STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADDENDUM NO. 2

for

**INTERSTATE ROUTE H-1 REHABILITATION,
SALT LAKE BOULEVARD TO AIRPORT VIADUCT**

FEDERAL AID PROJECT NO. NH-H1-1(275)

The following amendments shall be made to the Bid Documents:

A. NOTICE TO BIDDERS

1. Prospective bidders are hereby notified that receiving of sealed proposals scheduled for 2:00 P.M. HST, November 29, 2021, is hereby POSTPONED until 2:00 P.M. HST, FRIDAY, December 10, 2021. The attached NOTICE TO BIDDERS dated r11/22/21 shall be incorporated and made a part of the NOTICE TO BIDDERS.

2. Prospective bidders are hereby notified that additional questions and requests for information regarding this project may now be submitted through HIePRO until 4:00 P.M. HST, Friday, November 26, 2021.

B. SPECIFICATIONS

1. Replace the Table of Contents dated 10/20/21 with the attached Table of Contents dated r11/22/21.

2. Replace Special Provision Section 107 dated 9/16/21 with the attached Special Provision Section 107 dated r11/22/21.

3. Replace Special Provision Section 315 dated 8/28/21 with the attached Special Provision Section 315 dated r11/22/21.

4. Replace Special Provision Section 406 dated 10/22/21 with the attached Special Provision Section 406 dated r11/22/21.

5. Replace Special Provision Section 415 dated 10/13/20 with the attached Special Provision Section 415 dated r11/22/21.

6. Replace Special Provision Section 645 dated 10/21/21 with the attached Special Provision Section 645 dated r11/22/21.

7. Remove Special Provision Section 695 Project Vehicles.

C. PROPOSAL SCHEDULE

1. Replace Proposal Schedule page P-8 to P-18 dated r11/10/21 with the attached revised Proposal Schedule page P-8 to P-20 dated r11/22/21.

D. PLANS

1. Replace Plan Sheets No. 3, 4, 5, ADD.19, ADD. 33, ADD. 34, 35, 38, 39, and ADD. 46 with the attached revised Plan Sheets No. ADD. 3, ADD. 4, ADD. 5, ADD. 19, ADD. 33, ADD. 34, ADD. 35, ADD. 38, ADD. 39, and ADD. 46.

The following is provided for information.

E. ANSWERS TO QUESTIONS FROM PROSPECTIVE BIDDER

1. Attached are RFI's and responses for your information.

F. BORING INFORMATION FROM AS-BUILT PLANS

1. Attached are as-built plan sheets that provide boring information for your information.

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.

JADE T. BUTAY
Director of Transportation

NOTICE TO BIDDERS
(Chapter 103D, HRS)

The receiving of sealed bids for **INTERSTATE ROUTE H-1 REHABILITATION, SALT LAKE BOULEVARD TO AIRPORT VIADUCT, FEDERAL AID PROJECT NO. NH-H1-1(275)**, through HIePRO, scheduled for 2:00 P.M., November 29, 2021, is hereby POSTPONED UNTIL 2:00 P.M., FRIDAY, December 10, 2021.

The submission of the Disadvantaged Business Enterprise (DBE) Contract Goal Verification and Good Faith Efforts (GFE) Documentation for Construction, Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement – Trucking Company and Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement – Subcontractor, Manufacturer, or Supplier for **INTERSTATE ROUTE H-1 REHABILITATION, SALT LAKE BOULEVARD TO AIRPORT VIADUCT, FEDERAL AID PROJECT NO. NH-H1-1(275)**, scheduled for 2:00 P.M., December 6, 2021, is hereby POSTPONED UNTIL 2:00 P.M., WEDNESDAY, December 15, 2021.

JADE T. BUTAY
Director of Transportation

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Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement – Subcontractor, Manufacturer, or Supplier

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Make the following section a part of the Standard Specifications:

"SECTION 315 – NONWOVEN GEOTEXTILE FABRIC

315.01 Description. This work includes furnishing and placing nonwoven geotextile fabric on the subgrade or lightweight aggregate material.

315.02 Material. The nonwoven geotextile fabric material shall meet the Standard Specification 716.06 – Geotextiles for Stabilization Applications, though with a minimum Permittivity of 0.7 sec^{-1} and with an Apparent Opening Size (U.S. Standard Sieve) of Number 100.

315.03 Construction Requirements.

(A) Surface Preparation. Before placing the nonwoven geotextile, proof-roll the subgrade with the compactor. If the ground is very soft or pumping, inform the Engineer.

(B) Nonwoven Geotextile Placement. Place nonwoven geotextile fabric onto the compacted subgrade or lightweight aggregate material.

The nonwoven geotextile fabric material shall have a minimum overlap of 24 inches for transverse and longitudinal joints.

315.04 Method of Measurement. The Engineer will measure nonwoven geotextile fabric per square yard of nonwoven geotextile fabric finished surface, not including overlaps.

315.05 Basis of Payment. The Engineer will pay for the accepted nonwoven geotextile fabric at the contract unit price per square yard. Payment will be full compensation for the work prescribed in this section and the contract documents

The Engineer will pay for the following pay item when included in the proposal schedule:

Pay Item	**Pay Unit**
Nonwoven Geotextile Fabric	Square Yard"

END OF SECTION 315

Make the following 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 Dense Graded Hot Mix Asphalt (HMA) Pavement are applicable to this Section, subject to any exceptions contained herein.

406.02 Materials. Materials shall conform to the following:

(A) Asphalt Cement (PG 64E-22) 702.01B

(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 Aggregate Gradation Limits 1/2 inch Nominal Maximum Size Mix.

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	8.0 – 11.0

(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 not to exceed the amount stated in Table 406-2 - Design Criteria as determined by AASHTO T 305 Standard Method of Test for Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures. Increase the amount of fiber at no additional cost to HDOT to meet the allowed draindown requirement. Fibers other than cellulose fiber that are equal or better may be used if requested to and accepted by the Engineer. The Engineer is under no obligation to accept a substitution.

(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 30 working days before production. Production paving shall not start until the job mix formula has been reviewed and found acceptable by the Engineer. The job-mix formula shall include:

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

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

(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, and

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

Mixtures shall meet the requirements of Table 406-1 (Aggregate Gradation Limits 1/2 inch Nominal Maximum Size Mix) and 406-2 (Design Criteria).

Table 406-3 — Production 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	± 2.0%
Binder Content (expressed as % by weight of total mix)	± 0.4%
Temperature of Mixture	± 20° F
Voids, total mix	± 1.0%

* The tolerances shown are the allowable variance between the physical characteristics of laboratory job mix submitted mix design and the production or operational mix, i.e., field samples.

406.03 Construction Requirements. Construction requirements shall be as specified in Subsection 401.03 - Construction, 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.

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. 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 interlock with plant controls, 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. SMA shall not be placed on a cold-planed material and shall be placed over the Hot Mix Asphalt Base Course as indicated in the plans.

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 the recently-placed-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. Joints shall be parallel to the centerline of the road or lane and shall have a uniform longitudinal alignment that is not wavy in appearance.

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 work using the material on site or is in the process of being delivered to the project using manual controls. Additional work may be performed if needed to provide the public with a safe travelway, e.g., no dips or bumps, drop offs. 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-longitudinal edge of the placed SMA 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, e.g., water, detergent and water mixture, 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 that have been accepted by the Engineer. On depressed areas, trench roller or cleated compression strips under roller may be used to transmit compression.

Remove pavement that is loose, broken, exposed to deleterious material, contaminated, or shows an excess or deficiency in asphalt binder content; or is defective in any way or combination thereof. 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) SMA 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. No production pavement shall start until the SMA demonstration is accepted by the Engineer.

(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. Submit to the Engineer the means and methods to construct the control strip, e.g., equipment, rolling pattern, compaction of the longitudinal joint, quality control plan including real-time pavement smoothness methods and testing during paving. If acceptable to the Engineer, this document will be considered part of the Contract Documents and the Contractor shall meet the stated means and methods unless another control strip is constructed and accepted by the Engineer. No production pavement shall start until the SMA control strip is accepted by the Engineer.

(H) Pavement Smoothness Rideability Test. The requirements for pavement smoothness rideability in Section 401 – Dense Graded HMA Pavement shall apply to this section. This includes applicable Subsections of 401.03 Construction.

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.

Engineer will deduct from the Contractor's monthly estimate the amount necessary to pay for the services of a third-party pavement profile testing entity plus the additions specified in the Contract documents. Payment will be full compensation for work prescribed in this section, required by the Engineer and Contract Documents. No payment for the Contractor's pavement profile work required in this section will be made it will be considered incidental to the various paving items unless stated otherwise.

The Engineer will pay for incentives or assess pavement roughness disincentives in accordance with the pay schedule below.

Pay Item	Pay Unit
_____ SMA Pavement	Ton

(1) 70% of the contract unit price upon the submitting a job-mix formula acceptable to the Engineer; the SMA demonstration and control strip is accepted by the Engineer, completion of preparing the surface, spreading, finishing the mixture; 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.

(3) 10% of the contract unit price upon completion of removal of temporary pavement markings, installation of permanent pavement markings, work zone signage, site cleanup.

(4) The Engineer may, at its sole discretion, 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, if he decides to use a sliding scale factor, at a reduced price arrived at by multiplying the contract unit price by the pay factor. The Engineer is not obligated to allow non-compliant work to remain in place and may at any time choose not to use a sliding scale factor method of payment and instead require removal of the noncompliant pavement greater than 97.0 or less than 94.0.

(5) In compliance with Subsection 105.12 – Removal of Non-Conforming and Unauthorized Work remove and replace HMA compacted below 90.0 percent.

(6) The Engineer will solely decide if the noncompliant work would be acceptable if a reduced payment for the noncompliant work is made. The Engineer is not obligated to allow noncompliant work to remain in place and may at any time choose not to use a sliding scale factor method of payment as a method of resolution. Instead, utilize the remedy allowed in Subsection 105.12 – Removal of Non-Conforming and Unauthorized Work and require removal of the noncompliant pavement.

(7) Such a reduced payment, if made and accepted by the Contractor, hall be a mutually agreeable resolution to the noncompliant work being addressed. If it is not mutually acceptable, the noncompliant work shall be removed. If the reduced payment is acceptable; the Engineer will make the reduced payments for the noncompliant work in accordance with Table 406-4 – Sliding Scale Pay Factor for Compaction. The amount of tonnage to be

reduced will be determined by the Engineer by using the initial cores taken on the mat. No additional cores shall be taken to determine the limits of the non-compliant area unless requested by the Engineer.

(8) In order to determine the reduced tonnage for noncompliant work, the Engineer will assume the level of compaction is linear and will proportion the compaction level from the last core that indicated an acceptable compaction level to the nearest core indicating a noncompliant compaction level to determine the calculated limit of acceptable compaction. The length will be the linear distance between the cores measured along the baseline. If there is no core that was taken for the shift's or day's work that was compliant then the limit will be the end or start of the day's or shift's work. The width will be the nominal paving width. Use the day's specific gravity of the mix to determine tonnage. The thickness will be the nominal paving thickness.

(9) The total reduced noncompliant tonnage to be paid will be determined by multiplying the applicable percent of reduction by the computed tonnage of the noncompliant work. The Engineer will make payment for the material in that production day at a reduced price arrived at by multiplying the unadjusted contract unit price by the pay factor shown in Table 406-4 – Sliding Scale Pay Factor for Compaction.

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 – less than 94.0	95
90.0 – less than 92.0	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 – Sliding Scale Pay Factor for Air Voids at N_{design}.

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

Percent Air Voids	Percentage Payment
> 6.0	90
5.1 – less than 6.0	95
3.0 – less than 5.1	100
2.0 – less than 3.0	95
< 2.0	90

Demonstration paving (406.03(F)) shall be incidental to SMA pavement.

The Engineer will pay for only one accepted control strip. Control strips not accepted by the Engineer shall be considered as work noncompliant to the Contract Document requirements and will not be paid for. Additional control strips after the initial acceptance of the control strip will not be paid for unless it is incorporated into the accepted SMA paving work. It then will be paid at the contract unit price or shall be part of the lump sum price. Paving for the first accepted control strip will be paid for at the contract unit price or shall be part of the lump sum price.

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 pay for adjusting existing frames and covers and existing valve boxes in accordance with and under Section 626 — Manholes and Valve Boxes for Water and Sewer Systems.”

END OF SECTION 406

Amend **Section 415 – COLD PLANING OF EXISTING PAVEMENT** to read as follows:

"SECTION 415 - COLD PLANING OF EXISTING PAVEMENT

415.01 Description. This section describes removing existing pavement by a cold-planing process (i.e., cold mill or mill process) and establishing grade controls to provide a basis for a smooth riding surface.

415.02 Materials. None.

415.03 Construction.

(A) Equipment. Cold-planing machines shall be self-propelled, equipped with an automatically controlled and activated cutting drum that is capable of grade reference, maintaining transverse slope control and producing a uniformly textured surface. An Engineer accepted grade 1-piece referencing attachment, not less than 30 feet in length, shall be used. The cold-planing machine shall be capable of accurately removing the pavement surface, in one or more passes, to the required grade or cross-section indicated in the Contract Documents, without tearing or gouging underlying surface that is to remain and without contaminating milled pavement with underlying base course material. The final cut shall result in a neat and uniform milled surface.

Equip machine with cutting drum capable of producing a uniform surface finish and texture. Enclose the cutting drum in shroud to prevent discharge of loosened material into adjacent work areas. As standard equipment, provide dust suppression system, storage tanks with an adequate water, and high-pressure spray bar with spray nozzles. Provide a machine capable of cutting a crown and a depth by tilting drum axis and it shall be equipped with guidance system that controls transverse slope and longitudinal profile, matches adjacent pavements, and controls depth of cut. A mobile referencing system shall be used. Provide at minimum a 30-foot long 1-piece mobile reference to provide average elevation variations. The entire length shall be used in activating the sensor.

If referencing from existing pavement, the cold-planing machine shall be controlled by a self-contained grade reference system. The system shall be used at or near the centerline of the roadway. On the adjacent pass with the cold-planing machine, a joint-matching shoe may be used on the newly placed HMA surface. Using the existing newly paved pavement as a reference is discouraged and should not be used unless the profile of the existing pavement meets the smoothness requirements of the Contract Documents and even then, shall be used at the Contractor's own volition.

(B) Cold-Planing Pavement Profile. Prior to the start of cold-planing (planing) take a pavement surface profile test of all areas where planing is to occur. Use these profiles to create a surface profile that shall be used to install a smooth finish pavement that meets the Contract Document smoothness requirements. The planing profile shall allow the finish HMA pavement's profile in general to:

(a) Not change the drainage patterns of the existing roadway.

(b) Decrease the clearance between overhead objects, e.g., overpasses, utility lines, and the finish pavement.

(c) Decrease the effectiveness or make existing safety apparatuses non-compliant.

(d) Change geometric properties, e.g., sight distance, slopes of the roadway shall not be changed.

The method used by the Contractor to obtain planing pavement profiles will be left up to the Contractor. The Engineer will use a profile obtained using the Contractor supplied inertial profiler to determine the International Roughness Index (IRI)" (i.e., the profile of the pavement surface smoothness) of the new pavement regardless of what method the Contractor uses to determine the planing pavement profile. Submit all planing pavement profiles for review and acceptance by the Engineer at a minimum of 30 days before planing starts. Inform the Engineer of any existing feature that may need adjustment to obtain a smooth riding surface.

Planing shall be used to create the initial base that shall improve the existing pavement profile when paving work is properly performed. Set guidance system grade sensor on string line or other grade device to guide the planing machine to the proper cutting profile established by the planing pavement profile.

(C) Cold-Milled Surface and Removed Material. Cold-mill (mill) surface to remove pavement and to eliminate high spots and surface irregularities for a smooth roadway resurfacing. Remove thickness of existing pavement to the average minimum depth indicated in the Contract Documents. In general, the depth, length, width, and shape of the cut shall be as shown in the Contract Documents or as directed by the Engineer. Examine the milled surface and inform the Engineer if:

(a) There are any weakened pavement areas not shown in the Contract Documents.

(b) A thin milled 90 subsurface layer exists.

(c) Holes are present in the milled surface.

(d) There are indications of poor bonding of the milled layer to the layer below.

(e) Base course showing.

(f) Any condition that may be deleterious to the service life of the new overlay exists.

The Engineer may direct remedial work in these areas to provide increased pavement life as well as a smoother ride, e.g., increase the depth of the planing or do additional work to the weakened pavement areas. Additional remedial work will be considered extra work unless the Contractor over milled the pavement.

Furnish, install, and maintain grade and transverse slope references.

Adjust machine blades to avoid damaging existing items that are to remain, such as underlying pavement structure, monuments, manholes, and pipes. Remove and replace or reconstruct items damaged by planing operations.

Maintain an appropriate consistent planing speed that shall give a smooth consistent texture for the milled surface. Planing speed shall be adjusted so that the milled surface is not scalloped or individually gouged or both. The travel speed in feet per minute shall not exceed 2/3 of the cutter drum RPM, e.g., 100 RPM > 66 feet per minute. If the planing machine does not have a drum RPM gage, assume the drum speed is $1/19^{th}$ of the engine RPM.

Provide for drainage of milled surface areas and adjacent pavement. Drainage of the milled areas shall be installed on same work shift as when planing is performed.

The completed surface of the milled asphalt concrete pavement shall not vary more than 0.02 foot when measured with a 12-foot straightedge parallel with the centerline. With the straightedge at right angles to the centerline, the transverse slope of the planed surface must not vary more than 0.03 foot. Check the milled surface profile every 24 feet to verify that the planing is compliant. Record drum speed and planing machine speed at every 30 minutes. Record results of checks, in a manner acceptable to the Engineer showing at a minimum:

(a) Location of the profile check showing station and offset from centerline or station and lane location for both profile check and drum speed and planing machine speed.

(b) Date and time for both profile check and drum speed and planing machine speed.

(c) When planing machine started planing and stationing, all stopping and restarting times. End of shift planing work station.

(d) Variances from straightedge, location of the variance on the straight edge.

(e) Person performing checks and recording the information shall sign and print full name on report.

(f) Submit reports weekly to the Engineer.

Re-mill areas that do not conform to Contract Document requirements or perform an Engineer accepted remedial repair if existing subsurface pavement would be too thin to re-mill and still provided the needed structural support to the pavement section. The work required for re-milled areas that do not conform to Contract Document requirements shall be at no additional cost or increase in contract time.

The Engineer may reduce the number of profile and planing machine speed checks if the reports show a consistent pattern of best practices and performance. The Engineer reserves the right to reinstate the former level of checks at any time should the quality of the work start to degrade.

Minimize dust escaping from cold-planing operation and contain or remove runoff water used for dust control in accordance with Section 209 – Temporary Water Pollution, Dust and Erosion Control.

The milled surface shall not be exposed to public traffic.

415.04 Measurement.

(A) The Engineer will measure planing per square yard in accordance with the contract documents.

(B) Planing pavement profile as described in this Section will be paid on a lump sum basis. Measurement for payment will not apply.

415.05 Payment. The Engineer will pay for the accepted pay items listed below at the contract 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 the following pay items when included in the proposal schedule:

Pay Item	**Pay Unit**
___ Inch Cold Planing	Square Yard

(1) 80 percent of the contract unit bid price per square yard for Planing upon completion of removing the indicated thickness, meeting profile requirements and cleaning and sweeping before opening to public traffic;

(2) 20 percent of the contract unit bid price per square yard for Planing upon completion of the removal and disposal of the milled material daily sweeping of the milled surface, and the installation and maintaining of temporary pavement markers. Sweeping of milled surface and maintaining of temporary pavement markers will be considered complete when the permanent overlay is placed.

Planing Pavement Profile	Lump Sum”

END OF SECTION 415

Amend **Section 645 – Traffic Control Devices** to read as follows:

"SECTION 645 - WORK ZONE TRAFFIC CONTROL

645.01 Description. This section describes the following:

(A) Furnishing, installing, maintaining and subsequently removing work zone traffic control devices, and personnel. Work zone traffic control shall include providing flaggers and police officers.

(B) Keeping roads for public traffic open and in passable condition; providing and maintaining temporary access crossings for trails, businesses, parking lots, garages, residences, farms, parks, and other driveways; taking necessary work precautions for the protection, safety, and convenience of the public; should pedestrian facilities exist, taking necessary measures for safe and accessible passage, with route information and ADAAG compliance, for pedestrians traveling through or near work zone.

(C) Taking safety and precautionary measures, such as illuminating roadway obstructions during hours of darkness, in accordance with Chapter 286, HRS; Title 19, Subtitle 5, Chapters 127, 128, and 129, HAR; and *MUTCD*.

645.02 Materials.

Signs	750.01
Sign Posts	750.02
Fasteners for Signs and Route Markers	750.03
Reflector Marker	750.07
Flexible Delineator Posts and Reflectors	750.08
Traffic Delineators	750.09
Preformed Pavement Marking Tape	755.04

Submit electronic crashworthy documentation, including but not limited to, drawings in pdf and CADD, crash test reports, and FHWA eligibility letters certifying compliance with MASH 2016, for signs, sign supports, barricades, tubular markers, cones, vertical panels, and other traffic control devices. Only devices that are deemed crashworthy will be allowed.

Upon request of the Engineer, furnish self-certified MASH 2016 compliant letter from vendor for each type of Category 1 traffic control device, as defined by FHWA and/or AASHTO, including single-piece traffic cone, single-piece drum, and tubular marker.

Use of new signs, sign supports, barricades, cones, vertical panels, drums, tubular markers, and other traffic control devices that are not certified to be MASH 2016 compliant will not be allowed after December 31, 2019.

Traffic control devices, including signs, barricades, warning lights, arrow boards, portable changeable message signs, cones, tubular markers, and temporary concrete barriers shall conform to the American Traffic Safety Services Association (ATSSA), *Quality Guidelines for Temporary Traffic Control Devices and Features* and the *MUTCD*.

Other traffic control devices including barricades, warning signs, lights, and temporary signals shall conform to Title 19, Subtitle 5, Chapters 127, 128, and 129, HAR. Retroreflectorization for protective devices such as barricades, tubular markers, and warning signs shall conform to *Subsection 750.01 – Signs*.

645.03 Construction. Furnish, install, and maintain barricades, signs, cones, delineators, lights, flashing signals, and other traffic control devices.

Furnish two (2) police officers for each location that requires work zone traffic control. If contractor submitted TCP during project, furnish number of police officers indicated in the accepted TCP, whichever is greater. All police officers shown in the accepted TCP shall be consider incidental to the lump sum contract item No. 645.0100 - Traffic Control.

Furnish, deploy, maintain, and remove portable message signs (i.e., electronic message boards, EMB) as specified in *Subsection 645.03(l) – Portable Message Sign*.

When directing traffic, flaggers or police officers, or both shall be in direct communication with each other.

TCP Development. Contractor shall develop site-specific Traffic Control Plan (TCP) and work schedule based on work hours and lane closure restrictions stipulated in the contract documents.

TCP shall be developed after Contractor conducted field investigation of traffic conditions, including but not limited to, traffic volume counts taken during anticipated work hours, detour routes, interchange ramp & city street traffic signal timing, and public gathering places such as schools, businesses and shopping malls within the project limits and surrounding areas.

If excessive work zone traffic delays within project limits were observed during construction, the State reserves the rights to suspend TCP if Contractor failed to adjust his work and/or TCP to address traffic concerns brought forth by the State in a timely and responsive manner.

If TCP affects City & County of Honolulu streets, such as but not limited to, traffic detours onto City streets, or traffic control devices placed on City streets, a City & County of Honolulu, Department of Transportation services (DTS) Permit for Street Usage shall be obtained prior to starting work. A TCP stamped by a registered Civil Engineer from the State of Hawaii may be required to obtain the DTS Permit for Street Usage.

TCP Submittal. Submit TCP and work schedule for review and acceptance following the procedures established in *Subsection 105.04 - Review and Acceptance Process*. TCP and schedule shall be accepted by the Engineer prior to starting work in each area. Submit modifications and deviations from accepted TCP following the procedures established in *Subsection 105.04 - Review and Acceptance Process*. Illegible TCP will not be accepted.

Include the following in TCP and schedule:

(1) Signs (type, size, designation, and placement).

(2) Traffic movements shown by arrows.

(3) Positions of flaggers and police officers.

(4) Barricades, cones, delineators, and additional traffic control devices and measures necessary for protection of work and public safety; and placement, spacing, distances, and reference points for traffic control devices.

(5) Layout, drawn to scale, of traffic control devices, including information needed to layout TCP.

(6) Brief description of work.

(7) Dates of work.

(8) Times of day affected.

(9) Proposed public information sign.

(10) Proposed news release.

(11) For lane closures indicate the max. length of roadway to be closed.

(12) For mobile operations such as rumble strip milling and striping, provide instruction details for warning sign and flagger deployment.

(13) Minimum lane width and offset distances to adjacent roadway elements (e.g., bridge railing, guardrail, portable concrete barrier, etc.)

(14) Eradicate conflicting pavement striping per *Subsection 629.03(D) – Removal of Existing Pavement Markings*. Eradication of existing markings by painting over them will not be allowed.

(15) If the work will affect a pedestrian or bike route, show an alternative route and provide appropriate warning signs.

Place sign or device situated farthest upstream from work zone first. Then place others progressively downstream toward work zone.

Extend cones or delineators to point where cones or delineators are visible to approaching traffic.

For signs with messages on both faces, cover inapplicable message before placement.

Keep barriers, end treatments, barricades, construction and warning signs, and other traffic control devices in good condition. Repair, clean, or replace barriers, end treatments, barricades, signs, or other devices as required to maintain effectiveness and appearance. The Engineer will solely decide if the barriers, end treatments, barricades, signs, or other traffic control devices are in suitable condition to remain or needs cleaning, repair, or other actions.

Remove or cover regulatory and warning signs that conflict with accepted TCP. Restore signs upon completion of work or as ordered by the Engineer. Affix object markers to post(s) of covered sign.

Promptly remove or cover construction and warning signs that are not applicable or not in use.

Promptly remove traffic control devices that are no longer needed.

Remove traffic control devices in reverse order of installation, starting closest to work zone and continuing away from work zone.

Maintain abutting owners' existing access until replacement access is usable. Obtain permission from abutting owners, including conditions for closing existing access. Submit copy of agreement with abutting owners before beginning work in the affected area.

When working on existing facility that will be kept open to traffic, provide smooth and even surface for public traffic use. Only work on a portion of roadway at one time, and stage construction from one side to other while routing traffic over opposite side.

During subgrade and paving operations, paved shoulders may be used for public traffic.

Do not store work zone signs, if not in use, sign stands, material or equipment where it will interfere with public traffic. Remove equipment and other obstructions out of right-of-way or clear zone to permit free and safe passage of public traffic during non-working hours or suspension of work. For storage of materials and equipment, see *Subsection 105.14 – Storage and Handling of Materials and Equipment*.

(A) Signs. Install signs sufficiently ahead of location where operations may interfere with use of road by traffic and at intermediate points where new work crosses or coincides with existing road.

Place signs in accordance with TCP as accepted by the Engineer.

(B) Construction Signs. Erect post-mounted construction signs at the beginning of project and at the end of project at the location indicated by the Engineer. These signs shall remain for the duration of the highway project. Maintain these signs. Place these signs besides the required traffic control signs called for herein.

Furnishing, installing, maintaining, and subsequently removing two (2) sets of post-mounted construction signs as ordered by the Engineer.

Install post-mounted construction signs on each main approach to the project work zone, excluding any ramps or side roads/streets.

The construction signs shall be new and become the property of the Contractor, when the project obtains final acceptance or when directed by the Engineer.

(C) Barricades

(1) General. Provide, erect, and maintain necessary barricades suitable for protection of work and safety of the public.

Barricades shall be in good condition. Barricade application and installation shall be in accordance with accepted TCP.

Provide sandbags if required or ordered by the Engineer. Sandbags and installation method shall comply with *MUTCD* and be accepted by the Engineer prior to use. Do not place sandbags on striped barricade rail.

During hours of darkness, install steady burn lamps on barricades selected by the Engineer. Flashing lamps must not be used, unless directed by the Engineer or required by the Contract Documents. Attach lamps on barricade ends closest to traveled way and visible to oncoming traffic. Replace non-functioning lamps within 24 hours of discovery. Perform nighttime inspection of the lamps and work zone devices every 48 hours.

Do not install signs on barricades unless signs and barricades have been crash tested as a unit and accepted under MASH 2016.

(2) Retroreflectorization. Retroreflectorize barricade rails and attachment with retroreflective sheeting in accordance with *Subsection 750.01(C)(4) - Type III or IV Retroreflective Sheeting (High Intensity)* or *Subsection 750.01(C)(5) - Hardened Aluminum-Backed Retroreflective Sheetin*g.

Retroreflectorize both vertical faces of each barricade rail.

(3) Color. Provide white colored rails, frames, and braces with front and back rail faces having 6-inch-wide alternating orange or red and white stripes sloping downward toward traveled way at angle of 45 degrees from vertical. Use stripe colors in accordance with the following:

(a) Use orange and white stripes for the following conditions:

1. Construction work.

2. Detours.

3. Maintenance work.

(b) Use red and white stripes for the following conditions:

1. On roadways with no outlet, such as dead-ends and cul-de-sacs.

2. Ramps or lanes closed for operational purposes.

3. Permanent or semi-permanent closure or termination of roadway.

(4) Maintenance. Keep barricades in good condition. Repair, repaint, clean, or replace barricades to maintain effectiveness and appearance. Immediately replace missing or damaged barricades, lamps, sandbags, and other accepted weights.

Clean and repair barricades immediately when effectiveness is impaired, or when directed by the Engineer and before relocating to other locations.

(D) Traffic Delineators. Install traffic delineators in accordance with accepted TCP.

Maintain traffic delineators in good condition. Immediately replace missing or damaged traffic delineators.

Clean delineator immediately when effectiveness is impaired or when directed by the Engineer and before relocating to a new location.

(E) Cones. Install traffic cones in accordance with accepted TCP.

Maintain traffic cones. Keep traffic cones clean and in good repair. Immediately replace lost, stolen, or damaged traffic cones.

Clean cones immediately when effectiveness is impaired or when directed by the Engineer and before relocating to a new location.

(F) Lane Closures. No roadway pavement resurfacing and/or roadway reconstruction work will be allowed during weekday night-time lane closure hours from Monday night to Friday morning.

All roadway paving and reconstruction work shall be performed over the weekends from Friday night to Monday morning.

The Contractor shall coordinate lane closures with nearby HDOT project(s) at no increase in contract price or contract time. See *Section 697 - Public Communication and Coordination* for additional information.

(1) H-1 EB Airport Viaduct Improvements, NH-H1-1(276)

(2) Nimitz Highway & Ala Moana Blvd Resurfacing, NH-092-1(030)

The Contractor shall adjust his work schedule to resolve detour route conflicts and implement additional traffic control measures as necessary to alleviate potential traffic bottlenecks.

Lane closures will be allowed only during the following hours. Exceptions to lane closure hours specified require written acceptance by the Engineer. No increase in contract price or contract time will be given for lane closure restrictions specified.

(1) Weekday Night-Time Work (No Roadway Paving). Lane closures will be allowed on the Interstate Freeway H-1 (Inbound, Outbound and Zipper Lane Deployment Area, ZLDA) during the following hours:

1-Lane Closure (3-thru lane min. open)	**Inbound**	**Outbound** * (outside ZLDA)
Monday	6:30 P.M. to Midnight	6:30 P.M. to Midnight
Tuesday thru Thursday	Midnight to 4:30 A.M. 6:30 P.M. to Midnight	Midnight to 4:30 A.M. 6:30 P.M. to Midnight
Friday	Midnight to 4:30 A.M.	Midnight to 4:30 A.M.
1-Lane Closure (3-thru lane min. open)	**Inbound**	**Outbound** * (inside ZLDA)
Monday		6:30 P.M. to Midnight
Tuesday thru Thursday		Midnight to 2:30 A.M. 6:30 P.M. to Midnight
Friday		Midnight to 2:30 A.M.
2-Lane Closure (2-thru lane min. open)	**Inbound**	**Outbound** * (Zipper barrier not deployed)
Monday	6:30 P.M. to Midnight	8:00 P.M. to Midnight
Tuesday thru Thursday	Midnight to 4:00 A.M. 6:30 P.M. to Midnight	Midnight to 2:30 A.M. 8:00 P.M. to Midnight
Friday	Midnight to 4:00 A.M.	Midnight to 2:30 A.M.
3-Lane Closure (1-thru lane min. open)	**Inbound**	**Outbound** * (Zipper barrier not deployed)
Monday	8:30 P.M. to Midnight	10:00 P.M. to Midnight

Tuesday thru Thursday	Midnight to 4:00 A.M. 8:30 P.M. to Midnight	Midnight to 2:30 A.M. 10:00 P.M. to Midnight
Friday	Midnight to 4:00 A.M.	Midnight to 2:30 A.M.

* Zipper barrier deployment expected to reach project limits around 3:00 A.M.

Zip-mobile mobilization would commence at Zip Hale around 1:00 A.M. during weekday mornings (Monday to Friday, except holidays). The Contractor shall coordinate with the Zipper Lane operator to minimize interference with Zipper Lane barrier deployment.

If Contractor's operations resulted in unauthorized interference with Zipper Lane barrier deployment the Contractor will incur the cost for the Zipper Lane barrier deployment in addition to Zipper Lane Deployment Area (ZLDA) rental fees.

If the Contractor failed to revise his operations to minimize such interference, the Engineer may suspend work until the Contractor submits and obtains acceptance for a plan that will ensure unauthorized interference with Zipper Lane barrier deployment be kept to a minimum.

(2) Weekend Work (Roadway Paving, Reconstruct Settled Areas and ZLDA), Two-Lane Closure. The Contractor is allowed to close two (2) lanes over the weekends for reconstructing the settled areas (i.e., right lane and right shoulder).

Work within Zipper Lane Deployment Area (ZLDA) shall be allowed twelve (12) weekends maximum with Zipper Lane barrier deployed. There shall be no exceptions or extensions for any hours of work within the ZLDA.

Lane closures will be allowed on the Interstate Freeway H-1 (Inbound, Outbound and Zipper Lane Deployment Area, ZLDA) during the following hours:

2-Lane Closure (2-thru lane min. open)	**Inbound**	**Outbound** **
Friday	6:30 P.M. to Midnight	8:00 P.M. to Midnight
Saturday	Midnight to Midnight	Midnight to Midnight
Sunday	Midnight to Midnight	Midnight to Midnight

Monday	Midnight to 4:00 A.M.	Midnight to 2:30 A.M.

** Zipper barrier deployment expected to reach project limits around 3:00 A.M. Zipper Lane would be opened to traffic at 5:30 A.M.

The Contractor shall coordinate with the Zipper Lane operator (ZIP U There, Inc., 342-3300) and Oahu District's Waimalu Field Office (485-5211) six (6) weeks prior to any work affecting the ZLDA and its operations. The ZLDA shall be free of debris during the project duration.

The cost for the twelve (12) weekend Zipper Lane barrier deployments beyond the normal weekday (Monday to Friday) Zipper Lane operation periods shall be considered incidental to lump sum contract item No. 645.0100 - Traffic Control.

In areas where hot-mix asphaltic concrete base (ACB) materials have been placed, the top lift of asphaltic concrete (e.g., SMA or PMA) shall be placed prior to opening lanes to traffic. For reconstruction at settled area "C", the Engineer may allow alternate top lift paving option in the case of unforeseen circumstances. See note #2 in contract plan sheet No. 18 for additional information.

(3) Weekend Work (Roadway Paving), Three-Lane Closure. The Contractor is allowed to close three (3) lanes over the weekends to reconstruct weakened pavement areas and perform roadway pavement resurfacing work.

Weekend three-lane closures shall not be combined with the weekend full-closures listed below.

3-Lane Closure (1-thru lane min. open)	**Inbound**	**Outbound** * (Zipper barrier not deployed)
Saturday	8:30 P.M. to Midnight	8:30 P.M. to Midnight
Sunday	Midnight to Midnight	Midnight to Midnight
Monday	Midnight to 4:00 A.M.	Midnight to 2:30 A.M.

* Zipper barrier deployment expected to reach project limits around 3:00 A.M.

In areas where hot-mix asphaltic concrete base (ACB) materials have been placed, the top lift of asphaltic concrete (e.g., SMA or PMA) shall be placed prior to opening lanes up to traffic.

(4) Weekend Work (Roadway Paving), Closing All Freeway Lanes in One Direction. As an option to the 3-lane closure listed in Subsection 645.03(F)(4) above, the Contractor is allowed to close all freeway lanes in one direction over the weekends to reconstruct weakened pavement areas and perform roadway pavement resurfacing work.

Full freeway lane closures will be limited to thirty (30) weekends Inbound (IB) and thirty (30) weekends Outbound (OB) for the duration of the project.

The Contractor shall notify the Engineer in writing, six (6) weeks prior to start full freeway lane closures.

Lane closures that close all freeway lanes in one direction will be allowed on the Interstate Freeway H-1 during the following hours:

All Lanes Closed	**Inbound** ***	**Outbound** ***
Sunday	8:00 A.M. to Midnight	8:00 A.M. to Midnight
Monday	Midnight to 4:00 A.M.	Midnight to 2:30 A.M.

*** One direction only.

Full freeway lane closures shall not be combined with other lane closures. No lane closures will be allowed in the opposite direction of the full freeway lane closure.

In areas where hot-mix asphaltic concrete base (ACB) materials have been placed, the top lift of asphaltic concrete (e.g., SMA or PMA) shall be placed prior to opening lanes up to traffic.

(5) ZLDA Rental Fees. Should the Zipper Lane barrier deployment be delayed due to Contractor's failure to complete work within the ZLDA in time, the Engineer will assess the ZLDA rental fees in the amount of $5,000 for every one-to fifteen-minute increment or portion thereof, for ZLDA occupied beyond the time periods authorized in the contract or by the Engineer.

For areas outside of the ZLDA see *Subsection 108.09 – Rental Fees for Unauthorized Lane Closure or Occupancy* for additional information.

See *Subsection 107.03 – Working Hours* of the project Special

Provisions for description of Noise Variance hours, noise control conditions and restrictions during weekend and night work.

At the Director's discretion, with a one-week prior notification to the Contractor, work may be suspended to allow traffic to flow freely during major public events, such as concerts, parades, sporting events, etc. The Contractor will not be compensated but the Contractor's Roadway Completion Time and/or Contract Time will be adjusted accordingly.

The Director may also suspend work at any time due to unforeseen circumstances that occur within the immediate vicinity of project that may disrupt traffic on the freeway and/or alternate routes, or in times of emergencies. The Contractor will be compensated for work performed up to the time of the suspension and Contractor's Roadway Completion Time and/or Contract Time will be adjusted accordingly.

For island of Oahu, no lane closures will be allowed during 24-hour periods as follows:

(1) Day preceding holiday (3:00 p.m. to Midnight), except as otherwise specified.

(2) Holidays (Midnight to 6:30 p.m.).

(3) Thanksgiving weekend (Thursday to Sunday).

(4) Three-week holiday period for Christmas and New Year.

(5) One-week "Beat-the-School-Jam" period, to be determined, beginning approximately third week of August (first week of University of Hawaii Manoa Session).

(6) Other dates of events indicated in the contract documents.

No time extension will be given for the above restrictions. The contract time for the project has accounted for any loss of time due to the above restrictions.

Before scheduling work, submit requests for detours, lane and/or full closures as follows:

(1) Detours - 8 weeks before implementing detours.

(2) Lane closures - 6 weeks before implementing lane closures.

(3) Closing all lanes in one direction – 6 weeks before implementing full closure.

(4) Weekend work within ZLDA – 6 weeks before start of work.

Include the following with detour and lane closure requests:

(a) Explanation of proposed changes to existing traffic pattern.

(b) Installation schedule for informational and traffic control signs.

(c) Publication schedule for legal notices.

(d) Plan showing proposed informational signs.

(e) Plan showing lane changes or detours in accordance with accepted TCP, including details at beginning of multi-lane highway lane changes and detours.

Detours or lane closures will not be allowed before the Engineer accepts detour or lane closure request.

TABLE 645-I - FOR TRAFFIC CONTROL PLAN

POSTED SPEED LIMIT (M.P.H.)	SIGN SPACING (D) (FEET)	TAPER LENGTH (T) (FEET)		LONGI-TUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET)		
		W = 12' OR LESS *	W = GREATER THAN 12' *		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

* W = width of lane or shoulder

(G) Advisory Signs. Submit advisory sign shop drawings. Furnish, install, maintain and remove two (2) advisory as ordered by the Engineer.

Place signs at locations designated by the Engineer. Provide signs, minimum 8 feet wide by 4 feet high, with black letters on orange background, and with three 4.00 pounds/foot flanged channel posts for each sign.

Include starting date and hours of construction in sign message. Use letter heights of 8 inches, Series D. The Engineer will review and accept advisory signs' wording before fabrication. Install advisory signs two weeks before start of construction. Remove advisory signs immediately after construction has been completed or as ordered by the Engineer.

(H) Advertisement. All public notices, including advertisements in newspaper, shall be paid for under lump sum contract item No. 697.1000 - Public Communication and Coordination, unless otherwise directed by the Engineer.

(I) Portable Message Sign. Furnish, deploy, maintain and remove the following as directed by the Engineer:

(1) Up to eight (8) portable message signs/EMB in the outbound (OB) direction during project duration.

(2) Up to five (5) portable message signs/EMB in the inbound (IB) direction during project duration.

The portable message signs/EMB shall have remote message capabilities to be used for the duration of the project, as directed by the Engineer. Remote message access shall be granted to HDOT personnel if requested by the Engineer.

During work that would require lane closures, deploy portable message signs/EMB on all approaches to the work area at locations accepted by the Engineer, seven (7) days prior to and during such work.

645.04 Measurement.

(A) Traffic control as specified in *Subsection 645.03 - Construction* will be measured on a contract lump sum basis and will not include any work performed under other specific traffic control contract bid items. Measurement for payment will not apply.

(B) The Engineer will measure additional police officers, additional traffic control devices, and advertisement, if ordered by the Engineer, on a force account basis, in accordance with *Subsection 109.06 - Force Account Provisions and Compensation*.

(C) Up to eight (8) portable message signs (i.e., electronic message boards) in the outbound direction and up to five (5) in the inbound direction with remote message capabilities for the duration of the project, as accepted by the Engineer, shall not be paid for separately and shall be considered

incidental to the contract item No. 645.0100 - Traffic Control for respective base bid and additive bid.

645.05 Payment. The Engineer will pay for the accepted "Traffic Control", "Additional Police Officers and Additional Traffic Control Devices" items at the contract 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.

All labor, materials, tools, equipment and incidentals, including but not limited to, traffic control signs, detour route signs, traffic control devices, police officers, portable message signs/EMBs, that are shown in site-specific Traffic Control Plan (TCP) accepted by the Engineer shall not be paid for separately and shall be consider incidental to the lump sum contract item No. 645.0100 - Traffic Control for respective base bid and additive bid.

All labor, materials, tools, equipment and incidentals necessary, including but not limited to, public notices and advertisements in newspaper, to develop and implement public communication and project coordination plans shall not be paid for separately and shall be consider incidental to the lump sum contract item No. 697.1000 - Public Communication and Coordination for respective base bid and additive bid.

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

Pay Item	**Pay Unit**
Traffic Control	Lump Sum
Additional Police Officers and Additional Traffic Control Devices	Force Account

An estimated amount for the force account may be allocated in the proposal schedule under "Additional Police Officers and Additional Traffic Control Devices", but the actual amount to be paid will be the sum shown on the accepted force account records, whether this sum be more or less than the estimated amount allocated in the proposal schedule.

The Engineer will not pay for request submittals. The Engineer will not consider claims for additional compensation of late submittals or requests by Contractor.

TWO-LANE HIGHWAY - ONE LANE CLOSED

FIGURE 1 - TRAFFIC CONTROL PLAN

R11/97

614
615
616

NOTES:

1. CW20-1Ad sign required for posted speed limit of 45 m.p.h. or greater
2. See TABLE 1 for additional dimensions.
3. The advisory speed (xx) shall be determined by the Engineer.

MULTILANE UNDIVIDED HIGHWAY - RIGHT LANE CLOSED

FIGURE 2 - TRAFFIC CONTROL PLAN

R2/97

617
618
619

MULTILANE UNDIVIDED HIGHWAY - LEFT LANE CLOSED

FIGURE 3 - TRAFFIC CONTROL PLAN

R10/96

620
621
622

MULTILANE DIVIDED HIGHWAY - ONE LANE CLOSED

FIGURE 4 - TRAFFIC CONTROL PLAN

R10/96

623
624
625

NOTES:

1. For work being performed in the left center lane, use mirror image of above with appropriate left lane closure signs and taper.
2. For undivided highways, delete advance warning signs shown posted in median area.
3. The advisory speed (xx) shall be determined by the Engineer.
4. See TABLE 1 for additional dimensions.
*5. For posted speeds of 40 m.p.h. or less, use sign spacings and taper lengths from TABLE 1 and change signs CW21-4-A and CW20-5(R) to CW20-1A(3D) and CW20-5(2D)(R) as shown in Figure 4.

MULTILANE HIGHWAY - CENTER LANE CLOSED

FIGURE 5 - TRAFFIC CONTROL PLAN

R10/96

626
627

NOTES:

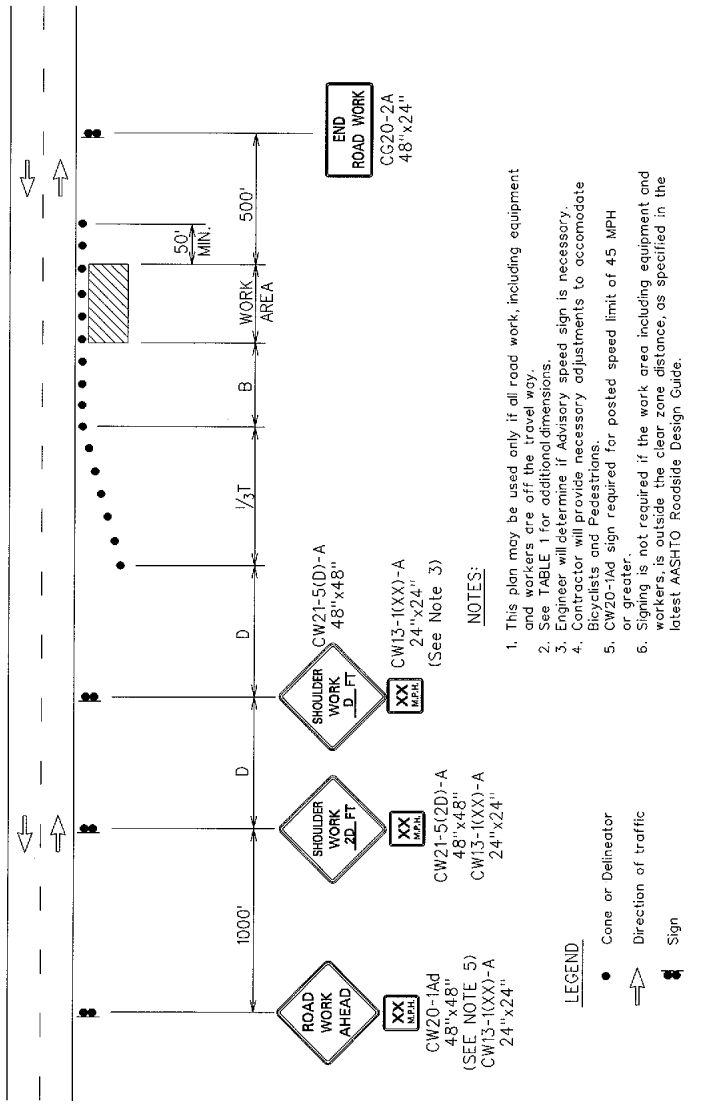
1. For work being performed in the left center lane, use mirror image of above with appropriate left lane closure signs and taper.
2. For undivided highways, delete advance warning signs shown posted in median area.
3. The advisory speed (xx) shall be determined by the Engineer.
4. See TABLE 1 for additional dimensions.
•5. For posted speeds of 40 m.p.h. or less, use sign spacings and taper lengths from TABLE 1 and change signs CW21-4-A and CW20-8(R) to CW20-1A(3D) and CW20-8(2D)(R) respectively.

MULTILANE HIGHWAY - MULTIPLE LANE CLOSED

FIGURE 6 - TRAFFIC CONTROL PLAN

R10/96

628
629



WORKING ON SHOULDER OR ROADSIDE

FIGURE 7 - TRAFFIC CONTROL PLAN

R10/96

"

END OF SECTION 645

PROPOSAL SCHEDULE					
BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
202.1000	Removal of Existing Opiuma Trees (Sta. 102+60 to 109+60 Lt.)	12	EA	$ _____	$_____
209.1000	Installation, Maintenance, Monitoring, and Removal of BMP	L.S.	L.S.	L.S.	$_____
209.2000	Additional Water Pollution, Dust, and Erosion Control	F.A.	F.A.	F.A.	$ 50,000.00
219.1000	Determination and Characterization of Fill Material	L.S.	L.S.	L.S.	$_____
301.1000	Hot Mix Asphalt Base Course	16,340	Tons	$ _____	$_____
302.1000	#2 Coarse Aggregate	2,120	C.Y.	$ _____	$_____
303.1000	Lightweight Aggregate	685	C.Y.	$ _____	$_____
304.1000	Aggregate Base Course	355	C.Y.	$ _____	$_____
305.1000	Aggregate Subbase	35	C.Y.	$ _____	$_____
315.1000	Nonwoven Geotextile Fabric	6,700	S.Y.	$ _____	$_____
316.1000	Polypropylene Biaxial Geogrid	22,590	S.Y.	$ _____	$_____
401.1000	2 Inch PMA Pavement	640	Tons	$ _____	$_____
401.2000	HMA Pavement, Mix No. IV (Under Guardrail)	50	Tons	$ _____	$_____

PROPOSAL SCHEDULE					
BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
401.3000	HMA Pavement, Mix No. V, Leveling	1,010	Tons	$ _____	$_____
401.4000	Pavement Smoothness Incentive	Allowance	Allowance	Allowance	$ 49,950.00
406.1000	2 Inch SMA Pavement	8,500	Tons	$ _____	$_____
414.1000	Excavation of Weakened Pavement Areas	3,690	C.Y.	$ _____	$_____
415.1000	5 Inch Cold Planing	60,400	S.Y.	$ _____	$_____
415.2000	6 Inch Cold Planing	14,500	S.Y.	$ _____	$_____
415.3000	10 Inch Cold Planing	1,840	S.Y.	$ _____	$_____
415.3100	1.5 Inch Cold Planing	5,410	S.Y.	$ _____	$_____
415.4000	Planing Pavement Profile	L.S.	L.S.	L.S.	$ 166,250.00
416.1000	Paving Grid	6,505	S.Y.	$ _____	$_____
417.1000	Paving Grid for Cold-Planed Surface	F.A.	F.A.	F.A.	$ 20,000.00
606.1000	Midwest Guardrail System (MGS) Guardrail (Type 3)	4,600	L.F.	$ _____	$_____
606.1100	MGS Guardrail (Type 3) with 8’ Posts at 6’-3” o.c.	2,220	L.F.	$ _____	$_____

PROPOSAL SCHEDULE					
BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
606.2000	MGS End Treatment	2	Each	$ _____	$_____
606.3000	Trailing End Anchorage	3	Each	$ _____	$_____
606.4000	Transition Section Type Thrie Beam to MGS Guardrail	3	Each	$ _____	$_____
615.0300	12-Inch Milled Rumble Strip, Shoulder	7,939	L.F.	$ _____	$_____
626.1000	Adjusting (Water) Standard Valve Box	2	Each	$ _____	$_____
627.1000	RVSD Systems	L.S.	L.S.	L.S.	$_____
629.1010	Double 4-Inch Pavement Striping (Thermoplastic Extrusion)	1,606	L.F.	$ _____	$_____
629.1011	1-Inch White Guide Stripe (Thermoplastic Extrusion)	19,330	L.F.	$ _____	$_____
629.1020	4-Inch Pavement Striping (Thermoplastic Extrusion)	2,959	L.F.	$ _____	$_____
629.1022	4-Inch Pavement Striping - Guide Line (Thermoplastic Extrusion)	374	L.F.	$ _____	$_____
629.1023	4-Inch Lane Striping, 10-Foot Profiled (Thermoplastic Extrusion)	31,640	L.F.	$ _____	$_____
629.1110	6-Inch Pavement Striping (Thermoplastic Extrusion)	20,980	L.F.	$ _____	$_____
629.1111	6-Inch Pavement Striping - Dashed Extension Line (Thermoplastic Extrusion)	1,122	L.F.	$ _____	$_____

PROPOSAL SCHEDULE					
BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
629.1210	8-Inch Pavement Striping (Thermoplastic Extrusion)	1,936	L.F.	$ _____	$_____
629.1212	8-Inch Pavement Striping - Lane Drop (Thermoplastic Extrusion)	528	L.F.	$ _____	$_____
629.1300	12-Inch Pavement Striping - Diagonal (Thermoplastic Extrusion)	1,916	L.F.	$ _____	$_____
629.3011	Pavement Arrow (Thermoplastic Extrusion)	16	Each	$ _____	$_____
629.3013	Pavement Symbol - Diamond (Thermoplastic Extrusion)	9	Each	$ _____	$_____
629.4010	Type "C" Pavement Markers	1,293	Each	$ _____	$_____
629.4013	Type "H" Pavement Markers	313	Each	$ _____	$_____
630.0150	New Exit Signs (Ground Mounted) with three 2-1/2” Square Tube Posts (for sign width greater than 60”)	96	S.F.	$ _____	$_____
630.0250	Overlay Panel for Zipper Lane Signs (Overhead Mounted)	32.5	S.F.	$ _____	$_____
631.1030	Regulatory Sign (More than 10 Square Feet)	7	Each	$ _____	$_____
631.1040	Regulatory Sign (More than 10 Square Feet) with Post(s)	3	Each	$ _____	$_____
631.2010	Warning Sign (10 Square Feet or Less)	1	Each	$ _____	$_____
631.2030	Warning Sign (More than 10 Square Feet)	1	Each	$ _____	$_____

PROPOSAL SCHEDULE					
BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
631.2040	Warning Sign (More than 10 Square Feet) with Post(s)	3	Each	$ _____	$_____
631.4010	Removal of Existing Sign	1	Each	$ _____	$_____
631.4020	Removal of Existing Sign & Post(s)	1	Each	$ _____	$_____
631.5202	"Hospital" (D9-2) Symbol Sign with Post(s)	2	Each	$ _____	$_____
631.5203	"Hospital" (D9-13a) Word Sign	2	Each	$ _____	$_____
631.5204	"Straight Arrow" (IM6-3) Symbol Sign	2	Each	$ _____	$_____
632.0300	Mile Post Marker with Post	4	Each	$ _____	$_____
632.4200	Reflector Marker (RM-5, White) Mounted on Guardrail	136	Each	$ _____	$_____
636.1000	E-Construction License	F.A.	F.A.	F.A.	$ 275,000.00
639.1000	Reconstruct Existing Asphalt Concrete Gutter (6 to 8 Feet)	1,587	L.F.	$ _____	$_____
639.2000	Reconstruct Existing Asphalt Concrete Gutter (4 to 5.99 Feet)	1,624	L.F.	$ _____	$_____
639.3000	Reconstruct Existing Asphalt Concrete Gutter Transition	77	L.F.	$ _____	$_____
643.1000	Maintenance of Existing Landscape Areas	F.A.	F.A.	F.A.	$ 50,000.00

PROPOSAL SCHEDULE					
BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
645.0100	Traffic Control	L.S.	L.S.	L.S.	$_____
645.0200	Additional Police Officers and Additional Traffic Control Devices	F.A.	F.A.	F.A.	$ 230,000.00
648.0100	Field-Posted Drawings	L.S.	L.S.	L.S.	$_____
657.1000	Handling and Disposal of Contaminated or Hazardous Items and Material	F.A.	F.A.	F.A.	$ 250,000.00
696.1000	Maintenance of Trailers	F.A.	F.A.	F.A.	$ 50,000.00
697.1000	Public Communication and Coordination	L.S.	L.S.	L.S.	$_____
699.1000	Mobilization (Not to Exceed 6 Percent of the Sum of All Items Excluding the Bid Price of this Item)	L.S.	L.S.	L.S.	$_____
	Sum of All Base Bid Items				$ _____

PROPOSAL SCHEDULE					
ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
209.1000	Installation, Maintenance, Monitoring, and Removal of BMP	L.S.	L.S.	L.S.	$_____
209.2000	Additional Water Pollution, Dust, and Erosion Control	F.A.	F.A.	F.A.	$ 50,000.00
219.1000	Determination and Characterization of Fill Material	L.S.	L.S.	L.S.	$_____
301.1000	Hot Mix Asphalt Base Course	17,020	Tons	$ _____	$_____
302.1000	#2 Coarse Aggregate	980	C.Y.	$ _____	$_____
303.1000	Lightweight Aggregate	705	C.Y.	$ _____	$_____
304.1000	Aggregate Base Course	165	C.Y.	$ _____	$_____
305.1000	Aggregate Subbase	35	C.Y.	$ _____	$_____
315.1000	Nonwoven Geotextile Fabric	5,085	S.Y.	$ _____	$_____
316.1000	Polypropylene Biaxial Geogrid	12,420	S.Y.	$ _____	$_____
401.1000	2 Inch PMA Pavement	640	Tons	$ _____	$_____
401.2000	HMA Pavement, Mix No. IV (Under Guardrail)	70	Tons	$ _____	$_____
401.3000	HMA Pavement, Mix No. V, Leveling	790	Tons	$ _____	$_____

PROPOSAL SCHEDULE					
ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
401.4000	Pavement Smoothness Incentive	Allowance	Allowance	Allowance	$ 51,050.00
406.1000	2 Inch SMA Pavement	8,700	Tons	$ _____	$_____
414.1000	Excavation of Weakened Pavement Areas	2,090	C.Y.	$ _____	$_____
415.1000	5 Inch Cold Planing	60,810	S.Y.	$ _____	$_____
415.2000	6 Inch Cold Planing	15,850	S.Y.	$ _____	$_____
415.3000	10 Inch Cold Planing	4,160	S.Y.	$ _____	$_____
415.3100	1.5 Inch Cold Planing	3,120	S.Y.	$ _____	$_____
415.4000	Planing Pavement Profile	L.S.	L.S.	L.S.	$ 183,250.00
416.1000	Paving Grid	6,530	S.Y.	$ _____	$_____
417.1000	Paving Grid for Cold-Planed Surface	F.A.	F.A.	F.A.	$ 20,000.00
606.1000	Midwest Guardrail System (MGS) Guardrail (Type 3)	4,768	L.F.	$ _____	$_____
606.1100	MGS Guardrail (Type 3) with 8’ Posts at 6’-3” o.c.	810	L.F.	$ _____	$_____
606.2000	MGS End Treatment	4	Each	$ _____	$_____

PROPOSAL SCHEDULE					
ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
606.3000	Trailing End Anchorage	4	Each	$ _____	$_____
606.4000	Transition Section Type Thrie Beam to MGS Guardrail	6	Each	$ _____	$_____
615.0300	12-Inch Milled Rumble Strip, Shoulder	6,674	L.F.	$ _____	$_____
626.1100	Adjusting Non-Potable Water Manhole Frame and Cover	10	Each	$ _____	$_____
629.1010	Double 4-Inch Pavement Striping (Thermoplastic Extrusion)	748	L.F.	$ _____	$_____
629.1020	4-Inch Pavement Striping (Thermoplastic Extrusion)	3,053	L.F.	$ _____	$_____
629.1022	4-Inch Pavement Striping - Guide Line (Thermoplastic Extrusion)	1,012	L.F.	$ _____	$_____
629.1023	4-Inch Lane Striping, 10-Foot Profiled (Thermoplastic Extrusion)	32,977	L.F.	$ _____	$_____
629.1110	6-Inch Pavement Striping (Thermoplastic Extrusion)	19,011	L.F.	$ _____	$_____
629.1210	8-Inch Pavement Striping (Thermoplastic Extrusion)	2,976	L.F.	$ _____	$_____
629.1212	8-Inch Pavement Striping - Lane Drop (Thermoplastic Extrusion)	2,904	L.F.	$ _____	$_____
629.1300	12-Inch Pavement Striping - Diagonal (Thermoplastic Extrusion)	2,371	L.F.	$ _____	$_____
629.3011	Pavement Arrow (Thermoplastic Extrusion)	13	Each	$ _____	$_____

PROPOSAL SCHEDULE					
ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
629.3012	Pavement Word (Thermoplastic Extrusion)	2	Each	$ _____	$_____
629.3013	Pavement Symbol - Diamond (Thermoplastic Extrusion)	8	Each	$ _____	$_____
629.4010	Type "C" Pavement Markers	1,360	Each	$ _____	$_____
629.4013	Type "H" Pavement Markers	323	Each	$ _____	$_____
630.0150	New Exit Signs (Ground Mounted) with three 2-1/2” Square Tube Posts (for sign width greater than 60”)	45	S.F.	$ _____	$_____
630.0200	Overlay Panel for Destination Signs (Overhead Mounted)	336	S.F.	$ _____	$_____
631.1010	Regulatory Sign (10 Square Feet or Less)	4	Each	$ _____	$_____
631.1030	Regulatory Sign (More than 10 Square Feet)	8	Each	$ _____	$_____
631.1040	Regulatory Sign (More than 10 Square Feet) with Post(s)	1	Each	$ _____	$_____
631.4010	Removal of Existing Sign	2	Each	$ _____	$_____
631.4020	Removal of Existing Sign & Post(s)	1	Each	$ _____	$_____
632.0100	Reflector Marker RM-3 with Flexible Post (Type A, 36" high, Yellow)	13	Each	$ _____	$_____
632.0200	Reflector Marker RM-3 with Flexible Post (Type A, 48" high, Yellow)	28	Each	$ _____	$_____

PROPOSAL SCHEDULE					
ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)					
ITEM NO.	**ITEM**	**APPROX. QUANTITY**	**UNIT**	**UNIT PRICE**	**AMOUNT**
632.0300	Mile Post Marker with Post	4	Each	$ _____	$_____
632.4200	Reflector Marker (RM-5, White) Mounted on Guardrail	175	Each	$ _____	$_____
639.1000	Reconstruct Existing Asphalt Concrete Gutter (6 to 8 Feet)	1,322	L.F.	$ _____	$_____
639.2000	Reconstruct Existing Asphalt Concrete Gutter (4 to 5.99 Feet)	475	L.F.	$ _____	$_____
645.0100	Traffic Control	L.S.	L.S.	L.S.	$_____
645.0200	Additional Police Officers and Additional Traffic Control Devices	F.A.	F.A.	F.A.	$ 220,000.00
657.1000	Handling and Disposal of Contaminated or Hazardous Items and Material	F.A.	F.A.	F.A.	$ 250,000.00
699.1000	Mobilization (Not to Exceed 6 Percent of the Sum of All Items Excluding the Bid Price of this Item)	L.S.	L.S.	L.S.	$_____
Sum of Additive Alternate Items					$ _____

PROPOSAL SCHEDULE SUMMARY

Sum of All Base Bid Items ..... $ _____

Sum of Additive Alternate ..... $ _____

Sum of All Items ..... $ _____

Notes:

1. Bidders must complete all unit prices and amounts. Failure to do so may be grounds for rejection of bid.
2. All bidders are required to bid on the BASE BID ITEMS and the ADDITIVE ALTERNATE ITEMS to be considered responsive.
3. Evaluation of Bids and Award:

   Prior to opening bids, the State will announce the estimated project control budget. All bids will be evaluated on the basis of the same alternate item.

   The ADDITIVE ALTERNATE ITEMS is added to the SUM OF ALL BASE BID ITEMS price. This sum is compared to the estimated project control budget and the State will verify if it falls within the final project control budget.

   The bidder with the lowest aggregate amount, within the final project control budget, for the SUM OF ALL BASE BID price, plus ADDITIVE ALTERNATE Bid price, is the lowest responsible bidder.

   If the sum of the ADDITIVE ALTERNATE ITEMS would make the aggregate amount exceed the final project control budget for ALL responsible bidders, the ADDITIVE ALTERNATE ITEMS will be removed, and only the SUM OF ALL BASE BID ITEMS will be considered. The bidder with the lowest SUM OF ALL BASE BID ITEMS, is the lowest responsible bidder.

   The State reserves the right to remove the Additive Alternate scope of work.

4. No price adjustments will be made by the State for losses, including overhead and profit, resulting from the non-award of the ADDITIVE ALTERNATE.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Project: INTERSTATE ROUTE H-1 REHABILITATION,
SALT LAKE BOULEVARD TO AIRPORT VIADUCT,
FEDERAL AID PROJECT NO. NH-H1-1(275)

Prospective bidders had submitted RFI's via HIePRO. Questions and responses are as follows:

2. Sheet 46 - The drawing has a Note 1 that says "Design of Light Standard & Foundation Shall Conform to Latest AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", subsequent interims, and latest HDOT Memorandum with subject title "Design Criteria for Bridges and Structures". However, the drawing has a base detail and pole shown. Does the base and pole shown meet the Note 1 requirements? If not can you please provide a base and pole detail that does. We are not designers and we should not be required to be designing bases and poles for a bid.

Clarified Response:
To follow up with our response given in Addendum No. 1, of which we said we would address this question in Addendum No. 2, we are removing the requirement for the contractor to design the base and pole and have removed the Note 1 on Sheet 46 in question that mentioned design requirements.

6. The Typical Section Temporary Prior to Cold Planing detail on sheet 18 indicates to level with State Mix V and without cold planing. However, the elevations shown on sheet 40 indicate many locations where the thickness of the leveling will be thinner than the maximum aggregate size. Without enough thickness to bind the layer together, the leveling course will ravel. Will the State consider cold planing and a minimum 1.5" thickness?

Clarified Response:
To clarify response given in Addendum No. 1, the 1.5" cold planing shall be paid under Item No. 415.3100 - 1.5 Inch Cold Planing. See revised Proposal Schedule in Addendum No. 2.

19. Please provide geotechnical report and boring information for the project area.

Clarified Response:
There is no geotechnical report. We anticipate the same subsurface conditions as from the original grading of the road. The boring information from the original grading of the road is enclosed in Addendum No. 2.

22. Special provision section 107.03 calls out specific equipment that cannot be used after 10:00pm or midnight. Please clarify at what hour this restriction no longer applies.

Clarified Response:
To clarify, response given in Addendum No. 1, the restriction is lifted during daytime working hours which are given in Special Provisions Section 107.03. See Addendum No. 2.

23. Per the noise permit provided with the bid documents, the Contractor is not allowed to operate the necessary equipment required to perform the reconstruction and paving operations after midnight within 500' of a residence. Considering the Noise Permit doesn't cover day shift work during the weekend, and the Noise Variance limits equipment operations at night after 10 pm and Midnight, this drastically restricts the Contractors ability to efficiently complete the work within the allowable work hours specified in sections 107.03 and 645.03(F) and will significantly impact cost and schedule. Please confirm that the HDOT will provide the necessary Noise Permit to allow equipment operations during the day on Weekends to allow for the necessary equipment operations during all hours specified in sections 107.03 and 645.03(F).

Revised Response:
We are revising our response given in Addendum No. 1. The State will obtain the noise permit and will provide to the Contractor upon award of the project. The noise permit will allow certain work to be performed on Saturdays from 9am to 6pm. Department of Health will generally not give out noise permits for the same scope of work that can be performed during noise variance hours. See added note to Plan Sheet no. ADD. 4 and revised Special Provisions Section 107 in Addendum No. 2

38. Contractors' Automobile Insurer(s) may require that each Driver undergo an MVR (Motor Vehicle Record) check and may set forth certain conditions to insure base on individual MVR:
a. Including but not limited to being allowed to restrict, suspend or otherwise deny Drivers who do not meet safe Driving and Vehicle operation standards;
b. Or require that each driver undergo Driver Safety Training to operate Contractor vehicles.
Is the State able to comply with these requirements, or will the contractor be allowed right of refusal if driver's abstract warrants?

Response:
Bid items and specifications pertaining to the Project vehicle are being removed from this bid. See Addendum No. 2.

39. Given the current volatility of the auto market, and the potential back order on appropriate vehicles, the lead time for procuring suitable vehicles may be considerable. The idea that the exact make and model of the vehicles are not specified but will be later determined will not allow contractors adequate time to procure the vehicles.

Response:
Bid items and specifications pertaining to the Project vehicle are being removed from this bid. See Addendum No. 2.

40. The project vehicles provides no stipulation on type of vehicles required. Requires the contractor to insure a vehicle that will be driven by employees it has no control over. Unlimited fuel requirements. State employees or CM's should not be riding around contractor owned vehicles. What recourse is there for the contractor if the vehicles are damaged and lose sale value at the end of the project? These are very ambiguous requirements and there is no way for contractors to price this item. There should be some sort of limits placed or this should be a force account/allowance item.

Response:
Bid items and specifications pertaining to the Project vehicle are being removed from this bid. See Addendum No. 2.

41. In the past, the State included in their contracts Short Supply Material clauses to protect both the State and Contractors in the midst of sharp material increases beyond the Contractors control. Forecasted costs of construction materials show a sharp increase in imported costs for asphalt cement binder in the coming months, which will affect this project. Would the State consider reinstituting Short Supply clauses to the contract for:
a. Asphalt Cement
b. Portland Concrete Cement
c. Structural Steel
d. Reinforcing Steel
This will allow the Contractor to bid with more confidence and protect the State from inflated pricing.

Response:
No, not for this project.

42. Please check the attached ADD#1 2of2 plans. Is specifies another project.

Response:
To further clarify, the file ADD No. 1 2 of 2 is a set of as-built plans uploaded to assist in the clarification of question #18 that requests utility profiles for existing underground utilities.

43. Please confirm there is no previous understanding or agreements between HDOT and DOH that would prohibit the contractor from obtaining a new noise permit to allow for the necessary equipment operations during all hours specified in sections 107.03 and 645.03(F).

Response:
See response to question #23.

44. Please provide application for the noise variance permit.

Response:
See response to question #23.

45. As HDOT is a governmental entity and this Solicitation is a public works contract with an estimated value more than $250,000, is this Solicitation subject to the apprenticeship preference in as mandated by HRS § 103-55.6? Section 102.15 of the Special Provisions Proposals Contract and Bond for this Project states that the "Hawaii Products and Recycled Products shall not apply to this project." There is no provision in the Solicitation that explicitly excludes this preference as required by HRS § 103-55.6 from being applied. Please clarify HDOT's position.

Response:
Question will be addressed in Addendum No. 3.

46. Section 303 – Lightweight Aggregate - Due to the lack of domestic lightweight aggregate sources that comply with the stringent specifications provided in the special provisions, we would like to submit the attached product' technical data on behalf of Aero Aggregates of North America, LLC. for review and approval prior to bid opening date (attachment will be sent separately via email). We believe there will be a significant cost saving due to using this product in lieu of relying on a sole source "importing the material from foreign country". Attachment will be emailed to the PM, Li Nah Okita.

Response:
The intent was always to use a lightweight foamed expanded glass aggregate. There was no intent of having a sole source item.

Due to concerns with the non-potable waterline and small irrigation lines breaking at these locations in the past (due to the waterline and due to the settlement at this area), we did not want the aggregate to be too light so as to float, as we do not have sufficient overlying weight to hold down the buoyancy force.

We also wanted a material that was not too brittle, as we have seen lightweight foamed expanded glass aggregates that we can crush within our fingers with very little effort, which we believe will translate to variable densities and high fines content that will change the performance of the material.
Therefore, we do not accept the RFI substitution. However, if Aero Aggregates can make a heavier aggregate that meets the specifications of this project, then that would be acceptable.

47. Section 303 – Lightweight Aggregate - Due to the lack of domestic lightweight aggregate sources that comply with the stringent specifications provided in the special provisions, we would like to submit the attached product' technical data on behalf of Utelite Aggregate Industries for review and approval prior to bid opening date (attachment will be sent separately via email). We believe there will be a significant cost saving due to using this product in lieu of relying on a sole source "importing the material from foreign country". Attachment will be emailed to the PM, Li Nah Okita.

Response:
The intent was always to use a lightweight foamed expanded glass aggregate. There was no intent of having a sole source item.

Due to the high Specific Gravity and high Absorption, the concern is that this material could be too heavy initially and too heavy over time as it absorbs water, as the absorption is much more than the specified 2%.

The other problem is that the aggregate data is 10 years old and the triaxial shear testing is 19 years old. Although there is some lab test data that is from this year, it is only tested as a concrete aggregate.

Therefore, we do not accept the RFI substitution.

48. Regarding the RVSD, we are not aware of an RVSD sensor that operates on 37VDC-60VDC do you have a specific product/ manufacturer in mind for this?

Response:
HDOT used the WAVETRONIX Expanse XP20 Sensor as a reference point.

49. Would you accept an alternative device from manufacturer that runs on 12-24VDC and can provide the same data per the spec- volume, speed, occupancy.

Response:
As long as the alternative device meets the minimum specifications of the contract and plans it would be acceptable upon HDOT review and approval.

50. For the reconstruction section C, the project requires three layers of hot mix asphalt and two layers of GlasGrid 8512TF. The installation Guide for GlasGrid 8512TF requires a road surface temperature less than 140 degrees or else the tack film will melt and cause the GlasGrid to move when paving the next lift. This could cause a delay of several hours between lifts. Due to the time constraints in the work window, will the State consider using Mirafi instead of the GlasGrid 8512TF?

Response:
No, Mirafi will not be acceptable.

51. For areas outside of the leveling area where grades are not given, is the intent to match the existing grade? Or will finish grades be given at a later date? If grades are given later, it could cause additional surveying and impact costs.

Response:
Question will be addressed in Addendum No. 3.

52. Spec Section page 415-3a lines 126-127 says to "cold plane each day across full width of traffic lanes to avoid longitudinal pavement drop-off between lanes". Is it the State's intent to only do paving work during full freeway closures in order to accomplish the full width of traffic lanes?

Response:
Section 415 has been revised. See Addendum No. 2.

53. Spec page 415-5a lines 216-217 says the milled surface shall not be exposed to public traffic for more than three days prior to placement of resurfacing material. If a cold planed 8:1 slope for longitudinal transitions is used and paving work can only be done on the weekend, could the State modify the three day requirement to the next weekend? or exclude transitional milled surfaces?

Response:
Section 415 has been revised. See Addendum No. 2.

54. Spec Section 406.05 (G) requires a 500ft. control strip. Will the State require the control strip to be within the project limits?
Response:
Yes, the control strip shall be within the project limits. Per 406.03G, the control strip shall be a full lane width at finish grade for at least 500 feet.

55. Spec Section 406.04 lines 320-323 says the Engineer will issue a billing for the pavement profile work done for the time period with the invoices and receipts that the billing was based on, attached to the Contractor for each contract item. Can the State provide an estimate on how much this will be or make it an allowance item?

Response:
Paragraph was deleted. See revised Section 406 in Addendum No. 2.

56. Spec Section 406.05 Payment lines 332-334 says the Engineer will deduct from the Contractor's monthly estimate the amount necessary to pay for the services of a third-party pavement profile testing entity plus... Could the State provide an estimated cost for this or make it an allowance item?

Response:
Paragraph was deleted. See revised Section 406 in Addendum No. 2.

57. In reference to RFI question #6 response, please confirm what bid item the cold-planing of the areas needing the 1.5" minimum thickness will be paid under.

Response:
See clarified response to question #6.

58. RFI response to question 2 states that an Addendum 2 for this project to be forthcoming. As next week is a short week due to the Thanksgiving holiday, request bid extension of one additional week to allow proper time for review of addendums and coordination with subcontractors and suppliers.

Response:
We are postponing the bid opening. See Addendum No. 2.

59. To follow up on question and response to RFI Question 6: “For areas where the thickness will become less that 1.5”, cold planing to achieve the 1.5” minimum thickness should be performed. However, Cold planing of the areas that will require more than 1.5” State Mix V need not be cold planed.” 1. How will the contractor be compensated for cold planing these areas? 2. Has the State considered the additional tonnage quantity for the areas where an additional 1.5” will need to be repaved? 3. Furthermore, given the amount of pavement distress in these areas, lift thickness above 1.5” does not eliminate the strong possibility of delamination. 4. Recommend cold plane and pave 1.5” over entire area prior to placement of Leveling course. Request revised tonnage qty in bid item 401.3000 for both Base Bid and Additive Alternate to account for this change in scope.

Response:
See response to question #6. The purpose of the leveling course is only to get the pavement near the finish grade to help with construction phasing to avoid temporary drop-offs. Therefore, cold-planing of the entire area is not necessary, as this surfacing will later be removed when the final paving is done. Therefore, the Contractor will not be paid for additional cold-planing or additional paving. Quantities for Item 401.3000 have been revised. See revised Proposal Schedule in Addendum No. 2.

60. Regarding the lightweight foam glass aggregate; material suppliers have indicated that the specification cannot be met and seems to be that of a similar lightweight product such as expanded shale or clay. Please confirm the material specification for the Lightweight Foamed Expanded Glass Aggregate.

Response:
There are suppliers of the Lightweight Foamed Expanded Glass Aggregate in US-East Coast, Europe, and Japan.