

City Of Garden Grove

INTER-DEPARTMENT MEMORANDUM

To:	Matthew J. Fertal	From:	William E. Murray	
Dept:	City Manager	Dept:	Public Works	
Subject:	CONSIDERATION OF AWARD OF CONTRACT TO SULLY MILLER CONTRACTING COMPANY FOR 2012 LOCAL STREET REHABILITATION PROJECT IFB NO. S-1095; CONSIDERATION OF RELATED BID PROTEST		Date:	May 8, 2012

OBJECTIVE

To consider the award of a contract with Sully Miller Contracting Company for 2012 Local Street Rehabilitation Project on various city streets and to consider related bid protest filed by Pavement Recycling Systems, Inc.

BACKGROUND

Selected streets for the 2012 Street Rehabilitation Project have been identified, reviewed, and all necessary preparation work has been completed.

DISCUSSION

In response to prescribed bidding procedures, six (6) bids were received, of which the following five (5) were deemed responsive:

Contractor	Total Cost Per Year
Sully Miller Contracting Company Brea, Ca.	\$2,917,670.24
RJ Noble Company Orange, Ca.	\$3,036,141.54
Hardy and Harper, Inc. Santa Ana, Ca.	\$3,070,000
All American Asphalt Corona, CA	\$3,187,704.36
Palp, Inc. DBA Excel Paving Company Long Beach, Ca.	\$3,548,324.14

CONSIDERATION OF AWARD OF CONTRACT TO SULLY MILLER CONTRACTING COMPANY FOR 2012 LOCAL STREET REHABILITATION PROJECT IFB NO. S-1095; CONSIDERATION OF RELATED BID PROTEST

May 8, 2012

Page 2

One (1) bid from the apparent low bidder, Pavement Recycling Systems, Inc. of Mira Loma, California, was deemed non-responsive for failure to complete all required bid items. In its bid, Pavement Recycling Systems, Inc. failed to provide a price item for Item 3 on Page 94 (Traffic Control). Page 7 of the Bid Packet states: **"Partial bids will NOT be accepted! All lines must be filled out on Attachment "B" including pages 93-94 for your bid to be considered responsive."** Not only is completion of all lines on Attachment "B" a mandatory requirement in order for a bid to be found responsive, Attachment "B" is the line item bid price list. Thus, this omission affects the bid amount, and to permit correction or clarification after opening of the bids would give Pavement Recycling Systems, Inc. an unfair advantage that other bidders did not enjoy.

The non-responsive bidder, Pavement Recycling Systems, Inc., filed a protest asserting that the bid of the second lowest bidder, Sully Miller Contracting Company, was non-responsive because it contained incomplete information in response to the submittals requested on page 32 of the bid specifications. Page 32 of the bid specifications calls for bidders to submit certain information at the time of their bid relating to their relevant experience with similar Cold Central Plan Recycling (CCPR) asphalt projects. The requested information included: (i) identification of the proposed emulsion and emulsions supplier and other projects where the proposed recycling emulsion has been successfully; (ii) description of the proposed central plant, construction method, expected production rates, and planned sequence of construction; (iii) evidence of completion by the contractor or subcontractor of five (5) CCPR asphalt projects in the last three (3) years (iv) quality control plan; and (v) verification of central plant compliance with applicable regulations. None of the submittals by any of the six bidders strictly conformed to all of these requested items.

The Bid Packet expressly provides that the "City reserves the right to reject any and all bids and to waive any informality in any bid received in the event that waiver is permitted by law." Bids that substantially conform to the bid specifications, but which are not strictly responsive, may be accepted, and any variance waived, so long as the variance cannot have affected the bid amount or given the bidder an unfair advantage not allowed other bidders.

In this case, page 32 of the specifications provides that approval of the Contractor/Subcontractor performing the CCPR is at the discretion of the City Engineer and requests the submittal of information designed to allow the City Engineer to confirm that bidders have the pertinent experience and are qualified to adequately perform the project. Although the information submitted by Sully Miller Contracting Company at the time of its bid was not strictly responsive to all of the items listed on page 32 of the Bid Packet, in the determination of the City Engineer,

CONSIDERATION OF AWARD OF CONTRACT TO SULLY MILLER CONTRACTING COMPANY FOR 2012 LOCAL STREET REHABILITATION PROJECT IFB NO. S-1095; CONSIDERATION OF RELATED BID PROTEST

May 8, 2012

Page 3

the information submitted was sufficient to establish that Sully Miller Contracting Company and its listed subcontractors are qualified and possess the relevant experience to complete the City's street rehabilitation project. In addition, none of the other bidders were able to strictly conform to the submittal requirements on page 32, and none of the bidders were found to be non-responsive as a result. Accordingly, any irregularity in the information provided by Sully Miller Contracting Company could not have affected the bid amount or given Sully Miller Contracting Company an unfair advantage not allowed to the other bidders. Therefore, Staff recommends that Pavement Recycling Systems, Inc.'s bid protest be denied and the contract be awarded to Sully Miller Contracting Company.

FINANCIAL IMPACT

Funding for the first year of the project is available in the 2011/2012 Street Division Budget and from a grant titled Proposition 1B Phase III obtained from the County of Orange. A termination clause has been included in the contract should funding become unavailable.

RECOMMENDATION

It is recommended that the City Council:

- Find that the bid of Pavement Recycling Systems, Inc. was non-responsive due to the omission of a price item for Traffic Control in the bid price list and that to award the contract to Pavement Recycling Systems, Inc. in light of such omission would give Pavement Recycling Systems, Inc. an unfair advantage that other bidders did not enjoy;
- Waive any irregularity in the bid submitted by Sully Miller Contracting Company and deny the protest of Pavement Recycling Systems, Inc.;
- Award the contract to lowest responsible bidder, Sully Miller Contracting Company, in the amount of \$2,917,670.24, for 2012 Local Street Rehabilitation Project; and
- Authorize the City Manager to execute the agreement on behalf of the City and make minor modifications as appropriate.

BY: 
WILLIAM E. MURRAY
Public Works Director/City Engineer

Attachments: Bid Protest Letter
Agreement

Recommended for Approval


Matthew Fertal
City Manager



Pavement Recycling Systems

10240 San Sevaine Way, Mira Loma, CA 91752
 PH: (951) 682-1091
 FAX: (951) 682-1094
 www.pavementrecycling.com

5 April, 2012

City of Garden Grove
 Attn. Sandra Segawa
 Purchasing Division
 11222 Acacia Parkway
 Garden Grove, CA 92840

Sent via Certified Mail
 7008 1140 0002 0984 7210

RE: IFB No. S-1095/Local Street Rehabilitation

Protest of Bid Proposal submitted by Sully-Miller Contracting

Dear Ms. Segawa,

Pavement Recycling Systems would like to formally protest the proposal submitted by Sully-Miller Contracting for the above referenced project. Our protest is based on the following items as stated on Page 32:

2) Description and specification of the proposed central plant, construction method, expected production rates, and planned sequence of construction.

Sully-Miller does not provide a specification for their proposed Central Plant, they do not include the construction method, and they do not provide production rates or a sequence of construction.

3) The Contractor (or Subcontractor) shall have completed a minimum of five (5) CCPR asphalt projects in the last three (3) years. Submit project name, agency/owner, project engineer, and construction dates.

There is no evidence submitted by Sully Miller Contracting showing the listed subcontractor for the CCPR "Western Pavement Solutions" has completed 5 CCPR projects within the last 5 years. Western Pavement Solutions did not obtain a California contractor's license until March 1, 2012 (license no. 970528). How could Western Pavement Solutions have completed the California projects Sully Miller references?

4) Quality Control Plan

The Quality Control Plan provided by Sully-Miller is for hot mix asphalt not Cold Central Plant materials.

5) Verification the Central Plant meets the proportioning requirements of California Test 109 and the applicable Air Quality Control Permits.

Sully-Miller did not provide supporting documentation that they meet either of these requirements.

Sully-Miller's proposal should be found non-responsive.

I appreciate your consideration.

Respectfully,

A handwritten signature in black ink, appearing to read 'Don Sante', with a stylized flourish at the end.

Don Sante
Senior Estimator

SECTION 4 - AGREEMENT

PROJECT AGREEMENT

THIS AGREEMENT is made this _ day of _____, 2012 by the CITY OF GARDEN GROVE, a municipal corporation, ("CITY"), and **Sully Miller Contracting Company**, hereinafter referred to as ("CONTRACTOR").

RECITALS:

The following recitals are a substantive part of this Agreement:

This Agreement is entered into pursuant to Garden Grove COUNCIL AUTHORIZATION, DATED _____.

CITY desires to utilize the services of Furnish All Labor, Material and Equipment for the 2012 Local Street Rehabilitation Project for the City of Garden Grove.

CONTRACTOR is qualified by virtue of experience, training, education, and expertise to accomplish services.

AGREEMENT

THE PARTIES MUTUALLY AGREE AS FOLLOWS:

- 4.0 **Compensation.** CONTRACTOR shall be compensated as follows:
Compensation under this agreement shall be a Not to exceed (NTE) amount of **Two Million Nine Hundred Seventeen Thousand Six Hundred Seventy Dollars and 24/100** (\$2,917,670.24) payable in arrears and in accordance with Bid Proposal (Attachment B), which is attached and is hereby incorporated by reference. Payment for work under this Agreement shall be made per invoice for work completed. All work shall be in accordance with Bid No. S-1095 and the Plans and Specifications (Attachment A), which are attached and are hereby incorporated by reference.
- 4.1 **General Conditions.** CONTRACTOR certifies and agrees that all the terms, conditions and obligations of the Contract Documents as hereinafter defined, the location of the job site, and the conditions under which the work is to be performed have been thoroughly reviewed, and enters into this Contract based upon CONTRACTOR'S investigation of all such matters and is in no way relying upon any opinions or representations of CITY. It is agreed that this Contract represents the entire agreement. It is further agreed that the Contract Documents including the Notice Inviting Bids, Special Instructions to Bidders, if any, and Contractor's Proposal, are incorporated in this Contract by reference, with the same force and effect as if the same were set forth at length herein, and that CONTRACTOR and its subcontractors, if any, will be and are bound by

any and all of said Contract Documents insofar as they relate in any part or in any way, directly or indirectly, to the work covered by this Contract.

"Project" as used herein defines the entire scope of the work covered by all the Contract Documents. Anything mentioned in the Specifications and not indicated in the Plans, or indicated in the Plans and not mentioned in the Specifications, shall be of like effect as if indicated and mentioned in both. In case of discrepancy in the Plans or Specifications, the matter shall be immediately submitted to City's Engineer, without whose decision CONTRACTOR shall not adjust said discrepancy save only at CONTRACTOR'S own risk and expense. The decision of the Engineer shall be final.

4.2 Materials and Labor. CONTRACTOR shall furnish, under the conditions expressed in the Plans and Specifications, at CONTRACTOR'S own expense, all labor and materials necessary, except such as are mentioned in the Specifications to be furnished by the CITY, to complete the project, in good workmanlike and substantial order. If CONTRACTOR fails to pay for labor or materials when due, CITY may settle such claims by making demand upon the surety to this Agreement. In the event of the failure or refusal of the surety to satisfy said claims, CITY may settle them directly and deduct the amount of payments from the Contract price and any amounts due to CONTRACTOR. In the event CITY receives a stop notice from any laborer or material supplier alleging non-payment by CONTRACTOR, CITY shall be entitled to deduct all of its costs and expenses incurred relating thereto, including but not limited to administrative and legal fees.

4.3 Project. The PROJECT is described as Furnish All Labor, Material and Equipment for the 2012 Local Street Rehabilitation Project for the City of Garden Grove.

4.4 Plans and Specifications. The work to be done is described in a set of detailed Plans and Specifications entitled Furnish All Labor, Material and Equipment for the 2012 Local Street Rehabilitation Project for the City of Garden Grove.

Said Plans and Specifications and any revisions, amendments or addenda thereto are attached hereto and incorporated herein as part of this Contract and referred to by reference. The work to be done must also be in accordance with the General Provisions, Standard Specifications and Standard Plans of City which are also incorporated herein and referred to by reference.

4.5 Time of Commencement and Completion. CONTRACTOR agrees to commence the Project with TEN (10) calendar days from the date set forth in the "Notice to Proceed" sent by City and shall diligently prosecute the work to completion **no later than May 30, 2012** excluding delays caused or authorized by the CITY as set forth in Sections 4.7, 4.8 and 4.9 hereof. The completion date shall include any material delivery.

4.6 Time is of the Essence. Time is of the essence of this Contract. As required by the Contract Documents, CONTRACTOR shall prepare and obtain approval of all shop drawings, details and samples, and do all other things necessary and incidental to the prosecution of CONTRACTOR'S work in conformance with an approved construction progress schedule. CONTRACTOR shall coordinate the work covered by this Contract with that of all other contractors, subcontractors and of the CITY, in a manner that will facilitate the efficient completion of the entire work in accordance with Section 4.5 herein. CITY shall have complete control of the premises on which the work is to be performed and shall have the right to decide the time or order in which the various portions of the work shall be installed or the priority of the work of other subcontractors, and, in general, all matters representing the timely and orderly conduct of the work of CONTRACTOR on the premises.

4.7 Excusable Delays. CONTRACTOR shall be excused for any delay in the prosecution or completion of the Project caused by acts of God; inclement weather; damages caused by fire or other casualty for which CONTRACTOR is not responsible; and act, neglect or default of CITY; failure of CITY to make timely payments to CONTRACTOR; late delivery of materials required by this CONTRACT to be furnished by CITY; combined action of the workers in no way caused by or resulting from default or collusion on the part of CONTRACTOR; a lockout by CITY; or any other delays unforeseen by CONTRACTOR and beyond CONTRACTOR'S reasonable control.

City shall extend the time fixed in Section 4.5 herein for completion of the Project by the number of days CONTRACTOR has thus been delayed, provided that CONTRACTOR presents a written request to CITY for such time extension within fifteen (15) days of the commencement of such delay and CITY finds that the delay is justified. CITY'S decision will be conclusive on the parties to this Contract. Failure to file such request within the time allowed shall be deemed a waiver of the claim by CONTRACTOR.

No claims by CONTRACTOR for additional compensation or damages for delays will be allowed unless CONTRACTOR satisfies CITY that such delays were unavoidable and not the result of any action or inaction of CONTRACTOR and that CONTRACTOR took all available measures to mitigate such damages. Extensions of time and extra compensation as a result of incurring undisclosed utilities will be determined in accordance with Section 9-103A of the State of California Department of Transportation Standard Specifications. The CITY'S decision will be conclusive on all parties to this Contract.

4.8 Extra Work. The Contract price includes compensation for all work performed by CONTRACTOR, unless CONTRACTOR obtains a written change order signed by a designated representative of CITY specifying the exact nature of the extra work and the amount of extra compensation to be paid all as more particularly set forth in Section 4.9 hereof. CITY shall extend the time fixed in Section 4.5 for completion of the Project by the number of days reasonably required for

CONTRACTOR to perform the extra work, as determined by CITY'S Engineer. The decision of the Engineer shall be final.

4.9 Changes in Project.

4.9.1 CITY may at any time, without notice to any surety, by written order designated or indicated to be a change order, make any change in the work within the general scope of the Contract, including but not limited to changes:

- a. in the Specifications (including drawings and designs);
- b. in the time, method or manner of performance of the work;
- c. in the City-furnished facilities, equipment, materials, services or site; or
- d. directing acceleration in the performance of the work.

4.9.2 A change order shall also be any other written order (including direction, instruction, interpretation or determination) from the CITY which causes any change, provided CONTRACTOR gives the CITY written notice stating the date, circumstances and source of the order and that CONTRACTOR regards the order as a change order.

4.9.3 Except as provided in this Section 4.9, no order, statement or conduct of the CITY or its representatives shall be treated as a change under this Section 9 or entitle CONTRACTOR to an equitable adjustment.

4.9.4 If any change under this Section 4.9 causes an increase or decrease in CONTRACTOR'S actual, direct cost or the time required to perform any part of the work under this Contract, whether or not changed by any order, the CITY shall make an equitable adjustment and modify the Contract in writing. Except for claims based on defective specifications, no claim for any change under paragraph (4.9.2) above shall be allowed for any costs incurred more than 20 days before the CONTRACTOR gives written notice as required in paragraph (4.9.2). In the case of defective specifications for which the CITY is responsible, the equitable adjustment shall include any increased direct cost CONTRACTOR reasonably incurred in attempting to comply with those defective specifications.

4.9.5 If CONTRACTOR intends to assert a claim for an equitable adjustment under this Section 4.9, it must, within thirty (30) days after receipt of a written change order under paragraph (4.9.1) or the furnishing of a written notice under paragraph (4.9.2), submit a written statement to the CITY setting forth the general nature and monetary extent of such claim. The CITY may extend the 30-day period. CONTRACTOR may include the statement of claim in the notice under paragraph (4.9.2) of this Section 4.9.

4.9.6 No claim by CONTRACTOR for an equitable adjustment shall be allowed if made after final payment under this Agreement.

4.9.7 CONTRACTOR hereby agrees to make any and all changes, furnish the materials and perform the work that CITY may require without nullifying this Contract. CONTRACTOR shall adhere strictly to the Plans and Specifications unless a change therefrom is authorized in writing by the CITY. Under no condition shall CONTRACTOR make any changes to the Project, either in additions or deduction, without the written order of the CITY and the CITY shall not pay for any extra charges made by CONTRACTOR that have not been agreed upon in advance in writing by the CITY. CONTRACTOR shall submit immediately to the CITY written copies of its firm's cost or credit proposal for change in the work. Disputed work shall be performed as ordered in writing by the CITY and the proper cost or credit breakdowns therefore shall be submitted without delay by CONTRACTOR to CITY.

4.10 Liquidated Damages for Delay. The parties agree that if the total work called for under this Contract, in all parts and requirements, is not completed within the time specified in Section 4.5 herein, plus the allowance made for delays or extensions authorized under Section 4.7, 4.8 and 4.9 herein, the CITY will sustain damage which would be extremely difficult and impractical to ascertain. The parties therefore agree that CONTRACTOR will pay to CITY the sum of two hundred and fifty dollars (\$250.00) per day for each and every calendar day during which completion of the Project is so delayed. CONTRACTOR agrees to pay such liquidated damages and further agrees that CITY may offset the amount of liquidated damages from any moneys due or that may become due CONTRACTOR under the Contract.

4.11 Contract Price and Method of Payment. CITY agrees to pay and the CONTRACTOR agrees to accept as full consideration for the faithful performance of this Contract, subject to any subsequent additions or deductions as provided in approved change orders, the sum as itemized in the bid proposal. Progress payments shall be made to the CONTRACTOR per month for each successive month as the work progresses. The CONTRACTOR shall be paid such sum as will bring the total payments received since the commencement of the work up to ninety percent (90%) of the value of the work completed, less all previous payments, provided that the CONTRACTOR submits the request for payment prior to the end of the day required to meet the payment schedule. The CITY will retain five percent (5%) of the amount of each such progress estimate and material cost until 30 days after the recordation of the Notice of Completion.

Payments shall be made on demands drawn in the manner required by law, accompanied by a certificate signed by the CITY'S Engineer, stating that the work for which payment is demanded has been performed in accordance with the terms of the Contract. Partial payments of the Contract price shall not be considered as an acceptance of any part of the work.

4.12 Substitution of Securities in Lieu of Retention of Funds. Pursuant to California Public Works Contract Code Section 22300, the CONTRACTOR will be entitled to post approved securities with the CITY or an approved financial institution in order to have the CITY release funds retained by the CITY to ensure performance of the Contract. CONTRACTOR shall be required to execute an addendum to this Contract together with escrow instructions and any other documents in order to effect this substitution.

4.13 Completion. CITY may require affidavits or certificates of payment and/or releases from any subcontractor, laborer or material supplier in connection with Stop Notices, which have been filed under the provisions of the statutes of the State of California.

4.14 Contractor's Employee Compensation.

4.14.1 General Prevailing Rate. CONTRACTOR shall comply with all applicable requirements of Division 2, Part 7, Chapter 1 of the California Labor Code and all applicable federal requirements respecting the payment of prevailing wages. If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the prevailing wage rates determined by the Director of the Department of Industrial Relations (DIR) for similar classifications of labor, the CONTRACTOR and its Sucontractors shall pay not less than the higher wage rate. The DIR will not accept lower State wage rates not specifically included in the Federal minimum wage determinations. This includes "helper" (or other classifications based on hours of experience) or any other classification not appearing in the Federal Wage determinations. Where Federal wage determinations do not contain the State wage rate determination otherwise available for use by the CONTRACTOR and Subcontractors, the CONTRACTOR and its Subcontractors shall pay not less than the Federal Minimum wage rate which most closely approximates the duties of the employees in question." CONTRACTOR shall be responsible for compliance with the most recent Federal Wage Requirements and may reference <http://www.wdol.gov/dba.aspx#0>.

4.14.2 Forfeiture for Violation. CONTRACTOR shall, as a penalty to the CITY, forfeit fifty dollars (\$50.00) for each calendar day or portion thereof for each worker paid (either by the CONTRACTOR or any subcontractor under it) less than the prevailing rate of per diem wages as set by the Director of Industrial Relations, in accordance with Sections 1770-1780 of the California Labor Code for the work provided for in this Contract, all in accordance with Section 1775 of the Labor Code of the State of California.

4.14.3 Travel and Subsistence Pay. Section 1773.8 of the Labor Code of the State of California, regarding the payment of travel and subsistence

payments, is applicable to this Contract and CONTRACTOR shall comply therewith.

4.14.4 Apprentices. Section 1777.5, 1777.6 and 1777.7 of the Labor Code of the State of California, regarding the employment of apprentices is applicable to this Contract and the CONTRACTOR shall comply therewith if the prime contract involves thirty thousand dollars (\$30,000.00) or more or twenty (20) working days, or more; or if contracts of specialty contractors not bidding for work through the general or prime contractor are two thousand dollars (\$2,000.00) or more for five (5) working days or more.

4.14.5 Workday. In the performance of this Contract, not more than eight (8) hours shall constitute a day's work, and CONTRACTOR shall not require more than eight (8) hours of labor in a day from any person employed by him thereunder except as provided in paragraph (4.14.2) above. CONTRACTOR shall conform to Article 3, Chapter 1, Part 7 (Sections 1810 et seq.) of the Labor Code of the State of California and shall forfeit to the CITY as a penalty, the sum of twenty-five dollars (\$25.00) for each worker employed in the execution of this Contract by CONTRACTOR or any subcontractor for each calendar day during which any worker is required or permitted to labor more than eight (8) hours in any one calendar day and forty (40) hours in any one week in violation of said Article. CONTRACTOR shall keep an accurate record showing the name and actual hours worked each calendar day and each calendar week by each worker employed by CONTRACTOR in connection with the Project.

4.14.6 Records of wages: Inspection. CONTRACTOR agrees to maintain accurate payroll records showing the name, address, social security number, work classification, straight-time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by it in connection with the Project and agrees to require that each of its subcontractors does the same. All payroll records shall be certified as accurate by the applicable contractor or subcontractor or its agent have authority over such matters. CONTRACTOR further agrees that its payroll records and those of its subcontractors shall be available to the employee or employee's representative, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards and shall comply with all the provisions of Labor Code Section 1776, in general.

4.15 Surety Bonds. CONTRACTOR shall, upon entering into performance of this Agreement, furnish bonds in the amount of one hundred percent (100%) of the Contract price bid, to guarantee the faithful performance of the work, and the other in the amount of one hundred percent (100%) of the Contract price bid to guarantee payment of all claims for labor and materials furnished. This Contract shall not become effective until such bonds are

supplied to and approve by the CITY. The Surety Company must have an AM Best rating of A- VII or better.

4.16 Insurance.

4.16.1 CONTRACTOR is also aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or undertake self-insurance with provisions of that Code and will comply with such provisions before commencing the performance of the work of this Contract.

4.16.2 CONTRACTOR and all subcontractors will carry and provide Workers' Compensation insurance for the protection of its employees during the progress of the work and *provide Employers Liability in an amount not less than \$1,000,000*. The insurer shall waive its rights of subrogation against the CITY, its officers, agents and employees and shall issue a certificate to the policy evidencing same.

4.16.3 CONTRACTOR shall at all times carry, for all operations hereunder policies of insurance for: (1) bodily injury, including death, and property damage liability insurance; (2) auto liability including mobile equipment if any, for bodily injury and property damage coverage; (3) and builders' all risk insurance. All insurance coverage shall be in amounts specified by CITY in Section 4.16.4 Insurance Requirements. CONTRACTOR shall provide evidence of insurance coverage by the issuance of a certificate of insurance and endorsements in a form prescribed by the CITY. Policies shall be underwritten by insurance companies satisfactory to CITY for all operations, subcontract work, contractual obligations, on-going, products and completed operations, all hired, leased, owned and non-owned vehicles and mobile equipment if any. Said insurance coverage obtained by the CONTRACTOR, excepting workers' compensation coverage, shall name the CITY, its Officers, Agents, Employees, Engineers, and Consultants for this Contract, and all public agencies from whom permits will be obtained and their Directors, Officers, Agents and Employees, as determined by the CITY, as additional insured on said policies.

For any claims related to this Agreement, CONTRACTOR'S insurance coverage shall be primary insurance as respects CITY, its officers, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by the CITY, its officers, officials, employees, agents, or volunteers shall by excess of the CONTRACTOR'S insurance and shall not contribute with it.

4.16.4 Before CONTRACTOR performs any work at, or prepares or delivers materials to, the site of construction, CONTRACTOR shall furnish certificates of insurance and endorsements evidencing the foregoing insurance coverage and such certificates of insurance and endorsements

shall provide the name and policy number of each carrier and that the insurance is in force and will not be canceled without thirty (30) days written notice to the CITY. CONTRACTOR shall maintain all of the foregoing insurance coverage in force until the work under this Contract is satisfactorily and fully completed. The requirement for carrying the foregoing insurance shall not derogate from the provisions for indemnification of CITY by Contractor under Section 4.17 of this Contract. Notwithstanding nor diminishing the obligations of CONTRACTOR with respect to the foregoing, CONTRACTOR shall subscribe for and maintain in full force and effect during the life of this Contract, the following insurance in amounts not less than the amounts specified and issued by a company having a Best's Guide Rate of A-, Class VII or better (claims made and modified occurrence policies are not acceptable)

4.16.5 COMMENCEMENT OF WORK. CONTRACTOR shall not commence work under this Agreement until all certificates and endorsements have been received and approved by the CITY. All insurance required by this Agreement shall contain a Statement of Obligation on the part of the carrier to notify the CITY of any material change, cancellation, or termination at least thirty (30) days in advance *and provide a Waiver of Subrogation in favor of the City.*

4.16.6 INSURANCE AMOUNTS. CONTRACTOR shall maintain the following insurance for the duration of this Agreement *and shall require and verify that all sub-contractors provide and maintain insurance coverage meeting the requirements herein. City reserves the right to modify these requirements, including but not limited to, limits based on the nature of the work, prior experience, insurer, coverage or other special circumstances.*

For any hazardous materials or products, please provide MSDS sheets.

- (a) Commercial general liability *in an amount not less than \$2,000,000 per occurrence, including products liability; (claims made and modified occurrence policies are not acceptable);* Insurance companies must be acceptable to CITY and have an AM Best's Guide Rating of A-, Class VII or better, as approved by the CITY.
- (b) Automobile liability *in an amount not less than \$1,000,000 combined single limit; (claims made and modified occurrence policies are not acceptable);* Insurance companies must be acceptable to CITY and have an AM Best's Guide Rating of A-, Class VII or better, as approved by the CITY.
- (c) Excess liability, *following form,* coverage shall be provided for any underlying policy that does not meet the insurance requirements

set forth herein (**claims made and modified occurrence policies are not acceptable**). Insurance companies must be acceptable to CITY and have a Best's Guide Rating of A-Class VII or better, as approved by the CITY.

An Additional Insured Endorsement, **ongoing products and completed operations, including products liability**, for the policy under section 4.16.6(a) shall designate CITY, its officers, officials, employees, agents, and volunteers as additional insureds for liability arising out of work or operations performed by or on behalf of the CONTRACTOR. CONTRACTOR shall provide to CITY proof of insurance and endorsement forms that conform to city's requirements, as approved by the CITY.

An Additional Insured Endorsement for the policy under section 4.16.6 (b) shall designate CITY, its officers, officials, employees, agents, and volunteers as additional insureds for automobiles owned, leased, hired, or borrowed by the CONTRACTOR. CONTRACTOR shall provide to CITY proof of insurance and endorsement forms that conform to CITY's requirements, as approved by the CITY.

An Additional Insured Endorsement for the policy under section 4.16.6 (c) shall designate CITY, its officers, officials, employees, agents, and volunteers as additional insureds under the excess liability policy. CONTRACTOR shall provide to CITY proof of insurance stating the excess liability policy follows form, additional insured endorsement forms, and the schedule of underlying policies with policy numbers, that conform to CITY's requirements, as approved by the CITY. Information for the excess policy only needs to be provided if the underlying policies do not meet the policy limits set forth herein.

For any claims related to this Agreement, CONTRACTOR's insurance coverage shall be primary insurance as respects CITY, its officers, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by the CITY, its officers, officials, employees, agents, or volunteers shall by excess of the CONTRACTOR's insurance and shall not contribute with it.

4.17 Risk and Indemnification. All work covered by this Contract done at the site of the Project or in preparing or delivering materials to the site shall be at the risk of CONTRACTOR alone. CONTRACTOR agrees to save, indemnify and keep CITY, its Officers, Agents, Employees, Engineers, and Consultants for this Contract, and all public agencies from whom permits will be obtained ant their directors, Officers, Agents and Employees harmless against any and all liability, claims, judgments, costs and demands, including demands arising from injuries or death of persons (CONTRACTOR'S employees included) and damage to property, arising directly or indirectly out of the obligations herein undertaken or out of the operations conducted by CONTRACTOR, save and

except claims or litigation arising through the sole negligence or sole willful misconduct of CITY and will make good to reimburse CITY for any expenditures, including reasonable attorneys' fees CITY may incur by reason of such matters, and if requested by CITY, will defend any such suits at the sole cost and expense of CONTRACTOR.

4.18 Termination.

4.18.1 This Contract may be terminated in whole or in part in writing by the CITY for its convenience, provided that the CONTRACTOR is given (1) not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and (2) an opportunity for consultation with the terminating party prior to termination. Termination of contract shall conform to Section 8-1.11 of the State of California, Department of Transportation Standard Specifications.

4.18.2 If termination for default or convenience is effected by the CITY, an equitable adjustment in the price provided for in this Contract shall be made, but (1) no amount shall be allowed for anticipated profit on unperformed services or other work, and (2) any payment due to the CONTRACTOR at the time of termination may be adjusted to cover any additional costs to the CITY because of the CONTRACTOR'S default. The equitable adjustment for any termination shall provide for payment to the CONTRACTOR for services rendered and expenses incurred in accordance with section 8-1.11 of the State of California, Department of Transportation Standard Specifications.

4.18.3 Upon receipt of a termination action under paragraph (4.18.1) or (4.18.2) above, the CONTRACTOR shall (1) promptly discontinue all affected work (unless the notice directs otherwise), and (2) deliver or otherwise make available to the CITY all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the CONTRACTOR in performing this Contract whether completed or in process.

4.18.4 Upon termination under paragraphs (4.18.1) and (4.18.2) above, the CITY may take over the work and may award another party an agreement to complete the work under this Contract.

4.19 Warranty. The CONTRACTOR agrees to perform all work under this Contract in accordance with the CITY'S designs, drawings and specifications.

The CONTRACTOR guarantees for a period of one (1) year from the date of the notice of completion of the work that the completed work is free from all defects due to faulty materials, equipment or workmanship and that he shall promptly make whatever adjustments or corrections which may be necessary to cure any defects, including repairs or any damage to other parts of the

system resulting from such defects. The CITY shall promptly give notice to the CONTRACTOR of observed defects. In the event that the CONTRACTOR fails to make adjustments, repairs, corrections or other work made necessary by such defects, the CITY may do so and charge the CONTRACTOR the cost incurred. The performance bond shall remain in full force and effect through the guarantee period.

The CONTRACTOR'S obligations under this clause are in addition to the CONTRACTOR'S other express or implied assurances provided under this Contract and in no way diminish any other rights that the CITY may have against the CONTRACTOR for faulty materials, equipment or work.

4.20 Attorneys' Fees. If any action at law or in equity is necessary to enforce or interpret the terms of this Contract, the prevailing party shall be entitled to reasonable attorneys' fees, costs and necessary disbursements in addition to any other relief to which it may be entitled. If any action is brought against the CONTRACTOR or any subcontractor to enforce a Stop Notice or Notice to Withhold, which named the CITY as a party to said action, the CITY shall be entitled to reasonable attorneys' fees, costs and necessary disbursements arising out of the defense or such action by the CITY. The CITY shall be entitled to deduct its costs for any Stop Notice filed, whether court action is involved or not.

4.21 Notices. Any notice required or permitted under this Contract may be given by ordinary mail at the address set forth below. Any party whose address changes shall notify the other party in writing.

To CITY: City of Garden Grove
 City Attorney
 11222 Acacia Parkway
 Garden Grove, California 92840

To CONTRACTOR: Sully-Miller Contracting Company
 Attention: Mike Edwards, Vice President
 135 South State College Blvd. (Suite 400)
 Brea, CA 92821

IN WITNESS THEREOF, these parties have executed this Project Agreement on the day and year shown below.

Date: _____

"CITY"
CITY OF GARDEN GROVE

By: _____
City Manager

ATTEST:

City Clerk

Date: _____

"CONTRACTOR"
Sully-Miller Contracting Company

Contractor's State Lic. No. 747612, A & C10

Expiration Date: MARCH 31, 2014

By: _____

Title: GARY DOWNEY, ASSISTANT SECRETARY

Date: ARIL 5, 2012

Tax ID No. 33-0787630

If CONTRACTOR is a corporation, a Corporate Resolution and/or Corporate Seal is required. If a partnership, Statement of Partnership must be submitted to the CITY.

APPROVED AS TO FORM:

Garden Grove City Attorney

CALIFORNIA ALL-PURPOSE ACKNOWLEDGEMENT

STATE OF CALIFORNIA

COUNTY OF ORANGE



On April 6, 2012 before me, M. Sykes, personally appeared Gary Downey

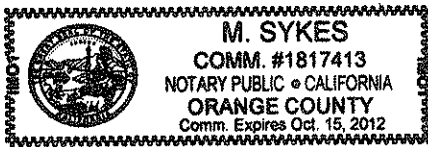
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature _____

M. Sykes
M. Sykes, Notary Public



Notary Seal

OPTIONAL

Description of Attached Document

Title or Type of Document: Section 4 - Agreement

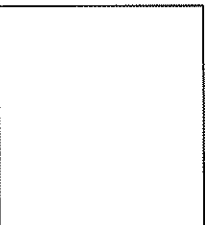
Document Date: April 5, 2012 Number of Pages: 1

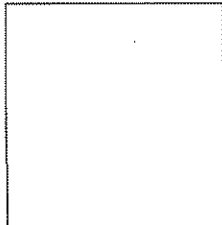
Signer(s) Other Than Named Above: None

Capacity(ies) Claimed by Signer(s):

Signer's Name Gary Downey Signer's Name _____

- | | |
|---|---|
| <input type="checkbox"/> Individual | <input type="checkbox"/> Individual |
| <input checked="" type="checkbox"/> Corporate Officer – Title(s) <u>Assistant Secretary</u> | <input type="checkbox"/> Corporate Officer – Title(s) _____ |
| <input type="checkbox"/> Partner – Limited/General _____ | <input type="checkbox"/> Partner – Limited/General _____ |
| <input type="checkbox"/> Attorney In Fact _____ | <input type="checkbox"/> Attorney In Fact _____ |
| <input type="checkbox"/> Trustee _____ | <input type="checkbox"/> Trustee _____ |
| <input type="checkbox"/> Guardian or Conservator _____ | <input type="checkbox"/> Guardian or Conservator _____ |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ |

Right Thumbprint
of Signer


Right Thumbprint
of Signer


Signer is Representing: SULLY-MILLER CONTRACTING COMPANY

CERTIFICATE OF INCUMBENCY AND RESOLUTION

I, Gary Downey, do hereby certify that I am the Assistant Secretary of Sully-Miller Contracting Company, a Delaware corporation, and that as such I have access to and custody of the corporate records and minute books of said corporation.

And I do hereby further certify that the following persons are duly elected officers of said corporation.

<u>TITLE</u>	<u>NAME</u>
Chairman of the Board	Gordon R. Crawley
President	David Martinez
Chief Financial Officer/Treasurer/Vice President	Timothy P. Orchard
Vice President/Assistant Secretary	Michael Edwards
Vice President	Scott Bottomley
Secretary	Anthony L. Martino II
Assistant Secretary	George Aldrich
Assistant Secretary	Gary Downey
Assistant Secretary	Dennis Gansen

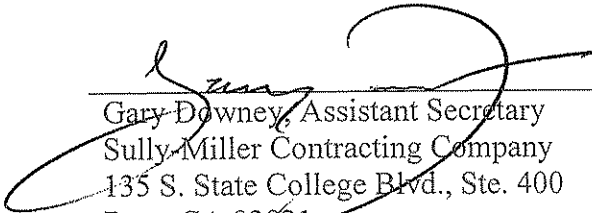
I further certify that the following is a true and correct copy of a resolution duly adopted by the Board of Directors of said Company at a meeting held on August 11, 2009, and that this resolution has not been in any way rescinded, annulled, or revoked but the same is still in full force and effect:

“AUTHORITY TO EXECUTIVE BIDS AND CONTRACTS”

Resolved, that any officer or assistant officer of this Company be and each of them is hereby authorized to execute in the name and on behalf of this Company under its corporate seal any and all proposals for the sale of products, merchandise and services of this Company and any bids and performance bonds required in connection therewith, to the United States, and of the State, territories and dependencies of the United States, the District of Columbia, cities, towns, townships, counties, school districts, and to the department, political subdivisions, agencies or wholly-owned corporations thereof, or to any other person.”

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal this 1st day of September 2011.

(SEAL)



Gary Downey, Assistant Secretary
Sully-Miller Contracting Company
135 S. State College Blvd., Ste. 400
Brea, CA 92821

Attachment "A"

**IFB NO. S-1095
CITY OF GARDEN GROVE
2012 LOCAL STREET REHABILITATION
PROJECT**

Technical Specification

SPECIAL PROVISIONS

ARTICLE	SPECIAL PROVISIONS	PAGE(S)
1.	Construction Administration Procedures	30-94
2.	Submittals	32
3.	Construction Administration Procedures	32-33
4.	Cooperation	33
5.	Schedule of Construction and Order of Work	33-34
6.	Street Lists	34-35
7.	Typical Section Diagram	36
8.	Special Work Hours	37
9.	Temporary Driving Surfaces	37
10.	Mobilization	37
11.	Notification of Residents and Businesses	38
12.	Stormwater and Non-Stormwater Pollution Control	39-44
13.	Traffic Control	44-48
14.	Cooperation and Collateral Work	48-49
15.	Street Maintenance	49
16.	Protection and Restoration of Existing Improvements	49
17.	Preservation of Property and Survey Monuments	50
18.	Protection and Restoration of Underground Utilities & Facilities	50-51
19.	Dust Control	51-53
20.	Clean Up	54
21.	Adjust Storm Drain Manhole Rings and Covers, Sewer Manhole Covers, and Water Valve Covers and Gas Valve Covers to Grade	54-55
22.	Cold Central Plant Recycling (CCPR) Asphalt	55
23.	Just In Time Training	55-56
24.	Project Mix Design	56-61
25.	Method of test for Determining the Percent of Emulsified Recycling Agent to Use for Cold Recycling of Asphalt Concrete	61-66
26.	Construction Methods	66-67
27.	Full Depth Asphalt Removal	67
28.	Central Plant Location	67
29.	Subgrade and Surface Preparation	67-68
30.	Mixing Proportioning	68-69
31.	Transportation	69
32.	Placement	69-70
33.	Cement Stabilization Specification	70-73
34.	Compaction	73-74
35.	Cure and Maintenance	74-75
36.	Secondary Compaction	75
37.	Smoothness	75
38.	Material Acceptance	75-76
39.	Method of Measurement	76
40.	Payment	76-77
41.	Asphalt Concrete (PG64-10)	77-83
42.	Paint Binder	83
43.	Paving Equipment	83-84
44.	Asphalt Placement	84
45.	Compaction - Residential and Arterial/Collector	84-85
46.	Payment	85
47.	Traffic Striping and Pavement Markings	85-87
48.	Pavement Markers	87-88
49.	Completion and Acceptance	88-94

**SPECIAL PROVISIONS
PROJECT NO. S-1095
2012 LOCAL STREET REHABILITATION
PROJECT**

PROJECT SPECIFIC SCOPE OF WORK

The work to be done consists of furnishing all labor, materials, necessary tools and machinery, supervision, and all utility and transportation services required for the construction of street improvements, but is not limited to:

- Resurfacing of forty-two (42) local streets with cold central plant recycling (CCPR) asphalt and asphalt concrete overlay as described in these specifications and "Typical Section Drawing(s)" included in Appendix A; Eight (8) of the forty-two (42) streets will be referred to as; **Prop 1B Phase III** and will be billed separately and all invoices pertaining to those specific streets shall be designated as such.
- Adjustment of utility manholes, valves, and water meter box;
- Re-establishment of disturbed traffic striping, pavement markers and markings.

The scope of work shall conform and adhere to all of the provisions of "**Greenbook**" **Standard Specifications for Public Works Construction latest edition**, with emphasis on Section 2 and the following additions:

The intent of this project is to construct all items of work complete in place and in accordance with the project plans, specifications, and as directed by the Engineer. By submitting his/her bid, the Contractor acknowledges that the unit prices as shown on the bid proposal represent the cost necessary to bring in the equipment, tools, materials and labor to complete this project within the contract time required.

When unforeseen difficulties or conflict is encountered, Contractor shall notify the Engineer immediately upon their discovery and before the existing conditions are disturbed. Contractor shall also allow the Engineer reasonable time to investigate the conditions and make determinations of its conditions. If the Engineer determines that additional time is needed to evaluate the difficulties at hand, the Engineer shall have the right to reschedule, reassign, transfer or move within the project site any labor, materials, tools, equipment and alter the sequence of construction activities deemed necessary to carry out the intent of this project, at no cost to the City.

The Contractor cannot withdraw from the project site any labor, materials, tools and equipment without prior written approval by the Engineer or his authorized representative. The Contractor, therefore, shall have no claim against the City for delay, standby time of tools, equipment and labor, damages, liability and loss of profit, when it is necessary for the Engineer to exercise these requirements.

If on any working day after the final paving commences, the Contractor fails to complete a minimum of one of the following or 500 tons of placed asphalt, for reasons other than inclement weather, equipment breakdown or as directed by the Engineer, a reduction of \$500 per day will be deducted from final payment.

Full compensation for conforming to the requirements of this Section shall be considered as included in the Contract bid prices for the various items of work. No separate payment will be allowed.

SUBMITTALS

At the time of bid, the Contractor shall furnish the following information regarding the Cold Central Plant Recycling (CCPR) asphalt to the Engineer. Approval of the Contractor/Subcontractor performing the CCPR is at the discretion of the Engineer.

- 1) Emulsion and emulsion supplier. Identification that the proposed recycling emulsion has been successfully used on at least five (5) other CCPR asphalt projects in California over the past five (5) years, including project name, agency/owner, project engineer, and construction dates.
- 2) Description and specification of the proposed central plant, construction method, expected production rates, and planned sequence of construction.
- 3) The Contractor (or Subcontractor) shall have completed a minimum of five (5) CCPR asphalt projects in the last three (3) years. Submit project name, agency/owner, project engineer, and construction dates
- 4) Quality Control Plan
- 5) Verification the Central Plant meets the proportioning requirements of California Test 109 and the applicable Air Quality Control district permits.

During the CCPR process, the Contractor shall furnish the following information to the Engineer on a daily basis:

- 1) Certified weight tickets of emulsion delivered to the Central Plant.
- 2) A summary of quantity of CCPR product manufactured each day.

CONSTRUCTION ADMINISTRATION PROCEDURES

The Contractor shall notify the City Engineer through the inspector in writing within three (3) working days following the discovery of any conflicts and/or changed conditions, and before they are disturbed of existing conditions. The Contractor's failure to give written notice of changed conditions within the time required shall constitute a waiver of that claim.

The Engineer will promptly investigate conditions when notified. If the Engineer determines that the conditions are changed conditions, a change order will be issued. If the Engineer determines that the conditions are not changed conditions, the Contractor will be so advised in writing. Should the Contractor disagree with such determination, it may submit a notice of disputed claim, in writing, within fifteen (15) days from receipt of determination. Contractor's failure to submit a notice of disputed claim shall constitute a waiver of that claim.

Generally, work site changed conditions are described as:

1. Sub-surface or hidden physical conditions differing materially from those represented in the contract; and

2. Unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character being performed.

If the Contractor disagrees with the decision, the City will direct the Contractor to proceed with the work. Payment shall be as later determined by arbitration or as fixed in a court of law. Although not to be construed as proceeding under extra work provisions, the Contractor shall keep and furnish daily records of labor, materials and equipment involved of disputed work.

It shall be the responsibility of the Contractor to initiate, to meet and confer, and try to resolve in good faith pending claims against labor, materials and equipment, potential and disputed claims, extra work, corrections and repairs, and any other claims associated with the project. The City, therefore, shall continue to assess the Contractor of liquidated damages for each calendar day until the project is certified by the Engineer in writing and is ready for acceptance.

If for any reason claims cannot be settled through good faith negotiations, claims will be resolved in conformance with Section 9-1.10 "Arbitration" of the Standard Specifications with the following additions:

All fees required by arbitration shall be shared equally by the City and the Contractor. When the claim has to be settled in court, both parties must share equally all court fees and pay their own attorneys' fees. The decision of the court is final. Both parties are prohibited for filing any counter action suit for any related damages. Assessment of liquidated damages will end on the day litigation is filed in court.

Full compensation for conforming to the requirements of this Section shall be considered as included in the contract bid prices for the various items of work and no additional compensation will be allowed.

COOPERATION

Although there can be no guarantee that difficulties will not be encountered, the cooperation of the Contractor is expected. The City has endeavored to provide a complete project plan and specifications. In the event of any conflict, during the course of construction, Contractor shall allow reasonable time and provide equipment and manpower for the Engineer to field-check and make determination to resolve the conflict.

Contractor shall also provide equipment and manpower to dig all holes necessary for testing and other test requirements.

Contractor shall have, at all times, an English speaking representative on the job site. The representative shall have the authority to make decisions regarding work that will commit contractor time, materials and money.

Full compensation for conforming to the requirements of this Section shall be considered as included in the contract bid prices for the various items of work. No separate payment will be allowed.

SCHEDULE OF CONSTRUCTION AND ORDER OF WORK

Pre-construction Conference

The Contractor, along with his field representative(s) and all subcontractors, shall meet with representatives of the City before the start of construction. The Contractor will be notified regarding the exact time and place of the conference.

Before starting construction, the Contractor shall submit to the Engineer a practicable progress schedule to be approved by the Engineer.

The schedule shall show the order in which the Contractor proposes to carry out the work, and the contemplated dates for completing the said salient features.

The progress schedule shall be consistent with the order of the work, and time requirements of the contract. The work shift shall begin at 7:30 a.m. Construction for Monday - Thursday shall be scheduled in such a manner that hours between 3:30 p.m. to 4:00 p.m. shall be spent in cleaning up, watering and street sweeping the job site and rearranging traffic delineation for opening the traffic lanes. No construction activities will be allowed beyond 4:00 p.m. The full width of the traveled roadway shall be open for use by public traffic after 3 p.m. on Fridays and the day preceding designated legal holidays, and when construction operations are not actively in progress on working days. Should the Contractor receive permission from the Engineer to work overtime, all inspection costs as a result of the Contractor's overtime work shall be paid by the Contractor.

Construction in more than one location at one time will be allowed only if authorized by the Engineer. Said authorization will be dependent on the Contractor's proper scheduling and conducting of the construction operations.

All construction operations listed in these Special Provisions must be completed by May 30, 2012.

STREET LISTS

Rehabilitation Areas					
STREET	FROM	TO	WIDTH	LENGTH	SQUARE FOOTAGE
PROP 1B PHASE III* (*invoice separately)					
DALE	Chapman	OCFCC	50	515	25,974
DALE	N/O Enualt	Amy	40	1100	44,000
DALE	N/O Enualt	Lampson	48	1285	63,198
DEODORA	Westminster	Parking lot	37	848	31,630
DEODORA	Parking lot	CDS	37	645	29,177
PICKETT	TOPAZ	CHASE	33.2	1323	43659
CHASE*	LAMPSON	PICKETT	32	150	4800
TOPAZ*	LAMPSON	PICKETT	32	180	5760
					248,198

12 STREET NIC AREA PROJECT					
AMY	Dale	Lorna	32.5	1046	33,995
BLANCHE	Dale	Lorna	32.5	1113	37,205
DUDMAN	Haga	Lorna	32.5	508	16,510
DUDMAN	Lorna	CDS	32.5	508	16510
DUDMAN	Lorna	CDS	32.5	1184	41,521
DUDMAN cds	Dudman	CDS	24.0	114	6,020

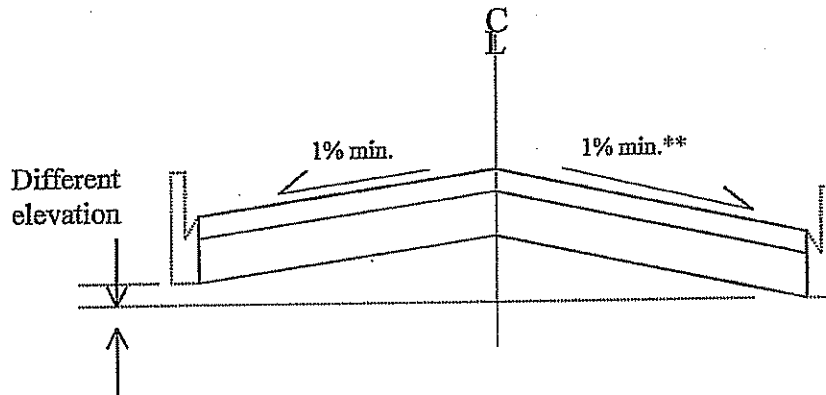
HAGA	Blanche	Lampson	32.0	1797	57,964
HAGA	Cds	Amy	32.5	413	15,820
LORNA	Chapman	Amy	32.5	458	14,885
LORNA	Amy	Dudman	32.5	1713	55,159
BARR LN.	Dale	CDS	33.0	543	19,993
PENTAGON	Cds	Lampson	32.2	1158	39,571
					355,153

22 -Street Residential Rehabilitation					
RICKY AVE.	WEST	JACALENE	33	1266	37,386
JACALENE LN.	CITY LIMITS	ORANGEWOOD	33	892	32,112
ROBERT LN.	CULDESAC	ORANGEWOOD	33	538	23,339
KATHY LN	CULDESAC	ORANGEWOOD	36	538	22,680
MORGAN LN	CULDESAC	ORANGEWOOD	36	538	22,680
BIXLER CIR.	CULDESAC	EUCLID	33	650	22,443
LOARA ST	CITY LIMITS	CHAPMAN	36	1288	46,989
DANIEL AVE	9 TH ST.	WEST	33	2861	83,043
CANDY LN	GAIL	JACALENE	33	1362	39,357
GAIL LN.	DANIEL	REVA	33	699	24,522
GAIL LN.	DONNA	CANDY	33	318	12,204
GAIL LN.	CANDY	CHAPMAN	33	384	12,640
JACALENE LN	ORANGEWOOD	SAMUEL	33	1030	36,099
JACALENE LN	SAMUEL	REVA	33	456	18,621
JACALENE LN	DONNA	CHAPMAN	36	656	25,983
ROBERT LN	ORANGEWOOD	DANIEL	33	781	26,622
KATHY	ORANGEWOOD	DANIEL	33	768	26,019
MORGAN	ORANGEWOOD	DANIEL	33	768	26,019
SAMUEL DR.	GAIL	JACALENE	33	1355	40,230
JENNIFER LN.	REVA	DONNA	33	253	8,140
REVA DR	9 TH ST.	JACALENE	33	1683	48,861
DONNA LN	GAIL	JACALENE	33	1411	39,906
					675,895

Total Rehabilitation Square Feet

1,279,246

TYPICAL SECTION



FOR SELECTED RESIDENTIAL STREETS*

***Selected Streets:**

Gail Lane -	Reva to Daniel
Jennifer Lane -	Donna to Reva
Jacalene Lane -	Chapman to Donna
Jacalene Lane -	Reva to N'y City Limits
Daniel Avenue -	9 th to West Street

**The goal is to provide 1% cross-fall on each side of street centerline. If one curb is lower than the other, the half street with the highest curb shall have 1% cross-fall and the cross-fall of the other half-street shall vary to match existing gutter elevations per Garden Grove Standard Plan B-113. In no case shall there be less than 1% cross-fall on any street section.

Special Work Hours

The hours of work are set forth in Section 6-7 Time of Completion of the General Provisions and Standard Specifications with the following exceptions:

No lane closure 1 hour period before school starts and after school ends.

Temporary Driving Surfaces

At the end of each working day, the work areas must be open to traffic, with temporary lane control and transitions. If a difference in excess of 3 inches (0.25 ft.) exists between the elevation of the existing pavement and the elevation of any excavation within 5 ft. of the traveled way an approved material shall be placed and compacted against the vertical cuts adjacent to the traveled way. During excavation operations, native material may be used for this purpose, however, once the placing of the structural section commences, structural material shall be used. The material shall be placed to the level of the elevation of the top of existing pavement and tapered at a slope of 1 vertical to 4 horizontal or flatter to the bottom of the excavation. Treated base shall not be used for the taper.

Full compensation for placing the material on a 1:4 slope, regardless of the number of times it is required, and subsequent removing or reshaping of the material to the lines and grades shown on the Plans shall be considered as included in the Contract price paid for the materials involved and no additional compensation will be allowed therefor.

No payment will be made for material placed in excess of that required for the structural section.

The new asphalt concrete pavement shall not be placed until all underlying conduits, if any, have been installed and all Portland cement concrete is removed and replaced, if any. The top layer (final overlay or cap) of asphalt concrete pavement shall not be placed until all asphalt concrete base paving has been completed. Final striping (second coat) shall not be placed until all final AC paving has been completed and deemed acceptable by the Inspector. No payment will be made for material placed in excess of that required for the structural section. This does not alleviate the Contractor from any final punch list items of correctness for the pavement of striping.

MOBILIZATION

Mobilization shall be in accordance with Subsection 9-3.4 "Mobilization," of the Standard Specifications, and these special provisions.

Mobilization shall consist of preparatory work and operations, including but not limited to, those necessary for the movement of personnel, equipment, supplies, incidentals to the project site, for setting up the Central Plant complete in place for asphalt recycling at the City's designated location at the North East corner of Brookhurst Avenue and Garden Grove Boulevard, for cleaning up the site at the completion of project; for the establishment of all offices, buildings, construction yards, sanitary facilities, and any other facilities necessary for work on the project; and for all other work and operations

which must be performed or costs incurred prior to beginning work on the various contract items on the project site, as well as the related demobilization costs anticipated at the completion of the project. The cost of all bonds and insurance policies, including premiums and incidentals, shall be included in mobilization.

No additional compensation will be allowed for additional mobilizations required, including but not limited to, delays caused by the relocation of existing utility facilities shown on the plans or discovered during construction operations.

The deletion of work or the addition of extra work as provided for herein shall not affect the price paid for Mobilization.

Payment for mobilization, central plant setup and site cleanup at the completion of the project, additional mobilizations, cost of all bonds and insurance policies, and all costs incurred prior to beginning work shall be considered to be included in the contract lump sum price paid for Mobilization and Plant Setup, and no additional compensation will be allowed. Payment will be made on a basis of the percentage of work completed on the entire project.

NOTIFICATION OF RESIDENTS AND BUSINESSES

The Contractor shall notify in person and with printed notification (in English and Spanish language), at least ten (10) working days prior to commencing work, to all agencies, firms, institutions, postal service, residents, hospital, Local Transit Authority, schools, stores, utilities and waste disposal service fronting or affected by the work. Additional printed notification (in English and Spanish language) 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. All schools and churches shall receive seven (7) working days notification prior to performing any work which will restrict property access.

The Contractor shall coordinate with the school district for pick-up and drop-off of school children, Local Transit Authority for the pick-up and drop off of riders, waste disposal collection, the postal service to ensure delivery of mail, and churches for weekly or special activities.

The printed notices shall contain a general description of the work to be done and the date that the work is to be done. The notices shall also include a statement that parking will be restricted as called for on the "NO PARKING" signs to be posted along the street. All public notices must be reviewed and approved by the Resident Engineer prior to its distribution.

The Contractor shall also post printed "NO PARKING-TOW AWAY" signs at one-hundred-foot (100') (thirty meters (30m)) maximum spacing along each side of the affected street for forty-eight (48) hours prior to the commencement of the street improvement work. The Contractor shall document the day, date and time the "NO PARKING" signs were posted. Posting of signs on trees and utility poles will not be allowed.

The signs shall contain the day, date, hours and vehicle code, that parking will be prohibited on that particular street, and must include the City of Garden Grove Municipal Code 10.56.030 (f). The signs shall be removed immediately upon completion of work that will prohibit parking.

The printed notices and the "NO PARKING" signs shall be furnished by the Contractor.

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.

STORMWATER AND NON-STORMWATER POLLUTION CONTROL

The contract item Stormwater and Non-Stormwater Pollution Control shall include preparing, obtaining approval of, amending and implementing the Stormwater Pollution Prevention Plan (SWPPP) as required by the State Water Resources Control Board (SWRCB) and the California Regional Water Quality Control Board (CRWQCB)-Santa Ana Region.

The SWPPP shall identify site specific Best Management Practices (BMPs) to be implemented during and after construction to minimize the potential pollution of stormwater runoff and receiving waters. The identified BMPs shall be practices designed to minimize or eliminate the discharge of pollutants from the construction site and Contractor's construction activities, including, but not limited to:

1. Good housekeeping practices for solid and sanitary/septic waste management, vehicle and equipment cleaning/maintenance, and material handling and storage.
2. Construction procedures such as stabilized construction access points, scheduling/phasing to minimize areas of soil disturbance, soil stabilization, and erosion/sediment control.

The SWPPP shall also stipulate an ongoing program for monitoring and maintenance of all BMPs.

In the event the City incurs any Administrative Civil Liability (fine) imposed by the CRWQCB – Santa Ana Region, as a result of Contractor's failure to fully implement the provisions of this section "Stormwater and Non-Stormwater Pollution Control," the Engineer may, in the exercise of his sole judgment and discretion, withhold from payments otherwise due the Contractor a sufficient amount to cover the Civil Liability. Liability may be in an amount up to \$27,500 per day per deemed occurrence.

Stormwater and Non-Stormwater Pollution Control work shall conform to the requirements in the latest version of California Stormwater Quality Association (CSQA), "Best Management Practices Handbook" and, The Storm Water Pollution Prevention Plan (SWPPP) and local governing codes and regulations. The CASQA best management handbook may be obtained by use of the following weblink:<http://www.casqa.org/LeftNavigation/ConstructionBMPHandbookPortalSWPPPTemplate/tabid/200/Default.aspx>.

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 this section, "Stormwater and Non-Stormwater Pollution Control," including but not limited to, compliance with the applicable provisions of the CASQA BMP Handbooks, General Permit, Federal, State, and local regulations. For the purpose of this paragraph, costs and liabilities include, but are not limited to, fines, penalties and damages whether assessed against the City or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Act.

The Contractor shall become fully informed of and comply with the applicable provisions of the CASQA BMP Handbooks, General Permit, Federal, State and local regulations that govern the Contractor's activities and operation pertaining to both stormwater and non-stormwater discharges from both the project site and areas of disturbance outside the project limits during construction. The Contractor shall, at all times, keep copies of the General Permit, approved SWPPP and all amendments at the project site. The SWPPP shall be made available upon request of a representative of any federal, state or local environmental protection agency having jurisdiction. Requests by the public shall be directed to the City Clerk's Office..

The Contractor is solely and exclusively responsible for any arrangements made between the Contractor and other property owners or entities that results in disturbance of areas or construction activities being conducted outside limits of the designated rights-of-way and temporary construction easements as shown on the project drawings.

The Contractor shall, at reasonable times, allow authorized agents of the CRWQCB, SWRCB, USEPA or local stormwater management agency, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the construction site and the Contractor's facilities pertinent to the work;
2. Have access to and copy any records required to be kept as specified in the NPDES General Permit;
3. Inspect the construction site, including any off-site staging areas or material storage areas, and related soil stabilization practices and sediment control BMPs; and
4. Sample or monitor for the purpose of ensuring compliance with the General Permit.

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

The Contractor shall prepare and obtain approval of the SWPPP as part of the Stormwater and Non-Stormwater Pollution Control work for this contract. The preparer of SWPPP shall be a Certified QSD and on-site SWPPP Manager (contractor or City official) shall be a certified QSP. An additional guidance document titled "Construction Storm Water Sampling and Analysis Guidance Document" is available from the Storm water quality Task Force internet site at <http://www.stormwatertaskforce.org/swqtf/products.htm>. The Contractor shall prepare and implement the SWPPP in accordance with the Santa Ana Regional Water Quality Control Board, the NPDES General Permit and these Detailed Specifications.

In case of conflict between the CASQA BMP Handbook and these Detailed Specifications, the Detailed Specifications shall govern; in case of conflict between these Detailed Specifications and the General Permit, the latter shall govern.

The Contractor must have an approved SWPPP prior to the Pre-Construction meeting.

The objectives of the SWPPP shall be to identify all pollution sources associated with the Contractor's construction activities that may adversely affect the quality of stormwater discharges; to identify all non-stormwater discharges; to identify, construct, implement

and maintain water pollution control Best Management Practices, hereafter referred to as "BMPs," to reduce to the maximum extent practicable pollutants in both stormwater discharges and authorized non-stormwater discharges from the construction site during construction and to develop a maintenance schedule for BMPs after construction is completed under this contract.

The SWPPP shall incorporate BMPs in each of the following categories:

1. Soil stabilization practices;
2. Sediment control practices;
3. Sediment tracking control practices;
4. Wind erosion control practices; and
5. Non-stormwater management, waste management, and disposal control practices.

Specific objectives and minimum requirements for each category of BMPs are described in the CASQA BMP Handbooks. The Contractor shall consider the objectives and minimum requirements presented in the CASQA BMP Handbooks for each of the above categories. When minimum requirements are listed for any category, the Contractor shall incorporate one or more of the listed minimum BMPs required into the SWPPP and implement on the project to meet the pollution control objectives for the category. In addition, the Contractor shall consider other BMPs presented in the CASQA BMP Handbooks to supplement the minimum BMPs required when necessary to meet the objectives of the SWPPP and maintain compliance with the permittee's NPDES and General Permit. The Contractor shall document the selection process in accordance with the procedure specified in the CASQA BMP Handbooks.

The Contractor should not assume that the minimum BMPs required for each category presented in the CASQA BMP Handbooks are adequate to meet the pollution control objectives. The Contractor may use other effective BMPs, as approved by the Engineer, in addition to the minimum as required in the CASQA BMP Handbooks to achieve the pollution control objectives.

The SWPPP shall include the following items as described in the CASQA BMP Handbooks, and presented in the certified Qualified SWPPP Developer (QSD) and General Permit:

1. Title Page;
2. Certification and Approval;
3. Table of Contents;
4. Source Identification;
5. Stormwater and Non-Stormwater Pollution Control Drawings;
6. Erosion Control;
7. Stabilization;
8. Sediment Control;
9. Non-Stormwater Management;
10. Waste Management and Disposal;
11. Maintenance, Inspection and Repair Program;
12. Training;
13. List of Contractors and Subcontractors;
14. Sampling and Analysis Plan;
15. Post-Construction Stormwater Management;
16. Current Inventory of BMP related materials;

17. Mobilization Plan for BMP deployment;
18. A copy of the Notice Of Intent (NOI) form submitted by the City for this project;
19. A copy of the Waste Discharge Identification (WDID) number or proof of mailing of the NOI (provided by the City);
20. A copy of the General Permit;
21. A copy of other applicable Plans/Permits, if any;
22. Construction site Inspection Checklist;
23. Pre/Post Storm Inspection Checklist;
24. Inspection Log;
25. A copy of the Amendments, if any;
26. Amendment Certification and Approval, if any;
27. Amendment Log;
28. Annual compliance Certification;
29. BMPs Consideration Checklist; and
30. SWPPP Checklist.

The Contractor that is QSD certified shall prepare amendments to the SWPPP, both graphically and in narrative form, whenever there is a change in Contractor's construction activities or operations which may result in the discharge of pollutants to surface waters, ground waters, municipal storm drain systems, or as deemed necessary by the Engineer. The Contractor shall also amend the SWPPP if it is in violation of any condition of the NPDES and General Permit, or has not effectively achieved the objective of reducing pollutants in stormwater discharges. Amendments shall show additional BMPs, revised Contractor's construction activities or operations, including those in areas not shown in the initially approved SWPPP, which are required on the project to effectively control water pollution.

Amendments to the SWPPP shall be submitted for approval by the Engineer. The Contractor shall date and attach all approved amendments to the SWPPP. Upon agreement, the Contractor shall implement the additional BMPs, revised construction activities or operations.

The Contractor shall certify annually that construction activities are in compliance with the requirements of the General Permit and the approved SWPPP. The certification must be completed by July 1, of each year.

If the project is in non-compliance at any time, the Contractor shall make a written report to the Engineer within two (2) calendar days of identification of non-compliance activities.

Upon approval of the SWPPP, the Contractor shall be responsible throughout the duration of the project for placing, installing, constructing, inspecting, and maintaining the BMPs as well as conducting the sampling analysis plan as included in the SWPPP and any amendments thereto and for removing and disposing of temporary BMPs. **Unless otherwise directed by the Engineer or specified in these detailed Specifications, the Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension.** Requirements for installation, construction, inspection, maintenance, removal and disposal of BMPs are specified in the Caltrans Handbooks and these Detailed Specifications.

The Engineer may order the suspension of construction operations if the Contractor fails to comply with the requirements of this section "Stormwater and Non-Stormwater Pollution Control" as determined by the Engineer. The Contractor will not be compensated for sampling and analysis work because of the Contractor's failure to properly implement, inspect, maintain, and repair BMPs in the approved SWPPP, or for failing to store construction materials or wastes in watertight conditions.

- 1) The Contractor shall implement soil stabilization practices and sediment control BMPs, including minimum requirements as presented in the Caltrans Handbooks, on all disturbed areas of the project site during the winter season, defined as between October 15th and April 15th.

Implementation of soil stabilization practices and sediment control BMPs for soil-disturbed areas, including but not limited to, rough graded access roads, slopes, channel inverts, operational inlets and outlets of the project shall be completed no later than ten (10) calendar days prior to the start of the winter season or upon start of applicable Contractor's construction activities for projects which begin either during or within ten (10) calendar days of the winter season.

The Engineer may require the Contractor, on a case-by-case basis, to reduce the active, soil-disturbed area limit of the project. The Contractor shall demonstrate the ability and preparedness to fully deploy soil stabilization practices and sediment control BMPs to protect soil-disturbed areas of the project site by maintaining an adequate quantity of soil stabilization and sediment control materials onsite to protect exposed, soil-disturbed areas and a detailed plan for the mobilization of sufficient labor and equipment to fully deploy the required BMPs prior to the onset of precipitation and for the duration of the project.

Throughout the winter season and/or forecasted precipitation events, soil-disturbed areas of the project site shall be considered to be non-active whenever soil disturbing activities are expected to be discontinued for a period of fifteen (15) calendar days or more. Areas that will become non-active either during the winter season or within ten (10) calendar days thereof shall be fully protected with soil stabilization practices such as covering with mulch, temporary seeding, fiber rolls, blankets, etc. within ten (10) calendar days of the discontinuance of soil disturbing activities or prior to the onset of precipitation, whichever is first to occur. Areas that will become non-active either during the winter season or within ten (10) calendar days thereof shall be fully protected with sediment control BMPs within ten (10) calendar days of the discontinuance of soil disturbing activities or prior to the onset of precipitation, whichever is first to occur.

Throughout the winter season and/or forecasted precipitation events, active soil-disturbed areas of the project site shall be fully protected at the end of each day with soil stabilization practices and sediment control BMPs. The Contractor shall monitor the weather forecast on a daily basis. The National Weather Service forecast shall be used, or an alternative weather forecast proposed by the Contractor may be used if approved by the Engineer. If precipitation is predicted prior to the end of the following workday, construction scheduling shall be

modified, as required, and the Contractor shall deploy functioning BMPs prior to the onset of the precipitation.

- 2) **The Contractor shall implement, year-round and throughout the duration of the project, BMPs included in the SWPPP for sediment tracking, wind erosion, non-stormwater management and waste management and disposal.**
- 3) The Contractor shall regularly inspect the construction site for BMPs identified in the SWPPP to ensure the proper implementation and functioning of BMPs. The Contractor shall identify corrective actions and time frames to address any damaged BMPs or reinstate any BMPs that have been discontinued.

At a minimum, the Contractor shall inspect the construction site as follows:

- a) Prior to a forecast storm;
- b) After any precipitation which causes runoff capable of carrying sediment from the construction site;
- c) At 24 hour intervals during extended precipitation events; and
- d) At regular interval of once every 2 weeks.

The construction site Inspection Checklist provided in the CASQA BMP Handbooks shall be used to ensure that the necessary BMPs are being properly implemented and are functioning adequately. The Contractor shall submit one copy of each site inspection record to the Engineer.

- 4) The Contractor shall maintain construction site BMPs identified in the SWPPP to ensure the proper implementation and functioning of BMPs. If the Contractor or the Engineer identifies a deficiency in the deployment or functioning of an identified BMP, the deficiency shall be corrected by the Contractor immediately, or by a later date and time if requested by the Contractor and approved by the Engineer in writing, but not later than the onset of subsequent precipitation event. The correction of deficiencies shall be at no additional cost to the City.
- 5) The Contractor shall describe the types of training that the Contractor's BMP inspection, maintenance, and repair personnel have received or will receive that is directly related to stormwater pollution prevention.

The contract lump sum price paid for the Stormwater and Non-Stormwater Pollution Control work shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising and amending the SWPPP, and installing, constructing, maintaining, removing and disposing of BMPs as shown in the SWPPP, as specified in the CASQA BMP Handbooks and Sample Contractor's Water Quality SAPs, NPDES and General Permit and these Detailed Specifications, and as directed by the Engineer. Payment will be made on a basis of the percentage of work completed on the entire project.

TRAFFIC CONTROL

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 these technical Special Provisions; Traffic Control Plans; California

MUTCD (FHWA's MUTCD latest edition as amended for use in California), Part 6, Temporary Traffic Control, Caltrans adopted September 26, 2006; the current "Work Area Traffic Control Handbook"; 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. California Manual on Uniform Traffic Control Devices (FHWA's MUTCD latest edition as amended for use in California), Part 6, Temporary Traffic Control, Caltrans adopted September 26, 2006.
4. Work Area Traffic Control Handbook. (WATCH)
5. Standard Specifications

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

- a. All streets shall remain open to through traffic at all times except when street closure is approved by the Engineer. The Contractor shall make provisions to allow local traffic access to the closed streets. The local traffic consists of, but is not limited to, residences, church congregations, farmers, post offices, meter readers, trash pickup, school buses, and emergency vehicles. The Contractor shall provide a smooth travel way and either a flagger and/or signing to direct traffic.
- b. The Contractor shall be responsible for the preparation of Traffic Control Plans as necessary for the work. The Traffic Control Plans shall be signed and stamped by a California Registered Traffic Engineer and transmitted to the City 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; California MUTCD Part 6, Temporary Traffic Control; the Work Area Traffic Control Handbook; and the Standard Specifications. A permit and traffic control plan must be submitted to, obtained from and approved by the City of Stanton and/or the County of Orange for the area of Dale St. from Amy Ave. north to the City limits adjacent to the flood control channel north of Chapman Ave. The City of Stanton has stated they will waive their permit fees but will require permits and traffic control plans for that specific area of the project and the cost for same is the sole responsibility of the Contractor and shall be considered as included in contract bid price. The County of Orange has not stated they will waive their fees.
- 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 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 8:30 a.m. and 3:30 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) R11-2, "Road Closed" sign, one (1) R11-4, "Road Closed to Thru Traffic," sign, and a Type P warning sign.
- h. Channelizers shall be surface mounted type and shall be furnished, placed and maintained at the locations shown on the Plans or as approved by the Engineer, and shall conform to the provisions in Subsection 12-3.07, "Channelizers," of the State of California Standard Specifications and these Special Provisions.

When no longer required for the work as determined by the Engineer, channelizers (except channelizers to be left in place), and underlying adhesive used to cement the channelizer bases to the pavement, shall be removed. Removed channelizers and adhesive shall become the property of the Contractor and shall be removed from the site of work.

- i. Reflectorized (both sides) temporary self adhesive markers, 100mm (4in) wide, shall be applied to unstriped pavement surface before opening the travel way to public traffic. Reflectorized temporary yellow markers shall be used for to delineate the centerline to separate opposing traffic. Reflectorized temporary white markers shall be used to delineate lanes of travel and placed in 600mm (24in) intervals transverse to the road to delineate stop bars and limit lines.

The reflectorized temporary markers shall be removed the same day the first coat of striping has been placed on the pavement. The removal of the markers shall be done such a way that the pavement is not damaged.

- j. Except as otherwise approved by the Engineer, two-way vehicular traffic shall be maintained at all times within two (2) 3.3m (11') wide lanes on streets having an effective roadway width of 13.4 m (44') or more with restricted parking. Other streets of lesser widths may be reduced to one (1) 3.6 (12') wide lane with work activity being limited to one side at a time, and the one-way vehicular traffic being maintained at all times by properly trained and experienced flaggers. All lane closures shall have flashing arrow signs to provide additional, high level, advanced warning.

No reduction of the traveled way width shall be permitted on any City street before 7:30 a.m. nor after 4:00 p.m., on weekends or holidays, or when active work is not being done, unless otherwise approved by the Engineer.

- k. 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.
- k. Vehicular access to occupied residential property may be restricted on weekdays, other than holidays, between the hours of 7:30 a.m. and 4:00 p.m. while essential work activity is taking place only upon approval by the Engineer and providing the Contractor gives the property owner or resident at least forty-eight (48) hour advance written and oral notice.

Convenient and safe pedestrian access to schools, churches, 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. Trash pick-up services shall not be interrupted and the trash company must be properly notified in advance and given a construction schedule at least one week prior to construction. Access to vacant and unused property may be restricted when approved by the Engineer. Both vehicular and pedestrian access shall be maintained at all times to all other property except as otherwise specifically authorized in writing by the Engineer.

- m. Vehicular access to business, school and church driveways shall be maintained at all times during construction.
- n. 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 are displaced or not in an upright position from any cause, shall be promptly returned or restored to their proper position.
- o. 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.
- p. 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.
- q. 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.
- r. 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 of not more than 150m (500') from their homes or destination. 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.
- s. 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" signs, other obstructions, and unnecessary traffic control devices and equipment shall be promptly removed from that street, except as otherwise approved by the Engineer.
 - t. 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 City 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 City 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 City or the City's agents.
 - u. 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 City, 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 City, all as prescribed by contractual obligation or State law, whichever is applicable.

The Contract lump sum price paid for the traffic control system shall include full compensation for, but not 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 shown on the Plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Full compensation for removing and salvaging the traffic control equipment and materials that are to be reused or reset in the project shall be considered as included in the Contract lump sum price paid for traffic control system and no additional compensation will be allowed therefor.

Partial payment for traffic control shall be based on the percentage of total value of work completed on the other items listed under each schedule as of each progress pay estimate.

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 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 City, 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 to the end 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.

The Contractor is to coordinate the work with any utility company or entity that is on-site due to unforeseen or unanticipated emergency repairs and/or any other utility relocating their facilities at no separate or additional cost. There are no known utility projects within the project area(s) at this time. Each contractor shall be responsible to the other for all damage 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 its bid all costs involved as a result of coordinating its work with others. The Contractor will not be entitled to additional compensation from the City 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.

It is not anticipated that some or all of the existing utilities will be relocated during construction. However, the Contractor is to coordinate its work with the utility companies and with any other utility relocating their facilities, at no separate or additional cost.

Should the Contractor be delayed by the City, and such delay could not have been reasonably 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 prices. 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.

STREET MAINTENANCE

The Contractor shall be responsible for the maintenance of the streets and roadways to be used by public and local traffic through and adjacent to the construction zone, from the date of "Notice to Proceed" until the date of acceptance of the completed construction improvements.

Street maintenance shall include filling of potholes, grading of subgrade and base, replacing signs, installing interim pavement striping and markers on the street and other side streets within the construction zone. Street maintenance shall also include sweeping and washing of streets, adjacent and connected to the construction zone on a weekly, or more frequent schedule, to prevent the accumulation of dust, dirt, gravel or other deleterious materials, all as necessary to maintain the construction roadways and adjacent streets in a safe, clean and driveable condition for use by public and local traffic. All as necessary and as approved by the Engineer.

Full compensation for furnishing all labor, equipment, materials, and tools required to perform Street Maintenance of the type and to the limits noted above, and as ordered by the Engineer, shall be considered as being included in the various Contract items of work and no separate or additional compensation will be allowed therefore.

PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

Protection and Restoration of Existing Improvements shall be in accordance with Subsection 7-9, "Protection and Restoration of Existing Improvements," of the Standard Specifications, and these Special Provisions.

Existing hardscape that is damaged due to the Contractor's operations shall be restored or replaced in as nearly the original condition and location as is reasonably possible.

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.

PRESERVATION OF PROPERTY AND SURVEY MONUMENTS

Attention is directed to Section 300-1.2 of the Standard Specifications and the following Special Provisions:

Permanent Survey Markers

The Contractor shall be responsible for protecting all existing horizontal and vertical survey controls, monuments, ties and bench marks located within the limits of the project. If any of the above require removal; relocating or resetting, the Contractor shall, prior to any construction work and under the supervision of a California-licensed Land Surveyor or Civil Engineer, establish sufficient temporary ties and bench marks to enable the points to be reset after completion of construction.

Any ties, monuments and bench marks disturbed during construction shall be reset per City standards after construction and the tie notes submitted to the City on 8-1/2" x 11" loose leaf paper. The Contractor and his sureties shall be liable for, at his expense, any resurvey required due to his negligence in protecting existing ties, monuments, bench marks or any such horizontal and vertical controls.

When there is no separate pay item for survey monuments, full compensation for conforming to the requirements of this Section shall be considered as included in the various contract items and no separate payment will be allowed therefore.

PROTECTION AND RESTORATION OF UNDERGROUND UTILITIES AND FACILITIES

All existing underground utilities and facilities such as electric utilities, gas utilities, telephone utilities, television utilities, water utilities, street lighting facilities, traffic signal facilities, sanitary sewers, storm drains, and irrigation systems may not have been shown on the Plans for this project. The Contractor shall assume that any of these underground utilities and/or facilities may be encountered during the removal and reconstruction work and shall protect and restore same in place in accordance with Section 5 of the Standard Specifications, Subsection 7-9 of the Standard Specifications, and the following requirements and provisions:

The Contractor shall pothole utilities in any areas of excavation, including but not limited to, street widening, utility pole installation or relocation, light pole installation or relocation, pipe installation, catch basin installation, pavement reconstruction, and traffic signal equipment foundation installation. The Contractor shall submit pothole locations to the City five (5) working days ahead of USA notification for review and comment. The Contractor retains sole responsibility for utilities. The Contractor shall pot hole a minimum of two (2) working days ahead of the construction or installation for the area in which the work is to be performed. The "pot holes" shall be to a depth sufficient to satisfy the Contractor that the proposed construction work will not damage any underground utilities and/or facilities. The Contractor shall be solely responsible for the cost of repair for any such damage to said underground utilities and/or facilities and shall, except for irrigation systems, make or cause to be made all repairs necessary to restore service the same day.

All utilities including water, gas, oil, telephone, electrical, cable TV, traffic signals, sewer mains and services, storm drains and street light conduit and wires shall be marked protected in place, except as noted on the project plans.

The City does not guarantee the accuracy of depth, size, type, material and location of all utilities marked in the field by utility companies. Any data provided by the City from available records is to be used for information purposes only.

The Contractor, prior to submitting his/her bid, shall first inquire from the utility companies listed regarding type of facility, location, location of M.H., specifications and

requirements concerning the protection and support of their respective main, trunk lines, services lines and other appurtenances.

Contractor shall exercise extreme care in exposing; locating, supporting, protecting and working in the locale of existing utilities. Hand dig within two feet (2') on both sides of these utilities; main lines, service lines and other utility appurtenances. Contractor shall arrange a compatible work schedule with all utility companies involved. Contractor's attention is also directed, that overhead and above-ground utilities are also existing within the project site. It may not be shown in the project plan, but visible in the field. All utilities above and underground and all types of existing improvements must be protected in place, unless otherwise specified in the project plan.

List of utility companies who **may** have underground utilities within the project right-of-way:

Orange County Sanitation District	(714) 962-2411
City of Garden Grove, Utilities Division (water & sewer)	(714) 741-5395
City of Garden Grove, Traffic Engineering	(714) 741-5193
Southern California Edison Company	(714) 973-5450
Southern California Gas Company	(714) 634-3122
Orange County Flood Control District	(714) 834-6192
Midway City Sanitary District	(714) 903-8307
Time Warner Communications	(714) 895-6886
Dig Alert, U.S.A.	(800) 422-4133
Caltrans	(949) 930-3600
ATT	

Some of the above utilities are not Underground Service Alert (USA) members, it shall be the Contractor's responsibility to call, notify and make certain that utilities have responded to his notification. Damage to utilities, caused by failure to notify, is his sole responsibility.

When damage occurs to existing utilities, Contractor shall notify the owner immediately and have it repaired or to be repaired by Contractor to the satisfaction of the owner. In the case of damage to traffic conduit, electrical conduit, storm drain, sewer and sewer laterals, the Contractor shall repair these facilities to the requirements of the owners, within a maximum of twenty-four hours or sooner as required by the Engineer. Necessary tools, equipment and materials shall be available at all times for immediate repairs. Any expenditures incidental to maintaining water service to customers shall be borne by the Contractor.

The Contractor is notified therefore, that damage to any utilities caused directly as a result of his operations, he is held to be responsible and liable for all costs in rectifying such damages. At the request of the owner, costs in rectifying such damages can be withheld or deducted from the final progress payment due to Contractor at the discretion of the Engineer.

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.

DUST CONTROL

Dust control shall be performed in accordance with Subsection 7-8.1, "Clean up and Dust Control," of the Standard Specifications, South Coast Air Quality Management District (SCAQMD) Rule 403, the general Provisions and the following Provision. Dust resulting from the Contractor's performance of the work, either inside or outside, the right-of-way shall be controlled by the Contractor. Dust control includes the action necessary to prevent, reduce or control dust within the work area as required to complete the work. The Contractor shall carry out proper and efficient measures to prevent his operations from producing dust in amounts damaging to property or causing a nuisance, or harm to persons living nearby or occupying buildings in the vicinity of the work. The Contractor shall control dust 24 hours a day, seven days a week. The methods to be used for controlling dust in the construction area and along haul roads shall be approved by the Engineer prior to starting any work. The Rule 403 Implementation Handbook published by the SCAQMD, contains a detailed listing of reasonably available dust control measures.

Dust or dirt accumulations generated by the Contractor's operations shall be cleaned and removed by the Contractor from all areas as designated by the Engineer. Areas to be cleaned shall include, but not be limited to swimming pools, interiors of any structures including residences and places of business, exteriors of any structures including roofs, patios, driveways, and any other areas as required. The Contractor shall retain a professional cleaning service for the cleaning of swimming pools, and the interior and exterior of structures. The cost for cleaning and removal of dust or dirt shall be at the Contractor's expense and no additional compensation will be made therefore.

Water for use in dust control shall, at the option of the Contractor, be potable or non-potable. Non-potable water shall consist of reclaimed waste water or non-potable water developed from other sources.

If the Contractor uses reclaimed waste water in the work, the sources and discharge of reclaimed waste water shall meet the California Department of Health Services Water Reclamation Criteria and the Regional Water Quality Control Board requirements. The Contractor shall obtain either a waste water discharge permit or a waiver from the Regional Water Quality Control Board. Copies of permits or waivers from the Regional Water Quality Control Board shall be delivered to the engineer before using reclaimed waste water in the work.

Water shall be applied in the amounts, at the locations, and for the purposes designated in the Special Provision and these Specifications, and as order by the Engineer.

Water for compacting embankment material, sub-base, base and surfacing material, and for laying dust, shall be applied by means of pressure-type distributors or pipe lines equipped with a spray system or hoses with nozzles that will ensure a uniform application of water.

All equipment used for the application of water shall be equipped with a positive means of shut-off.

Unless otherwise permitted by the Engineer or unless all the water is applied by means of pipe lines, at least one mobile unit with a minimum capacity of 3700 L (1,000 gallons) shall be available for applying water on the project at all times.

Chemical additives or binder may be used in water for compaction or dust palliative. If such additives are used, furnishing and applying the additives shall be at the Contractor's expense.

The right is reserved by the Engineer to prohibit the use of a particular type of additive, to designate the locations where a particular type of additive may not be used, or to limit the amount of a particular type of additive to be used at certain locations, all if the Engineer has reasonable ground for believing that such use will in any way be detrimental.

The additive or binder shall be either miscible in water or be some form of material that is directly applied to the surface without mixing with water.

Additives or binders that are miscible in water shall be either a resin emulsion, an SS1 type asphaltic emulsion, materials composed essentially of lignin sulfonate, or any other binder that is miscible in water in the proportions provided herein is non-corrosive, and is effective as a dust palliative.

Resin emulsion shall be composed of from 57 percent (57%) to 63 percent (63%) of semi-liquid petroleum resin and the remainder water to which a suitable emulsifying agent has been added. The resin emulsion shall be readily miscible with water and when diluted with any hard water in the proportions of one part of emulsion to 10 parts water shall show no signs of breakdown or separation of the petroleum resin base. Resin emulsion, which has been stored in closed containers at temperatures above freezing for a period up to 3 months, shall show no signs of separation. Any resin emulsion which has been stored for more than 3 months shall not be used until tested and approved.

SS1 type asphaltic emulsion shall conform to the provisions in Subsection 203-3, "Emulsified Asphalt.

Additives or binders that are miscible in water shall be mixed with additional water at the rate of from 4 to 19 parts of water to one part of binder, the exact rate to be determined by the Engineer. Mixing shall be accomplished by placing the binder and water in the spreading equipment simultaneously or by some other mixing method that will produce equivalent results.

The resulting mixture shall be applied with pressure type water distributor trucks equipped with a spray system or pressure type asphalt distributors at an approximate rate of from 0.9- to 3.6 L/m². (0.2 to 0.8 gallon on per square yard)

Additives or binders that are directly applied to the surface without mixing with water shall be applied with equipment approved by the Engineer. The binder shall be applied at a rate of from 0.4- to 1.1L/m². (0.10 to 0.25 gallons per square yard)

The exact rate and number of applications of binders will be determined by the Engineer.

Dust control ordered by the Engineer to be applied on Saturdays, Sundays or holidays will be included in the Contract price for dust control and no additional compensation will be allowed therefore.

No adjustment of compensation will be made for any increase or decrease in the quantity of dust control required, regardless of the reason for such increase or decrease.

The full compensation for all direct and indirect costs incurred for work performed or materials used to control dust resulting from the Contractor's performance of the work and caused by public traffic, either inside or outside the right-of-way shall be considered as included in the Contract prices paid for the various items of work involved and no additional compensation will be allowed therefore.

CLEAN UP

Throughout all phases of construction, including suspension of work and until the final acceptance, the Contractor shall keep the site clean and free from rubbish and debris. The Contractor shall remove and dispose of all loose material and debris caused by construction operations from the construction site on a daily basis.

Materials and equipment shall be removed from the site as soon as they are no longer necessary. Before the final inspection, the site shall be cleared of equipment, unused materials, and rubbish so as to present a satisfactory clean and neat appearance. All clean up costs shall be included in the Contractor's Bid.

Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately and the area cleaned.

Excess excavated material from catch basins or similar structures shall be removed from the site immediately. Sufficient material may remain for use as backfill if permitted by the Specifications or Engineer. Forms and form lumber shall be removed from the site as soon as practicable after stripping.

Failure of the Contractor to comply with the Engineer's clean up orders may result in an order to suspend work until the condition is corrected. No additional compensation will be allowed as a result of such suspension.

Before final inspection of the work, the Contractor shall clean the right-of-way, private property, material sites, and all ground occupied by the Contractor in connection with the work of all rubbish, excess materials, falsework, temporary structures, and equipment. All parts of the work shall be left in a neat and presentable condition.

The full compensation for collecting and disposing of loose material and debris from the job site shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefore.

ADJUST STORM DRAIN MANHOLE RINGS AND COVERS, SEWER MANHOLE COVERS, AND WATER VALVE COVERS AND GAS VALVE COVERS TO GRADE

Adjustment of storm drain/sewer manhole covers, water valve, and gas valve to grade shall be in accordance with the plans and Subsection 301-1.6, "Adjustment of Manhole Frame and Cover Sets to Grade," of the Standard Specifications and the agency or utility standards and policies that owns or has control of the manhole. Note that double adjustment of these facilities is required within the limits of the CCPR improvements. Double adjustment of the facilities is required to lower the facilities prior to CCPR and to raise the facilities to finish grade after completion of the Final AC Finish Course.

The contractor is responsible for obtaining timely written approval from other applicable agencies who have jurisdiction over other manhole and valve covers found within the work area.

For all new manhole rings and covers furnished by the Contractor, certification shall include the test results from test Method B as called for in Subsection 206-3 "Gray Iron Castings," of the Standard Specifications.

Raised manhole rings and covers shall have a Type II barricade with two flashing lights placed over each manhole until it is paved.

After the pavement has been completed, the necessary portions of the sub-grade, base, and pavement shall be neatly removed, the structure built-up, and the manhole frame set to be backfilled with PCC concrete and Type III-C3-AR-4000

asphalt concrete. The asphalt concrete shall be placed and compacted in a workmanlike manner to conform to the appearance of the surrounding pavement. The asphalt concrete shall be placed within two (2) days after the manhole ring and cover has been adjusted to final grade, unless otherwise approved by the Engineer.

The Contractor shall so schedule this work that adjusted manholes and rings shall not remain unpaved over holidays and weekends.

All new and existing water valve and gas valve covers shall be adjusted to grade during paving. The Contractor shall furnish all slip sleeves or cans where none exist. The Contractor shall loosen all valve covers immediately after paving. The Contractor shall paint all water valve covers blue.

All existing water valve covers, gas valve covers, storm drain and sewer manhole structures within the CCPR require lowering and protection by the Contractor to accommodate the CCPR process.

The Contract unit price paid per each for double adjusting water valve covers, gas valve covers, storm drain manhole covers, and sewer manhole covers to finished grade shall be measured in accordance with Subsection 301-1.7, "Payment," of the Standard Specifications, and shall include full compensation for furnishing all labor, materials, tools, and equipment, and for doing all the work involved, complete in place, and no additional compensation will be allowed therefore. No adjustment of compensation will be made for any increase or decrease in the quantities of manholes or valves, regardless of the reason for the increase or decrease.

COLD CENTRAL PLANT RECYCLING (CCPR) ASPHALT

This work shall consist of Cold Central Plant Recycling (CCPR) of Reclaimed Asphalt Pavement (RAP) milled from local streets for this project and placing the recycled asphalt back to the streets as base course ready to receive new asphalt concrete overlay. The RAP shall be clean, free of contamination of dirt, base, concrete or other deleterious materials. The stockpiled RAP shall be crushed and screened to a graded aggregate blend with 100% of the crushed RAP passing a 1-inch sieve and fines (particles passing No. 200 sieve) at less than or equal to 5%. The properly graded RAP to be recycled shall then be blended with an emulsified asphalt recycling agent, and other additives, as required by the Project Mix Design, to produce a recycled asphalt concrete. This material shall then be placed and compacted in accordance with the Plans and these Special Provisions and as directed by the Engineer.

To minimize construction traffic in and out of the complex and to ensure the applicability of the mix design, the asphalt pavement milled from the existing streets is the material that is to be used for the CCPR process. The material is to be recycled in the CCPR process at the location stipulated by the City of Garden Grove and is not to be transported to any other off-site recycling facility.

Just In Time Training

Attending a 2-hour minimum Just-In-Time Training (JITT) shall be mandatory, and consist of a formal joint training class on cold recycled asphalt materials, required special equipment, placement and compaction methods, quality control and inspection.

Construction operations for cold recycling shall not begin until the Contractor's and the Engineer's personnel have completed the JITT. The JITT class shall be conducted for

not less than 2 hours on cold recycling operations and recycled paving techniques. The training class shall be conducted at a project field location convenient for both the Contractor and the Engineer. The JITT class shall be completed not more than 7 days prior to the start of cold recycling operations, but ideally, the JITT class will be held immediately prior to the first day's production run. The class shall be held during normal working hours. The Contractor shall provide the JITT instructor. The instructor shall be experienced in the construction methods, materials, and test methods associated with construction of cold recycle asphalt projects. A copy of the course syllabus, handouts, and presentation material shall be submitted to the Engineer at least 7 days before the day of the training. The Contractor and the Engineer shall mutually agree to the course instructor, course content, and training site. Just-In-Time Training shall not relieve the Contractor of responsibility under the contract for the successful completion of the work in conformance with the requirements of the plans and specifications.

Contractor Responsibility - The Contractor shall be responsible for the final product and shall make any quality control, adjustments and corrections necessary to obtain the final product accepted by the Engineer. The Contractor shall perform process and quality control sampling and testing and exercise management control the work of his/her subcontractors, technicians and workers to ensure that the milling, transporting, recycling, spreading, compaction, and finishing processes conform to these Specifications. The proficiency of testing laboratories and sampling and testing personnel shall be reviewed and approved by the Engineer prior to providing services to the project. The Engineer shall have unrestricted access to the laboratory, sampling, testing sites, and all information resulting from mix design and quality control activities.

All Quality Control testing results shall be submitted to the Engineer on a daily basis. **Mix Design** - The City of Garden Grove in an evaluation of the existing roadways suitability as a candidate for CCPR performed a mix design(s) utilizing PASS-R® formulated by Western Emulsions, Inc. of Irwindale, California as the emulsified recycling agent. While the City prefers the use of this existing mix design(s) provided at no cost to the Contractor, the type of recycling emulsion to be used for construction shall be determined by the Contractor, whose comparable mix design(s) will be provided, at their cost, as specified. Should Contractor utilize another mix design(s) other than that provided by the City, Contractor shall reimburse the City for the City's mix design(s) provided.

Project Mix Design

Asphalt Pavement And Recycling Technologies, Inc.

5207 Minter Field Avenue

Shafter, CA

93263

Telephone: (661) 393-2748

Fax: (661)

393-2804

e-mail: apart@hughes.net

Report: 12-0131

February 11, 2012

Customer: City of Garden Grove - Bob Moungey

Project: City of Garden Grove, Cold-Central-Plant Recycling (CCPR)
Project

Samples Submitted: Approximately, 137 eight-inch pavement specimens were received from this project.

Requested Testing: Perform the necessary tests for a CIR mix design as outlined by Caltrans LP 8 requirements utilizing the RAP generated from the cores submitted.

Recommendation: This Mix Design meets the LP 8 requirements. Estimated time interval between CIR mixing and compaction at ambient temperature is 15-60 minutes. If the ambient temperature is above 95°F at the time of construction, a reduction of the Emulsified Recycling Agent content by 0.25 to 0.50w% because of higher compaction at these temperatures is suggested.

RAP Gradation	Medium	Coarse
Asphalt Content of RAP, w%	4.8	
Emulsion (Western Emulsions)	PASS R	PASS R
Percent Emulsion, w%	2.75 ± 0.50	2.75 ± 0.50
Percent Water for Mixing, w%	2.5 ± 1.5	2.5 ± 1.5
Bulk Specific Gravity, (lbs/ft ³) ^(1,2)	1.990 (124.1)	2.000 (124.7)
Maximum Theoretical Specific Gravity ⁽²⁾	2.375	2.374
Air Voids of Compacted and Cured Specimens ⁽²⁾	16.2	15.8
Water Adsorbed, v%	0.5	0.8
Marshall Stability, Cured Specimen ⁽²⁾ , AASHTO T245, 40°C, 1,250 lb., minimum, lb.	2745	2550
Marshall Retained Stability, AASHTO T245, 40°C, Based on Moisture Conditioning on Cured Specimen ^(2,3,4) , 70% minimum	76.7	82.7
Ratio of Emulsion Residue to Cement, 1.8 min.	Not Applicable	Not Applicable
Raveling Test, w%, ASTM D7196, (Medium Gradation), 7.0% max.	3.2	--

Gyratory compactor at 30 gyrations.

- (1) Measurement on specimens after 60°C curing to constant weight for no less than 16 hours and no more than 48 hours.
- (2) Vacuum saturation of 55 to 75 percent in a water bath at 25°C for 23 hours, then 30-40 minutes in 40°C water bath.
- (3) If the saturated Marshall Stability is at least 1500 lbs., the Marshall Retained Stability may be reduced to 60%.

Test data reported herein has been secured by reliable testing procedures. As we have no knowledge of, or control over the conditions that may affect the use of material from which samples were taken, we assume no responsibility in furnishing this data other than to warrant that they represent reliable measurements of the properties of the sample (s) received and tested. No warranties, expressed or implied, including warranties of merchantability or fitness for a particular use, are made with respect to the products described herein. Nothing contained herein shall constitute a permission or recommendation to practice any invention covered by a patent without license from the owner of the patent.

Summary of Testing:

Test results on the emulsified recycling agent, Western Emulsions PASS R, are shown on Table 1. The emulsified recycling agent was manufactured by Western Emulsions' Plant in Irwindale, California.

Please note that Fabric was noticed in 13 specimens. Please see Appendix A for locations.

The top 4.0" ± 1.0" of each core was sawed off and crushed in a laboratory jaw crusher to generate RAP. The RAP grindings were dried at 104°F until constant weight and screened to obtain material passing the 1" sieve retained on a ¾" sieve, passing ¾" sieve retained on # 4 sieve, passing # 4 sieve retained on # 30 sieve, passing the # 30 sieve retained on # 200 sieve and passing # 200 sieve. These RAP components were batched at approximately 1035 g for the medium and coarse gradations. Each batch was mixed at ambient temperature, 77°F ± 4°F, with 2.5w% water and 2.0, 3.0 and 4.0w% percent PASS R. Each mixture was compacted at ambient temperature by a gyratory compactor at 30 gyrations, removed from the gyratory mold and cured at 60°C for 48 hours. For each emulsion content several cores were made and divided into two subsets, one for dry and one for soaked. The soaked set was vacuum saturated (55-75%) and placed in a water bath at 25°C for 23 hours and 30-40 minutes at 40°C before Marshall Stability testing. The dry set was placed in water bath or 30-40 minutes at 40°C before Marshall Stability testing.

The gradation of the RAP was done by CT202, the asphalt content was done by ASTM 2172, bulk specific gravity was done by CT308-Method C, the maximum specific gravity was done by CT309 with provision of section J, the air voids of compacted and cured specimens were done by CT367 Part B, the water absorbed was determined by ASSHTO T166, the Marshall Stability and Retained Strength were done by AASHTO T245, and the Raveling Test was done by ASTM D7196.

Table 1

Test Results on Emulsified Recycling Agent – Western Emulsion-PASS R

Test on Emulsion	Test Method	Test Results	Specifications	
			Min.	Max.
Sieve Test, %w	AASHTO T59	0.0	---	0.1
Residue by Distillation, %w	AASHTO T59 ⁽¹⁾	64.9	60.0	67.0
RAP Coating Test	AASHTO T59 ⁽²⁾	Good	Minimum Good	
Tests on Residue by Distillation				
Penetration, 25°C, 100g/5sec., Target Value ⁽³⁾	AASHTO T49 ^(3,4)	71	± 25%	
Viscosity@60°C, Poises	AASHTO T2171 ⁽⁴⁾	2529	Report Only	

Modify AASHTO T59-Distillation temperature of 177°C with a 20 minutes hold.

- (1) Mix emulsified recycling agent and water rates shall be determined by the mix design and with jobsite RAP.
- (2) Target value shall be determined by the mix design.

(3) Sieve residue from distillation on # 20 sieve prior to determining viscosity.

Table 2

Test Results for City of Garden Grove, Cold-Central-Plant Recycling (CCPR) Project

RAP Gradation	Medium Gradation			Coarse Gradation		
Emulsion	PASS R	PASS R	PASS R	PASS R	PASS R	PASS R
Emulsion, %	2.0	3.0	4.0	2.0	3.0	4.0
Water, %	2.5	2.5	2.5	2.5	2.5	2.5
Density, lbs/ft ³	123.3	124.4	125.7	123.8	125.0	126.5
Maximum Theoretical Specific Gravity	2.389	2.371	2.353	2.384	2.370	2.357
Dry Specimens	--	--	--	--	--	--
Bulk Specific Gravity	1.976	1.994	2.014	1.984	2.004	2.028
Air Voids, %	17.3	15.9	14.4	16.8	15.4	14.0
Water Adsorbed, v%	0.6	0.5	0.5	0.8	0.9	0.8
Stability, 40°C	2905	2745	2780	2630	2525	2460
Soaked Specimens	--	--	--	--	--	--
Bulk Specific Gravity	1.984	2.000	2.016	1.991	1.997	2.024
Air Voids, %	17.0	15.6	14.3	16.5	15.7	14.1
Vacuum Saturation, %	70.5	66.4	65.7	65.6	63.4	62.4
Retained Stability, 40°C	1680	2105	2345	1690	2135	2190
Retained Strength, %	57.8	76.7	84.4	64.3	84.6	89.0
Raveling Test, w% ⁽¹⁾	--	2.2	--	--	--	--

(1) When the medium gradation was compacted at an emulsion content of 2.5w% & @77 ± 4°F, the raveling test was 4.2%.

Table 3

Test Results for City of Garden Grove, Cold-Central-Plant Recycling (CCPR) Project⁽¹⁾

Sieve	Medium Gradation, Percent Passing	Coarse Gradation, Percent Passing
1"	100.0	100.0
¾"	95.0	85.0
# 4	50.0	40.0
# 30	10.0	5.0
# 200	0.8	0.3

(1) Asphalt Content of RAP is 4.8w%

Table 4

**Test Results for City of Garden Grove, Cold-Central-Plant Recycling (CCPR) Project
RAP - Recovered Properties**

Asphalt Content, w%	
Total Mix	4.8
By weight of dry aggregate	5.0

Aggregate Gradation	
Sieve Size	Percent Passing
3-4-inch	100
½-inch	98.2
3/8-inch	87.5
#4	71.0
#8	56.2
#16	41.9
#30	28.4
#50	16.5
#100	8.8
#200	4.8

In lieu of using the City of Garden Grove's mix design, The Contractor shall submit a mix design to the Engineer at least 14 calendar days prior to beginning the recycling operation. The mix design is for informational purposes only and shall be in accordance with the "Method of Test for Determining the Percent of Emulsified Recycling Agent to Use for Cold Recycling of Asphalt Concrete" below using representative samples of the asphalt concrete to be recycled obtained directly from streets for this project. Based on the characteristics of the existing asphalt pavement taken from different streets, more than one mix design may be required. The mix design shall be certified by a licensed Civil Engineer experienced in cold recycled pavements. The job mix formula shall meet the criteria of Table 1: Recycling Mix Requirements and be approved by the Engineer.

Table 1: Recycling Mix Requirements

Design Parameters	Requirement
Gradation of Reclaimed Asphalt Pavement (RAP): CT 202	1-inch maximum ≤5% passing No. 200
Asphalt Content of RAP: CT 362 or CT 379 or ASTM D 2172 Method B	Report
Bulk Specific Gravity of Compacted Samples ^{a, b} : CT 308, Method C	Report
Maximum Theoretical Specific Gravity ^b : CT 309, including provisions of Section J	Report
Air Voids of Compacted and Cured Specimens ^b : CT 367 Part B	Report
Marshall Stability, Cured Specimen ^b : AASHTO T 245 104 °F (min)	1250 lb
Marshall Retained Stability, AASHTO T 245, 104 °F based on Moisture Conditioning on Cured Specimen (min) ^{b, c}	70% ^d
Ratio of Emulsion Residue to Cement (min)	3:1
Raveling Test of Cold Mixed Bituminous Emulsion, ASTM D 7196, 50 °F (max)	7.0
RAP Coating Test, ASSHTO T59 ^e , (min)	Good

Notes:

- ^a 4-inch diameter mold compaction based on either 75 blow Marshall on each side or gyratory compactor at 30 gyrations.
- ^b Test specimens after 140°F curing to constant weight between 16 hours and 48 hours.
- ^c Vacuum saturation from 55 percent to 75 percent. Water bath at 77 °F for 23 hours, with the last 30 minutes to 40 minutes in 104 °F water bath.
- ^d The Marshall Retained Stability ratio may be reduced to 60%, providing the saturated Marshall Stability is at least 1500 lbs.
- ^e Modify ASSHTO T59 using jobsite RAP, emulsified recycling agent and water application rates that have been determined in the CCPR mix design and submitted in job mix formula.

During the mix design, the Contractor shall determine the target values for penetration at 25°C and viscosity at 60°C of the emulsified recycling agent to be used in production of the recycled pavement mixture.

METHOD OF TEST FOR DETERMINING THE PERCENT OF EMULSIFIED RECYCLING AGENT TO USE FOR COLD RECYCLING OF ASPHALT CONCRETE

- a. **Scope:** This procedure is used to determine the percent and grade of emulsified recycling agent to use for recycling asphalt concrete when the cold method of recycling is used.
- b. **Cold Mix Requirement:** The recycled pavement mixture shall conform to the Mix Design Requirements as outlined in Table 1.
- c. **Sampling and Processing of Existing Pavement Materials:** Obtain sufficient RAP samples by coring areas to be recycled, approximately 400 lbs, to be used for mix design purposes. It is recommended to take one core for each lane mile and where visual differences in the pavement are noticed. If cores show significant differences in various areas, such as different type or thickness of layers between cores, then separate mix designs shall be performed for each of the pavement segments. Cut cores to the depth specified for the cold recycling project. Determine asphalt content of the RAP according to CT362 or CT379 or ASTM D2172 Method B. Perform two mix designs, one for each grading, by recombining the RAP material in the laboratory in order to meet the gradation criteria shown in Table 2.

Table 2: Cold Recycling Gradation Requirements

Sieve Size	Suggested Target	
	Medium Gradation	Coarse gradation
25-mm (1")	100	100
19-mm (¾")	95 ± 2	85 ± 2
4.75-mm (No. 4)	50 ± 2	40 ± 2
600-µm (No. 30)	10 ± 2	5 ± 2
75-µm (No. 200)	0.8 ± 0.3	0.3 ± 0.3

Determine gradation of the RAP after crushing and recombining by California Test CT 202 with the exception that drying of RAP samples to constant mass shall be performed at $104 \pm 4^\circ\text{F}$.

- d. Mixing:** Determine the amount that will produce a 2.4-inch to 2.6-inch tall specimen when compacting 4-inch diameter specimens with either the Marshall compactor based on 75 blows on each side or the gyratory compactor at 30 gyrations for stability testing. Choose three emulsion contents that bracket the estimated recommended emulsion content for all stability testing outlined in Table 1. Select three emulsion contents in either 0.5% or 1.0% increments covering a range typically between 0.5% and 4.0% by dry weight of RAP. Compact 6 samples at each emulsion content for stability testing, 3 for Marshall stability on cured samples and 3 for Marshall stability on cured samples for moisture conditioning. Two specimens are required for Theoretical Maximum Specific Gravity according to CT309, Section J, with the exception that loose RAP mixture shall be cured in an oven at $140 \pm 2^\circ\text{F}$ to constant weight but no more than 48 hours and no less than 16 hours. Constant weight is defined as 0.05% change in weight in 2 hours. Do not break any agglomerates that do not easily reduce with a flexible spatula. Test both specimens at the highest emulsion content in the design and back calculate for the lower emulsion contents. Add moisture that is expected to be added at the milling head, typically 1.5 to 3.0 percent. If any additives are in the mixture, introduce the additives in a similar manner that they will be added during field production. Mixing of test specimens shall be performed manually or with a mechanical bucket mixer or a combination of the two. Mix the RAP thoroughly with water first, then mix with emulsion. Mix at room temperature of $77 \pm 4^\circ\text{F}$. One specimen shall be mixed at a time. Mixing time with emulsion should not exceed 60 seconds.
- e. Compaction:** Compact specimens after mixing. Compact specimens at room temperature of $77 \pm 4^\circ\text{F}$. Compact specimens with a Marshall compactor by applying 75 blows per side for stability testing using 4-inch molds or with a gyratory compactor at 30 gyrations for stability testing using 4-inch molds. Do not heat molds or Marshall compaction hammer. If paper disks are used, place paper disks on the top and bottom of the specimen before compaction and remove paper disks from specimens immediately after compaction.
- f. Curing after Compaction:** Extrude specimens from molds after compaction without damaging the samples. Carefully remove paper disks if used. Place specimens in $140 \pm 2^\circ\text{F}$ forced draft oven with ventilation on sides and top. Place each specimen in a small container to account for material loss from the specimens. Cure compacted specimens at $140 \pm 2^\circ\text{F}$ to constant weight but no more than 48 hours and no less than 16 hours. Constant weight is defined as 0.05% change in weight in 2 hours. After curing, cool specimens at ambient temperature a minimum of 12 hours and a maximum of 24 hours. Perform same oven conditioning and volumetric measurements on moisture-conditioned specimens as on other specimens. Perform moisture conditioning on 3 compacted samples at each emulsion content by applying a vacuum of 254 to 660 mm of Hg partial pressure for a time duration required to vacuum saturate samples to 55 to 75 percent. Saturation calculation shall be calculated by comparing saturated surface dry mass with dry mass in air determined. Soak moisture conditioned samples in a $77 \pm 2^\circ\text{F}$ water bath for 23 ± 1 hours, followed by a 30 to 40 min soak at $104 \pm 2^\circ\text{F}$.

- g. Measurements:** Determine asphalt content of the RAP material to be recycled according to CT362 or CT379 or ASTM D 2172 Method B. Determine bulk specific gravity of each compacted, cured and cooled specimen according to CT308, Method C. Determine specimen heights according to CT308 Section D2e. Alternatively, the height can be obtained from the SGC readout if the gyratory compactor is used. Determine maximum theoretical specific gravity, CT309, Section J, with the exception detailed in Section 4 of this document. Determine air voids of the compacted and oven-cured samples at each emulsion content according to CT367 Part B. Determine corrected Marshall stability by AASHTO T245 at $104\pm 2^{\circ}\text{F}$ after 2-hour temperature conditioning in a forced draft oven or by immersing in water bath for 30 to 40 minutes. This testing shall be performed at the same time that the moisture-conditioned specimens are tested. Determine Marshall Retained Stability. The average moisture conditioned specimen strength divided by the average dry specimen strength is referred to as retained stability.
- h. Emulsion Content Selection:** Choose the design emulsion content that optimizes the performance of the recycled asphalt concrete and meets the requirements listed in Table 1.
- i. Raveling Test on Recycled Asphalt Specimens:** Determine raveling potential on recycled asphalt specimens in accordance with ASTM D 7196.
- j. Report:** The mix design report shall contain the following minimum information: gradation of RAP, RAP asphalt content, recommended water content range as a percentage of dry RAP, optimum emulsion content as a percentage of dry RAP, amount of additive as a percentage of dry RAP, ratio of emulsion residue to cement, and corresponding density, air void level, Marshall stability, retained stability, compaction method used to determine any reported stability, and raveling at recommended moisture and emulsion contents. Include the emulsion and additive designation, company name and location; and residue content; and the additive designation, company name and location; and certificates of compliance for both.

Materials

Emulsified Recycling Agent – The type of emulsified recycling agent to be used shall be as specified. An experienced and qualified technician ("Qualified Technician") shall be at the job site during mixing operations to monitor the characteristics and performance of the emulsified recycling agent. Throughout the job the Qualified Technician shall be available to monitor the mixing, placement and compaction of the recycled asphalt concrete and make adjustments to the emulsified recycling agent formulation as required to improve coating, increase or decrease moisture content to aid in compaction or adjust breaking properties of the emulsion.

The asphalt binder used to make the emulsified recycling agent shall be in compliance to the Bending Beam requirements of the Performance Graded (PG) Asphalt Binder Specification AASHTO M320. This will verify its suitability in meeting the low temperature climatic requirements of the given region where the recycled asphalt concrete will be placed.

The Certificate of Compliance (COC) shall indicate the target value for penetration and the Bending Beam results. Emulsified recycling agent shall meet the criteria of Table 3 and be approved by the Engineer.

The type of emulsified recycling agent utilized must have been successfully used on at least three other cold in-place recycling projects in the last 12 months within California.

Emulsified Recycling Agent – The type of recycling emulsion to be used shall be determined by the mix design. The recycling emulsion supplier shall designate a technician, knowledgeable and experienced in CIR and approved by the Engineer who shall be at the job site at the beginning of the project to monitor the characteristics and performance of the recycling emulsion. Throughout the job the Contractor's designated technician will be available to check on the project and make adjustments to the recycling emulsion formulation as required, to insure the emulsion and recycled pavement perform per these specifications. The Emulsified recycling agent shall be a polymer modified rejuvenating emulsion with a latex polymer, rejuvenating agent and asphalt and shall conform to the following requirements:

Table 3

Tests on Emulsion	Test Method	Requirement	
		Minimum	Maximum
Sieve test, % of weight sample	AASHTO T59 ⁽¹⁾	--	0.1
Residue by distillation, %	AASHTO T59 ⁽¹⁾	60	67
RAP Coating Test	AASHTO T59 ⁽²⁾	Good	—
Tests on residue by distillation:			
Penetration, 25°C, 100g, 5s (Target Value) ⁽³⁾	AASHTO T49 ⁽⁴⁾	+/- 25%	
Absolute Viscosity at 60°C, poise	AASHTO T2171 ⁽⁴⁾	Report Only	

- Note: 1 Modify AASHTO T59 -- distillation temperature of 177°C with a 20 minute hold.
 2 Mix emulsion recycling agent and water rates shall be determined by the mix design and with jobsite RAP.
 3 Target value shall be determined by the mix design.
 4 Sieve residue from distillation on #20 sieve prior to determining viscosity.

The latex polymer shall be PA-AS-1 or approved equal, a product of Polymer Science of America and conform to the following requirements:

Test on Latex Polymer	Test Method	Requirement
Specific Gravity Min.	ASTM 1475	1.08
Tensile strength, die C dumbbell, psi, minimum	ASTM D412 ⁽¹⁾	500
Swelling in rejuvenating agent, % maximum; 48 hours exposure @	ASTM D471 ⁽²⁾ Modified	40% intact film

104°F		
-------	--	--

- (1) **Tensile Strength Determination:** Samples for testing for tensile strength in accordance with ASTM D412 shall be cut using a die dumbbell at a crosshead speed of 20 in/min.
- (2) **Latex Testing:** Suitable substrate for film formation shall be polyethylene boards, silicone rubber sheeting, glass, or any substrate which produces a cured film of uniform cross-section. Polymer film shall be prepared from latex as follows:
- Resistance to Swelling:** Polymer films shall be formed by using a 50 mil drawdown bar and drawing down 50 mils of the latex on polyethylene boards. Films shall be cured for 14 days at 75°F and 50% humidity. Samples for resistance to swelling in rejuvenating agent shall be 1" by 2" rectangles cut from the cured film. Cut at least 3 specimens for each sample to be tested for swelling. Fill 3- 8 oz ointment tins with at least a 1/2" deep of rejuvenating agent. Swelling samples shall be weighed and then placed in the ointment tins on top of the rejuvenating agent. Then, add at least another 1/2" deep of rejuvenating agent over each of the latex samples. The ointment tins shall be covered and placed in an oven at 104°F for the specified 48 hours +/- 15 minutes. The ointment tins are allowed to cool to 75°F and then the latex films are removed from the tins. Unabsorbed rejuvenating agent is removed from the intact latex film by scraping with a rubber policeman and blotting with paper towels. If the latex film does not remain intact during removal from the tins or while removing the unabsorbed rejuvenating agent the sample shall be rejected. After the rejuvenating agent is removed from the samples they are then weighed. Percent swelling is reported as weight increase of the polymer film; report mass increase as a percent by weight of the original latex film mass upon exposure of films to the recycling agent.

The rejuvenating agent shall meet the following requirements:

Test on Rejuvenating Agent	Test Method	Requirement
Viscosity, 140F, CST	ASTM D-2170	50-175
Flash Point, F, COC	ASTM D-92	380 Min.
Saturate, % by wt.	ASTM D2006-70	30 Max
Asphaltenes	ASTM D2006-70	1.0 Max.
Test on Residue	ASTM D2872	
Weight Change, %	ASTM D2872	6.5 Max.
Viscosity Ratio (RTFO/Original)	ASTM D2170	3 Max

The Contractor shall provide current test results and a Certificate of Compliance for emulsified recycling agent at the time of mix design submittal and for each load delivered to the jobsite. During cold in-place recycling operations, the Contractor shall obtain two 1-liter samples of emulsified recycling agent from each load

delivered to the project. One sample shall be used for the Contractor's quality control testing. The remaining samples shall be delivered to the Engineer at the end of each working day. Emulsified recycling agent shall be sampled in plastic containers that are clean, dry, and properly sealed. The Contractor shall also "sieve test" each load of emulsion before accepting delivery. Any load which does not pass the sieve test shall be refused and not incorporated into the work.

Crushed RAP - The stockpiled RAP shall be crushed and screened as necessary to conform to the following gradation prior to the addition of the emulsified recycling agent:

Sieve Size	Percentage Passing
1-Inch	100
200	≤5

Rubberized crack filler, pavement markers, loop wires, thermoplastic markers, fabric and other like materials that may be incorporated into the RAP as it is removed from the roadway shall be removed by the screening process. A minor amount of these residual materials that cannot be completely removed from the processed RAP may be incorporated into the recycled mix if the Contractor can demonstrate that those added materials will not adversely affect the performance of the recycled asphalt pavement. Any such materials retained in the mix shall be appropriately sized and blended so as not to adversely affect the appearance or strength of the recycled pavement.

Crushed and screened RAP shall not be stockpiled for longer than 10 days or in stockpiles greater than 15 feet in height that may, through the weight of the stockpile, reconsolidate the crushed and screened RAP. Water shall be added to the RAP as it is screened and crushed to abate dust and mitigate reconsolidation.

Water - Water may be added to facilitate the uniform mixing of the emulsified recycling agent and the processed RAP. Water added to the recycled asphalt concrete shall be potable, clean and free from deleterious concentrations of acids, alkalis, salts, sugar and other organic or chemical substances. The water shall not contain an amount of impurities that will cause a reduction in the strength of the recycled asphalt concrete. If the water is of questionable quality, it shall be tested in accordance with AASHTO T26.

Additives - If necessary other additives such as cement or lime, in a dry or slurry form may be added to the recycled pavement mixture to meet the requirements of Table 1 and to aid in curing and early strength gain. Any recycling additives used including type, source and percentage used shall be described in the job mix formula submittal. Include the process for incorporating a recycling additive into the CCPR mixture in the job mix formula submittal.

Construction Methods

Weather Limitations

Recycling and placement operations shall not be performed during wet conditions or if rain or cold conditions (less than 45°F) are imminent or predicted to exist at any time. "Imminent or predicted" is defined as being forecasted within a 48-hour period on the

National Weather Service Web Site <http://www.wrh.noaa.gov> for the most representative and nearest location listed where recycling is to begin and end. Recycling and placement operations shall not be performed unless the ambient temperature is a minimum of 45°F and unless the National Weather Service Web Site forecasts that the ambient temperature will be a minimum of 60°F within 3 hours after the start of placement operations and will remain above 60°F throughout the recycling operation until all initial compaction and protection efforts have been completed for that day's run.

Recycling mixing operations shall be ceased if actual ambient temperatures drop below 60°F anytime after the initial 3-hour window following start-up. In the event CCPR pavement is placed and weather conditions deteriorate soon after, it is then a requirement that all traffic stay off the recycled mat until weather conditions improve (temperature rises and humidity drops) and the recycled section has "cured" sufficiently for secondary compaction to take place in accordance with the **Cure and Maintenance** requirements of this specification. The Contractor will be responsible for maintaining and protecting the recycled surface. Any recycled asphalt surfacing damaged by inclement weather shall be replaced by the Contractor at the Contractor's expense as directed by the Engineer.

Full Depth Asphalt Removal

Shall be in accordance with Section 300-1 of the Standard Specifications. Contractor shall remove entire asphalt section without disturbing or introducing any subgrade materials to the asphalt millings. Asphalt shall be removed **separately** from the removals of base or native materials as to not contaminate the asphalt millings.

For roadways included in the project, the Contractor shall remove the existing asphalt to a total depth of 4". If the existing depth of asphalt is less than 4" the contractor shall remove asphalt and base or native soils to a total depth of 3, or as determined by the engineer".

Central Plant Location

The City designates a city owned property/parcel at the North East corner of Brookhurst Avenue and Garden Grove Boulevard for use to set up a central plant. The Contractor shall apply for a temporary use permit (TUP) from the City's Planning Division in order to use. The Contractor shall not have use of the area until the TUP has been issued. Fees for the TUP will be the responsibility of the Contractor. The central plant area shall be thoroughly cleaned of all excess material and left in a neat, orderly appearance upon completion of the project.

Reclaimed Asphalt Pavement (RAP) cold planned from the local streets included in this project shall be hauled to the City designated property/parcel. At no time shall City owned RAP material leave the city limits. The RAP shall then be Cold Central Plant Recycled in accordance with these specifications. Any RAP left over after processing the CCPR pavement for all the streets included in the project shall be hauled to an approved asphalt recycling facility.

Subgrade and Surface Preparation

Prior to placing recycled pavement the subgrade soils/base shall be properly prepared, moisture treated and compacted to a minimum of 95 percent relative compaction based upon ASTM D 1557 so as to create an evenly graded, unyielding surface. If the recycled pavement is to be placed on an existing milled pavement surface it shall be verified that the milled surface is firm and unyielding and there are no subgrade failure areas beneath the milled surface that might compromise the integrity of the recycled pavement. When CCPR pavement is placed on a milled surface or adjacent to structures such as curbs, concrete gutters, swales, planters, etc... these contact surfaces shall be swept of all loose material to create a dry clean surface. A tack coat of SS-1h emulsion, emulsified recycling agent or equivalent (0.05 gallon per square yard minimum) shall be applied to all surface areas prior to placing the recycled pavement. CCPR pavement is not recommended as a direct overlay on existing asphalt pavement without first milling the underlying pavement to aid in bonding and to prevent slippage. Successive layers of recycled pavement may be paved without milling but requires that each layer be fully cured and compacted before placing the overlay section. See "**Placement**" in these specifications.

The Contractor shall remove (edge grind) additional base and /or native soils at 2 feet width along edge of all gutters, cross gutters and spandrels, and at 20 feet width at all joint locations of existing pavement and new pavement prior to placing CCPR to accommodate the thickness of final ARHM-GG-C overlay.

Mixing and Proportioning

The recycled material shall be processed through a material sizing unit having screening and crushing capabilities to reduce the RAP to the maximum size of 1-inch without producing "fines" passing the No. 200 sieve in excess of 5% prior to mixing with the emulsified recycling agent.

After crushing and sizing, the recycled material shall be processed in a mixing unit capable of processing the sized RAP, emulsified recycling agent, water and any additives to a homogeneous mixture to produce recycled asphalt concrete. The mixing unit shall be equipped with a belt scale for the continuous weighing of the RAP and a coupled/interlocked computer-controlled liquid metering device. The mixing unit shall be an on-board completely self-contained counter rotating twin shaft pugmill appropriately rated by the manufacturer for the production levels used by the Contractor. The liquid metering device shall be capable of automatically adjusting the flow of emulsified recycling agent to compensate for any variation in the weight of the RAP introduced into the pugmill. Emulsified recycling agent shall be metered by weight of RAP using a mass flow, coriolis effect, type meter that will accurately measure the amount of emulsified recycling agent to within 0.5 percent of the amount required by the mix design or as adjusted in the field and approved by the Engineer. Other additives, including water as required, shall be controlled and metered using the weight of the RAP introduced into the pugmill. Additives may be introduced volumetrically or by weight per the mix design. The CCPR Contractor shall calibrate and verify the accuracy of the recycle plant not less than five days before recycle operations are to begin.

Automatic digital readings shall be displayed for both the flow rate and total amount of RAP, emulsified recycling agent, and additives in appropriate units of weight and time.

The emulsified recycling agent, additives and water shall be incorporated into the graded RAP at the initial rate determined by the mix design and approved by the Engineer. The total water content shall include that amount present in the stockpile and additional mixing water at the pugmill if required. Adjustments in the rate of emulsified recycling agent, additives and water shall be determined by the Qualified Technician and made as necessary based on the coating, compaction and breaking properties of the recycling emulsion. Sampling variations and mix design may determine the necessity of different levels of emulsified recycling agent and/or additives in various sections of the project.

When a paving fabric is encountered during the cold milling operation, the CCPR Contractor shall make the necessary changes in equipment or operations so that incorporation of the shredded fabric in the recycled material does not affect the performance parameters of the recycled asphalt concrete, or inhibit placing or compaction of the CCPR pavement. No fabric piece incorporated into the recycled section shall have any dimension exceeding a length of 2-inches. The Contractor shall be required to remove and properly dispose of oversized pieces of paving fabric as directed by the Engineer. Similarly, loop wires, pavement markers, rubberized crack fill materials, thermoplastic marking materials, milled concrete, and other materials that may be incorporated into the RAP through the milling process shall be removed from the recycled material unless the Contractor can demonstrate that minor amounts of residual materials that remain will not compromise the integrity of the recycled asphalt.

Transportation

Trucks with smooth clean beds shall be used to haul the recycled asphalt concrete mixture to the placement area. The loaded trucks shall deliver the blended material into the paver within 1 hour of mixing or before the emulsion begins to break and set, whichever time is earlier.

Placement

Recycled pavement shall be spread using a self-propelled paver having electronic grade and cross slope control for the screed. The equipment shall be of sufficient size and power (minimum 170 hp) to spread the recycled material in one continuous pass, without segregation, to the lines and grades established by the Engineer and according to Plans. Heating of the paver screed is not permitted.

CCPR pavement shall be placed to the finished thickness as specified by the Engineer, see attachment "TYPICAL SECTION" for finished elevation specifics on selected residential streets.

A single lift thickness shall be at a minimum compacted depth of 2-inches and not exceed a maximum compacted depth of 4-inches. Before placing any additional lifts, the recycled surface shall be allowed to cure until the moisture of the material is reduced to 2.0 percent or less or has remained in place for a minimum of 10 days without rainfall upon the Engineer's approval. Compaction of the first layer, and any subsequent layers to be overlaid shall be performed and verified per the **Compaction and Cure and Maintenance** requirements of this specification. Prior to installing any additional lifts, contact surfaces shall be carefully swept of all loose material to create a dry clean surface. A tack coat of SS-1h emulsion, emulsified recycling agent or

equivalent (0.05 gallon per square yard minimum) shall be applied to all surface areas prior to placing any additional lifts.

When a pick-up machine is used for transferring the recycled material from a windrow to the receiving hopper of the paver, the pick-up machine shall be capable of removing and transferring the entire windrow of recycled mix in a single pass.

Handwork of CCPR pavement shall be minimized and care shall be taken to prevent segregation. The wings of the paver shall be emptied regularly to prevent buildup and to minimize segregation.

CEMENT STABILIZATION SPECIFICATION:

*To Be Implemented In The Event Of Existing And Unforeseen Sub-grade Deficiencies
And At Direction Of Engineer*

1-1 DESCRIPTION.

This item shall consist of constructing a mixture of soil, cement, and water in accordance with this specification, and in conformity with the lines, grades, thickness, and typical cross sections shown on the plans. Cement-treated subgrade shall be constructed in a series of parallel lanes such that longitudinal and transverse joints are minimized.

2-1 MATERIALS.

2-1.1 PORTLAND CEMENT.

Portland cement shall be Type II/V conforming to the requirements of Section 201-1.2.1 "Portland Cement" of the Standard Specifications for Public Works Construction "GreenBook" 2006 edition. Pozzalone material shall not be substituted for portland cement.

2-1.2 WATER.

Water used for mixing or curing shall be reasonably clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product. Water shall be tested in accordance with and shall meet the suggested requirements of AASHTO T 26. Water known to be of potable quality may be used without testing.

2-1.3 SOIL.

The soil for this work shall consist of materials on the site or imported and shall be free of roots, sod, weeds, wood, construction debris, and stones larger than 2-1/2 inches (60 mm).

3-1 CONSTRUCTION METHODS.

3-1.1 GENERAL.

Prior to beginning any cement treatment, the existing subgrade shall be shaped to conform to the typical sections, lines, and grades as shown on the plans. Bulking of the subgrade resulting from the stabilization process should be considered.

3-1.2 APPLICATION.

Cement shall be applied at a rate of not less than _____ percent based on the in-place dry unit weight of soil and for the depth of subgrade treatment shown on the plans. For estimating purposes, an in-place dry unit weight of soil of _____ pcf should be used.

The cement content shall vary no more than 0.5 percent under and not more than 1.0 percent over the specified cement content (example: tolerance on spread rate of 4.0% is 3.5% to 5.0%). However, the moving average of the rate of cement content tests/inspections shall not be less than the specified cement content. The Engineer reserves the right to increase the rate of application of cement from the specified rates during the progress of construction as necessary to maintain the desired characteristic of the cement treated soil.

Cement shall be distributed with a non-pressurized mechanical vane-feed spreader capable of spreading the cement at a prescribed weight per unit area. Cement shall not be spread upon the prepared subgrade more than 2 hours prior to the mixing operation. No traffic other than the mixing equipment shall be allowed to pass over the spread cement until the mixing operation is completed.

3-1.3 MIXING.

Mixing of the soil, cement, and water shall be done with a four-wheel drive rotary mixer (CMI RS-650B, CAT 500 or equivalent). The mixing machine shall have equipment provisions for introducing water at the time of mixing through a metering device.

The full depth of the cement treated subgrade shall be mixed a minimum of two times with the approved mixing machine. If necessary, one of the two mixes shall be done while introducing water into the soil through the metering device on the mixer. Water shall be added during mixing to provide a moisture content not less than 1 percentage point below nor more than three percentage points above (-1 to +3 of OMC) the optimum moisture of the cement treated soil to ensure chemical action of the cement and soil.

To ensure a uniformly treated section, any material/soil around manholes, utility risers, valves and adjacent to curbs/gutters or in corners, must have that material/soil pulled out at the depth of treatment where it is accessible to be mixed with the reagent. After that material is mixed with the reagent, it will be placed back and compacted.

3-1.4 COMPACTION.

The Contractor shall regulate the sequencing of the cement treatment such that final compaction of the cement treated soil to the specified density shall be completed within 2 1/2 hours after the initial application of water during the mixing operation.

Compaction shall be by means of steel drum rollers. Areas inaccessible to rollers shall be compacted to the required compaction by other means satisfactory to the Engineer.

The field dry density of the compacted cement treated soil shall be at least 95 percent of the maximum dry density of the in-place material as determined in accordance with ASTM D 1557. Should the cement treated subgrade yield under the weight of the compaction equipment, compaction effort will cease in an effort not to compromise the section; in this case, the maximum achievable field density will be accepted or an alternate remedial plan will be proposed by the Engineer.

3-1.5 FINISHING AND CURING.

After the final layer of cement treated subgrade has been compacted, it shall be brought to the required lines and grades in accordance with the typical section. The completed section shall then be finished by rolling with a pneumatic or other suitable roller approved by the Engineer.

The completed cement treated subgrade shall be moist cured or surfaced with a curing seal consisting of SS or CSS grade asphaltic emulsion at a rate of 0.10 to 0.15 gallons per square yard of surface. If used, the curing seal shall be applied on the same day as finish rolling is completed.

3-1.6 MICROCRACKING (RECOMMENDED WHEN NEW ASPHALT IS TO BE PLACED DIRECTLY ON CEMENT TREATED SURFACE IN A SINGLE LIFT OF 2" - 4")

Microcracking of the cement treated subgrade shall be accomplished within 48 to 72 hours of the final compaction. A 10-ton steel-wheel vibratory roller, traveling at a speed of approximately 2 mph and vibrating at maximum amplitude and lowest frequency, or as directed by the Project Engineer shall be used. Three passes shall be completed over the entire section so as to induce minute cracks in the cement treated subgrade. After each pass observe the section for excessive damage, proceed as directed by the Engineer.

3-1.7 FINAL CURING. After microcracking is completed, the section shall be cured in accordance with Section 3-1.5 until the section will support the installation of overlying courses, unless otherwise directed by the Engineer.

3-1.8 CONSTRUCTION JOINTS

Construction joints shall have vertical faces and shall be made in thoroughly compacted material. Additional cement treated soil shall not be placed against the construction joint until the joint has been approved by the Engineer. The face of the cut joint shall

be lean and free of deleterious material and shall be kept moist until the placing of the adjacent cement treated soil.

3-1.9 REPAIR

Cement treated soil that is damaged shall be repaired by removing and replacing the entire depth of affected layers in the damaged area. Feathering will not be permitted for repair of low areas.

4-1 MEASUREMENT AND PAYMENT

The cement treatment of the existing subgrade shall be paid for at the contract unit price per square foot for "Cement Treated Subgrade" and shall include costs for all water and Portland cement; for all spreading, mixing, compacting and trimming to the proper grade as shown on the plans and as specified; for all haul away of all excess material; for all microcracking, curing, protection and sealing of the cement treated subgrade. Additional cement and work required above and beyond the specified amount will be paid on a change order basis.

Compaction

Compacting the recycled mix shall be completed using self-propelled rollers, complete with properly operating scrapers and water spray systems. Rollers of the vibratory-steel drum and pneumatic tired 5 deg below 60 deg F another 10 minutes can elapse before rolling begins, or at the direction of the Qualified Technician and/or Engineer. The number, weight and types of rollers shall be as necessary to obtain the required compaction. At a minimum the following rollers shall be used:

At least one pneumatic roller with a minimum gross operating weight of not less than 25 tons. Tires on the pneumatic rollers shall be evenly inflated and matched in size and profile so as to maximize compactive effort.

At least one double drum steel vibratory roller with a gross operating weight of not less than 10 tons with a minimum drum diameter of at least 60-inches.

Rolling patterns shall be established in the field by the Contractor and verified by the Engineer to achieve a maximum density determined by nuclear density testing. A rolling pattern for compaction shall be determined such that no increase in density is shown on successive nuclear density tests (per ASTM D 2950) for any additional passes of the compaction equipment once the maximum density pattern has been identified ("break over point"). Nuclear density testing shall be repeated throughout the time compaction is being completed to continuously verify the compaction is achieving maximum density results by establishing a rolling vs. density chart that shows the progress of densification from initial breakdown compaction through maximum obtainable density at the break over point.

Care shall be taken not to over compact the mat. A Qualified Technician shall be on site and observing all compaction efforts, monitoring density gauge readings, and approving areas as they reach maximum density. The minimum rolling pattern shall be as follows:

Two complete coverages with the double drum steel vibratory roller immediately after the recycled mix is placed. The first coverage shall be made without the vibratory unit turned on and the second with the vibratory unit operating.

Two complete coverages with the pneumatic-tired roller shall be made after the initial passes of the steel roller.

Final rolling, before cure, to eliminate pneumatic tire marks and to achieve maximum density shall be done by the double drum steel roller, either operating in a static or vibratory mode.

The recycled mat shall be continuously observed during compaction efforts. If moisture cracking occurs under the vibratory compaction mode, the vibrators shall be turned off and static rolling only applied. If moisture cracking of the mat continues under static steel rolling, steel drum compaction shall cease, the mat shall be allowed to cure for a time in order for some moisture to escape, and pneumatic rolling commenced, followed by steel rolling to iron out irregularities from the rubber-tired roller(s). This procedure shall be followed until there is no longer any displacement of the mat observed by roller action on the recycled surface.

The selected rolling pattern shall be followed unless changes in the recycled mix or placement conditions occur and a new rolling pattern is established at that time. Any type of rolling that causes cracking, major displacement and/or any other type of pavement distress shall be discontinued until such time as the problem can be resolved.

Discontinuation and commencement of rolling operations shall be at the discretion of the Engineer.

Extra care shall be taken to ensure that aggregate from the recycled mixture does not stick to the drums or wheels of the rollers. Water shall be uniformly applied to the wheels and drums, along with mechanical means to keep aggregate from sticking. Sufficient water shall be applied to keep rollers and tires clean, but not so much that water pools or ponds on the recycled surface.

Rollers shall not be started or stopped on uncompacted recycled material. Rolling patterns shall be established so that starting and stopping shall be on previously compacted material or the adjacent, existing surfacing.

Cure and Maintenance

After the completion of compaction of the recycled material, no traffic, including that of the Contractor, shall be permitted on the recycled material for at least two hours. This may be reduced if sufficient care is established for traffic that will not initiate raveling. A fog seal of dilute (1:1) SS-1h emulsion, emulsified recycling agent or equivalent (0.08 to 0.12 gallon per square yard) may need to be applied after initial compaction or after the secondary compaction, as outlined below, to all areas opened to significant traffic depending on curing of the CCPR pavement. If necessary to prevent pickup of the fog seal, the recycled pavement surface shall be covered with sand at a rate of 1.0 to 2.0 pounds per square yard. Excess sand shall be removed from the pavement surface by careful sweeping. Sand shall be free from clay or organic material. Fog sealing and/or sanding shall be initiated at the Engineer's direction.

After opening to traffic, the surface of the recycled pavement shall be maintained in a condition suitable for the safe movement of traffic. Before placing the final surfacing, the recycled surface shall remain in-place:

- For a minimum of 2 days and until there is less than 2.0 percent moisture remaining in the recycled pavement mixture; or
- A minimum of 10 days without rainfall.

Secondary Compaction

Two complete coverages (minimum), after cure and before placing any AC overlay or other surface seal shall be conducted with the pneumatic and steel drum roller. A rolling pattern shall be reestablished to determine the maximum density of final rolling.

Density of the recycled pavement shall be verified behind the secondary compaction by nuclear density gauge. A rolling pattern for the secondary compaction shall be determined such that no increase in density is shown on successive nuclear density tests (per ASTM D 2950) for any additional passes of the compaction equipment once the maximum density pattern has been identified. Nuclear density testing shall be repeated throughout the time secondary compaction is being completed to continuously verify that the secondary compaction is achieving maximum density results. Care shall be taken not to over compact the mat. A Qualified Technician shall be on site and observing all secondary compaction efforts, monitoring density gauge readings, and approving areas as they reach maximum density.

The Contractor shall protect and maintain the recycled surface from nuisance water, other deleterious substances, and/or any other damage. Any damage to the completed recycled material shall be repaired by the Contractor prior to the placement of new asphalt concrete or final surface sealing. Areas damaged shall be excavated to the depth directed by the Engineer and/or filled and compacted with new asphalt concrete.

All loose particles that may develop on the pavement surface shall be removed prior to the final surface course. No direct payment will be made and costs shall be included elsewhere for protection and maintenance of the recycled asphalt concrete pavement. Prior to any overlay with asphalt concrete, the recycled pavement should be carefully swept of all loose material to create a dry clean surface. A tack coat of SS-1h emulsion, emulsified recycling agent or equivalent (0.05 gallon per square yard minimum) shall be applied to all surface areas.

Smoothness

The finished surface and grade of the recycled material shall be checked regularly during placement using a level. The smoothness shall not vary more than ¼ inch from a 10-foot straight edge placed on the surface. The Contractor shall correct humps or depressions exceeding this tolerance. High points may be trimmed if approved by the Engineer in the field.

Material Acceptance

Gradation - A sample shall be obtained for each 500 tons of RAP addition to verify the maximum particle size requirement is being met. The first sample and every third sample thereafter shall be compared to the gradation band determined during the mix design by performing a wet field gradation for material passing the 1-inch to No. 4 sieves. The CCPR Contractor shall adjust the emulsified recycling agent as needed.

Emulsified Recycling Agent –A Certificate of Compliance from the emulsion manufacturer shall accompany each shipment to the Project. The CCPR Contractor shall perform a sieve test in accordance with ASTM D 2444 to verify the emulsion is stable prior to using each load. The Contractor shall obtain two 1-quart minimum samples of emulsified recycling agent from each load delivered to the project. One sample shall be used for the Contractor's quality control testing. The remaining samples shall be delivered to the Engineer at the end of each working day. Emulsified recycling agent shall be sampled in plastic containers that are clean, dry, and sealed. Each sample shall be labeled with the date and time sampled and the bill of lading number from the delivery vehicle. Emulsion samples shall be retained and protected from damage or contamination by the Contractor until the project is accepted.

Emulsified Recycling Agent Content – Emulsion content shall be checked and recorded for each segment in which the percentage is changed. Emulsion content changes shall be made based upon if coating and adequate dispersion is not being achieved and if the mix design indicates the CCPR pavement will be stable. Emulsified recycling agent content shall be checked from the belt scale totalizer and asphalt pump totalizer, verified by the delivery weight tickets.

Additives –A Certificate of Compliance from the additive manufacturer shall accompany each shipment to the Project.

Additive Content – Additive content shall be checked and recorded for each segment in which the additive is used per the mix design. Additives shall be checked from the belt scale totalizer and verified by the delivery weight tickets.

Recycled Material Compacted Density – Wet density shall be determined using a nuclear moisture-density gauge generally following the procedures for ASTM D 2950, backscatter measurement. A rolling pattern shall be established such that a maximum density is achieved with the rollers specified, based on relative nuclear density readings.

Method of Measurement

Placement of the recycled asphalt concrete pavement shall be measured by the tonnage placed and accepted by the Engineer for the depths specified in these Specifications. Quantities of the produced CCPR pavement will be based on the belt scale readings from the CCPR Contractor's mixing unit plus the amount of emulsified recycling agent and additive(s) applied to and mixed with the processed RAP. Emulsified recycling agent and additive weight shall be based upon Certified delivery weight tickets less any unused portion and shall be paid separately. Water used in this operation will not be paid for directly and shall be considered subsidiary to the bid item.

Payment

The unit price per square yard for full depth asphalt removal shall include full compensation for all labor, materials, tools, equipment, quality control, traffic control, for doing all work involved in removal and hauling of asphalt to the central plant, for separating the base and/or native soils from asphalt concrete mills, and for the removal and disposal of additional base and/or native soils to obtain depths as specified in these Specifications, and no additional compensation will be allowed therefore.

Payment for subsurface and surface preparation and removal of excess base or native soils shall be considered as included in the contract price paid for full depth asphalt removal and shall include full compensation for all labor, materials, tools, equipment,

quality control, traffic control, for doing all work, and no additional compensation will be allowed therefor.

Payment for setting up central plant and removal/disposal of all excess RAP and cleaning up the site at the completion of project shall be considered as included in the contract price paid for Mobilization and Plant Setup and shall include full compensation for all labor, materials, tools, equipment, quality control, transportation, traffic control, for doing all work, and no additional compensation will be allowed therefor.

The contract price paid per ton for CCPR shall include full compensation for all labor, materials, tools, equipment, quality control, JITT, and incidentals; for doing all the work involved in cold central plant recycling, complete in-place; for mixing, blending, hauling, placing, and compacting the recycled pavement mixture; for protection and maintenance of the recycled layer; for performing all QC testing including mix design; for fog sealing, sanding and sweeping if necessary; for obtaining measurements and recording results of all tests as directed by the Engineer.

Emulsified recycling agent will be paid for at the contract price per ton for emulsified recycling agent. No adjustment of compensation will be made for any increase or decrease in the quantities of emulsified recycling agent required, regardless of the reason for the increase or decrease.

Additive will be paid for at the contract price per ton for additive. No adjustment of compensation will be made for any increase or decrease in the quantities of additive required, regardless of the reason for the increase or decrease.

ASPHALT CONCRETE (PG64-10)

Asphalt concrete shall be Type III-C2 for surface course and shall conform to the applicable portions of Section 400-4.3 of the Standard Specifications with the following modifications:

The amount of paving asphalt to be mixed with the mineral aggregate shall be 5.8% by weight of dry mineral aggregate for arterial and collector streets and 6.0% by weight of the dry mineral aggregate for residential streets.

The mineral aggregate for the 1/2" surface course shall conform to the following grading requirements:

1/2" Surface Course		
Sieve Sizes	Individual Test Result	Moving Average
3/4"	100	100
1/2"	89-100	95-100
3/8"	70-94	75-90
No. 4	44-72	50-67
No. 8	30-54	35-50
No. 30	10-34	15-30
No. 200	2-10	4-7

A minimum of 75 percent by weight, of the mineral aggregate retained on No. 4 sieve shall have at least one fractured face as determined by test method No. California 205.

Designation shall normally be AR-4000, or AR-8000. Two percent (2%) rubber latex solids by weight of the asphalt cement shall be added at the Pug Mill with the asphalt cement during the mixing cycle.

The surface course shall be spread and shaped in layers, with an asphalt paving machine. Each lane of the surface course, once commenced, shall be placed without interruption. The Contractor shall complete all asphalt paving passes on a street before moving to another street or as designated by the Engineer.

Asphalt shall not be heated during the process of its manufacture or during construction so as to cause injury as evidenced by the formation of carbonized particles. Asphalt arriving on the job site shall not be less than 280° or more than 325°F.

During the process of the work no change affecting the uniformity of the asphalt shall be made in either the source of crude stock or the method of manufacture without notifying the Engineer of such proposed change and obtaining his approval.

Tarpaulins shall be used to cover all loads of asphalt concrete from plant to project. A steam refined paving asphalt of viscosity grade AR-4000 shall be used as the asphaltic binder. This shall conform to the provisions of Section 92 of the Standard Specifications, amended as follows: The viscosity grade of paving asphalt will be AR-4000 as determined by the Engineer. Grades of asphalt shall conform to the requirements set forth in the following table:

AASHO	
Test	Viscosity Grade
Special Designation Method	AR-4000

Test of residue from RTFC Procedure (Calif. Method 346E*)	T-240-731	
Absolute Viscosity at 140°F, poise	T-202	3000-5000
Kinematic Viscosity at 275°F, cs min.	T-201	275
Pen. at 77°F 100g/5 sec. min.	T-49	25
96 of orig. pen. at 77°F, min.	**	45
Ductility at 77°F, CM, min.	T-53	440
Solubility in Trichloroethylene %, min.	T-44	99

• TFO (AASHO Test Method T-179) may be used but the RTFC shall be the referee method.

** Original penetration as well as penetration after the RTFC loss will be determined by AASHO

Test Method T-49.

Asphalt concrete shall conform to the applicable portions of Section 39 of the Standard Specifications with the following modifications:

1/2-inch aggregate for the surface course shall conform to the following grading requirements:

Surface Course, 1/2" aggregate		
Sieve Sizes	Individual Test Result	Moving Average
3/4"	100	100
1/2"	89-100	95-100
3/8"	74-100	80-95
No. 4	50-78	55-72
No. 8	32-60	38-55
No. 30	14-38	18-33
No. 200	0 -10	4-8
Asphalt %		±5.8 *

The surface course asphalt concrete shall be dense graded with 2% rubber latex. The following requirements shall also apply:

1. Grade for Asphalt binder shall normally be PG-64-10.
2. The Orange County EMA LAB or Engineer will determine the exact asphalt percentage after the supplier is known.
3. Two percent (2%) rubber latex solids by weight of the asphalt cement shall be added at the Pub Mill with the asphalt cement during the mixing cycle.
4. The Contractor shall submit the final mix design to the City of Garden Grove and to the Orange County EMA LAB for approval prior to use.

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

SECTION 92: ASPHALTS

92-1.01 DESCRIPTION

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

- a. Free from residues caused by the artificial distillation of coal, coal tar, or paraffin.

- b. Free from water
- c. Homogeneous

92-1.02 MATERIALS

92-1.02(A) GENERAL

The Contractor shall furnish asphalt in conformance with the Department's "Certification Program for Suppliers of Asphalt." The Department maintains the program requirements, procedures, and a list of approved suppliers at: <http://www.dot.ca.gov/hq/esc/Translab/fpmcoc.htm>.

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

92-1.02(B) GRADES

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

Performance Grade Asphalt						
Property	AASHTO Test Method	Specification				
		Grade				
		PG 58-22 ^a	PG 64-10	PG 64-16	PG 64-28	PG 70-10
Original Binder						
Flash Point, Minimum °C	T48	230	230	230	230	230
Solubility, Minimum % ^b	T44	99	99	99	99	99
Viscosity at 135°C, ° Maximum, Pa-s	T316	3.0	3.0	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin (delta), kPa	T315	58 1.00	64 1.00	64 1.00	64 1.00	70 1.00
RTFO Test, ^c Mass Loss, Maximum, %	T240	1.00	1.00	1.00	1.00	1.00
RTFO Test Aged Binder						
Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin (delta), kPa	T315	58 2.20	64 2.20	64 2.20	64 2.20	70 2.20
Ductility at 25°C Minimum, cm	T51	75	75	75	75	75
PAV ^f Aging, Temperature, °C	R28	100	100	100	100	110

RTFO Test and PAV Aged Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum G*sin(delta)	T315	22 ^d 5000	31 ^d 5000	28 ^d 5000	22 ^d 5000	34 ^d 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, MPa Minimum M-value	T313	-12 300 0.300	0 300 0.300	-6 300 0.300	-18 300 0.300	0 300 0.300

- a. For use as asphalt rubber base stock for high mountain and high desert area.
- b. The Engineer will waive this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."
- c. The Engineer will waive this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
- d. Test the sample at 3°C higher if it fails at the specified test temperature. G*sin(delta) shall remain 5000 kPa maximum.
- e. "RTFO Test" means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T240 or ASTM Designation: D 2872
- f. "PAV" means Pressurized Aging Vessel

92-1.02© SAMPLING

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

The sampling device shall include a valve:

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

The Contractor shall replace failed valves.

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

92-1.03 APPLYING ASPHALT

Unless otherwise specified, the Contractor shall heat and apply asphalt in conformance with the provisions in Section 93, "Liquid Asphalts."
The Contractor shall apply paving asphalt at a temperature between 120°C and 190°C.
The Engineer will determine the exact temperature of paving asphalt.

92-1.04 MEASUREMENT

If asphalt is paid as a contract work item on a mass basis, the Department will measure asphalt by the tonne under the provisions for determining the mass for payment of liquid asphalt in Section 93, "Liquid Asphalt."
The Engineer will determine the mass of asphalt from volumetric measurements if the Contractor:

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

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

The Engineer will determine pay quantities in conformance with the following:

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

Average Mass and Volumes of Paving Asphalt		
Grade	Liters per Tonne at 15°C	Grams per Liter at 15°C
PG 58-22	981	1020
PG 64-10	981	1020
PG 64-16	981	1020
PG 64-28	981	1020
PG 70-10	981	1020
PBA 6a	981	1020
PBA 6a mod	981	1020
PBA 6b	981	1020
PBA 7	981	1020

PAINT BINDER

Paint Binder shall conform to Sections 203-3 of the Standard Specifications.

A Paint Binder of asphaltic emulsion SS1h shall be applied to the pavement areas to be surfaced that are not covered by pavement reinforcing fabric in accordance with the following provisions:

Contractor shall sweep the recycled asphalt pavement surface so that it is free of dirt and debris prior to each day's paving, and application of paint binder.

Paint binder shall be applied only so far in advance of placing the surfacing as is anticipated for that day's resurfacing.

Paint binder shall be applied to all vertical surfaces of existing pavements, curbs, gutters, and construction joints in the surfacing against which additional material is to be placed, and to other surfaces designated by the Engineer.

Paint binder SS1h shall be applied in one application at a rate of .05/gallon per square yard of surface covered.

Payment for paint binder shall be included in the contract price per ton of A.C. Said payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved, and no additional compensation will be allowed.

PAVING EQUIPMENT

All asphalt pavers shall be self-propelled mechanical spreading and finishing equipment, provided with a screed or strike-off assembly capable of distributing the material up to a twenty (20) foot width. Screed action shall include any cutting, crowding or other practical action which is effective on the mixture without tearing, shoving or gouging, and which produces a surface texture of uniform appearance. The screed shall be adjustable to the required section and thickness. The paver shall be provided with a full width roller or tamper or other suitable compacting devices. Pavers that leave ridges, indentations or other marks in the surface shall not be used unless the ridges,

Indentations or other marks are eliminated by rolling or prevented by adjustment in operations.

The asphalt paver shall operate independently of the vehicle being unloaded or shall be capable of propelling the vehicle being unloaded in a satisfactory manner and, if necessary, the load of the haul vehicle shall be limited to that which will ensure satisfactory spreading. While being unloaded, the haul vehicle shall be in contact with the machine at all times, and the brakes on the haul vehicle shall not be depended upon to maintain contact between the vehicle and the machine.

The procedure whereby material is deposited in a wind-row, then picked up and placed in the asphalt paver with loading equipment, will be permitted for all asphalt concrete provided the asphalt paver is of such design that the material will fall into a hopper which has a movable bottom conveyor to feed the screed and the loading equipment is constructed so that substantially all of the material deposited on the roadbed is picked up and deposited in the paving machine.

ASPHALT PLACEMENT

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

When placing the initial mat of asphalt material on existing pavement, the end of the screed nearest the center line shall be controlled by a sensor activated by a ski device not less than 30 feet long. The end of the screed farthest from centerline shall be controlled by a sensor activated by a similar ski device.

When paving contiguously with previously placed mats, the end of the screed adjacent to the previously placed mat shall be controlled by a sensor that responds to the grade of the previously placed mat and will reproduce the grade in the new mat within a 0.01-foot tolerance. The end of the screed farthest from the previously placed mat shall be controlled in the same manner as when placing the initial mat.

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

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

Joint lines between successive runs shall be within 6 inches of lane lines or a minimum of 12 feet outside of the outer most lane lines.

Compaction - Residential and Arterial/Collector

All compaction of asphalt shall be done in accordance with Section 39 of the Standard Specifications. The compaction after rolling shall have a relative compaction of 95%.

A. Residential

In lieu of the rolling equipment required in Section 39-5.02 and Section 39-6.03 of the Standard Specification, the Contractor will be required to furnish two (2) 10-12 ton, 2-axle tandem steel rollers with journeyman operators behind the asphalt paver machine at all times.

B. Arterial/Collector

In lieu of the rolling equipment required in Section 39-5.02 and Section 39-6.03 of the Standard Specification, the Contractor will be required to furnish three (3) 10-12 ton, 2-axle tandem steel rollers with journeyman operators behind the asphalt paver machine at all times.

C. The breakdown 10-12 ton steel roller will follow directly behind the asphalt paver before the asphalt cools below 280oF. to assure proper compaction. When completed, the surface shall be smooth and free from ruts, humps, depressions, or irregularities.

PAYMENT

Measurement shall be in tons of A.C. The Contractor shall furnish to the City Inspector a legible copy of a licensed weighmaster's certificate showing net weight of asphalt concrete in the truckload. The labeled certificate must be delivered to the City Inspector on site on the same day that the asphalt concrete is delivered. If any of these conditions are not met, the City will not allow payment for the certificates. A.C. placed in excess of the finished grades (as established by the City's survey crew) will not be paid. The compaction after rolling shall have a relative compaction of 95%. Prior to placement of asphalt concrete, a 10-ton minimum vibratory roller shall be used to compact the existing AB or native materials to 95% relative compaction. Payment for asphalt concrete placed shall be made at the contract unit price per ton for asphalt concrete surface course as designated in the bid schedule and in accordance with Section 39-8-02 of the Standard Specifications.

TRAFFIC STRIPING AND PAVEMENT MARKINGS

Painted traffic stripes (lane lines and speed limit markings) and applying thermoplastic pavement markings (word and symbol markings, limit lines, crosswalk, etc.) shall conform to the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these Technical Provisions.

The subparagraphs of the first paragraph in Section 84-3.02, "Materials," of the Standard Specifications are amended to read:

	State Specification No.
Rapid Dry Water Base, Traffic Line.—White, Yellow and Black	PTWB-01

The second and third paragraphs in Section 84-3.02, "Materials," of the Standard Specifications are amended to read:

State Specifications for traffic paint and glass beads may be obtained from the Transportation Laboratory, 5900 Folsom Boulevard, Sacramento, CA 95819-4612, telephone number 916.227.7289.

Glass beads shall conform to 1-ACOT type beads or equal.

The Contractor shall layout and "cat-track" the alignment of the proposed striping at 4.5 m (15 ft) intervals and "spot" the proposed pavement markings as called for on the Plans. Striping shall vary no more than 12 mm (2 in) in 15.2 m (50 ft) from the specified alignment. The Engineer may waive minor variations.

The Contractor shall not proceed with the painting of any striping or applying thermoplastic pavement markings until the Engineer has checked and approved the cat-tracking and spotting, and has authorized the Contractor to proceed.

Traffic striping shall be applied with airless equipment. All traffic striping shall be performed with a road liner type striping machine. Where the configuration or location of a traffic stripe is such that the use of a road liner type striping machine is unsuitable, traffic paint and glass beads may be applied by other methods and equipment approved by the Engineer. The Engineer shall determine if the road liner type striping machine is unsuitable for a particular use.

The first coat of paint shall be applied upon completion of the surfacing. The second coat of paint shall not be applied until seven (7) calendar days after the first coat. Each coat of paint shall be applied at the wet film thickness of 10-12 mils for white and yellow paint and 7 mils for black paint. All paint shall be applied at a relative humidity below seventy-five percent (75%) and an ambient temperature above 13°C (55°F), unless otherwise approved by the Engineer.

Except for black paint, No. 1 reflective glass beads shall be uniformly incorporated in all coats of paint concurrently with the application of the paint. The glass beads shall be embedded in the coat of traffic paint being applied to a depth of at least one-half their diameters. The reflective glass beads shall be applied to the first coat of paint at the rate of 0.7 kg (1.5 lb) of beads per liter (0.26 Gal) of paint, and to the second coat of paint at the rate of 0.95 kg (2 lb) of beads per liter (0.26 Gal) of paint.

Except as otherwise noted on the Plans or as directed by the Engineer, all angle points, as shown on the striping Plans shall be painted as a smooth, tangent curve with a radius and length as approved in the field.

Temporary tape or reflective markers utilized for the purposes of interim delineation for centerline, lane lines, and crosswalk lines shall be placed to the side of the final striping pattern in such a way so that it will not interfere with the first coat of paint. All temporary tape and reflective markers applied for the purpose of interim delineation shall be removed by the Contractor at no additional cost to the City upon completion of the first coat of striping and prior to the final striping.

Stencils used for pavement markings must conform to the latest Caltrans approved metric Stenciling Standards.

Add to Subsection 84-1.04, "Protection from Damage," of the Standard Specifications the following:

Newly painted or existing striping or applied thermoplastic pavement markings which are damaged as a result of the construction, including wheel markings by public traffic and the construction equipment, shall be repainted or thermoplastic

replaced, and any associated removals shall be performed as outlined in these Technical Provisions at the sole expense of the Contractor and no separate compensation will be allowed therefore.

Existing traffic striping and pavement markings that do not conform to the approved Plans shall be removed by wet sandblasting. Other methods may be requested by the Contractor, but shall be submitted in writing to the Engineer for approval. Blackout of existing traffic striping or pavement markings, which do not conform to the approved Plan, shall not be allowed.

Painting traffic stripes and applying of thermoplastic pavement markings shall not be separately measured.

Payment for all paint and thermoplastic traffic striping and pavement markings shall be included in the contract lump sum price bid for "Traffic Striping, Pavement Markers and Markings" and shall include two (2) coats of paint and one (1) coat of thermoplastic. Said item shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in relocating existing traffic signs, painting traffic stripes and applying thermoplastic pavement markings including establishing alignment for stripes, layout work, sandblasting all conflicting markings (including existing paint and thermoplastic on existing PCC gutter plates and spandrels), removing all conflicting raised pavement markers, and performing all work, complete in place, as shown on the Plans, as specified in the Standard Specifications and these Technical Provisions and as approved by the Engineer, and no additional compensation will be allowed therefore.

PAVEMENT MARKERS

Pavement markers shall conform to the provisions in 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 the 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 Subsection 85-1.055, "Adhesives," of the State of California Standard Specifications.

Reflective pavement markers shall be installed per the approved Plan unless otherwise approved by the Engineer. The composition of the material shall be such that its properties shall not deteriorate when heated to, and applied at temperatures up to 425°F, using either air or oil jacketed melters.

Reflective pavement markers shall be placed 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. The Contractor shall perform all work necessary to establish satisfactory locations for markers.

The Contractor shall remove existing reflective pavement markers that do not conform to the approved Plan.

Reflective pavement markers shall be of the prismatic reflector type (3M model white 290-W and yellow 291-2Y) as outlined in Subsection 85-1.05, "Reflective Pavement Markers," of the State of California Standard Specifications. In accordance with Public Contract Code Section 3400, the City has made all necessary findings, and hereby declares that the 3M brand product shall exclusively be supplied for use on this project in order to match other reflective pavement marker equipment already in use throughout the City. In addition, the 3M product is the only product that has been found to achieve sufficient retroreflectivity and durability performance. Therefore, no substitutions will be allowed.

Existing pavement markers (blue) designating location of the fire hydrants shall be replaced "in kind" and proposed pavement markers (blue) designating location of the fire hydrants shall be installed, as indicated on the plans, after the paving is completed. The Contract lump sum price paid for Traffic Striping, Pavement Markers and Markings shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, for doing all the work involved in applying pavement markers and the items specified herein and no additional compensation shall be allowed therefor.

COMPLETION AND ACCEPTANCE

Upon receipt of the Contractor's written assertion that the work has been completed, the Engineer or his authorized representative will inspect the work for acceptance. Thereby a "punch list" is prepared and submitted to Contractor for compliance and/or repair.

The project is considered certifiable for acceptance; when all liens for labor, materials, tools and equipment has been paid for and all lien releases are received by the City; when all claims are satisfied; when all contract items of work have been completed, including changes to the plan in an acceptable workmanship; when all repairs to damages of existing utilities, appurtenances and improvements has been completed and accepted by the respective owners; when all survey monuments and other survey markers has been re-set and copy of center line ties been submitted; when the project site and all grounds occupied by the Contractor left in a neat and acceptable conditions.

All corrections noted in the "punch list" must be accepted by the Engineer.

If, in the Engineer's judgment, the work has been completed and is ready for acceptance, it will so certify to the City Council, which may accept the completed work.

The Engineer will, in its certification, give the date when the work was completed. This will be the date when the Contractor is relieved from responsibility to protect the work and the end of assessment of liquidated damages.

Full compensation for conforming to the requirements of this Section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

TRAFFIC STRIPING

A. Control of Alignment and Layout

All work necessary to establish satisfactory lines for stripes and all layout work required for pavement markings shall be performed by the Contractor. Lines shall be established by the application of cat tracks or dribble lines.

Cat tracking shall consist of stretching a rope on a straight line between control points on tangent alignment and on a true arc through control points on curved alignment and placing spots of paint along the rope. The spots shall be not more than 3 inches in width and not more than 5 feet apart on curves nor more than 10 feet apart on tangents.

Dribble method may be used only when designated by the City. Dribble lines shall consist of marking the pavement with a thin line of paint using a striping machine or other suitable device. Dribble lines shall be on a straight line between control points on tangent alignment and on a true arc through control points on curved alignment.

Paint for cat tracks and dribble lines shall be the same color as the traffic stripe for which they are placed.

B. Tolerances and Appearances

The Contractor shall perform all layout, alignment and spotting.

Traffic stripes and pavement markings shall conform to the dimensions and details in accordance with the MUTCD and Standard Specifications.

Completed traffic stripes shall have clean and well-defined edges without running or deformation, shall be uniform, shall be straight on tangent alignment, and shall be on a true arc on curved alignment. The widths of completed traffic stripes shall not deviate more than 1/4 inch on tangent nor more than 1/2 inch on curves from the widths shown on the plans. Broken traffic stripes shall also conform to the following requirements:

The lengths of the gaps and individual stripes that form broken traffic stripes shall not deviate more than 2 inches from the lengths shown on the plans

The Contractor shall be responsible for the completeness and accuracy of all layout alignment and spotting. Traffic striping shall not vary more than 1/2 inch in 50 feet from the alignment shown on the plans.

The lengths of the gaps and individual stripes shall be of such uniformity throughout the entire length of each broken traffic stripe that a normal striping machine will be able to repeat the pattern and superimpose additional stripes upon the traffic stripe being applied.

The completed pavement markings shall have clean and well-defined edges without running or deformation and shall conform to the dimensions shown on the plans, except that minor variations may be accepted by the City.

Drips, overspray, improper markings, and paint material tracked by traffic shall be immediately removed from the pavement surface by methods approved by

the City. Ragged ends of segments, fogginess along the sides or objectionable dribbling along the unpainted portions of the stripe shall be removed to the satisfaction of the City. When curb painting the Contractor shall take every effort to avoid getting paint on the sidewalk or in the gutter. All such removal for striping and curb painting work shall be at the Contractor's expense.

The finished product shall have an opaque, well painted appearance with no black or other discoloration showing through.

Existing lines shall be followed in such a manner as to present a uniform, pleasing appearance, and misalignment or disregard to previous painting will not be permitted. Abrupt breaks in alignment between broken segments will not be permitted.

The Public Works Director, or his designee, shall inspect completed lines and shall inform the Contractor of any faulty methods or unsatisfactory results. Lines considered unsatisfactory shall be repainted and reflectorized at the Contractor's expense and the Public Works Director, or his designee, shall be the sole judge as to the acceptability of the completed line.

C. **Paint Spills, Defective Workmanship and Environmental Compliance**

The Contractor will have ten (10) working days to clean up or correct any unsatisfactory work. Removal of paint shall be done by water blasting or wet sandblasting. Removal of thermoplastic shall be done by grinding. After sandblasting and grinding, area will be cleaned. The City shall after ten (10) working days retain the right to either call in another Contractor or to perform the work with City forces; and to bill the Contractor time and material charges plus 30 percent for overhead or contract cost plus 15 percent for overhead.

Contractor is also responsible to be NPDES compliant. Contractor is to clean up all paint spills and implement Best Management Practices to keep all materials out of the storm drain system, including excess glass beads.

Protection from Damage:

The contractor shall take special care to protect existing reflective pavement markers and shall, at his expense, replace all coated markers.

Newly placed traffic stripes and pavement markings shall be protected from damage by public traffic or other causes until the paint is thoroughly dry. Stripes or markings that are damaged prior to drying shall be repainted at the Contractor's expense.

D. **Application Rate and Requirements**

Application: Paint and beads shall be applied at the following rates and in conformance with the following requirements:

The rate of application of paint and beads:

15 mil + 2 mil wet film thickness

Six (6) to eight (8) pounds of beads per gallon of applied paint

The Contractor shall take all reasonable precautions to protect the paint during drying time and shall be required to paint out all objectionable tracking or water damage at his expense.

Traffic stripes and pavement markings shall be applied only on dry surfaces and only during periods of favorable weather. Painting shall not be performed when the atmospheric temperature is below 50 F; when the relative humidity exceeds 75 percent at the site of work; when freshly painted surfaces may become damaged by rain, fog, water, or condensation; nor when it can be anticipated that the atmospheric temperature will drop below said 50 F. temperatures during the drying period.

No work shall be done when weather conditions restrict visibility to less than one mile or when designated by the City. Water containment/diversion if required, will be done by the Contractor at his expense.

Surfaces which are to receive traffic stripes and pavement markings shall be dry and cleaned of all dirt and loose material.

Mixing and application equipment shall be in accordance with Section 310-5.6.3 of the Standard Specifications for Public Works Construction (Green Book).

Paint for traffic striping shall be either rapid dry white conforming to State Specifications 8010-81D-04, or rapid dry yellow conforming to State Specifications 8010-81D-05, in accordance with the color stipulated on the plans or as directed by the City.

Paint shall be applied in two (2) equal thicknesses totaling the minimum required wet film thickness indicated in Subsection 310-5.6.5, "Traffic Stripes and Markings," of the Standard Specifications for Public Works Construction. A minimum period of 14 days shall be allowed between the two applications of striping, or as directed by the City.

D. Materials

Waterborne Paint: The paint to be used on all work done under this contract shall be the following, or equivalent, as approved in writing by the City. All products used must be on the State of California, Department of Transportation Qualified Products List (QPL). Paint for traffic striping shall be either rapid dry white conforming to State Specifications 8010-81D-04, or rapid dry yellow conforming to State Specifications 8010-81D-05, in accordance with the color stipulated on the plans or as directed by the City.

Thinner shall not be mixed with paint. Paint shall dry "track free" within five (5) minutes. All pigment shall be lead free.

Beads used for reflectorized lines shall conform to the following:

American Association of State Highway and Transportation Officials (AASHTO) Standard Specification for Glass Beads Used in Traffic Paint. AASHTO Designation M 247-81 with AC 110 adhesion coating.

Stencils: Contractor shall provide all stencils and street marking legend cutouts, all of which conform to standards presently in use in the City of Garden Grove for the restriping of all existing pavements legends. For all new work, where new legends are required, the Contractor shall use the most recent addition of the California MUTCD.

F. Pavement Markers

This work shall consist of furnishing and placing pavement markers at the locations shown on the plans or where directed by the Public Works Director. Pavement markers shall be in accordance with Section 312-1 of the Standard Specifications for Public Works Construction (Greenbook), or shall be of type, color, shape, dimensions and tolerances shown on the plans or work orders. Markers shall be installed with hot melt bituminous material in accordance with Section 312-1 of the Greenbook.

The Contractor shall provide the City with a Certificate of Compliance.

Measurement: The quantity of reflective and non-reflective pavement markers will be measured as units determined from actual count in place.

Payment: The contract unit prices paid for reflective and non-reflective pavement markers shall include full compensation for furnishing all labor, materials, tools, equipment, and incidents, and for doing all the work involved in furnishing and placing pavement markers, complete in place, including adhesives, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the City.

ATTACHMENT "B"

SECTION 2 - PROPOSAL

THE HONORABLE MAYOR AND CITY COUNCIL
CITY OF GARDEN GROVE
11222 ACACIA PARKWAY
GARDEN GROVE, CALIFORNIA 92840

To: THE HONORABLE MAYOR AND CITY COUNCIL

The undersigned having carefully examined the Plans and Specifications to: Furnish All Labor, Material and Equipment 2012 Local Street Rehabilitation Project for the City of Garden Grove.

HEREBY PROPOSE to furnish all labor, materials, equipment and transportation, and do all the work required to complete work in accordance with the Plans and Specifications for the sum of:

BID PROPOSAL (2012 STREET REHAB PROJECT)		
<u>Item No</u>	<u>Project Title</u>	<u>Total Cost</u>
A	12 Street and 21 Street	\$ <u>553,290.56</u>
B	Prop 1B Phase III	\$ <u>2,364,379.68</u>
Total Cost for Part A and B combined		\$ <u>2,917,670.24</u>

Two million nine hundred seventeen thousand six hundred seventy dollars twenty four cents

(Amount written in words) Note: In case of discrepancy between the words and figures, the words prevail. The above bid price includes all applicable taxes for the pricing Proposed in this submittal. In case of error in the extension(s) in the Extended Total column, the unit price(s) shall govern.

NOTES:

- The lowest, responsible bidder will be determined by *Total Cost for Part A and B combined*.
- Attachment "B" Pages 93-94 of Attachment must also be submitted with the bid proposal.
- Partial bids will NOT be accepted! All lines must be filled out on Attachment "B" including pages 93-94 for your bid to be considered responsive.

It is understood and agreed that:

- (a) No verbal agreement or conversation with any officer, agent or employee of CITY, either before or after the execution of the Agreement shall affect or modify any of the terms or obligations of this Proposal.
- (b) CITY will not be responsible for any errors or omissions on the part of the undersigned in making up his bid, nor will bidders be released on account of errors.
- (c) The undersigned hereby certifies that this Proposal is genuine and is not sham or collusive, or made in the interest or in behalf of any person not herein named, and that the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other person, firm or corporation to refrain from bidding, and that the undersigned has not in any manner sought, by collusion, to secure for himself an advantage over any other bidder.
- (d) The Bidder acknowledges receipt of amendments to the Solicitation and related documents numbered and dated:

<u>Amendment No.</u>	<u>Date</u>
1	April 2, 2012

- (e) undersigned has not in any manner sought, by collusion, to secure for himself an advantage over any other bidder.

Check below where appropriate:

- Partnership: That _____ are partners, doing
(Names of all Partners)

business under the firm name of _____ and that
the co-partnership makes the accompanying proposal.
- Corporation: That **GARY DOWNEY,** **SULLY-MILLER CONTRACTING**
ASSISTANT SECRETARY of **COMPANY** makes
(President or Secretary) (Name of Corporation)

the accompanying proposal.
- Individual: That _____ is the bidder and makes the
(Name of Individual)
accompanying proposal.

ATTACHMENT "B"
PART ONE:
Prop 1B Phase III Line Items

	CODE	DESCRIPTION OF ITEMS	ESTIMATED QUANTITY		UNIT PRICE (FIGURES)	TOTAL COST (FIGURES)
1		Mobilization and Plant Setup	%	LS	40,000.-	40,000.-
2		Storm Water and Non-Storm Water Pollution Control	%	LS	5,500.-	5,500.-
3		Traffic Control	%	LS	9,000.-	9,000.-
4		Full Depth Asphalt Removal (Approx. 4" Thick) and Haul to Central Plant	248,198	SF	0.22	54,603.56
5		Cold Central Plant Recycling (CCPR)	5520	TON	16.-	88,320.-
6		Construct 1.5" HMA (PG64-10) Overlay	824	TON	90.-	74,160.-
7		Construct 2" HMA (PG64-10) Overlay Dale St. -Lampson to Chapman	1286	TON	87.-	111,882.-
8		Emulsified Recycling Agent	160	TON	750.-	120,000.-
9		Double Adjust Manholes (With False Floors for Sewer Manholes)	13	EA	525.-	6,825.-
10		Double Adjust Valve Boxes	15	EA	375.-	5,625.-
11		Adjust Clean Out	0	EA	0.-	0.-
12		Traffic Striping, Pavement Markers and Markings	%	LS	9,000.-	9,000.-
13		Traffic Loops (6X6)	15		225.-	3,375.-
14		Cement Stabilization	50,000	SF	0.50	25,000.-
		TOTAL COST FOR PART ONE				\$553,290.56

ATTACHMENT "B"
PART TWO:
12 Street and 21 Street Line Items

ITEM NO.	CODE	DESCRIPTION OF ITEMS			UNIT PRICE (FIGURES)	TOTAL COST (FIGURES)
1	F	Mobilization and Plant Setup	%	LS	40,000.-	40,000.-
2		Storm Water and Non-Storm Water Pollution Control	%	LS	3,500.-	3,500.-
3	S	Traffic Control	%	LS	60,000.-	60,000.-
4		Full Depth Asphalt Removal (Approx. 4" Thick) and Haul to Central Plant	1,031,044	SF	0.22	226,829.68
5		Cold Central Plant Recycling (CCPR)	23,000	TON	16.-	368,000.-
6		Construct 1.5" HMA (PG64-10) Overlay	9,795	TON	86.-	842,370.-
7		Construct 2" HMA (PG64-10) Overlay	0	TON	0.-	0.-
8		Emulsified Recycling Agent	900	TON	750.-	675,000.-
9	S	Double Adjust Manholes (With False Floors for Sewer Manholes)	109	EA	520.-	56,680.-
10	S	Double Adjust Valve Boxes	10	EA	550.-	5,500.-
11	S	Adjust Clean Out	3	EA	500.-	1,500.-
12	S	Traffic Striping, Pavement Markers and Markings	%	LS	10,000.-	10,000.-
13		Traffic Loops (6X6)	0		0.-	0.-
14		Cement Stabilization	150,000	SF	0.50	75,000.-
		TOTAL FOR PART TWO				\$2,364,371.68