STATEMENT OF WORK
FOR
QUEEN KAAHUMANU HIGHWAY WIDENING, PHASE I,
HENRY STREET TO KEALAKEHE PARKWAY,
PROJECT NO. NH-019-1(20)

I. OVERVIEW

The Queen Kaahumanu Highway Widening, Phase I, Henry Street to Kealakehe Parkway ("Project") is a Design-Build project.

The intent of this bid document is to provide the Contractor with sufficient information and direction such that a proposal may be submitted for the design and construction of this project. The scope encompasses areas of work and services traditionally provided by separate contracts with the State. The State's intent is to combine several functions, such as design services, project management and construction, under one contract between the State and the Contractor to establish a single point of responsibility.

II. PROJECT LOCATION AND DESCRIPTION

Queen Kaahumanu Highway is located within North Kona and South Kohala districts of the island of Hawaii (see Figure 1) and extends from Kailua to Kawaihae. The project limits are from Henry Street to Kealakehe Parkway, and the project length is approximately 2.6 miles.

The project includes design and construction services to widen Queen Kaahumanu from the existing two (2) lanes to a four (4)-lane divided highway. Other work consists of, but is not limited to, constructing new pavements, drainage systems, sidewalks, bike lanes, traffic signals, retaining walls, pavements markings, traffic signs, guardrails, highway lighting, and landscaping; relocating utilities; and permitting to complete the project in conformance with appropriate Federal, State, and local standards.

III. DESIGN PARAMETERS AND CRITERIA

The roadway shall be designed and constructed according to the following:

a. Design Designation:

1998 ADT	20,100
2018 ADT	36,500
V	50 mph (Kailua to Makala Blvd.)
V	70 mph (Makala Blvd. To Kealakehe Parkway)
DHV	3,100
D(DES)	60/40
T(DES)	6.0 %

Design vehicle SU, WB-50

Functional classification: Principal Arterial

b. The roadway design will be according to the following:

1. Four (4)-lane divided highway.
2. Twelve (12) feet wide lanes.
3. Ten (10) feet wide shoulders.
4. Five (5) feet wide median shoulders.
5. Six feet wide bike lanes.
6. Ten feet wide sidewalks.

c. Construction phasing and traffic control will accommodate at least one-lane of traffic in each direction at all times, including provisions for the "Iron man Triathlon" event. Property owners with legal access to Queen Kaahumanu Highway will continue to have access at all times during the construction period.

d. Pavement structure will be according to the State's, Report No. H-89, Pavement Type Justification Report, and Supplemental No. 1 which are summarized as follows:

Pavement section:

New traffic lanes:
4" Asphalt Concrete Pavement (AC), Mix IV
8" Asphalt Concrete Base Course (ACB)
6" Untreated Permeable Base (UTPB)

Permeable Base:

- Install a geotextile permeable separator between the UTPB and the Subbase.
- Provide outlet pipes to culverts or drainage structures or discharge into gutters or drainage ditches at approximately 200 feet intervals.
- Trenches for outlet pipes shall be back filled with material of low permeability or provide a cutoff wall or diaphragm to prevent piping.

Traffic lanes adjoining existing pavement structure:
7" AC, Mix IV
8" Aggregate Base Course

Pavement reconstruction areas:
4" AC, Mix IV
8" ACB

Existing pavement sections to remain:
3.5" overlay with AC, Mix IV

Shoulders:
The shoulders will be constructed with the same pavement section as that used for the new traffic lanes.

e. New paved shoulders shall be designed to accommodate bicyclists, and bike route signing shall be provided.

f. Sidewalks will be 4" concrete with 6" aggregate base course.

g. The drainage design will be according to the Hydrologic and Hydraulic Report For Highway Culverts dated May 2002 and will include, but not be limited, to closed culvert systems with grated inlets and headwalls; grass and/or concrete swales; and extending existing culvert crossings when required to accommodate the roadway widening. All drainage design shall meet current State and Federal Standards and Procedures.

h. Geotechnical design will be according to the Geotechnical Engineering Exploration Report dated September 12, 2002.

i. Retaining walls will be designed according to the Geotechnical Engineering Exploration Report dated September 12, 2002, and the Bridge Section Design Criteria, HWY-DB 2.7490, August 2002. The retaining walls in areas where the wall's face is exposed to the highway (cut sections) will be designed to include a rock veneer facing.

j. Upgrade any existing substandard roadside facilities, including roadside obstacles and substandard guardrail end treatments; and design new roadside safety to follow the current AASHTO roadside design guide, current MUTCD, and the State standards.

k. Improve intersections as follows:

Henry Street, Palani Road, Makala Boulevard and Police Station Access Road: Fully actuated signalized operation, including pre-emption for emergency vehicles. Four-legged channelized, providing for all turning movements, with left and right-turn deceleration and right-turn acceleration lanes. The left-turn deceleration lanes shall be designed to accommodate both storage and desirable deceleration lengths. Crossing for pedestrians and highway lighting will be provided.

Kaiwi Street: Fully actuated signalized operation, including pre-emption for emergency vehicles. Three-legged channelized, right-turn in, right-turn out and left-turn in only, with left and right-turn deceleration and right-turn acceleration lanes. The left turn deceleration lane shall be designed to accommodate both storage and desirable deceleration length. Crossing

for pedestrians and highway lighting will be provided.

l. All landowners who currently have legitimate access to the highway will continue to have use, which will be limited to right-turns only.

m. Landscaping and irrigation will follow the HDOT Master Guidelines for Landscaping and Maintenance of the Highways In Hawaii, dated 1999.

IV. SCOPE OF WORK AND SERVICES

This scope of work and services is intended to clarify the total scope that the Contractor must assume, and is not a complete statement of work.

The Contractor will be responsible for acquiring an engineering consultant to complete the partial construction plans provided by the State and prepare specifications. The completed plans and specifications will be used by the Contractor to construct the project and by the State to ensure the project is constructed in accordance with the completed plans and specifications.

The Contractor's Engineers will be licensed State of Hawaii Civil, Structural and/or Electrical Engineers.

The Contractor is solely responsible for the design and successful construction of the project using the Contractor completed plans and specifications. No claims will be paid for any items that the State may have reviewed in the Contractor's submittals that may have contained design errors or omissions, changes, scheduling conflicts, improper material, or other conflicting information.

Elements of work will include: design work; construction surveys; traffic control and maintenance; erosion control, American Disabilities Act (ADA) compliance, utilities coordination and relocations; obtaining and complying with all applicable clearances and permits; construction of all temporary and permanent features; public notifications, meetings and consultations; and all other necessary items for a complete project.

The design and construction shall follow the general and technical provisions of the Hawaii Standard Specifications For Road, Bridge, and Public Works Construction, 1994; the addenda/supplements to the Standard Specifications as prepared by the Contractor and approved by the State; and Federal, State and County Laws.

The Contractor shall be responsible for furnishing all supervision, professional services, labor, equipment, tools, supplies, permanent and temporary materials, and all other items necessary for a complete project.

The Contractor shall be responsible for preparation and submittal of all documentation related to construction and project management that is required by the Federal, the State, and the County governments.

V. PERMITS AND ENVIRONMENTAL REQUIREMENTS

The Contractor will review the Archaeological Data Recovery Report dated October 1999 and the Final Archaeological Treatment Plan dated April 1999, and will ensure compliance with the requirements of the aforementioned reports.

The Contractor will be responsible for compliance with the National Pollutant Discharge Elimination System (NPDES) Notice of General Permit Coverage and UIC Approval to Construct Dry Wells, including acquiring any required permit amendments and time extensions.

The Contractor will be responsible for acquiring any County of Hawaii grading, stockpiling, disposal and building permits, the CZM Federal Consistency Determination, and the Conservation District Use Application.

VI. PUBLIC RELATIONS

The Contractor will conduct a Public Informational Meeting (PIM) to inform the community of the proposed project. The Contractor will conduct the PIM after State review of the semi-final Submittal, or when directed by the State. The Contractor will provide technical assistance, data, and information necessary to produce display boards, printed materials, video graphics, and other forms of information necessary for project presentation to the public, and will also provide the necessary staffing and video equipment to present the information. The Contractor shall find a suitable location to conduct the PIM and make arrangements to reserve the meeting facility. The Contractor shall submit a newspaper notice to the State (HDOT) for approval, and the Contractor shall publish the notice in the West Hawaii Today and the Hawaii Tribune Herald. The notice shall be published no later than 14 calendar days prior to the PIM date. HDOT will be given 14 calendar days to review the public notice. HDOT may at its own discretion, issue a press release to the media.

HDOT will provide aid in the introduction of the Contractor to the public, aid in facilitating the meeting, and give general information about the project. The Contractor's staff will be available to provide more project specific information and technical information as needed to effectively present all aspects of the project to the community.

The Contractor shall prepare a list of attendees and meeting minutes. The meeting minutes shall accurately record all discussions in the PIM and identify all action items and responsible parties for each action item. Ten (10) copies of the list of attendees and meeting minutes shall be provided to HDOT within seven calendar days from the PIM date.

When directed by the Engineer, the Contractor shall investigate and take

appropriate actions to resolve public concerns resulting from the design and construction in a timely manner.

VII. PROJECT MANAGEMENT

The Contractor will be responsible for the overall project management and coordination of all professional design consultants and subconsultants, construction subcontractors, and utility companies. This includes implementing its Quality Assurance and Quality Control plan, processing and paying consultant's and subcontractor's payment requests, settlement of disputes, distribution of required documents, providing submittals to the State, coordination of work on site, project schedule development and updates, document control, material control, conduct project related meetings, resolve public concerns, and all other coordination related to the Contractor's responsibilities required to complete the project.

VIII. DESIGN PHASE REQUIREMENTS

The Contractor's engineering consultant will complete the partial construction plans provided by the State and prepare specifications. The completed plans and specifications will be used by the Contractor to construct the project and by the State to ensure the project is constructed in accordance with the completed plans and specifications.

All access requirements in conjunction with the engineering services shall be the responsibility of the Contractor.

The Contractor will review all existing data and information, which may be relevant to the Design phase.

The final completed plans shall be endorsed by the appropriate State of Hawaii licensed Civil, Structural and/or Electrical Engineers.

The Contractor will coordinate his work with all affected State, County and Federal agencies having jurisdiction in permits approval and review; with all affected utility facilities; with all affected permitted highway right-of-way access owners, and with the Commission on Persons with Disabilities. It will be the responsibility of the Contractor's Consultant to ensure that all requirements of roadway design conforms to the requirements of Federal, State and County laws.

The Contractor will be responsible for assuring that all existing utility facilities are accommodated by the project improvements. Utility Agreements (UA) for utility relocations were executed with Verizon Hawaii, Hawaii Electric Light Company, Oceanic TWC, and Hawaii County Water Supply Department. The Contractor will review the UA documents and revise as required, coordinate with the utility companies, and construct all utility facilities relating to utility relocation/adjustment work, excluding the work to be done by the utility

companies, e.g. overhead pole relocations, new pole installation and utility service transfer and reconnections.

In addition to the meetings requirements of Section 108, of the Special Provisions, the Contractor will meet monthly with the State during the design phase to review and discuss design related progress, problems, submittals and issues. Three working days prior to each monthly design meeting, the Contractor shall submit a list of critical path items, outstanding submittals, problems and issues that require discussion. The Contractor's personnel attending shall have the authority to make decisions and answer questions. The Contractor will prepare the meeting minutes for acceptance by the State.

The Contractor will bring to the monthly design meetings a time scaled detailed work schedule, on a format approved by the Engineer, showing the next four weeks' design work. Number of copies of the detailed work schedule to be submitted will be determined by the Engineer. The four-week time scaled schedule shall show:

(1) All design related activities, including utility relocation and permit activities in such detail that the Engineer will be able to determine what type of work will be done for the next four weeks;

(2) The interrelationships and duration of all activities and float;

(3) The critical path clearly marked in red or marked in a manner that makes it clearly distinguishable from other paths and is acceptable to the Engineer;

(4) Critical submittals and requests for information (RFI's);

(5) The project title, project number, date created, period the schedule covers, Contractor's name and creator of the schedule on each page.

The monthly design meetings will be held at a location designated by the State and on a mutually agreed schedule. The State may increase of decrease the frequency of the design meetings.

The State will review all scheduled Design Phase submittals within 28 calendar days after the State notifies the Contractor in writing that a complete submittal was received as determined by HDOT. The Contractor will make all changes and revisions as required by the State. In the event a resubmittal is required due to incompleteness, changes and/or revisions as determined by the State, the State will be afforded an additional 28 calendar days to review the resubmittals. The project completion time will not be extended due to any review time required by State for resubmittals due to incompleteness, changes and/or revisions.

The Contractor shall provide the engineering services and perform the different tasks described below and furnish the completed plans, specifications and schedule of values (PS&E) for the project.

A. TASK I - SEMI-FINAL PS&E

1) Plans - Complete plans, including but not limited to plan and profile, drainage, rights-of-way limits, retaining walls, traffic control, traffic signals, highway lighting, ADA improvements, landscaping and irrigation, pavement marking and signing, best management practices, erosion control, road cross sections, utility adjustments and/or relocations, elevations and details.

2) Special Provisions - Supplement and/or revisions to the Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994.

3) Schedule Of Prices (Estimate) - The Schedule Of Prices will breakdown the lump sum price items in the bidder's proposal into smaller component parts in sufficient detail. Each schedule item will consists of a lump sum price and associated theoretical quantity, and will be accompanied by a backup detailed quantity computation sheet and a price analysis arriving to the lump sum price. This schedule will be subject to acceptance by the State who may require the Contractor to submit another or several other schedules if in the Engineer's opinion the prices are unbalanced or not sufficiently detailed.

4) Quantity take-off and computation sheets for each schedule items.

5) Basis of Design - The basis of design will describe any assumptions, analysis, reasoning and decisions made during the design. It will also clarify items of work that may not be clear or need to be highlighted.

6) Progress schedule. The schedule will be in accordance with Section 108.07 of the Special Provisions.

7) Calculations and reports.

8) Revised utility agreement documents as required.

For the original submittal, provide ten (10) copies of PS&E and Basis of Design; one (1) copy of CADD files on CD ROM disk; and six (6) copies of progress schedule, calculations, computation sheets, revised utility agreements (if required), and reports to the State for review and approval. In the event a resubmittal is required, provide the identical quantities as the original submittal of all revised items, including ten (10) copies of a

tabulated written response to all of the review comments. Plans will be half-size and drawn in 1"=40' scale.

The Contractor shall not proceed with the preparation of the Final PS&E until receiving the State's written approval of Task I.

B. TASK II - FINAL PS&E

Upon return and receipt of the approved semi-final PS&E, the Contractor shall prepare the final PS&E . The final PS&E shall be 100% complete, and the following shall be submitted for State review; ten (10) copies of final PS&E, Basis of Design, and tabulated written response to all of the review comments from the semi-final submittal; and six (6) copies of progress schedule, calculations, computation sheets, and reports. After State review of the final PS&E, the Contractor will make any required revisions and resubmit for the State's approval. In the event a resubmittal is required, provide the identical quantities as the original submittal of all revised items, including ten (10) copies of a tabulated written response to all of the review comments.

Upon receipt of written approval of the final PS&E, the Contractor will submit the following:

1) Full-size vellums of Final Plans, including two (2) sets each of full-size and half-size copies on bond.

2) One (1) copy of CADD files on CD-ROM disk.

3) Original and two (2) copies of Final Special provisions.

4) Original and two (2) copies of Final Schedule Of Prices.

5) Original and two (2) copies of Final Quantity take-offs and computation sheets.

6) Four (4) copies of Progress Schedule.

7) Original and two (2) copies of Final Basis of Design.

8) Original and two (2) copies of Final Calculations and reports.

9) Two (2) copies of any amended permits and additional permits.

All field books and hard copies of any additional topographic surveys related to the project shall also be submitted.

C. TASK III – END OF JOB SUBMITTAL

At the completion of the construction work, the Contractor will furnish to the State for acceptance a complete set of as-built plans on vellums, and the Intergraph Micro Station CADD files of the as-built plans on CD-ROM disk. Acceptance of the aforementioned items by the State is required before final payment will be made

D. PAYMENT

Payment for design items will be made monthly based upon the percentage of work completed as estimated by the Contractor and approved by the State. The Contractor will be paid the percentage of the contract lump sum price of design items, as approved by the State, less any permissible retention.

E. PLANS AND DRAFTING REQUIREMENTS

1) The PS&E shall be prepared in conformance with standard State guidelines, format and general practices for Federal Aid projects.

2) All Plans shall be drawn in 1"=40' scale using the Computer-Aided Drafting and Design (CADD) program, Micro station. CADD files for the Plans shall follow the Protocol for Line Weight, Color, Level, Size, Grid Reference, Standard Units, Fonts, and Symbology for Microstation Produced Contract Plans ("State Drafting Protocol"), dated December 1999. The version of Micro Station Program shall be approved by the State.

3) All other electronic files shall be usable in Microsoft Word 2000 and Microsoft Excel 2000 on 3.5" high density diskettes

4) Final plans will be full size and properly endorsed by appropriate State or Hawaii, licensed professional engineer(s) and shall be plotted out on 100% cotton RAG vellum (a durable, 100% cotton fiber base paper, achievable) or State approved equivalent. The minimum size of text on the plans shall be 3/16" for uppercase letters and 1/8" for lowercase letters.

F. CODES, GUIDELINES, AND DESIGN STANDARDS

All permanent and temporary features of the project shall be designed and constructed according to the following codes and guidelines:

1. A policy on Geometric Design for Highways and Streets, 2002 edition, by AASHTO (Green Book),
2. AASHTO LRFD Bridge Design Specifications, US Units (1998) and

subsequent interim revisions,

3. Hawaii Statewide Uniform Design Manual for Streets and Highways,
4. American Disabilities Act - ADAAG reference manual, latest edition,
5. Designing Sidewalks and Trails for Access Part I and II, 7/99, FHWA,
6. Roadside Design Guide, AASHTO 2002,
7. NCHRP Report 350,
8. Manual on Uniform Traffic Control Devices, 2003 edition,
9. Americans with Disabilities Act,
10. Design Criteria for Highway Drainage, SDOT Highways Division, dated 2/01/01,
11. Applicable Hydraulic Engineer Circulars (HEC), U.S. Department of Transportation, Federal Highway Administration,
12. Bridge Section Design Criteria, HWY-DB 2.7490, August 2002,
13. Required Data For consultant Designed Projects or Design-Build Project, Bridge Section Design Memorandum, November 24, 1999
14. An Informational Guide for Roadway Lighting, AASHTO 1984,
15. Pavement Design Manual by the Materials Testing and Research Branch, Highways Division, Department of Transportation, March 2002,
16. Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signal, 4th Edition, 2001 and subsequent interim revisions; Published by the American Association of State Highway and Transportation Officials,
17. 1999 National Electric Code,
18. Applicable sections of 23 CFR 650,
19. Any other applicable other codes and standards typically used for design of highways projects.

If any conflict exists, the more restrictive policy guidance or reference material shall govern.

IX. CONSTRUCTION PHASE REQUIREMENTS

The Construction shall be in accordance with the Contract Documents, which include but are not limited to the final State approved plans and special provisions, the Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994 and the accepted reports produced during the Design Phase.

Construction phasing and traffic control will accommodate at least one-lane of traffic in each direction at all times, including provisions for the "Iron man Triathlon" event. Property owners with legal access to Queen Kaahumanu Highway will continue to have access at all times during the construction period.

A. Commencement Of Construction

No construction shall commence until the State has received and approved the final PS & E, and the Contractor has secured all the necessary permits, local and federal, and submitted all documents required in the project's Design Phase.

If HDOT determines that the PS&E and other design documents show that all comments related to: travel way design, utilities, drainage, access, and traffic control have been satisfactorily addressed as determined by HDOT after review of the semi-final submittals, HDOT at its sole discretion, may in writing, authorize the Contractor to start construction on clearing and grubbing, grading, utilities relocation, and installation of traffic control. In addition, the Contractor shall:

1. Submit copies of approved applicable permits to HDOT prior to start of any construction work,
2. Have all Best Management Practice measures in place,
3. Obtain written approval from all utility companies, and
4. Establish the Field Office and utility connections.

Within fourteen (14) calendar days after receipt of written approval of the final PS&E, the State will hold a preconstruction conference and issue a written approval to begin construction to the Contractor. Once the written approval has been issued, the Contractor shall begin work within ten (10) calendar days. All labor, materials and equipment shall be provided by the Contractor to construct the project.

B. Payment

Monthly payment will be made based on the percentage of work completed under each of the various construction items during such month as estimated by the Contractor and approved by the State. The Contractor will be paid the percentage of the price, as approved by the State established for each schedule item, less any permissible retention.