsurfacing operation, the Contractor shall furnish, at no cost to the County, current weigh master's certificates indicating the net weight of the dry aggregate and portable drive on scales. The Contractor shall provide a drive upon scale at the project site or an alternate site approved by the County. The drive on scale shall show the net weight of the dry aggregate on each machine. Each microsurfacing mixing machine used on the project shall carry a calibrated emulsion measuring stick similar to the measuring stick used on slurry application as specified in these Special Provisions.

Prior to applying the microsurfacing, the process of determining the net weight of the dry aggregate and the amount of MSE used, in gallons, shall be performed in the presence of the Engineer.

Method of Payment

Payment for microsurfacing will be made at the Contract Unit Price per ton for "MICROSURFACING. The Contract Unit Price per ton shall include performing all the work involved in placing microsurfacing, complete in place, including testing for and furnishing mix design(s), test strips, rut filling, portable scales, cleaning the surface, furnishing added water, additives, and mineral filler, protecting the microsurfacing until it has set, repair of early distress, and sweeping the microsurfacing.

No payment will be made for test strips which have been rejected or for removal of rejected test strips.

PAINT TRAFFIC STRIPE:

Painting traffic stripe shall conform to the provisions in Sections 84-1, "General" and 84-3, "Painted Traffic Stripes and Pavement Markings" of the Standard Specifications and these Special Provisions.

Traffic striping shall be applied in two coats with airless equipment and shall be performed with a roadliner truck mounted striping machine. Where the configuration or location of a traffic stripe is such that the use of a roadliner truck mounted striping machine is unsuitable, traffic

striping and glass spheres may be applied by other methods and equipment approved by the Engineer.

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 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.

PAINTED PARKING LINES:

Painted parking lines shall be replaced at the original locations and in the manner shown on the plans, in conformance with MUTCD Figure 3B-22(CA) attached to these Special Provisions , these Special Provisions, or as directed by the Engineer.

Newly painted lines and pavement markings shall be protected from damage by traffic or other causes until the paint is thoroughly dry. Any newly installed lines or markings which are damaged as a result of the construction, including wheel markings by traffic or 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 unit price paid per linear foot for Painted Stall Lines and Pavement Marking shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in painting stall lines and pavement markings complete in place, as shown on the plans and MUTCD Figure 3B-22(CA), as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

THERMOPLASTIC CROSSWALK AND PAVEMENT MARKING:

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

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

PAVEMENT MARKER (REFLECTIVE):

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 price paid per each for Pavement Markers (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 and as approved 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).

FINAL CLEAN UP:

Before final inspection of the work, the Contractor shall clean the roadway, material sites, and all ground occupied by the Contractor in connection with the work of all rubbish, excess materials, and equipment. All parts of the work shall be left in a neat and presentable condition.

The Contractor shall provide street sweeping within one month after completion as directed by the Engineer.

Method of Payment
The Contractor shall be responsible for removal of slurry tracked by vehicles on to driveways if requested by residents or business; unless, documented by the Contractor as a deliberate act (i.e. driving past the flagman or barricades).

Full compensation for final clean up will be considered as included in the contract price for the placement of the slurry seal and no separate payment will be made therefor.

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.

Any utility facility if damaged by the contractor’s operation shall be repaired or replaced by the contractor and repair/replacement cost shall be borne entirely by the Contractor.

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.

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Appendix A

AQMD Recommendations

Dust Abatement Attachments

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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

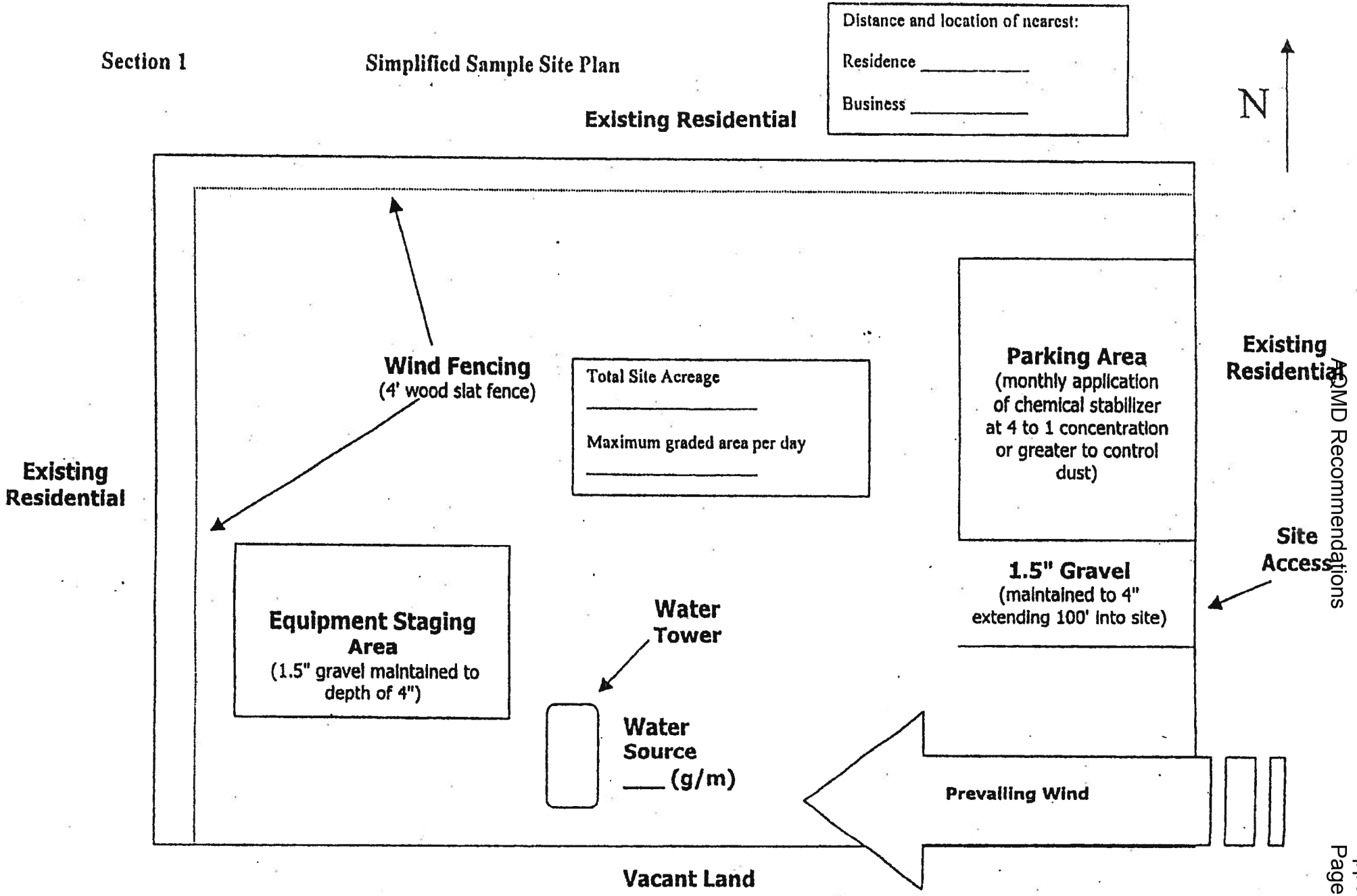
"Title Case" means the first letter of a word is capitalized and subsequent letters are lower case.

(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



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

☐ 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)

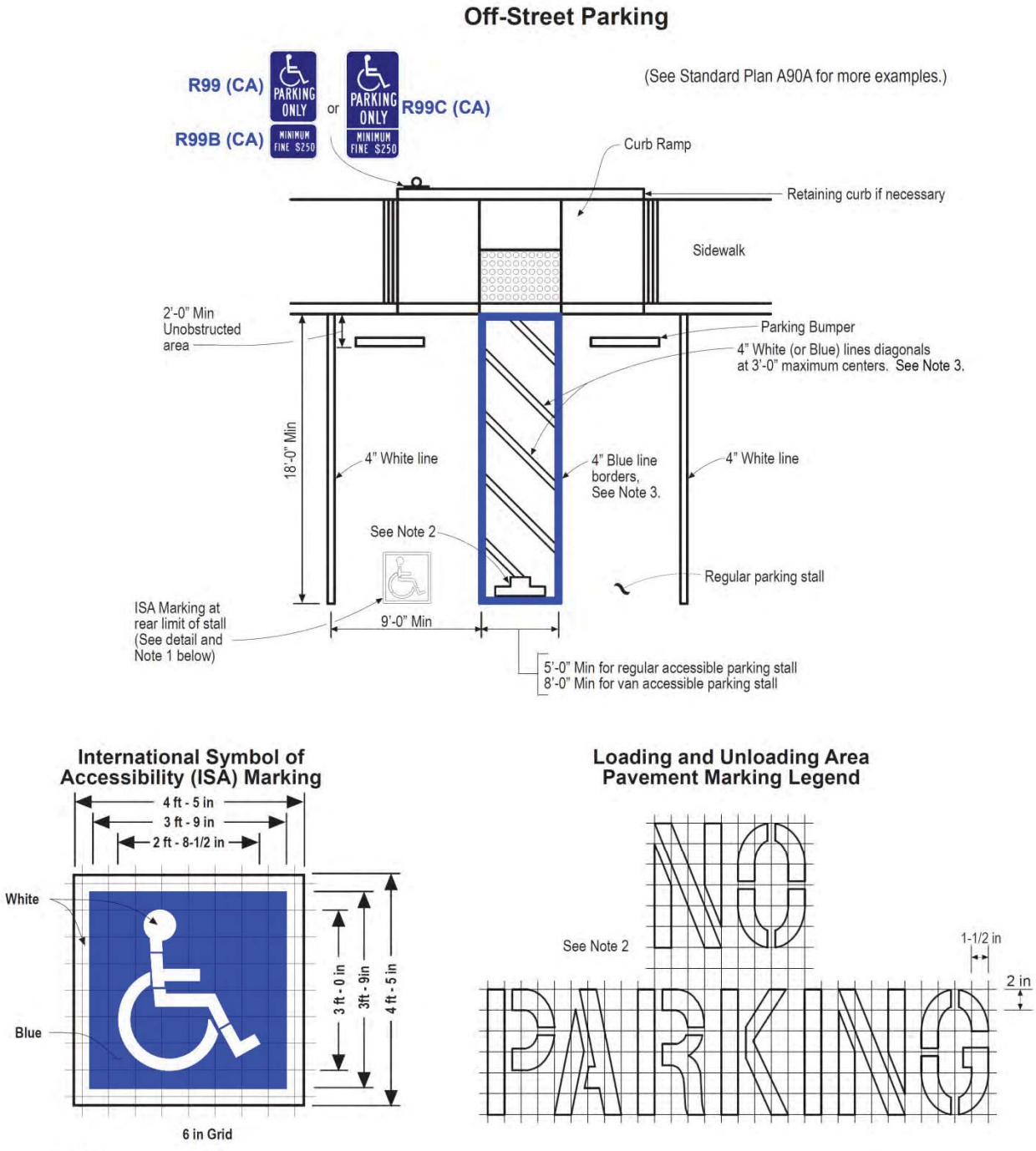
CONTROL OPTIONS

(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 (2 pages)

Figure 3B-22 (CA). Examples of Disabled Persons Parking Symbol, Legend and Related Markings (Sheet 1 of 2)

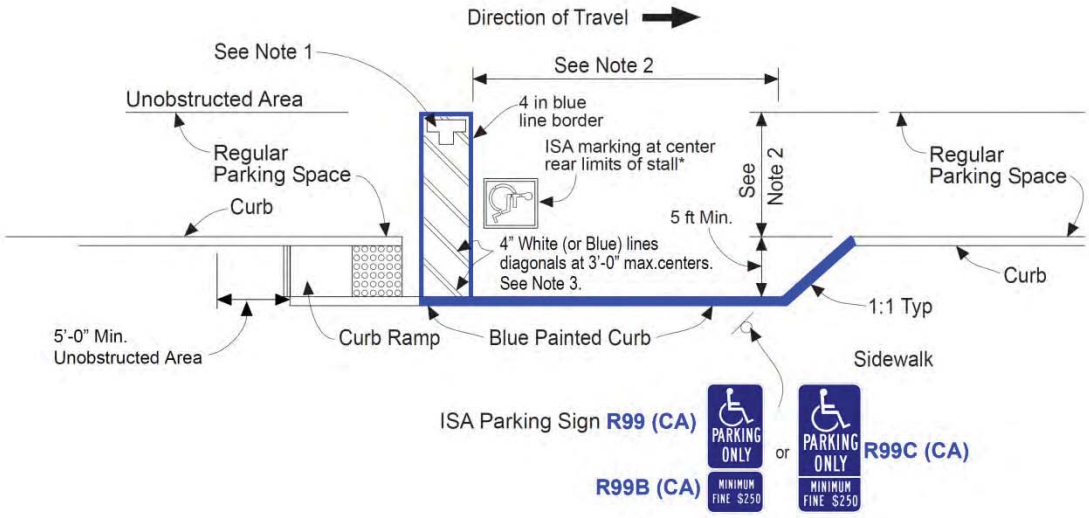


NOTES:

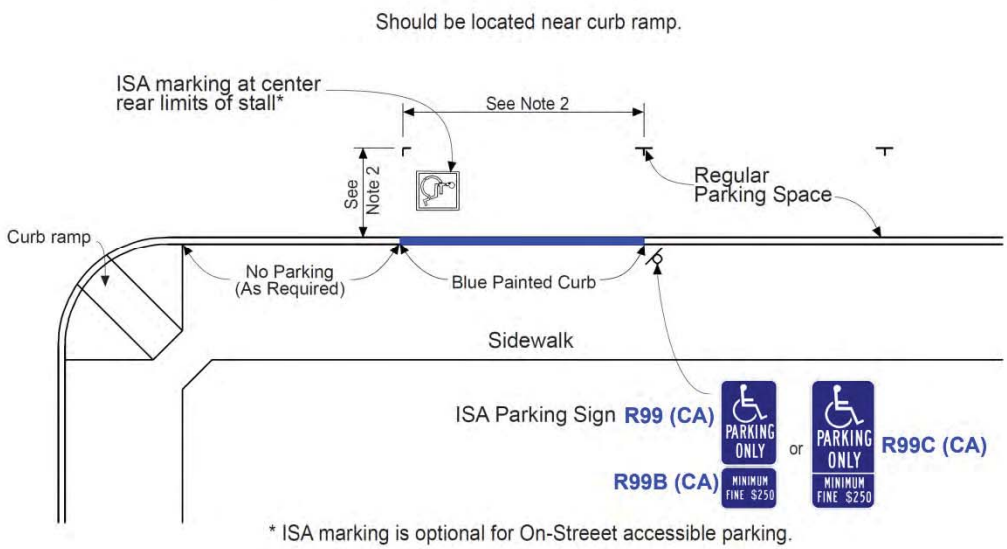
1. The design details for this symbol, legends, and related markings are shown in the Department of Transportation's Standard Plans. See Standard Plan A24C for square unit area for the ISA marking.
2. The words "NO PARKING" shall be painted in the loading and unloading area in white letters no less than 12 in high on a contrasting background and located so that it is visible to traffic enforcement officials. See Standard Plan A24E for square unit area for "NO PARKING" legend.
3. Loading and unloading area border shall be marked in blue paint. The hatched lines shall be painted a suitable contrasting color to the parking space. Blue or white paint is preferred.

Figure 3B-22 (CA). Examples of Disabled Persons Parking Symbol, Legend and Related Markings (Sheet 2 of 2)

On-Street Parking (Conventional)



On-Street Parking (Restricted Right of Way Width)



* ISA marking is optional for On-Streeet accessible parking.

NOTES:

1. The words "NO PARKING", shall be painted in white letters no less than 12 in high on a contrasting background and located so that it is visible to traffic enforcement officials. See Standard Plan A24E for square unit area for painting the legend "NO PARKING".
2. Accessible on-street parking spaces shall not be smaller in length or width than that specified by the local jurisdiction for other parking spaces, but not less than 20 ft in length and not less than 8 ft in width.
3. The hatched lines shall be painted a suitable contrasting color to the parking space. Blue or white paint is preferred.
4. Actual dimensions and curb geometry may differ from that shown. See Standard Plan A90B for additional details.