STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADDENDUM NO. 2
for
STORM WATER BEST MANAGEMENT PRACTICES IMPROVEMENTS AT MAINTENANCE BASEYARDS ON OAHU
PROJECT NO. HWY-O-02-18M

The following amendments shall be made to the Bid Documents:

A. SPECIFICATIONS

Section 660 – Electrical System shall be incorporated and made a part of the Specifications.

B. PROPOSAL SCHEDULE

Replace PROPOSAL SCHEDULE Pages P-11 to P-14 dated 3/19/18 with the attached PROPOSAL SCHEDULE Pages P-11 to P-14 dated r5/18/18.

C. PLANS

The attached Plan Sheet Nos. ADD.31S-1 and ADD.31S-2 shall be incorporated and made part of the Plans.

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.

for JADE T. BUTAY
Director of Transportation

Make this section a part of the Standard Specifications:

"SECTION 660 - ELECTRIC SYSTEM

660.01 Description. This section describes constructing junction boxes, underground ductlines, conduits, wires and circuit breakers required to power new hazmat storage containers. Such works shall be performed at the indicated locations in accordance with the requirements herein specified and the indicated details, or as ordered by the Engineer.

660.02 Materials.

(A) General. Materials such as junction boxes, conduits, wires, circuit breakers and all materials required to complete the work of the electric system shall be furnished by the contractor, unless otherwise indicated.

(B) Concrete. Concrete jackets for underground conduits and ducts shall be Class B concrete except that the cement content shall be 5.6 sacks per cubic yard. The maximum size of coarse aggregate shall be 3/4-inch and the slump shall be 6-inch minimum and 7-inch maximum.

(C) Conduits. Conduits shall meet the requirements of Section 712.27 - Conduits.

(D) Wires. Wires shall meet the requirements of Section 712.39 - Cables, Conductors and Wires.

(E) Circuit Breakers. Circuit breakers shall meet the requirements of Section 712.35 - Disconnect and Protective Devices.

(F) Bed Course Material. Trench backfill material shall meet the requirements of Subsection 703.20 - Structure Backfill Material.

(G) Ducts and Conduits. All ducts and conduits required shall be new and furnished by the Contractor in accordance with the plans and specifications.

During the course of construction, the Contractor shall not change from one type of conduit and duct to another without the written acceptance of the Engineer and providing:

(1) The changes shall not be made in a conduit and duct run (between any 2 pull points).

(2) The unit prices shall not be affected.

(3) The Contractor's request shall be in writing for Engineer's approval prior to making any changes.

PVC Plastic Conduits Type II, Schedule 40 and 80. Conduit and fitting shall be rigid Polyvinyl Chloride (PVC). Rigid PVC conduit shall be extruded heavy wall, non-metallic conduit and each length shall bear the label of Underwriters' Laboratory, Inc. The requirements of NEMA T C - 2 Federal Specifications, WC1094A and UL651 shall be adhered to.

660.03 Construction.

(A) General. The Contractor shall, in performing required excavation and backfill, exercise due care to avoid disturbing existing facilities. He shall remove and dispose of all demolished or excess material from the job site.

The Contractor shall notify the Engineer at least 24 hours in advance of his intent to commence concreting operations for ductlines.

(B) Existing Utilities. Existing utilities are shown on the drawings in approximate locations for the convenience of the Contractor. The fact that any utility is not shown on the drawings shall not relieve the Contractor of his responsibility under this Section. It shall be the Contractor's responsibility to ascertain the location of all existing utilities which may be subject to damage by reason of his operations. The Contractor shall be responsible for and shall pay for all damages to existing utilities of all types.

The Contractor shall:

(1) Support and protect all utilities during construction.

(2) Notify respective utility company immediately of any damage to its system caused by construction under this Contract, and

(3) Reconstruct, at his expense, damaged portions of the utility system in accordance with the requirements and specifications of the respective utility company.

(C) Excavation and Backfill. All excavation and backfill for underground trenches shall conform to the requirements of Section 206 – Excavation and Backfill for Drainage Facilities.

(D) Installation of Ducts Encased in Concrete Jacket. All plastic ducts installed in trench shall be installed with concrete jacket unless otherwise indicated. All joints shall be watertight.

(1) Plastic Conduit (PVC):

(a) Refer to Drawings for installation details and for dimensions of plastic conduit accessories installed in trench.

(b) The accessories shall be of the same type material as the conduit selected.

(2) Plastic Conduit Installation

(a) Conduits shall be square cut with a fine tooth woodsaw and all burrs shall be removed.

(b) All foreign matter shall be wiped off the sockets of the fittings and the edges of the conduit with a clean cloth.

(3) Plastic Conduit Solvent-Cemented Joints:

(a) The Contractor shall exercise due care in selecting the cement for PVC conduits. The cement should be accepted for use by the conduit manufacturer. A clean paint pot shall be used for containing the cement during use. Addition of thinner to the cement will not be permitted.

(b) A liberal and uniform coat of cement shall be applied to the conduit for a length equal to the depth of the socket. Also sufficient cement shall be applied to set the socket of the fitting. Excess cement on the fitting shall be avoidable as it is wiped into the joint and tends to weaken the pipe. Plastic bristle brushes shall not be used. The brush size shall be approximately equal to joint depth, for example, a 2 inch brush for a 4 inch conduit.

(c) The conduit shall be slipped into the socket of the fitting with a slight twist until it bottoms. The joint shall be held for 15 seconds so the conduit does not push out of the fitting. The pipe shall not be twisted or driven after the insertion is complete.

(d) The joined members shall be cured for at least 5 minutes before disturbing or applying stress to the joint. After this initial cure, care must be exercised in handling to prevent twisting or pulling the joint. In damp weather, this interval shall be increased to allow for slower evaporation of the solvent. Where possible, all conduits shall be assembled above ground and allowed to lie undisturbed while curing before lowering it into the trench or installing on bridges.

(e) Excess cement left on the outer shoulder of the fitting shall be wiped off.

(f) Another fitting or section of conduit may be added to the opposite end within 2 or 3 minutes if care is exercised in handling so that strain is not placed on the previous assembly.

(g) The brush shall be returned to the cement pot after covering the joint surfaces. When stopping work, the brush shall be placed in a solvent; unused cement shall be poured back in the can and covered tightly. When re-using the brush, the excess solvent shall be shaken out before dipping it into the cement. The cement brush shall be cleaned with a wire brush.

(h) Any joint included in a section of conduit to be bent in the trench shall be assembled above ground and allowed to lie undisturbed for at least 2 hours before installation. In cases where a plastic connection is made with the union under stress due to misalignment or other factors, the union shall be staked out to relieve stress on the joint until the conduit is backfilled or encased.

(i) The conduit in an open trench shall not be exposed longer than is absolutely necessary to minimize accidental mechanical damage.

(4) Plastic Conduit Spacers:

(a) Spacers for plastic conduit shall be placed along the length of the conduit at a maximum spacing of 6 feet on center.

(b) Spacers shall be 15 inches or more away from any coupling or joint. When conduit for trench is assembled above the ground, the spacer shall be supported in a horizontal position by use of a #4 rebar and smooth black steel wire, No. 14 gage. The base spacer shall be anchored flush to the bottom of the trench.

(c) Spacers shall not be located at the centers of a long radius bend. On prefabricated bends, the spacer shall be located in the tangent, free of the coupling. On trench formed bend, the spacer shall be located midway between the tangent and center of the bend.

(E) Restoration of Existing Roadway and Other Improvements. Roadways, sidewalks, curbs and other improvements of the State which are damaged shall be restored by the Contractor to their original condition. Trenches shall be repaired by measuring 10 feet from the furthest most point where the trench leaves the lane. If the trench is longitudinal then pave the width of the lane. Materials and workmanship shall conform to the applicable sections in these specifications. Payment for all materials and labor required shall be considered as incidental to the various contract items.

All disturbed unpaved surfaces shall be backfilled and graded to match the surrounding area, and plant grass and maintain. Fences and other improvements shall be restored to their original condition. This work shall be incidental to and included in the appropriate contract item under which the rearranged facility is provided.

(F) Wiring. Wiring shall conform to the appropriate articles of the Code. Arrange the wiring within cabinets and pullboxes neatly. Encase the wiring installed underground in conduits. Before installing the wires and cables in conduits, pull a wire brush, swab and mandrel through each conduit for the removal of extraneous matter and verification of the absence of obstructions and debris from the conduit system.

Pull the cables directly from their cores or reels into the conduits. Do not pull off and lay the cables on the ground before installation. Make the pulls in one direction only. Lubricants used shall be as recommended by the cable manufacturer or accepted by the Engineer. Leave the wires or cables under tension nor tight against bushings or fittings.

Remove the damaged ends resulting from the use of pulling grips soon after pulling the cable. Maintain the cable end seals. Do not pull the open-ended cables through the conduits. Cables shall be continuous from pulling point to pulling point. The Engineer will not permit splices. Make the splices, taps and terminations with pressure indented connectors or lugs as appropriate or as specified herein. Tape or seal the ends of the spare conductors as accepted.

Leave at least 12 inches of slack of each conductor within each junction/pullbox.

Furnish the cables on reels and handle the cables with great care to avoid damage to the conductors or the jacket.

Pull the cable in the conduit with a cable grip designed to provide a firm hold on the exterior covering of the cable. Pull the cable with a minimum dragging on the ground or pavement. Use powdered soapstone, talc, or other accepted lubricants to ease the pulling of the cable.

(G) Bonding and Grounding. Make the conduits and equipment mechanically and electrically secure to form a continuous system. Ground the system effectively. Bonding and grounding jumpers shall be No. 8 AWG copper wire.

(H) Testing and Warranty.

(1) Preliminary Arrangements. The equipment shall be given requisite factory tests as necessary to determine that the workmanship and materials are free from defects and to establish that the design and construction are satisfactory.

(2) Tests.

(a) Submit written certification that electrical systems are complete and operational. Submit certification with Contractor's request for final inspection.

(b) At the time of final review of electrical work, demonstrate the operation of electrical systems. Provide labor, apparatus and equipment for systems' demonstration.

(c) The Contractor shall perform start-up and all tests as required to obtain final field acceptance from the State. All tests shall be conducted in the presence of the Engineer.

(d) The Contractor shall be responsible for all tests. Testing shall be performed by and under the immediate supervisor of the Contractor.

(e) A visual inspection of all electrical equipment, to check for foreign material, tightness or wiring and connection, proper grounding, matching nameplate charts with specification, etc., shall be made prior to actual testing.

(3) Warranty. Materials and equipment installed for permanent construction shall be new. The contract contemplates the use of first-class material and equipment throughout the performance of the contract.

Secure from the manufacturer(s), a warranty or warranties guaranteeing equipment from defects in materials, design and workmanship for not less than twelve (12) months from the date of acceptance.

When requiring adjustments or repairs during the warranty period, adjust or repair the existing unit within twenty-four (24) hours from the time of notification until the Contractor can install the new unit. Install the new, identical non-defective unit within thirty (30) days from the time of notification.

660.04 Measurement. Electric system will be paid on a lump sum basis. Measurement for payment will not apply.

660.05 Payment. The Engineer will pay for the accepted electric system on a contract lump sum basis. 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**
Electric System	Lump Sum"

END OF SECTION 660

WAIANAE BASEYARD PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
202.0100	Removal of Existing Asphalt Concrete Channel	28	LF	$ _____	$ _____
202.0200	Removal of Existing Chain Link Fence and Footings	28	LF	$ _____	$ _____
206.0100	Excavation and Embankment for Drainage Structures	35	CY	$ _____	$ _____
209.0100	Installation, Maintenance, Monitoring, and Removal of BMP	LS	LS	LS	$ _____
209.0200	Additional Water Pollution, Dust, and Erosion Control	FA	FA	FA	$ 5,000.00
401.0100	HMA Pavement, Mix No. V	330	Ton	$ _____	$ _____
415.0100	Cold Planing	2765	SY	$ _____	$ _____
503.0100	Storage Container Slab-on-Grade Foundation	58	SY	$ _____	$ _____
503.0200	Equipment Slab-on-Grade Foundation	5	SY	$ _____	$ _____
503.0300	Slab-on-Grade Foundation near Wash Rack	11	SY	$ _____	$ _____
603.0100	Trench Drain	85	LF	$ _____	$ _____
603.0200	Clean Existing Culverts	FA	FA	FA	$ 7,500.00
607.0100	4-Feet High, Chain Link Fence	12	LF	$ _____	$ _____
607.0200	6-Feet High, Chain Link Fence	16	LF	$ _____	$ _____

626.0100	Adjusting Sewer Cleanout Cover	1	EA	$ _____	$ _____
627.0100	Adjusting Electrical Box	4	EA	$ _____	$ _____
640.0100	Concrete Channel	6	LF	$ _____	$ _____
640.0200	Concrete Channel Transition	11	LF	$ _____	$ _____
648.0100	Field-Posted Drawings	LS	LS	LS	$ _____
660.0100	Electrical System	LS	LS	LS	$ _____
681.0100	Water Polisher Treatment Device	1	EA	$ _____	$ _____
681.0200	Maintenance of Water Polisher Treatment Device	9	Month	$ _____	$ _____
681.0300	Pipe Bollard	5	EA	$ _____	$ _____
684.0100	Storm Water Sampling Equipment	1	EA	$ _____	$ _____
685.0100	Hazardous Material Storage Container	2	EA	$ _____	$ _____
699.0100	Mobilization (Not to Exceed 6% of the Sum of All Items (Waianae Baseyard) Excluding the Bid Price of this Item)	LS	LS	LS	$ _____
	SUM OF ALL ITEMS (Waianae Baseyard)				$

WINDWARD BASEYARD PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
202.0100	Removal of Existing Asphalt Pavement	4433	SY	$ _____	$ _____
202.0200	Removal of Existing Asphalt Wheelstops	20	EA	$ _____	$ _____
206.0100	Excavation and Embankment for Drainage Structures	40	CY	$ _____	$ _____
207.0100	Ditch and Channel Excavation	5	CY	$ _____	$ _____
209.0100	Installation, Maintenance, Monitoring, and Removal of BMP	LS	LS	LS	$ _____
209.0200	Additional Water Pollution, Dust, and Erosion Control	FA	FA	FA	$ 20,000.00
401.0100	HMA Pavement, Mix No. V	535	Ton	$ _____	$ _____
402.0100	Seal Coat	3,838	SY	$ _____	$ _____
503.0100	Equipment Slab-on-Grade Foundation	5	SY	$ _____	$ _____
503.0200	Concrete Sampling Boxes	2	EA	$ _____	$ _____
603.0100	12-Inch Reinforced Concrete Pipe, Class III	8	LF	$ _____	$ _____
603.0200	18-Inch Reinforced Concrete Pipe, Class III	4	LF	$ _____	$ _____
603.0300	Clean Existing Culverts	FA	FA	FA	$ 15,000.00
604.0100	Retrofit Existing Drain Inlet Grate	3	EA	$ _____	$ _____

626.0100	Adjusting Sewer Manhole Frame and Cover	1	EA	$ _____	$ _____
648.0100	Field-Posted Drawings	LS	LS	LS	$ _____
659.0100	Erosion Control Matting	120	SY	$ _____	$ _____
681.0100	Pipe Bollard	2	EA	$ _____	$ _____
682.0100	Drain Inlet Filter Baskets	1	EA	$ _____	$ _____
682.0200	Maintenance of Drain Inlet Filter Baskets	9	Month	$ _____	$ _____
684.0100	Storm Water Sampling Equipment	2	EA	$ _____	$ _____
695.0100	Maintenance of Existing Field Offices	FA	FA	FA	$ 20,000.00
699.0100	Mobilization (Not to Exceed 6% of the Sum of All Items (Windward Baseyard) Excluding the Bid Price of this Item)	LS	LS	LS	$ _____
	SUM OF ALL ITEMS (Windard Baseyard)				$
	a. SUM OF ALL ITEMS				$ _____
	NOTE: Bidders must complete all unit prices and amounts. Failure to do so may be grounds for rejection.				