

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ADDENDUM NO. 1**

**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 22, 2021, is hereby POSTPONED until 2:00 P.M. HST, MONDAY, November 29, 2021. The attached NOTICE TO BIDDERS dated r11/12/21 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 HlePRO until 2:00 P.M. HST, Thursday, November 18, 2021.

**B. SPECIFICATIONS**

1. Replace Special Provision Section 627 dated 10/21/21 with the attached Special Provision Section 627 dated r10/29/21.
2. Replace Special Provision Section 639 dated 8/5/21 with the attached Special Provision Section 639 dated r11/3/21.
3. Replace Special Provision Section 695 dated 10/19/21 with the attached Special Provision Section 695 dated r11/10/21.

**C. PROPOSAL SCHEDULE**

1. Replace Proposal Schedule page P-8 to P-18 dated 10/19/21 with the attached revised Proposal Schedule page P-8 to P-20 dated r11/10/21.

**D. PLANS**

1. Replace Plan Sheets No. 2, 18, 19, 29, 30, 32, 33, 34, 40, 41, 42, 45 and 46 with the attached revised Plan Sheets No. ADD. 2, ADD. 18, ADD. 19, ADD. 29, ADD. 30, ADD. 32, ADD. 33, ADD. 34, ADD. 40, ADD. 41, ADD. 42, ADD. 45 and ADD. 46.

The following is provided for information.

**E. PRE-BID MEETING MINUTES**

1. Attached are the November 1, 2021 Pre-bid Meeting Minutes and Attendance Sheet for your information.

**F. ANSWERS TO QUESTIONS FROM PROSPECTIVE BIDDER**

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

**G. STORM WATER POLLUTION PREVENTION PLAN (SWPPP)**

1. Attached is the SWPPP for this project.

**H. AS-BUILT PLANS**

1. Attached are as-built plans for "Interstate Route H-1, Halawa Interchange to Middle Street Interchange, Non Potable Water System (Halawa Interchange to Keehi Interchange), Federal Aid Interstate Project No. IR-H1-1(211)" final inspection dated September 1991.

Please acknowledge receipt of this Addendum No. 1 by recording the date of its receipt in the space provided on page P-4 of the Proposal.



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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 HlePRO, scheduled for 2:00 P.M., November 22, 2021, is hereby POSTPONED UNTIL 2:00 P.M., MONDAY, November 29, 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., November 29, 2021, is hereby POSTPONED UNTIL 2:00 P.M., MONDAY, December 6, 2021.



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JADE T. BUTAY  
Director of Transportation



1 Make the following section a part of the Standard Specifications:  
2

3 **“SECTION 627 – RADAR VEHICLE SENSING DEVICE SYSTEM**  
4

5 **627.01 Description.** This work includes furnishing labor, materials, tools,  
6 machinery, and equipment necessary to install a new Radar Vehicle Sensing Device  
7 System (RVSD System) complete in place according to the Contract. The Contractor  
8 shall make improvements as shown in the Contract, including the following:  
9

10 (A) Provide for traffic counting and classification operations by installing a new  
11 RVSD System, including conduit, cable wiring, and two controller cabinets.  
12

13 (B) Provide underground conduit systems including trenching and structural  
14 excavation. Furnish and install the controller cabinets and excavation warning  
15 signs on a post. Provide backfilling and restoration work required to install the  
16 RVSD System and restore other improvements at the site.  
17

18 (C) Coordinate work with and arrange for inspection of work by the Engineer.  
19 Arrange for a representative from the RVSD System to assist in installation.  
20

21 (D) Conduct required testing of the RVSD System. Submit acceptance test  
22 procedures and criteria for acceptance test results to the Engineer. Notify the  
23 Engineer a minimum of 1 week before the date scheduled for testing.  
24

25 (E) Turn over to the Engineer one complete and operating RVSD System  
26 according to the Contract.  
27

28 Furnish and install incidental parts necessary to complete the RVSD System as though  
29 such parts were in the Contract.  
30

31 **627.02 Materials.** Electrical equipment shall conform to the National Electrical  
32 Manufacturer's Association (NEMA) Standards and this Contract. Materials and  
33 workmanship shall conform to the National Electric Code (NEC), General Order Nos. 6  
34 and 10 of the Hawaii Public Utilities Commission, ASTM standards, the ANSI, and  
35 applicable revisions for all the above codes, standards, and local ordinances that may  
36 apply.  
37

38 (A) **RVSD System.** RVSD System shall consist of two RVSD sensors, one  
39 for Eastbound lanes and one for Westbound lanes, each connected to  
40 three 4-channel contact closure modules which shall then be connected to  
41 a Cabinet Interface Device (CID). The RVSD sensors shall be mounted on  
42 a single new aluminum pole at a height and lateral offset distance to  
43 detect all traffic in all Eastbound and Westbound lanes. The contact  
44 closure modules and CID shall be housed in a controller cabinet. The



RVSD sensor units shall be shipped with field-replaceable surge cards installed, and cable connectors for terminating the sensor cables. The contact closure modules shall each be capable of detecting vehicles in two lanes of traffic. The CID shall be a module that provides power and surge protection and that communicates with the contact closure modules, Ethernet, and controllers through Synchronous Data Link Control (SLDC) protocol. The CID shall be shipped with a DC pluggable terminal block, an Ethernet cable, and a blank field-replaceable surge card cover. The RVSD System shall meet the following conditions:

- (a) Provide per-lane interval data: volume, average speed, occupancy, classification counts, 85th percentile speed, average headway, average gap, speed bin counts, and direction counts for user-configurable time intervals for up to 22 lanes of traffic.
- (b) Provide up to eight length-based classification bins.
- (c) Provide up to 15 speed bins.
- (d) Provide speed, length, class, lane assignment, and range data for each vehicle detection.
- (e) Provide presence data for up to 22 lanes of traffic.
- (f) Maximum Lanes: Provide presence data for up to 22 lanes of traffic simultaneously.
- (g) Detection Range: Be able to detect and report information in lanes with boundaries as close as 6 feet lateral offset from the RVSD sensor. The RVSD System shall be able to detect and report information in lanes located within the far boundary at 250 feet lateral offset from the RSVD sensor and be able to simultaneously detect and report information from a lane located at the minimum offset from the sensor.
- (h) Lane Size and Spacing: Allow any spacing of traffic lanes positioned from the minimum offset to the maximum range. Gore and unequally sized or spaced lanes shall be handled so that detections from the lanes meet all performance specifications.
- (i) Barrier Performance: Detect vehicles with the specified accuracy in lanes that are adjacent to a barrier when 50% of a sedan is visible over the barrier from the point of view of the RVSD sensor.



(j) Volume Accuracy: Report volume data within 5% of truth for a direction of travel during nominal conditions. Individual lane volume data shall be within 10% of truth during nominal conditions. The percentage of missed detection and the percentage of false detections for each lane shall not exceed 15% during nominal conditions. Nominal conditions exist when average speeds are greater than 10 mph in every lane; when there is less than 20% truck traffic per lane; and when at least 50 cars per lane are counted in the interval. The RVSD System shall detect a minimum separation of 5.5 feet between two vehicles depending on vehicle speed and range.

(k) Speed Accuracy: Average speed data shall be accurate to within 3 mph for any direction of travel when there are more than five cars per lane in an interval. Average speed data for any individual lane shall be accurate to within 3 mph when there are more than five cars per lane in an interval. The RVSD System shall provide per-vehicle speed measurements on 95% of vehicles that are not occluded by other vehicles or by barriers. The RVSD System shall provide per-vehicle speed measurements in which 90% of the measurements are within 5 mph and shall measure speed using a dual-radar speed trap that calculates the time delay between two different radar beams.

(l) Occupancy Accuracy: Occupancy data shall be within 10% of truth for any direction of travel on a roadway during nominal conditions. For example, if the true occupancy in a lane is 20%, then the measured occupancy shall be between 18% and 22%. Individual lane occupancy shall be within 20% during nominal conditions. Nominal conditions exist when true occupancy is less than 30%, without merging traffic; when average speeds are greater than 10 mph in every lane; and when there is less than 20% truck traffic per lane.

(m) Classification Accuracy: The RVSD System shall correctly determine classification for 80% of detected vehicles when the classification bins are at least 10 feet wide and occupancy of all lanes is below 30%.

(n) Performance Maintenance: The RVSD sensors shall not require cleaning or adjustment to maintain performance. The RVSD System shall not rely on battery backup to store configuration information, thus eliminating any need for battery replacement.



Once the RVSD System is calibrated, it shall not require recalibration to maintain performance unless the roadway configuration changes. The RVSD System shall be manufactured using techniques that will yield a mean time between failures of 10 years.

(o) Physical Properties: The RVSD sensors shall not exceed 3 pounds in weight and 14 inches by 6 inches by 4 inches in physical dimensions. All external parts of the RVSD System shall be ultraviolet-resistant, corrosion-resistant, and protected from fungus growth and moisture deterioration. The RVSD sensors shall be housed in Lexan polycarbonate enclosures. The enclosures shall be classified "f1" outdoor weatherability in accordance with UL 746C and shall be IP66 rated. The RVSD sensor enclosures shall be classified as watertight according to the NEMA 250 standard for type 4X enclosures and shall conform to test criteria set forth in the NEMA 250 standard for type 4X enclosures. Test results shall be provided for each of the following type 4X criteria:

- Hose-down (NEMA 250 clause 5.7).
- 4X corrosion protection (NEMA 250 clause 5.10).
- Gasket (NEMA 250 clause 5.14).

The RVSD sensors shall be able to withstand a drop of up to 5 feet without compromising functional and structural integrity. Each enclosure shall include a M12 T-code male connector. The MIL-DTL-26482 connector shall provide contacts for all data and power connections.

The CID module shall be installed on a shelf inside one of the two controller cabinets and shall not exceed 3 pounds in weight and 8 inches by 4 inches by 7 inches in physical dimensions. The CID shall operate in the temperature range of -29° F to 165° F, and in humidity up to 95% Relative Humidity. The CID shall be shelf mounted in the controller cabinet.

(p) Power: The RVSD sensors shall consume less than 25 W each and operate with a DC input between 37 VDC and 60 VDC. The CID module power supply voltage shall be 24 VDC. The CID shall provide the DC power to the two RVSD sensor units. Power shall be provided to the CID by a solar power system with panels mounted on the same aluminum pole as the sensor units.



(q) Connections and Communication: The RVSD sensors shall communicate to the CID in the controller cabinet via Ethernet over single twisted-pair lead cables. The RVSD sensors shall have the capacity to upgrade the firmware over the Ethernet port. The RVSD sensor's Ethernet shall operate at a speed of 10/100 Mbps.

The CID shall include the following connections for power and communication:

- Power and surge: The CID shall have a DC input terminal block. A power switch on the back of the device shall turn off power to the device. The CID shall have a surge ground lug for connecting to earth ground. The CID's DC power input shall conform to the IEC/EN 61000-4-5 level 3 surge immunity standard. Surge protection for the CID's sensor ports shall be provided by manufacturer-installed field-replaceable surge cards that conform to the IEC/EN 61000-4-5 level 4 surge immunity standard.
- Ethernet: The CID shall have two RJ-45 10/100 jacks on the front of the device for wired Ethernet communications to other system devices, or for onsite configuration. The CID shall have one RJ-45 10/100 jack on the back of the device for wired Ethernet communications to the HDOT traffic monitoring network.
- SDLC: The CID shall have an SDLC port on the front of the device for connecting to SDLC-compatible controllers.
- Serial: The CID shall have two RJ-11 jacks on the front of the device for RS-485 communications.
- Connections to sensors: The CID shall have two slots for plugging in field-replaceable surge cards. These manufacturer-installed cards shall provide a spot for termination of sensor cables, as well as protecting the device from surges on those cables.
- Other features: The CID shall have illuminated indicators that show when data are being transmitted and received on the Ethernet, serial, SDLC and sensor ports. The CID shall have a +/-5 ppm real-time clock with super capacitor backup.



The CID shall support time synchronization from GPS, NTP, or a real-time clock.

(r) Support: The RVSD manufacturer shall provide both training and technical support services.

1. Training - The manufacturer-provided training shall be sufficient to fully train installers and operators in the installation, configuration, and use of the RVSD System to ensure accurate RVSD System performance. The manufacturer-provided training shall consist of comprehensive classroom labs and hands-on, in-the-field, installation and configuration training. Classroom lab training shall involve presentations outlining and defining the RVSD System, its functions, and the procedures for proper operation. These presentations shall be followed by hands-on labs in which trainees shall practice using the equipment to calibrate and configure a virtual RVSD System. To facilitate the classroom presentation and hands-on labs, the manufacturer-provided training shall include the following items:

- Knowledgeable trainer or trainers thoroughly familiar with the RVSD System and its processes.
- Presentation materials, including visual aids, printed manuals and other handout materials for each trainee.
- Computer files, including video and raw data, to facilitate the virtual configuration of the RVSD System.
- Laptop computers or mobile devices with the necessary software and all necessary cables, connectors, etc.
- All other equipment necessary to facilitate the virtual configuration of the RVSD System.

Field training shall provide each trainee with the hands-on opportunity to install and configure the RVSD System at roadside. Training shall be such that each trainee will mount and align the RVSD sensors correctly.



A virtual meeting, e.g., MS Teams, Zoom, GoToMeeting may be chosen by the Engineer in place of an in-person meeting for training at no additional cost or contract time.

2. Technical Assistance - Manufacturer-provided technical support shall be available according to contractual agreements, and a technical representative shall be available to assist with the physical installation, alignment, and auto-configuration of each supplied RVSD System. Technical support shall be provided thereafter to assist with troubleshooting, maintenance, or replacement of RVSD System components, should such services be required.

(s) Documentation: RVSD System documentation shall include a comprehensive user guide as well as an installer quick-reference guide and a user quick-reference guide.

(t) FCC Testing: The RVSD System sensors and CID shall be certified by the Federal Communications Commission (FCC) under CFR 47, part 15, subpart B and section 15.249 as an intentional radiator. The FCC certification shall be displayed on an external label on each RVSD sensor enclosure and on the CID according to the rules set forth by the FCC. The RVSD System shall comply with FCC regulations under all specified operating conditions and over the expected life of the RVSD System.

(u) NEMA TS 2-2016 Testing: The RVSD System shall comply with the applicable standards stated in the NEMA TS 2-2016 Standard. Third-party test results shall be made available for each of the following tests:

- Shock pulses of 10 g, 10 ms half sine wave.
- Vibration of 0.5 g up to 30 Hz.
- 300 V 10  $\mu$ s positive/negative pulses high repetition.
- 600 V positive/negative pulses low repetition.
- 1000 V positive/negative unpowered non-destruct transient.
- Power interruption <300 ms.



- Operation at 165.2° F and 89 VAC.
  - Operation at 165.2 F and 135 VAC.
- (v) Manufacturer Testing: Before shipping, the RVSD System shall pass a manufacturer's test.
- (w) Test Results: The RVSD System manufacturer shall supply the following test results at the time of the bid submittal:
- Volume accuracy data, including performance analyses for:
    - Free-flowing traffic.
    - Traffic with a lane roughly 8 feet beyond a 4-foot high concrete barrier.
    - 6-foot and 240-foot lateral offset (simultaneous).
  - Speed accuracy test data for both per-vehicle and average speed.
  - Occupancy accuracy test data.
  - Vehicle classification test data.
  - Auto-configuration documentation.
  - FCC CFR 47 certification.
  - NEMA 250 standard for Type 4X Enclosure third-party test data.
  - NEMA TS 2-2016 standard third-party test data.

The RVSD System shall be warranted free from material and workmanship defects for a period of five years from date of shipment.

- (B) **Mounting Pole and Foundation.** The Contractor shall provide a mounting pole that meets the conditions of Section 760.01 (A), "Aluminum Poles" of the Standard Specifications. The mounting pole and its foundation shall be as shown in the Contract Documents and shall have a factory-installed internal vibration damper. The radar sensors shall be mounted on the pole such that their vertical positions can be adjusted for



optimum performance of the RVSD System. The pole shall also allow for field-adjustable mounting of the solar power panel(s).

(1) **Pole and Foundation Design.** The Contractor shall design the aluminum pole and drilled shaft foundation in accordance with the latest edition of *AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals* as modified by *HDOT Changes to Design Criteria for Bridges and Structures Memorandum* dated January 8, 2018. The Contractor shall submit shop drawings for the aluminum pole and drilled shaft foundation such that they are stamped by a Hawaii licensed structural engineer.

(C) **Conduits.** The Contractor shall use PVC-coated galvanized steel electrical conduits for all exposed construction. PVC conduits shall be used for all underground construction. All new direct-burial PVC conduits shall be Schedule 80. PVC conduits under pavement and at utility crossings shall be concrete encased. Concrete-encased PVC conduits can be Schedule 40. Trenched conduits shall conform to Standard Plan TE-36, or as directed by the Engineer. Installation of conduits must comply with Chapter 6-73, Hawaii Administrative Rules, "Installation, Operation, and Maintenance of Overhead and Underground Electrical Supply and Communication Lines," and be installed in areas under pavement before the new pavement is placed.

(1) **Steel Conduits.** Steel conduits shall meet the conditions of Section 712.27 (D), "Rigid Steel Conduit PVC Coated" of the Standard Specifications.

(2) **Plastic Conduits.** Plastic (PVC) conduits shall meet the conditions of Section 712.27 (B), "Plastic Conduits" of the Standard Specifications.

(3) **Duct Sealing Compound.** Duct (Conduit) sealing compound shall meet the conditions of Section 712.27 (E), "Duct Sealing Compound" of the Standard Specifications.

(D) **Controller Cabinets.** The new RVSD System cabinets shall consist of two ground-mounted cabinets on reinforced-concrete foundations similar to an M-Type cabinet, capable of housing and securing all required communications and control equipment necessary for the RVSD System and the other electronic components of the traffic monitoring station. The two cabinets shall be mounted side by side as shown on the Contract Documents. One cabinet will contain the CID and its required batteries



and power components. The other cabinet will contain the rest of the traffic monitoring station electrical and electronic components.

**(E) Solar Power.** Solar power shall meet the following conditions:

- (1)** Power to the cabinets shall be provided via 12-volt batteries connected from a solar panel assembly. The solar power system supplying power to the CID shall operate at 24 VDC and be able to charge the system's batteries such that the CID can provide uninterrupted power of at least 60 W at maximum DC current of 8.5 A to the radar sensors. The solar power system supplying power to the other controller cabinet's electronics shall operate at 12 VDC and be able to provide uninterrupted power of at least 200 W. The batteries of these solar power systems shall be able to supply uninterrupted power to the CID and controller cabinet electronics for a minimum of 3 days without charging by the solar panels.
- (2)** Power supply surge protection devices and solar charge controllers shall be furnished by the Contractor.
- (3)** The Contractor shall provide a complete solar panel assembly consisting of a minimum of one or more solar panels, associated support brackets, and wiring to the cabinets as shown on the plans or described in these specifications. The solar panels shall be mounted below and on the same pole as the radar sensors. The bottom of the solar panels and bracket assembly shall be at least 8 feet above finished grade. The solar panel assembly shall be positioned to receive the maximum daily exposure to the sun. The solar panel assembly and pole shall be able to withstand winds up to 108 mph gusts without damage or permanent deformation.
- (4)** The Contractor shall submit shop drawings of the complete solar panel assembly and system prior to ordering materials. Shop drawings shall include information on wiring, solar panels, and associated supports.

**(F) Excavation Warning Signs.** The Contractor shall furnish and install warning signs and appropriate mounting adjacent to the sensor lead-in cable runs or as close as possible to the cables as indicated in the Contract Document. Signs and mountings shall conform to the requirements of Section 750.02 - Sign Posts, of the Standard Specifications and Standard Plan TE-01, and Contract Document. Sign posts shall be no more than 20 feet from the controller cabinets. Signs



shall be 12 inches wide by 18 inches high. Bottom of signs shall be at 8 feet above finished grade. Sign text shall read as follows:

WARNING  
BURIED TRAFFIC MONITORING LINES  
NOTIFY HWY-PLANNING BRANCH AT  
(808) 587-6352 BEFORE DIGGING OR EXCAVATION

The first line shall be a minimum of 2 inches in height. Subsequent lines of text shall be 1 inch in height. No border is necessary, but a minimum margin of 1/4 inch shall be maintained. For the letters and background, use black and yellow (non-retro-reflective) paints, respectively. The first line of text shall be centered. Subsequent lines shall also be centered; however, the Contractor shall have the option to move the wording within these lines to allow for best fit. Furnishing warning signs, mounting, and installation shall be incidental to the Contract.

- (G) Other Materials.** Other materials shall meet the requirements specified in the following sections of the Standard Specifications:

Structural Concrete                      Section 601

Reinforcing Steel                        Section 602

Trench Backfill Material              Subsection 703.21

**627.03 Construction Requirements.**

- (A) Equipment List and Drawings.** Submit within 7 days following Contract award, two copies of materials and equipment purchase requisition, including copies of the equipment list, manufacturer's brochures, catalog cuts, and shop drawings to the Engineer for acceptance.

Order materials and equipment immediately upon acceptance by the Engineer. If the Contract award is rescinded by the Department after ordering of materials and equipment, the Department will purchase ordered materials and equipment at cost based on invoices. Purchase price will include transportation cost and applicable State excise taxes. Purchase price will not include profit.

Upon completion and acceptance of work, submit an 'As Built' or corrected plan showing in detail any construction changes per Section 648, "Field Posted Drawings."



- 483       **(B) Excavation and Backfill.** Excavate and backfill in accordance with  
484       Section 204, "Excavation and Backfill for Miscellaneous Facilities." Place  
485       the material from the excavation to prevent damage and obstruction to  
486       vehicular and pedestrian traffic and interference with surface drainage.  
487
- 488       **(C) Installation.** The Contractor shall notify the State and schedule a meeting  
489       at least 14 days prior to any construction activity. Installation of the RVSD  
490       System shall be in accordance with the manufacturer's guidelines and  
491       recommendations. The State shall install new traffic monitoring equipment  
492       and electronics, including the CID, in the controller cabinets after the  
493       installation of the cabinets and the RVSD sensors and their lead cables.  
494       All work installed in areas under pavement must be completed before new  
495       pavement is placed.  
496
- 497       **(1) Foundations.**  
498
- 499               **(a)** Construct foundations as indicated in the Contract  
500               Document. Foundations within the clear zone, as defined by the  
501               AASHTO *Roadside Design Guide*, including anchor bolts, shall not  
502               extend more than 4 inches above the surrounding ground.  
503
- 504               **(b)** Set forms true to correct line and grade. Use rigid forms,  
505               securely braced in place. Place conduit ends and anchor bolts in  
506               proper position and height and hold in place with rigid top template.  
507               In addition to rigid top template, hold anchor bolts in place by  
508               means of rigid bottom template made of steel. Bottom template  
509               shall provide proper spacing and alignment of anchor bolts near  
510               their bottom embedded end. Install bottom template before placing  
511               footing concrete. Anchor bolts installed more than 1:40 from vertical  
512               will be rejected. Hold conduit ends and anchor bolts in place by  
513               template until concrete sets. Cure concrete not less than 72 hours.  
514
- 515               **(c)** Mix, place and cure concrete for foundations in accordance  
516               with Section 601, "Structural Concrete," and Section 503, "Concrete  
517               Structures" of the Standard Specifications.  
518
- 519       **(2) Controller Cabinets.**  
520
- 521       Mount the RVSD System controller cabinets on their foundations  
522       side by side, with the back of the cabinets parallel to and facing the  
523       highway, to allow viewing of cabinet electronics and passing traffic  
524       simultaneously. Set the cabinets at the required locations as shown  
525       in the Contract Document or as ordered by the Engineer. The



controller cabinets shall be secured on the foundations with 1/2 inch by 4-1/2 inch stainless steel wedge anchors.

**(3) Conduits.**

**(a)** Conduits shall not drain towards the controller cabinet.

**(b)** Make directional changes in the conduits, such as bends and changes to clear obstructions with curved segments using accepted deflection couplings or with short lengths of straight conduits and couplings. The deflection angle between two adjacent lengths of conduits shall not exceed 6 degrees. The bends shall not have a radius of less than 12 times the nominal size of the conduit. The Contractor may use factory-made ells.

**(c)** Cut the rigid PVC conduits with a hacksaw. Square and trim the ends after cutting to remove rough edges. The connections shall be of the solvent-weld type. Make the solvent-weld joints according to the conduit manufacturer's recommendations and as accepted.

**(d)** All above-ground exposed conduits shall be PVC-coated galvanized rigid steel conduits.

**(e)** Seal the ends conduits with plugs at the end of each day of work, whenever problems interrupt the conduit installation work, and whenever conduits are subject to submergence in water.

**(f)** Keep the conduits clean during construction.

**(g)** Conduits under pavement and at utility crossings shall be trenched and concrete encased, per Standard Plan TE-36. Metallic Excavation Warning Tape shall be placed above the conduit per Standard Plan TE-36.

**(h)** Use only hand shovels in compacting concrete encasements. Cure the concrete for at least 72 hours before permitting vehicular traffic to run over the concrete.

**(i)** Give the exterior portions of the direct-burial steel conduits not encased in concrete two coats of asphaltic base paint.

**(j)** The entire length of a conduit run between the pole and the cabinet or between cabinets shall be of one type of material unless



specified elsewhere in the Contract Document or as directed by the Engineer.

(k) The completed conduits shall be subject to a field test. Pass a bullet-shaped test mandrel about 14 inches long with a diameter 0.5 inch less than the inside diameter of the conduits through the entire length of each conduit run. The Engineer will consider scouring found on the mandrel deeper than 1/32 inch an indication of burrs and/or obstructions in the conduit run. Normal abrasion between the conduit line and bottom of mandrel is not an indication of burrs and/or obstructions in the conduit run. Remove such burrs and/or obstructions. Pass the test mandrel through again. Repeat the process until the Contractor gets a satisfactory result.

(l) Provide each conduit run with a No.10 gauge flexible, zinc-coated pull wire (or 1/8-inch polyester or polyolefin pull wire) extending through its entire length. Double an additional 5 feet back into the conduit at each end of the run. Plug the conduits and sleeves temporarily.

#### **(4) Wiring.**

(a) Wiring shall conform to the appropriate articles of the NEC. Arrange the wiring within assemblies and cabinets neatly. Wiring installed underground must be in conduits—no direct burial. Before the final installation of cables in conduits, pull a wire brush, swab, and mandrel through each conduit, to ensure that extraneous matter has been removed, and to verify that the conduit system is clean and free from obstructions.

(b) Handle the cables with great care to avoid damage to the conductors or the jacket. 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. Do not leave wires or cables under tension nor tight against bushings or fittings.

(c) Remove damaged ends resulting from the use of pulling grips soon after pulling conductor and cable. Temporarily tape or cap cable ends to exclude moisture. The cable ends shall remain protected until the Contractor attaches the terminal equipment. The Contractor shall submit brochures for cable connections in terminal cabinets for acceptance.



(d) The Contractor shall permanently tag and label all lead-in wires and cables in the cabinets according to the Contract.

**(D) Bonding and Grounding.**

- (1) Secure metallic conductor and cable sheaths and conduits mechanically and electrically to form a continuous system.
- (2) Ground system in accordance with the NEC and as specified herein. Provide No. 8 AWG copper wire or equivalent copper strap of same cross-sectional area for bonding and grounding jumpers.
- (3) Ground conduits and neutral wires at service points as required in accordance with the NEC, using No. 6 AWG or equal for grounding conductors.
- (4) Install copper-clad steel or pure copper ground rod, 5/8-inch diameter by 8 feet long, inside each controller cabinet foundation.
- (5) Connect grounding rods with No. 6 AWG wire to No. 8 AWG ground wire loop and power system neutral.

**(E) Inspection and Testing.**

- (1) **Before Installation.** The equipment shall be given requisite factory tests and inspected by the contractor upon receipt to determine that the workmanship and materials are free from defects.
- (2) **After Installation.** The equipment shall be tested in accordance with the manufacturer's testing guidelines and requirements. Correct any defects discovered as a result of the RVSD System tests at no additional cost to the State.
- (3) **Acceptance of RVSD System.** The RVSD System shall not be accepted and payment shall not be made until the system has successfully met the required testing and test results have been submitted to the State within 30 calendar days from the completion of RVSD System installation.

- (F) Restoring Pavements and Other Improvements.** Restore pavements and other improvements that are not to have new pavement placed back to their original condition, existing pavements, and other improvements, such as driveways, sidewalks, curbs, and gutters, disturbed by excavation.



Concrete pavements, improvements, e.g., driveways, sidewalks, curbs, and gutters, must be replaced to the nearest joint closest to the edges of excavation. Use replacement material equal to or better in quality than existing materials. Match existing grades, thickness, texture, and color whenever applicable.

- (G) Warranty.** Provide new material and equipment for permanent construction. Furnish copies of manufacturer's warranty or warranties guaranteeing equipment free from defects in materials, design, and manufacturing, for not less than 12 months from the date of acceptance and as stated in Subsection 108.17 "Guarantee of Work." If there is a conflict between Subsection 108.17 and this Section, the requirement that benefits the State the most shall be applied. The Engineer will solely decide which requirement benefits the State in the situation. Adjust or repair material and equipment under warranty within 24 hours from time of notification. Temporarily replace under-warranty material and equipment requiring factory corrections within 24 hours from time of notification. Install factory-corrected or new material and equipment no later than 30 days from time of notification.

**627.04 Method of Measurement.** The RVSD System will be paid for on a lump sum basis. Measurement for payment will not apply.

**627.05 Basis of Payment.** The Engineer will pay for the accepted RVSD System on a lump sum basis. Payment will be full compensation for the work prescribed in this section and the Contract Document.

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

Pay Item	Pay Unit
RVSD Systems	Lump Sum

**END OF SECTION 627"**



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(l) Amend **639.04 – Measurement** by revising lines 88 to 89 to read as follows:

**(II) Amend 639.05 – Payment** by revising lines 91 to 101 to read as follows:

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

Pay Item	Pay Unit
Reconstruct Existing Asphalt Concrete Gutter ( ____ Feet)	Linear Foot
Reconstruct Existing Asphalt Concrete Gutter Transition	Linear Foot"

**NH-H1-1(275)**  
**639-1a**

**Addendum No. 1**  
**r11/3/21**



1 Make the following section a part of the Standard Specifications:  
2

3 **“SECTION 695 – PROJECT VEHICLES**  
4

5 **695.01 Description.** This work shall consist of furnishing and maintaining  
6 vehicles as specified hereinafter, for use by State personnel or as directed by the  
7 Engineer.  
8

9 **695.02 General Requirements.**  
10

11 **(A) Responsibility of the Contractor.**  
12

13 The Contractor shall:  
14

15 (1) Maintain each vehicle in a good and safe operating condition at  
16 all times.  
17

18 (2) Provide complete maintenance of all vehicles including  
19 supplied accessories. This shall include but not be limited to, tune-  
20 ups, all types of lubrication work, all types of adjustments, all repairs  
21 requested by the Engineer and other related service work thereto.  
22

23 (3) Perform all repair and/or replacement work, including repair  
24 and replacement of tires. Repair and/or replacement work shall be  
25 performed in such a manner that the vehicle shall be equivalent to  
26 what it was when originally supplied, i.e. material used in the repair  
27 and/or replacement work shall be equal to or better than what was  
28 originally supplied on the vehicles.  
29

30 (4) Provide all oil and lubricants necessary for the mentioned  
31 maintenance and service work.  
32

33 (5) Respond to all trouble calls and requests for repairs  
34 immediately, but no more than three hours after the request or at a  
35 time designated by the State. Respond to all trouble calls and  
36 requests for repairs wherever the vehicle is located. This shall include  
37 the pickup and delivery of the vehicle during and after working hours  
38 including Saturdays, Sundays, and holidays at the location designated  
39 by the State.  
40

41 (6) Provide another vehicle in kind as a replacement any time a  
42 vehicle is detained by the Contractor or a vehicle is damaged or  
43 inoperable due to an accident or other causes. A replacement for  
44 every vehicle detained or out of service shall be provided within 24  
45 hours unless otherwise directed by the Engineer.  
46

47 (7) Provide all labor, equipment, tools, materials, and supplies



necessary for all required maintenance and service work.

(8) Comply with all State and City and County safety ordinances, regulations, and inspections. The Contractor shall bear the cost of all fees necessary to meet these requirements.

(9) Provide insurance coverage for all furnished vehicles including but not limited to bodily injury liability, property damage liability, comprehensive loss damages, collision or upset, or other damages. Insurance coverage shall be valid anywhere in the State of Hawaii.

Automobile bodily injury and property damage liability insurance shall not be less than the following limits:

**Bodily Injury Liability:**

\$1,000,000 each occurrence

**Property Damage Liability:**

\$1,000,000 each occurrence

The Contractor shall submit to the Engineer within fifteen (15) days from the date of award of the contract three (3) copies each of insurance certification, stating that the Contractor has taken out the aforementioned coverages with the State of Hawaii named as additional insured. The Contractor shall provide a copy of a valid no-fault insurance card for each vehicle.

(10) Provide and bear the cost thereof, all safety checks, license plates, and all fees and taxes in connection with the vehicle.

(11) Provide two (2) complete sets of keys for each vehicle supplied.

(12) Provide a charge card for each vehicle to be used by the State to fuel vehicle at a local area gas station.

**(B) Responsibility of the State.**

(1) The State will park vehicles after working hours at the Project Field Office.

(2) The State will retain fuel receipts to be provided to the Contractor at a time interval mutually agreed by the State and the Contractor.



95 **695.03 Delivery and Inspection.**

96  
97 The Contractor shall deliver all vehicles to the State Project Field Office. The  
98 vehicles shall be delivered on the Notice to Proceed date or at a later date as  
99 designated by the Engineer.

100  
101 A joint inspection of the vehicles shall be done by representatives of the  
102 Contractor and the State before acceptance of the vehicles. The State will document  
103 any deficiencies found, and the Contractor will remedy those deficiencies to the  
104 satisfaction of the State.

105  
106 **695.04 Termination.** The Contractor shall furnish and maintain the vehicles for  
107 use by the State from the delivery date to the date of the Engineer's approval of the  
108 final monthly estimate or as determined by the Engineer.

109  
110 **695.05 Liquidated Damages.** If the Contractor fails to furnish the vehicles  
111 within the time specified herein, including conditions described in Subsection  
112 695.02A(5)&(6), then damages will be sustained by the State. The amount of such  
113 damages resulting from loss of project management duties will be fixed at the sum  
114 of One Hundred Dollars (\$100.00) per vehicle for each and every calendar day,  
115 including weekends and holidays. The State may deduct such amount thereof from  
116 any monies due or that may become due the Contractor under this contract.

117  
118 **695.06 Vehicles to be Furnished for this Project.** The vehicles furnished and  
119 maintained shall be new at the beginning of the contract, shall be unmarked, and be  
120 a 2-door white midsize pickup truck. Estimated usage is 400 miles per month.

121  
122 **695.07 Measurement.** The Engineer will measure project vehicles per  
123 vehicle/month.

124  
125 **695.08 Payment.** The Engineer will pay for the accepted project vehicles at the  
126 Contract unit price per vehicle/month.

127  
128 The Engineer will pay for the following pay item when included in the  
129 proposal schedule:

Pay Item	Pay Unit
Project Vehicle (1 vehicle)	Months"

130  
131  
132  
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134  
135  
136  
137 **END OF SECTION 695**



<b>PROPOSAL SCHEDULE</b>					
<b>BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
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.	\$ <u>50,000.00</u>
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	\$ _____	\$ _____



<b>PROPOSAL SCHEDULE</b>					
<b>BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
401.3000	HMA Pavement, Mix No. V, Leveling	630	Tons	\$ _____	\$ _____
401.4000	Pavement Smoothness Incentive	Allowance	Allowance	Allowance	\$ <u>49,950.00</u>
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.	\$ _____	\$ _____
415.4000	Planing Pavement Profile	F.A.	F.A.	F.A.	\$ <u>166,250.00</u>
416.1000	Paving Grid	6,505	S.Y.	\$ _____	\$ _____
417.1000	Paving Grid for Cold-Planed Surface	F.A.	F.A.	F.A.	\$ <u>20,000.00</u>
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.	\$ _____	\$ _____
606.2000	MGS End Treatment	2	Each	\$ _____	\$ _____



## PROPOSAL SCHEDULE

### BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
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.	\$ _____	\$ _____
629.1210	8-Inch Pavement Striping (Thermoplastic Extrusion)	1,936	L.F.	\$ _____	\$ _____



<b>PROPOSAL SCHEDULE</b>					
<b>BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
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	\$ _____	\$ _____
631.2040	Warning Sign (More than 10 Square Feet) with Post(s)	3	Each	\$ _____	\$ _____



<b>PROPOSAL SCHEDULE</b>					
<b>BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
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.	\$ <u>275,000.00</u>
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.	\$ <u>50,000.00</u>
645.0100	Traffic Control	L.S.	L.S.	L.S.	\$ _____



<b>PROPOSAL SCHEDULE</b>					
<b>BASE BID (ALL WORK IN THE OUTBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
645.0200	Additional Police Officers and Additional Traffic Control Devices	F.A.	F.A.	F.A.	\$ <u>230,000.00</u>
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.	\$ <u>250,000.00</u>
695.1000	Project Vehicle (1 vehicle)	21	Months	\$ _____	\$ _____
696.1000	Maintenance of Trailers	F.A.	F.A.	F.A.	\$ <u>50,000.00</u>
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					\$ _____



<b>PROPOSAL SCHEDULE</b>					
<b>ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
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.	\$ <u>50,000.00</u>
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	570	Tons	\$ _____	\$_____



<b>PROPOSAL SCHEDULE</b>					
<b>ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
401.4000	Pavement Smoothness Incentive	Allowance	Allowance	Allowance	\$ <u>51,050.00</u>
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.	\$ _____	\$ _____
415.4000	Planing Pavement Profile	F.A.	F.A.	F.A.	\$ <u>183,250.00</u>
416.1000	Paving Grid	6,530	S.Y.	\$ _____	\$ _____
417.1000	Paving Grid for Cold-Planed Surface	F.A.	F.A.	F.A.	\$ <u>20,000.00</u>
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	\$ _____	\$ _____
606.3000	Trailing End Anchorage	4	Each	\$ _____	\$ _____



<b>PROPOSAL SCHEDULE</b>					
<b>ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
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	\$ _____	\$ _____
629.3012	Pavement Word (Thermoplastic Extrusion)	2	Each	\$ _____	\$ _____



## PROPOSAL SCHEDULE

### ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
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	\$ _____	\$ _____
632.0300	Mile Post Marker with Post	4	Each	\$ _____	\$ _____



<b>PROPOSAL SCHEDULE</b>					
<b>ADDITIVE ALTERNATE (ALL WORK IN THE INBOUND DIRECTION)</b>					
<b>ITEM NO.</b>	<b>ITEM</b>	<b>APPROX. QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>AMOUNT</b>
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.	\$ <u>220,000.00</u>
657.1000	Handling and Disposal of Contaminated or Hazardous Items and Material	F.A.	F.A.	F.A.	\$ <u>250,000.00</u>
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 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 project control budget and must be within the project control budget.

The bidder with the lowest aggregate amount, within the 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 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.



## **November 1, 2021 PRE-BID MEETING MINUTES**

**Subject:** Interstate Route H-1 Rehabilitation,  
Salt Lake Boulevard to Airport Viaduct,  
Island of Oahu  
Federal-Aid Project No. NH-H1-1(275)

**Attendees:** See attached list of attendees.

- A. The meeting was called to order by Robert Loo (HDOT Project Engineer) at about 10:00 a.m. to brief the prospective bidders for the subject project.
- B. Bidders were reminded, anything said at this meeting is for clarification only. The bid documents shall govern over anything said and discrepancies shall be clarified by addendum.
- C. Bidders were reminded of the scope of work for the project: cold planing, resurfacing, full depth reconstruction, reconstruction of existing asphalt concrete gutters, replacing existing guardrails, installing pavement markings, signs, median and shoulder rumble strip, milepost reference markers, and radar traffic counting system, utility adjustment, and removal of existing invasive Opiuma trees.

- D. Special reminders were made:

Pavement work will generally be limited to the weekends. See Special Provisions Section 645 – Work Zone Traffic Control and the provisions of the Noise Variance for restrictions on lane closures, work hours, and equipment.

Advance notification and coordination will also be required with the public and our Zipper Lane Operators. Please refer to Section 697 – Public Communication and Coordination and Section 645 – Work Zone Traffic Control for details respectively.

- E. OCR wants bidders to be aware of DBE requirements

- F. Questions:

- 1. So this project has a base bid in an additive alternate and is evaluated based on the total sum of the base bid and the additive alternate. However, the state reserves the right to award only the base bid. So is this 3.7% based on the contract value of the entire bid? And what happens if you only award the base bid, because then that percentage goes up right?

**The DBE goal is just calculated on the base bid. Bidders only have to show 3.7% of the value of the base bid for the DBE forms that they submit. We can clarify this in addendum as well (Addendum 1).**



2. I don't see a line item in the proposal schedule for their radar vehicle, sensing system.

**RVSD Systems is line item 627.1000. We would like to note that we're still working out some of the details for the RVSD of which we'll try to clarify them in addendum. If you submit your questions via HlePRO we can respond to them officially as well.**

3. Is 627.1000 for RVSD Systems on the additive alternate schedule as well?

**We will check and clarify. (RVSD Systems is not on the additive alternate schedule. The project only calls for RVSD Systems to be installed on the Outbound, Base Bid portion of this project)**

4. OK and then there's on the additive alternate schedule. There are 2 proposal numbers 606.3000. The description is different, but the item number is the same.

**We will check and clarify. (To fix this issue, Transition Section Type Thrie Beam to MGS Guardrail has been assigned to Item No. 606.4000 in Addendum 1)**

5. For DBE goal totals we shouldn't include any of the alternate items?

**The 3.7% DBE goal is going to be based on the base bid only (so alternate items won't count toward that)**

6. For so the current bid date for this project is the 22nd of November, which is a Monday, and the 25th is Thanksgiving. This is normally do 5 days after bid opening, so can you clarify if the bid or these forms are due on the 26th which is a Friday or the 29th which is a Monday.

**In this case the forms would be due on Monday. (However the Bid has been postponed. With the Bid Opening pushed back to November 29, 2021, the forms in question would be due Monday, December 6, 2021)**

G. Additional Comments:

1. **Attached are RFIs and responses for your information.**

E. Meeting was adjourned at about 10:21 am.



## HIGHWAYS DIVISION

### PRE-BID MEETING ATTENDANCE

**SUBJECT:** Interstate Route H-1 Rehabilitation, Salt Lake Boulevard to  
Airport Viaduct  
Island of Oahu

**FED-AID PROJECT NO.:** NH-H1-1(275)

**DATE, TIME & PLACE:** November 1, 2021; 10:00 A.M.  
Pre-offer conference held virtually

Microsoft Teams

NAME	OFFICE	TELEPHONE
Robert Loo	HWY-DD	808 692-8438
Li Nah Okita	HWY-DD	808 692-7581
Jillian Chen	HWY-DD	808 692-8439
Peter Chan	HWY-T	808 692-7680
Melanie Martin	OCR	808 831-7912
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John Griffin Jr.	Pacific Isles Equipment Rental,	808 630-4962
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Kevin Yamabayashi	Maui Kupono Builders, LLC	808-292-6781
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Ceria Milissa	Kiewit Infrastructure West Co.	808-840-3282
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Jason Ames	Grace Pacific, LLC	808-748-3881
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**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 HlePRO. Questions and responses are as follows:

1. Sheet 45 - The drawing shows the Radar Traffic Sensor pole and cabinets but does not show any conduits/cables for the pole and cabinets. Please show on the drawing the conduits and cables for the cabinets and pole if there are any.

**Response:**

**Sheet 45 will be revised to show the conduit connecting the pole and cabinets. There will be a 2" PVC sch 80 between the west cabinet and the pole foundation, and a conduit directly between the west and east cabinet, also 2" PVC. Sheet 43 shows both conduits being underground and passing through the concrete foundations in a 90-deg sweep, so that cables don't snag on sharp bends. In the pole foundation it would require one 90-deg sweep connecting to a straight segment. Depth of burial, sweep radius, and other details of these conduits would presumably be determined by the contractor based on the actual situation in the field. Standard Plan TE-35 would govern this situation, so burial could be as shallow as 2' minimum cover. If the two cabinets are very close to each other, the conduit between them would be essentially a half circle made of two 90-deg sweeps. Another possible option is to connect the two cabinets with a straight section of above-ground galvanized steel conduit, but the underground connection is preferred. The cables coming from the pole are the two sensor unit cables and one or two power cables from the solar panels. The cable coming from the west cabinet to the east cabinet would be an RS-485 serial ethernet cable and one power cable. See Addendum No. 1.**

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.

**Response:**

**Will be addressed in Addendum No. 2.**



3. Sheet 46 - Note 2 says "Refer to State Standard Specifications Section 511 for drilled shaft concrete properties". Please confirm that crosshole sonic log testing, trial shafts, load testing, integrity testing and construction method log as mentioned in Spec Section 511 are not required for this job.

**Response:**

**We are confirming that crosshole sonic log testing, trial shafts, load testing, integrity testing and construction method log as mentioned in Spec Section 511 are not required for this job.**

4. Sheet 46 - Note 3 says "See B-01 for additional notes". Where/what is B-01?

**Response:**

**This is Standard Plan B-01 which contains detailed notes about the concrete in foundations and concrete construction in general terms. Note 3 will be revised to say "See Standard Plan B-01 for additional notes". See Addendum No. 1.**

5. The pre-bid meeting indicated that the DBE goal will be based on the base bid only, will items A and B on the Contract Goal Verification and Good Faith Efforts Documentation be changed to indicate that it is for the base bid only?

**Response:**

**The form will not be amended. The bidders should calculate the DBE project goal on the base bid amount only, and include DBEs that will perform work on the base bid scope and not any additional work. Further, mobilization, force account and allowance items should not be included in the DBE goal calculation.**

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?

**Response:**

**For areas where the thickness will become less than 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.**

7. Sheet 19 Detail "Reconstruction of Existing Asphalt Concrete Gutter Type 7 Varies". Which bid item will this section be paid under?

**Response:**

**Added new pay Item No. 639.3000 - Reconstruct Existing Asphalt Concrete Gutter Transition. See Addendum No. 1.**



8. Section 694 - Moveable Steel Barrier, is ZoneGuard Steel Barrier system approved equal?

**Response:**

**ZoneGuard steel barrier has passed MASH TL-3 test and is acceptable to use. However, ZoneGuard steel barrier may not be as portable (movable) as Vulcan barrier.**

**The Contractor should evaluate his selection of barrier based on the need to periodically move (deploy/store) the portable barrier during reconstruction of the settled areas.**

9. Is T13 SLED end treatment By Traffix Devices approved end treatment for the Steel Barrier?

**Response:**

**The SLED end treatment has passed MASH crash test. However, the Contractor would need to confirm barrier attachment compatibility.**

10. Due to the 10" thickness of the asphalt layers in the reconstruction areas and the time constraints of getting off the highway, there may be times where the asphalt doesn't have sufficient time to cool. If needed, will the State allow the contractor to spray water over the surface to help cool the surface temperature after compaction has been achieved?

**Response:**

**Water is not allowed to cool the surface.**

11. For item 630.0150 Exit Sign can you please clarify if the material for this sign is extruded aluminum or flat sheet aluminum?

**Response:**

**The sign material should be flat sheet aluminum.**

12. For item 630.0150 Exit Sign can you please clarify the quantity of 106 SF - if there are three signs 7.5'x6', 9'x6', & 9'x6' = 141 SF?

**Response:**

**The project proposal schedule will be revised using the following sign SF quantities:**

**OUTBOUND:**

**Item No. 630.0150 New Exit Signs (Ground Mounted) with three 2-1/2" Square Tube Posts (for sign width greater than 60") - 96 SF**

**Item No. 630.0250 Overlay Panel for Zipper Lane Signs (Overhead Mounted) - 32.5 SF**



**INBOUND:**

**Item No. 630.0150 New Exit Signs (Ground Mounted) with three 2-1/2" Square Tube Posts (for sign width greater than 60") - 45 SF**

**Item No. 630.0200 Overlay Panel for Destination Signs (Overhead Mounted) - 336 SF**

13. On sheet 4 Note #32 it says for all material generated from the project it is to be considered solid waste, would it not be more environmentally responsible and acceptable to recycle the guardrail and sign metal materials then take to the land fill? Can the metal guardrail and sign materials removed be exclude from this note?

**Response:**

**Assuming the question was intended for Note #37 on Sheet 4, we understand the desire to recycle metals parts and sign materials. The intent of Note #37 is to minimize the potential for illegal dumping of solid waste. If allowed by the Engineer, the Contractor is responsible for furnishing documentation of any materials diverted for recycling purposes.**

14. General Provisions Section 107.01 (I) (A) Obligation of Contractor, line 13-15 states that the contractor must maintain all insurance policies until final acceptance. Builder's risk coverage ends upon Substantial Completion or when the Work is put to its intended use, whichever occurs earlier. It is not equitable to require the Contractor to carry builders' risk past Substantial Completion, into the Planting and Plant Establishment Period. We recommend adding the following to recognize insurance industry practices: "The Contractor shall maintain and ensure all insurance policies are current for the full period of the contract until final acceptance of the work by the State. This requirement excludes builders' risk, which will end at substantial completion."

**Response:**

**Bid per the specifications. No changes shall be made to the specifications.**

15. General Provisions Section 107.01 (I) (B) (4) requires builders risk insurance for the full replacement value of the project work. Contractor requests confirmation that it is acceptable to have sub-limits for the perils of Earthquake and Flood, as this is common practice in the insurance market. Contractor suggests Earthquake and Flood sub-limits of \$25 million.  
Bid per the specifications.

**Response:**

**No changes shall be made to the specifications.**



16. General Provisions Section 108.16 requires the Contractor to maintain the Risk of Loss or Damage until the written notice of final acceptance has been received. Per Section 108.14, Final Acceptance is when the Engineer finds that the Contractor has satisfactorily completed all contract work in compliance with the contract including all plant establishment requirements, and all the materials have been accepted by the State, the Engineer will issue a Final Acceptance Letter. While we acknowledge our responsibility to maintain and protect the plant work after Substantial Completion, we specifically cannot accept the risk of loss for all Work during the 9-month Plant Establishment Period. Builder's risk coverage ends upon Substantial Completion or when the Work is put to its intended use, whichever occurs earlier. It is not equitable to give the Contractor the risk for loss(es) it cannot insure. Contractor's risk of loss should end upon Substantial Completion or at the point the Work is put to its intended use by the State, whichever is earlier. Please amend to: "Contractor's Responsibility for Work; Risk of Loss or Damage. Until the written notice of final acceptance has been received Substantial Completion or when the Work is put to its intended use, whichever occurs earlier, the Contractor shall take every precaution against loss or damage to any part of the work from any cause whatsoever, whether arising from the performance or from the non-performance of the work. The Contractor shall rebuild, repair, restore, and make good all loss or damage to any portion of the work resulting from any cause before its receipt of the written notice of final acceptance Substantial Completion or when the Work is put to its intended use, whichever occurs earlier and shall bear the risk and expense thereof."

**Response:**

**Bid per the specifications. No changes shall be made to the specifications.**

17. For the 3 each "Joint Base PHH" overlay signs what pay item are these signs to be paid under?

**Response:**

**Item 630.0200 Overlay Panel for Destination Signs (Overhead Mounted).**

18. Please provide utility profiles for existing underground utilities.

**Response:**

**Refer to general notes #15. As-built plans for existing non-potable water line will be provided in Addendum No. 1.**

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

**Response:**

**Will be addressed in Addendum No. 2.**



20. Please confirm if contractor is allowed to temporarily restripe all 5 existing lanes to 10' wide, on both the outbound and inbound directions.

**Response:**

**H-1 Inbound: all 5 existing lanes could be restriped during construction to 10' wide minimum.**

**H-1 Outbound: because of the Zipper lane operation, the two existing lanes (i.e., 11' and 14.5') adjacent to the median must remain unchanged. Other 3 lanes could be restriped during construction to 10' wide minimum.**

21. Sheet 3, General Notes and Legend, note 4 states; "Contractor staging and storage areas identified in the environmental documents have been permitted for NPDES and Noise Variance..." Please provide said environmental documents.

**Response:**

**The NPDES permit (NGPC and CWB NOI) and Noise Variance were included in the HiePRO solicitation and available for download. The SWPPP was not included in the original HiePRO solicitation and will be included in Addendum No. 1.**

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.

**Response:**

**The restriction is lifted during daytime working hours.**

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).

**Response:**

**The contractor shall obtain a noise permit for work during daytime hours. Refer to general notes #2.**



24. Please confirm that portable concrete barrier meeting NCHRP-350 Test Level 3 rating is an acceptable substitution for the metal barrier specified in Section 694 - Moveable Steel Barrier.

**Response:**

**The use of Portable concrete barrier (PCB) is allowed. However, PCB may not be as portable (movable) as metal barriers.**

**The Contractor should evaluate his selection of barrier based on the need to periodically move (deploy/store) the portable barrier during reconstruction of the settled areas.**

25. The RVSD system drawings do not show any physical pathway that may be used for a wired connection to HDOT traffic monitoring network. Please clarify if the contractor is to provide conduit to the nearest communication pullbox or a cellular modem under this contract.

**Response:**

**This would be a cell comms station which we would remotely access via a cell modem in the east cabinet. No wired connection.**

26. For item 630.0250 Overlay panel for zipper lane signs (overhead mount) can you please clarify the quantity of 36 SF - if there are 5 each of 13" x 72" = 936 SF = 6.5 SF for a total of 32.5 SF?

**Response:**

**Item No. 630.0250 Overlay Panel for Zipper Lane Signs (Overhead Mounted) - 32.5 SF.**

27. Sheet 43 Note 7 calls for AC power connected to dual outlet boxes mounted on inside wall of the cabinets. However, the solar power system to supply power to the cabinets is only specified to supply 12V and 24V DC power. Please clarify whether the intention is to supply AC power from nearby highway lighting circuit or by means of an inverter system.

**Response:**

**Solar power only, no AC connection to highway lighting or other HECO connection. Note 7 on sheet 43 was incorrectly left in and will be deleted. See Addendum No. 1.**

28. Are both Contact Closure modules and Cabinet Interface Devices (CID) required?

**Response:**

**They are both required. The CID sends data to the contact closure devices, which then sends to our controller electronics that we communicate with via cellular modem inside the east cabinet. We anticipate the CID and contact closure modules will both be housed in the west cabinet.**



29. How is the data from the RVSD being transmitted to the controller? Via Contact Closures or via the CID or Other?

**Response:**

**See response to Prebid RFI question #28.**

30. The RVDS spec calls out for solar power which is to power the CID but the plans call out 120VAC to be in the traffic cabinets, which is where the CID is to be mounted? Could the RVSD system just be powered by the AC power?

**Response:**

**See response to Prebid RFI question #28; original plans assumed HECO power service and HTEL DSL line connection for comms. Then, we learned that a DC-powered suitable CID unit was coming on the market, so we switched the plan from a utility-connected station to an autonomous solar/cellular configuration.**

31. RVSD spec calls out for item to be powered by 37VDC to 60VDC input power, but the spec states the solar system shall provide 24VDC to the CID which will power the RVSD and the solar will also provide 12VDC to other cabinet electronics? Which electronics? Can the solar/DC voltage power be clarified?

**Response:**

**The DC-powered version of the CID requires input 24VDC, which would come from the solar system. Then in turn the CID supplies power to the sensor units in the 37VDC – 60VDC range they operate on. The other cabinet electronics in the east cabinet actually operate on 12VDC. Where we have cabinets with a 120VAC power source, we have to convert to 12VDC for the electronics which process and transmit the data to us. It may be necessary to have the solar panels supply 24VDC and 12VDC in separate circuits.**

32. Concerning SP Section 645-10a, please confirm that on weekends 2 lanes can be shut down completely from Friday night to Monday morning. Also please confirm that 3 lanes can be shut down completely from Saturday night to Monday morning. Finally please confirm that all lanes can be shut down completely from Sunday morning to Monday morning.

**Response:**

**Tables in Section 645 listed the number of lanes, both inbound and outbound, that could be closed (shut down) during the allowable lane closure hours specified. Full-closure in one direction is an option allowed. Please see Sec. 645.03(F) for additional lane closure restrictions and stipulations.**



33. Please clarify if the DBE goal is just for the base bid.

**Response:**

**Yes, the DBE goal is to be calculated for the base bid.**

34. Will separate DBE forms be required for the base bid and the additive?

**Response:**

**No, DBE forms will only be required for the base bid.**

35. Concerning SP Section 645-10a, what is the cost of the 12 weekend Zipper lane barrier deployments. Can contractors perform this work themselves? Who can we contact to get this cost?

**Response:**

**The deployment of Zipper Lane barrier would require specialized equipment. The Contractor shall coordinate with the Zipper Lane operator and Tunnel Manager (Oahu District's Tunnel Operations Section) at 485-6208 six (6) weeks prior to any work affecting the ZLDA and its operations.**

36. What is the State's intent with regard to Bid Item 401.3000 – HMA Pavement Mix No. V, Leveling?

**Response:**

**The Mix V leveling course is to get the pavement to near finish grade for the travel lanes at the beginning of construction to make the work on specific areas easier and without grade changes.**

37. Bid Item 303.1000 Light Aggregate - This aggregate cannot be locally sourced; is there another product that can be substituted for this glass aggregate?

**Response:**

**There is no local source at this time. There are sources in Japan, East US, and Europe. There is no alternative material.**