STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

ADDENDUM NO. 2

FOR

INTERSTATE ROUTE H-1 REHABILITATION
MIDDLE STREET TO VICINITY OF WARD AVENUE
FEDERAL-AID PROJECT NO. IM-H1-1(269)
DISTRICT OF HONOLULU
ISLAND OF OAHU

JUNE 20, 2013

The following amendments shall be made to the Bid Documents:

A. SPECIAL PROVISIONS

1. Delete Special Provision pages 107-1a through 107-3a and replace with attached Special Provision pages 107-1a through 107-3a dated 6/20/13.

2. Delete Special Provision Section 406 in its entirety and replace with attached Special Provision Section 406 dated 6/20/13.

Please acknowledge receipt of this Addendum No. 2 by recording the date of its receipt in the space provided on Page P-4 of the Proposal.

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Make the following amendments to said Section:

(I) Amend **107.01(B)(1) – Commercial General Liability (Occurrence form)** from lines 53 to 62 to read as follows:

> **(1) Commercial General Liability (Occurrence form).** Minimum limit of $5,000,000 combined single limit per occurrence for each of the following:
>
> **(a)** Products – Completed/Operations Aggregate,
>
> **(b)** Personal & Advertising Injury, and
>
> **(c)** Bodily Injury & Property Damage Insurance."

(II) Amend **107.03 – Working Hours; Night Work** by adding the following after line 142.

"The State has applied for a Noise Variance for this project through the Department of Health according to 'Hawaii Administrative Rules Title 11, Chapter 11-46-8' for the night work. Should the Department of Health modify, suspend or revoke the Noise Variance, the State will have the right to have part or all of the contract work done during the day. The Engineer and the Contractor will negotiate compensation for doing such work during the day.

The Noise Variance is granted from July 1, 2013 to August 1, 2014 and allows work during the following hours:

> Monday to Thursday, from 6:00 pm to 7:00 am
> Friday, from 6:00 pm to Saturday 9:00 am
> Saturday, from 6:00 pm to Monday 7:00 am

subject to the following conditions during the variance hours:

(1) Use of jackhammers, jumping jacks, hoe rams, and vibratory sheetpile drivers shall be prohibited after 10:00 pm.

(2) Use of cold planer shall be prohibited after 12:00 am.

(3) Contractor shall make every effort to minimize noise emanating from the project.

(4) The use of reverse signal alarms shall be prohibited between 8:00 pm and 7:00 am. The alternative method utilizing a ground guide for signaling shall be employed.

(5) Traffic noise from heavy vehicles traveling to and from the construction site shall be minimized near residences.

(6) The Contractor shall have a job-site inspector to whom immediate complaints can be forwarded for prompt response and who shall have the general responsibility of monitoring quiet work procedures.

(7) The Contractor shall give sufficient notice regarding the project to any residents that may be impacted by the nighttime activity. The notification for the planned nighttime activity shall also contain the name and telephone number of the job-site inspector. In addition, a copy of any notifications, as well as progress reports, shall be sent to the Indoor and Radiological Health Branch.

(8) If noise level is such that the numerous complaints are received by the Department, the Contractor shall cease operations upon receipt of an order and complete the project during hours on weekdays and weekends as directed.

(9) The Contractor shall notify the Indoor and Radiological Health Branch, State Department of Health, as to the date and time of any variance hour activity as soon as the dates are confirmed and also when the project is completed.

(10) Should the duration of the project continue beyond the expiration date, the Contractor shall submit a request for extension to the Engineer along with an updated work at least one (1) month prior to August 1, 2014.

(11) Pursuant to H.R.S., Chapter 342F, Section 342F-5(d)(3), the Contractor shall perform noise sampling during the variance hours and report the results of such sampling to the Indoor and Radiological Health Branch"

(III) Amend 107. 13(A) – Erosion, Siltation and Pollution Control by adding the following after line 376.

"All work in the Nuuanu Stream area shall be constructed above the Ordinary High Water Mark (OHWM). Capture and contain all debris so that none shall fall into the stream below the OHWM. All violations and penalties for non-compliance shall be paid for by the Contractor. The Engineer will not grant a time adjustment, cost adjustment, or both, due to the Contractor's non-

compliance which results in the project requiring a permit(s) to work in the stream below the OHWM."

(IV) Add the following **Subsection 107.18 – Indemnification Agreements** after line 745.

"**107.18 – Indemnification Agreements.** Execute Indemnification Agreements with the State of Hawaii Department of Education (TMK 1-6-21:5); the Bishop Museum (TMK 1-6-24:41); and the State of Hawaii Department of Accounting and General Services (TMKs 1-6-24:3 and 1-6-24:38). Copies of the fully executed Indemnification Agreements, including Insurance Certificates, shall be submitted to the Engineer prior to work commencing within those properties.

The executed Right-of-Entry Agreement between the State Department of Transportation and the Department of Education (TMK 1-6-21:5) is included in this Section. The Right-of-Entry Agreements with the Bishop Museum (TMK 1-6-24:41) and the State of Hawaii Department of Accounting and General Services (TMKs 1-6-24:3 and 1-6-24:38) will be similar except insurance requirements are as reflected in the Indemnification Agreements. The remaining Right-of-Entry Agreements will be provided to the successful Bidder. The Contractor shall comply with the conditions stated in the Right-of-Entry Agreements for each owner."

Make this section a part of the Standard Specifications:

"SECTION 406 – STONE MATRIX ASPHALT (SMA) PAVEMENT

406.01 Description. This Section describes furnishing and placing stone matrix asphalt pavement on a prepared surface. General requirements for all asphalt concrete pavements as specified in Section 401 are applicable to this Section, subject to any exceptions contained herein.

406.02 Materials. Materials shall conform to the following:

(A) Performance Graded (PG) Binder. Performance graded binder shall conform to Performance Graded Asphalt Binder Specifications, AASHTO M 320 and meet the following additional requirement:

(1) AASHTO T 315 Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR). Phase angle on original binder shall be less than 77 degrees.

Submit, before usage, a Certificate of Compliance, accompanied by substantiating test data, showing conformance with Performance Graded Asphalt Binder Specification. The Engineer will not accept the PG binder without adequate documentation.

Grade PG binder using AASHTO MP 19 Performance Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test. Submit MSCR grading report accompanied by substantiating test data.

PERFORMANCE GRADED BINDERS FOR SPECIFIC MIXES	
MIX	**BINDER***
Stone Matrix Asphalt (SMA) for Surface Course	PG 76-22
* Neat asphalt with elastomer polymer modification shall be used to achieve the specified performance grading.	

(B) Aggregates. Make mineral aggregate by crushing and screening hard, tough, durable stone of uniform quality. Crushed aggregate shall be free from soft or disintegrated pieces, clay, dirt, or other deleterious substances.

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

When tested according to the designated methods, the combined mineral aggregate shall meet the following requirements:

Test	Test Method	Requirement
Soundness	AASHTO T 104 (5 cycles using sodium sulfate)	9% Maximum
Flat and Elongated Particles (Length to thickness ratio of 3:1)	ASTM D 4791 (by Weight)	20% Maximum
Los Angeles Abrasion	AASHTO T 96	30% Maximum
Sand Equivalent	AASHTO T 176	50% Minimum
Fine Aggregate Angularity	AASHTO T 304, Method A	45% Minimum
Absorption	AASHTO T84 & T85	4% Maximum
Gradation	AASHTO T 27 AASHTO T 11	See Table 406-1
Plasticity Index	AASHTO T90	Non-Plastic

100 percent of the material retained on the No. 4 sieve shall consist of crushed particles. A crushed particle is one having at least one mechanically fractured face. A face is considered fractured if it has a projected area that is at least 0.25 of the maximum projected area of the particle.

(C) RAP (Reclaimed Asphalt Pavement). Use of RAP is not allowed in SMA.

(D) Aggregate Blend. Size, uniformly grade, and combine coarse and fine aggregate fractions to produce a job-mix formula that meets the gradation requirements of Table 406-1.

Table 406-1 - Aggregate Gradation Limits 1/2 inch Nominal Maximum Size Mix	
SIEVE SIZE	**PERCENT PASSING**
3/4 inch	100
1/2 inch	90 - 100

3/8 inch	40 - 80
No. 4	20 - 35
No. 8	16 - 24
No. 16	-
No. 30	12 - 18
No. 50	-
No. 100	-
No. 200	8 - 11

(E) Mineral Filler. Mineral filler shall conform to AASHTO M 17 and shall be rock dust or crushed limestone conforming to the following:

Test	Test Method	Requirement
Plasticity Index	AASHTO T 90	4% Maximum

(F) Stabilizer. Dosage rate of cellulose shall be approximately 0.3 percent (by weight of total mix) and sufficient to prevent draindown.

(G) Job-Mix Formula. Design the job-mix formula according to AASHTO R 46.

Table 406-2 - Design Criteria	
$N_{initial}$, N_{design}, N_{max}	8, 100, 160
Air Voids at N_{design}	4%
Voids in Mineral Aggregate (VMA) at N_{design} (for 1/2 inch Nominal Maximum Particle Size)	17.0% Minimum
Voids in Coarse Aggregate (VCA)	Less than VCA_{DRC}
Density at $N_{initial}$ (% of Theoretical Maximum Specific Gravity)	Not more than 89.0 %
Density at N_{design} (% of Theoretical Maximum Specific Gravity)	96.0 %
Density at N_{max} (% of Theoretical Maximum Specific Gravity)	Not more than 98.0 %
Binder Content (by weight of total mix)	6.0 % Minimum

Draindown at Production Temperature	0.3 % Maximum
Stabilizer (by weight of total mix)	0.2 - 0.4 %

Submit the job-mix formula at least 15 working days before production. The job-mix formula shall include:

(1) Design percent of aggregate passing each required sieve size,

(2) Design percent of PG binder material added to the aggregate (expressed as % by weight of total mix), and

(3) Temperature at which the mixture is delivered to the point of discharge,

(4) Source of aggregate,

(5) Grade of PG binder,

(6) Type and percentage of stabilizer,

(7) Test data used to develop job-mix formula.

Mixtures shall meet the requirements of Table 406-1 and Table 406-2.

Table 406-3 –Tolerances	
Passing 3/8 inch and larger sieves	± 5%
Passing No. 4 to No. 16 sieves (inclusive)	± 4%
Passing No. 30 to No. 100 sieves (inclusive)	± 3%
Passing No. 200 sieve	± 2%
Binder Content (expressed as % by weight of total mix)	± 0.4%
Temperature of Mixture	± 20° F
Voids, total mix	± 1.0%

406.03 Construction Requirements. Construction requirements shall be as specified in Subsection 401.05, except as follows:

(A) Equipment.

(1) Mixing Plant. Use mixing plants that conform to AASHTO M 156, supplemented as follows:

(a) All Plants.

1. Automated Controls. Control proportioning, mixing, and mix discharging automatically. When RAP is incorporated into mixture, provide positive controls for proportioning processed RAP.

2. Dust Collector. AASHTO M 156, Requirements for All Plants, Emission Controls is amended as follows:

Equip plant with dust collector. Dispose of collected material. In the case of baghouse dust collectors, dispose of collected material or return collected material uniformly.

3. Modifications for Processing RAP. When RAP is incorporated into mixture, modify mixing plant in accordance with plant manufacturer's recommendations to process RAP.

4. Stabilizer Supply System. Use a separate system for feeding stabilizing additives to proportion the required amount into the mixture and obtain a uniform distribution. Stabilizer supply system shall include low level and no-flow indicators, section of transparent pipe for observing consistency of flow or feed, and printout of status of feed rate.

(2) Hauling Equipment. Use trucks that have tight, clean, smooth, metal beds for hauling SMA.

Thinly coat truck beds with a minimum quantity of detergent or lime solution to prevent the mixture from adhering to the beds. A light dusting of No. 10 aggregate coated with one percent asphalt may be used in lieu of liquid release agent. The use of diesel or petroleum-based liquid release agents will not be allowed.

Raise truck beds to drain excess water before loading with SMA mixture.

Equip each truck with tarpaulin conforming to the following:

(a) In good condition, without tears and holes.

(b) Large enough to be stretched tightly over truck bed completely covering the mix.

(B) Plant Operation.

(1) Mixing. Measure aggregate and asphalt into mixer in accordance with job-mix formula. Mix until the components are completely mixed and adequately coated with asphalt in accordance with AASHTO M 156. Percent of coated particles shall be 98% when tested in accordance with AASHTO T 195.

(C) SMA Storage. The time between plant mixing and shipment shall not exceed one hour. Store the SMA mixture only in silos. Do not stockpile the SMA.

Equip the storage silo to prevent segregation of the completed mixture as the mixture is discharged into the silo.

Stored material shall be of no less quality than mixtures discharged directly into hauling vehicles.

(D) Spreading and Finishing. Prior to each day's paving operation, check screed or strike-off assembly surface with straight edge to ensure straight alignment. Provide screed or strike-off assembly that produces finished surface without tearing, shoving, and gouging SMA. Discontinue using spreading equipment that leaves ridges, indentations, or other marks, or combination thereof in surface that cannot be eliminated by rolling or be prevented by adjustment in operation.

The minimum temperature of the bituminous mixture as discharged to the paver shall be established during the mix design procedure. Measure temperature of mix in hauling vehicle just before depositing into spreader.

Deposit SMA in a manner that minimizes segregation. Raise truck beds with tailgates closed before discharging SMA mixture.

Lay, spread, and strike off SMA upon prepared surface. Use asphalt pavers to distribute mixture.

Control horizontal alignment using automatic grade and slope controls from reference line, ski and slope control device, or dual skis.

Obtain sensor grade reference from 30-foot ski for first pass. For subsequent passes, substitution of one ski with joint-matching shoe riding on finished adjacent pavement is acceptable. Use of a comparable non-contact mobile reference system and joint matching shoe is acceptable.

Avoid stop-and-go operations. Minimize changing forward speed of paver during paver operation.

Offset longitudinal joint in successive lifts by approximately 6 inches. Position joint in surface course at centerline of pavement when roadway comprises two lanes of width, or at lane lines when roadway is more than two lanes in width.

In areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, spread, rake, and lute the mixture by hand tools. For such areas, dump, spread, and screed the mixture to required compacted thickness.

Demonstrate competence of personnel operating grade and crown control device before placing surface courses. If automatic control system becomes inoperative during the day's work, the Engineer will permit the Contractor to finish day's work using manual controls. Do not resume work until automatic control system is made operative. The Engineer may waive requirement for electronic screed control device when paving gores, shoulders, transitions, and miscellaneous reconstruction areas.

When production of SMA can be maintained and when practicable, use pavers in echelon to place surface course in adjacent lanes.

At the end of each workday, SMA pavement that is open to traffic shall not extend beyond an adjacent panel of new lane pavement by more than distance normally covered in one workday. At end of each workweek, complete full width of pavement, including shoulders, to same elevation with no drop-offs. Construct transition taper along lane line at longitudinal pavement drop-off. Maximum drop-off height shall be 2 inches. Remove and dispose of transition taper before placing adjoining panel

The minimum and maximum allowable laying thicknesses for the SMA mixture shall be two inch minimum thickness and three and three fourths inch maximum thickness.

(E) Compaction. Immediately after spreading and striking off SMA and adjusting surface irregularities, uniformly compact the mixture by rolling.

Initiate compaction within the temperature range determined from the Temperature-Viscosity graph that does not produce excessive horizontal movement.

Use steel-tired tandem rollers for initial or breakdown rolling. Rollers shall follow directly behind the paver.

Finish rolling using tandem roller weighing at least eight tons. Complete compaction before the mix cools below 240°F.

On superelevated curves, begin rolling at lower edge and progress to higher edge by overlapping of longitudinal trips parallel to centerline.

If necessary, repair damage immediately using rakes and fresh mix. Do not displace line and grade of SMA edges during rolling.

Keep roller wheels properly moistened with water or water mixed with small quantities of detergent. Use of excess liquid, diesel, and petroleum-based liquids will not be allowed on rollers.

Along forms, curbs, headers, walls and other places not accessible to rollers, compact mixture with hot hand tampers, smoothing irons or mechanical tampers. On depressed areas, trench roller or cleated compression strips under roller may be used to transmit compression.

Remove pavement that is loose, broken, contaminated, or combination thereof; pavement that shows an excess or deficiency in asphalt binder content; and pavement that is defective in any way. Replace with fresh SMA pavement of same type and compact. Remove and replace defective pavement and compact at no increase in contract price or contract time.

Operate rollers at slow but uniform speed with drive wheels nearest the paver. Continue rolling to attain specified density and until roller marks are eliminated.

(1) HMA Pavement Courses One and a Half Inches Thick Or Greater. Where SMA pavement compacted thickness indicated in the contract documents is 1-1/2 inches or greater, compact to not less than 94.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate.

(F) Demonstration. Before proceeding with the SMA work, demonstrate that a satisfactory mix can be produced and placed and determine the compactive effort required. For the demonstration, place a minimum of 150 tons outside of the project limits.

(G) Control Strip. Prior to starting paving, construct a full lane width control strip on the finished grade at least 500 ft in length. The control strip will be used to determine the compactive effort. After the control strip is

complete, do not deviate from the approved rolling pattern without constructing a new control strip. As determined by the Engineer, remove and dispose of any unacceptable control strip at no additional cost to the State.

406.04 Measurement. The Engineer will measure SMA pavement per ton in accordance with the contract documents.

406.05 Payment. The Engineer will pay for the accepted pay items listed below at the contract unit price per pay unit, as shown in the proposal schedule. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for each of the following pay items when included in the proposal schedule:

Pay Item	**Pay Unit**
SMA Pavement	Ton

(1) 80% of the contract unit price upon completion of submitting a job-mix formula acceptable to the Engineer; preparing the surface, spreading, and finishing the mixture; and compacting the mixture;

(2) 20% of the contract unit price upon completion of cutting samples from the compacted pavement for testing; placing and compacting the sampled area with new material conforming to the surrounding area; protecting the pavement; and final analysis.

The Engineer may, in lieu of requiring removal and replacement, use the sliding scale factor to accept SMA pavements compacted below 94.0 percent and above 97.0 percent. The Engineer will make payment for the material in that production day at a reduced price arrived at by multiplying the contract unit price by the pay factor shown in Table 406-4.

Table 406-4 – Sliding Scale Pay Factor for Compaction

Percent Compaction	Percentage Payment
> 98.0	Removal
97.1 - 98.0	95
94.0 - 97.0	100
92.0 - 93.9	95
90.0 - 91.9	80
<90.0	Removal

The Engineer may use the sliding scale factor to accept SMA mixtures with air voids at N_{design} less than three percent and greater than five percent. The Engineer will make payment for the material in that production day at a reduced price arrived at by multiplying the contract unit price by the pay factor shown in Table 406-5.

Table 406-5 – Sliding Scale Pay Factor for Air Voids at N_{design}

Percent Air Voids	Percentage Payment
> 6	90
6	95
3-5	100
2	95
< 2	90

To apply multiple price adjustments for a production day, calculate a composite pay factor using the algebraic sum of the individual price adjustments.

Example: Compaction Pay Factor = 95%
Design Air Voids Pay Factor = 90%

Composite Pay Factor = [(- 0.05) + (- 0.10) + 1.00] x 100 = 85 %

Demonstration paving shall be incidental to SMA pavement.

The Engineer will pay for cold planing in accordance with and under Section 415 – Cold Planing of Existing Pavement.

The Engineer will pay for adjusting existing frames and grates for drainage structures shown in the proposal schedule in accordance with and under Section 604 – Manholes, Inlets and Catch Basins.

The Engineer will not pay for adjusting existing frames and covers and existing valve boxes not shown in the proposal schedule and the work shall be considered incidental to SMA pavement."

END OF SECTION 406