STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADDENDUM NO. 4

FOR

KAMEHAMEHA V HIGHWAY, KAWELA BRIDGE REPLACEMENT
DISTRICT OF MOLOKAI, ISLAND OF MOLOKAI
FEDERAL-AID PROJECT NO. BR-0450(8)

FY 2011

Amend the bid documents as follows:

A. SPECIAL PROVISIONS

1. Add the attached **Section 651 – Temporary Portable Concrete Barrier** dated 05/03/11.

B. PLANS

1. Replace Plan Sheet Nos. 33, 34, 46, 48, 49, and 50 with the attached Plan Sheet Nos. ADD. 33, ADD. 34, ADD. 46, ADD. 48, ADD. 49, and ADD. 50.

2. Add the attached new Plan Sheet Nos. ADD. 39 S-1, ADD. 39 S-2, ADD. 39 S-3, ADD. 39 S-4, ADD. 39 S-5, and ADD. 48 S-1.

C. PROPOSAL SCHEDULE

Replace Pages P-8 through P-13 dated r04/18/11 with the attached Pages P-8 through P-13 dated r05/04/11.

D. SUBSTITUTION REQUESTS

1. Can ACZ-350 portable end treatment be used as an option for the crash cushion as specified on Sheet 32 of the Project Plans?

Response: The ACZ-350 portable end treatment may be used as an option for the crash cushion as specified on Sheet 32.

2. Can the Triton CET System be used as an option for the crash cushion as specified on Sheet 32 of the Project Plans?

Response: The Triton CET System may be used as an option for the crash cushion with the portable concrete barrier.

3. Can the Vulcan Barrier as an option for the portable concrete barriers as specified on Sheet 32 of the Project Plans?

Response: The Vulcan Barrier may be used in place of the portable concrete barriers provided every section is anchored to the pavement to provide the 3-inch maximum dynamic deflection during errant vehicle impact.

E. REQUESTS FOR INFORMATION AND RESPONSES

1. Is there a spec for the erosion control blanket (Sheet 24 - C2.10)?

Response: The Erosion Control Blanket shall meet FHWA FP-03 Section 713.17 Type 4, long term double-net erosion control blanket or open weave textile requirements. Use North American Green C125 or approved equal.

2. How does the Dust Screen Fabric differ from the Geotextile Fabric and/or the Non-woven filter Fabric and/or Impermeable Fabric? Is there a spec? (s), (Sheet 19 - C2.05, and Sheet 70 - S2.5).

Response: Dust screen fabric and silt fence geotextile filter fabric shall follow Hawaii Standard Specification 716.08. The Geotextile Filter Fabric callout in the Silt Fence detail (Detail 2/C2.05) should be "permeable", not "impermeable".

Impermeable fabric shall only be used for the temporary native in-stream bag berms (Detail 4/C2.05) which specify "material shall be polypropylene, polyethylene or polyamide woven fabric, minimum unit weight (4) ounces per square yard, Mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70%."

The non-woven geotextile fabric, as shown on Sheet 70, is called out on Sheet 58, Para. 3(E), as conforming to Mirafi 180N or equivalent.

3. There is an intersection warning sign on sheet 25 – C3.01 that is to be removed, but it is not on the sign and striping plan sheet 46 – C4.12; does it need to be replaced?

Response: The existing Intersection Warning Sign (W2-2) shall be removed as shown on Sheet 25. The same sign shall be replaced in the location where it now exists. Payment for the removal of the sign shall be included in Item 202.0200 Removal of Fence and Posts, Guardrail and Posts, Signs and Posts, and 2-inch Waterline. Payment for the relocation of the existing sign shall be included in Item 631.0100 Relocation of Existing Sign pay item.

4. Also does the sign need to be installed for the detour signage application?

Response: Yes, re-install for the detour road.

5. Is there going to be a pay item for the detour and/or permanent installation?

Response: The pay items for the detour road improvements and/or permanent installation shall be included in the applicable bid items. For example, pay item 203.0100 Roadway Excavation shall include roadway excavation for both the detour road and Kamehameha V Highway.

6. Is the typical traffic control sign sheet going to be added, if so are the additional signs going to be required on Onioni Road?

Response: No typical traffic control sign sheet will be added. However, appropriate notes, along with the construction speed limit, have been added on Sheet ADD. 48 S-1. Traffic control signs on sheets ADD. 33, ADD. 34, ADD. 49, and ADD. 50 along Onioni Road have been changed/added to enhance traffic control on this roadway.

7. Can the signs on the traffic control signs (Sheets 48 to 50 – C4.14 to C4.16) be installed on temporary/portable sign stands, or does it need to be installed on posts, the duration is quite long for the project?

Response: Traffic control signs shall be installed on post(s).

8. There are 3 each FLEAT-350 end treatments on ends of the guardrail runs, but the 4th end only has a 3/4 wrap (rounded end). Is a G type anchor end treatment required?

Response: Yes. A Type G anchor is required. See new guardrail detail sheet ADD. 39 S-5.

9. We have been asked by general contractors on our interpretation of the pay item for the portable concrete rail?

Response: Portable concrete rail (Portable Concrete Barrier with Steady Burn Amber Light and Crash Cushion) shall be included in a new pay item 651.0100 Temporary Portable Concrete Barrier.

10. Is there enough clear zone for the use of a gating end treatment for the temporary portable concrete barriers? If not there is not enough clear zone behind the end treatments, the drawings should state the use of a non-gating system. If there is then it can be left as is, as there is a big price difference between a gating and a non-gating system.

Response: In accordance with the Roadside Design Guide, a minimum non-recoverable clear area should be provided for a gating system per plan.

11. What is the design speed of the detour road? This will determine the use of end treatments and the size required.

Response: The design speed of the detour road is 25 mph. Basic HDOT requirement for end treatments is TL-3.

12. Is there going to be a pay item for the Thrie Beam as opposed to the 606.0400 – Thrie Beam Transition? There are both items called out on sheets 39 and 82 (C4.05 and S4.6).

Response: Pay Item 606.0110 Guardrail Type 3 Thrie-Beam, Bridge End Post Transition has been added to the Proposal Schedule.

13. Wanted to verify if the thrie beam is 12 gauge (Sheets 39 and 82 - C4.05 and S4.6).

Response: The thrie beam is 10 gauge and shall be a 12'-6" double (nested) rail element. Remaining 6'-3" thrie beam section shall be a single rail element.

14. Aren't RM-4 and Type III OM the same thing?

Response: Yes, RM-4 and Type III OM is the same. Pay Item 632.9100 Type III Object Marker has been removed from the Proposal Schedule.

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

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

Make the following Section a part of the Standard Specifications:

"SECTION 651 - TEMPORARY PORTABLE CONCRETE BARRIER

651.01 Description. This section is for furnishing, installing, maintaining, relocating, and subsequently removing portable concrete barriers and inertial barrel systems according to the contract.

651.02 Materials.

(A) Portable Concrete Barriers. Materials shall meet the requirements specified in the following subsections of Division 700 - Materials.

Structural Concrete (Class A Concrete)	601
Reinforcing Steel	602
Reflector Marker	712.21
Preformed Pavement Marking Tape	712.53
Structural Steel	713.01
Bolts and Nuts	713.03

(B) Inertial Barrier Systems.

(1) Container. The Inertial Barrier shall consist of modules in 200, 400, 700, 1400, and 2100 lbs. sizes. 200, 400, 700 and 1400 lbs. modules shall consist of a container molded in one piece with a minimum capacity of 21 cubic feet. The material shall be durable, weatherproof, and shall be formulated to resist deterioration from ultraviolet rays. The color shall be yellow. This model must be of continuous molded construction and be nestable. The modules shall be designed and manufactured from a frangible polyethylene material which shall shatter upon impact to permit dispersion of the sand mass container within.

(2) Lid. Each module shall have a black lid which locks securely over the top lip of the outer container. Material shall be durable, weatherproof, and shall be formulated to resist deterioration from ultraviolet rays.

(3) Insert. All 200, 400 and 700 lbs. modules will require a cone-shaped supporting insert used to support various sand masses.

Cone inserts shall be of one-piece molded construction and be nestable.

(4) Sand. Sand placed into these modules should be washed concrete sand conforming to ASTM-C-33 or equal.

Each Inertial Barrier System array shall be configured to provide a satisfactory average rate of deceleration (8 g's maximum preferred for each row) for errant vehicles in the weight ranges of 1810 to 4410 lbs. The inertial barrier system shall meet the requirements of NCHRP 350 for Test Level 3 for nonredirective gating crash cushions. For impact vehicles weighing between 1810 and 4410 lbs. and traveling at speeds of up to 62 mph, the maximum 24-inch occupant fail space velocity shall be less than 39 ft/sec and the vehicles' highest 10 millisecond occupants' ride-down acceleration shall be less than 20 g's.

The center of gravity of each properly-filled module shall be at a height which will aid in controlling the pitch of standard passenger vehicles.

The components of the modules shall interface to prevent leakage of sand contained therein. The interface shall, however, permit drainage of excess water contained within the sand mass.

651.03 Construction Requirements.

(A) Portable Concrete Barriers.

(1) Fabrication. Construct the portable concrete barriers in accordance with the plans. Prior to fabrication of the portable concrete barrier, submit detailed shop drawings to the Engineer for acceptance.

(a) Forms. Forms shall be according to Section 503 - Concrete Structures.

(b) Placing Concrete. Moisten the form thoroughly immediately prior to the placing of the concrete. Place the concrete according to Section 503 - Concrete Structures.

(c) Curing. Steam or water-cure the portable concrete barriers according to Subsection 504.03(G) - Curing.

(d) Handling. Do not handle the portable concrete

barriers until the concrete has attained a compressive strength of more than 3,000 pounds per square inch. Use the lifting holes to hoist the portable concrete barrier. Repair or replace units damaged by improper handling at no cost to the State.

The Engineer will permit stacking of precast units with prior acceptance by the Engineer of the method to be employed by the Contractor.

(e) Accessories. Furnish and install one Steady Burn Amber Lamp on top of the concrete barrier and a longitudinal 4-inch by 20 feet permanent preformed pavement marking tape, Type I (color to match appropriate roadway pavement stripe) on the sloped side of the barrier facing traffic on each section.

(f) Ownership. Upon completion of the project, the portable concrete barriers shall become the property of the State and shall be delivered to the baseyard location as designated by the Engineer at no cost to the State.

(2) Installation. Erect all units as shown on the plans or as specified by the Engineer. Set the units in a vertical position, closely following the roadway grade. The units shall have a maximum of 1/4-inch offset in any direction between adjacent panels at the connections. Horizontal alignment of the panels shall be such that any panel is not out of alignment by more than 1/2-inch from straight line. Furnish and install steel pins for connecting the barrier sections.

(B) Inertial Barrier Systems.

The Contractor shall submit 7 days following the Award of Contract, a written certification to the Engineer stating that the crash cushion to be furnished satisfies the requirements of NCHRP 350, Test Level 3.

Placement of the modules within an array and the geometric design of the array shall be as shown on the plans, as indicated by the manufacturer's specifications or as ordered by the Engineer based on the design speed of the roadway. In locations where the barrier system separates two roadways, the barrier array and geometric design shall be based on the higher posted speed of the two roadways.

The Contractor shall install, maintain, relocate and subsequently remove the Inertial Barrier System. The Contractor

shall maintain and replace the modules throughout the construction period.

After the completion of the project, the sand will be removed and disposed from each module and each empty module shall be hauled as directed by the Engineer. Prior to hauling, each module shall be cleaned and nested together for transport.

651.04 Method of Measurement. Installing, maintaining, relocating, and subsequently removing the portable concrete barriers and Inertial Barrier Systems will be paid on a lump sum basis. Measurement for payment will not apply.

651.05 Basis of Payment. The Engineer will pay for furnishing of the accepted portable concrete barriers and Inertial Barrier Systems on a contract lump sum basis, as shown in the proposal schedule. Payment will be full compensation for the work prescribed in this section and contract documents.

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

Pay Item	**Pay Unit**
Temporary Portable Concrete and Inertial Barriers	Lump Sum"

END OF SECTION 651

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
201.0100	Clearing and Grubbing	LS	LS	LS	$
202.0100	Removal of Temporary Detour Road	LS	LS	LS	$
202.0200	Removal of Fence and Posts, Guardrail and Posts, Signs and Posts, and 2-inch Waterline	LS	LS	LS	$
202.0440	Removal of Existing Bridge	LS	LS	LS	$
203.0100	Roadway Excavation	1,601	CY	$	$
203.0200	Borrow Excavated Material	900	CY	$	$
203.0300	Stream Embankment Excavation	805	CY	$	$
204.0110	Trench Excavation for Waterline (WL "A" Sta. 0+00 to Sta. 1+19)	LS	LS	LS	$
204.0120	Trench Excavation for Waterline (WL "A" Sta. 1+19 to Sta. 2+40)	LS	LS	LS	$
204.0130	Trench Excavation for Waterline (WL "A" Sta. 2+40 to End)	LS	LS	LS	$
204.0140	Trench Excavation for Water Lateral Service	LS	LS	LS	$
204.0210	Trench Backfill for Waterline (WL "A" Sta. 0+00 to Sta. 1+19)	LS	LS	LS	$
204.0220	Trench Backfill for Waterline (WL "A" Sta. 1+19 to Sta. 2+40)	LS	LS	LS	$
204.0230	Trench Backfill for Waterline (WL "A" Sta. 2+40 to End)	LS	LS	LS	$
204.0240	Trench Backfill for Water Lateral Service	LS	LS	LS	$
205.1000	Structure Excavation for CRM Retaining Walls	LS	LS	LS	$
205.2000	Structure Excavation for Bridge Abutments	LS	LS	LS	$

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
205.3000	Structure Excavation for Approach Slabs	LS	LS	LS	$
205.4000	Structure Excavation for Access Ramps	LS	LS	LS	$
205.5000	Structure Excavation for Channel Liner	LS	LS	LS	$
205.6000	Structure Backfill for Bridge Abutments and Retaining Walls	LS	LS	LS	$
205.7202	Filter Material	LS	LS	LS	$
206.0100	Excavation for Drainage System	LS	LS	LS	$
209.1000	Installation, Maintenance, Monitoring, and Removal of BMP	LS	LS	LS	$
209.1100	Additional Water Pollution, Dust, and Erosion Control	FA	FA	FA	$ 100,000
209.2000	Dewatering System	LS	LS	LS	$
212.1000	Archaeological Monitoring	FA	FA	FA	$ 25,000
304.0100	Aggregate Base	LS	LS	LS	$
305.0100	Aggregate Subbase	LS	LS	LS	$
312.0100	Hot Mix Glassphalt Base Course	LS	LS	LS	$
401.0100	HMA Pavement, Mix No. IV	LS	LS	LS	$
501.1000	Structural Steel for Bollards	LS	LS	LS	$
501.2000	Structural Steel for Cattle Gates	LS	LS	LS	$
503.1090	Concrete for Bridge Abutments	LS	LS	LS	$

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
503.1091	Concrete for Abutment Pile Caps	LS	LS	LS	$
503.1092	Concrete for Bridge Deck	LS	LS	LS	$
503.1093	Concrete for Bridge Approach Slabs	LS	LS	LS	$
503.1094	Concrete for Channel Liner	LS	LS	LS	$
503.1095	Concrete for Access Ramps	LS	LS	LS	$
503.1096	Concrete for Reaction Blocks and Jackets	LS	LS	LS	$
504.7400	Prestressed Concrete Planks	LS	LS	LS	$
507.1501	Metal Railing	LS	LS	LS	$
507.7000	Concrete Bridge End Posts	LS	LS	LS	$
507.7100	Concrete Bridge Railing	LS	LS	LS	$
508.0100	Cement Rubble Masonry	LS	LS	LS	$
509.0100	Furnishing Micropile Drilling Equipment	LS	LS	LS	$
509.0200	Preproduction Micropile	LS	LS	LS	$
509.0300	Production Micropiles	2,700	LF	$	$
509.0820	Verification Testing	LS	LS	LS	$
509.0830	Proof Testing	LS	LS	LS	$
603.0100	Bed Course Material for Culverts	LS	LS	LS	$

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
603.0200	Bed Course Material for 18-inch Drain Pipe	LS	LS	LS	$
603.1006	18-Inch Reinforced Concrete Pipe, Class III or 18-Inch High Density Polyethylene Pipe, Type S	LS	LS	LS	$
603.1054	42-Inch Reinforced Concrete Pipe, Class IV, or 42-Inch High Density Polyethylene Pipe, Type S	LS	LS	LS	$
604.2330	Type 61614P Grated Drop Inlet (3.00 feet to 3.99 feet)	4	EA	$	$
606.0100	Guardrail Type 3 W-Beam	LS	LS	LS	$
606.0110	Guardrail Type 3 Thrie-Beam, Bridge End Post Transition	LS	LS	LS	$
606.0200	Terminal Section Type 3, Fleat-350 End Treatment	LS	LS	LS	$
606.0300	Terminal Section Type 3 W-Beam, Rounded (Type G Modified Flare)	LS	LS	LS	$
606.0400	Transition Section Type 3 Thrie Beam	LS	LS	LS	$
612.0100	Grouted Rubble Paving	LS	LS	LS	$
616.0100	Temporary Irrigation System	LS	LS	LS	$
619.1000	Monkeypod [Samanea saman] 2- 2 1/2-inches caliper	LS	LS	LS	$
619.2000	Anapanapa [Colubrina asiatica] 3' O.C. - 3 Gallon container	LS	LS	LS	$
624.0100	Temporary 2-inch Waterline	LS	LS	LS	$
624.0210	8-inch Waterline System (WL "A" Sta. 0+00 to 1+19)	LS	LS	LS	$
624.0220	8-inch Waterline System (WL "A" Sta. 1+19 to 2+40)	LS	LS	LS	$
624.0230	8-inch Waterline System (WL "A" Sta. 2+40 to End)	LS	LS	LS	$

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
624.0240	Type "A" and "B" Water Lateral Service	LS	LS	LS	$
626.0100	Type "F" Manhole, 3.00 feet to 3.99 feet	LS	LS	LS	$
629.1010	4-Inch Pavement Striping (White)	LS	LS	LS	$
629.1011	4-Inch Pavement Striping (Double Yellow)	LS	LS	LS	$
629.2010	Type "A" Pavement Marker	LS	LS	LS	$
629.2020	Type "C" Pavement Marker	LS	LS	LS	$
629.2030	Type "D" Pavement Marker	LS	LS	LS	$
629.2040	Type "DB" Pavement Marker	LS	LS	LS	$
631.0100	Relocation of Existing Intersection Sign	LS	LS	LS	$
632.8100	Reflector Marker (RM-4)	LS	LS	LS	$
638.0100	8-1/2" Curb for New Guardrail	LS	LS	LS	$
645.0100	Traffic Control	LS	LS	LS	$
645.0200	Additional Police Officers, Additional Traffic Control Devices, and Advertisement	FA	FA	FA	$ 10,000
648.0000	Field Posted Drawings	LS	LS	LS	$
651.0100	Temporary Portable Concrete and Inertial Barriers	LS	LS	LS	$
655.0100	Dumped Riprap	LS	LS	LS	$
665.0000	Invasive Species Management	LS	LS	LS	$

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
696.0100	Maintenance of Trailers	FA	FA	FA	$ 15,000
696.0200	Field Office Trailer (Not to Exceed $32,000.00)	LS	LS	LS	$
696.0300	Project Site Laboratory Trailer (Not to Exceed $22,000.00)	LS	LS	LS	$
699.0100	Mobilization (Not to exceed 10 percent of the sum of all items excluding bid price of this item and force account items)	LS	LS	LS	$

a. Sum of All Items $

b. Either Furnish Foreign Steel Not to Exceed Minimal Amount (Fill in "0") or Furnish Foreign Steel in Excess of Minimal Amount (Fill in 25% x a) $

c. Amount for Comparison of Bids (a+b) $

All bidders must fill in b and complete c

Note: Bidders must complete all bid items. Failure to do so may be grounds for rejection of bid.