

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS**

**ADDENDUM NO. 1
FOR
TRAFFIC SIGNAL MODERNIZATION, OAHU, PHASE 2
DISTRICT OF HONOLULU
ISLAND OF OAHU
FEDERAL-AID PROJECT NO. STP-0300(213)**

NOVEMBER 7, 2024

This Addendum shall make the following amendment(s) to the Solicitation:

A. TABLE OF CONTENTS

1. Delete **TABLE OF CONTENTS**, dated 12/21/22, in its entirety and replace with the attached **TABLE OF CONTENTS** dated 11/7/2024.

B. SPECIFICATIONS

1. Delete **SECTION 627 – TRAFFIC MONITORING AND SIGNAL CONTROL SYSTEM**, dated 6/25/24, in its entirety and replace with the attached **SECTION 627 – TRAFFIC MONITORING AND SIGNAL CONTROL SYSTEM**, dated 11/07/24.
2. Add and make a part of the specifications the attached **SECTION 770 – TRAFFIC SIGNAL MATERIALS**, dated 11/7/2024.

C. PROPOSAL SCHEDULE

1. Delete **PROPOSAL SCHEDULE** Pages P-8 through P-20, dated 7/17/24, and replace them with the attached **PROPOSAL SCHEDULE** pages P-8 through P-20, dated 11/7/2024.

D. PLANS

1. Delete **PLAN SHEET NO. 79 DUCT LINE & PULL BOX PLAN** and replace them with attached **PLAN SHEET NO. ADD. 79 DUCT LINE & PULL BOX PLAN**.
2. Delete **PLAN SHEET NO. 80 CONDUIT-CABLE SCHEDULE** and replace them with attached **PLAN SHEET NO. ADD. 80 CONDUIT-CABLE SCHEDULE**.

3. Delete **PLAN SHEET NO. 85 TRAFFIC MONITORING AND SIGNAL CONTROL PLAN** and replace them with attached **PLAN SHEET NO. ADD. 85 TRAFFIC MONITORING AND SIGNAL CONTROL PLAN**.
4. Delete **PLAN SHEET NO. 86 TRAFFIC MONITORING AND SIGNAL CONTROL PLAN** and replace them with attached **PLAN SHEET NO. ADD. 86 TRAFFIC MONITORING AND SIGNAL CONTROL PLAN**.

The following is provided for information:

E. PRE-BID MEETING MINUTES

1. The attached **PRE-BID MEETING MINUTES** are provided for information and includes a list of attendees.

F. RESPONSES TO REQUEST FOR INFORMATION (RFI's/QUESTIONS)

1. The attached **RESPONSES TO REQUEST FOR INFORMATION** are provided for your information.

Please acknowledge receipt of this **ADDENDUM NO. 1** by recording the date of its receipt in the space provided on the **PAGE P-4** of the Proposal.



BRYAN J. KIMURA
Traffic Branch Head

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1 Make the following section part of the Standard Specifications:

2
3 **"SECTION 627 – TRAFFIC MONITORING AND SIGNAL CONTROL SYSTEM**

4
5 **627.01 Description.** This section describes furnishing, installing, modifying, or
6 replacing traffic monitoring and signal control systems.

7
8 The work shall involve integrating traffic signal systems into the following
9 two traffic operations/management centers, using Internet Protocol (IP) based
10 communications:

11
12 H-3 Traffic Operations Center (TOC)
13 Hawaii Department of Transportation (HDOT)
14 State of Hawaii

15
16 Joint Traffic Management Center (JTMC)
17 Department of Transportation Services (DTS)
18 City & County of Honolulu
19

20 The traffic monitoring and signal control system shall consist of remotely
21 controlled closed-circuit television (CCTV) cameras, remote video switching, IP
22 based communications, cellular modem, and a fiber optic inter-connect system.
23 The local traffic signal control system will transmit data over two (2) single-mode
24 fiber strands through a 100/1000/10000 base T/FX Internet Protocol switch.

25
26 The work shall include:

27
28 **(A)** Performing investigation work to determine the set-up and layout of
29 the existing traffic monitoring system, including fiber optic cable route within
30 conduits and pull boxes, whether the fiber optic cable connects to or
31 provides service to existing equipment beyond the project limits, and how
32 the fiber optic cable connects to the JTMC.

33
34 **(B)** Furnishing and installing a fully operational traffic monitoring and
35 signal control system.

36
37 **(C)** Furnishing and installing equipment into traffic signal controller
38 cabinets to facilitate traffic signal control from the JTMC.
39

40 **627.02 Materials.** All traffic monitoring equipment, signal control equipment,
41 fiber optic cables, fiber optic equipment, and software shall be identical and/or
42 compatible with DTS's and HDOT's existing traffic monitoring and signal control
43 systems.

44
45 **(A) Traffic Monitoring and Signal Control Assembly.** The assembly
46 shall include all necessary equipment/licenses to receive/transmit video and

47 data to the TOC and JTMC; including Fiber Housing / Patch Panel with
48 Bulkhead SC Connectors, Network Switch, IP Encoder, cabinet, and
49 foundation.
50

51 The assembly shall be supplied with a foundation for the cabinet.
52 The foundation shall be furnished and installed per Section 623 – Traffic
53 Signal System.
54

55 The assembly shall be supplied with Model 332A cabinet. Each
56 332A cabinet shall meet the following additional requirements:
57

58 (1) Cabinets shall be fabricated from 0.125-inch-thick anodized
59 aluminum.
60

61 (2) Cabinet shall be supplied with:
62

63 (a) 50-amp circuit breaker
64

65 (b) A rack mounted 6 outlet surge-protector power strip
66

67 (c) Thermostatic control fan
68

69 (d) 19-inch rack
70

71 (e) Best Lock (City & County of Honolulu keyed) security
72 tumbler door locks of solid brass rim and include 4 keys
73

74 (f) Remote data port with monitor and control, stand
75 alone, all connectors and cables included
76

77 (g) Rack mounted 72 fiber optic splice capacity tray
78

79 (h) Rack mounted 72 fiber optic SC jumper connector
80

81 (i) Inline surge protection device with 120V AC, 3-wire,
82 20-amp, with operating temperature of -40 to 85 degree C,
83 maximum surge current of 30,000 amps, surge voltage of
84 10,000 volts, 138 volts for clamping voltage, power indicator,
85 open circuit for fail safe operation, and protection shall be
86 between line to neutral, line to ground, and ground to neutral.
87

88 **(B) Network Switch.** EtherWan EX78900X Series hardened managed
89 12-port gigabit PoE and 4-port 10G SFP+ ethernet switch or approved
90 equal. The switch shall meet the following requirements:
91

92 (1) Environmentally hardened switch including operating without
93 a ventilation fan; resistant to impacts and electrical noise; and
94 operating temperature range shall meet or exceed -40°F to +167°F
95 (-40 °C to +75°C).

96
97 (2) For use with either conventional CAT 6 copper or optical
98 transmission media.

99
100 (C) **IP Encoder.** Marshall Electronics VS-103E-3GSDI 1080p60 Full HD
101 Video encoder with Embedded Audio or approved equal. The encoder shall
102 meet the following requirements:

103
104 (1) Environmentally hardened switch including operating without
105 a ventilation fan; resistant to impacts and electrical noise; and
106 operating temperature range shall meet or exceed -40°F to +167°F
107 (-40 °C to +75°C).

108
109 (2) For use with either conventional CAT 6 copper or optical
110 transmission media.

111
112 (D) **Fiber Optic Cable.** Corning ALTOS® Loose Tube, Gel-Free, All-
113 Dielectric, Cables with Binderless FastAccess® Technology 72 F, SMF-
114 28® Ultra Fiber, Single-Mode (OS2) or approved equal.

115
116 Fiber optic cable shall meet the following requirements: suitable for
117 outdoor use, polyethylene jacketed, gel-free, loose buffer tubes, all-
118 dielectric, single-mode (OS2), 72 strand; and meet specifications
119 ANSI/ICEA S-87-640, Telecordia GR-20, and RDUP PE-90.

120
121 Polyethylene jacket shall be marked with the manufacturer's name,
122 year of manufacture, the words "optical fiber cable", fiber count, type of fiber,
123 and sequential linear foot markings. Repeat the markings every 3 feet. The
124 marking shall be in a contrasting color to the cable jacket. The marking
125 shall be 2.5 mm in height and must be permanent weatherproof and shall
126 not wear off during the installation in the underground conduits.

127
128 The shipping, storage, installation, and operating temperature range
129 of the cable shall meet or exceed -20 °F to +155 °F (-29 °C to +60°C).

130
131 Fiber optic cable shall contain color coded buffer tubes with 12 single
132 mode color-coded fibers per buffer tube. Each buffer tube shall contain a
133 water blocking element for water-blocking protection. The water blocking
134 elements shall be non-nutritive to fungus, electrically non-conductive. The
135 buffer-tube shall be gel-free. Buffer tubes shall be color-coded with the
136 following colors: blue, orange, green, brown, slate, and white.

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The fiber strands shall be Corning SMF-28 ® Ultra Fiber or approved equal with maximum allowable attenuation of 0.35 dB/km for 1310 nm and 0.25 dB/km for 1550 nm. Fiber strands shall be color-coded with the following colors: blue, orange, green, brown, slate, white, red, black, yellow, violet, rose, and aqua.

(E) Fabric Subduct. Maxcell MXC2003 (2-inch, 3-Cell) or approved equal.

(F) Category 6 Cable. Category 6 Ethernet cable shall be for outdoor use.

(G) CCTV Camera Assembly. The assembly shall include all necessary equipment (camera, mount, cables, etc.) and materials for operation.

Camera assembly shall be furnished with components assembled, complete, and a ready-to-install system.

The positioning device shall include true day-night with variable speed pan and tilt technology with a minimum sensitivity of 0.0 lux @30 IRE. The camera shall provide up to 5 independent output video streams configurable for H.264 and MJPEG and analog video output, electronic image stabilization, and wide dynamic range.

The CCTV Camera and mount shall meet the following requirements:

- (1) Camera Imaging**
 - (a)** Image Sensor: Progressive Scan CMOS
 - (b)** Image Size: Diagonal 6mm
 - (c)** Image Resolution: 1920 horizontal x 1080 vertical pixels
 - (d)** Picture Elements (total) 1920 (H) x 1440 (V)
 - (e)** Sensitivity: Scene Illumination; F1.4 @ 50% Video
0.4 Lux (0.04 fc) @ 1/30 shutter, color mode 498
0.0025 Lux (0.00025 fc) @ ½ shutter, mono mode
 - (f)** Day/Night Operation: Adjustable (Auto, Color and Mono Modes)

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- (g)** Optical Zoom Range: 30x, minimum
- (h)** Digital Zoom: 1x to 12x in 1x increments. The camera system shall support digital zoom limit setting.
- (i)** Auto Focus: Selectable Auto/Manual; Minimum Scene Illumination for Reliable Auto Focus shall be no more than 50% video output.
- (j)** Auto Iris; Selectable auto/manual; Iris shall automatically adjust to compensate for changes in scene illumination to maintain constant video level output.
- (k)** Electronic Image Stabilization: Shall support On/Off mode
- (l)** Backlight Compensation: Shall support On/Off mode
- (m)** White Balance: Shall support Auto/Manual mode
- (n)** IR Correction: Shall support On/Off mode
- (o)** Sharpness: Shall provide user control of increases or decreases in image sharpness through 4 user selectable settings of soft, normal, sharp and sharpest.

(2) H.264/MJPEG Encoding Engine

- (a)** The video encoding shall allow the following possible video stream configurations:
 - 1. H.264 Streams: 1920x1080 @ 30fps, 1280x720 @ 30 fps, 720x480 @ 15 fps
 - 2. MJPEG Streams: 1920x1080 @ 10 fps, 1280x720 @ 20 fps
 - 3. Analog Video Output: (1).
- (b)** Each video encoder channel shall provide the following configurable properties:
 - 1. Codec.
 - 2. Video frame shall be adjustable from 30 fps to 1 fps in increments of 1 fps.

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3. Bite Rate control

(c) Video Stream Protocols; the camera system shall support the following protocols:

1. RTSP/RTP; The RTSP communication shall occur over a TCP socket. RTP video packets shall be sent over UDP.

2. RTSP Interleaved; RTSP commands and the RTP video packets shall be transmitted over a single TCP connection.

3. HTTP tunneling; this mode shall use two separate TCP connections for sending and the other for received data from the client over port 80

4. RTP multicast; this mode shall send RTP video packets to the user assigned multicast destination. This mode shall be required to be enabled or disabled.

(d) Network Protocol Layers: TCP, UDP, IPv4, IGMP, ICMP, DNS, DHCP, RTP, RTSP, NTP, HTTP, HTTPS, ARP, and ONVIF Profile S as a minimum.

(3) Pan and Tilt Drive Unit Specifications

(a) Pan Movement; 360 degrees continuous rotation.

(b) Pan Speed; Variable from 0.05 to 45 degrees/second.

(c) Pan Repeatability; +/- 0.05 degree precision.

(d) Pan Preset Speed; 180 degree movement 2.5 < Seconds.

(e) Tilt Movement; Minimum of +90 to -90 degrees.

(f) Tilt Speed; Variable from 0.05 to 45 degrees/second.

(g) Tilt Repeatability; +/- 0.05 degree precision.

(h) Tilt Preset Speed; 180 degree movement < 2.5 Seconds.

- 276 (i) Proportional Zoom Control; Positioning control shall
277 allow variable pan/tilt. speeds based on zoom position.
278
279 (j) Home Position: Shall be a user defined point.
280
281 (k) The Inter Process Communication System (IPCS) shall
282 not have any exposed wiring from the positioning drive to the
283 camera head enclosure.
284
285 **(4) Electrical.** Operating Voltage; The camera system shall
286 provide flexible power input as required by the installation to include:
287
288 (a) Power over Ethernet, LTPoE++.
289
290 (b) Power injector
291
292 **(5) Certifications/Ratings**
293
294 (a) FCC Class A.
295
296 (b) International Electrotechnical Commission (IEC) /
297 European Conformity (CE) cover product emission and
298 immunity requirements (CISPR) 22 24.
299
300 (c) Restriction of Certain Hazardous Substances (RoHs)
301
302 **(6) Enclosure**
303
304 (a) Aluminum
305
306 (b) Dust-tight
307
308 (c) Waterproof & Pressurized
309
310 **(7) Controls.** Shall be controllable or interoperable by a Pelco
311 analog switcher and control System using Pelco P protocol IP
312 protocol shall be controllable by either Pelco P or Onvif protocol.
313
314 **(8) Warranty.** Manufacturer's warranty period shall be three (3)
315 years minimum.
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317 **(9) Mount**
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319 1. Outdoor type
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321 2. Aluminum or stainless-steel components

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3. Mount cantilever style on pole shafts using straps, or on horizontal mast arm shaft
4. Constructed of marine grade stainless steel
5. Has cable feed-through
6. Supports up to 100 lbs
7. Painted White
8. Wall to pole mount adapter, as required
9. Provide ability to level and adjust camera to plumb

627.03 Construction. Perform work in accordance with the requirements of the contract documents

(A) Equipment List. Submit within seven days following the contract award ten (10) copies of materials and equipment purchase requisition, including copies of equipment list, manufacturer’s brochures, catalog cuts, and shop drawings.

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.

(B) Fiber Optic Cable Pulling Plan. The Contractor shall submit a fiber optic cable pulling plan for review and approval by the Engineer prior to beginning fiber optic cable installation. The fiber optic cable pulling plan shall include:

- (1) Location of start and end of pulls,
- (2) Location of cable reel trailers during installation, Location of cable reel trailers during installation,
- (3) Location of any “figure-eight” of fiber optic cable, and
- (4) Location of staged equipment.

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(C) As-Built Plan. Upon completion of the work, submit an “As Built” or corrected plan showing in detail the following:

- (1)** Construction changes,
- (2)** Location and attenuation of every event along the installed fiber optic cable,
- (3)** Index of refraction of installed fiber,
- (4)** Fiber optic cable index of refraction, and
- (5)** Sequential fiber optic cable markings at each pull box, cabinet, and splice closure.

(D) Excavation and Backfill. Excavate and backfill in accordance with Section 204 – Excavation and Backfill for Miscellaneous Facilities.

(E) Installation.

(1) Foundations. Construct TMSCS cabinet foundations as indicated in the contract documents.

Set forms to correct line and grade. Use rigid forms, securely braced in place. Place conduit ends and anchor bolts in proper position and height and hold in place with rigid top template. In addition to rigid top template, hold anchor bolts in place by means of rigid bottom template made of steel. Bottom template shall provide proper spacing and alignment of anchor bolts near their bottom embedded end. Install bottom template before placing foundation concrete. Anchor bolts installed more than 1:40 from vertical will be rejected. Hold conduit ends and anchor bolts in place by template until concrete sets. Cure concrete for not less than 72 hours.

Mix, place, and cure concrete for foundations in accordance with Section 601 – Structural Concrete and Section 503 – Concrete Structures.

(2) TMSCS Equipment and Cabinet. Mount TMSCS cabinet on foundation. Assemble, wire, and house TMSCS equipment in cabinet.

(3) Pull Boxes. Pull boxes to facilitate underground installation of fiber optic cables shall be provided under Section 623 – Traffic Signal System.

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(4) Conduits. Conduits to facilitate underground installation of fiber optic cables shall be provided under Section 623 – Traffic Signal System.

(5) Conductors and Cables. Conductors and cables to provide electrical power to the TMSCS equipment shall be provided under Section 623 – Traffic Signal System.

(D) Fabric Subduct. Fabric subduct shall be installed in all new conduits containing 72-strand fiber optic cables.

The contractor shall:

(1) Protect the interconnect fabric subduct from the effects of moisture, UV exposure, corrosion and physical damage during installation.

(2) Install the interconnect fabric subduct prior to installing the new interconnect and fiber optic cables.

(3) Provide interconnect fabric subduct in conduits using continuous un-spliced lengths of interconnect fabric subduct between pull boxes, and/or termination points as indicated on the drawings.

(4) Make a 2" incision, approximately 18" from the end of interconnect fabric subduct. Pull out and cut off approximately 2 feet of pull-tape. Thus, allowing the pull tape ends to retract back into the cells.

Using approximately 6 feet of pull tape, tie a non-slip knot to the incision. Then tie 3 to 6 half-hitch knots down to the end of inter-connect fabric subduct. Apply black vinyl tape over all knots and the end of interconnect fabric subduct. Using a Bow Line knot tie a swivel to the end of 3 feet pull tape. For multi-pack installations, one swivel is sufficient; but stagger each inter-connect fabric subduct.

(5) Using a Bow Line knot, attach the pull rope located in the rigid conduit to the other end of the swivel. Install interconnect fabric subduct ensuring that no twist is introduced to the interconnect fabric subduct.

(6) Provide suitable interconnect fabric subduct slack in the pull boxes, and at turns to ensure there is no kinking or binding of the product.

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(7) At locations where interconnect fabric subduct will be continuous through a pull box, allow sufficient slack so that the interconnect fabric subduct may be secured to the side of the pull box maintaining the minimum bending radius.

(8) At pull boxes serving as the junction location, pull the exposed end of the interconnect fabric subduct to the far end of the pull box, install termination bag, and secure to the pull box.

(9) Seal all conduit and interconnect fabric subduct entering the pull boxes to prevent entrance into the pull boxes of gases, liquids or rodents.

(E) Fiber Optic Cable Installation. The Contractor shall be fully responsible for the quality, integrity, and operability of the installed fiber optic cable.

All necessary equipment and plug-in, fiber optic pigtails, fittings, splice tags, enclosures, and work to complete an operational system shall be furnished and installed by the Contractor, unless otherwise indicated, at no additional cost, and will be considered included in the cost of the contract items in this Section.

The Contractor shall:

(1) Install new fiber optic cable underground in PVC and metal conduits, as shown on the plans.

(2) Leave a minimum of 20 feet of cable service loops at every cabinet and 10 feet at every pull box.

(3) Pull new fiber optic cable through conduits using a breakaway swivel to prevent exceeding the manufacturer's recommended maximum tensile load on cable during installation.

(4) Provide documented historical cable pulling data indicating tensile forces exerted on the cable during the installation. Any tension measurements, which exceed the manufacturer's recommendation, will be considered means for the cable rejection.

(5) Splice fiber optic strands with fusion splices. Mechanical splices shall not be used.

(6) Provide pigtails on all fiber optic strands which attach to fiber optic hardware and components with SC-connectors. Six strands of

505 the same buffer tube shall be jumpered color for color using a SC-
506 connectors fiber optic patch panel.

507
508 (7) Provide patch cords for the six strands connected to the patch
509 panel. All remaining fiber optic strands shall be fusion spliced color
510 for color.

511
512 (8) Splice fiber optic strands at camera cabinets, hubs, and splice
513 cabinets; with no more than 0.07 dB loss per splice based on the
514 appropriate system operating wavelength.

515
516 (9) Complete all required fiber optic splices prior to final testing.

517
518 (10) Test all fiber optic strands and provide a documented optical
519 budget loss analysis report showing the acceptable budget losses
520 from one end to the other end of all fiber optic strands.

521
522 (11) Test all fiberoptic hardware and cables to provide a
523 documented optical budget loss analysis for each link to and from a
524 hub station.

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526 (12) As part of the final testing and acceptance, submit optical time
527 domain reflectometer (OTDR) readings in both hardcopy and
528 electronic formats (such that it can be examined using the
529 manufacturer's OTDR software) to the Engineer for review. Testing
530 shall be conducted on all single mode fibers at 1310 nm and 1550
531 nm from the beginning and end of entire run; which includes patch
532 panels and splicing. Power meter attenuation testing should be
533 performed at dual wavelength, bi-directionally.

534
535 **627.06 Measurement.** The Engineer will measure Traffic Monitoring and
536 Signal Control System Assembly, Network Switch and Equipment, and CCTV
537 Traffic Camera Assembly per each, in accordance with the contract documents,
538 complete in place.

539
540 The Engineer will measure fiber optic cable and fabric subduct per linear
541 foot, in accordance with the contract documents, complete in place.

542
543 **627.05 Payment.** The Engineer will pay for the accepted Traffic Monitoring and
544 Signal Control System Assembly at the contract unit price per each complete in
545 place. The price shall include furnishing and installing all necessary
546 equipment/licenses to receive/transmit video and data to the TOC and JTMC;
547 including Fiber Housing / Patch Panel with Bulkhead SC Connectors, Network
548 Switch, IP Encoder, cabinet; fiber optic cables and splice trays; cables; splicing;
549 OTDR testing and furnishing results; furnishing and installing any additional items
550 and all tools, labor, equipment, and incidentals necessary to complete the work.

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The Engineer will pay for the accepted Network Switch and Equipment for traffic signal controller fiber interface at the contract unit price per each complete in place. The price shall include furnishing and installing the items, and all tools, labor, equipment, and incidentals necessary to complete the work.

The Engineer will pay for accepted CCTV Traffic Camera Assembly at the contract unit price per each complete in place. The price shall include CCTV cameras; modems; cables; splicing; making the connections; testing; providing turn-on service; furnishing and installing any additional items, and all tools, labor, equipment, and incidentals necessary to complete the work.

The Engineer will pay for accepted fiber optic cable at the contract unit price per linear foot complete in place. The price shall include cables; splicing; making the connections; testing; providing turn-on service; furnishing and installing any additional items, and all tools, labor, equipment, and incidentals necessary to complete the work.

The Engineer will pay for accepted fabric subduct at the contract unit price per linear foot complete in place. The price shall include fabric subduct; furnishing and installing any additional items, and all tools, labor, equipment, and incidentals necessary to complete the work.

The Engineer will consider full compensation for additional materials and labor not specifically shown or called for that are necessary to complete the work incidental to the various contract items in the proposal.

Payment will be full compensation for work prescribed in this section, by the Engineer, and in the contract documents.

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

Pay Item	Pay Unit
Traffic Monitoring and Signal Control System Assembly	Each
Network Switch and Equipment	Each
CCTV Traffic Camera Assembly	Each
Fiber Optic Cable, 72-Strand, Single-Mode	Linear Foot
Fabric Subduct	Linear Foot

596 The Engineer will pay for foundation for Traffic Monitoring and Signal
597 Control System Assembly under Section 623 – Traffic Signal System.
598
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END OF SECTION 627

1 **SECTION 770 – TRAFFIC SIGNAL MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I) Amend Subsection 770.02(A) – Standard Traffic Signal Heads** by
6 revising the first paragraph from line 211 to 216 to read:

7
8 **“(b)** To ensure quality and performance, LED head shall
9 have prior history of testing and use by CALTRANS and shall
10 exceed ITE standards. Failure on one LED shall not affect
11 other LED’s. LED head shall have fully-encapsulated
12 electronic circuitry and configuration for 12-inch ball.”

13
14 **(II) Amend Subsection 770.02(A)(4) – Back Plates** from line 285 to 290 to
15 read:

16
17 **“(4) Back Plates.** Louvered back plates shall be furnished and
18 installed on mast arm mounted signal heads. Back plates shall be
19 constructed of aluminum alloy 3003-H14 sheet having minimum
20 thickness of 0.058 inch and minimum dimensions equal to signal
21 head size plus five-inch border, with a one-inch retro-reflective
22 border around the outside edge of the front surface. Back plates
23 shall be dull black in color.”

24
25 **(III) Amend Subsection 770.04 – Pedestrian Signal** from line 444 to 600 to
26 read:

27
28 **“(A) Purpose.** The purpose of this specification is to provide the minimum
29 requirements for the LED “walking person” and “hand” icon pedestrian signal
30 modules with countdown. This specification is only for the nominal overall
31 message-bearing surface of 16 x 18 in. This specification is not intended to
32 impose restrictions upon specific designs and materials that conform to the
33 purpose and the intent of this specification. This specification refers to
34 definitions and practices described in “Pedestrian Traffic Control Signal
35 Indications” published in the *Equipment and Materials Standards of the*
36 *Institute of Transportation Engineers*, (referred to in this document as
37 “PTCSI”) and in the Applicable Sections of Manual on Uniform Traffic Control
38 Devices (MUTCD) 2009 Section 4E.

39
40 **(B) Physical and Mechanical Requirements.** The modules shall fit
41 into existing pedestrian signal housings built for the PTCSI sizes stated in
42 Section 1 of the “walking person” and “hand” icon pedestrian signal
43 indication Standard without modification to the housing and shall not require
44 special tools for installation.

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46 Installation of a retrofit replacement module into existing pedestrian
47 signal housing shall only require the removal of the existing optical unit

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components, shall be weather tight and fit securely in the housing; and shall connect directly to existing electrical wiring. The LED module shall have a visual appearance similar to that of an incandescent lamp (ie: Smooth and non-pixelated). Screwed on lenses are not allowed. Only modules with internal mask shall be utilized. No external silk-screen shall be permitted.

When not illuminated, the WALKING PERSON, UPRAISED HAND, and COUNTDOWN DIGITS shall not be readily visible. The countdown digits of the pedestrian signal module shall be located to the right of the associated UPRAISED HAND. The display of the number of remaining seconds shall begin only at the beginning of the pedestrian change interval. After the countdown displays zero, the display shall remain dark until the beginning of the next countdown. The walking person, hand icons and countdown digits shall be incandescent looking.

The units shall not have any external attachments, dip switches, toggle switches or options that will allow the mode to be changed from counting the clearance cycle, to the full walk/don't walk cycle or any other modification to the icons or digits.

For each nominal module, use the corresponding minimum H (height) and W (width) measurements:

Module Size	Icon Height	Icon Width	Countdown Height	Countdown Width	Countdown Segment Width
16x18 in	11 in	7 in	9 in	7 in	0.7 in

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All exposed components of a module shall be suitable for prolonged exposure to the environment. As a minimum, the module shall be rated for use in the ambient operating temperature range, measured at the exposed rear of the module, of -40°C to +74°C (-40°F to +165°F).

The module shall be a single, self-contained device, not requiring on-site assembly for installation into an existing pedestrian signal housing. The power supply shall be located inside the pedestrian signal module. The assembly and manufacturing process for the module shall be designed to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

The front window shall be a transparent polycarbonate material with internal masking to prevent the icons and digits from being visible when not in operation. External masking or silk-screen technology shall not be permitted.

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Each module shall be identified on the backside with the manufacturer's name, model, serial number and operating characteristics. The operating characteristics shall include the nominal operating voltage and stabilized power consumption, in watts and/or Volt-Amperes.

(C) Photometric Requirements. For a minimum period of 60 months, the maintained minimum luminance values for the modules under operating conditions, when measured normal to the plane of the icon surface, shall not be less than:

- Walking person: 2,200 cd/m²;
- Hand: 1,400 cd/m².
- Countdown digits: 1,400 cd/m²;

The luminance of the emitting surface, measured at angles from the normal of the surface, may decrease linearly to a value of 50% of the values listed above at an angle of 15 degrees. The LED module shall have a visual appearance similar to that of an incandescent lamp (i.e.: Smooth and non-pixelated).

Maximum permissible luminance: When operated within the temperature range, the actual luminance for a module shall not exceed three times the required peak value of the minimum maintained luminance. Luminance uniformity: The uniformity of the signal output across the emitting section of the module lens (i.e. the hand, person or countdown icon) shall not exceed a ratio of 5 to 1 between the maximum and minimum luminance values (cd/m²).

The standard colors for the LED Pedestrian Signal Module shall be White for the walking person and Portland Orange for the hand icon and the countdown digits.

(D) Electrical Requirements. All wiring and terminal blocks shall meet the requirements of Section 13.02 of the VTCSH Standard. Maximum of three secured, color coded, 1 meter (39 in) long 600 V, 16 AWG minimum, jacketed wires, conforming to the National Electrical Code, rated for service at +105°C, are to be provided for electrical connection. The conductors shall be color coded with orange for the hand, blue for the walking person and white as the common lead.

LED modules shall operate from a 60 ± 3 Hertz ac line power over a voltage range from 80 to 135 VAC RMS. Nominal operating voltage for all measurements shall be 120 ± 3 VAC RMS. Fluctuations in line voltage over the range of 80 to 135 VAC RMS shall not affect luminous intensity by

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more than $\pm 10\%$. To prevent the appearance of flicker, the module circuitry shall drive the LEDs at frequencies greater than 100 Hz when modulated, or at DC, over the voltage range specified.

Low Voltage Turn Off: There should be no illumination of the module when the applied voltage is less than 35 VAC RMS. To test for this condition, each icon must first be fully illuminated at the nominal operating voltage. The applied voltage shall then be reduced to the point where there is no illumination. This point must be greater than 35 VAC RMS.

Turn-ON and Turn-OFF Time: A module shall reach 90% of full illumination (turn-ON) within 75 msec of the application of the nominal operating voltage. The signal shall cease emitting visible illumination (turn-OFF) within 75 msec of the removal of the nominal operating voltage.

Default Condition: For abnormal conditions when nominal voltage is applied to the unit across the two-phase wires (rather than being applied to the phase wire and the neutral wire) the pedestrian signal unit shall default to the hand symbol. The on-board circuitry of a module shall include voltage surge protection:

- To withstand high-repetition noise transients and low-repetition high-energy transients as specified in NEMA Standard TS-2 2003; Section 2.1.8
- Section 8.2 IEC 1000-4-5 & Section 6.1.2 ANSI/IEEE C62.41.2-2002, 3kV, 2 ohm
- Section 8.0 IEC 1000-4-12 & Section 6.1.1 ANSI/IEEE C62.41.2-2002, 6kV, 30 ohm

The LED signal and associated on-board circuitry shall meet the requirements of the Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise by Class A digital devices. The modules shall provide a power factor of 0.90 or greater when operated at nominal operating voltage, and 25°C (77°F). Total harmonic distortion induced into an AC power line by the module, operated at nominal operating voltage, and at 25°C (77°F) shall not exceed 20%.

The current draw shall be sufficient to ensure compatibility and proper triggering and operation of load current switches and conflict monitors in signal controller units. Off State Voltage Decay: When the module is switched from the On state to the Off state the terminal voltage shall decay to a value less than 10 VAC RMS in less than 100 milliseconds when driven by a maximum allowed load switch leakage current of 10 milliamps peak (7.1 milliamps AC).

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(E) Module Functions. The module shall operate in one mode: *Clearance Cycle Countdown Mode Only*. The module shall start counting when the flashing don't walk turns on and will countdown to "0" and turn off when the steady "Don't Walk" signal turns on. *The module shall not have user accessible switches or controls for the purpose of modifying the cycle, icons or digits.* At power on, the module enters a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark. The unit shall re-program itself if it detects any increase or decrease of Pedestrian Timing. The digits shall go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.

The module shall allow for consecutive cycles without displaying the steady Hand icon ("Don't Walk"). The module shall recognize preemption events and temporarily modify the crossing cycle accordingly. If the controller preempts during the walking man, the countdown shall follow the controller's directions and shall adjust from walking man to flashing hand. It shall start to count down during the flashing hand. If the controller preempts during the flashing hand, the countdown shall continue to count down without interruption. The next cycle, following the preemption event, shall use the correct, initially programmed values. This specification is worded such that the flashing don't walk time is not modified.

If the controller output displays Don't Walk steady condition or if both the hand/person go dark and the unit has not arrived to zero, the unit suspends any timing and the digits shall go dark.

(F) Warranty. Manufacturers will provide the following warranty provisions. Replacement or repair of an LED signal module that fails to function as intended due to workmanship or material defects within the first 5 years (60 months) from the date of project acceptance."

(IV) Amend Subsection 770.05(A)- Controller Assembly from line 617 to 625 to read:

(1) The traffic signal controller shall be a 2070 LX on CALTRANS QPL. Each controller shall be furnished with the latest firm ware. Each controller shall be able to communicate with HDOT's traffic signal central server.

(2) Each controller assembly listed in Table 770.05-1 – Controller Assembly Requirements contains sufficient equipment for full 8-vehicle, 4-pedestrian, and 4-preemption phase intersection, even though the contract documents may not require it.

TABLE 770.05-1 – CONTROLLER ASSEMBLY REQUIREMENTS	
<u>Item</u>	<u>Quantity</u>
Model 2070 LX Controller	1
332A Aluminum Cabinet (Non-QPL)	1
Model 200 Load Switches	12
Model 204 Flasher	All
Model 242L Isolators	2
Model FS/ST Isolator	All
Flash Transfer Relays (Non-QPL)	All
Firmware	1
Model 2010ECL Conflict Monitor (Crimp and Poke Type, such as Molex Dualcon TM Straight/on Edge Dual Position Connectors, or approved equal)	1
Model 662T Time Delay Detector Amplifiers (Non-QPL)	8
Model M762 Preempt. Car (Non-QPL) with M768 Auxiliary Input Panel	2

225

226 **(V)** Amend **Subsection 770.05(B)- Model 170E Controller** by deleting lines
227 627 to 643.

228

229 **(VI)** Amend **Subsection 770.05(C)(5)- Cabinet** by deleting lines 660 to 665.

230

231 **(VII)** Amend **Subsection 770.05(D)- Auxiliary Equipment** from line 697 to 741
232 to read:

233

234 **“(1) Model M762 Optical Preemption Module with M768**
235 **Auxiliary Input Panel.** M762 shall be card-type and shall interface
236 with Model 170 cabinet preemption slots of input file. Each M762
237 Module shall have two channels of preemption. M762 shall include
238 firmware to discriminate between two valid priority signals, to
239 prioritize valid same priority signals on a first come, first served basis,
240 and to override low priority signal if high priority is received. M762
241 Module shall receive input signals (9.639 and 14.035 Hz) to permit
242 priority preemption operation within 170 local intersection program.
243 M762 shall optically isolate output signals and shall trigger active low
244 signal to controller for high priority and pulsed active low signal for
245 low priority. M768 Auxiliary Input Panel shall be used to interconnect

246 M762 with the terminals inside the traffic cabinet. The State's
247 preemption systems employ the 3M/Global Traffic Technologies
248 Opticom System. New preemption equipment shall be 3M/Global
249 Traffic Technologies Opticom or accepted equal that is fully
250 compatible with 3M/Global Traffic Technologies Opticom.

251
252 **(2) Security Tumbler for Signal Cabinet.** The signal control
253 cabinet door locks (2 locks for each cabinet) are keyed to take Best
254 Lock Series tumblers. The contractor shall furnish and install 2 lock
255 cylinders that will fit in the current locks on the signal cabinet. The
256 lock cylinders keys shall be one of a kind, licensed to DTS, and each
257 cylinder shall have 2 sets of keys with "do not duplicate" stamped on
258 each key."
259

260 **(VIII) Amend Subsection 770.06(C) - Type 3 – Interconnect Cable Tie-in**
261 **Signalized Intersection to Another** from line 759 to 765 to read:

262
263 **“(C) Type 3 – Interconnect Cable Tie-in Signalized Intersection to**
264 **Another.** Fiber optic cables shall be utilized. See Section 627.02 for
265 details.”
266

267 **(IX) Amend Subsection 770.06(G) – Type 7 Preemption Detector**
268 **(Opticom) Cables** from line 788 to 798 to read:

269
270 **“(G) Type 7 - Preemption Detector (Opticom) Cables.** Preemption
271 detector (Opticom) cables are specific cables that run continuously from
272 optical detectors mounted on traffic signal standards to terminal blocks for
273 M762 phase module located in controller cabinet. Each detector shall be
274 furnished with its own cable running back to controller cabinet. 3M/Global
275 Traffic Technologies' M138 Optical Detector Cable shall be furnished for
276 detector cable because it is compatible and consistent with requirements
277 for Opticom Preemption System. M138 cable shall be furnished that is
278 BerkTek Type B, shield jacket, three - insulated conductor cable, 20 AWG,
279 one - 20 AWG bare stranded ground, 600 Volts, orange-blue-yellow color
280 coded and 5/16-inch diameter.”
281

282 **(X) Amend Subsection 770.11 – Preemption Detectors** from line 997 to
283 1009 to read:

284
285 **“(A) Description.** Preemption Detectors shall be located on traffic signal
286 standards to convert optical signals emitted from an emergency vehicle to
287 electrical pulses for emergency preemption of traffic signals. Electrical
288 signals from optical detector shall be transmitted by 4-conductor cable to
289 preemption module M762 located in input slot of controller cabinet. M762
290 preemption module shall direct and hold controller in preemption mode until
291 signal disappears. Preprogrammed selection of phases and signal displays

292 shall be controlled by Local Intersection Program. The State’s preemption
293 system employ 3M/Global Traffic Technologies Opticom System. New
294 preemption equipment shall be by 3M/Global Traffic Technologies Opticom
295 or equal accepted by the Engineer, that is fully compatible with 3M/Global
296 Traffic Technologies Opticom. Astro-mini brackets or similar device for
297 attaching preemption detector to poles shall be included.”
298

299 **(XI) Amend Subsection 770.11 – Preemption Detectors** from line 1012 to
300 1021 to read:
301

302 **“(1) Type 7 Cable.** Type 7 preemption detector (Opticom) cables
303 shall be specific cables that run continuously from optical detectors
304 mounted on traffic signal standards to terminal blocks for M762
305 phase module in controller cabinet. Type 7 preemption detector
306 cable shall be compatible with 3M/Global Traffic Technologies’ M138
307 Optical Detector cable and shall be consistent with requirements for
308 Opticom Preemption System. M138 cable shall be BerkTek Type B,
309 shield jacket, 3-insulated conductor, 20AWG stranded copper, 1-
310 20AWG bare stranded ground, 600 volts, orange-blue-yellow color
311 coded, and 5/16-inch diameter.”
312

313 **(XII) Add Subsection 770.12 – Pedestrian Signal Push Button With Integral**
314 **Sign** to read:
315

316 **“(A) Description.** The pedestrian push button unit shall consist of an
317 assembly that can be secured to traffic poles with standard screws, be
318 tamper proof, weatherproof, and constructed so that electrical shocks are
319 impossible to receive.
320

321 **(B) Materials.**
322

323 **(1)** The housing for the push button assembly shall be of cast
324 and/or machined aluminum. The push button assembly shall be
325 weatherproof with a water diverting groove set in the outside
326 diameter of the actuator button receptor. The housing shall be
327 designed to reduce vandalism and shall mount on the side or top of
328 a pole with a minimum 2-inch diameter button. The push button
329 housing shall be capable of mounting in an ‘up button’ or ‘down
330 button’ configuration. All wire connections shall be accessible from
331 the back of the assembly.
332

333 **(2)** An ADA acceptable raised directional sign shall be installed
334 with stainless steel fasteners to the housing. The sign shall consist
335 of a raised walking person and a raised arrow indication. Paint the
336 unit black and paint the raised walking person and arrow white. The
337 sign shall be capable of mounting in an ‘up button’ or ‘down button’

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configuration. The raised walking person and arrows shall be directional and match the indication as shown in the plans.

(3) The pushbutton shall extend from the sign faceplate approximately three inches. The pushbutton actuator shall be convex in design having a flat area on the face for uses of a stylus, ADA acceptable, two inches in diameter, and have a tension of less than five pounds when pressed. The button shall be manufactured in a way that it cannot be stuck in a closed (constant call) position.

The pedestrian push button shall be a piezo electric type and be UL listed. The button shall have a stainless steel actuator and shall be mounted within the housing with stainless steel, non-corrosive, tamper proof fasteners. The unit shall operate between 12-24V DC or AC, 3 inch round mounts with 4 mounting bolts. The pedestrian button shall give an audio and visual signal each time the pedestrian button is activated.”

END OF SECTION 770

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
201.0100	Clearing and Grubbing	150	S.Y.	\$ _____	\$ _____
201.0200	ISA Certified Arborist	F.A.	F.A.	F.A.	\$10,000.00
202.0101	Removal of Sign and Post	3	Each	\$ _____	\$ _____
202.0102	Removal of Sign	5	Each	\$ _____	\$ _____
202.0201	Removal of Asphalt Concrete Pavement	560	S.Y.	\$ _____	\$ _____
202.0202	Removal of P.C.C. Pavement	5	S.Y.	\$ _____	\$ _____
202.0301	Removal of Concrete Curb	165	S.Y.	\$ _____	\$ _____
202.0302	Removal of Concrete Curb and Gutter	225	L.F.	\$ _____	\$ _____
202.0401	Removal of Concrete Sidewalk, Driveway, and Curb Ramp	225	S.Y.	\$ _____	\$ _____
202.0500	Removal of Traffic Signal System	L.S.	L.S.	L.S.	\$ _____
202.0600	Removal of Traffic Monitoring System	L.S.	L.S.	L.S.	\$ _____
203.0100	Roadway Excavation	20	C.Y.	\$ _____	\$ _____
209.0100	Installation, Maintenance, Monitoring, & Removal of BMP	L.S.	L.S.	L.S.	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
209.0200	Additional Water Pollution, Dust, and Erosion Control	F.A.	F.A.	F.A.	\$ <u>50,000.00</u>
219.0100	Determination and Characterization of Fill Material	L.S.	L.S.	L.S.	\$ _____
219.0200	Testing for Lead Based Paint	F.A.	F.A.	F.A.	\$ <u>10,000.00</u>
301.0100	Hot Mix Asphalt Base Course	95	Ton	\$ _____	\$ _____
304.0100	Aggregate Base Course	20	C.Y.	\$ _____	\$ _____
314.0100	Controlled Low-Strength Material	10	C.Y.	\$ _____	\$ _____
401.0100	PMA Pavement, Mix No. IV (with PG 64E-22)	135	Ton	\$ _____	\$ _____
411.0100	14-inch Concrete Pavement	5	S.Y.	\$ _____	\$ _____
511.0100	Furnishing Drilled Shaft Equipment	L.S.	L.S.	L.S.	\$ _____
511.0200	Obstruction	40	Hour	\$ _____	\$ _____
511.0301	Drilled Shaft (24-inch Diameter Shaft)	64	L.F.	\$ _____	\$ _____
511.0302	Drilled Shaft (42-inch Diameter Shaft)	24	L.F.	\$ _____	\$ _____
511.0401	Unclassified Shaft Excavation (24-inch Diameter)	64	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
511.0402	Unclassified Shaft Excavation (42-inch Diameter)	24	L.F.	\$ _____	\$ _____
511.0500	Coring for Integrity Testing for Acceptable Drilled Shaft	40	L.F.	\$ _____	\$ _____
610.0100	6-inch Reinforced Concrete Driveway	15	S.Y.	\$ _____	\$ _____
617.0100	Imported Planting Soil	15	C.Y.	\$ _____	\$ _____
623.0100	Verify Location of Existing Underground Utilities	F.A.	F.A.	F.A.	\$100,000.00
623.0200	Hawaiian Electric Company Service Connection Fees	F.A.	F.A.	F.A.	\$20,000.00
623.0300	Controller Assembly with Software	2	Each	\$ _____	\$ _____
623.0401	Type I Traffic Signal Standard, H = 10 Feet	8	Each	\$ _____	\$ _____
623.0402	Type II Traffic Signal Standard with 27-Foot Mast Arm	1	Each	\$ _____	\$ _____
623.0403	Type II Traffic Signal Standard with 38-Foot Mast Arm	1	Each	\$ _____	\$ _____
623.0500	Foundation for Cabinet	3	Each	\$ _____	\$ _____
623.0601	Traffic Signal Assembly (1-Way, 12-inch, 1-3 Section Vertical, Type VI Mounting with Retroreflective Backplate)	4	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.0602	Traffic Signal Assembly (1-Way, 12-inch, 1-3 Section Vertical, Type IV Mounting)	1	Each	\$ _____	\$ _____
623.0603	Traffic Signal Assembly (1-Way, 12-inch, 1-4 Section Vertical, Type IV Mounting)	1	Each	\$ _____	\$ _____
623.0604	Traffic Signal Assembly (1-Way, 12-inch, 1-3 Section Vertical, Type I Mounting)	4	Each	\$ _____	\$ _____
623.0605	Traffic Signal Assembly (1-Way, 12-inch, 1-4 Section Vertical, Type IA Mounting)	1	Each	\$ _____	\$ _____
623.0606	Traffic Signal Assembly (1-Way, 12-inch, 1-3 Section Vertical, Type II Mounting)	2	Each	\$ _____	\$ _____
623.0607	Traffic Signal Assembly (1-Way, 12-inch, 1-4 Section Vertical, Type II Mounting)	2	Each	\$ _____	\$ _____
623.0608	Pedestrian Signal Assembly (1-Way, 12-inch, One Vertical with Type IV Mounting)	7	Each	\$ _____	\$ _____
623.0700	Pedestrian Push Button with Instruction Sign	9	Each	\$ _____	\$ _____
623.0801	Type A Pull Box	5	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.0802	Type B Pull Box	3	Each	\$ _____	\$ _____
623.0803	Special Type C Pull Box	16	Each	\$ _____	\$ _____
623.0804	Adjust Pull Box to Finish Grade	3	Each	\$ _____	\$ _____
623.0901	Loop Detector Sensing Unit (6 FT x 6 FT) Two Loops	10	Each	\$ _____	\$ _____
623.0902	Loop Detector Sensing Unit (6 FT x 6 FT) Six Loops	1	Each	\$ _____	\$ _____
623.0903	Video/Radar Vehicle Detection Unit	1	Each	\$ _____	\$ _____
623.1001	EVP Optical Receiver with Mast Arm Mounting	4	Each	\$ _____	\$ _____
623.1002	EVP Optical Receiver with Top Pole Mounting	3	Each	\$ _____	\$ _____
623.1101	Traffic Signal Ductline, One 2-inch Conduit, Schedule 40 PVC, Concrete Encased	135	L.F.	\$ _____	\$ _____
623.1102	Traffic Signal Ductline, Two 2-inch Conduit, Schedule 40 PVC, Concrete Encased	50	L.F.	\$ _____	\$ _____
623.1103	Traffic Signal Ductline, Three 2-inch Conduit, Schedule 40 PVC, Concrete Encased	25	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.1104	Traffic Signal Ductline, Four 2-inch Conduit, Schedule 40 PVC, Concrete Encased	620	L.F.	\$ _____	\$ _____
623.1105	Traffic Signal Ductline, Four 2-inch Conduit, Schedule 40 PVC, Reinforced Concrete Encased	50	L.F.	\$ _____	\$ _____
623.1106	Traffic Signal Ductline, Five 2-inch Conduit, Schedule 40 PVC, Concrete Encased	80	L.F.	\$ _____	\$ _____
623.1107	Traffic Signal Ductline, Five 2-inch Conduit, Schedule 40 PVC, Reinforced Concrete Encased	10	L.F.	\$ _____	\$ _____
623.1108	Traffic Signal Ductline, Six 2-inch Conduit, Schedule 40 PVC, Concrete Encased	75	L.F.	\$ _____	\$ _____
623.1109	Traffic Signal Ductline, Six 2-inch Conduit, Schedule 40 PVC, Reinforced Concrete Encased	10	L.F.	\$ _____	\$ _____
623.1110	Traffic Signal Ductline, Eight 2-inch Conduit, Schedule 40 PVC, Concrete Encased	75	Each	\$ _____	\$ _____
623.1111	Traffic Signal Ductline, Eight 2-inch Conduit, Schedule 40 PVC, Reinforced Concrete Encased	10	Each	\$ _____	\$ _____
623.1206	EVP Cable	1,330	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.1301	No. 14, 2-Conductor Loop Detector Lead-in Cable	2,400	L.F.	\$ _____	\$ _____
623.1302	No. 14, 26-Conductor Traffic Control Cable	1,400	L.F.	\$ _____	\$ _____
623.1303	No. 6, 3-Conductor Power Cable	100	L.F.	\$ _____	\$ _____
623.1304	No. 14, 4-Conductor Signal Drop Cable	970	L.F.	\$ _____	\$ _____
623.1305	No. 19, 24-Conductor Interconnect Cable	900	L.F.	\$ _____	\$ _____
626.0100	Adjusting Water Manhole Frame and Cover	1	Each	\$ _____	\$ _____
626.0200	Adjusting Water Standard Valve Box	1	Each	\$ _____	\$ _____
627.0100	Traffic Monitoring and Signal Control System Assembly	1	Each	\$ _____	\$ _____
627.0200	Network Switch and Equipment	3	Each	\$ _____	\$ _____
627.0300	CCTV Traffic Camera Assembly	1	Each	\$ _____	\$ _____
627.0400	Fiber Optic Cable, 72-Strand, Single-Mode	1,700	L.F.	\$ _____	\$ _____
627.0500	Fabric Subduct	400	L.F.	\$ _____	\$ _____
629.0101	Removal of Pavement Markings	4,100	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.0102	Removal of Pavement Markers	190	Each	\$ _____	\$ _____
629.0103	Removal of Crosswalk Markings	11	Lane	\$ _____	\$ _____
629.0104	Removal of Pavement Words	3	Each	\$ _____	\$ _____
629.0105	Removal of Pavement Arrows	18	Each	\$ _____	\$ _____
629.1011	4-Inch Pavement Striping (Thermoplastic Extrusion), White	1,250	L.F.	\$ _____	\$ _____
629.1012	4-Inch Pavement Striping (Thermoplastic Extrusion), Yellow	50	L.F.	\$ _____	\$ _____
629.1013	4-Inch Pavement Striping (Thermoplastic Extrusion), Double Yellow	760	L.F.	\$ _____	\$ _____
629.1014	6-Inch Pavement Striping (Thermoplastic Extrusion), White	1,100	L.F.	\$ _____	\$ _____
629.1015	8-Inch Pavement Striping (Thermoplastic Extrusion), White	360	L.F.	\$ _____	\$ _____
629.1016	12-Inch Pavement Striping (Thermoplastic Extrusion) White	210	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.1021	6-Inch Pavement Striping with Black Border (Thermoplastic Extrusion), White	260	L.F.	\$ _____	\$ _____
629.1022	8-Inch Pavement Striping with Black Border (Preformed Thermoplastic), White	130	L.F.	\$ _____	\$ _____
629.1023	12-Inch Pavement Striping with Black Border (Preformed Thermoplastic), White	210	L.F.	\$ _____	\$ _____
629.1031	Crosswalk Marking (Thermoplastic Extrusion)	9	Lane	\$ _____	\$ _____
629.1032	Crosswalk Marking with Black Border (Thermoplastic Extrusion)	2	Lane	\$ _____	\$ _____
629.1041	Pavement Arrow (Thermoplastic Extrusion)	15	Each	\$ _____	\$ _____
629.1042	Pavement Arrow with Black Border (Thermoplastic Extrusion)	6	Each	\$ _____	\$ _____
629.1024	Pavement Word (Thermoplastic Extrusion)	4	Each	\$ _____	\$ _____
629.2030	Type C Pavement Marker	80	Each	\$ _____	\$ _____
629.2040	Type D Pavement Marker	50	Each	\$ _____	\$ _____

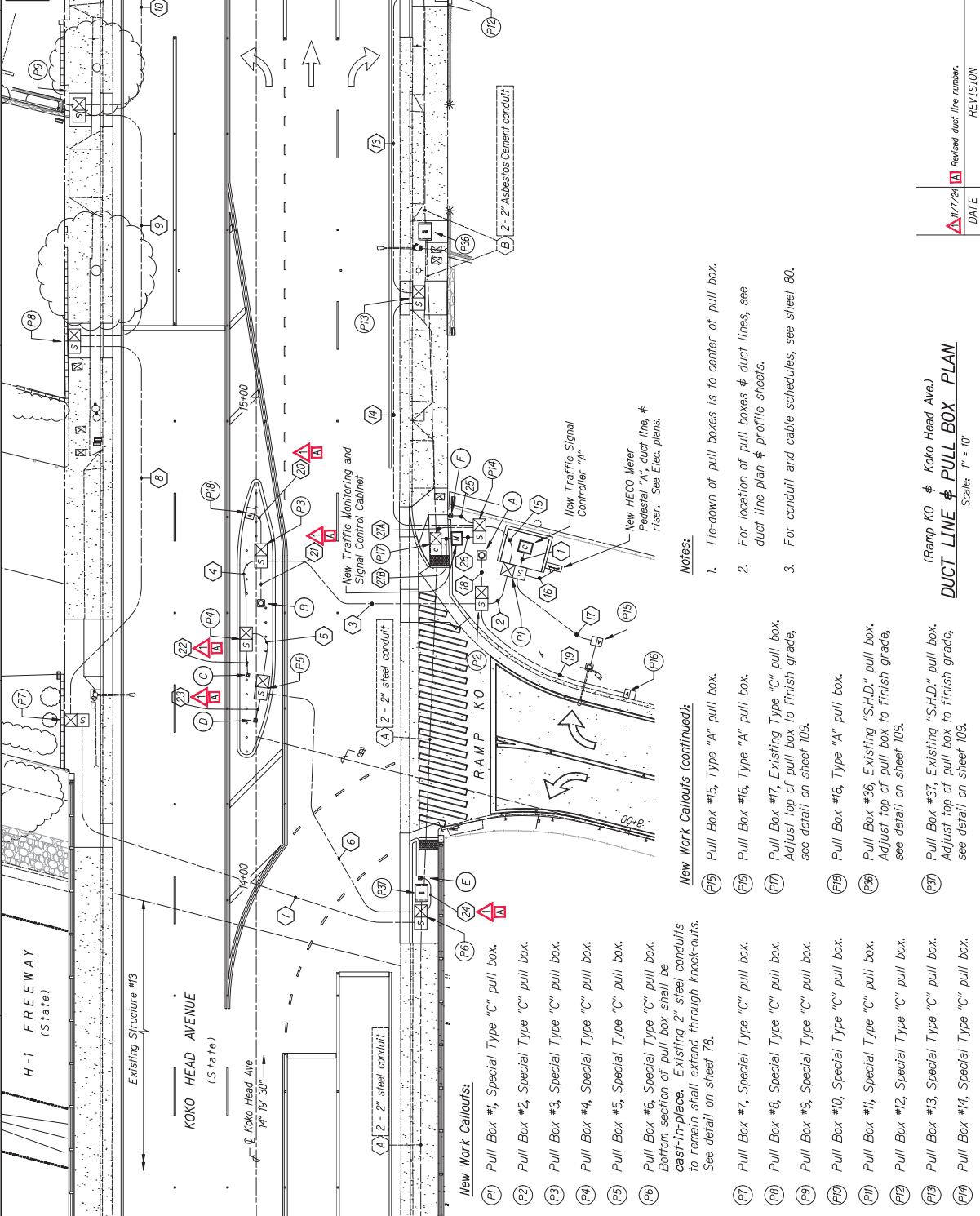
PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.2070	Type H Pavement Marker	20	Each	\$ _____	\$ _____
629.2080	Type F Pavement Marker	2	Each	\$ _____	\$ _____
630.0100	Street Name Sign	2	Each	\$ _____	\$ _____
631.0100	Regulatory Sign (10 Square Feet or Less)	5	Each	\$ _____	\$ _____
631.0200	Warning Sign (10 Square Feet or Less)	3	Each	\$ _____	\$ _____
632.0100	Reflector Marker-2 mounted on Flexstake HD	19	Each	\$ _____	\$ _____
632.0200	Type II Object Marker	10	Each	\$ _____	\$ _____
634.0100	Portland Cement Concrete Sidewalk	180	S.Y.	\$ _____	\$ _____
638.0100	Curb, Type 2D	420	L.F.	\$ _____	\$ _____
638.0200	Gutter, Type "G"	7	L.F.	\$ _____	\$ _____
638.0300	Curb and Gutter, Type 2DG	235	L.F.	\$ _____	\$ _____
638.0400	Curb and Gutter, Type "DBG"	40	L.F.	\$ _____	\$ _____
638.0500	Curb and Gutter, Type 2-A	10	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
641.0100	Hydro-Mulch Seeding (150 S.Y.)	L.S.	L.S.	L.S.	\$ _____
643.0100	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.	\$ _____
645.0200	Additional Police Officers, Additional Control Devices, and Advertisement	F.A.	F.A.	F.A.	\$ <u>50,000.00</u>
648.0100	Field-Posted Drawings	L.S.	L.S.	L.S.	\$ _____
650.0100	Curb Ramps	5	Each	\$ _____	\$ _____
650.0200	Detectable Warning Mat	5	Each	\$ _____	\$ _____
671.0100	Protection of Endangered Species	F.A.	F.A.	F.A.	\$ <u>10,000.00</u>
680.0100	Coordinate with HECO to extend the Overhead Services to Underground to the New Meter Locations, Complete	1	Each	\$ _____	\$ _____
680.0200	Provide New HECO 2-foot x 4-foot Handhole, Complete	1	Each	\$ _____	\$ _____
680.0300	Provide New 10"W x 12"H x 6"D Splice Can, Complete	2	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
680.0400	Provide New Combination Meter/Main Meter Socket, Complete	2	Each	\$ _____	\$ _____
680.0500	Provide New Meter Pedestal, Complete	2	Each	\$ _____	\$ _____
680.0600	Provide Conduit, Conductors, Trench Excavation, Trench Backfill, and Concrete Encasement, Complete	200	L.F.	\$ _____	\$ _____
699.0100	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.	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
	Total Amount for Comparison of Bids				\$ _____
<p>NOTES:</p> <ol style="list-style-type: none"> 1. Bids shall include all Federal, State, County and other applicable taxes and fees. 2. The TOTAL AMOUNT FOR COMPARISON OF BIDS shall be used to determine the lowest responsible bidder. 3. Bidders shall complete all unit prices and amounts. Failure to do so shall be grounds for rejection of bid. 4. If a discrepancy occurs between unit bid price and the bid price, the unit bid price shall govern. 5. Bidders shall submit and upload the complete proposal to HlePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HlePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection. Original (wet ink, hard copy) proposal documents are not required to be submitted. Contract award shall be based on evaluation of proposals submitted and uploaded to HlePRO. <u>FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HlePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.</u> If there is a conflict between the specification document and the HlePRO solicitation, the specifications shall govern and control, unless otherwise specified. 					

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	STP-0300(213)	2024 ADD.79	136



APPROVED BY: _____

DATE: _____

SCALE: AS NOTED

SHEET NO. 12 OF 43 SHEETS

ADD.79

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM
TRAFFIC SIGNAL MODERNIZATION

Oahu - Phase 2
Federal Aid Project No. STP-0300(213)

Scale: As noted Date: July 2024

New Work Callouts:

- (P1) Pull Box #1, Special Type "C" pull box.
- (P2) Pull Box #2, Special Type "C" pull box.
- (P3) Pull Box #3, Special Type "C" pull box.
- (P4) Pull Box #4, Special Type "C" pull box.
- (P5) Pull Box #5, Special Type "C" pull box.
- (P6) Pull Box #6, Special Type "C" pull box. Bottom section of pull box shall be cast-in-place. Existing 2" steel conduits to remain shall extend through knock-outs. See detail on sheet 78.
- (P7) Pull Box #7, Special Type "C" pull box.
- (P8) Pull Box #8, Special Type "C" pull box.
- (P9) Pull Box #9, Special Type "C" pull box.
- (P10) Pull Box #10, Special Type "C" pull box.
- (P11) Pull Box #11, Special Type "C" pull box.
- (P12) Pull Box #12, Special Type "C" pull box.
- (P13) Pull Box #13, Special Type "C" pull box.
- (P14) Pull Box #14, Special Type "C" pull box.

New Work Callouts (continued):

- (P15) Pull Box #15, Type "A" pull box.
- (P16) Pull Box #16, Type "A" pull box.
- (P17) Pull Box #17, Existing Type "C" pull box. Adjust top of pull box to finish grade, see detail on sheet 109.
- (P18) Pull Box #18, Type "A" pull box.
- (P19) Pull Box #19, Existing "S.H.D." pull box. Adjust top of pull box to finish grade, see detail on sheet 109.
- (P20) Pull Box #20, Existing "S.H.D." pull box. Adjust top of pull box to finish grade, see detail on sheet 109.

Notes:

1. Tie-down of pull boxes is to center of pull box.
2. For location of pull boxes & duct lines, see duct line plan & profile sheets.
3. For conduit and cable schedules, see sheet 80.

(Ramp KO @ Koko Head Ave.)
DUCT LINE & PULL BOX PLAN

Scale: 1" = 10'

DATE	REVISION
7/17/24	Revised duct line number.

DATE	BY	REVISION

NO. 24-033-013
DATE: 07/17/24
PROJECT: STP-0300(213) PHASE 2 TRAFFIC SIGNAL MODERNIZATION
SHEET: 12 OF 43

CONDUIT-CABLE SCHEDULE
 Ramp XO / Koko Head Ave Intersection

From	To	Conduit Size	Cable Type	Cable Quantity	From	To	Conduit Size	Cable Type	Cable Quantity	From	To	Conduit Size	Cable Type	Cable Quantity
1	Traffic Signal Controller "A"	2"	Type 1, Ground Wire	1	7	P6	2"	Type 1, Ground Wire	1	15	PB-14	2"	Type 1, Ground Wire	1
		2"	Type 1, Ground Wire	1			2"	Type 3	1			2"	Type 3	1
		2"	Type 2	3			2"	Traffic Camera Cables	1			2"	Traffic Camera Cables	1
		2"	Type 3	1			2"	Spare (pull cord)	1			2"	Spare (pull cord)	1
2	P1	2"	Type 6	1	8	P7	2"	Type 1, Ground Wire	1	16	PB-1	2"	Type 6	2
		2"	Type 7	3			2"	Spare (pull cord)	1			2"	Traffic Camera Cables	1
		2"	Cat. 6 (Video/Radar Detect.)	1			2"	Spare (pull cord)	1			2"	Traffic Camera Cables	1
		2"	Cat. 6 (Signal Control)	1			2"	Spare (pull cord)	1			2"	Traffic Camera Cables	1
3	P2	2"	Type 1, Ground Wire	1	9	P8	2"	Type 1, Ground Wire	1	18	P2	2"	Type 2	1
		2"	Type 2	4			2"	Spare (pull cord)	1			2"	Type 5	2
		2"	Type 3	1			2"	Spare (pull cord)	1			2"	Type 7	1
		2"	Type 7	3			2"	Spare (pull cord)	1			2"	Type 2	1
4	P3	2"	Fiber Optic	1	10	P9	2"	Type 1, Ground Wire	1	19	P2	2"	Type 2	1
		2"	Spare (pull cord)	1			2"	Type 1, Ground Wire	1			2"	Type 2	1
		2"	Type 1, Ground Wire	1			2"	Spare (pull cord)	1			2"	Type 2	1
		2"	Type 2	2			2"	Spare (pull cord)	1			2"	Type 2	1
5	P4	2"	Type 3	1	11A	P10	2"	Type 1, Ground Wire	1	20	P3	2"	Type 5	4
		2"	Type 7	2			2"	Type 1, Ground Wire	1			2"	Type 5	1
		2"	Fiber Optic	1			2"	Spare (pull cord)	1			2"	Type 7	1
		2"	Spare (pull cord)	1			2"	Spare (pull cord)	1			2"	Type 5	1
6	P5	2"	Type 1, Ground Wire	1	11B	P11	2"	Type 1, Ground Wire	1	23	P5	2"	Type 5	1
		2"	Type 2	1			2"	Spare (pull cord)	1			2"	Type 2	1
		2"	Type 3	1			2"	Spare (pull cord)	1			2"	Type 5	1
		2"	Type 7	1			2"	Spare (pull cord)	1			2"	Type 5	1
7	P6	2"	Fiber Optic	1	12	P11	2"	See sheet 83 for Controller "B"	1	24	P6	2"	Type 2	1
		2"	Spare (pull cord)	1			2"	See sheet 83 for Controller "B"	1			2"	Type 2	1
		2"	Type 1, Ground Wire	1			2"	See sheet 83 for Controller "B"	1			2"	Type 5	1
		2"	Type 2	1			2"	See sheet 83 for Controller "B"	1			2"	Type 5	1
8	P7	2"	Fiber Optic	1	13	P12	2"	See sheet 83 for Controller "B"	1	25	P14	2"	Type 2	1
		2"	Spare (pull cord)	1			2"	Type 1, Ground Wire	1			2"	Type 5	1
		2"	Type 1, Ground Wire	1			2"	Type 1, Ground Wire	1			2"	Type 5	1
		2"	Type 3	1			2"	Type 3	1			2"	Type 5	1
9	P8	2"	Fiber Optic	1	14	P13	2"	Type 1, Ground Wire	1	26	P14	2"	Type 3	1
		2"	Spare (pull cord)	1			2"	Type 1, Ground Wire	1			2"	Type 6	1
		2"	Type 1, Ground Wire	1			2"	Type 1, Ground Wire	1			2"	Traffic Camera Cables	1
		2"	Type 3	1			2"	Type 3	1			2"	Ethernet	1

Cable Notes:
 Type 1 Signal-loop cable for lead circuits from cabinet looped to fiber optic cable. Polyethylene Insulated, solid copper, 14 AWG color-coded; IMSA Specification No. 20-1 certified.
 Type 2 Home-run cable file-in loop detector stubs or pedestrian push button to the cabinet. Polyethylene Insulated, stranded-tinned-copper 14 AWG; two conductor cable polyethylene jacketed, 600 volts rated; IMSA Specification No. 50-2 certified.
 Type 3 Inter-connect cable file-in one signalized intersection to another. Polyethylene Insulated, solid copper, 19 AWG; 24 Conductor (12 twisted pairs) cable.
 Type 4 Detector-loop sensor cable; Stranded No. 12, single conductor to IMSA Spec 51-5.
 Type 5 Signal-Drop Cable; Stranded No. 14, 4 Conductors.
 Type 6 Electric Service Cable; Solid, No. 6, 3 Conductors; No. 6, 1 Ground.
 Type 7 Optical Cable; Stranded, No. 20, 3 Conductors; No. 20, 1 Ground.
 Fiber Optic Traffic Camera Cable; 72-Strand, Single-Mode Fiber Optic Install in Fabric Inter-duct.
 Ethernet Category 6 Ethernet cable for outdoor use.



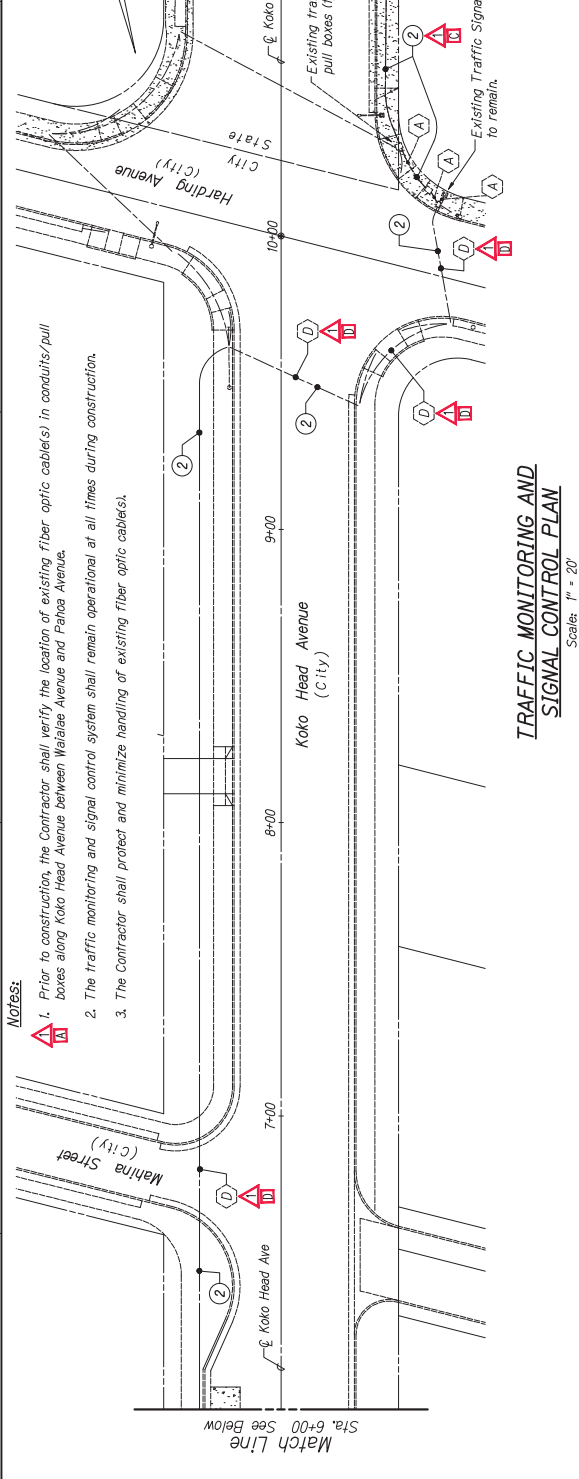
APPROVED BY: [Signature]
 DATE: [Date]

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
TRAFFIC SIGNAL SYSTEM
TRAFFIC SIGNAL MODERNIZATION
 Oahu - Phase 2
 Federal Aid Project No. STP-0300(213)
 Scales: AS noted Date: July 2024
 SHEET NO. 13 OF 43 SHEETS

DATE	REVISION
Δ 11/7/24	Deleted existing Type 3. Added new Type 3.
Δ 11/7/24	Revised duct line conduits and cables.
Δ 11/7/24	Added traffic camera cables to Duct Line 15.

NO. 06-2024-0389
 DATE: 07/24/2024
 TIME: 10:00 AM
 PROJECT: STP-0300(213)
 SHEET: 13 OF 43
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	STP-0300(213)	2024	ADD. 85
			136	



- Notes:**
1. Prior to construction, the Contractor shall verify the location of existing fiber optic cables in conduits/pull boxes along Koko Head Avenue between Waihee Avenue and Paloa Avenue.
 2. The traffic monitoring and signal control system shall remain operational at all times during construction.
 3. The Contractor shall protect and minimize handling of existing fiber optic cables.

TRAFFIC MONITORING AND SIGNAL CONTROL PLAN
Scale: 1" = 20'

APPROVED BY:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM
TRAFFIC SIGNAL MODERNIZATION
Oahu - Phase 2
Federal Aid Project No. STP-0300(213)
Scale: AS noted Date: July 2024

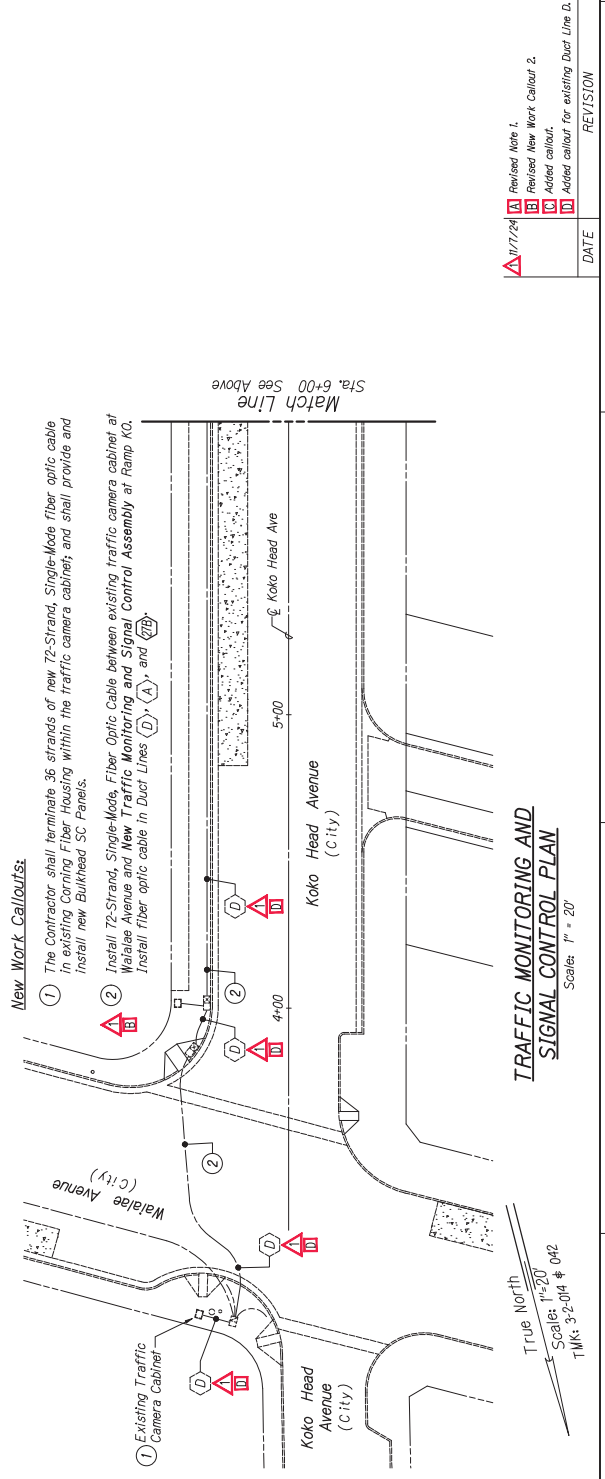
SHEET No. 18 OF 43 SHEETS

ADD. 85

DATE: _____

REVISION:

Δ 11/7/24	A	Revised Note 1.
B	B	Revised New Work Callout 2.
C	C	Added callout.
D	D	Added callout for existing Duct Line D.



- New Work Callouts:**
- 1 The Contractor shall terminate 36 strands of new, 72-Strand, Single-Mode Fiber optic cable in existing Corning Fiber Housing within the traffic camera cabinet; and shall provide and install new Bulkhead SC Panels.
 - 2 Install 72-Strand, Single-Mode, Fiber Optic Cable between existing traffic camera cabinet at Waihee Avenue and New Traffic Monitoring and Signal Control Assembly at Ramp (A). Install fiber optic cable in Duct Lines (D), (A), and (B).

TRAFFIC MONITORING AND SIGNAL CONTROL PLAN
Scale: 1" = 20'



License Expiration Date: 04/30/26

THIS WORK WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. I AM NOT PROVIDING CONTRACT ADMINISTRATION SERVICES. I AM NOT PROVIDING ARCHITECTURAL, LANDSCAPE ARCHITECTURE, OR SURVEYING SERVICES. I AM NOT PROVIDING ANY OTHER PROFESSIONAL SERVICES.

Daniel C. Higginbotham

DATE	REVISION

DATE	REVISION

DATE	REVISION

TRAFFIC SIGNAL MODERNIZATION, OAHU, PHASE 2

FAP NO. STP-0300(213)

SOLICITATION NO. B25000759

PRE-BID CONFERENCE MINUTES

The following notes are from the Hawaii Department of Transportation (HDOT) pre-bid conference with prospective bidders for the subject project.

The meeting was conducted virtually via Microsoft Teams at on October 23, 2024 at 9:00 AM Hawaii Standard Time (HST).

The following was discussed:

A. General:

- Pre-bid conference is non-mandatory and is intended for clarification prior to bidding.
- Announcement: Anything said at this meeting is for clarification only, the bid documents shall govern over anything said today and discrepancies shall be clarified by addendum.
- All Question shall be received in writing via HlePRO by October 30, 2024 at 2:00 PM HST. Questions received after the deadline will not be addressed. Verbal requests for information will not receive a response.
- The minutes to this meeting will be distributed by an addendum prior to bid opening.
- Bid Offer Due Date and Time is November 13, 2024, 2:00PM HST through HlePRO. Bids received after said due date and time shall not be considered.
- Geotechnical Engineering Exploration Documents for this project is included in the solicitation on HlePRO.

B. Disadvantaged Business Enterprises (DBE)

Jesus Navarro of Office of Civil Rights spoke about the project DBE and DBE requirements. See attached DBE handout. Added in a link to small business information link to the chat.

C. Open to discussion with prospective bidders.

No questions were asked from attending bidder.

D. Attendees: See attached attendance list.

Steven Yoshida – HDOT, Highways, Traffic Design
Patrick Tuter – HDOT, Highways, Traffic Design
Jesus Navarro – HDOT, Office of Civil Rights
Daniel Williams – HDOT, Office of Civil Rights
Conrad Higashiona – Engineering Concepts, Inc.
Wun Shen Chen – James W Glover Ltd

Conference adjourned at 9:21 AM.

State of Hawaii, Dept. of Transportation – Administration Division (HDOT OCR)
Disadvantaged Business Enterprises (DBE) Program
Pre – Bid Meeting – 10/23/24

STP-0300(213) Traffic Signal Modernization, Oahu, Phase 2

Policy of the State of Hawaii, Department of Transportation’s (HDOT) DBE Program:

To ensure equal opportunity and non-discrimination in the award and administration of United States DOT-assisted contracts. Contractors shall take all necessary and reasonable steps in accordance with the regulations (49 CFR, Part 26) to ensure that DBE's have an equal opportunity to compete for and perform on contracts.

DBE Goal for this project: 4.0%

- Be sure to document discussions, phone calls, faxes or memos relating to your efforts in meeting the DBE goal.
- DBEs must be certified by the bid opening date.
- DBE subcontractors, manufacturers, suppliers, trucking companies and any second tier subcontractors shall be listed on the respective DBE forms in order to receive credit.

The following forms are due to the Department’s Project Manager or designee by the close of business, 4:30 P.M. Hawaii Standard Time (HST), five (5) calendar days after bid opening. These forms are confidential documents and should not be included with the submitted proposals.

- A best practice would be to email the required DBE documents to the Department’s Project Manager or designee so they can be received prior to the 4:30 P.M. HST deadline.

1. **DBE Confirmation and Commitment Agreement.** This form must be **signed by the bidder/offeror and each DBE** subcontractor, manufacturer, supplier, or trucking company. Information to be provided on the form shall include, among other things, the project number, the DBE’s NAICS codes, description of work, bid items with corresponding price information, prime contractor name and contact information, DBE name and contact information and subcontractor name and contact information if the DBE is a second tier subcontractor.

To count toward meeting a goal, each DBE firm must be certified in a NAICS code applicable to the kind of work the firm would perform on the contract.

2. **DBE Contract Goal Verification and Good Faith Efforts (GFE) Documentation for Construction.** List the dollar amount of all subcontractors, manufacturers, suppliers, and trucking companies (both DBE and non-DBE firms). Bidder/offeror must also list the DBE project goal on this form. The bidder/offeror must submit documentation demonstrating how the DBE goal was met or how the bidder/offeror attempted to meet the goal if the goal

was not met. Responses must be sufficient to properly evaluate the bidder's/offeror's good faith efforts. Copies of correspondence return receipts, telephone logs, or other documentation will be required to support GFE. This documentation shall include quotations for both DBE and non-DBE subcontractors when a non-DBE is selected over a DBE for the project.

Documentation of good faith efforts is required irrespective of whether the bidder/offeror met the DBE project goal.

The above forms must be complete and provide the necessary information to properly evaluate bids/proposals. Failure to provide any of the above shall be cause for bid/proposal rejection. **It is in best interest of the bidder to ensure that that dollar amount listed for DBEs on the DBE Confirmation and Commitment Agreement and the DBE Contract Goal Verification and Good Faith Efforts (GFE) Documentation for Construction are consistent and in alignment with each other.**

In determining calendar days, the day from which the period begins to run is not counted, and when the last day of the period is a Saturday, Sunday, or Federal or State holiday, the period extends to the next day that is not a Saturday, Sunday, or Federal or State holiday.

- Calculation of the DBE contract goal for this project is the proportionate contract dollar value of work performed, materials, and goods to be supplied by DBEs. DBE credit shall not be given for mobilization, force account items and allowance items. This DBE contract goal is applicable to all the contract work performed for this project.

DBE contract goal percentage = Contract Dollar Value of the work to be performed by DBE subcontractors, truckers/haulers, and manufacturers, plus 60% of the contract dollar value of DBE suppliers, divided by the sum of all contract items (sum of all contract items is the total amount for comparison of bids less mobilization, force account items, and allowance items).

The Department shall adjust the bidder's/offeror's DBE contract goal to the amount of the project goal if it finds that the bidder/offeror met the goal but erroneously calculated a lower percentage. If the amount the bidder/offeror submits as its contract goal exceeds the project goal, the bidder/offeror shall be held to the higher goal.

- In the bid documents be sure to refer to the DBE Requirements section and pay special attention to:
 - Section VIII. Demonstration of Good Faith Efforts for Contract Award, which summarizes the kinds of efforts that will be considered demonstrative of good faith efforts, and
 - Section IX. Administrative Reconsideration, which describes the process the apparent low bidder may take if they failed to meet the provisions of 49 CFR Sections 26.53(a)

- All federally funded projects awarded after October 1, 2017 are required to use the Certification and Contract Compliance Management System program, an online payment tracking system. This project will be required to use the Certification and Contract Compliance Management System program. HDOT OCR will work with the Project Engineer and selected bidder to get the contract information to create a contract record for the project. Subcontractors, suppliers, manufacturers, trucking companies, etc. that are selected to work on this project are expected to log in (on a regular basis) and indicate if payment was prompt and provide all required information.
- BIDDER REGISTRATION FORM. All firms bidding or quoting on DOT projects, including vendors, subcontractors, manufacturers, truckers, etc., must register as a bidder. Certified DBEs are automatically registered as a bidder with the HDOT.
Bidder Registration Form can be found at:
<https://hidot.hawaii.gov/administration/files/2019/03/Bidder-Registration-Fillable-Form.pdf>
- Be sure to check the DBE Directory online at: <https://hdot.dbesystem.com/> to ensure the DBEs listed are certified.
- [Accessing HDOT DBE Directory.pdf](#)

Surveys for Small Business information:

<https://forms.office.com/g/iFuWtNKzN6> - General Contractors/Primes

TRAFFIC SIGNAL MODERNIZATION, OAHU, PHASE 2
FAP NO. STP-0300(213)
SOLICITATION NO. B25000759

Responses to Request for Information (RFI's/Questions)

10/30/2024

- 1. Please identify on the plans what needs to be cleared and grubbed for the bid item.**

HDOT response: The area to be cleared and grubbed is shown on the INSET on sheet 18, Erosion and Sediment Control Plan (ESCP). It is called out as "Approximate Limits of Grading and Disturbed Area".

- 2. Drawing 111 Sheet S-1 under General Notes #9B, calls for the Traffic Signal Pole to be designed for a Basic Wind Speed = 180 MPH and a Gust Effect Factor = 1.3. Under AASHTO LRFD 2015 for Hawaii, past HDOT projects have used a Basic Wind Speed = 145 MPH and a Gust Effect Factor = 1.14. Please confirm the Traffic Signal Poles for this particular project is to be designed for the higher values of Basic Wind Speed = 180 MPH and a Gust Effect Factor = 1.3.**

HDOT Response: Traffic Signal Poles for this project are to be designed to the minimum wind criteria on sheet S-1 General Note 9.