TECHNICAL PROVISIONS

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TECHNICAL PROVISIONS FOR:

QUEEN KAAHUMANU HIGHWAY WIDENING, PHASE 2,
KEALAKEHE PARKWAY TO KEAHOLE AIRPORT ROAD
PROJECT NO. NH-019-1(38)

I OVERVIEW

The Queen Kaahumanu Highway Widening, Phase 2, Kealakehe Parkway to Keahole Airport Road ("Project") is a design-build project and will be awarded using the two-step process described herein and in the Request for Proposals (RFP).

The Contractor-Designer team ("Contractor") will be responsible to use the information contained in this package; to obtain other information as determined by the Contractor; obtain the services of a design engineering firm to prepare construction shop drawings, specifications, estimates, permits, and clearances; obtain the State Highway Division's (HDOT) confirmation of compliance of the Contractor designed construction documents; provide quality control measures; and to construct the Project in accordance with the construction documents.

The purpose of this package is to provide the Contractor with sufficient information and parameters so that a detailed proposal for the design and construction of this Project can be prepared and submitted to HDOT. HDOT's intent is to combine engineering services, project management, and construction under one contract between HDOT and the Contractor to establish a single point of responsibility.

HDOT reserves the right to revise these Technical Provisions. Such revisions, if any, shall be in the form of written addenda issued by HDOT. HDOT will post a notification on the HDOT website that an addenda is being issued and notify all known RFP recipients that the addenda is available for pick up at the Contracts Office.

Award of this project is contingent on the outcome of a pending Circuit Court appeal of the Administrative Hearing Board's decision of the previous award. In the event the plaintiff prevails in its appeal, this contract offering shall be cancelled and no award will be made.

II DESIGN AND CONSTRUCTION CRITERIA AND PARAMETERS

A PROJECT DESCRIPTION

The project includes: design and construction services to widen Queen Kaahumanu Highway from the existing two (2) lanes to a four (4) lane divided highway. Other work consists of, but is not limited to, design and construct new pavements, drainage systems, sidewalks, traffic signal systems, pavement markings, traffic signs, guardrails, highway lighting, landscape planting, relocate/install utilities, address mitigation of archaeological sites within the project limits, provide temporary and permanent Best Management Practices (BMP), and process permits required to

complete the project in conformance with appropriate Federal, State, and local standards.

B DESIGN AND CONSTRUCTION REQUIREMENTS

For evaluation purposes, HDOT will assume conformance to these requirements unless specifically stated otherwise in the proposal. As variances from these requirements are subject to HDOT approval, offerors' proposals may deviate from the following requirements at the offerors' risk. Proposals which deviate from, or are considered non-conforming to, the design and construction requirements and guidelines will not necessarily be considered non-responsive, but shall be scored with respect to the stated requirements and their benefits or dis-benefits to the project.

New and temporary facilities shall be designed and constructed to the following requirements:

1. Design Designation

2007 ADT	25,800
2027ADT	42,600
DHV	3,600
D (DES)	60/40
T (DES)	5.0%
V	55 MPH *
Design vehicle	SU, WB-50
Functional Classification:	Principal Arterial
Maximum superelevation rate (e max):	10%

* - design speed, V, shall remain 70 mph for the design of vertical alignment, horizontal alignment, and superelevation.

2. Design Parameters

   a. Four (4) lane divided highway;
   b. Twelve (12) feet wide travel lanes;
   c. Ten (10) feet wide paved shoulders;
   d. Six (6) feet wide median shoulders;
   e. Median width – 72 feet;
   f. Median slopes – 6:1 cut maximum;
   g. The roadway pavement section for new roadways shall be either: nine and one-half (9.5) inches asphaltic concrete; with six (6) inches aggregate base course;

      Or

      Nine (9) inches Portland Cement Concrete (PCC) pavement; with six (6)

inch subbase, with dowel joints.

h. The shoulder pavement section for new shoulder areas shall be either: eight (8) inches asphaltic concrete; with six (6) inches aggregate base course;

   Or

   Seven and one-half (7.5) inches Portland Cement Concrete (PCC) pavement; with six (6) inch subbase, with dowel joints.

i. The existing, Queen Kaahumanu Highway pavement section may be utilized provided that the Contractor replaces all distressed pavement section areas with a section conforming to item 2.g., meets the 2% cross slope or superelevation requirements, and resurfaces the existing pavement by removing the upper 1.5 inches of existing pavement and replacing a minimum 1.5 inches of AC Mix IV.

j. Provide shoulder rumble strips; and

k. Other design criteria items contained in the plans and technical provisions.

3. The project limits shall be:

   - The transition area from the Queen Kaahumanu Highway Widening, Phase 1 project located approximately 1150 feet south of Kealakehe Parkway (approximate Station 1110+00) to approximately 1700 feet north of Keahole Airport Road (1000 feet + taper length).

     For the purpose of budgeting, the roadway pavement cost shall be segregated into two parts, Part A and Part B. Part B shall include the makai travel lanes between Hulikoa Drive and Keahole Airport Road including all transitions between the existing and final roadway condition. All necessary traffic control and/or other features required for phasing operation and safety pertaining to this work shall be considered incidental to the Roadway Pavement (Part B) cost.

     The Contractor shall specify the construction duration associated with Part B and shall provide an overall construction schedule in the event Part B is deleted from the project. Part B work shall be planned as a separate activity from the rest of the Roadway Pavement work and is contingent on HDOT securing the necessary funding to prosecute this work. In the event HDOT's budget does not allow the inclusion of Part B, HDOT reserves the right to delete this work from the project at the cost shown in the proposal schedule. This cost will include all costs, both direct and indirect. The contract time will be based on the overall construction schedule that reflects the exclusion of Part B.

4. The Contractor shall comply with FHWA Final Rule on Work Zone Safety and Mobility, 23 CFR 630 Subpart J.

5. Bifurcation of the roadway is allowed provided that the finished roadway grading allows for the ultimate full build-out scenario without requiring any additional retaining walls or structures to be constructed.

6. All roadway improvements shall be contained within the existing highway right-of-way unless prior, written approval by HDOT is granted. All permanent improvements will be located within existing State ROW or permanent acquisition parcels and all temporary improvements shall be located in existing State ROW, permanent acquisition parcels, or construction parcels.

7. The Hawaii Ironman Triathlon is typically held each year on the third weekend of October. This is a major event for the Kona community. The bicycle and running routes are both located along Queen Kaahumanu Highway, starting at Palani Road and travel north. The Contractor shall ensure that the pavement is in good condition with no construction zones, metal plates, uneven surfaces, or bumps. The travel lanes and paved shoulders shall remain clean of debris. The Contractor shall ensure that these conditions are met during the event, as well as three weeks before and one week after the event.

8. Median breaks will only be allowed at signalized intersections or as approved by HDOT.

C AVAILABLE DRAWINGS AND/OR REFERENCES

1. As-Built Drawings

The following drawings are available for on-line viewing at the Department of Transportation, Design Branch Office, Room 609. Please contact Mr. Henry Kennedy at 692-7550 or by email at henry.kennedy@hawaii.gov to arrange an appointment. Viewing stations are limited.

Project Title	Project Number	Project Type	Date
Queen Kaahumanu Highway, Guardrail and Shoulder Improvements, Hapuna towards Kailua-Kona	NH-019-1(31)	Guardrail shoulder improvement	10/04/2001
Kailua-Kawaihae Road, Phase IIIA (Paving), Anaehoomalu to Hapuna	19BC-01-71	Original	9/13/1973
Kailua-Kawaihae Road, Phase IIIB (Paving), Keahole to Anaehoomalu	19BC-01-71	Original	7/25/1974
Queen Kaahumanu	NH-019-1(23)	Shoulder	6/27/1996

Highway Shoulder Improvements, Keahole to Waikoloa		improvements	
Queen Kaahumanu Highway Resurfacing and Intersection Improvements	NH-019-1(35)	Resurfacing, signing, widening	6/30/2004
Kailua-Kawaihae Road (Grading)	BD-66-7-352	Original	5/09/1968
Queen Kaahumanu Highway Resurfacing, Honokohau to Keahole	STP-019-1(18)	Guardrail, Resurfacing, Roadway Improvement, Safety Improvement, Traffic Signal	4/27/1995
Queen Kaahumanu Highway, Intersection Improvements at Keahole Airport Road	STP-019-1(21)	Traffic Signal	5/16/1996
Kailua-Kawaihae Road, Honokohau to Keahole (Paving)	BD-69-352	Original	11/20/1969
Queen Kaahumanu Highway, Shoulder Improvements, Palani Road towards Keahole Airport	19A-01-87M	Shoulder Improvement	6/29/1987
Queen Kaahumanu Highway, Traffic Signals at Kaiminani Drive	STP-019-1(22)	Traffic Signal	10/30/1997
Reflective Pavement Marking Program (Phase II), Hawaii District	PMS-0100(8), Unit 8	Others	7/27/1978
Queen Kaahumanu Highway, Installation of Traffic Signals at Hina Lani Street	19A-01-98	Traffic Signal	6/28/2000
Queen Kaahumanu Highway, Intersection Improvements at Access Road to Kaloko-Honokohau	FLH-019-1(26)	Roadway Improvement	5/04/2000

National Park			
Queen Kaahumanu Highway, Installation of Traffic Signals at Kealakehe Parkway	19B-01-97	Highway Lighting, Signing, Traffic Signal	8/14/1997
Kailua-Kawaihae Road, Section 1, Kailua to Honokohau	B-3267-01-63	Original	3/5/1964
Queen Kaahumanu Highway, Kealakehe Parkway and Interchange	190A-02-92, Phase I	Original	1/01/1992
Queen Kaahumanu Highway, Kealakehe Parkway and Interchange	190A-02-92, Phase IIA	Original	1/01/1992
Paving of Kailua-Kawaihae Road, Section I, Kailua to Honokohau	B-3267-02-63	Original	4/15/1965
Queen Kaahumanu Highway Resurfacing, Palani Road to Honokohau	19A-01-80M	Resurfacing	2/28/1980
Queen Kaahumanu Highway Resurfacing, Palani Road to Honokohau	19A-01-97M	Resurfacing, Roadway Improvement, Signing	6/26/1997

2. Reference Drawings

A conceptual version of the Queen Kaahumanu Highway Widening, Phase 2 plans (Queen Kaahumanu Highway, Four Lane Widening – Kealakehe Pkwy to Keahole Airport Road (Phase 2); Project No. 19AB-02-97) are available for viewing. Please note that the conceptual plans do not necessarily comply with the requirements as stated in this Request for Proposals and, therefore, are for reference and/or information purposes only.

The drawings are available for viewing at the Department of Transportation, Design Branch Office, Room 609. Please contact Mr. Henry Kennedy at 692-7550 or by email at henry.kennedy@hawaii.gov to arrange an appointment.

D PROJECT OBJECTIVES

HDOT is seeking the following characteristics:

1. Minimize Project Cost – project cost should be within the estimated budget of $75M,
2. Effective Traffic Management – the Contractor utilizes a combination of efficient construction traffic control and project duration which balances the effect of construction impact to the traveling public, and safe work zones for motorists and workers.
3. Technical Approach – the Contractor maximizes conformance to the specified requirements and guidelines, provides mitigative measures and advance notice when variance from the specified requirements and guidelines is proposed, and establishes a cooperative work process which allows the State an opportunity within the design process to collaborate and offer input, and
4. Aesthetics of Design and Context Sensitivity – the Contractor provides a balance of aesthetics and a Hawaiian sense of place with principles of sustainability and low maintenance.

E SCOPE OF WORK AND SERVICES

The Contractor will be responsible for acquiring an engineering consultant and subconsultants (Civil, Structural, Geotechnical, Environmental, Electrical, Traffic, Surveying, Landscape and others as deemed necessary) who are licensed in the State of Hawaii to prepare construction drawings and specifications to be used by the Contractor to construct the project and by HDOT to ensure the project is constructed as designed.

The Contractor is solely responsible for the design and successful construction of the project using the Contractor prepared construction drawings and specifications. No claims will be paid for any items that HDOT 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 that HDOT did not comment on or accepted in previous submittals. HDOT may compensate the Contractor for claims related to HDOT directed changes to the work scope, as solely determined by HDOT.

Elements of work will include: additional topographic surveys, design work, design coordination with the Hawaii County projects or known private projects, additional geotechnical investigations, temporary and permanent Best Management Practices, drainage studies, utilities coordination, utility relocations, construction of County utility improvements, obtaining and complying with all applicable clearances and permits, traffic control and maintenance, temporary and permanent pavement markings, dewatering provisions, temporary and permanent roadway lighting, construction of all temporary and permanent features, obtaining additional construction parcels or easements if needed, public notifications, public meetings and consultations, paying for permit application fees, and all other necessary incidental items for a complete project.

A Final Environmental Assessment (FEA) dated 5/1/96 has been prepared for the Queen Kaahumanu Highway Widening (FAP Route 19), Kailua to Keahole. All design and construction work shall conform to all commitments contained in these documents. Electronic copies of the FEA on CD can be requested from the HDOT. Please contact Mr. Henry Kennedy at 692-7550 or by email at henry.kennedy@hawaii.gov.

This scope of work and services is intended to clarify the total scope that the Contractor must assume. It is not a complete statement of work. As stated previously, the intent of this design/build contract is to combine all work and services for the project into one contract and point of responsibility.

The Contractor will be responsible for furnishing all supervision, professional services, labor, equipment, tools, supplies, permanent materials, and temporary materials required to provide the following services:

1. Design Services

   The Contractor's engineer will be responsible for providing the following services and preparing:

   a. Basis of Geometric Design summary,
   b. Drainage report,

      The Drainage Report shall be completed before any major earthwork commences. The Drainage Report shall evaluate drainage requirements for Phase 2 and the ultimate roadway improvements and include the following:

      - Table of Contents
      - Executive Summary
      - Introduction (include project background/ purpose, scope of work, location and vicinity maps)
      - General Site Conditions (include land use, climatology, soil type and ground cover)
      - Methodology (include hydrologic and hydraulic for roadway drainage, hydrologic and hydraulic for bridge and culvert crossing, scour analysis (if applicable))
      - Existing Drainage Conditions (include narrative description, hydrologic and hydraulic calculations, drainage map)
      - Proposed Drainage Conditions (include narrative description, hydrologic and hydraulic calcs, drainage map)
      - Appendix (include all calculation input/ output)
      - References

      The drainage report shall include proposed temporary and permanent improvements needed for offsite runoffs into adjacent segments if the project is phased.

c. Additional topographic surveys,
d. Boundary surveys,
e. All engineering and survey calculations,
f. Structural design calculations and load rating analysis for bridges and culvert crossings (if applicable),
g. Utilities coordination and Utilities Agreement estimates and documents,
h. Public announcements and conducting public meetings,
i. Site-Specific Best management plan and details to comply with various permit requirements including a Permanent Best Management Practices (BMP) Report,

The Permanent BMP Report shall include, but not be limited to, the following:

- Table of Contents
- Executive Summary
- Introduction (include description of project area, location and vicinity maps)
- Permanent BMP checklist
- Outfall (include location of affected outfall area, coordinate outfall with potential downstream archaeological sites to ensure no adverse impact, description of outfall condition and potential impact)
- Permanent BMP Description (include description and intended treatment, description of environmental resources, regulatory requirements, construction plans/ details showing permanent BMP locations, location of outfalls impacted by the drainage improvements, calculations of surface area and volume tabulation, right-of-way requirements, maintenance requirements, construction cost estimate)
- Appendix (include applicable computations, existing and proposed drainage maps, photos)
- References

j. All necessary permits and environmental clearances,
k. Transportation Management Plans, Traffic control plans and Temporary Detour Plans,
l. Complete construction shop drawings and specifications,
m. Detailed construction estimate,
n. Coordinating the design with other Federal, State, County, and private projects,
o. Additional construction parcel or easements if needed, and
p. Other design, permitting and environmental services necessary to complete the design of the project.

2. Alternative Technical Concepts

To promote innovation by the Proposers and to maintain flexibility of design and

construction, HDOT will allow Proposers to submit for consideration Alternative Technical Concepts (ATCs) that provides a variation in the Scope of Improvements. Proposed ATCs must not have an adverse effect on project quality and objectives as determined by HDOT at its sole discretion. Proposed ATCs most likely to receive favorable consideration are those that are consistent with HDOT's project objectives, and more specifically, maximize efficiency, incorporate technical innovation, reduce project schedule, minimize traffic impacts, or otherwise improve the quality of the project or reduce the contract time, thereby benefiting the public. Proposers must demonstrate that the proposed ATC was either used successfully on a similar project under comparable circumstances or otherwise demonstrate the reliability and efficiency of the proposed ATC. HDOT will not consider any change that would require excessive time or cost for review, evaluation, investigation, or that does not result in increased benefits or savings to HDOT.

a. Pre-Proposal submittal of ATCs

To be considered, a proposed ATC must be submitted to HDOT no later than 30 calendar days prior to the proposal (Design and Price Proposal) submittal date. This deadline applies to both initial ATCs and ATCs that have been revised for resubmittal in response to HDOT's comments. Each ATC submittal package shall consist of 10 copies and shall address all of the following elements:

- Description – A detailed description of and schematic drawings of the configuration of the ATC or other appropriate descriptive information including, if appropriate, product details (i.e. specifications, special provisions);
- Usage – A description of where and how the ATC would be used on the project;
- Variations – References to requirement in the RFP documents that are not consistent with the proposed ATC, an explanation of the nature of the variation from said requirements, and a request for approval of such deviations;
- Analysis – An analysis justifying use of the ATC and demonstrating why the requested variation from the requirements of the RFP documents should be allowed;
- Impacts – Discussion of potential impacts the implementation of the ATC will have on vehicular traffic, including a traffic operational analysis, safety, and project life cycle costs (including impacts on the cost of repair and maintenance);
- History – A detailed description of other projects where the ATC has been used, the success of such usage, and names and telephone numbers of project owners that can confirm such usage;
- Benefit – An estimate of cost savings and added value likely to result if the ATC were approved and implemented;
- Goals – Discussion on how the ATC is consistent with HDOT's Project Goals and Objectives.

b. Pre-Proposal Review of ATCs

Incomplete ATC submittal packages may be returned by HDOT without review or comment. HDOT may, in its discretion, request additional information regarding a proposed ATC and/or conduct meetings with the Proposer of ATC(s). In the event an incomplete ATC is received by HDOT but the Proposer fails to complete all revisions prior to the ATC submittal cutoff date as specified in 2.a. above, that ATC will not be considered or reviewed by HDOT.

HDOT will return comments to the proposer submitting the ATC within 10 business days of receipt, provided HDOT has received all requested information regarding the ATC. HDOT's determination will indicate one of the following:

- The ATC is approved; or
- The ATC is not approved; or
- The ATC is not approved in its present form, but may be approved upon satisfaction, in HDOT's sole judgment, of certain identified conditions that must be met or certain clarifications or modifications that must be made; or
- The submittal does not qualify as an ATC, but is eligible to be included in the Proposal without an ATC (i.e. concept conforms to the basic scope of improvements and is consistent with other contract requirements); or
- The submittal does not qualify as an ATC and may not be included in the Proposal.

3. Traffic Engineering Plan

The Contractor will be responsible for submitting a Traffic Engineering Plan which articulates how he will address construction traffic control and traffic engineering design.

a. Construction Traffic Control

Construction phasing and traffic control around the work areas shall consider:

- Traffic flow;
- Pedestrians and bicycle traffic;
- Work zone safety; and
- HDOT's prerogative to impose revisions in the event that the practical effect of the Contractor's plan generates an undue amount of public complaints or other inconveniences as determined at the sole discretion of HDOT.

The Contractor shall obtain the services of a Traffic/Transportation

Engineer specifically for the duration of the project construction through the entire corridor. The tasks for this traffic engineer shall include, but not be limited to:

- Develop (and when necessary, revise), coordinate and implement traffic signal timing plans per the contractor's activities.
- Provide the traffic operations function in support of construction activities, including managing messages posted on portable variable message signs.
- Provide construction management support as it relates to work zone traffic control and the observed impact to traffic.

b. Traffic Engineering Design

The Contractor shall comply with the Intersection Configuration, Table 1 provided in the project Final Environmental Assessment dated May 1996. Intersection improvements at Hina Lani Street and the new Lanihau intersection shall comply with existing Traffic Impact Assessment Reports.

The Contractor shall conduct and implement traffic signal timing optimization during construction as required to address public complaints and/or HDOT concerns about traffic flow. The Contractor shall also provide new optimized, coordinated traffic signal timing and phasing plans from Kamehameha III Road to Keahole Airport Road to be implemented after the widening is completed.

Intersection Signalization

The Contractor shall prepare Construction Documents for installation of new and/or existing traffic signals. The signal controller shall match the adjacent controllers used by the County of Hawaii. The Contractor shall design, furnish and construct traffic signals at the following intersections:

- Kealakehe Parkway
- Kaloko-Honokohau National Historic Park (new Lanihau intersection)
- Hina Lani Street
- Kaiminani Drive
- Keahole Airport Road

The Contractor shall design the intersection and traffic signals to optimize vehicle levels of service, minimize delay, and accommodate pedestrians in accordance with ADA requirements. The signal shall be constructed within existing State highway right-of-way limits.

The Contractor shall also price out an additive alternative for the creation of a 4th leg (makai side) and signalization of the Hulikoa Drive intersection. The Hulikoa Drive intersection shall be designed by the Contractor in

accordance with the attached Figure 6. For the purpose of pricing this work, the Contractor shall provide detailed backup documentation clearly identifying the additional cost of converting Hulikoa Drive from the current scope of work to the requested additive alternative including any necessary ancillary work.

This Hulikoa Drive intersection additive alternative work shall be planned as a separate activity from the rest of the project work and is contingent on HDOT securing the necessary funding to prosecute this work.

i. Design Criteria

Traffic signals shall be designed using the following criteria:

1. Traffic signal design shall comply with 2003 MUTCD. Design shall allow for preemption control of emergency vehicles and include detectors, controller add-ons/upgrades, wiring, etc. and be fully compatible with existing preemption systems in use by the State and County.
2. The signal controller shall match existing County of Hawaii controllers at adjacent locations. An underground conduit for the interconnect cable shall be installed along the project route.
3. In addition to the conduit for the interconnect cable, three (3) 2-inch conduits shall be provided underground for future Intelligent Traffic System (ITS) deployment for the entire project length. Drop locations for the three (3) 2-inch conduit shall be constructed at each signalized intersection listed above, one drop at Huliko'a Drive and three equidistant drops between Kaiminani Drive and Huliko'a Drive.
4. Signals shall be furnished and installed per current HDOT Design Standards and Standard specifications, and the following County of Hawaii design criteria:
    - Install countdown pedestrian signal heads at intersections where pedestrian access is allowed.
    - Install new uninterruptible power supply (UPS) units with all signal controllers. UPS to be Clary model or approved equal.
    - Install at least six (6) spare 2-inch diameter conduits in each traffic signal run.
    - Locate traffic signal and street light standards as far away as practical from the roadway.
    - Install LED traffic signal heads.
    - Vehicle detector loops shall be 6-feet x 40-feet with a minimum of two (2) loops per lane.
    - Traffic signal controllers shall be McCain 170-ATC-CF Coldfire controllers, or approved equal.
    - Each controller installation shall include conduits for

telephone and cable connection between the nearest utility connection point and the controller.

- Traffic signal and pedestrian signal heads shall not be mounted on street light standards.

5. Temporary signals shall be furnished and installed per current HDOT Design Standards and Standard specifications. Temporary signals shall be traffic actuated and coordinated with adjacent County of Hawaii signal systems.
6. The Contractor shall furnish and install all signal equipment. All signal equipment shall be new and conform to HDOT standards and specifications. The Contractor shall only use HDOT approved signal poles.
7. All salvaged traffic signal materials and equipment shall be delivered to the County of Hawaii Traffic Division baseyard in Hilo.

ii. Design

The Contractor shall prepare preliminary design plans for the traffic signals. The plans shall be drawn to HDOT Standards. The plans shall include the following minimum information:

1. Lane geometry and striping (thermoplastic).
2. Signal pole locations.
3. Signal head locations.
4. Types of signal faces.
5. Controller location.
6. Power source.
7. Type and location of detection.
8. Pole and conductor schedule.

The Contractor shall submit the preliminary design to HDOT and Hawaii County Traffic Division for review prior to purchasing equipment.

The 100 percent Design shall contain full plans as required to construct and operate the signalized intersections. This shall include all requirements for the efficient operation of the traffic signal.

iii. Testing, Activation & Construction of Traffic Signals

The Contractor shall conduct testing of all traffic signal hardware and certify its functionality prior to field installation.

The Contractor shall notify HDOT fourteen (14) calendar days prior to scheduled start of operation of any traffic signal. The Contractor shall inspect the traffic signal installation and HDOT will provide

cursory inspection, as necessary. HDOT will program the equipment. Unless otherwise directed, the contractor will receive authorization from HDOT for turn on of the signal on the specific date scheduled. The start of operation of the traffic signal does not constitute final acceptance of the traffic signal installation.

c. Telemetry Station

The Contractor shall upgrade the existing telemetry station, Sta. T8M, to accommodate the widened highway by relocating, replacing, or adding additional induction loops or other hardware, as necessary, to maintain its current function.

d. Intersection Street Lighting

Street lighting is required at all intersections. Limits include all auxiliary lanes (including tapers) and sideroads up to the right-of-way line. The Contractor shall provide luminaires that meet the County of Hawaii requirements.

4. Landscape Design Services

The Contractor shall prepare Construction Documents for landscaping improvements.

a. Intersection Landscaping

i. Design Criteria

Landscaping shall be designed by a licensed landscape architect using the following criteria:

1. Native, drought resistant, durable, and sustainable plant palette which must be approved by the HDOT Highways Division Landscape Architect.
2. No permanent irrigation.
3. Improvements must retain a Hawaii sense-of-place and shall consider public input which shall be provided prior to final design.
4. Low maintenance
5. As a general guideline, HDOT recommends the following landscape scope of work as a basis for the expected landscaping improvements:

Landscape scope of work – includes 156,000 square feet of total landscape improvements at the following intersections that are durable for 15 years, sustainable with HDOT maintenance resources and reflect a Big Island sense of place. Landscape scope to include complete restoration of all existing improvements removed during

construction and new landscape improvements at all intersections. Contractor to include conceptual planting plans for all intersections with list of plants to install including plant name, quantity, width, height, brown trunk height and trunk caliper size. Conceptual planting plan to include projected cost estimate for annual contracted maintenance. The following intersections to be improved with new landscaping:

Kealakehe Parkway – include a minimum of 30,000 square feet of xeriscape landscaping to include 250 feet of median and 300 feet on each side of Queen Kaahumanu Highway. Landscape concept should enhance existing landscaping with a seamless transition to existing harbor landscaping. New planting shall match the species, width and height. Replace landscaping removed during construction.

Honokohau National Park – include a minimum of 22,000 square feet of xeriscape landscaping, consisting of 3,000 square feet per street corner and 10,000 square feet of median landscaping. Landscaping should reflect the sense of the national park through the design and use of native plant materials. No irrigation.

Hina Lani Street – include a minimum of 16,000 square feet of xeriscape landscaping, consisting of 3,000 square feet per street corner and 10,000 square feet of median landscaping. No irrigation.

OTEC Access Road – include a minimum of 12,000 square feet of xeriscape landscaping, consisting of 3,000 square feet per street corner. No irrigation.

Kaiminani Road – include a minimum of 16,000 square feet of xeriscape landscaping, consisting of 3,000 square feet per street corner and 10,000 square feet of median landscaping. No irrigation.

Keahole Airport Road – include a minimum of 60,000 square feet of irrigation and landscaping to include 500 feet of median and 750 feet on each side of Queen Kaahumanu Highway. Landscape concept should enhance existing landscaping with a seamless transition to the existing airport landscaping. New planting shall match the species, width and height. Submit a tree protection plan for protecting existing landscaping during construction.

ii. Design

The Contractor shall prepare preliminary design plans for the landscaping. The plans shall be drawn to HDOT Standards and in coordination with the HDOT Highways Division Landscape Architect. The plans shall include the following minimum information:

1. Limits of landscaping.
2. Planting Plan
3. Landscape Maintenance Specifications

The Landscape Maintenance Specifications shall include the following in the State Department of Transportation format:

a. Introduction and Summary;
b. Operating Guidelines – Irrigation and watering schedule;
c. Landscape Maintenance Specifications;
   - Invasive Species Management
   - Pruning,
   - Weeding,
   - Pest eradication and control,
   - Fertilizing,
   - Chemical Storage,
   - Waste Disposal,
   - Removal of temporary appurtenances,
   - Drainage facilities,
   - Root Pruning,
d. Maintenance Plan showing tasks and recommended frequency;
e. Maintenance Specifications;
   - Fertilizer specifications and application,
   - Plant Material Inventory and Maintenance recommendations,
   - Estimated water usage (gpd), and other maintenance costs,
f. Representative Plant Material Photographs illustrating desired appearance.

The Contractor shall submit the preliminary design for review prior to planting.

5. Archaeological Services

The Contractor shall provide archaeological services as directed and comply with the following:

a. Memorandum of Agreement between the Advisory Council on Historic Preservation, Federal Highway Administration, and the Hawaii State Historic Preservation Officer dated 3/5/99

The Contractor shall comply with all stipulations set forth in the Memorandum of Agreement and any amendments, including but not limited to:

i. Adjusting the alignment and median width of the widened highway in the immediate vicinity of the Mamalahoa Trail to limit the amount of

impact to no more than 120 lineal feet.

ii. Prepare a Cultural Impact Assessment covering anticipated impacts and recommended mitigation efforts due to the subject project.

iii. Provide 'on-site' Archaeological Monitoring during all ground disturbing activities by a professional archaeologist for all presently known historic sites. Provide a written report summarizing the work activities and any related findings.

iv. Provide Cultural Resource Training for all construction personnel consisting of cultural site recognition and notification requirements and awareness training of archaeological procedures.

b. Final Archaeological Treatment Plan dated April 1999.

i. Data Recovery Plan

The Archaeological Data Recovery Report dated October 1999 has been completed and is available for the Contractor's review upon request through HDOT's Project Manager, Mr. Henry Kennedy.

ii. Interim Protection Report

Prepare an Interim Protection Report upon completion of construction in accordance with the conditions set forth in the Final Archaeological Treatment Plan. The report shall be prepared by a qualified archaeologist in conjunction with the State DOT. Each report will consist of:

1. An introductory summary of the interim protection effort.
2. Detailed descriptions of each site consisting of narrative, black and white scaled drawings, and color photographs prepared by the archaeologist.
3. Color photographic documentation recorded for pre-construction, during construction, and post-construction site conditions.
4. A conclusion inclusive of the archaeologists professional recommendations.

The Interim Protection Report will be submitted for archival purposes to the Hawaii State Historic Preservation Officer and the University of Hawaii Hamilton Library. Also, each report will be distributed for informational purposes to Na Ala Hele, Hawaii, Burial Council, the Kona Hawaiian Civic Club, Hui Malama I Na Kupuna O Hawaii Nei, the Office of Hawaiian Affairs, and the Federal Highway Administration.

If it appears that the project will affect a religious site, the Contractor shall notify HDOT and engage in consultation with qualified persons from within the local native Hawaiian community to determine the appropriate treatment for the particular site.

c. SHPD Consultation

i. The Contractor shall conduct SHPD consultation to determine if additional field inspection services are required.

6. Utility Relocation/ Installations

a. Wastewater Sewer, Wastewater Force Main, and Reclaimed Water Pipe Installation

i. General

1. Description

a. Scope

This section specifies the requirements for installation of wastewater sewer, wastewater force main, and reclaimed water pipe installation. The intent of these lines is to provide future service to (gravity sewer and wastewater force main) and from (reclaimed water) the Kealakehe Wastewater Treatment plant. The Contractor shall furnish the design, materials, labor and equipment for the installation of one gravity sewer pipeline, two (2) parallel wastewater force mains, and one reclaimed water force main within the State of Hawai'i Department of Transportation, Highways Division Right-of-Way (ROW) as indicated in Section 2 herein.

The Contractor shall be responsible for the investigation, inspection and verification of all existing utilities supplemented by actual digging in the field if necessary, to determine the actual location of buried utilities, branches, and service lines.

The Contractor shall be responsible for all necessary permits and licenses for the prosecution of this work

The Contractor shall repair, at his own expense, all damages sustained during the course of his work and leave completed work in its original or better condition.

No debris resulting from the construction work shall be allowed to enter the new wastewater collection and/or force main pipelines or the reclaimed water pipeline system. The Contractor shall provide the necessary barriers and collection devices to protect the pipes and prevent debris from entering the new systems. Following the completion of construction, all pipe ends shall have been protected and have either valves with end caps, blind flanges, or removable plugs installed as specified in Section 3 herein unless otherwise directed. No pipe ends shall be left opened after completion of construction.

The project is funded by the Clean Water State Revolving Fund (CWSRF) program. The Contractor is required to comply with all requirements of the CWSRF Program which is provided as an attachment herein. Copies of all documents and certification statements required under the CWSRF program shall be provided to the County of Hawai'i, Department of Environmental Management, Technical Services Section (TSS) at the following address:

Ms. Dora Beck, P.E., Chief
County of Hawai'i
Department of Environmental Management
Technical Services Section
108 Railroad Avenue
Hilo, Hawai'i 96720

2. Quality Assurance

Workmanship shall be first class. All work shall be performed by the respective trade person in accordance with applicable County Ordinance and State Regulations.

All construction work shall conform to the 2005 Hawaii Standard Specifications for Road and Bridge Construction; Standard Details for Public Works Construction, September 1984; Wastewater Division Standard Details; Standard Specifications for Public Works Construction, September 1986; State of Hawaii, Water System Standards, 2002; and Rules and Regulations, County of Hawaii, Department of Water Supply, October 2004.

Wastewater Gravity Sewer, Wastewater Force Mains, and Recycled Water Systems shall be designed, constructed, used, and installed in accordance with Hawai'i Administrative Rules, §11-62, Wastewater Systems and the Design Standards of the

Department of Wastewater Management, City and County of Honolulu, Volume I, July 1993.

In the event of conflicts between the various referenced specifications and detailed specifications provided herein, detailed specifications herein shall prevail. In the event of conflicts between referenced specifications, the more restrictive requirements shall apply.

ii. Products

1. Gravity Sewer

a. Pipe

All sewer pipes and fittings shall be PVC SDR-26 bell(s) and spigot, High Density Polyethylene HDPE Pipe, or Fusible PVC Pipe rated for the system design and superimposed loads for buried piping.

b. Bedding

Materials for Class B pipe bedding shall be 3/4" Aggregate Base Course placed in successive horizontal layers of loose material not to exceed 6 inches in depth, and shall be uniformly consolidated to 95 percent maximum dry density. Compaction testing for compliance shall be routinely performed and approved by the independent testing and quality control laboratory. All test results shall be submitted to the Engineer for final acceptance.

c. Manholes

Manholes with covers shall be provided for all bends and stub out connections to the gravity sewer main. Stub outs for future connection shall terminate in a manhole. The County shall provide size and location for additional penetrations for future connection in the stub out manholes as part of the shop drawing comments.

Unless otherwise approved all manholes shall be provided "Eccentric" cone sections with Type SB frames and covers and shall be lined with a PVC liner (Dura-Plate or equal) and benches shall be Saurereisen F-120 corrosion resistant polymer concrete or approved equal. All manholes less than 5'-0" deep shall be provided 22-inch "Concentric" cone sections with Type SB frames and covers (Std. Detail S-21).

Sewer manholes located in unpaved areas shall be provided a concrete collar. The concrete collar shall be Class "B" concrete reinforced with 1-#3 reinforcement steel hoop. The concrete collar shall be 42"x42"x6" for Type SA frames, 54"x54"x6" for Type SB frames.

d. Manhole Connections

Sewer pipe connections to new manholes shall be with an approved cast-in-place manhole pipe adapter (A-lok, Econoseal, or approved equal).

e. Lateral Connections

All lateral and main connections to the sewer main installed under this project shall be made at sewer manhole connections.

Main connections shall be made at the following approximate locations with final approval of the connection locations to be provided as part of the shop drawing comments.

APPROXIMATE STATION LOCATION	DESCRIPTION	TMK	SIDE OF HIGHWAY	DESIGN FLOW (MGD)
260+00	Hina Lani Street	7-3-009	Mauka	1.576
216+00	Honokohau National Park	7-4-008:025	Makai	0.53
215+50	West Hawaii Business Park (WHBP)	7-4-008:077	Mauka	7.424
195+00	McClean Property Utility Easement	Between 7-4-008:030 and 7-4-008:055	Mauka	0.482
185+50	Kealakehe Parkway (to Honokohau Harbor)	7-4-008	Makai	0.15
185+50	Kealakehe Parkway	7-4-020	Mauka	0.60

* The County reserves the right to adjust exact locations as comments on the layout shop drawings at no extra cost. Compensation or credit will be negotiated for additional or deleted stub outs.

f. Gravity Main Design Criteria

The gravity sewer main shall be designed to provide with the following criteria:

BEGINNING STATION	ENDING STATION	DESIGN FLOW (MGD)	REMARKS
260+00	216+00	2.1	Gravity sewer flow from Hina Lani Street (Sta. 260+00) to Future Sewage Pump Station (Sta. 205+05)
216+00	205+05	9.53	
185+50	205+05	1.232	Gravity sewer flow from Kealakehe Parkway to Future sewage pump Station (Sta. 205+05)

2. Wastewater Dual Force Main

a. Pipe

Wastewater Force main piping shall be AWWA C900 or C905 PVC Pipe, High Density Polyethylene (HDPE) Pipe, or Fusible PVC Pipe rated for the system design and superimposed loads for buried piping.

Piping, fittings, and valves shall comply with the State of Hawaii, Water System Standards.

High Density Polyethylene (HDPE) pipe shall utilize butt-fused joints. Electro-fusion joints may be utilized when authorized by the County Wastewater Division. Plastic welding of joints shall not be allowed. HDPE pipe used for Recycled Water service shall be purple and shall be in conformance with the Guidelines for the Treatment and Use of Recycled Water, Hawai'i State Department of Health, Wastewater Branch, May 15, 2002.

b. Thrust Blocks

Thrust blocks shall be provided for all fittings such as tees, plugs, caps, bends, offsets, reducers, and valves as well as all other pipeline appurtenances that are subject to unbalanced thrusts. Design of thrust blocks shall be in accordance with the current edition of the Water System Standards, Department of Water Supply, County of Hawai'i, State of Hawai'i.

c. Design

Design, materials, construction, and testing shall comply with the State of Hawaii, Water System Standards and the City and County of Honolulu Design Standards, Volume 1, July 1993. Stub outs for future connection shall terminate with an end cap, plug or blind flange for future connection and be located in a concrete valve box with cover. Maximum velocity allowed in the force main is 8 fps, and the maximum headloss shall be 3 ft/100 ft. Minimum velocity shall be 3.5 fps in order to re-suspend any settled solids.

Dual Force mains are provided for redundancy and each force main shall be capable of accommodating design flows. Force Mains shall be installed with a minimum 3 ft. clearance between adjacent surfaces.

Wastewater Force main piping shall be designed with a continuous upward slope to eliminate high points on the piping and the need for installation of air relief valves. Designs incorporating high points in the force main shall not be allowed unless specifically authorized by the County Technical Services Section (TSS).

In the event that high points on the force main are authorized by the County TSS, sewage air relief valves shall be installed on the high points. Sewage air relief valves shall be installed in reinforced concrete vaults and shall be vented to an adjacent sewer system with drainage of the vault to the sewer system to the maximum extent possible.

If authorized, sewage air relief valves shall be Type 316 Stainless Steel, Vent-O-Mat Series RGX air relief valves and shall be provided with isolation valves to allow maintenance and repair of the air relief valve during periods when the force main is active.

d. Design Criteria

Design criteria for the force main shall be as shown below:

BEGINNING STATION	ENDING STATION	FLOW (MGD)	REMARKS
205+10	183+90	10.76	Dual Force Mains to begin at Future Sewage Pump Station location on TMK 7-4-008:077 and terminate in County of Hawaii Irrigation Easement located

			Makai of Queen Kaahumanu Highway and south of the Honokohau Harbor Access Roadway

3. Reclaimed Water Pipeline

a. Pipe

Reclaimed Water force main piping shall be AWWA C900 or C905 PVC Pipe, High Density Polyethylene (HDPE) Pipe, or Fusible PVC Pipe rated for the system design and superimposed loads for buried piping.

Piping, fittings, and valves shall comply with the State of Hawaii, Water System Standards.

High Density Polyethylene (HDPE) pipe shall utilize butt-fused joints. Electro-fusion joints may be utilized when authorized by the County Wastewater Division. Plastic welding of joints shall not be allowed. HDPE pipe used for Recycled Water service shall be purple and shall be in conformance with the Guidelines for the Treatment and Use of Recycled Water, Hawai'i State Department of Health, Wastewater Branch, May 15, 2002.

b. Thrust Blocks

Thrust blocks shall be provided for all fittings such as tees, plugs, caps, bends, offsets, reducers, and valves as well as all other pipeline appurtenances that are subject to unbalanced thrusts. Design of thrust blocks shall be in accordance with the current edition of the Water System Standards, Department of Water Supply, County of Hawai'i, State of Hawai'i.

c. Design

Design, materials, construction, and testing shall comply with the State of Hawaii, Water System Standards and the City and County of Honolulu Design Standards, Volume 1, July 1993. Stub outs for future connection shall terminate with a gate valve of the same size as the pipeline, end cap, plug or blind flange for future connection and be located in a concrete valve box with cover. Contractor shall provide a minimum 5 ft clearance between the reclaimed force main and gravity sewer. Maximum velocity allowed in the force main is 8 fps, and the maximum headloss shall be 3 ft/100 ft. Minimum velocity shall be 3 fps.

Recycled water force main piping shall be designed with a continuous upward slope to eliminate high points on the piping and the need for installation of air relief valves. Designs incorporating high points in the force main shall not be allowed unless specifically authorized by the County Wastewater Division.

In the event that high points on the force main are authorized by the County Wastewater Division, sewage air relief valves shall be installed on the high points. Sewage air relief valves shall be installed in reinforced concrete vaults and shall be vented to an adjacent sewer system with drainage of the vault to the sewer system to the maximum extent possible.

If authorized, sewage air relief valves shall be Type 316 Stainless Steel, Vent-O-Mat Series RGX air relief valves and shall be provided with isolation valves to allow maintenance and repair of the air relief valve during periods when the force main is active.

d. Lateral Connections

Main connections shall be made at the following approximate locations with final approval of the connection locations to be provided as part of the shop drawing comments.

APPROXIMATE STATION LOCATION	DESCRIPTION	TMK	SIDE OF HIGHWAY	PEAK FLOW (GPM)
310+00	Kohanaiki	7-3-009:016	Makai	700
300+50	Hulikoa Drive	7-3-058	Mauka	50
260+00	Hina Lani Street	7-3-009	Mauka	4120
245+00	Ala Nui Kaloko	7-3-009:002/021	Makai	100
215+60	West Hawaii Business Park (WHBP)	7-4-008:077	Mauka	700
216+20	Honokohau National Park	7-4-008:025	Makai	50
205+00	Future SPS	7-4-008:077	Mauka	100
195+05	McClean Property Utility Easement	Between 7-4-008:030 and 7-4-008:055	Mauka	70
185+70	Kealakehe Parkway (to Honokohau Harbor)	7-4-008	Makai	60
185+70	Kealakehe Parkway	7-4-020	Mauka	1390

* The County reserves the right to adjust exact locations as comments on the layout shop drawings at no extra cost. Compensation or credit will be negotiated for additional or deleted stub outs.

e. Design Criteria

Design criteria for the Recycled Water force main piping shall be as shown below:

BEGINNING STATION	ENDING STATION	FLOW (GPM)
310+00	300+50	1600
300+50	260+20	1650
260+20	184+00	4120

4. Tracer Tape and Pipe Markers

Metallic tracer tape shall be installed above all buried piping. Tracer tape shall be acid and alkali-resistant, green or yellow, 6-inches (minimum) width, 9-mil (minimum) thickness and be reinforced for increased breaking strength. Metallic tracer tape shall be equal to or better than THORTEC Detectable warning tape and shall have wording similar to "CAUTION – Sewer Line Buried Below." Tracer tape to be installed at a depth of approximately 12-inches from grade with a minimum depth coverage of 6-inches. Tape shall be placed on compacted backfill and shall be laid in continuous lengths with wording facing upwards.

Scotchmark 3M Full Range Markers, 15-inches in diameter, Product Number 1253, color coded to APWA standards designed for maximum depth applications (up to eight feet depth) shall be installed above buried piping at a maximum depth of 6-feet. Markers shall be placed at all piping directional changes (horizontal and/or vertical) and at maximum intervals of 50-feet. Electronic Markers shall be installed with 12-inches (top, bottom, sides) of No. 4 crushed screening around the Marker to protect it from damage during backfilling operations. Electronic Markers shall be installed in the horizontal position to maximize locator efficiency.

5. Submittal Requirements

The following information shall be provided in accordance with Subsection 105.02 - Submittals and shall include the following information:

a. A Preliminary Engineering Report (PER) prepared and sealed by a registered civil engineer licensed in the State

of Hawai'i shall be provided for approval by the County. As a minimum, the PER shall contain the following:

i. Basis of Design including conceptual layout, design requirements, preliminary calculations, pipe sizes, applicable regulatory requirements, design cost, construction costs of wastewater sewer, wastewater force main, and reclaimed water pipeline installation.

ii. Summary table indicating stations, pipe lengths, pipe sizes, slopes, minimum and maximum flows, minimum and maximum velocities.

1. Preliminary and final layout drawings and calculations clearly showing plan, profile and sections of the proposed pipelines (plans may show both pipelines, but separate profiles and sections may be required for clarity). Drawings shall clearly indicate pipe sizes, slopes, invert elevations, hydraulic data for each section of sewer piping (Design Peak Flow, Pipe Capacity flowing full, Velocity at Design Peak Flow, Velocity at Pipe flowing full, Manning coefficient). Fitting and stub out type, size and locations shall be clearly shown on these drawings. Final drawings shall be stamped and signed by a registered civil engineer licensed in the State of Hawaii.
2. Preliminary and final calculations including a summary table indicating stations, pipe lengths, pipe sizes, slopes, minimum and maximum flows, minimum and maximum velocities.
3. Stub out box details.
4. Details and catalog cuts of all piping materials, valves, fittings, plugs, etc proposed for use in the construction.
5. Manufacturer's certificates of compliance with the specified standards and Contractor's layout drawings.
6. One (1) set of "As-Built" plans on vellum, including two (2) copied sets and one set of electronic drawings in AutoCAD 2002 version, and one set of signed and stamped electronic drawings in Adobe Acrobat format. The "As-Built" plans shall show correctly identified property TMK numbers and accurately located sewer manholes, laterals, cleanouts and all other major components of the wastewater systems.

7. Documentation certified by an independent professional land surveyor duly registered with the Hawaii Board of Registration for Professional Engineers, Architects, Land Surveyors and Landscape Architects attesting to the location and elevation of all sewer manholes, sewer laterals, cleanouts and all other major components of the wastewater collection system as shown on the "As Built" plans.

iii. Execution

1. Testing

a. Gravity Sewer

Acceptance Testing of the Gravity Sewer shall be in accordance with County of Hawaii standards and the Standard Specifications for Public Works Construction, September 1986, County of Hawai'i.

In addition, the Contractor shall perform CCTV inspection of the sewer line prior to acceptance of the system with a copy of the CCTV inspection provided to the County for review and approval. Testing for deflection will be accomplished with the CCTV inspection. If the CCTV inspection reveals conditions such as sags, dents, out-of-round condition, etc., then the Contractor shall perform mandrel testing in accordance with 21.3.E of the Standard Specifications at not cost to the County or State. CCTV acceptance criteria is available from the County. If corrective measures are required, additional CCTV and mandrel testing costs for re-inspection and/or additional inspections are the responsibility of the Contractor.

b. Reclaimed Water and Wastewater Force Main

Hydrostatic pressure tests of pressure pipe shall be conducted in accordance with Section 4 of AWWA C600. The test shall consist of holding the test pressure on the piping for a minimum period of 120 minutes at 150 psi pressure. No leakage shall be allowed. In the event that the test is not completed or must be repeated due to leakage, equipment failure, etc., the piping shall be depressurized and allowed to "relax" for a minimum of eight (8) hours prior to repeating the test. All testing shall

be witnessed by the County TSS and/or Wastewater Division. The Contractor shall provide a minimum two weeks notification to the County TSS prior to conducting the pressure tests.

b. Water System Facilities Installation

i. General

1. Description

a. Scope

This section specifies the requirements for constructing the new 16-inch diameter water line, its appurtenances and necessary adjustments and renovations to the existing Department of Water Supply water system facilities. The intent of the new water line is to provide for current and future water service needs by improving the transmission capability of the water system along the Queen Kaahumanu Highway. The Contractor shall furnish the necessary, materials, labor and equipment for the design, construction of the new water line and its appurtenances, and for adjustments and renovations to existing water system facilities as described in the project contract's construction plans, proposal items of work and the specifications.
The Contractor shall be responsible for the investigation, inspection and verification of all existing utilities supplemented by actual digging in the field if necessary, to determine the actual location of buried utilities, branches, and service lines.

The Contractor shall be responsible for all necessary permits and licenses for the prosecution of the water system installation work

The Contractor shall repair, at his own expense, all damages sustained during the course of his work and leave completed work in its original or better condition.

No debris resulting from the construction work shall be allowed to enter the new or existing water system. The Contractor shall provide the necessary devices to protect the water lines and prevent debris from entering the new and existing water system. Following the completion of construction at the end of each workday, all pipe ends shall be protected and have either end caps or removable plugs installed unless otherwise directed.

- The new 16-inch waterline shall be installed parallel to the highway from the Kealakehe Parkway intersection (near Station 1120+50) to the Keahole Airport Road.
- The new 16-inch waterline shall be installed in the 10-foot shoulder of the southbound lanes.
- The new 16-inch waterline shall be connected to the existing 12-inch waterline in the existing roadway at the following 5 locations/intersections: (a) Kealakehe Parkway (near Sta. 1120+50 at the existing 16-inch to 12-inch connection); (b) Kaloko-Honokohau National Historic Park; (c) Hulikoa Street; (d) Hina Lani Street; and (e) Kaiminani Drive.
- The northern terminus of the new 16-inch waterline shall be connected to the existing 12-inch waterline that serves the Keahole Airport.
- The existing 12-inch water main shall remain in place.
- The new 16-inch waterline is being installed to increase the transmission capacity of the Department of Water Supply water system.
- Existing service laterals and sub-mains providing service to customers makai of the new widened highway shall be cut and capped at the existing 12-inch main, the existing pipe crossing the highway removed, and connected to the new 16-inch main (ie. The existing 12-inch main shall serve customers mauka of the new highway and the new 16-inch main shall serve customers makai of the new widened highway).
- Existing fire hydrants serving the makai side of the new widened highway shall be connected to the new 16-inch waterline.
- The waterline/system design shall be accepted by the Hawaii Department of Water Supply prior to installation.

2. Quality Assurance

All work shall be performed by the respective trade person in accordance with applicable County Ordinance and State Regulations.

All construction work shall conform to the Standard Details for Public Works Construction, September 1984; Standard Specifications for Public Works Construction, September 1986; State of Hawaii, and the Department of Water Supply's Water System Standards, State of Hawaii, dated 2002, as amended.

3. Submittal Requirements

Furnish the following items containing the specified information:

a. A Preliminary Engineering Report (PER) prepared and sealed by a registered civil engineer licensed in the State of Hawai'i shall be provided for approval by the Department of Water Supply. As a minimum, the PER shall contain the following:

i. Basis of Design including conceptual layout, design requirements, preliminary calculations, pipe sizes, applicable regulatory requirements, design cost, construction costs of water line installation.

ii. Summary table indicating locations of existing water service connections and water line laterals (road centerline stations, pipe lengths, pipe sizes, water meter numbers, tax map keys of parcels, and property owners' names).

1. Preliminary and final layout drawings and calculations clearly showing plan, profile and sections of the proposed and existing water lines and water system facilities. Drawings shall clearly indicate pipe sizes, slopes, invert elevations, hydraulic data. Sizes and locations of pipe fittings, valves, cleanouts and other water system facilities shall be clearly shown on these drawings. Final drawings shall be stamped and signed by a registered civil engineer licensed in the State of Hawaii.

2. Preliminary and final calculations including a summary table indicating stations, pipe lengths, pipe sizes, slopes, minimum and maximum flows, minimum and maximum velocities.

3. Details and catalog cuts of all water system materials, valves, fittings, etc proposed for use in the construction.

4. Manufacturer's certificates of compliance with the specified standards and Contractor's layout drawings.

5. One (1) set of "As-Built" plans on vellum, including two (2) copied sets and one set of electronic drawings in AutoCAD 2002 version,

and one set of signed and stamped electronic drawings in Adobe Acrobat format. The "As-Built" plans shall show correctly identified property TMK numbers and accurately located major components of the water system facilities.

6. Documentation certified by an independent professional land surveyor duly registered with the Hawaii Board of Registration for Professional Engineers, Architects, Land Surveyors and Landscape Architects attesting to the location and elevation of all water manholes, water laterals, cleanouts and all other major components of the water system as shown on the "As Built" plans.

The Contractor will be responsible for the professional quality, technical accuracy and coordination of the above services. All plans, calculations, reports, and load rating analysis shall be stamped by a licensed engineer registered in the State of Hawaii within their respective disciplines.

c. HELCO Utilities

The Contractor shall furnish the design, materials, labor and equipment for the installation/ relocation of affected HELCO utilities within the project limits. This work shall include coordination with the respective utility company and executing a utility agreement. The Contractor shall prepare the utility agreement with the assistance of the State's Engineer.

d. Hawaiian Telcom Utilities

The Contractor shall furnish the design, materials, labor and equipment for the installation/ relocation of affected Hawaiian Telcom utilities within the project limits. This work shall include coordination with the respective utility company and executing a utility agreement. The Contractor shall prepare the utility agreement with the assistance of the State's Engineer.

e. Oceanic Time-Warner Utilities

The Contractor shall furnish the design, materials, labor and equipment for the installation/ relocation of affected Oceanic Time-Warner utilities within the project limits. This work shall include coordination with the respective utility company and executing a utility agreement. The Contractor shall prepare the utility agreement with the assistance of the State's Engineer.

F PROJECT MANAGEMENT AND COORDINATION

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

All activities and decisions of the Contractor relating to the project where the following will be involved will be subject to the review and acceptance by HDOT:

1. Changes to the quality of materials,
2. Changes to utilities cost or utilities schedule
3. Changes to project schedule,
4. Changes in permit requirements,
5. Decisions or activities that may require changes to the FEA,
6. Decisions or activities where landowners or tenants will be affected,
7. Decisions or activities where the traveling public, Hawaii Ironman Triathlon race, or community members will be affected,
8. Decisions or activities that will require additional land acquisition or rentals.

In the event the Contractor's design changes any existing provisions in the FEA, the Contractor shall be responsible for all delays and associated costs related to additional public notices or hearings and review by all affected agencies and processing an amendment to the FEA. Time required for these processes shall be clearly noted on the Project Schedule. The Contractor shall submit 10 copies of documentation related to item nos. 1 to 8 above for HDOT's review and approval. HDOT will review any such submittals within 30 calendar days upon receipt from the Contractor. In the event this review period falls on the critical path of the project, the project completion time will not be extended.

G PERMITS AND CLEARANCES

The Contractor shall be responsible for the preparation, submittal, and approval of all permits necessary to construct and complete the project, including but not limited to:

1. NPDES Permits for discharge of storm water associated with Construction Activities, Hydrotesting Activities, discharge of effluent from dewatering operations.
2. Stream Channel Alteration Permit (SCAP),
3. Water Quality Certification (Section 401),
4. US Army Corps of Engineers Permit (Section 404),
5. CZM Federal Consistency Determination,
6. Special Management Area Use Permit,

7. County Stockpiling, Grading, and Disposal Permits,
8. Chapter 343, HRS,
9. National Historic Preservation Act (Section 106),
10. Section 4 (f) and 6 (f) as applicable,
11. Section 7 Endangered Species Act as applicable,
12. Work to Perform Upon County Highway Permit,
13. Noise variance permit for any nighttime work,
14. Underground Injection Control (UIC) permit, and
15. Other permits as required.

All permits and clearances shall be obtained prior to the start of any construction activities. The Contractor, its subcontractors and design consultants shall ensure that all design and construction work complies with all permit conditions and commitments made with environmental agencies. HDOT will consider permit fees as included in the contract prices for the various contract items and will not pay for permit fees separately.

H HDOT REVIEW OF CONSTRUCTION DOCUMENTS:

Prior to commencing with the construction documents, the Design Build Contractor shall meet with HDOT's Project Manager to confirm the drawing requirements such as sheet size and content of drawings and special provision requirements. Drawing requirements may vary based on proposed concepts. These requirements can be addressed in discussions with HDOT during preparation of Design and Cost Proposals.

The Design-Builder is encouraged to maintain close communications with HDOT throughout the design and construction of the project. It is anticipated that this close communication will serve to expedite submittal review; facilitate the incorporation of innovative project solutions that will enhance the project; and facilitate final acceptance of the project.

Should the Design-Builder choose to hold meetings with HDOT, HDOT would be available to meet weekly during the design phase. Design-Builder shall provide a minimum 72-hour notice to allow coordination of key Department personnel schedules. The Design-Builder shall be responsible for all meeting agendas (to be sent to invitees prior to meeting), providing meeting facilities, and preparing meeting minutes to be sent to meeting participants within 7 calendar days. HDOT shall return comments, if any, on the minutes within 7 calendar days of receiving the minutes. The Design-Builder shall finalize the minutes within 7 calendar days of receiving the comments.

If the Project is done in increments, the construction shop drawings for each increment shall be complete and "stand alone." Cross referencing between increment plans will not be allowed.

The Special Provisions, which are part of the Request for Proposal, are the specifications governing the construction of the Project. The Contractor shall add to or modify the sections in Division 200 to 700 to suit the final design. If there are any additions or modifications, the Design Build Contractor shall submit a compilation of RFP Special Provisions, Proposal, Contract and Bond and those changes with the appropriate submittal.

HDOT will not pay claims for any item that HDOT 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 that HDOT did not comment on or accept in previous submittals.

1. Submittal Format
   a. Submit CAD files for construction drawings in Microstation V8.0 using 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 on CD-ROM or DVD. CAD files are required for Final Submittal Only.
   b. All other electronic files shall be usable in Microsoft Word 2003 and Microsoft Excel 2003 on CD-ROM or DVD.
   c. Submit Design and Construction schedules in Microsoft Project or alternative software approved by HDOT.
   d. Print hardcopies on 20 pound bond and bind.
   e. Detailed cost estimates shall follow HDOT's format used for Federal Aid projects.
   f. Plot tracings on vellums (20 lb) or alternative media approved by HDOT.

2. Copies per Submittal to HDOT
   a. Submit five copies of engineer stamped full size construction drawing sheets and 20 copies of engineer stamped half-size construction drawings,
   b. Five sets of calculations,
   c. Five copies of permit applications,
   d. 12 sets of design reports,
   e. 12 sets of detailed cost estimates,
   f. 12 sets of special provisions specifications,
   g. 12 sets of legible Design and Construction schedule plots on construction drawing size (or smaller) sheets, and
   h. CD-ROM or DVD containing CAD and other electronic files.

The Design Build Contractor shall make the necessary submittals to other government agencies and utility companies and secure the required acceptances independent of HDOT's review and acceptance.

3. Design Submittal and Review by HDOT
   HDOT will review all scheduled submittals within 28 calendar days after HDOT notifies the Contractor in writing that a complete submittal was received as determined by HDOT. In the event a resubmittal is required due to incompleteness as determined by HDOT, HDOT will be afforded an additional 28 calendar days to review any resubmittals. The Project's completion time will not

be extended due to any review time required by HDOT for resubmittals due to incompleteness. Scheduled submittals shall be as follows:

a. 50% Design Submittal: Develop preliminary plans necessary to clearly document the complete scope of improvements and to allow the Contractor to determine the permitting, plan acceptances, and construction parcels necessary to accomplish the work. This may include, but may not be limited to:

1) Contractor's incrementation Plan,
2) Prefinal Structural Design Report,
3) Prefinal Drainage report,
4) Site specific best management plan (BMP), and details,
5) Prefinal Geotechnical Report, as required,
6) Basis for Design for elements not covered by a specific report,
7) Preliminary construction drawings for all of the highway improvements, including traffic control plans,
8) Request for Utility Agreement, Utility Relocation plan(s) and estimate(s),
9) Highway lighting and voltage drop calculations,
10) Construction parcel requirements,
11) Log of submittals made to other government agencies and utility companies and status of coordination and approvals,
12) Log of permit applications to be made in conjunction with the work proposed and copies of draft permit applications,
13) The Progress schedules shall be prepared in accordance with Section 108.06-Progress Schedules of the Special Provisions and any activities including non-construction activities with durations exceeding one month shall be broken into smaller sub-activities,
14) Schedule and copies of public announcements, in coordination with DOT,
15) New special provisions section (Division 200-700), as applicable
16) Quality Control and Assurance Plan,
17) Operational and Maintenance Plan and detail breakdown of estimated O&M costs,
18) Detailed breakdown of contract payment items with schedule of values and theoretical quantities, broken down by increments and in smaller more measurable units.
19) Design Exceptions, as necessary,
20) Prefinal Traffic Control Plan
21) Prefinal Safety Plan

b. 100% Design Submittal (Final Design): Develop all final plans and any documentation required (i.e. permitting, etc.) for construction of the proposed improvements. This may include, but may not be limited to:

1) Design and construction phasing schedule (updated as necessary),
2) Construction shop drawings,
3) Finalized calculations,
4) Finalized cost estimate (including Operation & Maintenance costs),
5) Finalized Geotechnical Report,
6) Finalized Drainage Report,
7) Compilation of RFP Special Provisions, Proposal, Contract and Bond and accepted additions and modifications to Division 200 to 700.

8) Completed "Permanent BMP Consideration Checklist and Project Record."
9) Finalized "Request for Utility Agreement" document,
10) Finalized Easement documentation, and
11) Tabulation of how each comment from the 50% submittal was addressed,
12) CAD files for construction drawings.
13) Finalized Design Exceptions
14) Finalized Traffic Control Plan
15) Finalized Safety Plan

End of Job Design Submittal. At the completion of the construction work, furnish metes and bounds description of the utility corridor for power and communication cables, as required; as-built vellum drawings prepared in accordance with the *Hawaii Standard Specifications for Road and Bridge Construction* Section 108.13(B)(2) As-Built Drawing and with the State Drafting Protocol; and any other submittals to complete the design and construction of the Project.

I CODES AND DESIGN STANDARDS

All permanent and temporary features of the project shall be designed and constructed according to the following codes and guidelines and as amended. Other Codes, Design Standards, or Rules and Regulations not listed may also apply to the Project and it shall be the sole responsibility of the Contractor to adhere to the appropriate documents.

1. A Policy on Geometric Design for Highways and Streets, 5th edition by AASHTO (Green Book),
2. AASHTO LRFD Bridge Design Specifications, US Units 4th edition (2007) and subsequent interim revisions,
3. Hawaii Statewide Uniform Design Manual for Streets and Highways, State of Hawaii Division, October 1980
4. American Disabilities Act - ADAAG reference manual, Designing Sidewalks and Trails for Access Part I and II, 7/99,
5. Roadside Design Guide including Chapter 6 (2006), including latest revisions, AASHTO 2002,
6. Guide for the Development of Bicycle Facilities, AASHTO, 1999,
7. NCHRP Report 350,
8. Manual on Uniform Traffic Control Devices, 2003 edition,
9. Americans with Disabilities Act,
10. Guide for the Planning, Design and Operation of Pedestrian Facilities, AASHTO
11. Design Criteria for Highway Drainage, SDOT Highways Division, dated 5/15/06,
12. Evaluating Scour at Bridge, Second Edition, HEC #18, U.S. Department of Transportation Federal Highway Administration, April 1993,
13. Stream Stability at Highways Structures, HEC #20, U.S. Department of Transportation Federal Highway Administration,
14. Other Applicable Hydraulic Engineer Circulars (HEC) and Hydraulic Design Series (HDS), U.S. Department of Transportation, Federal Highway Administration,
15. State of Hawaii, Department of Transportation, Design Criteria for Bridges and

Structures, February 14, 2005 (HWY DB2.6843),

16. State of Hawaii, Department of Transportation, Highways Division, Statewide Policy for Permanent Highway Safety Hardware, March 1, 1999 (HWY-TD2.2822),
17. Required Data for Consultant Design Projects or Design-Built Project, dated November 24, 1999, HDOT, Bridge.
18. Roadway Lighting Design Guide, AASHTO, 2005.
19. Pavement Design Manual by the Materials Testing and Research Branch, Highways Division, Department of Transportation, March 2002,
20. Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signal, 4th Edition, 2001 including interim revisions; Published by the American Association of State Highway and Transportation Officials,
21. National Electric Code, 2002 Edition, NFPA 70.
22. Applicable sections of 23 CFR 650,
23. FEMA/ National Flood Insurance Program requirements,
24. Standard Details for Public Work Construction, Sept. 1984,
25. Standard Specifications for Public Work Construction, Sept. 1986.
26. Water System Standards, Department of Water Supply, 2002 as amended,
27. Hawaiian Electric Company, Inc. Construction Standards and Specifications,
28. Hawaiian Electric Company, Inc. Underground Utilities Standard Details,
29. Storm Water Permanent Best Management Practices Manual, March 2007.
30. Clean Water Act Section 401 404 MOU, July 2003
31. Pipeline Removal Policy, April 2005
32. Design Exception Policy
33. Statewide Work Zone Safety and Mobility Process, October 4, 2007 (HWY-TD 2.5931)
34. Best Management Practices Manual for Construction Sites in Honolulu, City and County of Honolulu, December 2000,
35. Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications, Publication No. FHWA ED-88-053, and
36. Any other applicable codes and standards typically used for design of highways projects.

J CONSTRUCTION WORK DURING DESIGN

1. If HDOT and County determine that the construction shop drawings and other design documents show that all comments related to: utilities, drainage, access, archaeology and traffic control have been satisfactorily addressed, and provided that the Contractor has:

    a. Satisfactorily completed the 50% design plans, including horizontal and vertical alignment for the highway and intersections,
    b. Submitted copies of approved applicable permits to HDOT prior to start of any construction work,
    c. Placed all site-specific Best Management Practice measures,
    d. Obtained written approval from all utility companies,
    e. Obtained written approval from the County of Hawaii,
    f. Established the Field Office and utility connections, and

g. Submitted to HDOT and obtained written approval of all proposed materials to be used at this stage,

HDOT at its sole discretion, may in writing, authorize the Contractor to start construction on utility relocations, mass grading, and installation of traffic control/traffic detours.

2. If HDOT determines that the shop drawings and other design documents show that comments related to the bridge and wall foundations have been sufficiently addressed, and provided that the Contractor has:

a. Submitted copies of approved applicable permits to HDOT prior to start of any construction work for this and latter phases of work,
b. Placed all site-specific Best Management Practice measures,
c. Obtained written approval from all utility companies,
d. Obtained written approval from the County of Hawaii, and
e. Submitted to HDOT and obtained writtten approval of all proposed materials to be used,

HDOT at its sole discretion may authorize the Contractor to start construction on that portion of work in writing.

The Contractor shall be responsible for constructing the improvements in accordance with the engineered construction shop drawings and specifications. The Contractor shall provide revised drawings and applicable calculations to HDOT for any revisions or deviations from the approved construction shop drawings for review and approval prior to performing the work.

The Contractor shall provide to HDOT, copies of correspondence between the Contractor's designer and the Contractor that pertains to any corrections or clarifications to the shop drawings and specifications.

K INSURANCE AND BOND REQUIREMENTS

The Contractor shall maintain throughout the term of the Project for any design and construction work within State Right-of-Way and construction parcels, a policy or policies of general liability and automobile liability insurance with an insurance company licensed to do business in the State of Hawaii, naming County of Hawaii and the State of Hawaii as additionally insured, with a limit of Excess Liability of not less than Two million dollars ($2,000,000) for each occurrence and covering (i) all of the Contractor's operations, (ii) operations of the Contractor's subcontractors, (iii) Contractor's completed operations, (iv) motor vehicles of every description for which the Contractor is legally responsible, and (v) pedestrian and other non-motor vehicular traffic of every description for which the Contractor is legally responsible during the Project construction.

Minimum coverage for Personal Injury and Property Damage Liability and Automobile Bodily Injury and Property Damage Liability shall be as specified in Section 103 of the

Special Provisions.

The Contractor shall provide three copies of a certificate of insurance to HDOT in advance of any activities conducted on HDOT or County of Hawaii property.

L PRECEDENCE OF CONTRACT DOCUMENTS

Technical Provisions shall govern over the Special Provisions. Special Provisions shall govern over the Standard Specifications. Between Special Provisions and Project Plans, the more restrictive requirements shall govern. Project Plans shall govern over Standard Plans.

M PLANS, SPECIFICATIONS, AND ATTACHMENTS

In addition to the items covered in this Technical Provisions and other CODES AND DESIGN STANDARDS referenced in Section II.F, the following is a listing of Project Plans and Specifications that shall be used for the preparation of Construction Shop Drawings, Project Specifications, and Estimates.

Plans Sheet	Description
	Plan Sheets – Typical Section - Typical Section – Utilizing Existing Roadway (3 sheets) - Figure 6 – Short-Term Intersection Configuration - Right Of Way Maps (7 sheets)
all applicable sheets	State of Hawaii, Department of Transportation Highways Division STANDARD PLANS, 1986, and subsequent revisions. The Contractor shall include the latest specification revisions from the HDOT Project Manager at project award.

Special Provision Section Numbers	Description
101 to 109	General Provisions *
201	Clearing And Grubbing *
202	Removal Of Structures And Obstructions *
203	Excavation And Embankment *
204	Excavation and Backfill for Miscellaneous Facilities *
205	Excavation and Backfill for Bridge and Retaining Structures *
206	Excavation and Backfill for Drainage Facilities *
209	Temporary Water Pollution, Dust and Erosion Control *
306	Untreated Permeable Base Course*
312	Hot Mix Glassphalt Base Course*

401	Hot Mix Asphalt (HMA) Pavement *
503	Concrete Structures *
602	Reinforcing Steel *
603	Culverts and Storm Drains *
604	Manholes, Inlets and Catch Basins *
605	Underdrains *
606	Guardrail *
607	Chain Link Fences and Gates*
613	Centerline and Reference Survey Monuments *
614	Street Survey Monuments *
617	Planting Soil *
619	Planting *
623	Traffic Signal System *
624	Water System*
625	Sewer System*
626	Manhole and Valve Boxes for Water and Sewer Systems *
627	Electric and Communication Systems *
629	Pavement Markings *
630	Traffic Control Guide Signs
631	Traffic Control Regulatory, Warning, and Miscellaneous Signs *
632	Markers *
634	Portland Cement Concrete Sidewalks *
638	Portland Cement Concrete Curb and Gutter *
641	Hydro-Mulch Seeding *
648	Field-Posted Drawings *
650	Curb Ramps *
651	Miscellaneous Work *
695	Archaeological Monitoring *
699	Mobilization *
712	Miscellaneous *
717	Cullet And Cullet-Made Materials *
801	Design Services *

other 200 - 700 series All other applicable 200 to 700 Special Provision sections shall be used and modified to reflect lump-sum payment for items except for force-account items listed in the attached Proposal. Latest versions of the specifications shall be used from the HDOT's website: www.state.hi.us/dot/highways/specs2005/sspecprv.htm

all applicable Sections	2005 Hawaii Standard Specifications for Road, Bridge, and Public Works Construction

* - specification sections included in proposal documents

N DESIGN-BUILD QC/QA PLAN REQUIREMENTS

1. Description

The Design-Build QC/QA plan, submitted as part of the proposal, must be approved by HDOT prior to contract execution. This approval will occur after selection in order to allow minor modifications to the QC/QA plan if necessary. No work activities may proceed until the Contractor's Quality Control Plan has been approved in writing by HDOT.

The plan shall detail how the Contractor will provide quality control (QC) and quality assurance (QA) for both the design and construction elements of the project, coordinate design review with HDOT or other affected agencies, perform tests for quality control, provide inspection, and exercise management control to ensure that work conforms to the contract requirements.

The Design-Build QC/QA Plan shall include a description of the quality control and quality assurance organization, including the number of full-time equivalent employees with specific Quality Control and/or Quality Assurance responsibilities and including a chart showing lines of authority and reporting responsibilities. The persons and organizations performing Quality Control and/or Quality Assurance functions shall have sufficient authority and organizational autonomy to identify quality problems, and to initiate, recommend, and verify implementation of solutions. Persons performing Quality Control and/or Quality Assurance functions shall be at an organizational level which ensures that they are not influenced by the impact of implementation of Quality Control and/or Quality Assurance measures on the Project schedule, performance or cost. To ensure the above organizational independence, at the very least, the QC/QA organization shall be established as a separate entity operating under a separate profit center from the design and production organization. All key personnel performing Quality Control and/or Quality Assurance functions shall be exclusively designated to such and shall not be assigned to perform conflicting duties.

Partnering should be considered an integral part of the Design Quality Control/Quality Assurance program. A partnering agreement is recommended to handle disputes. In addition a separate procedure with escalation ladder for issue resolution should be developed and agreed to by the partnering participants. The procedure should include, but is not limited to, the following elements.

a. Disputes should be delegated to the lowest appropriate level of authority on the project team to resolve within a specified timeframe.
b. A timeframe for each level of authority should be established before the project begins for a list of typical disputes that could occur on a project.
c. If the dispute is not resolved to the satisfaction of both parties within the specified timeframe, the dispute would be automatically escalated to the next level of authority on the project team.
d. If left unresolved, the process would then continue to escalate to the highest level of authority where a final resolution would be arbitrated by an unbiased third party, whose selection would be agreed upon in advance

as part of the QC/QA Plan.

e. A written report describing the dispute, all subsequent actions, and final disposition of the dispute should be submitted to the project records.

f. If subsequent disputes arise on the same issue, the written report should be included as a resource during the resolution process.
Disputes not resolved informally through the partnering process may be brought by either party to the Disputes Review Board.

2. Design-Builder QC/QA Staff

At a minimum, Design-Builder QC/QA staff shall include the following:

a. Design-Builder Quality System Manager

The Design-Builder Quality System Manager is the individual with overall responsibility for development of and adherence to the Design-Build QC/QA Plan. This individual shall be a Professional Engineer licensed by the State of Hawaii having a minimum of ten years supervisory experience in roadway or bridge design or ten years supervisory experience in inspection or materials testing on highway transportation construction projects or a combination thereof.

b. Design-Builder Design QC/QA Manager

The Design-Builder Design QC/QA manager is the individual with overall responsibility for the Design portion of the Design-Build QC/QA Plan. This individual shall have a minimum of five years supervisory experience in roadway design on highway transportation construction projects.
At least one staff member of the Design-Build QC/QA team shall be a Professional Engineer licensed by the State of Hawaii having a minimum of five (5) years experience in design of wastewater and water systems.

c. Design-Builder Construction QC/QA Manager

The Design-Build Construction QC/QA manager is the individual with overall responsibility for the Construction portion of the Design-Build QC/QA Plan. This individual will be responsible for implementing, monitoring and, as necessary, adjusting the processes to assure acceptable quality. This individual shall have a minimum of five years supervisory experience in inspection or documentation or testing materials or combination thereof on highway transportation construction projects, and shall meet one of the following additional requirements:

- A Professional Engineer registered in the State of Hawaii with at least two years of highway materials and/or inspection experience acceptable to the State, or

- A Bachelor of Science Degree in Civil Engineering, or Construction with at least six years of highway materials and/or inspection

experience acceptable to the State.

At least one staff member of the Design-Build QC/QA team shall be a Professional Engineer licensed by the State of Hawaii having a minimum of five (5) years experience in construction of wastewater and water systems.

The Construction QC/QA Manager or his designated representative shall be available or on the project within four hours of being notified of a problem regarding the quality control of any work being done by the Design-Builder, or any of its subcontractors or agents.

d. Quality Testing Supervisor

The Quality Testing Supervisor may be an employee of the Design-Builder's laboratory, and shall be on the site during testing. The Quality Testing Supervisor shall meet one of the following requirements:

i. A Professional Engineer, registered in the State of Hawaii, with at least one year of highway materials testing experience acceptable to the State, or

ii. A Bachelor of Science Degree in Civil Engineering or related field acceptable to HDOT; and at least three years of highway materials testing experience acceptable to the State, or

iii. An individual with at least eight years of highway materials testing and construction experience acceptable to the State.

At least one staff member of the Design-Build QC/QA team shall be a Professional Engineer licensed by the State of Hawaii having a minimum of five (5) years experience in design of wastewater and water systems.

At least one staff member of the Quality Testing team shall be a Professional Engineer licensed by the State of Hawaii having a minimum of three (3) years experience in construction and/or inspection in wastewater and water systems.

In addition to the above, technicians and inspectors shall be employed when necessary. The Testing Technicians and Inspection Technicians shall have the following qualifications:

e. Inspection Technicians

The Design-Builder's QC/QA Inspection Technicians shall have a minimum of three years roadway construction inspection experience in the work activity being inspected.

QC/QA Inspection Technicians utilized for inspection of Sewer,

Wastewater Force Main, and Reclaimed Water Systems shall have a minimum of three (3) years construction inspection experience in the work activity being inspected.

3. Design QC/QA Plan Requirements

a. General

The quality control and quality assurance procedures for each type of Design Document and Construction Document shall be organized by engineering discipline (such as structural, civil and utilities). These procedures shall specify measures to be taken by the Design-Builder (1) to ensure that appropriate quality standards are specified and included in the Design Documents and Construction Documents and to control deviations from such standards, it being understood and agreed that no deviations from such standards shall be made unless they have been previously approved by HDOT at HDOT's sole discretion, and (2) for the selection of suitability of materials, and elements of the Work that are included in the Project.

The Design QC/QA Plan shall include the following:

- Quality control and quality assurance procedures for preparing and checking all plans, calculations, drawings and other items submitted, to ensure that they are independently checked and back-checked in accordance with generally accepted architectural and engineering practices, by experienced architects and engineers, respectively. The originator, checker and back-checker shall be clearly identified on the face of all submittals. Specific procedures for verifying computer programs used shall also be included. Plans, reports and other documents shall be stamped, signed and dated by the responsible Hawaii registered architect or engineer where required under the Contract Provisions, under generally accepted architectural or engineering practices or by applicable laws.

- The plan shall set forth the level, frequency and methods of review of the adequacy of the design of the Project, including the methods by which all final Design Documents and Construction Documents shall be independently reviewed and verified for adequacy of design and back-checked in accordance with generally accepted design and engineering practice by experienced architects and engineers not involved with the preparation of such Documents.

- The plan shall set forth the procedures for coordinating Work performed by different persons in the same area, or in adjacent areas or in related tasks to ensure that conflicts, omissions or misalignments do not occur between drawings or between the drawings and the specifications and to coordinate the review,

approval, release, distribution and revision of documents involving such persons.

- The plan shall identify those elements of the Contract Provisions, Design Documents or Construction Documents, if any, requiring special Quality Control and/or Quality Assurance attention or emphasis, including applicable standards of quality or practice to be met, level of completeness and/or extent of detailing required.

- The plan shall identify by discipline, the name, qualifications, duties, responsibilities and authorities for all persons proposed to be responsible for QC/QA.

- The plan shall state any requirement for, and the name, qualifications, duties, responsibilities and authorities of, external technical experts necessary to ensure the quality of the design of the Project, the anticipated timing of use of, the expected availability of, and any coordination required with respect to any such experts.

- The plan shall describe the required design quality control and assurance functions, including scheduled activities for Design QC/QA identifying the Design Documents and Construction Documents to be delivered to HDOT for its review at each stage of the design or work phase of the Project.

All documents shall be maintained by the Design-Builder for the duration of the Contract and shall be organized, indexed and delivered to HDOT (1) upon Final Acceptance unless required to be delivered earlier pursuant to the Contract Provisions, or (2) even if incomplete, within seven days of receipt of request from HDOT. These documents should include but not be limited to the following items: design criteria, reports and notes, calculations, drawings, schematics, supporting materials, etc.

b. HDOT/County Review of Design Work

HDOT will not officially approve Design Work after initial acceptance of the Design-Builder's Proposal, except as noted for requests for deviations from the RFP, right of way plans, and permit documents. HDOT will reach agreement with the Design-Builder on dates and times for design reviews, and will comment on Design Work, but will not require comment responses unless specifically requested or if work is deemed to be outside the provisions of the contract. If HDOT at any time determines that the Design Work is proceeding which does not conform to Contract or plan requirements, HDOT reserves the right to suspend work for cause until resolution of the issue.

Acceptance of the designs for the Sewer, Wastewater Force Main, and Reclaimed Water Systems by the County under Section 5, Utility

Relocations/ Installations, of the Technical Provisions shall be required prior to installation.

c. Design Quality Review

Prior to the release of final Design Documents and Construction Documents, the Design-Builder shall complete review with architects and engineers experienced in the appropriate disciplines(s). The review shall verify that the Design Documents and Construction Documents were prepared in such a manner as to ensure that they will be acceptable to HDOT, as well as the Design-Build Team. The criteria used in such review shall include (1) conformity of the final Design Documents and Construction Documents with the Contract Provisions; (2) assurance that all materials, equipment and elements of the Work provided for in such documents which shall be incorporated into the Project have been provided for and designed to perform satisfactorily for the purpose intended; (3) the appearance, organization, technical and grammatical accuracy of such documents; (4) verification that such documents have been checked and signed by the drafter, designer, checker and reviewers; (5) where required under the contract, generally accepted architectural or engineering practices or applicable law, verification that such documents have been stamped, signed and dated by the responsible Hawaii registered civil engineer or architect; and (6) assurance that such documents fully provide for constructability, compatibility of materials and conformity to acceptance criteria for inspections and tests as provided in the Contract.

d. Plan Approvals by HDOT

Permit drawings and utility construction drawings shall be developed to the appropriate design standards as specified. HDOT or the appropriate agency shall approve these drawings after a thorough review for completeness and conformance to standards. HDOT will return all non-conforming drawings to the Design-Builder for corrective action.

i. Plans Distribution

The Design-Builder shall provide to HDOT copies of the following documents, with all design changes and revisions shown, upon their being stamped "Released for Construction". These documents will be used by HDOT to facilitate their administration and inspection responsibilities:

- All Design and Construction Documents
- All shop or fabrication drawings which have been approved by the Design-Builder
- All forming plans which have been approved by the Design-Builder

- All traffic control plans which have been approved by the Design-Builder

e. QC/QA of Design Changes

Changes, including field changes, in the design of the project or any portion thereof as shown on the Design and Construction Documents, shall be subject to design QC/QA measures and procedures commensurate with those applied to the original design of the portion of the Project being changed. Furthermore, all changes described in this Section shall be approved in writing by the organization that performed the original design, with the written approval of HDOT. Any changes affecting the basic configuration of the Project shall also be subject to the requirements contained in this Section. Documents containing design and/or field changes shall be distributed according to the requirements set forth in the section entitled "Plans Distribution".

Approval by the County shall be required for all Design Changes to the Sewer, Wastewater Force Main, and Reclaimed Water Systems.

f. Submittals for Review by Department

Design and Construction Documents relating to the following construction phases shall be submitted to HDOT for review. HDOT approval of these submittals is not required and will not be provided. Acceptance of the design by the County shall be required for the Sewer, Wastewater Force Main, and Reclaimed Water Systems prior to installation. Any review comments made by HDOT will be provided, in writing, to the Design-Builder within 28 calendar days, or as agreed to in writing. The following table indicates the submittals for review.

The Design-Builder shall be fully responsible for the schedule impacts and costs of revisions arising from HDOT's review of the Construction Documents for consistency with the requirements of the Contract Provisions and caused by the Design-Builder's non-compliance with Contract requirements.

Construction Phase	**Documents**
Environmental	Permanent Best-Management Practices Report
Earthwork	Roadway Geometrics (Plan and Profile) Channelization Plan Intersection Plan Traffic Control Plan Erosion Control Plan Clearing & Grubbing Roadway Quantities Geotechnical Report Construction Specifications

Geotechnical	Draft Geotechnical Report Final Geotechnical Report
Surfacing and Pavements	Pavement Justification Report Roadway Geometrics Roadway Sections Superelevation diagrams Paving Quantities Paving Plan Construction Specifications
Drainage Structures & Hydraulics	Hydraulics Report Design calculations Drainage Plans & Profiles Drawing & Special Details Construction Specifications
Sewer, Wastewater Force Main, and Reclaimed Water Systems	Submittals in accordance with Section 5.5 of the Technical Provisions
Landscaping	Planting Plan Construction Specifications
Safety and Traffic Items	Phasing and Construction Sequence Report Sign Inventory Traffic Markings and Delineation Guardrail Highway Lighting Signal System Permanent Signing Transportation Management Plan Work Zone Traffic Control Construction Specifications
Misc. Construction	Plans and Plan Details Construction Specifications

4. Construction QC/QA Plan Requirements

   a. General

      The plan must at a minimum address the following:

      1. Describe the Design-Builder's quality control organization, including the number of full-time equivalent employees with specific Quality Control and/or Quality Assurance responsibilities and including a chart showing lines of authority and reporting responsibilities;
      2. List by discipline the name, qualifications, duties, responsibilities and authorities for all persons proposed to be responsible for Construction Quality Control and/or Quality Assurance;
      3. Project progress schedule;
      4. Submittal schedule;

5. Inspection requirements;
6. Quality control sampling, testing, and analysis plan with frequencies, location and methods;
7. Identify the laboratory(s) to be used;
8. Specify documentation for QC/QA activities, including control charts; and
9. HDOT requirements for corrective action when quality control and/or acceptance criteria are not met.

The Contract Provisions may also require specific quality control measures for certain materials. When so required the Design-Builder shall provide all personnel, equipment, supplies, and facilities necessary to perform quality control, obtain samples, and perform tests required in the Contract Provisions.

b. Design-Builder Responsibilities

The Design-Builder shall be responsible for the quality of construction and materials incorporated into the project. The Design-Builder's Quality Control measures are to insure that operational techniques and activities provide material of acceptable quality. Design-Builder sampling and testing shall be performed to control the processes and determine the degree of material compliance with the Contract Provisions.

c. HDOT's Responsibilities

Verification sampling and testing will be performed by HDOT to validate Design-Builder sampling and testing as well as the quality of the material produced. An Independent Assurance Program will also be conducted by HDOT to evaluate all sampling and testing used in the acceptance of material.

The Design-Builder shall provide a schedule for material testing to be conducted by HDOT as required by these documents. The schedule will clearly state the response time required to avoid impact to the project schedule. The response times shall be mutually agreed to.

HDOT shall be solely responsible for determining the acceptability of materials incorporated into the project. The acceptance decision will consider results of Design-Builder sampling and testing at specified frequencies and locations, verification sampling and testing at specified frequencies and locations, inspection by HDOT of the attributes and processes that may affect the quality of the finished product, and a dispute resolution system to resolve discrepancies between the verification sampling and testing and the Design-Builder sampling and testing. The testing of referee samples to resolve disputes will be done by HDOT.

The persons and organizations performing Quality Control and/or Quality

Assurance functions shall have sufficient authority and operational independence to identify quality problems, and to initiate, recommend, and verify corrective actions. Persons performing Quality Control and/or Quality Assurance functions shall be designated as such and shall not be assigned to perform any conflicting duties.

d. Activities Meetings

Prior to the start of any work activity, the Design-Builder shall hold an Activity Meeting to ensure that all project personnel have a thorough understanding of work to be done. Work activities generally correspond to the sections of the Standard Specifications, such as clearing and grubbing, earthwork, etc. or a definable feature of work such as a pre-paving conference. The Activity Meeting should include discussions relating to what will be accomplished, by whom it will be performed, and where, when, and how the work will be done. The Activity Meetings are to ensure that all parties have the same understanding of the design intent, have the appropriate plans, specifications and any special details, and are aware of safety regulations and procedures that need to be followed. At this time the QC inspection checklist for this activity should be reviewed. Activity Meetings shall be scheduled several days in advance of the actual work beginning on an activity to allow for additional preparation if necessary. The Activity Meetings shall be planned and conducted by the Design-Builder Construction QC/QA Manager. Minutes of the meeting shall be taken to document any clarifications and understandings related to the construction of the item that are not documented elsewhere. Activity Meetings are classified as hold points and shall be identified in the Design-Builder's QC/QA plan.

e. Design-Builder Sampling and Testing

Design-Builder field and laboratory sampling and testing shall be performed as specified in the Standard Specifications. Sampling and testing shall be performed by qualified testing personnel defined in this specification. Representative samples shall be randomly obtained by the Design-Builder at specified frequencies and locations. The Design-Builder shall furnish copies of all test results to HDOT within 24 hours of acquiring the sample or the next day of business.

The Design-Builder shall provide to HDOT a testing plan for each material. The testing plan shall be submitted prior to the beginning of production or placement of the material.

All laboratory soil tests and field density tests must be performed by the Design-Builder's Geotechnical Engineering firm.

5. Quality Control Inspections

a. Witness and Hold Points

Witness and Hold Points are to be established where notification of HDOT is required for HDOT's option of observing or visually examining a specific work operation or test. Witness Points are points identified within the inspection plan which require notification of HDOT. Work may proceed beyond a witness point with or without participation by HDOT provided proper notification has been given. Hold Points are mandatory verification points identified within the inspection plan beyond which work cannot proceed until mandatory verification is performed and a written release is granted by HDOT. Witness and Hold Points should be identified in the construction process where critical characteristics are to be measured and maintained, and at points where it is nearly impossible to determine the adequacy of either materials or workmanship once work proceeds past this point. All Activity Meetings shall be included in the Design-Builder's QC/QA Plan as Hold Points.

b. Coordination and Notification

The Design-Builder's Construction QC manager shall designate a primary point of contact for notifications for inspection at hold points and witness points. An alternate individual may be designated to function in this capacity in his/her absence. HDOT will also designate one individual to handle responses to the Design-Builder with written reports or releases for hold and witness points.

The time necessary to respond to the notification for inspection at hold and witness points shall be stated in the Design-Builder's QC Plan and shall be mutually agreed to by both the Design-Builder and HDOT.

c. Hold Points

The following are mandatory hold points for inspections to be performed by HDOT. The Design-Builder may wish to include others.

1. Structures (incl. all foundations)

i. Prior to all concrete pours

HDOT will check that the Design-Builder has completed the following:

- Rebar size, spacing and splices have been checked

HDOT will perform the following independent inspections or checks:

- Spot check form dimensions
- Check that concrete mix design has been reviewed by HDOT
- Pre-pour meeting held

ii. For walls, HDOT will inspect footing excavation base prior to concrete pour.

2. Pavements

i. Asphalt Paving – pre-paving conference

The following elements will be discussed:

- QC sampling and testing discussed
- Compaction test sites determined
- Traffic control
- Hours of operation
- Weather & surface temperature limitations

3. Sewer and Effluent Reuse Systems

i. HDOT will verify that the County has accepted design in accordance with Section 5.5 of the Technical Provisions prior to installation.

d. Witness Points

The following are witness points for inspections or checks that HDOT and/or County may elect to perform. The Design-Builder may wish to include others.

1. Pipe Installations

i. Water Mains (including Reclaimed Water and Wastewater Force Mains)

- Thrust blocks are of proper mass and location
- Compaction test reports for bedding and backfill zones available
- Material Certificates for materials where appropriate
- Hydrostatic pressure tests of Reclaimed Water and Wastewater Force Main

ii. Sewers

- Witness all leak tests performed
- Compaction test reports for bedding and backfill zones available
- Material Certificates for materials where appropriate
- CCTV Inspections

2. Compaction

HDOT shall be given the opportunity to check that the Design-Builder has completed the following:

i. Embankment

- Compaction – minimum one test/ lift

ii. Backfill Zones

- Compaction – minimum one test/ lift

iii. Surfacing

- Compaction – minimum one test/ lift

3. Traffic Signal Work

HDOT and/or the County shall be given the opportunity to check all traffic signal work.

e. Quality Control Inspection

The QC Plan shall contain inspection plans for each construction work item included in the project whether performed by the Design-Builder or a subcontractor or vendor. Work items may be definable features or items of work defined by HDOT's Hawaii Standard Specifications For Road And Bridge Construction, 2005.

f. Work Activities

The Design-Builder shall provide inspection for all work activities for conformance with the construction requirements in the Contract Provisions.

g. Inspection Guidelines

Inspections shall be performed during all phases of the project from start to completion in order to assure that the work meets, and is being performed in accordance with the Contract Provisions, plans, specifications, approved submittals, and any other requirements.

1. Inspection Documentation

Each of the Design-Builder's QC inspectors shall summarize their daily inspections, test and material sampling activities in a daily report. HDOT's Inspectors Daily Report or a similar form shall be used for maintaining a written record of inspection results. Copies of

the inspector's diaries shall be provided to HDOT daily.

O PUBLIC RELATIONS AND PUBLIC COMPLAINTS

HDOT's goal is to minimize the emotional and physical impact on highway users, businesses and neighborhoods that abut, or are serviced by, the highways that comprise this project. It will be the responsibility of the Contractor to provide the following services for the well-being of the affected highway users, residents, and businesses.

The Contractor shall provide a public information specialist responsible for managing public information and public involvement activities outlined below. This staff member shall be experienced in all aspects of providing the public with information on public works projects, including newsletter writing, design and production, direct mailing, telecommunications, news release writing, webpage management and public speaking. This public information specialist will be expected to work with HDOT staff in a team effort to help promote public satisfaction with the project. All information released shall be approved in advance by HDOT.

The public information specialist shall have "real-time" access to all project details that may be relevant to the public, public agencies, emergency service providers, businesses, and other interested groups. The public information specialist is expected to provide that "real-time" information to HDOT's public information staff located at the Highways Division office at (808) 587-2160, or by email at DOTPAO@hawaii.gov on a weekly basis at a minimum, and more frequently if deemed necessary by HDOT. The public information specialist is also expected to maintain a 24-hour hotline to handle public inquiries and complaints.

Although media interviews will mainly be the responsibility of HDOT, on request the Contractor or the public information specialist may be asked to provide the media with an interview or other information on short notice. In such a case, the Contractor or the public information specialist shall deliver a message consistent with HDOT's message. The Contractor or designee shall inform and coordinate this activity with HDOT prior to the interview.

In addition, all written, audio and video materials produced by the Contractor's staff for public dissemination shall comply with HDOT's standards. A copy of all such materials shall be provided to HDOT for preapproval at least seven (7) calendar days prior to scheduled distribution.

The goal of written, audio or video materials should be to increase stakeholder satisfaction of the project by educating and informing the public about the project, including long-term, short-term and daily disruptions or changes to traffic conditions, project benefits, project staging when appropriate, and other relevant issues.

At least two weeks before construction activities begin, HDOT's public information staff will meet with the Contractor and public information specialist to review the following requirements.

1. Public Meetings

The Contractor shall have well-trained and informed speakers available for public meetings, community and civic organizations, neighborhoods associations, private businesses, and other stakeholders.

The Contractor shall organize, prepare, attend, and conduct, a minimum of 4 Public Informational Meetings (PIM). Two PIMs will be conducted during design to provide project status and information to the community. A third PIM will be conducted just prior to construction to advise the community of temporary construction impacts and schedule. A fourth PIM will be conducted after the start of construction to address any public complaints received by HDOT or the Contractor.

If required and as solely determined by HDOT, any additional PIMs conducted by the Contractor may be considered as extra work and compensable by change order. HDOT will not pay for the cost of public meeting(s) associated with the permits separately, if required. HDOT will consider the cost of the public meeting(s) associated with the permits as included in the contract prices for the various contract pay items.

For each meeting, the Contractor shall provide technical assistance, data, and information necessary to produce display boards, printed materials, video graphics, and other forms of information necessary for dialogue with the public. The Contractor shall also provide the necessary staffing and video equipment to present the information. The Contractor shall find a suitable venue to conduct the PIM and make arrangements to reserve the meeting facility. The Contractor shall make accommodations for disabled or disadvantaged people. The Contractor shall submit a newspaper notice to HDOT for approval, and after obtaining HDOT's approval, the Contractor shall publish the notice in the West Hawaii Today, the Hawaii Tribune Herald, and either the Honolulu Advertiser or the Honolulu Star Bulletin. The notice shall be published no later than 14 calendar days prior to the PIM date.

In addition to the general public attending the PIM, the Contractor shall at a minimum, contact the following organizations:

a. West Hawaii Council of Advisors,
b. Governor's Advisory committee,
c. Kona-Kohala Chamber of Commerce,
d. Hawaii Burial Council,
e. Hawaiian Civic Clubs,
f. Na Ala Hele,
g. Hawaii Police Department,
h. Hawaii Fire Department,
i. Owners/lessees within 500-feet of Phase II alignment area,
j. Hawaii County, Department of Water Supply,
k. Hawaii County, Department of Environmental Management,

l. Hawaii Electric Light Company, Inc. ,
m. Hawaiian Telcom,
n. Oceanic-Time Warner,
o. Mayor, Hawaii County,
p. Council Members of Hawaii County Council,

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. Twenty (20) copies of the list of attendees and meeting minutes shall be provided to HDOT within seven calendar days from the PIM date.

2. Bi-Weekly Progress Reports

The Contractor shall provide updates every two weeks to the HDOT Project Manager. That information should specify details of the following periods closures, detours, general project status and other information relevant to the motoring public.

The Contractor shall provide the HDOT Project Manager a summary of public inquiries, complaints and comments every two weeks that includes general categories and trends of comments and an explanation of how the Contractor has responded to those comments.

3. Project Web Page

The contractor shall develop a project web page that will contain information listed below:

Information	Update Frequency
Project Work Scope	Beginning of job
Project Site Map	Beginning of job
Contractor call-in number for complaints	Beginning of job
Progress Schedule/ Milestones	Beginning of job and when schedule is adjusted. Schedule changes must be approved by DOT prior to posting.
Work progress narrative with sketches	every 2 weeks
Scheduled Road/Lane Closures	14 calendar days prior to closure changes. DOT shall be provided 14 calendar days notice for any road/lane closures or changes to road/lane closures.

DOT may link this project web page to the Hawaii DOT's website. The contractor shall include the web page address on a construction advisory sign that will be visible to the public in a location and format as directed by DOT.

P CONTRACT TIME

The Contract Time shall be either a maximum of 900 calendar days from date of Design Notice to Proceed to completion of all construction work items, or the duration shown in the Project Schedule submitted as part of the Design Concept Documents in Section IV.A.1.c plus 30 calendar days, whichever is less. For any work beyond the established Contract Time, the Contractor will be subject to Liquidated Damages in accordance with Section 108.08 of the Special Provisions.

The above contract time will be exclusive of the 9-month plant establishment period specified in Special Provision sections 618 and 619.

III QUALIFICATION PROPOSAL

Each firm interested in being considered for this project is required to submit a Qualification Proposal, of no more than 100 pages, no later than the date and time specified in the Request for Proposals, at the State Contracts Office, 869 Punchbowl Street, Room 105, Honolulu, Hawaii, 96813.

HDOT has scheduled a mandatory pre-qualifications proposal meeting for all interested Contractors at the time, date, and location specified in the Request for Proposals. At a minimum, a representative of the prime contractor shall attend this meeting. The Department highly recommends that representative(s) from the prime firms making up the contractor-design team attend this meeting. The Department will disqualify any Prime Contractor from submitting a proposal for this Project who does not attend this meeting. The purpose of this meeting will be to present a summary of the information contained in the technical provisions related to the Project scope of work and requirements: and to the proposal, selection and award process. The Department will give all attendees an opportunity to pose any questions to the Department. Meeting minutes will be taken and these minutes will be issued as an addendum before the qualifications proposals are due.

A. QUALIFICATION PROPOSAL ITEMS AND EVALUATION CRITERIA

The Qualification Proposal shall contain the following:

1. Project Understanding (300 points)
   a. Discuss generally the tasks involved in the Project. Identify special issues or problems that are likely to be encountered. Illustrate clearly and concisely your understanding of the technical and institutional elements that must be addressed by the Proposer to achieve completion of the Project.
   b. Discuss your understanding of the traffic control required for the Project

and how traffic control will impact the Project schedule. Discuss any major traffic control issues that need to be addressed including your Transportation Management Plan, and your solution.

c. Outline key community relations and stakeholder issues and how they will be addressed.

d. Provide a general description of key issues that might affect schedule.

e. Explain your understanding of partnering and how it will be implemented for specific tasks and issues on the Project.

2. Contractor's Project Team, Key Personnel and Processes (300 points)

a. Describe in detail the organizational structure of the project team. Provide a description of any teaming arrangements, the functions and organizational structure of each team member, including key subconsultants and subcontractors. Specifically identify any team members who will take financial responsibility for the project, and identify any liability limitations.

b. Demonstration of financial capability. This may include a certification or a letter from a financial institution attesting that the contractor-designer team is financially capable of undertaking a project with an anticipated budget of $75M. **Failure to provide demonstration of financial capability will be considered as non-qualified for the project.** If you are including balance sheets, consolidated statements of income or consolidated statements of cashflow, please enclose one copy of these documents in a separate sealed envelope marked "CONFIDENTIAL." The financial documents in the separate sealed envelope will not be counted towards the 100 page qualification proposal limitation.

c. Identify the following key personnel proposed for the Project:

Design-Build Project Manager: Identify the person who (1) will be responsible for ensuring personnel and other resources are made available for the Project; (2) will handle contract administration matters, and; (3) will be ultimately responsible for the quality and timeliness of the Proposer's performance. Identify any other projects that person will be involved with concurrently and time committed to each project. State that person's position and authority within the design-build firm. Discuss previous similar projects for which this person has performed a similar function. Identify that person's experience working with HDOT, local agencies and regulatory agencies.

Design Project Manager: Identify the person who will actively manage the design of the Project. Identify any other projects that person will be involved with concurrently and time committed to each project. List similar projects for which this person has performed a comparable function within the last five years. Discuss relevant experience, professional registrations, education and other components of qualifications applicable to the Project. Identify that person's experience working with HDOT, local agencies, and regulatory agencies.

Construction Project Manager: Identify the person who will actively manage the construction of the Project. Identify any other projects that person will be involved with concurrently and time committed to each project. List similar projects for which this person has performed a

comparable function within the last five years. Discuss relevant experience, professional registrations, education and other components of qualifications applicable to the Project. Identify that person's experience working with HDOT, local agencies, and regulatory agencies.

Quality System Manager: Identify the person who will actively manage the Quality Control/Quality Assurance program of the Project. Identify any other projects that person will be involved with concurrently and time committed to each project. List similar projects for which this person has performed a comparable function within the last five years. Discuss relevant experience, professional registrations, education and other components of qualifications applicable to the Project. Identify that person's experience working with HDOT, local agencies, and regulatory agencies.

Project Engineer(s) and Other Key Personnel: Identify other key members of the Project team including sub-consultants/subcontractors that provide special expertise or will perform key tasks. Describe their anticipated roles. Identify experience working with HDOT, local agencies, and regulatory agencies.

d. Describe any equipment or other resources the Proposer has that will enhance their ability to accomplish the Project. Describe any expertise or special capabilities of members of the Proposer's design-build team that are critical to the Qualification Proposal.

e. Discuss quantitatively how the Project would impact the current and anticipated workload of the office that will perform this work. Describe the Proposer's internal procedures for developing, monitoring, and maintaining Project schedules.

f. Define the methods the Proposer has in place for addressing claims, contract modifications and schedule recovery to maintain the completion date.

3. Contractor's Past Performance (200 points)
   a. Provide a recent work history. List the last five projects completed by each of the Contractor's member firms. Include a contact name, current address, telephone number, and fax number.
   b. Discuss recent relevant experience of the Contractor and/or Contractor's member firms. To the extent possible list only projects similar in nature to the Project and that involve team members proposed for the Project. Describe total project costs and the total value of change orders and claims for each project. Describe any permit violations or environmental regulation violations. Include a contact name, current address, telephone number, and fax number for each project listed.
   c. Provide examples of projects in which the Contractor, Design Consultant, or Project Managers have completed their task ahead of schedule and/or below budget. Explain how this was accomplished.
   d. Describe your experience developing the information for acquiring the permits required for similar projects and compliance with permit conditions and environmental regulations.
4. Quality Control Program (100 points)
   a. Identify the Contractor's internal policies and procedures for quality control and quality assurance.

b. Describe how the Contractor's internal quality control program would enhance the development of the Project.

5. Safety Program (100 points)
Provide a brief overview of the Contractor's safety program.
   a. Describe the past five years safety record on all construction projects. List circumstances and outcome for all citations.
   b. Submit resume of Contractor's safety officer.

In addition to the items contained in the five categories above, completed CONFLICT OF INTEREST (COI) DISCLOSURE FORMs shall be included as a separate tabbed appendix to the Qualification Proposal. A blank form is provided after the Technical Provisions. Failure to submit a completed COI Disclosure Forms by the General Contractor and all tiers of its subcontractors (i.e. engineering, environmental, or architectural consultants) will automatically designate the proposer as non-responsive to this solicitation. All potential conflicts of interest must also be disclosed in the COI Disclosure Form. The proposer may include a conflict mitigation plan as described in the COI disclosure form. If the proposer was aware of an organizational COI as defined in the COI form prior to award of the contract and did not disclose the conflict or potential COI to HDOT, HDOT may disqualify the proposer from further consideration, or may terminate the contract for default if discovery is made after contract execution.

Attach completed COI forms as a tabbed Appendix to the Qualifications Proposal. The separately sealed financial documents, the COI forms and tabs will not count against the Qualification Proposal 100-page limitation.

The COI forms and the conflict mitigation plan shall be used throughout the term of the contract to disclose any conflicts that may arise (i.e. new contract awards, replacement of HDOT approved subcontractors/subconsultants, etc.).

Twelve (12) copies of the Qualification Proposal shall be submitted in a bound volume on 8 ½ x 11" letter size paper. Drawings, charts, or exhibits may be of larger size up to 11" x 17" but shall be folded down to letter size. In addition, submit a pdf copy of the Qualification Proposal, including the COI disclosure forms, on CD-ROM or DVD. To facilitate HDOT's review, each of the five above sections shall be clearly tabbed and a Table of Contents shall be included.

If the engineering firm used by the Contractor does not have a DPW Form 120 or Federal Standard Form 255 on file with the State Contracts Office, provide two completed forms with the Qualification Proposal submittal. The DPW Form 120 and Federal Standard Form 255 may be downloaded from http://www.hawaii.gov/dot, click on "Business Related Information", then on "Professional Services."

Total Qualification Points Possible = 1000 Points

The total number of pages including all introductory letters, evaluation criteria items, exhibits, and references shall not exceed 100 pages. The separately

sealed financial documents, the COI forms, tabs, DPW Form 120, and Federal Standard Form 255 will not count against the Qualification Proposal 100-page limitation. A penalty of ten points per page will be deducted from the total score if the number of pages exceeds 100 total. If double sided pages are used, each printed face will count as one page. (Example, two sheets of paper with one sheet with double sided print and one sheet with single sided print will count as three pages.) All pages shall be numbered.

The maximum total score is 1000. Any score of 650 or less will be considered as non-qualified for the project.

All information required for HDOT to properly evaluate the proposers for each criteria item contained in the three categories listed on pages TP-66 THRU 68 MUST be submitted in the Qualifications Submittal. Failure to provide complete information in the Qualification Proposal will automatically result in a reduced score for a given Criteria Item where complete information is not provided. If no information is provided, this will automatically result in a score of zero points. HDOT at its sole discretion may deem the Qualifications Submittal as non responsive if the information submitted is incomplete and HDOT is unable to assign a credible Qualification Proposal score based on an incomplete submittal.

In the event only one qualified contractor remains after all Qualification Proposals are evaluated, HDOT reserves the right to cancel this Request for Proposals and re-advertise the project.

B. DETERMINATION OF TOP THREE QUALIFIED CONTRACTORS

The three highest Qualification Proposal Total Score determined above will be used to determine the top three qualified Contractors.

Upon HDOT's determination of the top three qualified contractor-designer teams, the top three qualified Contractors will be invited to submit Design Concept Documents and a Price Proposal described in Section IV below. All Contractors who fail to qualify to submit a Design Concept Document and Price Proposal submittal will be notified via certified mail.

C. DEBRIEFING

If requested, debriefing sessions will be conducted for the non-selected firms after the project is awarded.

IV DESIGN CONCEPT DOCUMENTS AND PRICE PROPOSAL

The Design Concept Documents and Price Proposal shall be received no later than the date and time specified in the Request for Proposals at the State Contracts Office, 869 Punchbowl Street, Room 105, Honolulu, Hawaii, 96813.

By submitting a Design and Price Proposal, the Contractor acknowledges the Contractor's

team is fully qualified to complete the Project and that the allocated time was sufficient to collect the necessary information and to prepare designs to base its price proposal. There will be no claims due to "insufficient time to collect information and prepare studies and designs."

Once the Design and Price Proposal is submitted to the State, HDOT becomes the owner of the Design Documentations. After the winning Contractor is selected and the project is awarded, HDOT may disclose desirable elements from the second ranked and third ranked designs to the winning Contractor.

A. DESIGN CONCEPT DOCUMENTS

Design Concept Documents from the top three qualified Contractors shall be submitted in a separate box(es) or envelope(s) from the Price Proposal. The Price Proposal shall be submitted in a separate sealed envelope described in subsection B below.

HDOT has provided a Geotechnical Engineering Exploration Report dated September 12, 2002 to be used at the Contractor's **own risk** and a Pavement Type Justification Report, Supplement No. 2 for this project.

HDOT has also provided topographic survey dated 1997 in this package to reduce time and cost incurred by the Contractor in producing the Design Concept Documents. An electronic file of the topographic survey on CD will be provided to each Contractor. The Contractor may use this survey **at its own risk** in the design of the project, however the Contractor shall not be entitled to any claims to HDOT that is related to changed features or missing features in the HDOT furnished topographic survey. The topographic survey was taken during the design phase of the Queen Kaahumanu Widening, Phase I project. It is highly advised that site visits be conducted to ascertain changed features from the time the HDOT topo was taken.

To aid in preparing the above proposal, an electronic copy of the Final EA on CD can be obtained from HDOT design engineer's office at 601 Kamokila Boulevard, Room 688, Kapolei, Hawaii. Call 692-7550 to check for availability.

All teams shall submit complete DBE documentation as stated in Section III of the Regulatory Requirements for Federal-Aid Projects Regarding Disadvantaged Business Enterprises (DBE) form within five working days of the notification date. It is anticipated that notification will occur on **March 16, 2010**.

1. REQUESTS FOR INFORMATION

The Department will accept Requests for Information (RFI) related to preparing the Design Documents up to 40 calendar days prior to the Proposal (Design and Price Proposal) submittal date specified in the Request for Proposals. All RFI's will be received by the Department in writing, by FAX, letter, or email by 4:00pm of this date. RFI's shall be emailed to the following address: henry.kennedy@hawaii.gov or faxed to the following number: (808) 692-7555, attention: Henry Kennedy. No verbal inquiries will be accepted by the Department.

The Department's responses to the RFI's related to the preparation of the design documents will be issued by Addendum no later than 30 calendar days prior to the Proposal submittal date. After the Addendum is received, the Contractors shall finish their design documentation according to their best understanding of the project given all information received in this Request for Proposal Documents, in the mandatory pre-qualifications proposal meeting, and any addenda documents received to that point.

2. DESIGN CONCEPT REQUIREMENTS

The Design Concept Documents shall contain the following:

a. An itemized, written statement of conformance affirming any/ all requirements and/or guidelines that the Design-Build team will comply with.
b. An itemized, written statement of any/ all requirements and/or guidelines that the Design-Build team will deviate from along with a mitigation description explaining how and/or why the deviation will add value to the project.

   Any variations from the Scope of Improvements or any other section of this RFP, including Alternative Technical Concepts (ATC), shall be identified by the Contractor. Any variations, either perceived or noted by the Contractor shall not necessarily cause a proposal to be considered non-responsive. The Department will assess the variations during the evaluation process and score the proposal accordingly.

c. Clearly show dates when new roadway lanes in excess of 2 lanes will be opened for public use. Show these new segments in lane-miles.
d. 20 or 40 scale schematic drawings showing temporary and final roadway alignments, roadway profiles, traffic control phasing and management scheme, temporary and final utilities alignment and locations. Other drawings at appropriate scales shall include: structure plan and elevations, foundations schematic drawings, drainage plans, and other details at a scale and level of detail necessary to effectively present the design concept to HDOT;
e. Landscape plans and/or renderings and estimated annual maintenance costs;
f. Project Schedule - A critical path method schedule of anticipated milestones and their associated phasing with other activities covered in

the Technical Provisions. As a minimum, this schedule shall include the following:

(1) Preliminary Design Submittal,
(2) 100% Design Submittal,
(3) End of Job Design Submittal,
(4) HDOT design reviews,
(5) Permitting activities,
(6) Public meetings,
(7) Scheduled public events – Hawaii Ironman Triathlon race
(8) Start of Construction,
(9) Mass Grading
(10) Relocation of utilities,
(11) Construction Phasing Plan,
(12) Retaining walls,
(13) Intersection Improvements
(14) Landscaping
(15) Completion of All Work Items, and
(16) 9-month Plant Establishment Period.

g. Updated Quality Control Plan containing all materials or elements known at the Design Concept stage.

3. DESIGN CONCEPT DOCUMENT SUBMITTAL

The submittal shall contain the following:

a. 15 bound sets of schematic drawings and renderings (half-size prints),
b. Five bound sets of calculations,
c. 15 copies of a listing of anticipated permits and clearances to be obtained,
d. 15 plots of the Project Schedule neatly folded to 8 ½ x 11" size,
e. 15 bound sets of proposed materials list and draft Quality Control Plan, and
f. Submit a pdf copy of the Design Concept Document Submittal on CD-ROM or DVD..

3. DESIGN BUILD SCORING

a. Evaluation Plan

Evaluation of the Design Concept Documents shall be conducted by a review committee consisting of a three member scoring panel (Evaluation Committee) and a non-scoring Technical Advisory Committee (TAC) comprised of personnel from the various affected disciplines covered within the proposal.

The review committee will convene and review the proposals as a group over the course of one week. During this initial review, the group will post their comments on a group spreadsheet evaluating the pros and cons of each proposal on a relative basis for comparison.

Upon completion of the initial review, HDOT will schedule an interview with each Contractor that is invited to submit a proposal. Each Contractor and its designer will be given an opportunity to present their design concept to HDOT's Review Committee after HDOT establishes an initial Design Concept Score but before the Price Proposals are opened. These interviews will be held to allow HDOT to clarify any questions it may.

Upon completion of the Contractor interviews, HDOT's Review Committee will reconvene to finalize their comments to the Contractor proposals.

Once the comments have been finalized, the Evaluation Committee will score the proposals. At their discretion, they can choose to concur with the Review Committee's recommendation or utilize their best judgment.

After the Design Concept Document scores have been finalized, the Project Manager will open the Price Proposals to calculate each Contractor's total score. Total scores will be rounded to the nearest tenth of a point.

	CRITERIA ITEM	**MAX POINTS**	**ACTUAL POINTS**
1	Effective Traffic Management	30	
2	Technical Approach	30	
3	Aesthetics of Design and Context Sensitivity	15	

DESIGN CONCEPT SCORE : ____ Points

Total Design Concept Points Possible = 75 points

Breakdown of Points for evaluation

1	Effective Traffic Management (30 pts max) **Clearly show dates when new roadway lanes in excess of 2 lanes will be opened for public use. Show these new segments in lane-miles. Emphasis on delays & early lane openings**	0 - 15 pts: Traffic control plan which increases throughput; decreases travel time delays
		0 - 10 pts: Project duration; construction duration
		0– 5 pts: Work zone safety
2	Technical Approach (30 pts max)	0 - 15 pts: Conformance to requirements and guidelines
		0 - 5 pts: Mitigation plan for variances to requirements and guidelines
		0 – 10 pts: Work process is collaborative; allows State input during design process
3	Aesthetics of Design; Context Sensitivity (15 pts max)	0 - 10 pts: Project combines visual aesthetics with a sense of place consistent with the region (Kaloko-Honokohau NPS, etc.)
		0 – 5 pts: Project incorporates principles of sustainability and low maintenance

b. Price Score

The envelopes containing the sealed Price Proposal will be opened after the Design Concept Documents have been evaluated and scored and a Price Score will be determined by HDOT's Review Committee as follows:

Price Score : $\frac{\text{25 points x Low Bid Amount}}{\text{Bid Amount of any given bidder}}$

The score will be rounded to the nearest tenth of a point. Any score of 0.05 or greater will be rounded to the next higher tenth of a point.

c. Total Score

Total design-build score will be the sum of Design Concept and Price Scores (a + b).

4. INTERVIEWS WITH CONTRACTORS

HDOT will schedule an interview with each Contractor that is invited to

submit a proposal. Each Contractor and its designer will be given an opportunity to present their design concept to HDOT's Review Committee after HDOT establishes an initial Design Concept Score but before the Price Proposals are opened. These interviews will be held to allow HDOT to clarify any questions it may.

Any substantial oral clarification by the Contractor shall be reduced to writing by the Contractor. HDOT will consider all information presented in this meeting before determining a final Design Concept Score.

The winning Contractor will be expected to incorporate into their design and construction, any items presented in this interview that were not reflected in the Design Concept Documents. HDOT may take meeting minutes, audio and/or video records and will verify that all items discussed and written clarification offered by the Contractor have been incorporated into subsequent design submittals.

The Contractor shall be permitted to submit a new proposal or amend those submitted if, and only if, HDOT issues an addendum following these interviews.

Each interview will be limited to 75 minutes maximum; 30 minutes will be given to the Contractor for presentation purposes, and a 45-minute questions and answers session. HDOT will contact each Contractor to set the final time, date, and location of the interview and will provide a minimum 7 days notice.

B. PRICE PROPOSAL

1. PRICE PROPOSAL ITEMS

The Project is a design build project to be priced for a total lump sum price plus force account work items. The itemized lump sum prices in the Proposal Schedule are intended principally to serve as a guide in determining and comparing the price proposals. The Schedule may not include all units of work traditionally itemized in other HDOT projects. It is the responsibility of the Contractor to price the total scope of work necessary to complete the Project.

The Price Proposal shall consist of the completed PROPOSAL SCHEDULE and contract documentation attached.

The completed Price Proposal Items shall be submitted in a sealed envelope that is separate from the Design Concept Documents and shall be clearly marked.

HDOT will consider this Price Proposal to be the Contractor's Best and Final offer unless HDOT issues addendum(s) to the Request for Proposal after

receiving the Design and Price Proposals.

2. CASH FLOW SCHEDULE

In addition to the project schedule submitted with the Technical Proposal, each Proposer shall submit a schedule of the projected monthly payments that would be earned if its proposed construction schedule is followed. These Cash Flow Schedules shall be submitted in a single copy.

The above documentation shall be submitted with the Price Proposal in a separate sealed envelope.

C. DETERMINATION OF PROJECT AWARD AND CONTRACT EXECUTION

The project will be awarded to the Contractor with the highest total of Design Concept Score and Price Score.

In the event of a tie, the Contractor with the lowest Price Proposal will prevail.

After HDOT completes its review of the completed Proposal Documents and determines the documents are in order and verifies that sufficient funds are available, HDOT will issue an award letter to the apparent winning bidder.

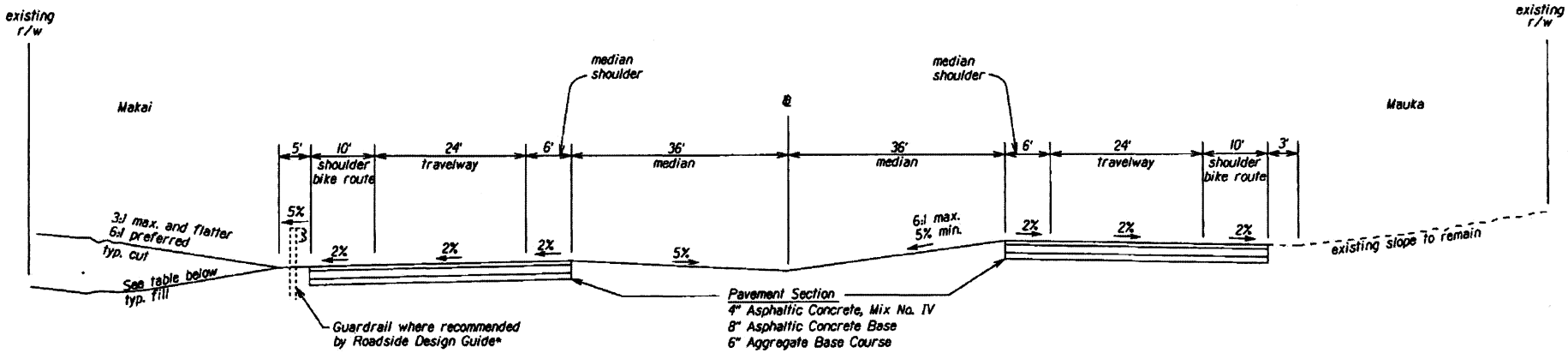
The winning Contractor shall for monthly payment and measurement purposes, break down any of the contract items contained in the Proposal Schedule to smaller, more easily measurable elements. The winning Contractor shall provide a schedule of values and the theoretical quantities associated with each value item, and should clearly indicate which contract item and specification section(s) it applies to. Unless otherwise shown in the Proposal Schedule, all items shall be lump sum based on theoretical quantities. This breakdown of items shall be provided as indicated in the Contractor's proposal.

Once Price Proposals are opened and the Total Score is calculated, the winning proposer as determined by the process specified above who submitted a responsive proposal will not be allowed to withdraw from the project.

In the event after evaluation of the Design Concept Documents and Price Proposal that there is less than one responsive proposer or if the construction cost for the apparent successful proposer substantially exceeds HDOT's project budget, the HDOT may at its sole discretion, cancel this Request for Proposal and readvertise the project.

END OF TECHNICAL PROVISIONS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(38)	2007	0	0



* Pave shoulders under and behind guardrails per current DOT guardrail plan details, approved by State Highways Traffic Branch.

TYPICAL SECTION

Not to Scale

FILL SLOPES
3:1 max. typical fill slope (no guardrails)
2:1 max. with guardrails
1:1 max. with guardrails and slope protection (e.g., grouted rubble pavement)
Steeper than 1:1, provide retaining structure.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

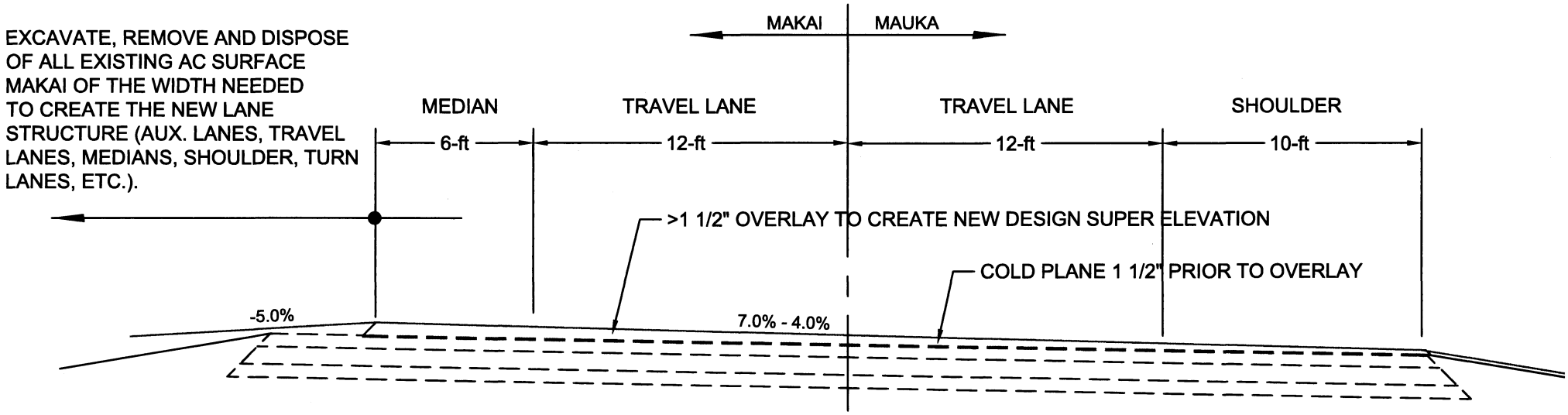
TYPICAL SECTION

QUEEN KAAHUMANU HIGHWAY WIDENING PHASE 2
Keaiakahe Parkway to Keahole Airport Road
Federal-Aid Project No. NH-019-1(38)

Scale: NTS Date: Mar, 2008

SHEET No. X OF X SHEETS

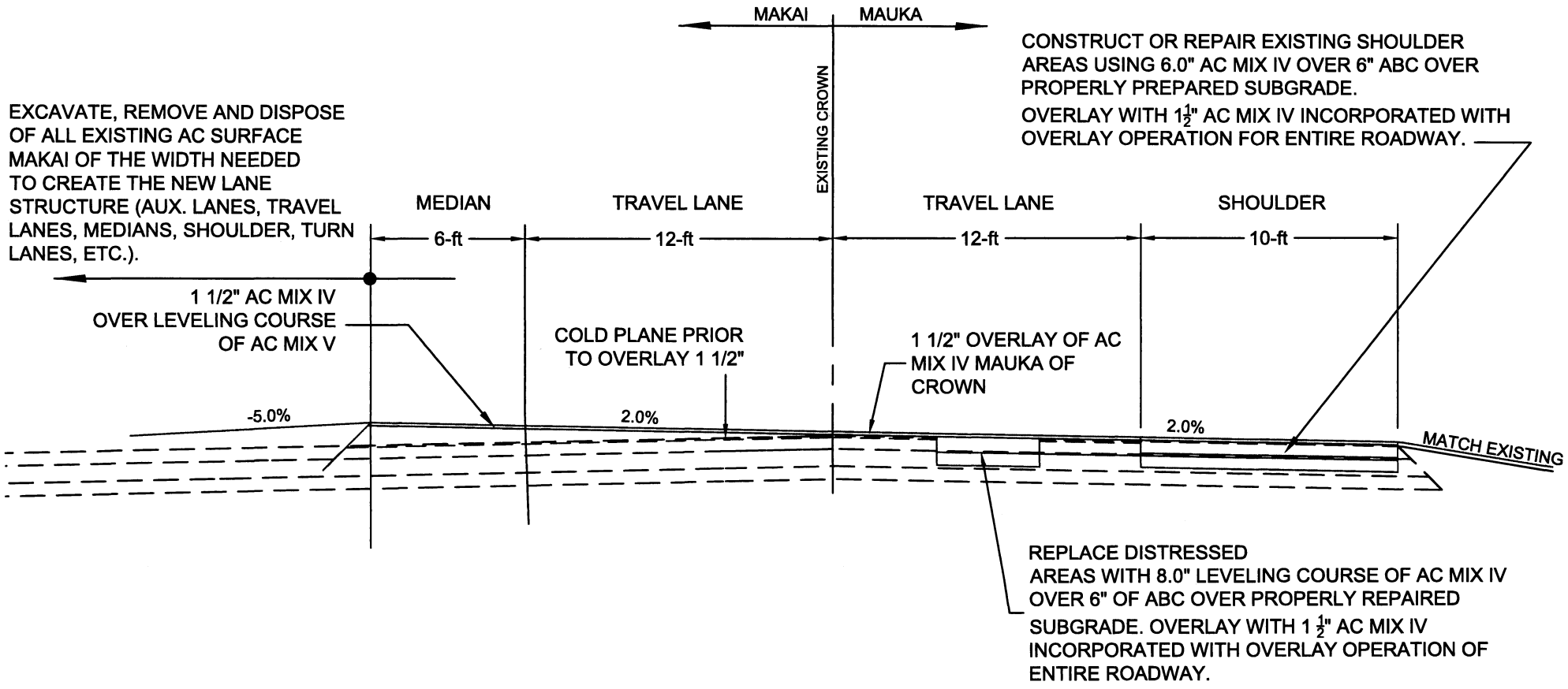
00



TYPICAL SECTION - UTILIZING EXISTING ROADWAY IN SUPER ELEVATED AREAS

SCALE: 1" = 6'

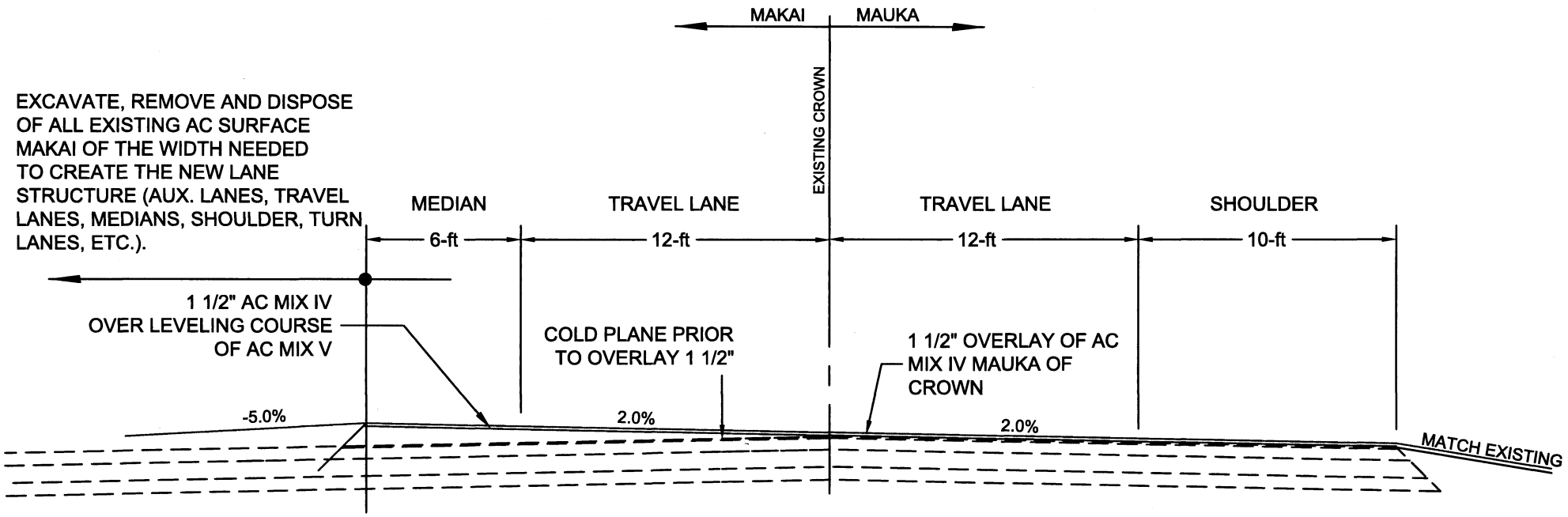
AUX. LANES, TURN LANES, ETC. SHALL BE INCLUDED IN A SIMILAR MANNER



TYPICAL SECTION - UTILIZING EXISTING ROADWAY IN DISTRESSED AREAS

SCALE: 1" = 6'

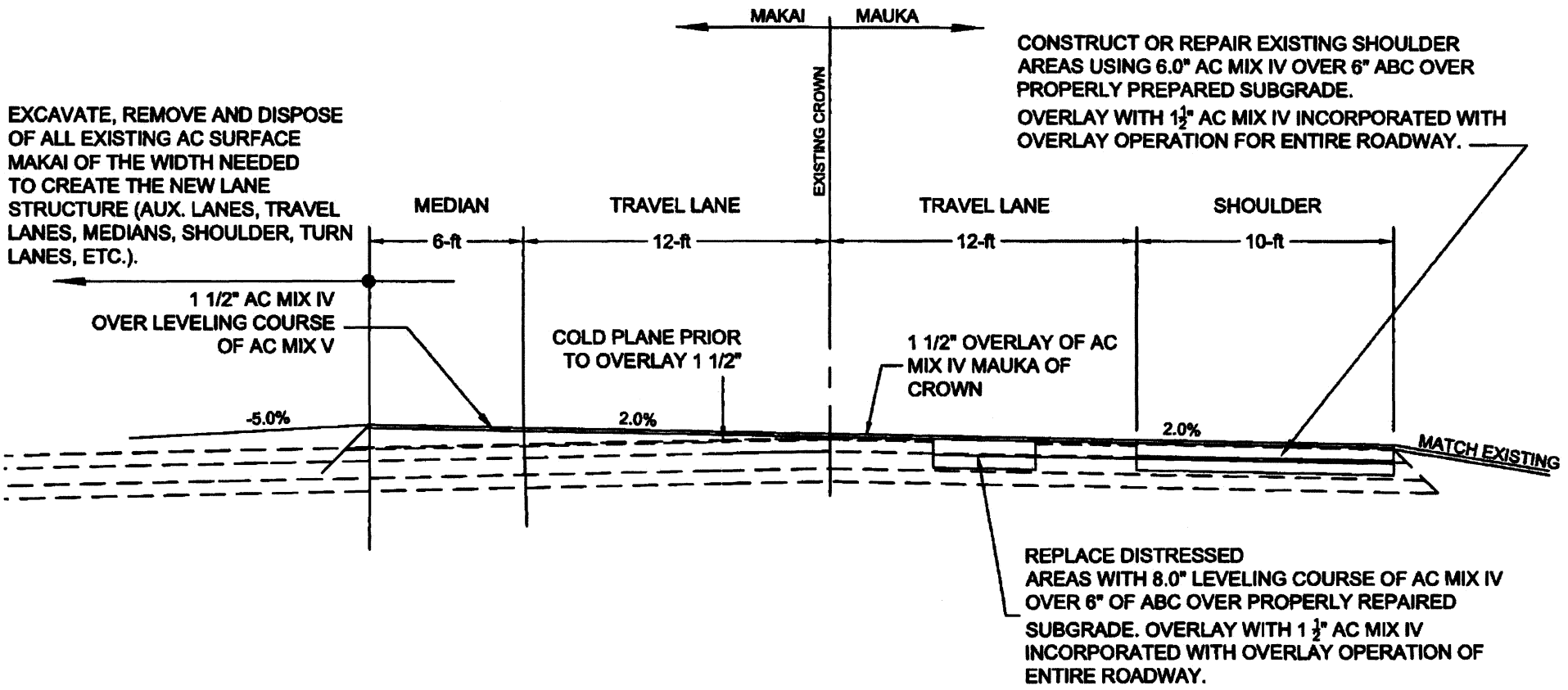
AUX. LANES, TURN LANES, ETC. SHALL BE INCLUDED IN A SIMILAR MANNER



TYPICAL SECTION - UTILIZING EXISTING ROADWAY

SCALE: 1" = 6'

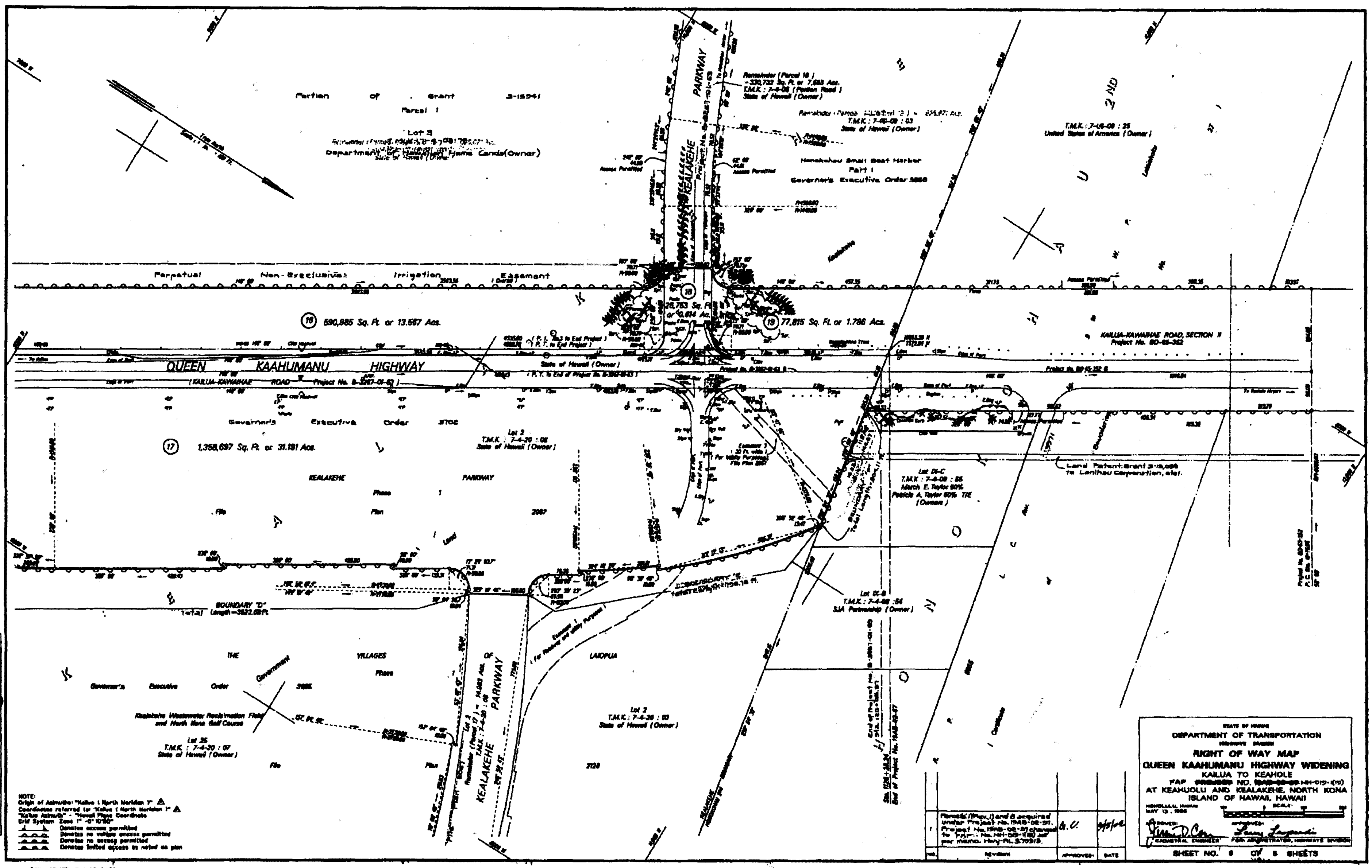
AUX. LANES, TURN LANES, ETC. SHALL BE INCLUDED IN A SIMILAR MANNER



TYPICAL SECTION - UTILIZING EXISTING ROADWAY IN DISTRESSED AREAS

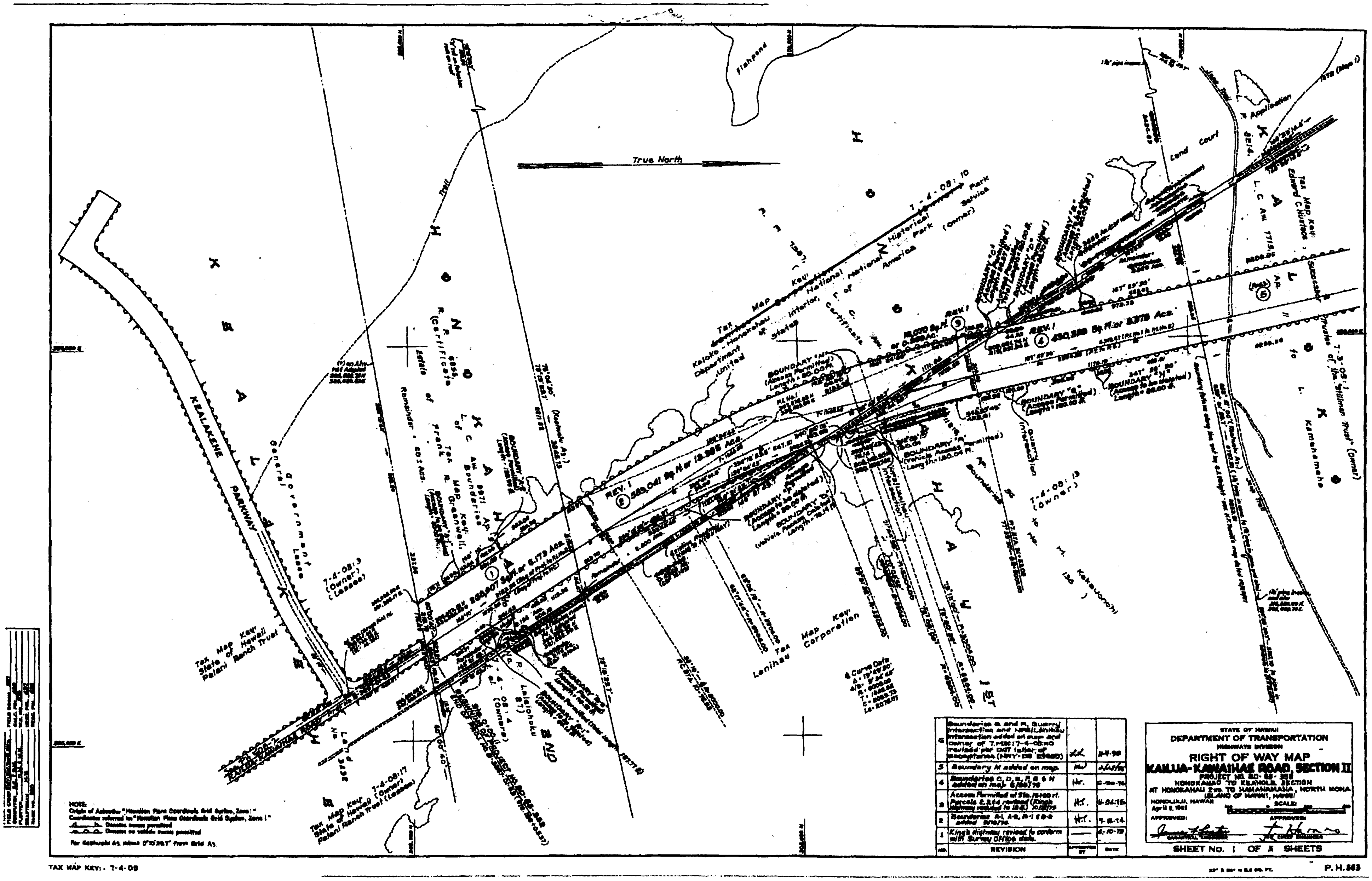
SCALE: 1" = 6'

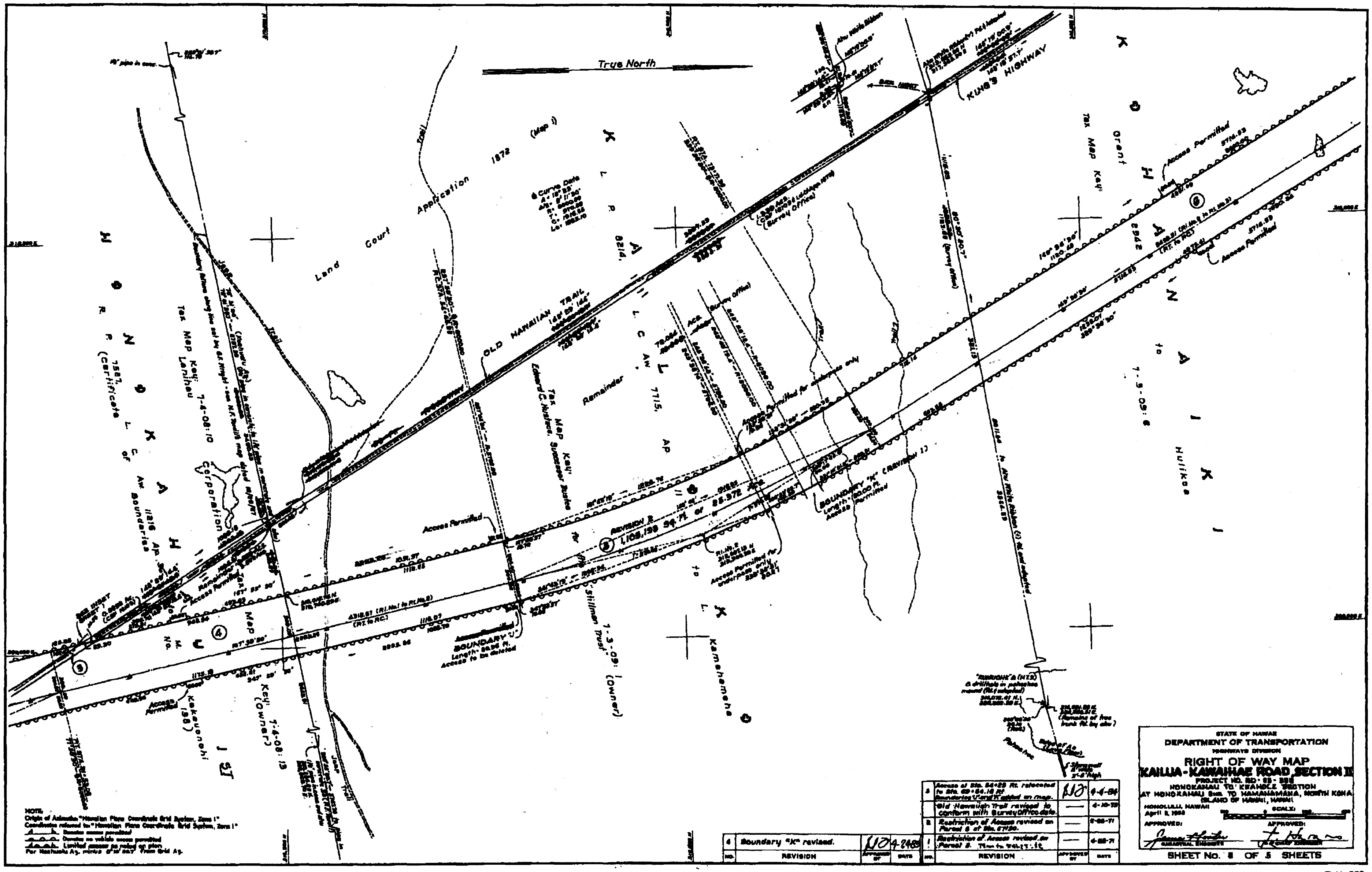
AUX. LANES, TURN LANES, ETC. SHALL BE INCLUDED IN A SIMILAR MANNER



TAX MAP KEY: 7-4-08 & 20

P.H. 741


True North
KEALAKEHE PARKWAY
Fishpond
Land Court
Quarry Intersection
Tax Map Key
Lanihau Corporation
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
RIGHT OF WAY MAP
KAILUA-KAWAIHAE ROAD, SECTION II
HONOKAHAU TO KEAHOLE SECTION
HONOLULU, HAWAII
SCALE:
APPROVED:
APPROVED:
SHEET No. 1 OF 5 SHEETS
P. H. 563
TAX MAP KEY: 7-4-08



NOTE:
Origin of Azimuths "Hawaiian Plane Coordinate Grid System, Zone 1"
Coordinates referred to "Hawaiian Plane Coordinate Grid System, Zone 1"
Denotes access permitted
Denotes no vehicle access permitted
Limited access as noted on plan.
For Hashuela Ap. minus 0°10' 30.7" from Grid Az.

No.	Revision	Approved by	Date
4	Boundary "K" revised.	NJ	4-24-85

No.	Revision	Approved by	Date
3	Access at Sta. 54+29 Rt. relocated to Sta. 69+64.16 Rt. Boundaries "J" and "K" added on map.	NJ	4-4-84
	Old Hawaiian Trail revised to conform with Survey Office data.	—	4-10-73
2	Restriction of Access revised on Parcel 6 at Sta. 67+50.	—	6-25-71
1	Restriction of Access revised on Parcel 5.	—	4-28-71

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RIGHT OF WAY MAP
KAILUA-KAWAIHAE ROAD, SECTION II

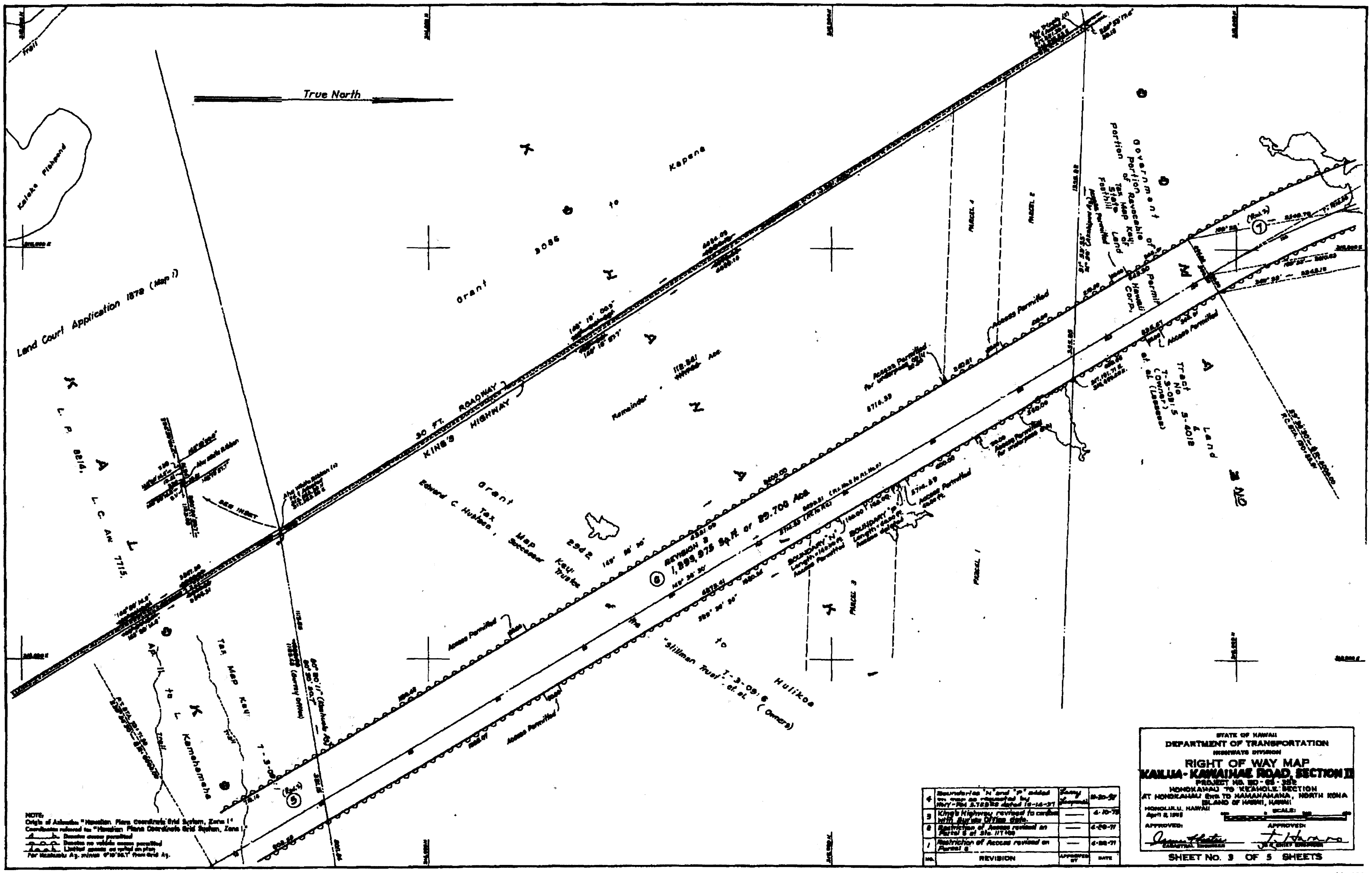
PROJECT NO. RD-63-388
HONOKAHAU TO KEAHOLE SECTION
AT HONOKAHAU 2nd. TO HAMANAMANA, NORTH KONA
ISLAND OF HAWAII, HAWAII

HONOLULU, HAWAII
April 2, 1968
SCALE:
APPROVED: Engineer
APPROVED: Chief Engineer

SHEET No. 5 OF 5 SHEETS

TAX MAP KEY: 7-4-08, 7-3-09

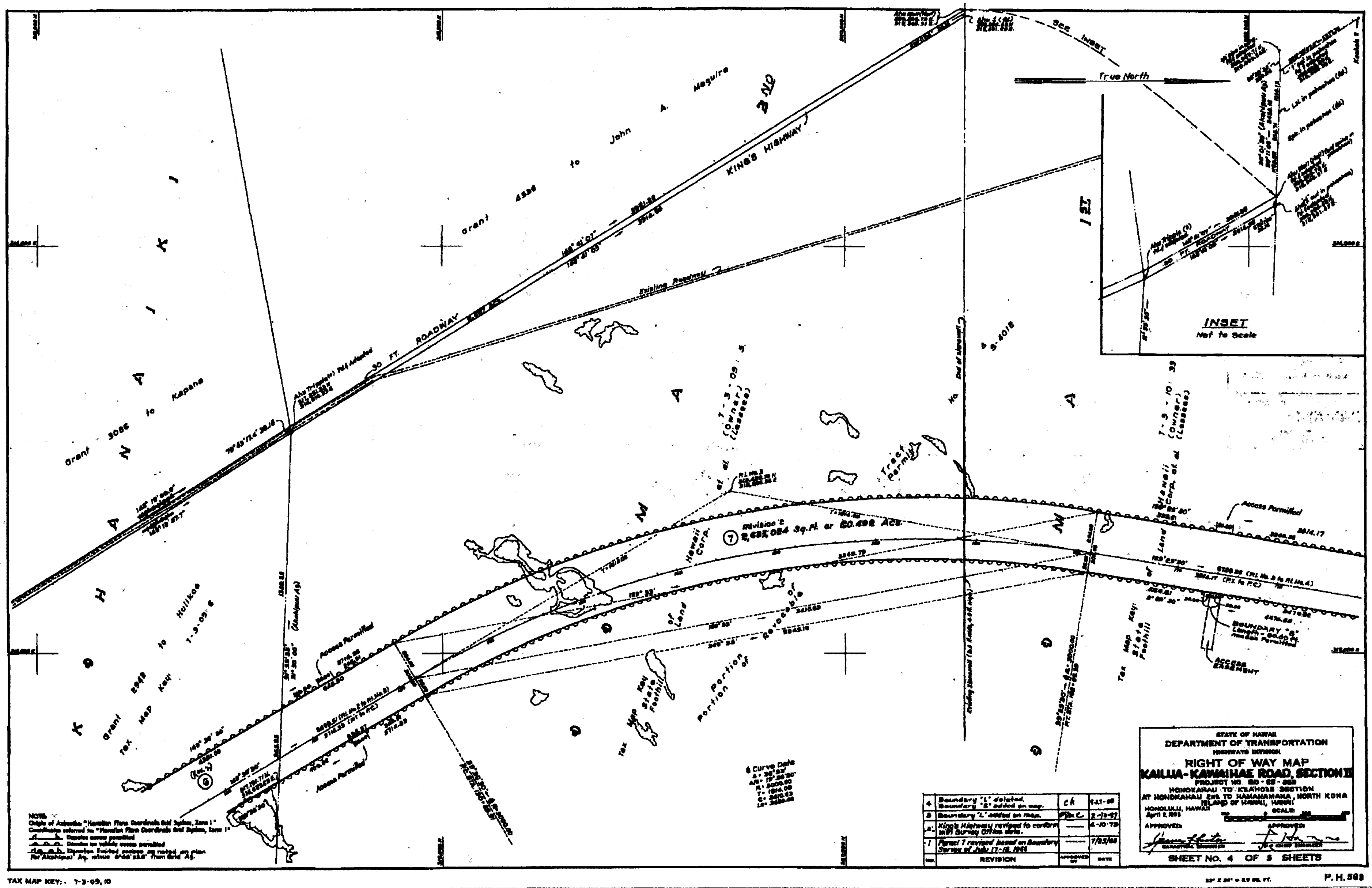
P. H. 563



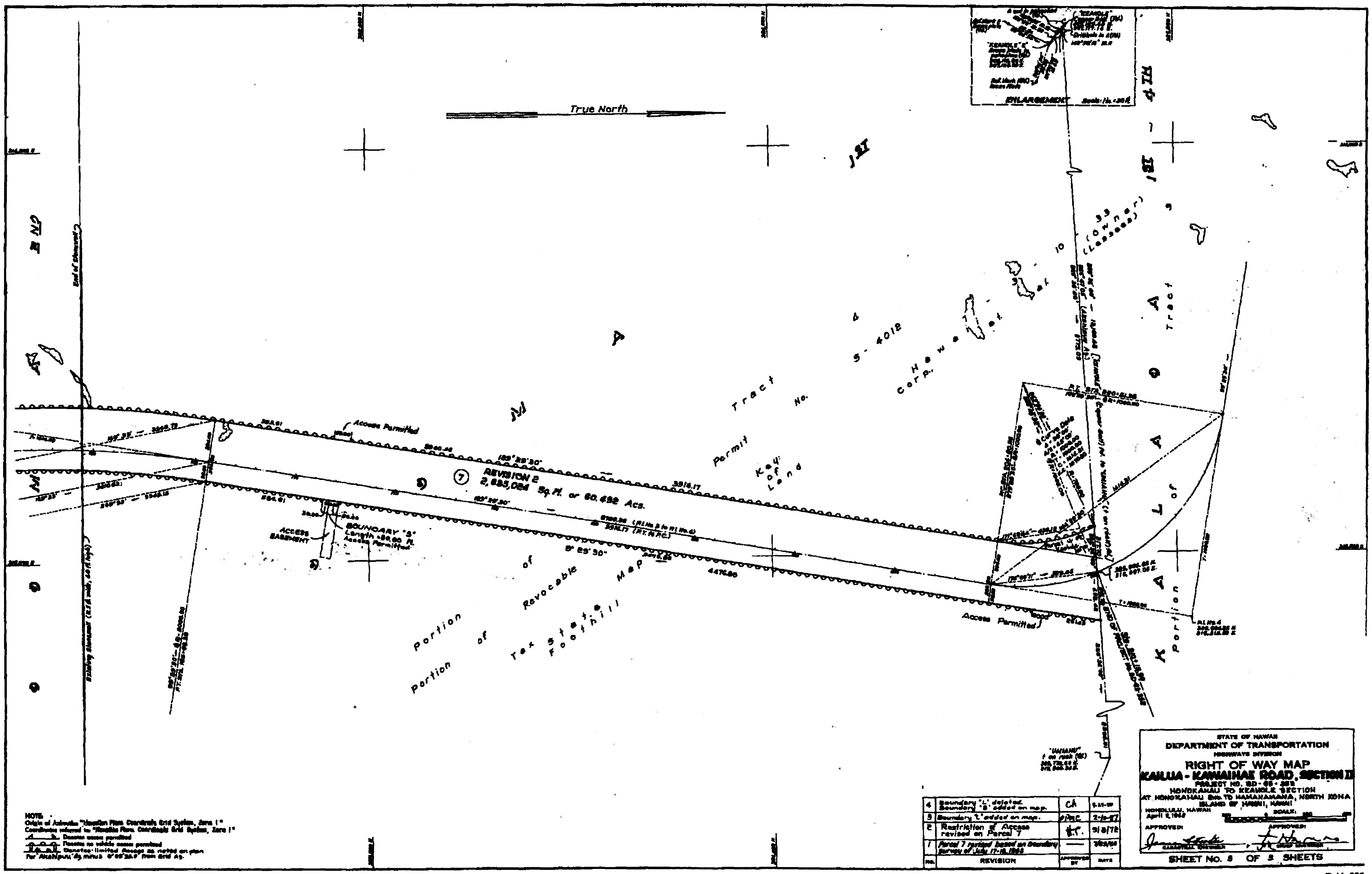
TAX MAP KEY: 7-3-09

22" X 36" = 5.5 SQ. FT.

P. H. 862


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
RIGHT OF WAY MAP
KAILUA-KAWAIHAE ROAD, SECTION II
HONOKAHAU TO KEAHOLE SECTION
HONOLULU, HAWAII
SCALE:
APPROVED:
APPROVED:
SHEET NO. 4 OF 5 SHEETS
Boundary "L" deleted.
Boundary "S" added on map.
Boundary "L" added on map.
King's Highway revised to conform with Survey Office data.
Parcel 7 revised based on Boundary Survey of July 17-18, 1965
REVISION
DATE
INSET
Not to Scale
True North
See INSET
KING'S HIGHWAY
30 FT. ROADWAY
Existing Roadway
Grant 4536 to John A. Maguire
Grant 3086 to Kapana
Grant 2942 to Holikoe
Tax Map Key: 7-3-09: 6
Tax Map Key: State Foothill
Portion of Portion of Revocable
Tract Permit
Hawaii Corp. et al
Access Permitted
ACCESS EASEMENT
Curve Data
NOTE:
TAX MAP KEY: 7-3-09, 10

P. H. 568



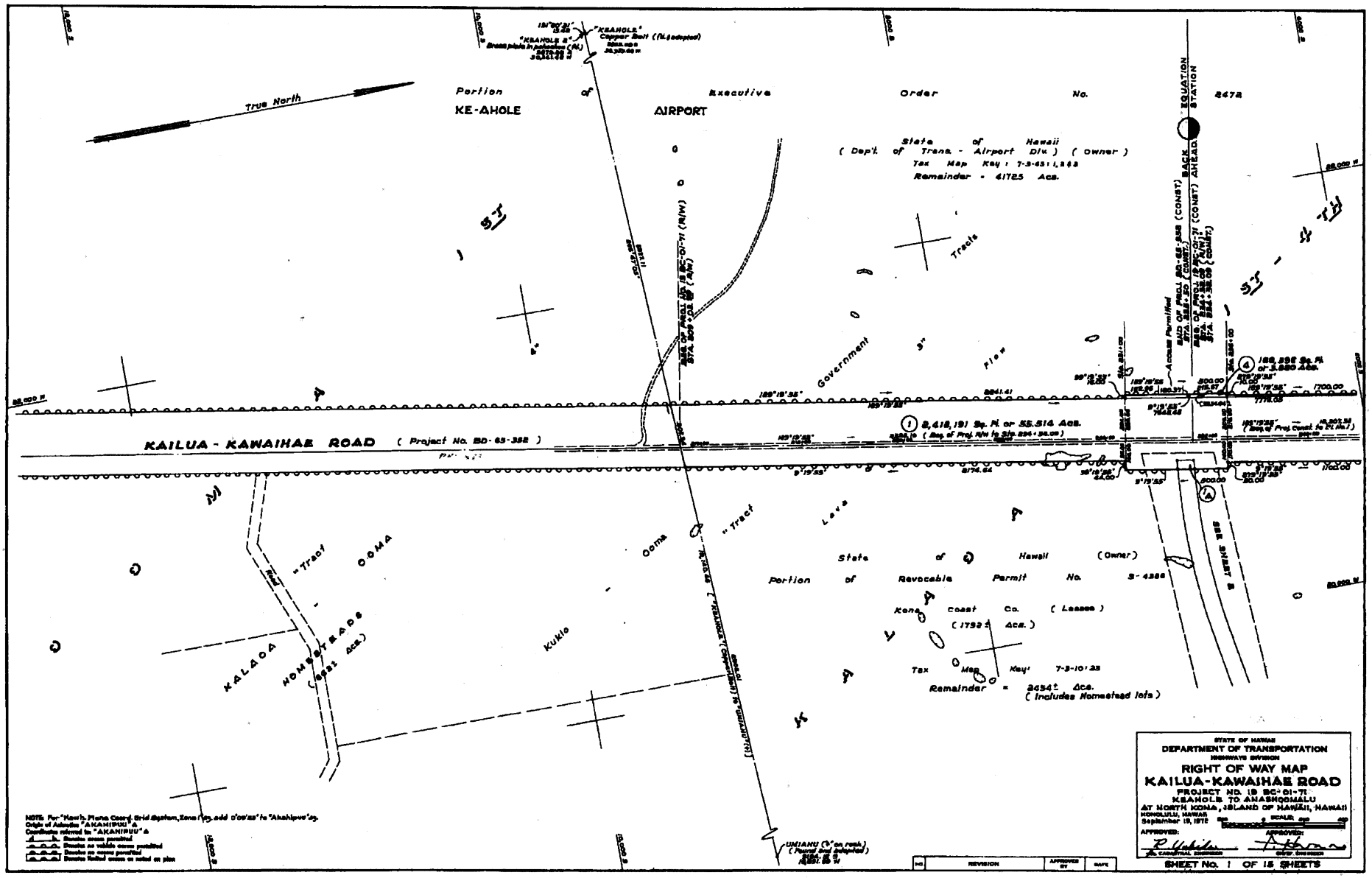
NOTE:
Origin of Azimuths "Hawaiian Plane Coordinate Grid System, Zone 1"
Coordinates referred to "Hawaiian Plane Coordinate Grid System, Zone 1"
Denotes access permitted
Denotes no vehicle access permitted
Denotes limited access as noted on plan
For Akahipuu Az minus 0°05'35.9" from Grid Az.

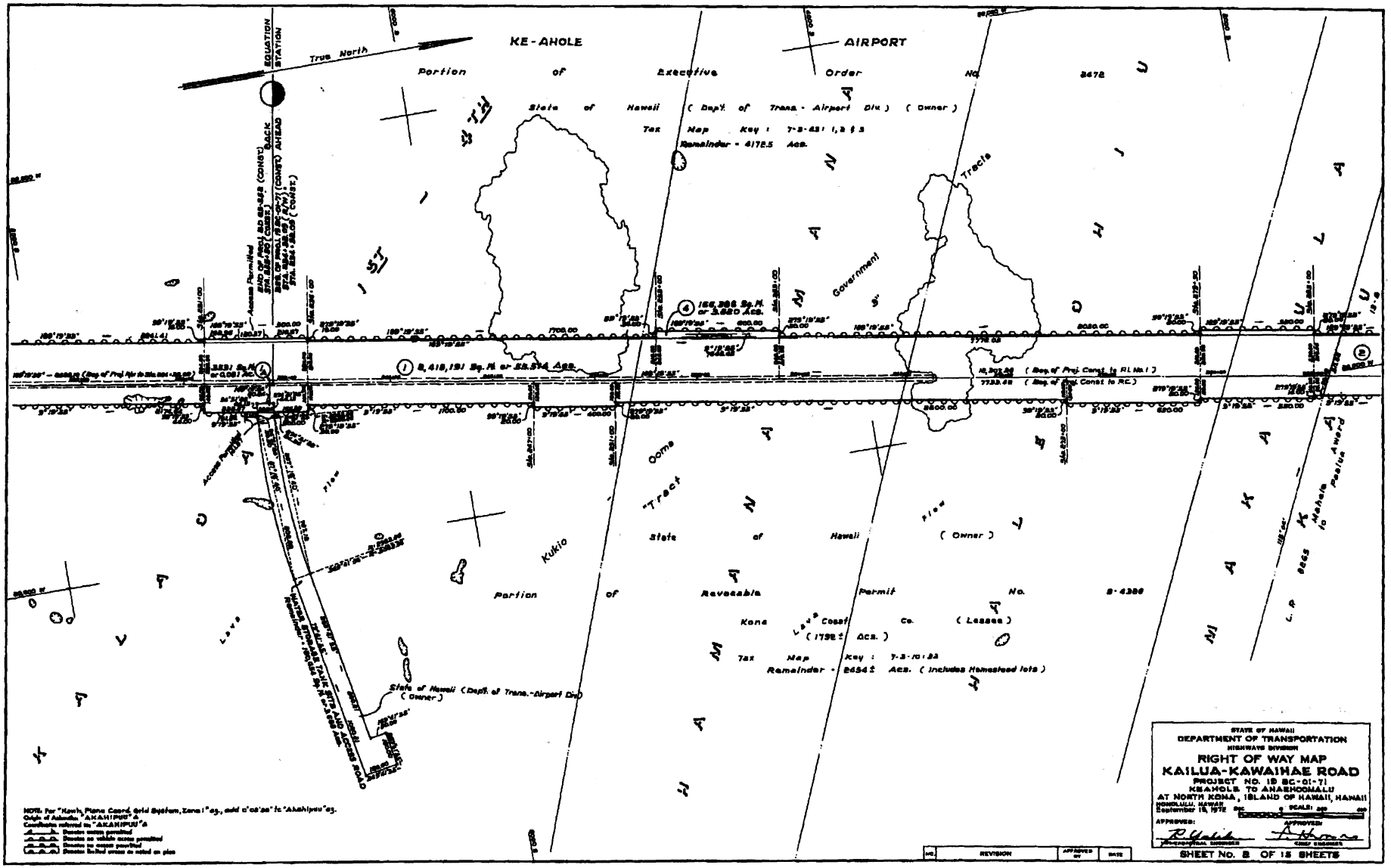
No.	Revision	Approved By	Date
4	Boundary "L" deleted. Boundary "S" added on map.	CA	5-11-89
3	Boundary "L" added on map.	PMC	2-10-87
2	Restriction of Access revised on Parcel 7	[illegible]	9/8/72
1	Parcel 7 revised based on Boundary survey of July 17-18, 1968	—	[illegible]

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
RIGHT OF WAY MAP
KAILUA - KAWAIHAE ROAD, SECTION II
PROJECT NO. SD-65-252
HONOKAHAU TO KEAHOLE SECTION
AT HONOKAHAU 2nd TO HAMANAMANA, NORTH KONA
ISLAND OF HAWAII, HAWAII
HONOLULU, HAWAII
April 2, 1968
SCALE:
APPROVED: CADASTRAL ENGINEER
APPROVED: CHIEF ENGINEER
SHEET NO. 5 OF 5 SHEETS

TAX MAP KEY: - 7-3-10

P.H. 865

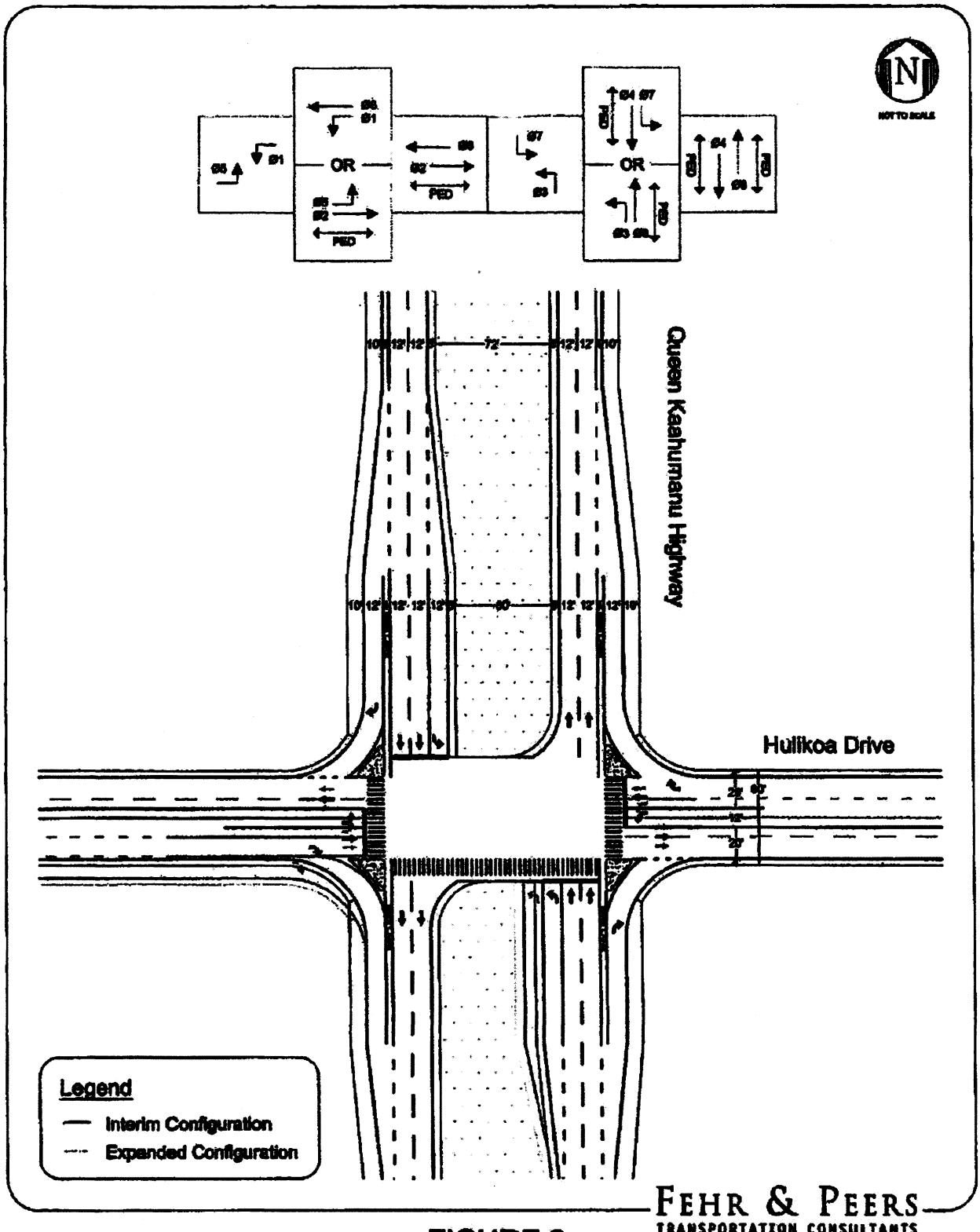

Portion of Executive Order No. 2472
KE-AHOLE AIRPORT
True North
"KEAHOLE" Copper Bolt (Reestablished)
"KEAHOLE 2" Brass plate in monument (Al)
State of Hawaii (Dep't. of Trans. - Airport Div.) (Owner)
Tax Map Key : 7-3-43 : 1, 2 & 3
Remainder - 417.25 Acs.
EQUATION BACK STATION
EQUATION AHEAD STATION
Access Permitted
Trails
Government
Flow
KAILUA - KAWAIHAE ROAD (Project No. RD-65-352)
1) 2,418,191 Sq. Ft. or 55.514 Acs.
4) 188,356 Sq. Ft. or 3.880 Acs.
A
SEE SHEET B
"Tract
Lava
Ooma
Kukio
KALAOA HOMESTEADS (98.21 Acs.)
State of Hawaii (Owner)
Portion of Revocable Permit No. S-4386
Kona Coast Co. (Lessee)
(1792.5 Acs.)
Tax Map Key: 7-3-10:22
Remainder = 2454.1 Acs.
(Includes Homestead lots)
"PEAHINAIA" (Compiled) to "UHUHONUA" (Set)
UHUHONUA (Found and Adopted)
NOTE: For "Hawn. Plane Coord. Grid System, Zone 1" eg. add 0'00'22" to "Ahahipwa" eg.
Origin of Azimuths "AHAHIPWA"
Coordinates referred to "AKAHIPUU"
Boundary shown permitted
Boundary as widths shown permitted
Boundary as shown permitted
Boundary Radial unless as noted on plan
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
RIGHT OF WAY MAP
KAILUA-KAWAIHAE ROAD
PROJECT NO. 19 BC-01-71
KEAHOLE TO ANAEHOOMALU
AT NORTH KONA, 19 LAND OF HANEII, HAWAII
HONOLULU, HAWAII
September 19, 1972
SCALE
APPROVED:
CHAIRMAN AND CHIEF ENGINEER
APPROVED:
DEPUTY CHIEF ENGINEER
NO. REVISION APPROVED BY DATE
SHEET NO. 1 OF 15 SHEETS
TAX MAP KEY: 7-3-10,48
P.H. 619



SHEET NO. 8 OF 15 SHEETS

TAX MAP REV: 7-3-10, 43

P. H. 618



FEHR & PEERS
TRANSPORTATION CONSULTANTS

FIGURE 6
SHORT-TERM INTERSECTION CONFIGURATION