



**CONTRACT BIDDING AND
SPECIFICATION DOCUMENTS
FOR
REHABILITATION PROJECT, 2014
AVOCADO HOA
AVOCADO SUMMIT DRIVE
EL CAJON, CALIFORNIA**

September 26, 2014

Prepared for:
Curtis Management Company
5050 Avenida Encinas, Suite 160
Carlsbad, CA 92008

Prepared by:
Krazan & Associates, Inc.
215 West Dakota Avenue
Clovis, California 93612

 **Krazan** & ASSOCIATES, INC.
SITE DEVELOPMENT ENGINEERS

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PROJECT SUMMARY
ASPHALT/ CONCRETE PAVEMENT PROJECT, 2014
Avocado HOA
Avocado Summit Drive
El Cajon, California

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
1	Full-Depth AC/Subgrade pulverize to 15.0" depth. Allow net placement Placement of 3.5" AC over 12.0" CTB.	Sq. Ft.	234,600
2	Stabilize 15.0" depth section. Cement treatment base (6%) CTB.	Sq. Ft.	234,600
3	Install 3.5" section AC	Sq. Ft.	234,600
4	Remove/Replace AC Berms	Sq. Ft.	17,100
5	Paint markings (restripe existing markings and curbs)	LS	LS
6	Install speed bumps	LS	14
7	Duration warranty	Years	_____

TOTAL BASE BID:

Additional Alternative Items (Cul-de-Sacs)

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
1	Full-Depth AC/Subgrade pulverize to 15.0" depth. Allow net placement of 3.5" AC over 12.0" CTB	Sq. Ft.	70,100
2	Stabilize 15.0" depth section. Cement treatment base (6%) CTB.	Sq. Ft.	70,100
3	Install 3.5" section AC	Sq. Ft.	70,100
4	Remove/Replace AC Berm	LF	4,300
5	Duration warranty	Years	_____

TOTAL BASE BID:

INVITATION TO BID

Sealed Bids, by invitation only, must be delivered to Krazan & Associates, Inc., 215 West Dakota Avenue, Clovis, California 93612, Attention Mr. Brian Nelson no later than 3 P.M., _____.

Thereafter, all Bids that have been received will be privately opened.

DESCRIPTION OF WORK

This bid package includes work for Avocado HOA, Avocado Summit Drive, El Cajon, California. Work includes parking area reconstruction.

All Bids must be on the attached Bid Form along with Bidders Qualification and be in accordance with the Contract Documents on file at the office of KRAZAN & ASSOCIATES, INC.

Bidders will be required to sign a contract.

Bidders must be licensed contractors in the State of California.

Bids will be received on a unit price basis with a Total Base Bid with one Additive Alternate.

No Bid may be withdrawn within a period of 30 days after the date fixed for opening bids.

Krazan & Associates, Inc. reserves the right to reject all Bids, to waive informalities, and to reject nonconforming, nonresponsive or conditional Bids.

The successful bidder will be contacted within 30 days of the receipt of Bids.

To facilitate review and timely award of the contract, a copy of the official bid and attachments shall be mailed or delivered to Krazan & Associates, Inc., 215 West Dakota Avenue, Clovis, California 93612, Attention Mr. Brian Nelson by 3:00 P.M., _____.

BID ENVELOPE shall be clearly marked Avocado HOA, Avocado Summit Drive, El Cajon, CA, CONFIDENTIAL BID COPY ENCLOSED.

Official bids will be opened at the appointed time in the in engineer's office in Clovis, California. Owner and Engineer will not be responsible for bid information exposed prior to the appointed bid opening.

INSTRUCTION TO BIDDERS

TAXES AND PERMITS: All taxes that are lawfully assessed against Owner or Contractor in connection with the work shall be paid by Contractor. The bid prices shall include all such taxes and the costs of all required permits (*does not apply to this project*).

BIDDER'S ABILITY: Each bidder must be licensed as a contractor in accordance with state provisions for licensure, and be skilled and regularly engaged in the general class or type of work called for under this Contract.

FAMILIARIZATION WITH THE WORK: Before submitting his Bid, each prospective Bidder shall familiarize himself with the Work, the site where the Work is to be performed, local labor conditions and all laws, regulations and other factors affecting performance of the Work. He shall carefully correlate his observations with requirements of the Contract Documents and otherwise satisfy himself of the expense and difficulties attending performance of the Work. The submission of a Bid will constitute a representation of compliance by the Bidder. There will be no subsequent financial adjustment for lack of such familiarization.

Each Bidder shall visit the site of the Work and completely inform himself relative to construction hazards and procedure, the arrangement and condition of existing structures and facilities, the procedure necessary for maintenance of uninterrupted operation of existing facilities, the character of construction equipment and facilities needed for performance of the Work, and facilities for transportation, handling, and storage of materials and equipment. All such factors shall be properly investigated and considered in the preparation of the Bid.

INTERPRETATIONS: All questions about the meaning or intent of the Contract Documents shall be submitted to the Engineer in writing. Replies will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the bidding documents. Questions received less than five days prior to the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

CONTRACT TIME: The Contract Time is an essential part of the contract and it will be necessary for each Bidder to satisfy Owner of his ability to complete the Work within the time set forth. Provisions for delays, damages, and extensions of time are set forth in the General and Supplementary Conditions.

BID FORM: The Bid Form is attached hereto. Bid Forms must be completed in ink. **DO NOT USE BID FORM IN THE CONTRACT DOCUMENTS.**

Bids by corporations must be executed in the corporate name by the president or vice president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The state of incorporation shall be shown below the corporate name. Bids by partnerships must be executed in the partnership name and signed by a partner: title and the official address of the partnership must be shown below the signature. Bids by joint ventures shall be signed by each participant in the joint venture or by an authorized agent of each participant.

The names of all persons signing must also be legibly printed below the signature. A Bid by a person who affixes to his signature the word 'president,' 'secretary,' "agent," or other designation without disclosing his principal may be held to be the Bid of the individual signing. When requested by Owner, evidence of the authority of the person signing shall be furnished.

All blank spaces in the Bid Form shall be filled. Bids received without all such items completed will be considered nonresponsive.

The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers and dates of which shall be filled in on the Bid Form.

No alterations in Bids, or in the printed forms therefore, by erasures, interpolations, or otherwise will be acceptable unless each such alteration is signed or initialed by the Bidder; if initialed, Owner may require the Bidder to identify any alteration so initialed.

If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof.

No Bidder may submit more than one Bid. Multiple Bids under different names will not be accepted from one firm or association.

AWARD OF CONTRACT: Owner will award a contract to the Bidder who, in Owners judgment, is the lowest responsive, responsible Bidder. Owner reserves the right to reject all Bids, to waive informalities, and to reject nonconforming nonresponsive, or conditional Bids.

BID FORM
(7 PAGES)

TO: Krazan & Associates, Inc. 215 West Dakota Avenue, Clovis, California 93612

ATTENTION: Mr. Brian Nelson

FOR: Asphalt/Concrete Pavement, Avocado HOA, Avocado Summit Drive, El Cajon, CA

Submitted by _____
A corporation
A partnership
An individual

Principal Office _____

Person to contact for additional information on this bid:

Name _____

Address _____

Phone _____

Bidder declares and agrees, if this Bid is accepted, to enter into Agreement in the form attached to perform all Work, including the assumption of all obligations, duties, and responsibilities necessary to the successful completion of the contract and the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the Work; tools, equipment, supplies, transportation, facilities, labor, superintendence, and services required to perform the Work; insurance and submittals; all as indicated or specified in the Contract Documents.

BID FORM

If this Bid is accepted, the Bidder agrees to sign and deliver the Agreement with any required bonds and insurance document to Owner or Owner's representative within ten (10) days after receipt of Notice of Award.

Receipt of the following Addenda, is acknowledged:

No _____ Dated _____

No _____ Dated _____

No _____ Dated _____

SIGNATURE OF BIDDER:

Contractors License Number _____

If an individual: _____, doing business

as _____

If a Partnership: _____, partner

by: _____

If a Corporation: _____

(a _____ Corporation)

by _____

Title _____ SEAL & ATTEST)

Business Address of Bidder _____

PROJECT SUMMARY
ASPHALT/ CONCRETE PAVEMENT PROJECT, 2014
Avocado HOA
Avocado Summit Drive
El Cajon, California

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
1	Full-Depth AC/Subgrade pulverize to 15.0" depth. Allow net placement Placement of 3.5" AC over 12.0" CTB.	234,600 Sq. Ft.		
2	Stabilize 15.0" depth section. Cement treatment base (6%) CTB.	234,600 Sq. Ft.		
3	Install 3.5" section AC	234,600 Sq. Ft.		
4	Remove/Replace AC Berms	17,100 Sq. Ft.		
5	Paint markings (restripe existing markings and curbs)	LS		
6	Install speed bumps	LS - 14		
7	Duration warranty	_____yrs		
TOTAL BASE BID:				

Additional Alternative Items (Cul-de-Sacs)

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
1	Full-Depth AC/Subgrade pulverize to 15.0" depth. Allow net placement of 3.5" AC over 12.0" CTB	70,100 Sq. Ft.		
2	Stabilize 15.0" depth section. Cement treatment base (6%) CTB.	70,100 Sq. Ft.		
3	Install 3.5" section AC	70,100 Sq. Ft.		
4	Remove/Replace AC Berm	4,300 LF		
5	Duration warranty	_____yrs		
TOTAL BASE BID:				

Quantity of Materials:

Tons of cement projects for soil stabilization CTB (6%): _____ Cost per Ton (tax inc.) _____

Tons of Hot mix asphalt concrete 1/2" fine
PG 64-10 Type A, 1/2" max medium: _____ Cost per Ton (tax inc.) _____

Tons of berm mix: _____ Cost per Ton (tax inc.) _____

Asphalt/Cement Plant Name: _____ Dump: _____

Project Duration:

Days of Demo, soil stabilization and paving: _____

Days of asphalt berm placement: _____

Signature of Contractor: _____ Date: _____

Company Name: _____

PROJECT SUMMARY
ASPHALT/ CONCRETE PAVEMENT PROJECT, 2014
Avocado HOA
Avocado Summit Drive
El Cajon, California

Street	Total Sq. Ft.	Berm (LF)
Cadoglen	38,404	3,226
Avocado Summit Phase III	45,611	3,025
Wood Hills	50,147	3,335
Timber Pond Cul-de-Sac	8,750	3,660
Timberpond	43,406	1,050
The Woods	23,069	1,206
Pool Parking Lot	7,828	386
Avocado Summit Phase I	17,317	1,141
Totals:	234,600	17,100

Street	Total Sq. Ft.	Berm (LF)
Cul-de-Sac 1-13	70,100	4,300

BID FORM

If Bidder is a joint venture, all other parties must sign below, and state Contractors license number:

If an Individual:

doing business as

Contractor's License Number:

List of Subcontractors (with attached Lien Releases):

BIDDER QUALIFICATION FORM

Bidder: _____
(Name)

(Address)

Corporation: [] Yes [] No

Date of Incorporation: _____ State of Incorporation: _____

Name, Title and Address of all Principal Officers:

Co-Partnership: [] Yes [] No

Date of Organization: _____

Name, Title, and Address of all Partners:

Individual: [] Yes [] No

Date Company Formed: _____

How long has your firm been in the type of work involved in this project? _____

Bonding Company: _____

Have you ever refused to sign a contract awarded to you? _____

Have you ever defaulted on a contract? _____ If so, attach separate statement listing location, owner and circumstances.

Owner may require Bidder to submit financial information.

Remarks: _____

List for projects of similar size and character this firm has completed within the past five years:

Project (Name and Address)	Owner (Name and Address)	Architect	Contract Amount	Date of Completion	Completed on Time (yes/no)	Work Done With Own Force % of Work Trades
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

(Attach separate statement if necessary to fully describe qualifications for this work)

Name and experience of management personnel nominated for this project:

Project Manager
Name

Experience (Years)

Superintendent
Name

Experience (Years)

Contractor - Authorized Signature

Date

State of California

County of _____

} ss.

On _____, before me, _____,

Date

Here Insert Name and Title of the Officer

personally appeared _____,

Name(s) of Signer(s)

Who proved to me based on 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.

Place Notary Seal Above

Signature _____

Signature of Notary Public

**SUPPLEMENTAL CONDITIONS
PAVEMENT REHABILITATION PROJECT, 2014
Avocado HOA
Avocado Summit Drive
El Cajon, California**

SC-1 THE CONTRACT DOCUMENTS

The Contract Documents are complementary; what is called for in one is as binding as if called for in all. If the Contractor finds a conflict, error, or discrepancy in the contract Documents, he must call it to the attention of the Engineer in writing before proceeding with the work affected thereby. In resolving such conflicts, errors and discrepancies, the documents shall be given preference in the following order:

1. Agreement
2. Drawings
3. Specifications

Within the specifications, the order of precedence is as follows:

1. Addenda
2. Supplemental General Conditions (Special Conditions)
3. Instruction to Bidders
4. General Conditions of the Contract
5. Technical Provisions
6. Standard Specifications

Within reference to the drawings, the order of precedence is as follows:

1. Figures govern over scaled dimensions
2. Detail drawings govern over general drawings
3. Change order drawings govern over contract drawings
4. Contract drawings govern over standard drawings
5. Contract drawings govern over shop drawings

The approval of shop drawings that deviate substantially from the requirements of the contract documents must be accompanied by a written change order.

SC-2 ENGINEER

All duties and responsibilities assigned to Engineer in the Contract Documents, with the corresponding rights and authority, will be assumed by Krazan & Associates, Inc. _____
_____ and their duly authorized agents.

SC-3 DESCRIPTION OF WORK

The Contractor shall perform all the work required by the Contract Documents for construction of the Pavement Rehabilitation Project, 2014 complete per plans and specifications, furnishing all labor, services, materials and equipment necessary to complete the work shown on the Drawings and described in the General Conditions, Addenda and Technical Specifications.

The work generally consists of placing asphalt concrete overlays with fabric, surface seal coat, AC leveling course, surface preparation including, but not limited to, rubberized asphalt crack seal, dig out repairs, wedge cutting, utility cover adjustment, replacing paint markings and other work as described herein.

SC-4 BEGINNING WORK AND TIME FOR COMPLETION

The Contractor shall begin work within fifteen (15) days after receiving written notice to proceed and shall diligently prosecute the work to completion within the time for completion specified in the Construction Agreement.

The time of completion will be measured in working days.

The Engineer will furnish the Contractor a weekly statement showing the number of days charged for the preceding week, the number of working days of time extensions approved, the number of working days originally specified and the number of working days remaining.

Should the Contractor elect to begin work prior to execution of contract, any work performed by him in advance of the said date of execution shall be considered as having been done by him at his own risk and as a volunteer in the event the contract is not executed.

Notice in writing of the Contractor's intention to start work prior to execution of contract, specifying the date on which he intends to start, shall be submitted to the Engineer's at least 24 hours in advance.

The Contractor shall, on commencing operations, take all precautions required for public safety and shall observe all the provisions in these specifications and the special provisions.

In the event contract is not executed, the Contractor shall at his own expense do such work as is necessary to leave the site in a neat condition to the satisfaction of the Engineer. If the work done affects any existing road or highway, the Contractor shall at his expense restore it to its former condition, or the equivalent thereof, to the satisfaction of the Engineer.

SC-5 COORDINATION OF WORK

The Contractor shall be responsible for ascertaining the nature and extent of any work being conducted by other forces within or adjacent to the work site of the project.

The Owner, its workers and contractors, utility companies and other contractors shall have the right to operate within or adjacent to the work site to perform such other work. The Contractor shall conduct his operations in such a manner as not to cause any unnecessary delay or hindrance to the work being performed by other such forces. The work of the Contractor shall be coordinated with the work of others, so that no discrepancies result in the whole work, and Contractor shall be responsible for arranging with the proper representatives of other such forces for the coordination of such work. All costs associated with coordination or work shall be included in the bid prices for the various items of work of the Contract, and the Contractor will not be entitled to additional compensation for such work or for damages resulting there from.

SC-6 INSPECTION AND ACCEPTANCE

INSPECTION – inspection shall conform to the provisions in Section 5-1.08, “Inspection,” of the Standard Specifications and these special provision.

ACCEPTANCE OF CONTRACT – Section 7-1.17 “Acceptance of Contract” of the Standard Specifications is amended to read:

When the Engineer has made the final inspection as provided in Section 5-1.13, “Final Inspection,” and determines that the contract work has been completed in all respects in accordance with the plans and specifications, he shall recommend acceptance to the Owner, and the Owner shall adopt a resolution accepting said work. Immediately upon and after such acceptance by the owner, the Contractor will be relieved of his responsibility for injury to persons or property or damage to the work which occurs after the formal acceptance by the Owner.

SC-7 USE OF OWNER’S FACILITIES

- A. The Contractor shall provide restrooms for his employees.
- B. Storage of Contractor’s equipment and material on Owner’s premises shall be permitted only at the site or sites designated in writing by Owner. Contractor is responsible to provide any protective covering or shelter.

SC-8 BONDS

Bonds may or may not be required and are included as an additive alternate to the Bid Schedule (*does not apply to this project*).

- A. Faithful Performance Bond. As a part of the execution of this contract, the Contractor shall furnish a bond of a surety company acceptable to the Owner Conditioned upon the faithful performance of all covenants and stipulations under this contract. The amount of the bond shall be one hundred percent (100%) of the total contract price, as this sum is set forth in the agreement (*does not apply to this project*).
- B. Material and Labor Bond. As a part of the execution of this contract, the Contractor shall furnish a bond of a surety company acceptable to the Owner in a sum not less than fifty percent (50%) of the total contract price, as this sum is set forth in the agreement for the payment in full of all persons, companies, or corporations who perform labor upon or furnish materials to be used in the work under this contract, in accordance with the provisions of Sections 3247 through 3252 inclusive of the Civil Code of the State of California, and any acts amendatory thereof (*does not apply to this project*).
- C. Notification of Surety Companies. The surety companies shall familiarize themselves with all of the conditions and provisions of this contract, and they waive the right of special notification of any change or modification of this contract or of extension of time, or decreased or increased work, or of the cancellation of the contract, or of any other act or acts by the Owner or its authorized agents, under the terms of this contract; and failure to so notify the aforesaid surety companies of changes shall in no way relieve the surety companies of their obligation under this contract.

SC-9 PAYMENTS

Attention is directed to Article 14 Payment to Contractor and Completion of the General Conditions and these Supplemental Conditions.

- A. Measurement and Payment. No separate or extra payment will be made for the work involved in preparing application for payment.
- B. Compensation for Extra Work or Work Omitted. Whenever corrections, additions or modifications in the work under this contract change the amount of work to be done or the amount of compensation due the Contractor and such changes have been ordered in writing by the Engineer and approved by the Owner, then a price may be agreed upon, or failing such an agreement in price, an amount equal to the sum of the following five items shall be sued as the full and proper compensation therefore; and such amount shall be added to or subtracted from, as the case may be, the price fixed by the terms of this contract for the part of the work affected.

- (a) The necessary reasonable cost to the Contractor of the material required for the work as furnished by the Contractor and delivered by him at the site of the work.
- (b) The necessary cost to the Contractor of the labor (including foremen devoting their exclusive attention to the work in question), required to incorporate all of said material into the work and to finish the work in accordance with directions.
- (c) The necessary reasonable cost to the Contractor of equipment used for the work.
- (d) The cost of workmen's compensation insurance premiums, State Unemployment and Federal social Security payment on the labor included in item (b).
- (e) Fifteen percent (15%) of the sums of items (a), (b), (c) and (d) which shall be considered as covering all other expenses and profit.

In order that a proper estimate may be made by the Engineer of the net cost of labor and materials entering into extra work, in accordance with the procedure just stated, the Contractor shall furnish weekly and itemized statement of material and labor supplied together with the cost of such material and the wages paid, and shall furnish vouchers for quantities and prices of such labor, material or work. In case the Contractor fails to comply with the above provision, he shall have no claim for compensation against the Owner.

This method of determining the price of work shall not apply to the performance of any work which is required or reasonable implied to be performed or furnished under this contract.

- C. Compensation to the Owner for Extension of Time. In case the work called for under this contract is not completed within the time limit stipulated herein, the Owner shall have the right as provided herein above, to extend the time of completion thereof. If the time limit be so extended, the Owner shall have the right to charge to the Contractor and to deduct from the final payment for the work the actual cost to the Owner for engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the contract and which and which accrue during the period of such extension, except that the cost of final unavoidable delays shall not be included in such charges.
- D. Liquidated Damages for Delay. It is agreed by the parties to the contract that time is of the essence and that in case all the work is not completed before or upon the expiration of the time limit as set forth, damage will be sustained by the Owner, and that it is and will be impracticable to determine the actual amount of damage

by reason of such delay; and it is therefore agreed that the Contractor will pay to the Owner the sum of five hundred dollars (\$500.00) per day for each and every working day's delay beyond the time prescribed.

SC-10 QUALIFICATION OF BIDDERS

Each bidder shall be licensed under the provision of Chapter 9, Division 3 of the Business and Professions Code, and shall be skilled and regularly engaged in the general class or type of work called for under this contract. A statement setting forth this experience and business standing shall be submitted by each bidder on the form provided herewith. It is the intention of the Owner to award a contract only to a bidder who furnishes satisfactory evidence that he has the requisite experience and ability and that he has sufficient capital, facilities, and equipment to enable him to prosecute the work successfully and promptly within the time and in the manner agreed. In determining the degree of responsibility to be credited to a bidder, the Owner may weigh evidence that the bidder, or his personnel charged with the responsibility in the work, has performed satisfactorily other contracts of like nature and magnitude or comparable difficulty at similar rates of progress.

SC-11 DISQUALIFICATION OF BIDDERS

More than one bid from an individual business, partnership, corporation or association, under the same or different names, will not be considered. Reasonable grounds for believing that any bidder is financially interested in more than one bid for the work will cause the rejection of all bids in which he is so interested. If there is reason to believe that collusion exists among the bidders, none of the participants in such collusion will be considered. Bids in which the prices obviously are unbalanced may be rejected.

SC-12 AWARD AND EXECUTION OF CONTRACT

- A. Award of Contract. Award of the contract, if it be awarded, will be to the lowest responsible bidder whose bid complies with all the specified requirements. The award, if made, will be made within thirty (30) days after opening of the bids. The Owner reserves the right to reject any and all bids.
- B. Return of Proposal Guaranties. Within ten (10) days after the bids are opened, the Owner will return the bid guaranties accompanying such of the bids as are not to be considered in making the award. All other bid guaranties will be held until the contract has been fully executed, after which they will be returned to the respective bidders whose bids they accompany.
- C. Execution of Contract. The contract agreement shall be executed in duplicate by the successful bidder and returned, together with the contract bonds, if required, within ten (10) days after the date of the award of contract. After execution by the Owner, one copy shall be filed with the Owner, and one copy shall be returned to the Contractor. **If the bidder fails or refuses to enter into a contract to do the**

work, then the bid guaranty accompanying the bid shall be forfeited to the Owner.

SC-13 SAMPLES AND TESTS

When requested by the Engineer, sample(s) or test specimen of the materials to be used or offered for use in connection with the work shall be prepared at the expense of the Contractor and in such quantities and sizes as may be required for proper examination and tests, with information as to their sources.

All samples shall be submitted and in ample time to permit the making of proper tests, analyses, or examination before the time at which it is desired to incorporate the material into the work. All tests of materials furnished by the Contractor shall be made by the Engineer. Samples shall be secured and tested whenever necessary to determine the quality of the material.

SC-14 DEFINITION OF TERMS

Whenever the following terms are used in these specifications, in the contract, in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be interpreted as follows:

AASHTO - The American Association of State Highway and Transportation Officials, the successor association to AASHTO.

ADVERTISEMENT - A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.

ASTM - The American Society for Testing Materials.

AWARD - The acceptance, by the Owner, of the successful bidder's proposal.

CAL-TM - State of California Department of Transportation Testing Procedures and Methods.

CONTRACT ITEM (PAY ITEM) - A specific unit of work for which a price is provided in the contract.

EQUIPMENT - All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the work.

EXTRA WORK - An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by

the engineer to be necessary to complete the work within the intended scope of the contract as previously modified.

INSPECTOR - An authorized representative of the engineer assigned to make all necessary inspections and/or tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

INTENTION OF TERMS – Whenever, in these specifications or on the plans, the words “directed,” “required,” “permitted,” “ordered,” “designated,” “prescribed,” or words of the like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer is intended; and similarly, the words “approved,” “acceptable,” “satisfactory,” or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer, subject in each case to the final determination of the Owner.

ISSA – International Slurry Seal Association.

LABORATORY – The official testing laboratories of the Owner or such other laboratories as may be designated by the Engineer.

MATERIALS - Any substance specified for use in the construction of the contract work.

PAVEMENT - The combined surface course, base course, and subbase course, if any, considered as a single unit.

PERFORMANCE BOND – The approved form of security furnished by the contractor and his surety as a guaranty that the contractor will complete the work in accordance with the terms of the contract.

PLANS – The official drawings or exact reproductions, approved by the engineer, which show the locations, character, dimensions and details of the work to be done and which are to be considered as a part of the contract, supplementary to the specifications.

PROPOSAL - The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.

PROPOSAL GUARANTY – The security furnished with a proposal to guarantee that the bidder will enter into a contract if his proposal is accepted by the Owner.
NOT REQUIRED FOR THIS CONTRACT.

STATE STANDARD SPECIFICATIONS - Those portions of the contract documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the work. The work embraced herein shall be

done in accordance with the Standard Specifications dated July 1992 and the Standard Plans of the California Department of Transportation.

SUBGRADE - The soil which forms the pavement foundation.

SUBSTANTIAL COMPLETION - Means that the work has reached a point in quantity and quality of construction that, except for *de minimis* matters, the Contractor has constructed a facility in accordance with the contract documents which the Owner may use and operate for business, subject only to completion of the punch list work items that may be done after the date of Substantial Completion.

SUPERINTENDENT - The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the Engineer, and who shall supervise and direct the construction.

TECHNICAL SPECIFICATIONS - The following Technical Specifications are hereby made part of these specifications and are the construction details for the work.

WORKING DAY - A working day shall be any day other than a legal holiday, Saturday or Sunday on which the normal working forces of the contractor may proceed with regular work for at least 6 hours toward completion of the contract. Unless work is suspended for causes beyond the contractor's control, Saturdays, Sundays and holidays on which the contractor's forces engage in regular work, requiring the presence of an inspector, will be considered as working days.

**TECHNICAL SPECIFICATIONS
PAVEMENT REHABILITATION PROJECT, 2014
Avocado HOA
Avocado Summit Drive
El Cajon, California**

TS-1 SCOPE

Contractor shall furnish all materials, equipment, labor and services to perform the work described as Pavement Rehabilitation Project, 2014 in accordance with these specifications.

TS-2 DRAWINGS

The drawings entitled Pavement Rehabilitation Project, 2014 are part of these specifications.

TS-3 GENERAL

Any questions concerning the work should be directed to the on-site inspector. In the event that the Owner does not provide on-site inspection during construction, technical questions should be addressed to Krazan & Associates, Inc.

The Contractor shall at all times be mindful of public safety including, but not limited to, Krazan & Associates, Inc. employees not associated with the construction.

During unfavorable weather, wet ground, or other unsuitable construction conditions, The Contractor shall confine his operations to work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by Contractor to perform the work in a proper and satisfactory manner.

Contractor shall keep the premises free at all times from accumulations of waste materials and rubbish. Contractor shall provide adequate trash receptacles about the site, and shall promptly empty the containers when filled.

From receipt of the Notice to Proceed until final acceptance by the Owner, the Contractor shall be responsible for protecting his work and job site. Protection shall cover damage caused by rain, automatic sprinkler systems, vehicle or pedestrian traffic, vandalism, and construction mishaps such as spills or waterline rupture.

Contractor shall promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids and cleaning solutions from surfaces to prevent marring or other damage.

Volatile wastes shall be properly stored in covered metal containers and removed daily.

Wastes shall not be buried or burned on the site or disposed of into storm drains, sanitary sewers, streams, or waterways. All wastes shall be removed from the site and disposed of in a manner complying with local ordinances and anti-pollution laws.

The Contractor is required to provide portable toilets per state laws.

Adequate cleanup will be a condition for recommendation of payment.

TS-4 REFERENCE STANDARDS

Reference to the standards of any technical society, organization, or association, or to codes of local or state authorities, shall mean the latest standard, code, specification, or tentative standard adopted and published at the date of receipt of bids, unless specifically stated otherwise.

TS-5 PROTECTION OF EXISTING INSTALLATIONS

The Contractor shall make every effort to protect existing installations from damage resulting from the operation of equipment or placement of material. Suitable precautions shall be taken by the Contractor to protect exposed surfaces from discoloration resulting from the application of asphaltic materials. It will be the responsibility of the Contractor, at no extra cost to the Owner, to provide suitable means of dust control resulting from his performance of the work. Any damage caused by the Contractor's operations will be repaired by the Contractor at the Contractor's expense.

TS-6 NOTIFICATIONS

In order to allow the Owner sufficient time to notify the various occupants of upcoming work, the Contractor shall notify the Owner in writing at least (10) working days before commencing work on any portion of the Work.

TS-7 CONTROL OF MATERIALS

Only materials conforming to the specifications shall be incorporated in the work. The materials shall be manufactured, handled and used in a workmanlike manner.

It is the intent of these specifications that materials to be incorporated in the work shall meet the requirements of these specifications after incorporation in the paved areas shown on the plans.

The Owner's Engineer shall have the right to obtain samples of all materials to be used in the work and to test such samples for the purpose of determining specifications compliance. The Owner reserves the right to obtain said samples at the point of delivery and/or at the point of manufacture. The Owner shall also have the right to inspect sources of materials to be used in the work to verify workmanlike procedures used by the materials supplier.

Initial testing done to determine specification compliance will be performed and paid for by the Owner. If any particular portion of the work does not pass this testing, it shall be subject to a retest after the Contractor feels he has remedied the deficiency. **All retesting will be paid for by the Contractor.**

In the event that the Owner does not provide on-site inspection during construction, the Contractor is hereby notified that two or more core tests will be taken to check for compliance to these specifications. If deficiencies in material quality, thickness or densities are determined, the entire area represented by that Contractor will be required to pay for additional testing to determine compliance of all other areas tested. All non-complying areas shall be removed and replaced at the Contractor's expense.

TS-8 FAMILIARIZATION WITH THE WORK

Before submitting the Bid, each prospective Bidder shall familiarize himself with the Work, the site where the Work is to be performed, local labor conditions and all laws, regulations and other factors affecting performance of the Work. Bidder shall correlate observations with requirements of the Contract Documents, expense and performance of the Work. The submission of the Bid will constitute a representation of compliance by the Bidder. There will be no subsequent financial adjustment for lack of such familiarization. Each Bidder shall visit the site of the Work and completely inform himself relative to construction hazards and procedure, the arrangement and condition of existing structures and facilities, the procedure necessary for maintenance of uninterrupted operation of existing facilities, the character of construction equipment and facilities needed for performance of the Work, and facilities for transportation, handling, and storage of materials and equipment. All such factors shall be properly investigated and considered in the preparation of the Bid.

TS-9 WORK SCHEDULE AND PUBLIC SAFETY

Five (5) days prior to initiating the work under this contract, the contractor shall submit his proposed schedule of work to the Engineer for his review. The plan shall clearly indicate how the work is to be laid out and the order in which individual areas will be completed. The goal of this requirement is to ensure that public traffic is safely maintained and that there is adequate public access to the site.

Phasing will be required to allow access to buildings at all times. The site will require a minimum of two phases.

TS-10 TRAFFIC CONTROL

Contractor is responsible for providing all traffic control necessary to maintain public safety and access to the project site. Pre-approval by the Engineer is required before imposing any traffic closures. Traffic control may involve flagmen, guards, barricades, signs, lights, flares, and other facilities.

The Contractor shall include traffic closures in the proposed work schedule submittal as described in Section TS-8, "Work Schedule and Public Safety."

Full compensation for providing traffic control, including labor, materials, equipment, tools and incidentals, shall be considered included in the various items of work and no separate payment will be made therefore.

TS-11 FULL DEPTH RECLAMATION WITH CTB

Description

Work shall consist of pulverizing existing asphalt concrete, base, and subgrade soil to a total depth of 12 to 14 inches. Re-grade and haul away excess material to allow for the net placement of 3.5 inches of new asphalt compacted. Add cement and water to the blended material to a total depth of 12 to 14 inches in accordance with the specifications provided below. Fine grade to the grades required prior to placement of asphalt. Micro-cracking of the completed cement stabilized surface is recommended if new asphalt concrete is to be placed directly on top of the cement treated surface.

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. There are no substitutions for Portland cement.

Water

Water used for mixing or curing shall be reasonable clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product. Water shall conform to the provisions in Section 201-1.2.3, "Water," of the Standard Specifications.

Pulverized Material

Existing asphalt concrete surfacing shall be pulverized with underlying base materials and subgrade soil to the specified depths and widths in conformance to the Project Plans and Special Provisions. This is as long as water drainage will not be affected by increased elevations.

The asphalt concrete surfacing and underlying base/soil materials shall be pulverized such that 100% of the material will pass a 2-inch sieve and a minimum of 90% will pass a 1½-inch sieve. All materials other than rock and pulverized asphalt concrete shall be broken up such that these materials will pass a 1-inch sieve. The pulverized materials shall be free of root, sod, weeds, wood, and construction debris specifically Petromat.

Off haul of excess pulverized material may contain Petromat and will be disposed legally at a legal dump site.

Submittals

Provide the following information:

- Cement supplier. Identification that the proposed cement has been successfully used on at least five other CTB projects in California over the past three years, including project name, agency/owner, project engineer, and construction dates.
- Description of the proposed equipment and construction methods.
- The Contractor (or Subcontractor) performing the CTB will cement shall have completed a minimum of five CTB projects in the last three years. Submit project name, agency/owner, project engineer, and construction dates. For deep-lift compaction (lift thickness greater than 12 inches) the Contractor shall provide the same information on a minimum of five CTB projects the Contractor has compacted in one lift in the last three years.

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

1. Certified weight tickets of cement delivered to the project location.
2. A summary of quantity of CTB constructed each day.

TS-12 CONSTRUCTION METHODS FOR CEMENT TREATMENT AND SOIL STABILIZATION

General

Prior to beginning any cement treatment, the existing subgrade shall be shaped to conform to the typical sections, lines, and grades as shown the plans. The Engineer shall check and verify the conformance of the material to the lines, grade, and elevation as shown on the plans, prior to beginning cement treatment.

Trimming and disposal of excess material, if required, will be performed on the intimate mixture of pulverized asphalt concrete, base materials and subgrade soil prior to cement treatment.

Application

Cement shall be applied at a rate of not less than 5% based on the in-place dry unit weight of soil and for the depth of subgrade treatment shown on the plans.

The cement content shall vary no more than 0.5% under and not more than 1.0% over the specified cement content (example: tolerance on spread rate of 6.0% is 5.5% to 7.0%). However, the moving average of the rate of cement content tests/inspections shall not be less than the specified cement content.

Cement shall be distributed with a non-pressurized mechanical vane-feed spreader equipped with on-board scales and controls capable of spreading the cement at a prescribed weight per unit area. Cement shall not be spread upon the prepared material 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.

Mixing

Mixing of the soil, cement, and water shall be done with a four-wheel drive rotary mixer (CMI RS-650, 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 treated subgrade shall be mixed a minimum of two times with the approved mixing machine. At least 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 to the subgrade during mixing to provide a moisture content not less than 1% point below nor more than 2% points above (-1 to +2 of OMC) the optimum moisture of the soil-cement mixture (ASTM D558) 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 by the contractor, 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 by the contractor.

Compaction

The mixture shall be compacted in one layer. The Contractor shall regulate the sequencing of the cement treatment operations, such that the final compaction of the soil-cement mixture to the specified density will be completed within 2 ½ hours after the initial application of water during the mixing operation. However, trimming (cuts only) can be completed within 24 hours of mixing.

Compaction shall be by means of steel drum, pad foot and/or segmented wheel rollers of sufficient capacity to compact the full depth. Areas inaccessible to rollers shall be compacted to the required density by other means satisfactory to the Engineer. The field dry density of the compacted mixture shall be at least 95% of the maximum dry density as determined in accordance with ASTM D558 (Moisture-Density of Soil-Cement Mixtures).

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, and shall be kept moist. The completed section shall then be finished by rolling with a steel drum or other suitable roller approved by the Engineer. The mixture shall be compacted in one layer.

Adjust Utility Covers

Storm drain and sewer manhole covers, cleanout, water valve covers, utility vault and other such utility access covers, within areas to be paved with asphalt concrete shall be adjusted by the Contractor to the new finished grade, if necessary. The Contractor shall be responsible for verifying the number of utility covers to be adjusted, accurately referencing all covers prior to paving and adjusting the covers.

The scope of work for in-place cement treatment and grading/paving contractor is as follows for this project:

1. Contractor will pulverize the existing asphalt and blend with the underlying base and subgrade to the specified depth (utilizing CME RS800 reclamation/pulverization machine or equivalent). The pulverizing machine is unable to access asphalt adjacent to existing structures, such as concrete curb or gutter, and corners; during this process the grading/paving contractor will pull asphalt from any edges and corners using a blade or skip loader and place them in an area accessible to the pulverizer.
2. The grading contractor will perform any necessary grade adjustments and establish a rough grade of typically +/-0.10 feet.
3. Contractor will off-load cement from the delivery trucks pneumatically into our spreader/distributor truck. Spread cement onto the subgrade at the specified application rate (5% based on an in-place dry density weight of 125 pcf and a depth of application of 12 to 14 inches).
4. Contractor (CME RS800) will then dry mix the spread cement into the subgrade to the specified depth. To ensure a uniformly treated area, the grading contractor will then use equipment such as a motor grader, skip loader or backhoe to heel away or dig out any areas that are inaccessible to the mixing machine. These areas include adjacent to curb and gutter, corners, around manholes, water valves, vaults, etc.
5. Contractor will mix the material again while introducing water through the mixing chamber of the machine in order to hydrate the mixture of cement and soil.
6. After the second mixing operation with water, start the initial compaction with a REXPACTOR 370 Segmented steel wheel compactor.
7. The grading contractor will replace and compact material that was dug out or heeled away from structures and corners.
8. By specification, the grading contractor has approximately 2 ½ to 3 hours to finish grade and final compact (with a smooth drum roller) all of the areas that has been cement treated for that day.

9. After finish grading and final compaction the grading contractor must moist or emulsion cure the treated areas per the specifications or until it is determined to be in a firm and unyielding condition by the Engineer through proof-rolling. Moist curing can be done with a water truck spraying the surface, keeping it in a moist condition and not allowing the surface to dry.
10. After 48 hours of the curing time, the grading contractor will perform micro-cracking of the cement treated section in accordance with the specifications. The process involves rolling the surface with a smooth drum roller at a slow travel speed and high amplitude (generally three passes of the roller). After the third day of curing, the cement treated section is typically ready for placement of the overlying asphalt pavement.

TS-13 ASPHALT CONCRETE

General

The following provisions for Asphalt Concrete material shall apply to work completed within these specifications.

Materials

Asphalt concrete shall comply with the provisions of Section 39 of the California State Standard Specifications 2006 and as modified herewith. The requirements provided within these special provisions shall supersede State Specifications where conflicts or other disparities exist.

Asphalt concrete shall be hot plant mixed and shall be furnished from the plant at a temperature not to exceed 325 degrees F.

Asphalt concrete for paving work and repairs shall be Type A, ½ inch Maximum Medium Gradation, conforming to the requirements of Section 92 of the 2006 State Standard Specifications. Asphalt binder shall be a PG64-10 viscosity graded asphalt, steam refined paving asphalt conforming to Section 39-2 (2006) of the State Standard Specifications.

All types of Asphalt Concrete shall comply with the specifications below.

The actual asphalt cement content may vary up to 0.5% plus/minus from the target optimum bitumen content (OBC) unless the job-mix-design and final product indicated the required provisions are not met.

NOTE: At the OBC, the compacted mixture shall have the follow properties:

Hveem Stability

37 min. Type A

The suggested job-mix-design air voids below are provided to help obtain compaction requirements in the field and not a specifications requirement.

Air Voids	3% to 5%
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Only material conforming to the specifications shall be incorporated in the work. The materials shall be manufactured, handled and used to industry standards.

Submittals

The Contractor shall furnish Owner's Engineer for review and approval, at least ten (10) working days prior to start of work, a list of his sources of materials together with a Certificate of Compliance, indicating that materials to be incorporated in the work fulfill the requirements of these specifications and the job-mix-design for the asphalt concrete. The Certificate of Compliance shall be signed by the material supplier or his representative. It is the intent of these specifications that materials to be incorporated in the work meet the requirements of these specifications after incorporation in the paved areas shown on the plans.

At least ten (10) working days prior to start of work, the Contractor shall also furnish a **job-mix-design** for the asphalt concrete. The job-mix-design shall indicate **all** of the following:

1. Percentage passing each sieve size
2. Percent asphalt recommended
3. Percent voids*
4. Stability*
5. Maximum theoretical unit weight*

The * items shall be provided at each asphalt content used to arrive at the recommended optimum bitumen content.

The job-mix-design shall be in effect until a change is approved in writing by the Engineer.

The Contractor shall be responsible for all costs associated with the required job-mix-design. Recent mix designs from previous jobs using the same mixture may be submitted for approval. Mix design in excess of 6 months in age must be submitted with recent gradations for verification.

Testing

The Owner's Engineer shall have the right to obtain samples of all materials to be used in the work and to test such samples for the purpose of determining specifications compliance. The Owner reserves the right to obtain said samples at the point of delivery and/or at the point of manufacture. The Owner shall also have the right to inspect sources of materials to be used in the work to determine workmanlike procedures used by the materials supplier. Any material testing completed or not completed by the Owner does not relieve the Contractor of complying to the provisions herein.

Payment

Full compensation for compliance with the mix design requirements, as well as furnishing all labor, materials, equipment, tools and incidentals necessary for constructing asphalt concrete, complete in-place, shall be considered included in the contract unit price for the items of work in which asphalt concrete will be used.

TS-14 FULL DEPTH AC PAVEMENT REPAIR OR RECONSTRUCTION

General

Areas designated by the Engineer shall be dug out to Full-Depth removed and replaced with the same thickness of AC, unless otherwise directed on the contract plans. The AC shall be placed in two (2) equal lifts.

Materials

The asphalt concrete used for this work shall conform to all requirements of Section TS-13, "Asphalt Concrete," of these technical specifications.

Tack coat emulsion shall be either SS-1 or RS-1.

Construction

The Contractor shall make all arrangements for disposal of excavated materials.

All edges shall be saw-cut or milled. If a milling machine is used, all sloping edges shall be chipped to a vertical face. Exposed edges shall be protected against breakage with timbers or AC mix whenever a roller enters or leaves the repair spot.

The underlying material to remain in place shall be recompacted to 95 percent minimum relative compaction as determined by ASTM D1557 to a depth of 6-12 inches below the bottom of the repair. After compaction and prior to the placing of asphalt concrete, the vertical edges of the existing pavement shall receive a tack coat.

When ever the surface course of AC is placed more than four hours after the base course, or, in the opinion of the Engineer, contamination by dirt or dust has caused the base course to lose its tackiness, a tack coat shall be applied to the entire area of the repair before placing the surface course. Tack coat may be diluted for workability, but shall be applied at a rate equivalent to 0.05 to 0.15 gallon per square yard undiluted.

The finished repair shall conform to the surrounding grade and contour and shall not trap water or present a visible hump. Variations from specified (existing grades) shall not exceed ¼ inch.

Asphalt concrete shall be compacted to an average relative density of 95.0 percent of the laboratory compacted unit weight (Cal TM 304). Tests will be run at random locations to verify compaction. No single test shall be less than 95 percent. Compaction of the mix will be determined by use of a nuclear density gauge and/or cores.

The laboratory compacted unit weight will be determined from the mix design, a prequalified or production sample of the asphalt concrete proposed to meet these specifications.

Unsuitable Material

In the event that the underlying material is unsuitable, it shall be excavated below the depth required above and disposed of in accordance with these special provisions. The limits of removal shall be designated by the Engineer. The resulting space shall be filled with a single lift of asphalt concrete.

Unsuitable material is defined as material the Engineer determines to be:

- a. of such unstable nature as to be incapable of being compacted to specified density using ordinary methods at optimum moisture content: or
- b. too wet to be properly compacted and circumstances prevent suitable in-place drying prior to incorporation into the work; or
- c. Otherwise unsuitable for the planned use.

Payment

Payment for the removal of unsuitable material and replacement with asphalt concrete shall be paid for at the bid item price, prorated for the thickness of additional AC.

Payment for the excavation, disposal and replacement of asphalt concrete pavement removed shall be made on the basis of surface area measured in square feet. If areas larger than as designated on the plans are excavated for the convenience of using a milling machine, payment will be made on the basis of plan quantities, or as determined by the Engineer. The unit price for this work shall include all costs associated with its performance, including any and all incidental work required to perform the work complete in place.

Finished asphalt concrete pavements which do not conform to the specified compaction requirements will be paid for using the following factors:

<u>In-Place Compaction</u>	<u>Pay Factors</u>
93-95%	100% Pay factor.

TS-15 ASPHALT CONCRETE LEVELING

General

Prior to application of surface seal, fabric interlayer or AC overlay, all depressions in the pavement surface that trap water or otherwise interrupt proper drainage shall be filled and leveled with asphalt concrete.

Areas designated on plans for AC leveling course must receive a 1 inch nominal course over the entire designated area.

Where a nominal 1 inch AC leveling course is specified, leveling shall be performed with the paving machine. The screed height shall be set at 1.20 inches. Leveling in other areas shall be performed in accordance with the detail drawing, either by using the paving machine or by hand leveling.

Leveling shall be performed in such a manner as not to leave grooves or gouges from rock dragging.

Materials

Maximum size of aggregate used in production of AC for leveling purposes in seal coat areas shall be ¼ inch. Overlay areas may be leveled with ½ inch AC. Aggregate shall be well graded to produce maximum density in-place. Asphalt concrete shall conform to the applicable provisions in Section TS-13, "Asphalt Concrete."

Application

If necessary, the Contractor shall flood test the pavement in the presence of the Engineer and locate and mark all areas with standing water at depths of 3/8 inch and greater.

When the pavement is dry and ready for leveling work, the Contractor shall apply a tack coat of SS-1 or RS-1 asphalt emulsion over the entire area to be leveled. Tack coat may be diluted for workability, but shall be spread at a rate equivalent to 0.05 to 0.15 gallons per square yard undiluted. Following the tack coat, asphalt concrete shall be placed to eliminate ponding.

Payment

Payment for furnishing all labor, tools, equipment and materials, including tack coat, shall be at the contract price for AC leveling in areas designated for a full leveling course. In areas not designated for an entire leveling course, payment for furnishing all labor, tools, equipment and materials including tack coat for isolated leveling, shall be included in the price for the major item of work in those areas, either Item 1 "Surface Seal Coat" or Item 2 "AC Overlay." One-quarter (1/4) inch mix leveling in seal coat areas shall be included in the contract unit price for "Surface Seal Coat (2 coats)."

TS-16 RUBBERIZED EMULSIFIED ASPHALT CRACK SEAL

General

This work applies to all cracks and joints in and adjacent to the asphalt concrete pavement as indicated on the plans. For cracks and joints ¼ inch and wider, the work consists of cleaning, sterilizing where weeds are present, filling with emulsified asphalt crack seal and covering with sand. For cracks and joints less than ¼ inch wide, the work consists only of weed cleaning and sterilization.

No routing of pavement is required for this project.

Materials

Crack seal shall be an emulsified material that can be readily handled at ambient temperatures, can be stored for periods of up to six months, and is made with base materials that will remain ductile with aging and provide resiliency under extreme climatic conditions.

The sealant shall contain no volatile organic compounds which contribute to air pollution and shall conform to the requirements in the following table:

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>REQUIREMENTS</u>
Viscosity @ 77 F (25 C), SFS	ASTM D-244-76	25-150
Pumping stability	GB method (1)	Pass
5-day Settlement test, percent	ASTM D-244-76	5.0 maximum
Cement mixing test, percent	ASTM D-244-76	2.0 maximum
Sieve test, percent	ASTM D-244-76 (MOD) (2)	0.1 maximum
Particle charge test	ASTM D-244-76 (MOD)	Positive
Residue, percent	ASTM D-244-76 (MOD) (3)	62 minimum
Test of Residue	ASTM D-244-76 (MOD)	
Viscosity at 140 F (60 C), cs.	ASTM D-244-76	1000-4000

NOTES:

1. Pumping stability is determined by charging 450 ml. Of emulsion into a one-liter beaker and circulating emulsion through a gear pump (Roper 29 B22621) having ¼ inch inlet and outlet. The emulsion passes if there is no significant oil separation after circulating ten minutes.
2. Test procedure identical with ASTM D-244 except that distilled water shall be used in place of two percent sodium oleate solution.
3. ASTM D-244 Evaporation Test for percent of residue is modified by heating a 50 gram sample to 300 F (149 C) until foaming ceases, then cooling immediately and calculating results.

The vendor shall furnish certification that the crack sealant material complies with the above requirements.

Sand cover shall be free from clay or organic material and shall be of such size that from 90 percent to 100 percent will pass a No. 4 sieve and not more than 10 percent will pass a No. 200 sieve.

Application

Immediately before applying the sealant, cracks and joints shall be cleaned by mechanical or hand methods followed by blast cleaning with high-pressure air jets to remove all residue and foreign material to a minimum depth of three-quarter (3/4) inch. Water jets shall not be allowed. Crack surfaces shall be surface dry at the time the sealant is applied.

Crack sealant material may be spread with any type nozzle or device that will place the material within the specified temperature range and to the dimensions shown on the plans and is approved for use by the Engineer.

Crack sealant shall be placed at a temperature such that the sealant temperature plus air temperature falls within a range of 150 to 200 degrees Fahrenheit.

When cured, crack sealant shall be at least flush with the pavement surface or extend no more than one-eighth (1/8) inch above the pavement surface. **NOTE: The common practice of "band-aiding" a thick ribbon of crack sealant to the pavement surface is not acceptable.**

Cracks shall be covered with clean sand immediately following placement of the sealant material to prevent tracking of sealant by vehicles or pedestrians.

A light brooming shall be performed to remove loose sand before the end of each day's work or as a first order of work on the morning following application of the sand cover. The exact time of brooming will be determined by the Engineer.

TS-17 PORTLAND CEMENT CONCRETE REPAIRS

General

This work consists of constructing or repairing exterior Portland Cement Concrete (PCC) drainage pads/aprons, sidewalks, drive lanes, curbs, gutters and handicap curb ramps at the locations and to the dimensions shown on the plans and as directed by the Engineer. The Contractor is responsible for all drainage grades.

Materials

The Contractor shall furnish concrete for this work which conforms to the following: aggregate shall be sound, thoroughly washed before use and free from deleterious coatings, clay balls, organic and other extraneous materials. Gradation limits of the aggregate are:

<u>SIZE</u>	<u>PERCENT PASSING</u>
1"	90 - 100
3/4"	55 - 100
3/8"	45 - 75
No. 4	35 - 60
No. 8	27 - 45
No. 16	20 - 35
No. 30	12 - 25
No. 50	5 - 15
No. 100	1 - 5
No. 200	0 - 2

Portland Cement shall be Type II, III, IIIA (ASTM C-150) or Type IP (MS) (ASTM C-595). Each cubic yard of concrete produced shall contain not less than 564 pounds of Portland Cement. Compressive strength of concrete per ASTM C-39 shall be minimum 3000 psi at 28 days.

Water used in concrete shall be free of oil and shall contain no other deleterious substances. The amount of water used shall not exceed that necessary to permit practical placement and consolidation of the concrete without exceeding a slump of 3 inches. (ASTM C-143).

An air-entraining agent conforming to the specifications of ASTM Designation C-260 shall be added to the concrete mixture in a proper amount to produce air-entrainment of 3 to 4 percent.

The Contractor may propose specific accelerators, water reducers or other admixtures for approval by the Engineer.

Forms for concrete shall be smooth, straight, and free from warp and properly supported to prevent deflection or displacement during placement and consolidation of concrete.

Slip forms may be used for gutters where practical and where satisfactory results can be obtained.

Submittals

At least 5 days before commencement of work, the Contractor shall submit a Certificate of Compliance from the concrete manufacturer identifying the PCC mix and verifying that the requirements of this specification are met.

Each load of concrete shall be accompanied by a delivery tag containing at least the following information:

1. Name of vendor
2. Identification of the project
3. Number of cubic yards in the load
4. Mix identification
5. Total amount of water in the load
6. Time and date of batching

Construction

The underlying material to remain in place shall be recompact to a minimum 95 percent relative density for a depth of 6 - 12 inches as determined by ASTM tests D1557 and CAL 216.

Concrete shall be placed before 90 minutes has elapsed following addition of water at the time of batching.

No water shall be added during transit and none shall be added on the job site unless directed by the Engineer..

Forms and other surfaces against which concrete will be placed shall be wetted just prior to placement of concrete.

Concrete shall be placed and consolidated by methods that will not cause segregation of aggregate and will result in homogeneous concrete, free of voids and rock pockets. Exposed surfaces of concrete shall be hand troweled to a smooth and even finish. After troweling, exposed surfaces shall be given a fine hair broom finish.

Scoring of concrete surfaces and location of expansion joints or weakened plane joints shall match the existing pattern unless otherwise directed by the Engineer.

Immediately after concrete finish and marking operations are complete, all surfaces exposed to air shall be completely coated with curing compound in accordance with the manufacturer's recommendations.

Curing

Concrete repairs shall be allowed a minimum **3 day curing period** before grinding or paving adjacent AC pavement. Additionally, concrete subjected to vehicle traffic loading shall be protected from traffic for a minimum **7 day curing period**. The Contractor is responsible for all drainage grades.

Payment

The contract unit price for items of concrete work shall include full compensation for all materials, labor, equipment and incidentals, including protection of green concrete from public and construction traffic, required to complete the concrete work in accordance with the plan and these specifications.

TS-18 ADJUST UTILITY COVERS

Storm drain and sewer manhole covers, cleanouts, water valve covers, utility vault and other such utility access covers, within areas to be paved with asphalt concrete shall be adjusted by the Contractor to the new finished grade. The Contractor shall be responsible for verifying the number of utility covers to be adjusted, accurately referencing all covers prior to paving and adjusting the covers after paving has been completed.

Cutting of the new pavements to make utility cover adjustments shall be accomplished without disturbing or deforming asphalt concrete that is to remain. Deformed asphalt concrete shall be removed and repaired as directed by the Engineer.

Unless otherwise specified by the utility owner, cover frames are to be set to grade and backfilled to within 1 ½ inches of the finished surface with Portland Cement Concrete. Asphalt concrete (1/2 inch maximum aggregate size) conforming to the provisions in Section TS-13 of these technical specifications shall be used to complete the restoration to the new finished surface. Surface tolerances as specified for Asphalt Concrete overlay shall apply to the restoration of paving surfaces, including the positioning of utility covers and frames.

The contract unit price for adjusting utility covers, by type, shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary to complete the adjustment of utility covers in a workmanlike manner in conformance with the plans and these technical specifications.

TS-19 HANDICAP MARKINGS - ADA SPECIFICATIONS

All handicap paint markings shall comply with TX-20, "Paint Markings." They shall be placed as shown in the Plans. Old paint that requires removal shall be removed by a method proposed by the Contractor and approved by the Engineer (*does not apply to this project*).

Payment for this item shall be by the contract price for "Replace handicap marking per ADA Specifications," and shall include all materials, labor equipment, and incidentals to perform per this specification. This shall include all signs, parking bumpers, and other work required per the plans (*does not apply to this project*).

TS-20 PAINT MARKINGS

Description - This work shall consist of constructing painted parking stall lines, traffic stripes, legends, and curbing delineation to the layout and color that existed prior to commencement of the contract work, unless otherwise directed by the project plans or by the Engineer. This work also includes retouching previously painted surfaces marred by construction activities.

Restriping is not required in areas with no construction activity.

Contractor shall be responsible for conforming to the provisions of Title III of The American with Disabilities Act and any local codes as those provisions relate to restriping for handicap access.

Materials - Paint for asphalt concrete or asphalt seal coated surfaces shall be a water borne acrylic as may be permitted by local air pollution regulations, rapid or regular dry at the option of the Contractor, commercially available and specified by the manufacturer as being suitable for marking and striping of seal coated asphalt pavements. Paint for Portland Cement surfaces shall be oil based.

Surface Preparation - Before applying paint, the pavement surface shall be cleaned by sweeping, blowing, vacuuming, or washing as necessary to remove moisture, dirt, oils, grease, acids, laitance or other foreign matter which would reduce the bond between paint and pavement.

Control Points - The Contractor shall lay out all necessary control points for markings and stripes.

Mixing - Mechanical mixers shall be used to mix paint. Prior to applying, the paint shall be mixed to uniformly blend pigment and vehicle together, and shall be kept thoroughly agitated during application.

Application - All equipment used shall produce markings and stripes of uniform quality, true to line and specified thickness.

Markings on all pavement surfaces within the project area are to be replaced with two (2) coats of paint. A cleaning prior to second coat or traffic control required to protect the paint shall be included in this item at no additional cost to the Owner.

Paint shall be applied only on dry surface, when temperatures are 50 degrees F or above, and when rain, fog or condensation will not cause damage. Painting shall not be carried on whenever it is determined by the Engineer that wind will prevent proper paint application.

The rate of paint application shall be one gallon to 125 square feet, or sufficient to produce a wet film thickness not less than 15 mils.

The Contractor shall provide necessary protection for painted surfaces from damage by traffic and pedestrians.

Measurement and Payment – Payment will be made at the lump sum contract price for “Paint Markings.”

Such payment shall be full compensation for furnishing all labor, materials, tools, equipment, templates and incidentals and doing all work involved in pavement marking and striping as specified and as directed by the Engineer.

TS-21 WATERING

The Contractor shall not draw water from any fire hydrant, except to extinguish a fire, without first obtaining permission from the water agency concerned.

Full compensation for developing water supply and applying water, including water used for rollers and dust control, shall be considered as included in the various items of work and no separate payment will be made therefore.

TS-22 CLEAN-UP

The Contractor shall clean up the job site prior to acceptance of the work. All dirt, spoil, and debris of any nature shall be removed and the entire site shall present a clean, workmanlike appearance. Any damage to paint work, spillage or splattering from prime coating, paving or seal coating operations shall be corrected to the satisfaction of the Engineer.

TS-23 WARRANTY

The Contractor is responsible for all workmanship and materials provided for the on-site project. The warranty for seal coat and striping is 1.5 years, AC pavement isolated areas for digouts is 2 years, AC pavement complete removal and replacement is 3 years. Base rock installation and compaction is 3 years. All PCC curb, flatwork, and ramps are 4 years. Project payout is 90% upon completion, 10% upon final and closeout.