

**ADDENDUM NO. 1**

OCTOBER 17, 2024

TO PLANS, BID FORM, SPECIFICATIONS, CONTRACT AND BOND FOR

**SIDEWALK REPAIR AT KALAU PL, WAIMANALO**

KO'OLAUPOKO, ISLAND OF OAHU, HAWAII

**RFQ NO.: RFQ-25-HHL-005**

**ITEM NO. 1 PRE-BID SITE VISIT AGENDA AND SIGN IN SHEET**

A Pre-bid conference was held at 41-217 Kalau Pl, Waimanalo on October 14, 2024, followed by a site visit. The minutes from the meeting and the sign-in sheet are attached to **ADDENDUM NO. 1 (10-17-24)**.

**ITEM NO. 2 REVISED BID OFFER FORM AND SCOPE OF WORK**

Replace in its entirety the Bid Offer Form included in Attachment 2 RFQ25HHL005 BIDDING AND CONTRACT REQUIREMENTS with the Revised Bid Offer Form attached to **ADDENDUM NO 1 (10-17-24)**.

**ITEM NO. 3 SITE VISIT DIAGRAM WITH DIMENSIONS CALLED OUT**

A diagram with approximate lengths and area from the site visit on October 14, 2024 are provided as an attachment **ADDENDUM NO 1 (10-17-24)**.

**ITEM NO. 4 TECHNICAL SPECS AND STANDARD DETAILS FOR ASPHALT**

Replace in its entirety the Bid Offer Form included in Attachment 2 RFQ25HHL005 BIDDING AND CONTRACT REQUIREMENTS with the Revised Bid Offer Form attached to **ADDENDUM NO 1 (10-17-24)**.

**ITEM NO. 5 QUESTIONS AND RESPONSES ON HIEPRO**

This addendum will be provided on HIEPRO on 10-17-2024 and the questions due date will also be changed to 10-18-2024 to allow potential bidders to review this document before asking questions.

**SIDEWALK REPAIR AT KALAU PL, WAIMANALO**  
**RFQ-25-HHL-005**  
**Pre-bid Conference Minutes & Site Visit**  
**9:30 a.m., Monday, October 14, 2024**

The Pre-bid Conference and Site Visit was held at 41-217 Kalau Pl, Waimanalo. Meeting commenced at 9:30 AM. (See Attachment 1, sign-in sheet for members in attendance.)

Bladimir Gonzalez read through the project summary (see Attachment 2 for project summary.) Summary included Introductions, Purpose, Scope of Work, Procurement reminders, Completion Schedule and Liquidated Damages, and Deadlines.

A walk-through was conducted by Bladimir Gonzalez and Kehaulani Quartero (DHHL) to familiarize prospective bidders with the current site conditions.

**CHANGES TO ORIGINAL RFO:**

1. **Allowance Increase:** The allowance line item has been added and is \$10,000.
2. **Bid Offer Form Replacement:** The existing Bid Offer Form has been entirely replaced with the Revised Bid Offer Form to reflect the increase in the allowance item as well as to account for the dimensions provided at the site visit for a better cost estimate.
3. **Contract Completion Schedule:** There was a discrepancy in the original submittal on HiePRO for contract duration, there was a 30 days and 45 days called out. After discussion at the pre-bid meeting and to take into account the permitting process, the new contract duration will be 120 days.

**CLARIFICATION ON SCOPE OF SERVICES:**

1. **Utility Box Replacement:** The original scope called for the possible replacement of this water service meter box. After the site visit, it has been confirmed to be replaced and to include in the bid offer.
2. **Concrete Replacement:** There were no clear dimensions provided in the original RFQ, but after the site visit, estimate quantities of concrete replacement are provided and the potential bidders can bid on a unit price.
3. **Asphalt Replacement:** There were no clear dimensions provided in the original RFQ, but after the site visit, estimate quantities of asphalt replacement are provided and the potential bidders can bid on a unit price.
4. **Storm Drain Replacement:** After the site visit, it was determined that only the Storm Drain End Cap Overhang (called out in Attachment 3) will be bid on at this time. If additional repairs are needed for the Storm Drain Deck and Catch Basin, we will address with the allowance as need.

5. **Planter Strip Areas**: After it was brought up at the pre-bid site visit, please use any excess backfill from the job site and place it in the planter strip on either side of the storm drain.
  
6. **Standard Qualification Questionnaire for Offerors (SQOO)**: The Standard Qualification Questionnaire for Offerors (SQOO) does NOT need to be submitted before the offer is due. However, the lowest responsive and responsible bidder may be asked to complete the SQOO if requested by the procurement officer. Please refer to the “Instructions for Bidders” specifically Section 11B, for further details regarding these requirements.

Sidewalk Repair at Kalau Pl, Waimanalo

RFQ No.: RFQ-25-HHL-005

October 16, 2024

**REVISED DEADLINES FOR SUBMITTALS**

Sidewalk Repair at Kalau Pl, Waimanalo

RFQ-25-HHL-005

<b>SUBMITTAL</b>	<b>DEADLINE</b>
Questions due on HiePRO	4:00 P.M., October 18, 2024
Answers due on HiePRO	4:00 P.M., October <del>21</del> <sub>2</sub> , 2024
Bid Offer Due (HiePRO) <ul style="list-style-type: none"><li>A completed Bid Offer Form shall be uploaded as an attachment to HiePRO along with your Offer.</li></ul>	2:00 P.M., October 29, 2024

**Sidewalk Replacement at Kalau PI, Waimanalo  
Pre Construction Meeting  
Monday, October 14, 2024**

	NAME	COMPANY	TITLE	PHONE	EMAIL
1	GEORGE MITTEI	HAWAII PACIFIC CORP	EST	834-5993	GEORGE.MITTEI@HPC.PHOENIX.AZ.GOV
2	Hoon King	HAWAII WORKS INC.	EST	348-0107	estimating@hawaiiworksinc.com
3	Kehaulani Quintero	DHHL	Project Mgr	730-0325	kehaulani.a.quintero@hawaii.gov
4	Rick Speer	DHHL	Project Mgr	730-0324	richard.a.speer@hawaii.gov
5	Bladimir Gonzalez	DHHL	Engineer III	730-0327	bladimir.a.gonzalez@hawaii.gov
6	Roger Hatley	Molina Engineering	Supervisor	9095281637	Molinaengineering@Email.com
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

**Sidewalk Replacement at Kalau Pl, Waimanalo  
(RFQ-25-HHL-005)**

**Pre-bid Conference and Site Visit**

**TMK: 4-1-030:053**

9:30 a.m., Monday, October 14, 2024

**AGENDA**

1. **Introductions**

- Kehaulani Quatrero, Project Manager, DHHL
- ~~Lokahi Pauole, Project Manager, Bowers + Kubota~~
- Bladimir Gonzalez, Engineer III, DHHL

2. **Purpose of Pre-Bid Conference**

- To provide potential bidders with a project overview and job site visit.
- To review procurement requirements and allow potential bidders to ask questions and obtain clarification on the bid documents. A written summary of this pre-bid conference will be issued to all plan holders as an Addendum.
- Submittal Schedule (below). (Also, pages 1-2, 'Instructions for Bid Submittal').

3. **Scope of Work (General Description)**

This project includes furnishing of all supervision, labor, materials, equipment, and all other items related to and necessary to remove, repair, and replace the sidewalk, curb and gutter areas damaged by the tree roots at 41-217 Kalau Place, Waimanalo.

Work includes but not limited to the following:

1. Demo and removal of damaged sidewalk sections, curb and gutter sections, and tree roots
2. Supply and install new sidewalk, new curb and gutter, new utility box, and new storm drain as appropriate per site visit.

**General**

- All work must be performed in accordance with the Technical Specifications and Plans included in this RFQ
- All work and responsibilities listed on the Plan's are incidental to the bid proposal and are made part of this contract.

#### **4. Procurement reminders**

- This project is NOT exempt from the General Excise Tax (GET). Your bid proposal must be inclusive of General Excise Tax.
- This project is subject to 104 HRS, Department of Labor and Industrial Relations (DLIR) prevailing wages and salaries. Please note that Wage Rate Bulletin No. 507 can be found in the RFQ attachments.
- After bid opening and prior to award of this contract, DHHL shall verify compliance with Sections 103D-310 and 103D-328 HRS via Hawaii Compliance Express (HCE) for the bidder and all subcontractors. Therefore, the bidder and all subcontractors should register with HCE. Instructions for registration are at the HCE website: <http://vendors.ehawaii.gov>.
- Failure by the bidder and/or any subcontractor to rectify a non-compliant status on HCE within ten business days of notification will be considered as sufficient for the disqualification of the bidder and rejection of its proposal.
- No bid security is required for this solicitation.
- The Bid Offer Form contained in the RFQ shall be uploaded to HiePRO as an attachment when submitting a bid. The winning bidder will be required to mail in the original signed Bid Offer Form at time of award.
- The minutes of this pre-bid conference will be issued as an addendum.
- Building permit with the Department of Planning and Permitting might be required.

#### **5. Completion Schedule and Liquidated Damages**

- Time to complete: ~~Thirty (30) Calendar Days after the Notice to Proceed is issued.~~
- Liquidated damages: \$250.00 per day.

#### **6. Questions/Answers issued by Addenda**

- ~~All questions shall be asked via HiePRO in writing by 2:00 pm, October 15, 2024~~
- ~~The answers to those questions will be answered via HiePRO by 4:00 pm, October 18, 2024~~

#### **7. Deadlines (See table below)**

#### **8. Questions and Answers**

#### **9. Site Inspection Notes**

**Deadlines for Submittals**  
Sidewalk Replacement at Kalau Pl, Waimanalo  
RFQ-25-HHL-005

SUBMITTAL	DEADLINE
<del>Questions due on HlePRO</del>	<del>2:00 pm, October 15, 2024</del>
<del>Answers due on HlePRO</del>	<del>4:00 pm, October 18, 2024</del>
Standard Qualifications Questionnaire (SPO Form 21) <ul style="list-style-type: none"> <li>• <del>Original hard copy with wet signature mailed or hand delivered to: 91-5420 Kapolei Parkway Kapolei, HI 96707</del></li> </ul>	<del>4:00 pm, October 18, 2024</del>
Bid Offer Due (HlePRO) <ul style="list-style-type: none"> <li>• A completed Bid Offer Form shall be uploaded as an attachment to HlePRO along with your offer.</li> </ul>	2:00 pm, October 29, 2024

**\*FOR ALL STRIKETHROUGH TEXT ON THIS SCHEDULE, PLEASE SEE REVISED SCHEDULE ON PAGE 3 OF ADDENDUM NO. 1\***



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS

**REVISED BID OFFER FORM FOR  
ADDENDUM NO 1, 10-17-24**

**SIDEWALK REPAIR AT KALAU PL,  
WAIMANALO**

**KO'OLAUPOKO, ISLAND OF OAHU, HAWAII**

**RFQ No.: RFQ-25-HHL-005**

Chairman Hawaiian Homes Commission  
Department of Hawaiian Home Lands  
91-5420 Kapolei Parkway  
Kapolei, Hawaii 96707

The undersigned has carefully examined, read, and understands the terms and conditions in the Plans and Specifications, Special Conditions attached hereto, DHHL Construction General Conditions, and General Conditions specified in the Request for Quotes (RFQ) No. RFQ-25-HHL-005. The State of Hawaii's (State) Requisition and Purchase Order Form C-03, AG-008 103D General Conditions, are included by reference, made a part hereof, and available upon written request to the Procurement Officer. The undersigned hereby submits the following offer to perform the work for RFQ No. RFQ-25-HHL-005 as specified herein, all in accordance with the true intent and meaning thereof.

The undersigned understands and agrees that:

1. The State reserves the right to reject any and all offers and to waive any items that are defective when, in the State's opinion, such rejection or waiver will be in the best interest of the State. A solicitation may be rejected in whole or part when in the best interest of the State.
2. If awarded the contract, all services will be in accordance with Hawaii Revised Statutes (HRS) § 103-55.5.
3. By submitting this offer, the Offeror is not in violation of HRS Chapter 84, which concerns prohibited State contracts.
4. By submitting this offer, the Offeror certifies that the offer was independently arrived at without collusion and the Offeror did not participate in any practices to restrict competition.
5. It is understood that the failure to receive any addendum shall not relieve the Offeror from any obligation under this RFQ.

Date: \_\_\_\_\_

The undersigned represents that it is: **(Check  one only)**

- A **Hawaii business** incorporated or organized under the laws of the State of Hawaii; **OR**
- A **Compliant Non-Hawaii business** not incorporated or organized under the laws of the State of Hawaii, is or shall be registered at the State of Hawaii Department of Commerce and Consumer Affairs Business Registration Division (DCCA-BREG) to do business in the State of Hawaii.

State of incorporation: \_\_\_\_\_

Offeror is:

- Sole Proprietor       Partnership       Corporation       Joint Venture       Other:

\_\_\_\_\_

Federal ID No.: \_\_\_\_\_

Hawaii General Excise Tax ID No.: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

E-Mail Address.: \_\_\_\_\_

Payment address (other than street address below)

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(Street Address, City, State, Zip Code)

Business address

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(Street Address, City, State, Zip Code)

Respectfully submitted:

\_\_\_\_\_  
Authorized (Original) Signature

\_\_\_\_\_  
Name and Title (Please Type or Print)

\_\_\_\_\_  
**The exact Legal Name of the Company (Offeror)**

\*If Offeror shown above is a "dba" or a "division" of a corporation, furnish the exact legal name of the corporation under which the awarded contract will be executed:

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The following bid is hereby submitted for RFQ-25-HHL-005. SIDEWALK REPAIR AT KALAU PL, WAIMANALO for the Department of Hawaiian Home Lands.:

Item No	Est. Quantity (per site visit)	Description	Unit Price	Unit Total
1	110 square feet	Sidewalk Panel Replacement (demo and refurbishment)	\$ _____	\$ _____
2	75 square feet	Asphalt Replacement (demo and refurbishment)	\$ _____	\$ _____
3	19 linear feet	Curb and Gutter Replacement (demo and refurbishment)	\$ _____	\$ _____
4	One (1)	Water Service Box replacement	\$ _____	\$ _____
5	10 square feet	Storm Drain End Cap Overhang replacement (Called out in the diagram in Attachment 3, demo and refurbishment)	\$ _____	\$ _____
6	One (1)	Removal of concrete base and metal post to the left of Storm Drain (Called out in diagram in Attachment 3)	\$ _____	\$ _____
7		Allowance		\$10,000
		<b>TOTAL SUM BID (ITEMS 1-7)</b>		\$ _____

TOTAL SUM BID = \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )

The prices herein for the above items shall include all supervision, materials, labor, tools, equipment, machinery, and all incidentals necessary, including general excise tax, to perform the work in place, complete, and in accordance with the plans and specifications contained in this RFQ.

The Time of Performance shall be one hundred and twenty (120) calendar days from the Notice to Proceed effective date, subject to extensions, as may be granted.

**ALL JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT**

The Bidder certifies that the following is a complete listing of all joint Contractors or Subcontractors covered under Chapter 444, Hawaii Revised Statutes, who the Bidder will engage on this project to perform the nature and scope of work indicated pursuant to Section 103D- 302, Hawaii Revised Statutes, and understands that failure to comply with this requirement shall be cause for rejection of the bid.

The Bidder further understands that only those joint Contractors or Subcontractors listed shall be allowed to work on this project and that the Bidder shall perform all other work necessary with his employees. If no joint Contractor or Subcontractor is listed, it shall be construed) that the Bidder shall perform all the work with his employees.

The Bidders must be sure that they possess and that the Subcontractors listed in the bid possess all the necessary licenses to perform the work for this project. The bidder shall be solely responsible for assuring that all the specialty licenses required to perform the job are covered in his bid.

The Bidder shall include the license number of the joint Contractors or Subcontractors listed below. Failure to provide the correct names and license numbers as registered with the Contractor’s Licensing Board may cause the rejection of the bid submitted.

Complete Firm Name of Joint Contractor or Subcontractor	License Number	Hawaii Tax ID Number	Nature and Scope of Work to be Performed

(Add additional sheets if necessary)

## METHOD OF AWARD

The bidder is required to bid on the entire project. The low bidder shall be determined by the procedures outlined in items 1. through 4. below:

1. Prior to opening of bids, the State will determine the amount of funds available for the project. This amount will be designated the "control amount." The control amount shall be announced at and before the opening of bids.
2. Each bidder's Base Bid and Alternate, if any, will be adjusted to reflect the applicable preferences in accordance with Chapter 103D, HRS. The Alternate, if any, will then be added to the Base Bid and compared with the control amount.
3. The low bidder shall be the Bidder with the lowest aggregate amount, within the control amount (after applying the various preferences), for the Base Bid plus the Alternate, if any.
4. If adding the Alternate, if any, would make the aggregate amount exceed the control amount for all Bidders, the low bidder shall be the Bidder with the lowest Base Bid after applying the various preferences.

It is further understood and agreed that:

1. The Chairman reserves the right to reject any and/or all bids and waive any defects when, in his opinion, such rejection or waiver will be in the best interest of the State.
2. After determining the low bidder, an award may be made either on the amount of the Base Bid alone or including the Alternate (exclusive of preferences), if:
  - a. It is in the best interest of the State.
  - b. Funds are available at the time of the award, and
  - c. The Base Bid plus Alternate combination does not change the apparent low bidder.
3. In the event the Base Bid for all Bidders exceeds the control amount, the Chairman reserves the right to negotiate with the lowest responsible and responsive bidder to award a contract within available funds.
4. In the event the award is made for the Base Bid alone, the Chairman reserves the right to amend the contract at a later date to include the Alternate should funds subsequently become available.

## OTHER CONDITIONS

1. The liquidated damages per working day for failure to complete the work on time have been determined and noted in the sample contract's Special Conditions.
2. By submitting this bid, the undersigned declares that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past one (1) year.
3. By submitting this bid, the undersigned declares that the Bidder's own organization will perform at least 20% of the contractor's work. For the purposes of this section, the Contractor's work is defined as direct cost labor for the contractor's forces; direct cost materials installed by the contractor's direct cost labor force; direct cost equipment, either owned or leased, used by the contractor's direct cost labor force; and field overhead cost to include: field supervision, field office trailer (if any), field office equipment and supplies, etc.
4. Upon the acceptance of the bid by the Chairman, the undersigned must enter and execute a contract for the same and furnish a Performance and Payment Bond, as required by law. These bonds shall conform to the provisions of Sections 103D-324 and 325, Hawaii Revised Statutes, and any applicable law.
5. The quantities given herewith are approximate only and are subject to increase or decrease.
6. The estimated quantities shown for items for which a UNIT PRICE is asked in this bid are only to compare uniformly bids offered for the work under this contract. No claim shall be filed for anticipated profit or loss because of any difference between the quantities of the various classes of work done or the materials and equipment installed and the said estimated quantities. Payment on UNIT PRICE items will be made only for the number of units incorporated into the finished project at the contract UNIT PRICE.
7. If the product of the UNIT PRICE BID and the number of units do not equal the total amount stated by the undersigned in the Bid for any item, it will be assumed that the error was made in computing the total amount. To determine the lowest Bidder, the stated UNIT PRICE alone will represent the Bidder's intention. The total amount bid on such items shall be considered the amount arrived at by multiplying the UNIT PRICE by the number of units.
8. Certification for Safety and Health Programs for Bids over \$100,000. Following Sections 103D-327 and 396-18, Hawaii Revised Statutes, by submitting this bid, the undersigned certifies that his firm will have a written Safety and Health Plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division.
9. Any contract arising out of this offer is subject to the approval of the Department of the Attorney General as to form and to all further approvals, including the approval of the Governor, required by statute, regulation, rule, order, or other directive.

Receipt of the following addenda issued by the Department is acknowledged by the date(s) of receipt indicated below:

	Date		Date
Addendum No. 1	_____	Addendum No. 3	_____
Addendum No. 2	_____	Addendum No. 4	_____

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this RFQ as submitted.

Respectfully submitted,

\_\_\_\_\_  
Name of Company, Joint Venture or Partnership

\_\_\_\_\_  
License No.

By \_\_\_\_\_  
Signature (\*1)

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone No.: \_\_\_\_\_

(IF A CORPORATION, AFFIX THE CORPORATE SEAL TO THE SIGNATURE, BE SURE TO FILL IN THE ATTACHED LIST OF SUBCONTRACTORS. THIS BID FORM MAY NOT BE ALTERED, AND BIDDERS MAY NOT QUALIFY OR CONDITION THEIR BIDS IN ANY WAY.)

PLEASE FILL OUT THE ATTACHED CERTIFICATE OF RESOLUTION GIVING EVIDENCE OF THE AUTHORITY OF THIS OFFICER TO SUBMIT BIDS ON THE COMPANY'S BEHALF.

NOTES:

- \*1. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company, as well as the names and residence addresses of all officers of the Company.
- \*2. Fill in all blank spaces with the requested information, or the bid may be invalidated. BID MUST BE INTACT; MISSING PAGES MAY INVALIDATE YOUR BID.

**CERTIFICATE OF RESOLUTION**

I, \_\_\_\_\_, Secretary of \_\_\_\_\_, a Hawaii Corporation, do hereby certify that the following is a full, true and correct copy of a resolution duly adopted by the Board of Directors of said Corporation, at its meeting duly called and held at the office of the Corporation \_\_\_\_\_, Hawaii, on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, at which a quorum was present and acting throughout; and that said resolution has not been modified, amended or rescinded and continues in full force and effect.

"RESOLVED that any individual at the time holding the position(s) of \_\_\_\_\_, be, and each of them hereby is, authorized to execute on behalf of the Corporation any bid, proposal or contract for the sale or rental of the products of the Corporation or the services to be performed by the Corporation and to execute any bond required by any such bid, proposal or contract with the United States Government or the State of Hawaii or the City and County of Honolulu, or any County of Municipal Government of said State, or any department or subdivision of any of them."

IN WITNESS THEREOF, I have hereunto set my hand and affixed to the corporate seal of said

\_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

\_\_\_\_\_  
Secretary

END OF BID



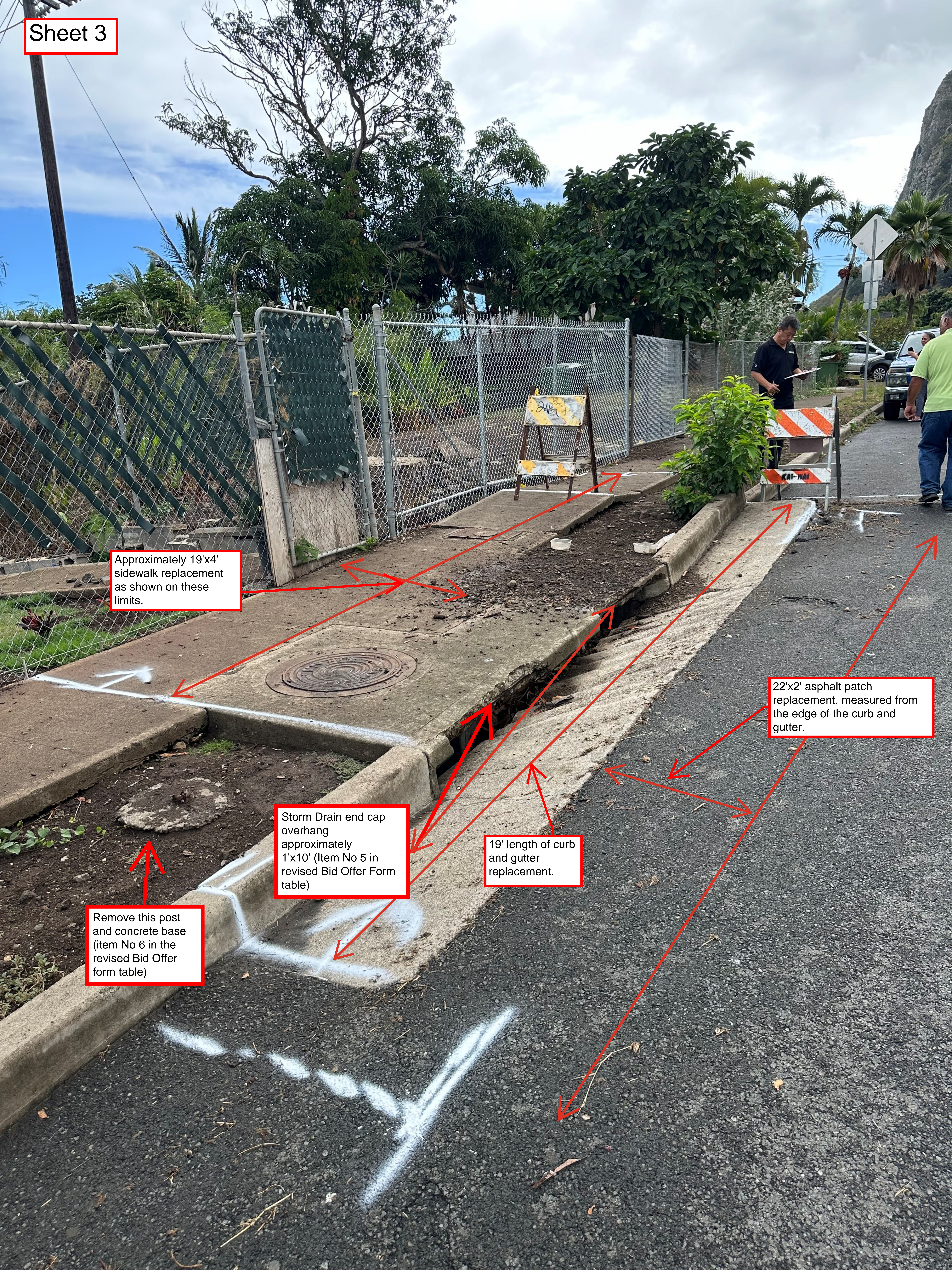
The sidewalk panel on Sheet 4 is in this direction.

Replace this water meter box.



4'x8'  
asphalt  
patch





Approximately 19'x4' sidewalk replacement as shown on these limits.

22'x2' asphalt patch replacement, measured from the edge of the curb and gutter.

Storm Drain end cap overhang approximately 1'x10' (Item No 5 in revised Bid Offer Form table)

19' length of curb and gutter replacement.

Remove this post and concrete base (item No 6 in the revised Bid Offer form table)



4'x6' sidewalk panel  
that needs to be  
replaced

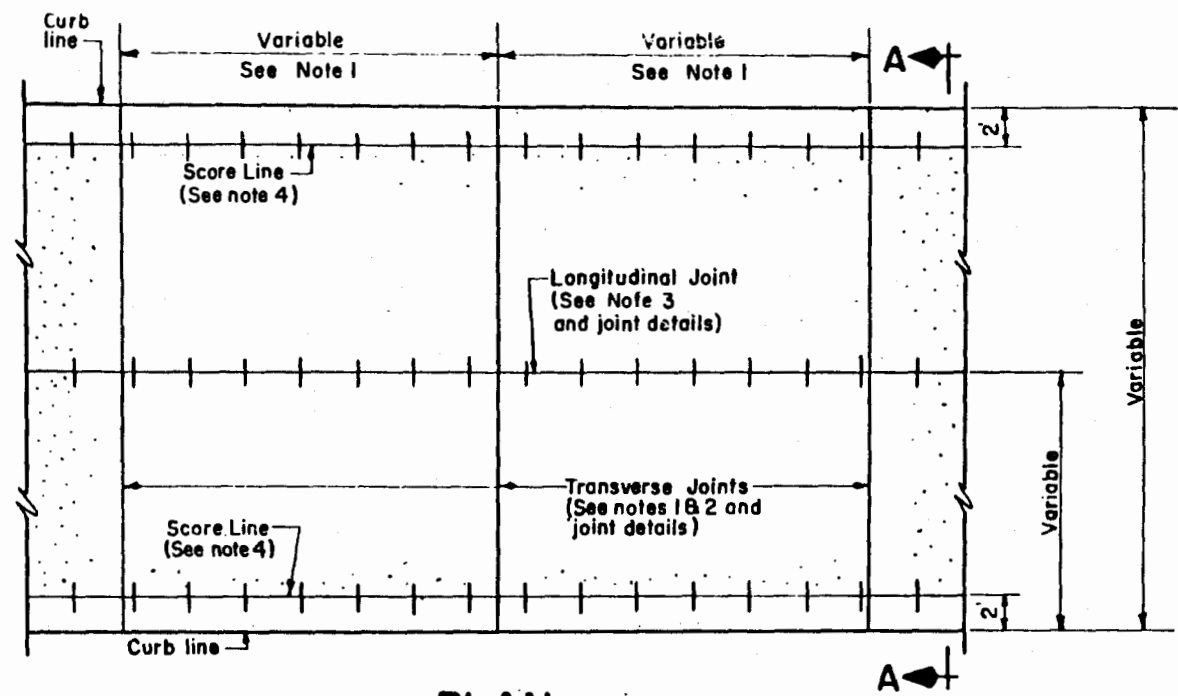
CITY & COUNTY OF HONOLULU  
 COUNTY OF MAUI  
 COUNTY OF HAWAII

SCALE: AS NOTED  
 CONCRETE PAVEMENT

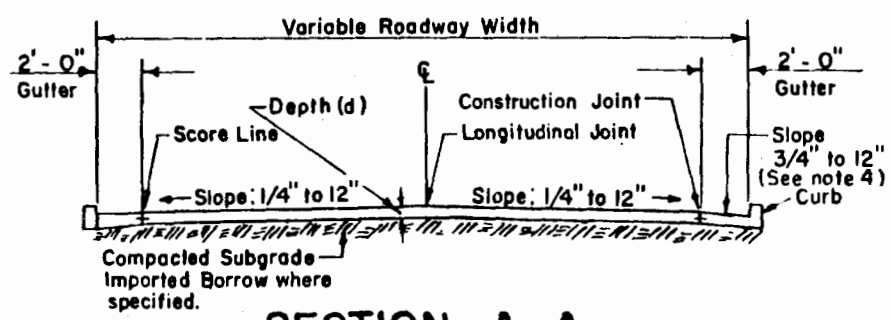
SEPTEMBER 1984

STANDARD  
 DETAILS

R-9



**PLAN**  
 SCALE: 1" = 1'-0"



**SECTION A-A**  
 SCALE: 1/8" = 1'-0"

**CONSTRUCTION NOTES**

1. Transverse joints shall be either weakened plane contraction joints or construction joints with dowels and shall be evenly spaced approximately 15 feet apart.
2. Expansion joints with dowels shall be located at intersections only.
3. Longitudinal joints shall be either weakened plane joints or keyed construction joints with tie bars. Maximum spacing between joints shall be as provided in the Standard Specifications.
4. Gutters constructed monolithically with the pavement shall be delineated with a score line. Gutters constructed separately shall have a longitudinal keyed construction joint with tie bars. Tie bars shall also be provided where gutters are constructed monolithically. For monolithic gutters, slope shall be 1/4" to 12".
5. Gutters on grades at 12% or less shall be steel trowel finished and gutters on grades greater than 12% shall be broom finished longitudinally.
6. Pavement on grades at 12% or less shall be broom finished transversely and pavement on grades greater than 12% shall be bristle brush finished.

**CONCRETE PAVEMENT**

## SECTION 34 ASPHALT CONCRETE PAVEMENT

### 34.1 DESCRIPTION

This work shall include furnishing and mixing mineral aggregate and asphalt binder at a central mixing plant, and hauling, spreading, and compacting the mixture on the approved prepared base course to the established grade and cross-section shown on the plans.

### 34.2 MATERIALS

A. Asphalt. The bituminous material shall be paving asphalt with a 85-100 penetration for locally refined product and shall meet the requirements under AASHTO M 20 for the specified grade or an aged residue graded paving asphalt, grade AR-4000 or AR-8000, conforming to AASHTO M 226-73I. The heptane-xylene equivalent shall be not more than 35% when tested in accordance with AASHTO T 102.

The use of other grades of asphalt shall be specified in the special provisions or approved in writing by the Engineer.

The Contractor shall furnish the Engineer with test reports covering the shipment of each lot of asphalt cement used for the project.

B. Aggregate. Mineral aggregate shall be obtained by crushing and screening hard, durable bluish-gray lava rock of uniform quality. The aggregate shall be free from decomposed materials, vegetable matter, and other deleterious substances. Elongated or flat pieces, where the ratio of length to width or width to thickness is greater than three, shall not exceed 25% by weight of the total aggregate in any batch. The percentage of wear shall not exceed 45% when tested under AASHTO T 96 after 500 revolutions.

Coarse aggregate shall be that portion of the mineral aggregated retained on a No. 4 sieve. Fine aggregate shall be that portion passing the No. 4 sieve.

C. Blending Sand and Mineral Filler. A nominal quantity of blending sand and mineral filler will be permitted with the Engineer's approval to obtain the required

gradation of the mineral aggregate. The quantity of blending sand and mineral filler used shall not exceed 5% of the total weight of the aggregate.

Natural sand shall be hard-grain, clean and free from loam, clay, organic matter or other deleterious substances. Mineral filler shall consist of thoroughly dry limestone dust or bluish-gray lava rock dust and shall be free of lumps or loosely bonded aggregations. The percentage composition by weight when tested under AASHTO M 29, shall meet the following requirements.

Percentage Passing by Weight

Sieve Size	Blending Sand	Mineral Filler
# 30	90-100	100
#100	5-50	Not less than 85
#200	0-10	Not less than 65

D. Gradation and Composition Requirements. The aggregate gradations for the various mixes of asphalt concrete are shown on Table 1-34. The grading limits specified are based on materials of uniform specific gravity. Correction of grading limits shall be made to compensate for any variations in specific gravity of the individual sizes.

The asphalt concrete are designated by mix numbers:

- 1) Mix #2 shall be used in constructing the first course for asphalt concrete wearing surface for road pavement.
- 2) Mix #3 shall be used in constructing the surface course for asphalt concrete wearing surface for road pavement.
- 3) Mix #4 shall be used in resurfacing existing pavements. For the County of Kauai only, this mix may also be used in constructing the surface course for asphalt concrete wearing surface for road pavement or constructing or resurfacing driveways.

- 4) Mix #5 shall be used in constructing driveways and repairing or resurfacing existing driveways. For the County of Kauai only, this mix shall not be used.

The amount of asphalt binder used in the particular mix shall be within the percentage range shown in Table 1-34 based on total dry weight of the mixture.

TABLE 1-34 ASPHALT CONCRETE COMPOSITION AND GRADATIONS

Sieve Size	Percentage Passing by Weight			
	Mix #2 (Coarse)	Mix #3 (Medium)	Mix #4 (Fine)	Mix #5 (Extra Fine)
1-1/4"	100			
1"	85-100	100		
3/4"	---	90-100		
1/2"	60-80	70-90	100	
3/8"	---	---	80-100	100
#4	36-50	40-57	55-75	70-90
#8	26-36	30-46	35-52	45-65
#30	16-25	18-31	13-25	22-38
#100	7-14	8-20	6-15	12-21
#200	1-8	4-10	4-10	6-12
Asphalt Binder (%)	4.5-6.5	4.5-7.0	5.5-7.5	6.0-8.0

E. Job Mix. The Contractor shall submit for approval, a job-mix formula for each asphalt concrete mixture to be supplied for the project. The job-mix formula for each mixture shall establish a single percentage of aggregate passing each required sieve size and a single percentage of bituminous material to be added to the aggregate.

After the job-mix formula is established, all mixtures furnished for the project shall conform thereto within the following ranges of tolerances:



<u>Sieve Size</u>	<u>Tolerance</u>
Passing No. 4 and larger sieves	± 7 per cent
Passing No. 8 to No. 100 sieves (inclusive)	± 4 per cent
Passing No. 200 sieve	± 2 per cent
Asphalt Binder	± 0.4 per cent

F. Tests. The combined mineral aggregates when tested shall conform to the following requirements:

K-Factor (obtained from Centrifuge Kerosene Equivalent Test).....	1.7 maximum
Sand Equivalent.....	50 minimum

### 34.3 DETAILS

A. Mixing. Asphalt cement shall be heated in a kettle of approved type and maintained at a temperature between 275° and 325°F. The heat must be applied so that there is no burning of any portion of the asphalt concrete. Live steam shall not be injected into the asphalt.

The mineral aggregate shall be heated to a temperature between 275° to 325°F.

After heating to the required temperature, the required amount of asphalt cement shall be added to the heated aggregate in a mixer and the mixing commenced. The minimum mixing period shall be 30 seconds. Longer mixing may be necessary to produce a thoroughly blended mixture in which all the particles are coated uniformly. Any mixture which shows an excess or deficiency of asphalt, or any uneven distribution of cement due to insufficient mixing, shall be wasted.

B. Preparing of Surface. All surfaces on or against which asphalt concrete wearing surface course is to be placed shall first be given a prime or tack coat as specified under Section 33, except clean surfaces of any course of asphaltic materials laid within the preceding 24 hours.

The Contractor shall prepare the existing surface by power brooming to remove all loose particles, dust, sand, and other foreign materials.

C. Spreading and Finishing. If required by the Engineer, a leveling course mixture shall be spread to level irregularities, dips, depressions, sags, and to provide a smooth base of uniform grade and cross section. The leveling course shall not be placed more than one day in advance of placing the surface course. No additional compensation will be allowed for furnishing, placing, and compacting the leveling course.

The surface course shall be spread with a mechanical, self-propelled spreading and finishing machine equipped with a hopper or mixture compartment to receive the mixture from the haul trucks, and a screed or cutoff device that oscillates in a horizontal motion or vibrates vertically when striking off the course or lift under construction. The screed shall be capable of adjusting to the required crown and elevation, and capable of covering the full width of a traffic lane. Spreading of the mixture from hauling trucks will not be permitted.

The paving machine shall be operated in such a manner as to distribute the mixture to proper cross section, width and thickness without segregation of aggregates.

If the paving machine leaves ridges, indentations, or other marks in the surface that cannot be eliminated by rolling or prevented by adjustment in operation, its use shall be discontinued and another equipment, acceptable to the Engineer, shall be furnished by the Contractor.

If more than one course is to be constructed in any area, not more than 24 hours shall elapse between the spreading and finishing of any two successive courses in that area. No wearing surface mixture shall be spread during unsuitable weather or when the base is wet.

When asphalt concrete wearing surface is to abut an existing transverse construction joint. The joint shall be trimmed to a neat vertical line.

When asphalt concrete wearing surface is to abut a concrete gutter, the wearing surface shall be laid so that its surface, after compaction, will approximately be slightly higher than the surface of the concrete gutter. The edge of the wearing surface shall then be neatly cut along the gutter edge.

At locations where the width of asphalt concrete mixture to be spread is too narrow to permit the use of a self-propelled mechanical spreading and finishing machine, or where the surfacing is to extend to a featheredge, the mixture shall be finally shaped and smoothed by means of a wooden float 8 feet long.

The maximum depth of asphalt concrete which may be spread and rolled in any one course or lift shall not exceed a compacted thickness of 2½ inches. When a thicker surface pavement is specified or indicated, the pavement shall be constructed in two or more lifts and the minimum thickness of each lift shall be 1 inch unless specified otherwise. Longitudinal joints in any two successive lifts or courses shall be offset a minimum of 6 inches so that one joint shall not be directly over the other.

D. Compacting. All compacting vehicles shall be self-propelled and in first-class mechanical condition. All rollers shall be capable of reversing and changing direction smoothly. The rollers shall be kept in continuous motion while on the hot mat and operated so that all parts of the pavement received equal compression. Roller shall be operated by competent and experienced personnel.

All rolling shall be longitudinal with the drive wheel forward in the direction of the paving machine. Rolling shall start near the edge of the pavement and proceed toward the center of the roadway, overlapping on successive trips by not less than one-half the width of the roller. The initial rolling shall take place as closely behind the laying machine as the temperature and condition of the mat will allow. The mixture temperature shall range between 220°F. and 300°F.

The initial or "breakdown" rolling shall be accomplished with steel-wheeled roller weighing 10 tons. After the first pass of the roller, any low or grainy spots shall be broken up with a hot rake and more material worked in to insure a smooth surface of uniform texture and density. Immediately following, a pneumatic-tired roller weighing not less than 12 tons shall be used to continue the rolling. For productions not exceeding 150 tons per hour, at least one steel-wheeled roller shall be used for the initial rolling. For productions in excess of 150 tons per hour, one additional roller will be required for each additional 100 tons per hour or fraction thereof. With the approval of the Engineer, the Contractor may achieve the required compaction by the best means available at his disposal.

Rolling shall continue until the compressed pavement or surfacing has attained a relative specific gravity of not less than 91 percent of the specific gravity of the combined mixture without voids. Test to determine compaction shall be done in accordance with ASTM D 2041 commonly called the "Rice Method". The final rolling shall be performed with a steel-wheeled roller weighing not less than 10 tons.

E. Smoothness. The finished surface of the pavement shall be true to grade and cross section, free from depressions and grainy spots, and of uniform texture. It shall not vary more than 1/8 of an inch from any point along the bottom of a 10-foot straightedge laid in any direction except across the crown.

F. Surface Tolerance. For the County of Kauai only, the finished surface of the asphaltic concrete pavement shall be within 0.02 foot above or below the theoretical grade. The thickness of the finished pavement shall not be more than 0.02 foot of the planned thickness at any point of the cross-section.

G. Pavement Samples and Testing. For the County of Kauai only, upon the Engineer's request, the Contractor shall cut pavement samples 12-inches by 12-inches or 4-inch diameter cores, minimum. Samples of the mixture shall be taken for the full depth of the course at the location directed by the Engineer. Where samples have been taken, new material shall be placed and compacted to conform with the surrounding area. The entire cost of sampling and restoring the area shall be borne by the Contractor, and no additional compensation will be made.

For the County of Kauai only, upon the Engineer's request, the Contractor shall employ an independent testing laboratory to analyze the characteristics of the asphaltic concrete pavement samples to determine if the asphaltic concrete pavement meets the requirements as set forth in this section. The entire cost of testing and any costs associated with the testing shall be borne by the Contractor, and no additional compensation will be made.

#### 34.4 MEASUREMENT AND PAYMENT

Asphalt concrete surfacing shall be measured for payment by the square yard or by the ton. The number of square yards shall be computed based on the horizontal dimensions of the completed surface.

Payment shall be made at the unit price bid as measured above, and shall be full compensation for furnishing the material, equipment, tools, labor, and any incidental work, necessary to construct the work in place.