ADDENDUM NO. 2  
February 26, 2020

TO

PLANS, BID FORM, SPECIFICATIONS, CONTRACT AND BOND

FOR

Kau Water System Improvements – Phase 1

Kamaoa, Kau, Island of Hawaii

IFB No.: IFB-20-HHL-019

Sample DHHL Contract

Adding to Special Conditions (Attachment S5)

SC-33 Notice to Proceed

After construction plans are fully approved by all required agencies and after the contract is fully executed and signed by the Chairman, the Contractor will be sent a formal Notice to Proceed letter advising the Contractor of the date on which it may proceed with the work. DHHL Construction General Conditions, 3.1.4 modified as follows, “In the event the Notice to Proceed is not issued within two hundred seventy (270) days after (1) the date the contract is executed by all parties; or (2) for projects funded with State Capital Improvement Project (CIP) funds, the date that the written certificate that funds are available is issued, whichever is later, the Contractor may submit a claim for increased labor and material costs (but not overhead costs) which are directly attributable to the delay beyond the first two hundred seventy (270) days. Such claims shall be accompanied with the necessary documentation to justify the claim. No payment will be made for assumed escalation costs.

Technical Specifications

Civil

1. SECTION 02665 - WATER SYSTEM: PART 2 – PRODUCTS, 2.01. MATERIALS, replace the following paragraph in its entirety:

“E. ELECTROMAGNETIC FLOWMETER”

Structural

1. SPECIFICATIONS: SECTION 03300 – CAST-IN-PLACE CONCRETE, Subsection 3.4, Item B.2, replace wording “without any vertical construction joints
and,” with revised wording “or in vertical wall sections,”; remove wording “A horizontal construction joint can be used at the Contractor’s option at the height indicated on the Drawings.”

2. SPECIFICATIONS: Remove SECTION 03300 – CAST-IN-PLACE CONCRETE, Subsection 3.4, Item B.5.


5. SPECIFICATIONS: SECTION 05600 – ALUMINUM STAIRS, Subsection 1.1, Item A, remove wording “including security enclosure,”

6. SPECIFICATIONS: Remove SECTION 05600 – ALUMINUM STAIRS, Subsection 1.2, Item C and D.

7. SPECIFICATIONS: Remove SECTION 05600 – ALUMINUM STAIRS, Subsection 1.3, Item C and D.

8. SPECIFICATIONS: Remove SECTION 05600 – ALUMINUM STAIRS, Subsection 3.3, in its entirety.

9. SPECIFICATIONS: Remove SECTION 07500 – FLUID APPLIED ROOFING in its entirety.

10. SPECIFICATIONS: Replace SECTION 08900 – LOUVERS AND VENTS in its entirety with attached revision.


Plans

Civil

The following plan sheet numbers have been revised and the revised drawings are reissued using Revision Delta 2, dated February 26, 2020:

1. PLANS: Drawing No. C-3 - Revisions include showing the electrical service equipment; showing the reservoir exterior stairs; and widening the AC pavement at the vicinity of the reservoir exterior stairs.
2. PLANS: Drawing No. C-4 - Revised grading where AC pavement was widened near reservoir exterior stairs.

3. PLANS: Drawing No. C-5 - Revisions include revising the alignment of the 8-inch reservoir effluent line; revising the layout of the 1-inch service lateral for the water filling station; relocating the reservoir level transmitter; relocating the water sampling station at the effluent line; deleting the concrete thrust beam on the reservoir effluent line; replacing the Toshiba flow meter on the effluent line with a Krohne flow meter; and adding one 8-inch gate valve with valve box and one 4-inch gate valve with valve box at the 4-inch interconnection line.

4. PLANS: Drawing No. C-7 - Revisions include revising the profiles to the 4-inch Interconnection Line and the 8-inch Effluent Line to suit its revisions described for Drawing No. C-5 above.

5. PLANS: Drawing No. C-9 - Revisions include removing the 1-1/2 – inch combination pressure relief and solenoid control valve and associated piping; reducing the size of the combination pressure relief and remote control valve from 4-inch to 1-1/2 – inch along with associated piping including the addition of two 4-inch ductile iron blind flanges with 1-1/2 – inch IPT taps; remove five straps for 4-inch pipes; add three more hold down clips for 4-inch pipes; replace the Toshiba flow meter at the influent control valve station with a Krohne flow meter.

6. PLANS: Drawing No. C-10 - Revisions include revising the sectional views of the reservoir influent control valve station to suit its revisions described for Drawing No. C-9 above; delete Section F.

7. PLANS: Drawing No. C-11 - Revisions include relocating the concrete support pedestal for the deleted 1-1/2 – inch combination pressure relief and solenoid control valve to the downsized 1-1/2 – inch combination pressure relief and remote control valve.

8. PLANS: Drawing No. C-12 - Revisions include revising the sectional views of the reservoir influent control valve station concrete foundation to suit its revisions described for Drawing No. C-11 above; delete Section F.

9. PLANS: Drawing No. C-13 - Revisions include deleting the Pipe Strap Detail for the 4-inch pipe and deleting the H-20 traffic rating for the flow meter vault access hatch.

10. PLANS: Drawing No. C-14 - Revision include adding a note to paint the exterior of the gauge cabinet with heat-reflective paint.

11. PLANS: Drawing No. C-15 - Revision include adding the Champion-Arrowhead brand to the hose bibb call out on the Water Sampling Station detail.
12. PLANS: Drawing No. C-16 - Revisions include adding in the Float Control Detail a call out to provide a stainless steel Unistrut support for the CF1 float control; and revisions to the 1-inch Combination Air Valve Assembly Detail.

13. PLANS: Drawing No. C-20 - Revisions include relocating three water meters and meter boxes; and adding a missing service lateral along with its reconnecting pipe to the new 4-inch waterline.

14. PLANS: Drawing No. C-21 - Revision include relocating one water meter and meter box.

15. PLANS: Drawing No. C-24 - Revisions include revising the inlet piping configuration to the 2-inch pressure relief valve; and relocating the vault ladder rungs.

**Structural**

1. PLANS: DETAIL 2/S-2 – Provided information for waterstop II; deleted information for waterstop IV.

2. PLANS: DETAIL 2/S-3 – Removed roof curb and added roof overhang.

3. PLANS: Added DETAIL 6/S-3 – SEISMIC CABLE ELEVATION AT VERTICAL WALL SECTION.

4. PLANS: Added detail 8/S-3 – HORIZONTAL SECTION OF VERTICAL WALL JOINT.


6. PLANS: DETAIL 1/S-5 – Removed concrete pedestal from overflow pipe, and revised pipe through slab; replaced wording “Hot Asphalt Mop” from reservoir concrete footing and concrete jacket interface with revised wording “2 Layers of 6 mil Polyethylene Over Jacket”; added pipe coating to exposed overflow pipe.

7. PLANS: DETAIL 2/S-5 – Replaced wording “Hot Asphalt Mop” from reservoir concrete footing and concrete jacket interface with revised wording “2 Layers of 6 mil Polyethylene Over Jacket”.


10. PLANS: DETAIL 1/S-6 – Shifted staircase location; moved level indicator gauge board; removed staircase security fenced enclosure.

11. PLANS: DETAIL 2/S-6 – Shifted staircase location; moved level indicator gauge board; removed concrete roof curb and added roof overhang; removed scupper collector box; removed wall louvers; indicated wording “2% slope”; added roof ventilator opening.

12. PLANS: DETAIL 1/S-7 – Removed concrete roof curb and added roof overhang; removed fluid-applied roof coating; indicated wording “2% slope”; added wording “with broom finish” to “9” roof slab” callout.

13. PLANS: DETAIL 2/S-7 – Removed scupper collector box, downspout and splash block, wall louvers; removed concrete roof curb and added roof overhang; Added roof ventilator to rooftop.


15. PLANS: DETAIL 1/S-9 – Removed concrete roof curb and added roof overhang.


18. PLANS: DETAIL 1/S-10 – Added safety rail on roof hatch curb at top of interior ladder; added wording “With ¼” FRP Bottom Plate” to “5'-0”x4'-11” Fiberglass Grating” callout; added wording “And Bottom Plate” to Interior Ladder Note #2.

19. PLANS: DETAIL 2/S-10 – Added safety rail on roof hatch curb at top of interior ladder; added bottom plate callout and detail bubble.


21. PLANS: DETAIL 6/S-10 – Added wording “And Bottom Plate” to “FRP Grating” callout.

22. PLANS: DETAIL 4/S-10 – Added wording “With ¼” FRP Bottom Plate” to “Fiberglass Grating Below” callout.

23. PLANS: SHEET S-11 – Revised sheet title to “RESERVOIR VENTILATOR DETAIL.”

25. PLANS: DETAIL 1/S-12 – Revised stair tread total length dimensions; removed security fence enclosure; added chain-link gate and duckbill gate stop at bottom stair landing.

26. PLANS: DETAIL 2/S-12 – Removed concrete roof curb; added guardrail toe plate; removed expanded metal security fence note.

27. PLANS: DETAIL 1/S-13 – Removed security fence enclosure; removed concrete roof curb and added roof overhang; adjusted stair landing guardrail.


29. PLANS: DETAIL 1/S-14 – Revised upper and lower stair tread total length dimension.

30. PLANS: Deleted SHEET S-15 in its entirety.

31. PLANS: SHEET S-16 – Revised sheet title to “FENCE GATE DETAILS.”


33. PLANS: DETAIL 1/S-17 – “Section A,” removed concrete roof curb and added roof overhang. Added bracket to water level indicator horizontal pipe.

34. PLANS: SHEET S-18 – Revised sheet title to “RESERVOIR RAILING DETAILS.”

35. PLANS: DETAIL 1/S-18 – Removed concrete roof curb and roof opening dimension; added guardrail toe plate.

36. PLANS: DETAIL 2/S-18 – Removed concrete roof curb; added guardrail toe plate.

37. PLANS: DETAIL 3/S-18 – Added guardrail toe plate.

38. PLANS: SHEET S-18 – Deleted fluid-applied roofing details 5, 6, 7, and 8/S-18.

Electrical

1. PLANS: DRAWING E-2 – Removed Duct Section B. The combination pressure relief and solenoid control valve has been removed.

2. PLANS: DRAWING E-4 – Removed electrical work for the combination pressure relief and solenoid control valve.

3. PLANS: DRAWING E-7 – Per DWS, the flow meters and level transmitters shall be modbus. Revised the SCADA diagram to reflect modbus connections and not analog.
Also removed connections for the combination pressure relief and solenoid control valve, and removed diagram 2/E-7 as it is no longer required.

END OF ADDENDUM NO. 2
E. ELECTROMAGNETIC FLOWMETER:

1. General Description:

Electromagnetic flowmeters shall be installed as shown on the plans at the 0.10-MG reservoir influent control valve station and the reservoir effluent line. The meter shall be capable of measuring flow rates and converting them to an analog signal to be sent to the SCADA system specified for this project.

Electromagnetic flowmeter shall be a Krohne Waterflux 3070C with the Krohne FlexPower and battery backup, or approved equal, conforming to the following specifications.

a. Overall Requirements:

1.) Description: This section of the specifications includes the furnishing and installation of an electromagnetic flowmeter at the location described below. The flowmeter shall include an electromagnetic flow sensor and an integral signal converter.

a.) Reservoir Influent Control Valve Station

1. Number required: One.
2. Flowmeter sensor size: 4 inches.
3. Maximum operating pressure: 300 psi.
4. Flange ends: ANSI Class 150.
5. Location: As shown on the plans.

b.) Reservoir Effluent Line

1. Number required: One.
2. Flowmeter sensor size: 8 inches.
3. Maximum operating pressure: 300 psi.
4. Flange ends: ANSI Class 150.
5. Location: As shown on the plans.

b. Sensor:

1.) Operating Principle: Utilizing Faraday’s Law of Electromagnetic Induction, the flow of liquid through the sensor induces an electrical voltage that is proportional to the velocity of the flow.

2.) Construction: The flow sensor tube shall be stainless steel. Liner material shall be Rilsan and shall be NSF approved for
potable water. Connecting flanges shall be Type 316L stainless steel, ANSI Class 150.

3.) Installation: As shown on the plans.

4.) Electrodes: Reference and measurement electrodes shall be 316 stainless steel or Hastalloy C, or approved equal.

5.) Grounding electrodes: Not required if reference electrode is used.

6.) Operating temperature: -13 to 149°F.

7.) Enclosure Rating: NEMA 4X watertight.


d. Sensor and Signal Converter Performance:

1.) Flow range: 1.0 to 39.4 feet per second for the accuracy stated below for the 4-inch flow meter and 0.3 to 1.0 feet per second for the accuracy stated below for the 8-inch flow meter.

2.) Accuracy: 0.5 % of actual flow.

3.) Calibration: 3 points minimum, witnessed.

e. Spare Parts: Spare parts for the equipment shall include the following, unless otherwise noted.

1.) One set of manufacturer’s recommended spare parts.

2.) Two additional copies of the Operations Manual.

f. Calibration of Flow Sensor:

1.) Each flow sensor shall be wet calibrated and all of the calibration information and factory settings matching the sensor shall be stored in an integrally mounted memory unit or converter. The memory unit shall store sensor calibration data and signal converter settings for the lifetime of the product. At initial commissioning, the flowmeter shall commence measurement without any initial programming. Any customer specified settings are downloaded to the memory unit. A certification of calibration shall accompany each flow sensor.
2.) Test mode: Provide the ability to verify the accuracy of the unit and the integrity of the current loop with the OPTICHECK tool for on-site verification.

3.) Self-diagnostics: Internal checks of all outputs and displays.

4.) In-situ calibration verification: The equipment shall be able to verify in a quantifiable manner the meter’s current conditions versus the meter’s condition when originally manufactured. This calibration verification of the meter shall be performed without need for physical access to the flow sensor unit.”
SECTION 08900 – LOUVERS AND VENTS

PART 1 – GENERAL

1.1 DESCRIPTION:

A. Furnishing of all labor, materials, tools and equipment necessary for installation of the penthouse gravity ventilator covered in this section and the Project Drawings, and as needed for a complete and proper installation.

1.2 SUBMITTALS:

A. Product Data: Include manufacturer's product specifications, technical support data, installation and maintenance recommendations and standard details, including flashing methods, hardware and accessories.

B. Shop drawings shall indicate materials, thicknesses, profiles, accessories, connection and dimensions.

C. Calculations: Submit a minimum of 2 sets of calculations stamped by a structural engineer licensed in the State of Hawaii.

D. Manufacturer to provide samples upon request; sized to represent material adequately.

E. Warranty: Submit executed copy of ventilator assembly Manufacturer's Warranty.

1.3 FABRICATOR QUALIFICATIONS:

A. A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units within the project schedule.

B. Welding: Qualify procedures and personnel according to the following:


3. AWS D1.6, “Structural Welding Code – Stainless Steel.”

C. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
1.4 **DELIVERY, STORAGE, AND HANDLING:**

A. Delivery: Deliver materials to Project site in manufacturer’s original, sealed and labeled packaging with manufacturer’s name, product brand name and type, date of manufacture, and directions for storing.

B. Storage: Store materials in a dry area indoors, protected from damage and in accordance with manufacturer’s instructions for protection of units.

C. Handle all materials in such a manner as to preclude damage to finish or unit.

1.5 **PROJECT CONDITIONS:**

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by the manufacturer.

B. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

C. The Contractor shall verify that other trades with related work are complete before installing pre-fabricated component(s). Mounting surfaces shall be straight and secure; substrates shall be of proper width. Refer to construction documents, shop drawings, and manufacturer's installation instructions.

1.6 **DESIGN PERFORMANCE:**

A. Design of ventilator frame structure and connection to the roof slab/curb shall meet the wind load requirements per the 2006 edition of the International Building Code.

1.7 **WARRANTY:**

A. The warranty of this equipment is to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at the Manufacturers’ option when returned to Manufacturer, transportation prepaid.

**PART 2 – MATERIALS**

2.1 **FABRICATED GRAVITY VENTILATOR:**

A. Description and Features: The ventilator is low silhouette for intake applications with natural gravity or negative pressure system.
B. Hood and Base:

1. Shall be aluminum, constructed of precision formed, arched panels with interlocking seams. Vertical end panels are fully locked into hood end panels. Curb cap has pre-punched mounting holes for installation.

C. Bird Screen:

1. Constructed of ¼” aluminum mesh, and mounted horizontally across the intake area of the hood.

D. Insect Screen:

1. Constructed of fine mesh aluminum, fitted above the bird screen, but not over the top of the throat.

E. Filters

1. Shall be mounted in open end racks for easy removal.

2. Washable 2-inch aluminum mesh designed to remove contaminants from the air.

F. Manufacturers: Examples of manufacturers meeting the above requirements:


2. Approved equal

G. Fasteners: Provide stainless steel, epoxy adhesive, or other materials warranted by the manufacturer to be non-corrosive and compatible with trim, hardware, anchors and other components of louver unit. Where fasteners screw-anchor into frame members less than 0.125 inches thick, reinforce the interior to receive screw threads, or provide standard, non-corrosive, pressed-in, splined grommet nuts.

H. Anchors, Clips and Accessories: Fabricate anchors, clips and accessories of non-magnetic stainless steel. Anchors, clips and louver accessories fabricated of hot-dip zinc coated steel or iron may be used for concealed work.

2.2 FABRICATION REQUIREMENTS:

A. Fabricate to minimize field adjustments, splicing, mechanical joints and field assembly nuts.
B. Preassemble units to greatest extent possible and disassemble as necessary for shipping and handling.

C. Clearly mark units for reassembly and coordinated installation.

D. Join frame-to-frame connections by welding in shop, and frame and lade members to one another by riveting, except where field bolted/screwed connections between frame members are necessary due to size of louver.

E. Maintain equal blade spacing to produce uniform appearance.

PART 3 – EXECUTION

3.1 INSTALLATION:

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete inserts, through-bolts, and other connectors. For pre-fabricated items secure as recommended by Manufacturer.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

C. Provide items that are to be built into concrete, or similar construction in a timely manner, not to delay progress of construction.

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are designed to be bolted or screw field connections.

PART 4 – PAYMENT

No separate payment for will be made; compensation for such work shall be deemed to be included in the Lump Sum Bid for the item of which it is a part.

END OF SECTION
DEPARTMENT OF HAWAIIAN HOME LANDS
KAU WATER SYSTEM IMPROVEMENTS - PHASE 1
KAU, HAWAII, HAWAII
IFB-20-HHL-019
STATE OF HAWAII
111 S. KING STREET, SUITE 170
808.523.5866
HONOLULU, HAWAII 96813
WWW.G70.DESIGN

RESERVOIR INFLUENT CONTROL VALVE STATION
FOUNDATION PLAN

SECTION - A
BASE PLAN

SECTION - B
BASE PLAN

GRAPHIC SCALE: 1/8" = 1'-0"

DEPARTMENT OF HAWAIIAN HOME LANDS
STATE OF HAWAII
KAU WATER SYSTEM IMPROVEMENTS - PHASE 1
KAU, HAWAII, HAWAII
IFB-20-HHL-019
RESERVOIR INFLUENT CONTROL VALVE STATION
FOUNDATION PLAN & SECTIONS

GTO
RESERVOIR GENERAL NOTES

1. **CONCRETE** - Materials
   - **Plain Concrete**
     a. **Plain Concrete** should be used in areas where no special strength or resistance to abrasion is required.
     b. **Concrete** should be designed to meet the requirements of the AASHTO M 153 standard for plain concrete.
   - **Fibrous Concrete**
     a. **Fibrous concrete** is used in areas where increased durability and resistance to abrasion are required.
     b. **Concrete** should be designed to meet the requirements of the AASHTO M 153 standard for fibrous concrete.

2. **Concrete** is a natural hardening material that begins to harden once it is mixed with water and allowed to cure.

3. **Concrete** mix design should be based on the project-specific requirements.

4. **Concrete** is a common building material used for structures such as sidewalks, driveways, and foundations.

5. **Concrete** is a mixture of cement, sand, water, and aggregate, which is poured into a mold and allowed to harden over time.

6. **Concrete** is a popular choice for construction because of its durability and ability to withstand weathering.

7. **Concrete** is used in a variety of applications, including building foundations, roads, and bridges.

8. **Concrete** is a versatile material that can be used in both commercial and residential construction.

9. **Concrete** is a material that requires careful consideration of the design and construction process.

10. **Concrete** is a key element in the structural integrity of any building or structure.

11. **Concrete** is a material that is widely used in the construction industry due to its strength and durability.

12. **Concrete** is a material that requires proper curing to achieve optimal performance.

13. **Concrete** is a material that is susceptible to cracking, which can be mitigated through proper design and construction techniques.

14. **Concrete** is a material that can be customized to meet specific requirements through the use of different aggregates.

15. **Concrete** is a material that is used in a variety of applications, including foundations, slabs, and structural elements.

16. **Concrete** is a material that is susceptible to damage from exposure to water and chemicals.

17. **Concrete** is a material that requires careful consideration of the environment in which it is used.

18. **Concrete** is a material that is used in a variety of construction applications, including roads, bridges, and buildings.

19. **Concrete** is a material that is widely used in the construction industry due to its strength and durability.

20. **Concrete** is a material that is susceptible to cracking, which can be mitigated through proper design and construction techniques.

21. **Concrete** is a material that can be customized to meet specific requirements through the use of different aggregates.

22. **Concrete** is a material that is used in a variety of applications, including foundations, slabs, and structural elements.

23. **Concrete** is a material that is susceptible to damage from exposure to water and chemicals.

24. **Concrete** is a material that requires careful consideration of the environment in which it is used.

25. **Concrete** is a material that is used in a variety of construction applications, including roads, bridges, and buildings.
FENCE GATE POST CONNECTION

FENCE POST STRINGER CONNECTION

FENCE BRACE TO WALL CONNECTION

FENCE BRACE TO FENCE POST CONNECTION

FENCE GATE ELEVATION

1. GATE SHALL BE CONSTRUCTED SUCH THAT GATE IS PROPERLY SUPPORTED BY FENCE POSTS. ALL JUNCTIONS BETWEEN GATE, POSTS, AND BRACES SHALL BE CONSTRUCTED OF ALUMINUM ALLOY.

2. ALL CONNECTING JIGS AND HARDWARE SHALL BE MADE OF ALUMINUM.

3. FENCE POSTS SHALL BE 5/16" REINFORCED ALL ALUMINUM POST. ALL JUNCTIONS BETWEEN ALUMINUM POSTS, WALLS, AND FENCE BRACES SHALL BE CONSTRUCTED OF ALUMINUM ALLOY.

4. WHERE APPLICABLE, WELDING OF ALUMINUM BRACES TO WALLS OR SEPARATE ALUMINUM POST OR BRACES OR MATERIALS FROM DIFFERENT MATERIALS.

5. PROVIDE DOORWAY SIDE FENCE, LOADING BAY SIDE FENCE IN THE FIELD.
WATER LEVEL INDICATOR

TYPICAL CABLE PIPE THROUGH ROOF
3. **OVERALL SCADA SYSTEM SCHEMATIC DIAGRAM**

1. SCADA SYSTEM SCHEMATIC DIAGRAM