

STANDARD PLANS SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	2	114

STANDARD PLAN NO.	TITLE	DATE
B-01	Notes and Miscellaneous Details	07/01/86
B-02		
B-03	Typical Structure Excavation and Backfill Pay Limits	07/01/86
B-04		
B-05		
B-06	Concrete Box Girder	07/01/86
B-07	Concrete Box Girder	07/01/86
B-08	Concrete Box Girder	07/01/86
B-09		
B-10		
B-11		
B-12	Prestressed Concrete Piles	r07/16/90
B-13	Prestressed Concrete Piles	r07/16/90

D-01	Chain Link Fence With Toprail	r03/06/87
D-02 ●	Chain Link Fence Without Toprail	r07/26/90
D-03	Wire Fence With Metal Posts	07/01/86
D-04	Typical Details of Curbs and/or Gutters	07/01/86
D-05 ●	Typical Details of Reinforced Concrete Drop Driveway	07/01/86
D-06	Centerline and Reference Survey Monument	07/01/86
D-07	Street Survey Monument	07/01/86
D-08	Landscaping Shrub and Tree Planting	07/01/86
D-09	Field Office	07/01/86
D-10	Field Office	07/01/86
D-11	Project Site Laboratory	07/01/86
D-12	Project Site Laboratory	07/01/86
D-13	Field Office & Project Site Laboratory	07/01/86

H-01 ●	Type A, B, C and D Catch Basin	07/01/86
H-02 ●	Type A1, B1, C1 and D1 Catch Basin	07/01/86
H-03	Type A2, B2, C2 and D2 Catch Basin	07/01/86
H-04 ●	Typical Reinforcing Details for Catch Basins	07/01/86
H-05 ●	Type A, B and C Storm Drain Manhole	07/01/86
H-06	Type D and E Storm Drain Manhole	07/01/86
H-07	Type F Storm Drain Manhole	07/01/86
H-08 ●	Catch Basin and Manhole Casting	07/01/86
H-09 ●	Type A-9 and A-9P Frames and Grates	07/01/86
H-10	Type A-9B Frames and Grates	07/01/86
H-11 ●	Type 61614 and 61214 Grated Drop Inlet	07/01/86
H-12	Type 61616 Grated Drop Inlet	07/01/86
H-13	61214, 61614 & 61616 Steel Frames and Grates	07/01/86
H-14	61214B Steel Frame and Grates	07/01/86
H-15	61614B Steel Frame and Grates	07/01/86
H-16	Concrete and Cement Rubble Masonry Structures	r10/16/90
H-17	Inlet Structures	r10/16/90
H-18	Flared End Section for Culverts	07/01/86
H-19	Outlet Structures	r02/15/91
H-20	Concrete Spillway Inlet	07/01/86
H-21	18" Slotted C.M.P. Drain	07/01/86
H-22 ●	C.M.P. Coupling Details Standard Joint	r10/16/90
H-23 ●	Hat Shaped Coupling Band	r10/16/90

STANDARD PLAN NO.	TITLE	DATE
TE-01 ●	Miscellaneous Sign Details	07/01/86
TE-02 ●	Galvanized Flanged Channel Sign Post Mounting	07/01/86
TE-03 ●	Galvanized Square Tube Sign Post Mounting	07/01/86
TE-04 ●	Regulatory Signs	r09/01/87
TE-05 ●	Warning Signs	07/01/86
TE-06 ●	Miscellaneous Signs	r11/03/89
TE-07	Reserved	07/01/86
TE-08 ●	Construction Signs	r09/01/87
TE-09	Miscellaneous Intersection Signs	r03/06/87
TE-10	Reserved	07/01/86
TE-11 ●	Bike Route Sign and Supplementary Plates	07/01/86
TE-12	State Route Marker and Auxiliary Markers	07/01/86
TE-13	Interstate Route Marker	07/01/86
TE-14	State Route Marker and Border Detail for Guide Signs	07/01/86
TE-15	Route Marker Assemblies	07/01/86
TE-16	Miscellaneous Reflector Markers	07/01/86
TE-17	Type II Object Markers	07/01/86
TE-18	Mileposts	07/01/86
TE-19	Reserved	07/01/86
TE-20	Overhead Sign Supports	07/01/86
TE-21	Overhead Sign Support, Box Truss Type, Aluminum	07/01/86
TE-22	Foundation Details and Schedules	07/01/86
TE-23	Supports for Ground Mounted Guide Sign	r11/03/89
TE-24	Breakaway Sign Supports for Ground Mounted Guide Signs	07/01/86
TE-25	Laminated Aluminum Sign Panels (Overhead)	07/01/86
TE-26	Laminated Aluminum Sign Panels (Ground Mounted)	07/01/86
TE-27	Solid Aluminum Extruded Sign Panel and Accessory Details	07/01/86
TE-28	Guide Signs Luminaire Mountings	07/01/86
TE-29	Reserved	07/01/86
TE-30 ●	Raised Pavement Markers and Striping	r05/09/90
TE-31 ●	Miscellaneous Pavement Markings	r05/09/90
TE-32 ●	Miscellaneous Pavement Markings	r05/09/90
TE-33 ●	Miscellaneous Pavement Markings	r11/03/89
TE-34	Reserved	07/01/86
TE-35	Pavement Alphabets, Numbers & Symbols	07/01/86
TE-36	Pavement Alphabets, Numbers & Symbols	07/01/86
TE-37	Reserved	07/01/86
TE-38 ●	Traffic Signal System, Miscellaneous Details	r11/03/89
TE-39 ●	Traffic Signal System, Miscellaneous Details	07/01/86
TE-40	Loop Detectors	r11/03/89
TE-41	Pullboxes	07/01/86
TE-42	Type III Traffic Signal Standard	07/01/86
TE-43	Concrete Pullbox (2' x 3')	07/01/86
TE-44	Reserved	07/01/86

STANDARD PLAN NO.	TITLE	DATE
TE-45	Reserved	07/01/86
TE-46	Reserved	07/01/86
TE-47	Reserved	07/01/86
TE-48	Reserved	07/01/86
TE-49	Reserved	07/01/86
TE-50	Metal Guardrail	r03/06/87
TE-51	Metal Guardrail	r09/01/87
TE-52	Metal Guardrail with Rubrail	r11/03/89
TE-53	Metal Guardrail with Rubrail at Obstruction	r09/01/87
TE-54	Beam Type Guardrail with Rubrail at Obstruction (Shoulder Installation)	r11/03/89
TE-55	Metal Guardrail Connection to Concrete Barrier	r11/03/89
TE-56	Concrete Barrier Transition	07/01/86
TE-57	Guardrail Type 3, Thrie Beam	r11/03/89
TE-57A	Guardrail Type 3, Modified Thrie Beam	11/03/89
TE-58	Approach End Flare, One & Two Way Roadway	07/01/86
TE-59	Trailing End Flare, One & Two Way Roadway	r11/03/89
TE-60	Anchor Block Details	07/01/86
TE-61	Breakaway Cable Terminal (BCT)	r11/03/89
TE-62	Breakaway Cable Terminal (BCT)	r09/01/87
TE-63	Guardrail Type 4 (Rigid Barrier)	r09/01/87
TE-64 ●	Portable Concrete Barrier	r11/03/89
TE-65	Guardrail Type 4, Miscellaneous	r09/01/87
TE-66 ●	Barricades	07/01/86
TE-67	Delineation & Pavement Markings at Bridges	07/01/86
TE-68	Wheelchair Ramps	r07/18/94
TE-69	Wheelchair Ramps	r07/18/94

NOTE:  
STANDARD PLANS APPLICABLE TO THIS PROJECT ARE INDICATED BY A " ● " NEXT TO THE STANDARD PLAN NO. (FOR EXAMPLE: D-07 ● )

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

STANDARD PLANS SUMMARY

Kaneohe Bay Drive Improvements  
Vicinity of Puohala Street to Kawa Bridge  
Federal Aid Project No. STP-065-1(9)

Date: June, 2002

SHEET No. 1 OF 1 SHEETS

DATE	REVISION
07/18/94	REVISED TE-68 & TE-69
02/15/91	REVISED H-19
10/16/90	REVISED H-16, H-17, H-22 & H-23
07/26/90	REVISED D-02
07/16/90	REVISED B-12, B-13
05/09/90	REVISED TE-30, TE-31 & TE-32
11/03/89	REVISED TE-06, TE-23, TE-30, TE-31, TE-32, TE-33, TE-38, TE-40, TE-52, TE-54, TE-55, TE-57, TE-59, TE-61, TE-64, TE-68 & TE-69, ADDED TE-57A
09/01/87	REVISED TE-04, TE-06, TE-08, TE-32, TE-51, TE-53, TE-54, TE-55, TE-57, TE-59, TE-62, TE-63, TE-65 & TE-69
03/06/87	REVISED D-01, TE-09, TE-40, TE-50, TE-51, TE-57, TE-59, TE-61, TE-63 & TE-64

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	3	114

LEGEND

- Construction Parcel C-1 and C-2

Pavement Reconstruction Area

Cold Planing Areas

Hydromulching

Limits of Pavement Work

Existing Electrical Line

New Electrical Line

Existing Joint Pole

Existing Power Pole

Existing Electric Manhole

Adjusted Elec. MH Frame/Cover

New Electric Manhole

Existing Telephone Line

New Telephone Line

Existing Telephone Pole

Existing Telephone Manhole

Adjusted Tele. MH Frame/Cover

New Telephone Manhole

Existing Signal Corps Line

New Signal Corps Line

Existing TV Cable

New TV Cable

Existing 12" Water Line

New 12" Water Line

Existing Water Manhole

Adjusted Water MH Frame/Cover

New Water Manhole

Existing Water Air Valve

Adjusted Water Air Valve

New Water Air Valve

Existing Water Valve Box

Adjusted Water Valve Box

New Water Valve Box

Existing Water Meter

Adjusted Water Meter

New Water Meter

Existing Fire Hydrant

New Fire Hydrant
- Existing Sewer Line
- New 12" Sewer Line
- Existing Sewer Manhole
- Adjusted Sewer MH Frame/Cover
- New Sewer Manhole
- Existing 6" Gas Line
- New 6" Gas Line
- Existing Gas Valve Box
- Adjusted Gas Valve Box
- New Gas Valve Box
- Existing Gas Manhole
- Adjusted Gas MH Frame/Cover
- New Gas Manhole
- Existing Monument
- Adjusted Monument
- New Monument
- Existing 24" Drain Line
- New 24 " RCP Drain Line
- Existing Storm Drain Manhole
- Adjusted Storm Drain MH Frame/Cover
- New Storm Drain Manhole
- Existing Grated Drop Inlet
- Existing Catch Basin
- Existing Traffic Sign
- Existing Highway Lighting Standard
- Existing Loop Detector
- Existing Traffic Signal Pole
- Existing Pedestrian Push Button
- Existing Traffic Signal Pull Box

DESIGNED BY	DATE
DRAWN BY	6/5/02
CHECKED BY	
IN CHARGE	
NOTE BOOK	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
IN CHARGE	

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

LEGEND

KANEQHE BAY DRIVE IMPROVEMENTS

Vicinity of Puohala Street to Kawa Bridge

Federal Aid Project No. STP-065-1(9)

Date: June, 2002

SHEET No. 1 OF 1 SHEETS



GENERAL NOTES

1. The scope of work for this project consists of widening Kaneohe Bay Drive excavating, constructing asphalt concrete pavement, building a bus bay, installing metal guardrail, retaining walls, noise barriers, highway lighting, drainage improvements, sidewalks and traffic signals, signs and pavement marking.
2. The Contractor is reminded of the requirements of Subsection 108.01 - Subletting of Contract, which requires him to perform work amounting to not less than 30 percent of the total contract cost less deductible items. Non- compliance with this Subsection may be grounds for rejection of bid.
3. The Contractor's attention is directed to the following Sections of the Special Provisions : Subsection 107.13 - Public Convenience and Safety; Subsection 107.21 - Contractor's Responsibility For Utility Property And Services; and Section 645 -Traffic Control.
4. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.
5. The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall tone for the exact locations and depths of all underground facilities, either shown on or omitted from the plans in areas where work, such as the placement of sign posts, traffic signal conduits, etc. may affect these properties. Toning shall be considered incidental to the various contract items and will not be paid separately. The contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operation.
6. The Contractor shall notify the Engineer in writing, two (2) weeks prior to starting paving operations.
7. The Contractor shall notify Oahu Transit Services, Inc.'s Ed Sniffin (848-4571) or Lowell Tom (848-4578) two weeks prior to Construction, informing them of location, scope of work, proposed closure of any street or traffic lanes and the need to relocate any bus stops.
8. The Contractor shall obtain a Community Noise permit from the State Department of Health, Noise and Radiation Branch, 591 Ala Moana Blvd., Room 136, Honolulu, HI 96813-2498; Telephone 586-4700. This shall be considered incidental to the various contract items.
9. The Contractor shall apply for a driveway construction permit at the City and County of Honolulu Department of Planning and Permitting, 650 S. King St. Hon, HI 96818. The Contractor will apply for the permit no earlier than 180 days before commencing construction of the driveway. This shall be considered incidental to the various contract items.
10. Smooth riding connections shall be constructed at all limits of the project, including the beginning and end of project, connecting approaches, side streets, side-walks and driveways as shown on the plans and/or as directed by the Engineer.
11. Dressing of shoulder, sidewalk and bus turnout shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
12. Earth swale shall be graded to drain. This work shall be considered incidental to the various contract items.
13. All saw cutting work shall be considered incidental to various Contract Items
14. Existing drainage system will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to various contract items.

15. The Contractor shall provide for access to and from all driveways, sidewalks and existing side streets at all times. This work shall be considered incidental to various contract items.
16. The Contractor shall provide a 12:1 transition to meet the existing ground at the beginning and end of sidewalk. All transition work shall be done within the existing State right of Way and shall be paid for under concrete sidewalk.
17. The Contractor shall provide for temporary parking to residents in the event that their driveways are blocked during construction.
18. The Contractor shall notify each effected resident 10 working days prior to roadway and driveway construction.
19. The Contractor shall remove and dispose of all existing raised pavement markers and traffic tapes prior to the overlaying of Asphalt Concrete. This work shall be considered incidental to Asphalt Concrete Pavement, Superpave and will not be paid for separately.
20. The Contractor shall clean and remove any accumulation of aggregates along the roadside within 10 feet of the edge of pavement. This work shall be considered incidental to the various contract items and will not be paid for separately.
21. All holes, depressions and wheel ruts shall be filled and compacted with Asphalt Concrete Pavement, Superpave prior to resurfacing. This work will be paid for under Asphalt Concrete Pavement, Superpave.
22. Prior to placement of new aggregate subbase course the existing subbase shall be compacted to a relative compaction greater than or equal to 95%.
23. The top of the Plant Mix Glassphalt Concrete Base Course prior to placement of the new A.C. Pavement, Superpave, shall comply with the ten foot straight edge requirement. The variation of the surface from a straight edged with two contacts with the surface, shall not exceed 3/16".
24. Spot elevations are shown on Pavement Grade Plan (Shts. 32-34).
25. The Contractor shall install new meter boxes as shown on the plan, or as directed by the engineer.
26. Objects protruding from utility poles and walls adjacent to the sidewalks (ie wall mounted fire hydrants, telephones, meters on poles, etc.) shall be mounted to meet the current American with disabilities Act Accessibility Guidelines (ADAAG) and will be subject to Engineer's approval. This work shall be considered incidental to the various contract items and shall not be paid separately.
27. The Contractor shall coordinate his utility work with Hawaiian Electric Company, Verizon and Oceanic Cable.
28. The Contractor shall provide a delineated safe path for local traffic at all times during construction. This work shall be considered incidental to the various contract items and will not be paid separately.
29. The Contractor shall obtain all the necessary construction permits. The cost of these permits, if any, shall be borne by the Contractor.
30. The Contractor shall notify each resident within the project limits, Castle High School, and Hawaiian Electric Company ten working days prior to their driveway reconstruction and noise wall construction. During this construction and during the regrading of Nohea Place, the Contractor shall provide parking and access to the properties at the affected residences.
31. The Contractor must provide each resident within the construction limits access to Kaneohe Bay Drive.
32. During non-working hours, all trenches shall be covered with safe non-skid bridging material.
33. During construction, the Contractor shall provide a minimum lane width of 10'.

34. The Contractor shall provide motorist access to the Castle High School Auditorium Parking Lot at all times.
35. Existing monuments and utility manholes and valves shall be adjusted and flush to the new pavement grade.
36. The Contractor shall maintain service to all fire hydrants at all times.
37. The Contractor shall verify the location of each waterline at no cost to the State prior to construction.
38. The Contractor shall complete the entire intermediate lift prior to placing the final riding surface.
39. For the duration of the project, the Contractor shall obtain the temporary use and rental of Construction Parcel C-1, from the City and County of Honolulu, and ames B. Castle High School, and Construction Parcel C-2, from Hawaiian Electric Company to Facilitate completion of the project so as not to delay construction. This work shall be considered incidental to the various contract items and shall not be paid for separately.

DUST CONTROL NOTES

1. The Contractor, at his expense, shall keep the project area and surrounding area free of dust nuisance. The work shall be in conformance with the Air Pollution Control Standards and Regulations of the State Department of Health and the City and County of Honolulu Code.
2. The graded or project site that is cleared of vegetation shall be kept damp seven (7) days a week through the use of misters and/or water wagons as necessary. At the end of each day, the site shall be sufficiently dampened so that it will remain moistened during the night. If the use of water causes problems with mud or soil erosion or water pollution or there is a notice by the Board of Water Supply to conserve water in the area, the Contractor shall utilize dust control agents approved by the Engineer.
3. The Contractor shall conduct his operations so that excavation, embankment, and imported material shall be dampened to prevent dust problems.
4. The Contractor shall designate a contact person to whom the State can direct public inquiries and/or complaints regarding fugitive dust. The person shall have the authority to resolve all inquires and complaints in regards to fugitive dust.
5. The Contractor shall hire an independent monitoring laboratory to monitor the amount of dust in the air daily or as directed by the Engineer. The monitoring shall begin before the project starts and end 90 days after the final acceptance Adjustments to the Contractor's dust control means and methodsshall be based on the report made by the independent monitoring laboratory. A copy of all reports shall be submitted to the Engineer. This work shall be incidental to the various contract items. .

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-(K9)	2003	4	114

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**GENERAL NOTES**  
**Kaneohe Bay Drive Improvements**  
**Vicinity of Puohala Street to Kawa Bridge**  
**Federal Aid Project No. STP-065-(K9)**  
Date: June, 2001  
SHEET No. 1 OF 4 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-(9)	2003	5	114

HAWAIIAN ELECTRIC COMPANY NOTES

1.

LOCATION OF HECO FACILITIES  
The location of HECO overhead and underground facilities shown on the plans are existing records with varying degrees of accuracy and are not guaranteed as shown. The Contractor shall verify in the field, the locations of the facilities and shall exercise proper care in excavating and working in the area. Wherever connections of new utilities to existing utilities and utility crossings are shown, the Contractor shall expose the existing lines at the proposed connections and crossings to verify the depths prior to excavation for the new lines. The Contractor shall be responsible for any damages to HECO's facilities whether shown or not shown on the plans.
2.

COMPLIANCE WITH HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS  
The Contractor shall comply with the State of Hawaii's Occupational Safety and Health Laws and Regulations, including without limitation, those related to working on or near exposed or energized electrical lines and equipment.
3.

EXCAVATION PERMIT  
The Contractor shall obtain an excavation permit from HECO's Technical Division (543-5654) located at 820 Ward Avenue, 4th floor, two weeks prior to starting construction. Please refer to our request number at that time.
4.

CAUTION!!! ELECTRICAL HAZARD!!!  
Existing HECO overhead and underground lines are energized and will remain energized during construction unless prior special arrangements have been made with HECO. Only HECO personnel are to handle these energized lines and erect temporary guards to protect these lines from damage. The Contractor shall work cautiously at all times to avoid accidents and damage to existing HECO facilities, which can result in electrocution.
5.

OVERHEAD LINES  
State laws requires that a worker and the longest object he or she may contact cannot come closer than a minimum radial clearance of 10 feet when working close to or under any overhead lines rated 50KV and below. For each additional 1KV above 50KV, an additional 0.4 inch shall be added to the 10-foot clearance requirement. The preceding information on line clearance requirement is provided as a convenience and it is the Contractor's responsibility to be informed of and comply with any revisions or amendments to the law.

Should the Contractor anticipate that his work will result in the need to encroach within the minimum required clearance at any time, the Contractor shall notify HECO at least four (4) weeks prior to the planned encroachment so that, if feasible, the necessary protections (e.g. relocation, de-energize, or blanket HECO lines) can be put in place. HECO's cost of safeguarding its line will be charged to the contractor.

Contact HECO's Customer Installation Department at 543-7846 for assistance in identifying and safeguarding overhead powerlines.

Refer to Section X of HECO's Electric Service Installation Manual for additional guidelines when working around HECO's facilities. A copy may be obtained from HECO's Customer Installations Department.

6.

POLE BRACING  
A minimum clearance of 10 feet must be maintained when excavating around utility poles and/or their anchor system to prevent weakening or pole support failure. Should work require excavating within 10 feet of a pole and/or its anchor system, the Contractor shall protect, support, secure and take all other precautions to prevent damage to or leaning of these poles. The Contractor is responsible for all associated costs to brace, repair, or straighten poles. All means of structural support for the pole proposed by the Contractor shall first be reviewed by HECO before implementation. For pole bracing instructions, the Contractor shall call the HECO Construction and Maintenance Dept., Customer & System Superintendent at 543-4223 a minimum of two (2) weeks in advance.

7.

UNDERGROUND LINES  
The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground lines. HECO's existing electrical cables are energized and will remain energized during construction. Only HECO personnel are to break into existing HECO facilities, handle these cables, and erect temporary guards to protect these cables from damage. The cost of HECO's assistance in providing proper support and protection of its underground lines will be charged to the Contractor. Special precautions are required when excavating near HECO's 138 KV underground lines (see HECO instructions to Consultant/Contractors on "Excavating Near HECO's Underground 138KV Lines" for detailed requirements.)  
  
For verification of underground lines, the Contractor shall call HECO's Underground Division at 543-7049 a minimum of 72 hours in advance.

For assistance in providing proper support and protection of these lines, the Contractor shall call HECO's Construction and Maintenance Dept., Customer & System Superintendent, at 543-4223, a minimum of two (2) weeks in advance,

8.

EXCAVATIONS  
When trench excavation is adjacent to or beneath HECO's existing structures or facilities, the Contractor is responsible for:  
a) Sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure and to prevent possible slides, cave-ins, and settlements.  
b) Properly supporting existing structures or facilities with beams, struts, or under-pinnings to fully protect it from damage.  
c) Backfilling with proper backfill material including special thermal backfill where existing (refer to Engineering Department for thermal backfill specifications).
9.

RELOCATION OF HECO FACILITIES  
Any work required to relocate or modify HECO facilities shall be done by HECO, or by the Contractor under HECO's supervision. The Contractor shall be responsible for all coordination, and shall provide necessary support for HECO's work, which may include, but not to be limited to, excavation and backfill, permits and traffic control, barricading, and restoration of pavement, sidewalk and other facilities. All costs associated with any relocation or modification (either temporary or permanent for the convenience of the Contractor, or to enable the Contractor to perform his work in a safe and expeditious manner in fulfilling his contract obligations shall be borne by the Contractor.

10.

CONFLICTS  
Any design or relocation of HECO's facilities not shown on the plans may be cause for lengthy delays. The Contractor acknowledges that HECO is not responsible for any delay or damage that may arise as a result of any conflicts discovered or identified with respect to the location or construction of HECO's electrical facilities in the field, regardless of whether the Contractor has met the requested minimum advance notices. In order to minimize any delay or impact arising from such conflicts, HECO should be notified immediately upon discovery or identification of such conflict.

11.

DAMAGE TO HECO FACILITIES  
The Contractor shall be responsible for the protection of all HECO surface and subsurface utilities and shall be responsible for any damages to HECO's facilities as a result of his operations. The Contractor shall immediately report such damages to HECO's Trouble Dispatcher at 548-7961. Repair work shall be done by HECO or by the Contractor under HECO's Supervision. Costs for damages to HECO facilities shall be borne by the Contractor.

In case of damage or suspected damage to HECO's fuel pipeline, the Contractor shall immediately notify HECO's Honolulu Power Plant Shift Supervisor at 533-2102 (a 24-hour number) so HECO personnel can secure the damaged section and report any oil spills to the proper authorities. All costs associated with the damage, repair, and oil spill cleanup shall be borne by the Contractor.

12.

HECO STAND-BY PERSONNEL  
The Contractor may request HECO to provide an inspector to stand-by during construction near HECO's facilities. The cost of such inspection will be charged to the Contractor.  
  
The Contractor shall call the HECO Construction and Maintenance Dept., Customer & System Superintendent at 543-4223 a minimum of 5 working days in advance to arrange for HECO stand-by personnel.
13.

CLEARANCES  
The following clearances shall be maintained between HECO's ductline and all adjacent structures (charted and uncharted) in the trench:

STRUCTURE TYPE	MINIMUM CLEARANCE (INCHES)
Water Lines, parallel	36
Water Lines, crossing	12 (A)
Sewer Lines, parallel	36 (B)
Sewer Lines, crossing	24 (C)
Drain Lines, parallel	12
Drain Lines, crossing	6 (D)
Electrical and Gas Lines, parallel	12
Electrical and Gas Lines, crossing	12
Telephone Lines, parallel	6(D)
Telephone Lines, crossing	6(D)
Chevron Oil Lines, parallel	36
Chevron Oil Lines, crossing	48 below oil line (E)

- A. The minimum vertical clearances to water lines crossing electrical ductlines can be reduced to 6 inches if the electrical ductline structure is smaller than 16 inches, is concrete encased, and is below the water line.
- B. A minimum horizontal clearance of 36 inches is required between new handholes and existing sewer laterals.
- C. The minimum horizontal clearances to sewer pipes crossing electrical ductlines can be reduced to 12 inches if the sewer pipe is jacketed in concrete.
- D. The minimum clearances shall be increased to 12 inches if the elctrical ductline is direct buried.
- E. The minimum vertical clearances to oil lines crossing electrical ductlines can be reduced to 24 inches below oil lines if the crossings are encased in 6 inches of concrete.
- F. The Contractor shall notify the Construction Manager & HECO of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawing

14.

INDEMNITY  
The Contractor shall indemnify, defend and hold harmless HECO from and against all losses, damages, claims, and actions including but not limited to reasonable attorney's fees and costs based upon or arising out of damage to property or injuries to persons, or other tortious acts caused or contributed to by the Contractor or anyone acting under its direction or control or on its behalf; provided Contractor's indemnity shall not be applicable to any liability based upon the sole negligence of HECO.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date: 7/8/02 By: AKL

Engineering Department  
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

HECO AND GENERAL NOTES

KANEOHE BAY DRIVE IMPROVMENTS  
Vicinity of Puohala Street to Kawa Bridge  
Federal Aid Project No. STP-065-I(9)

Date: June, 2001

SHEET No. 2 OF 4 SHEETS

SURVEY PLOTTED BY: DATE: 6/15/01

ORIGINAL PLAN

NOTE BOOK

DESIGNED BY: TCH, JLN

CHECKED BY: R2/00010201



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-I(9)	2003	6	114

HAWAIIAN ELECTRIC COMPANY NOTES-CONT.

15. **SCHEDULE**  
Contractor shall furnish his construction schedule at least 60 working days prior to starting work on HECO facilities. Contractor shall give HECO, in writing, forty (40) working days notice to proceed with HECO's portion of work.
16. **AUTHORITY**  
All construction, restoration work and inspection shall be subject to the State.
17. **SPECIFICATION**  
Construction of HECO's underground facilities shall be constructed in accordance with the latest revisions of HECO Specifications CS7001, CS7003, CS7202, CS9301, and CS9401 and applicable HECO standards.
18. **CONSTRUCTION**  
Contractor shall furnish all labor, materials, equipment, and services to properly perform and fully complete all work shown on the contract, drawings, and specifications. All materials shall be new and manufactured in the United States of America. All manhole, handhole, and ductline installations shall be inspected and approved by HECO prior to excavation and prior to placing concrete. Contractor shall notify HECO's Inspection Division at 543-4356 at least 48 hours prior to placing concrete.
19. **STAKEOUT**  
The Contractor shall stakeout all proposed HECO facilities within the project area so as to not conflict with any utility (existing or proposed) and any proposed construction or improvement work for verification by HECO before proceeding with HECO work.
20. **DUCTLINES**  
All ductlines installations shall be PVC schedule 40 encased in concrete, unless otherwise noted. All completed ductlines shall be mandrel rested by the Contractor in the presence of HECO's inspector using HECO's standard practice. The Contractor shall install a 1/8" polyolefin pull line in all completed ductlines after mandrel testing is complete.
21. **JOINT POLE REMOVAL**  
The last joint pole occupant off the poles shall remove the poles.
22. **AS-BUILT PLANS**  
The Contractor shall provide HECO with two sets of as-built reproducible tracings showing the offsets, stationing, and vertical elevation of the duct line(s) constructed.

SURVEY PLOTTED BY	DATE
DESIGNED BY	6/5/01
CHECKED BY	
NOTE BOOK	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
CHECKED BY	

DRAWING REVIEW	
Reviewed for HECO's Facilities Only	
Date	7/2/02
By	[Signature]
Engineering Department	
Hawaiian Electric Company, Inc.	
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
<b>HECO AND GENERAL NOTES</b>
<b>KANEOHE BAY DRIVE IMPROVMENTS</b>
<b>Vicinity of Puuhala Street to Kawa Bridge</b>
<b>Federal Aid Project No. STP-065-I(9)</b>
Date: June, 2001
SHEET No. 2 OF 4 SHEETS



BOARD OF WATER SUPPLY NOTES:

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	7	114

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS" VOLUME 1, DATED 1985, THE "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION", VOLUME 2, DATED 1985, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.
2. All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply. All other features of the water system, such as lines, grades, fittings, drainage, etc., and other features of improvements shall not be the responsibility of the Board of Water Supply.
3. Test pressure shall be one of the following: 150 psi (250 psi for the 12" waterline.
4. The Contractor shall notify the BWS Maintenance Unit-Engineering, Construction Section in writing and submit five sets of approved construction plans, one week prior to commencing work on the water system.
5. The Contractor shall chlorinate the entire inside surface of each pipe and fitting with disinfection solution of 5 ounces of sodium hypochlorite mixed with 10 gallons of water. (For connection only)
6. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measure necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction method.
7. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and shall pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
8. Prior to installation, the Contractor shall submit for approval by Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water System Standards, dated 1985. Polygon shape for mechanical joint glands as described on AWWA Standard CIII shall be "sraight-sided" or an approved equal or a job to job basis.
9. Polygon shape for mechanical joint glands as described in AWWA Standard CIII shall be "Straight Sides" or an approved equal on a job to job basis.
10. Re-approval shall be required if this project is not under construction within a period of two years.
11. The Contractor shall cut and plug all existing unused laterals at the main whether or not shown on the plans. The damaged area shall be repaired to an equal or better condition than the immediate area. All work shall be done at the expense of the Contractor.
12. The Contractor shall obtain a NPDES permit prior to chlorination and/or dewatering. A copy of the permit shall be submitted to the Board of Water Supply, Maintenance Unit - Engineering Construction Section.

13. Pipe cushion shall be of high resistivity material. The Contractor shall submit a soil certification that high resistant cushion material has a resistivity greater than 5,000 OHM-CM. Remainder of the backfill material shall be as specified in Volume 1 of the Water System Standards. Pipe cushion and backfill material shall contain no hazardous substances above regulatory action levels including but not limited to lead, asbestos, mercury, chromium, cadmium, zinc, strontium, and polychlorinated biphenyls (PCB).
14. All ductile iron pipe, fittings and valves shall be wrapped with two layers of 8 mil. polyethylene wrap and shall be considered incidental to the various waterline relocation.
15. The Contractor shall coordinate the securing of the existing water system with the BWS prior to excavating behind or removing any existing thrust blocks, structural struts or reaction beams, or any fittings such as tees, plugs, caps, bends, offsets, and valves, or any other pipeline appurtenance. The Contractor shall be responsible for all associated damages resulting from failure to adequately secure the existing system.
16. The Contractor shall adjust all manhole frames/valve boxes/ meter boxes within the resurfaced area. The Contractor shall be responsible for "referencing" these manholes/ valve boxes/ meter boxes to facilitate the adjustments.
17. Maintain 3'-0" minimum cover for all existing waterlines (18" minimum for service laterals) from new finish grade. The Contractor shall probe the waterline and service laterals and submit the probing data to BWS Construction Section. Any adjustments to the existing water system to meet the minimum cover and the requirements of the BWS standards, whether shown on plans or not, shall be done by the Contractor at no cost to BWS. Waterline probing shall be considered incidental to the various contract items.
18. The Contractor shall have existing water mains toned before construction in their vicinity. Call the Investigation Section at 527-5296 for toning services. Guardrail post locations are to be kept to a minimum clearance of 18" to any 2-1/2" water line or meter box. No post driving will be allowed when post is to be installed closer than 3' from water main. Excavated areas shall be restored to their original condition.
19. The Contractor shall verify all existing service lateral locations whether shown or not shown on plans prior to commencing with any of the work and shall not assume that where no services are shown, none exist.
20. Any adjustments to the existing water system required during construction shall meet BWS Standards, whether shown on the plans or not, shall be done by the contractor at no cost to the board.

20. Prior to any excavating, the Contractor shall verify in the field the location of existing water mains and appurtenances.
21. Two-way blue reflective hydrant markers Type DB shall be installed at all fire hydrant locations.
22. Cleaning shall be use of "pigs" introduced into the pipeline and run completely through all installed pipelines and all branch lines for fire hydrants. "Pigging" of service laterals is not required. Bare foam "pigs" shall be used to swab piping clean as each length of the pipeline is installed. Each "pig" shall consist of a cylindrical piece of polyurethane foam with a density of 3-7 pounds per cubic foot and a vinyl-coated nose. Outside diameter of the 'pig" shall be equal to 1-1/4 to 1-1/2 times the inside diameter of the pipe being installed. The length of the "pig" shall be 1-1/2 to 2 times its diameter. Prior to use, the "pig" shall be submerged in a chlorine solution of 1 oz. of 5% chlorine bleach in 5 gallons of water. "Pigging" of the pipeline shall be considered incidental to the installation of the new pipeline.
23. Install 4 mil. thick, non-metallic, blue colered, 6 inches wide warning tape over centerline of the pipe and below the base course along the entire length of trench. Tape should be marked with "CAUTION WATER LINE BURIED BELOW".
24. All waterline construction requiring shutdown connection shall be scheduled for the following:

STREET	CONNECTION STATION	WORKING HOURS	MAXIMUM DOWNTIME
Kaneohe Bay Drive	23+11± Rt.	Normal	6 hours
Kaneohe Bay Drive	23+23± Rt.	Normal	6 hours
Kaneohe Bay Drive	25+09± Rt.	Normal	6 hours
Kaneohe Bay Drive	30+20± Lt.	Normal	6 hours
Kaneohe Bay Drive	34+36± Lt.	Normal	6 hours (8" Waterline)
Kaneohe Bay Drive	34+36± Lt.	Normal	8 hours (20" Waterline)

DESIGNED BY	DATE
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

APPROVED BY:

*Joseph W. Keenan* 1/21/03

PRINCIPAL EXECUTIVE, MAINTENANCE UNIT, DATE

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**BOARD OF WATER SUPPLY NOTES**

**Kaneohe Bay Drive Improvements**  
Vicinity of Puohala Street to Kawa Bridge  
Federal Aid Project No. STP-065-1(9)

Scale: None Date: June, 2001

SHEET No. 4 OF 4 SHEETS



WATER POLLUTION AND EROSION CONTROL NOTES:

A. GENERAL:

- 1. The Contractor is reminded of the requirements of Section 209 - Water Pollution and Erosion Control, in the Special Provisions. Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment.
- 2. The Contractor shall follow the guidelines in the "Best Management Practices Manual for Construction Sites in Honolulu", dated May 1999 in developing, installing and maintaining the Best Management Practices (BMP) for the project.
- 3. The Engineer may assess liquidated damages of up to \$25,000 for non-compliance of each BMP requirement and each requirement stated in Section 209, for every day of non-compliance. There is no maximum limit on the amount assessed per day.
- 4. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.

B. WASTE DISPOSAL:

1. Waste Materials

All waste materials shall be collected and stored in a securely lidded metal dumpster. The dumpster shall meet all local and State solid waste management regulations. All trash and construction debris from the site shall be deposited in the dumpster. The dumpster shall be emptied a minimum of twice per week or as often as is deemed necessary. No construction waste materials shall be buried onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Notices stating these practices shall be posted in the office trailer and the Contractor shall be responsible for seeing that these procedures are followed.

2. Hazardous Waste

All hazardous waste materials shall be disposed of in the manner specified by local or State regulations or by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

3. Sanitary Waste

All sanitary waste shall be collected from the portable units a minimum of once per week, or as required.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

- 1. All control measures shall be inspected at least once each week and following any rainfall event of 0.5 inches or greater.
- 2. All measures shall be maintained in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.
- 3. Built-up sediment shall be removed from silt fence when it has reached one-third the height of the fence.
- 4. Silt screen or fence shall be inspected for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground. The bottom of the silt screen shall be inspected and verified that it is buried a minimum of 6 inches below the existing ground.
- 5. Temporary and permanent seeding and planting shall be inspected for bare spots, washouts and healthy growth.
- 6. A maintenance inspection report shall be made promptly after each inspection by the Contractor.
- 7. The Contractor shall select a minimum of three personnel who shall be responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
- 8. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan

- a. Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Fertilizers
Detergents	Petroleum Based Products
Paints (enamel and latex)	Cleaning Solvents
Metal Studs	Wood
Tar	Masonry Block

- b. Material Management Practices shall be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. An effort shall be made to store only enough product as is required to do the job.

- c. All materials stored onsite shall be stored in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.

- d. Products shall be kept in their original containers with the original manufacturer's label.

- e. Substances shall not be mixed with one another unless recommended by the manufacturer.

- f. Whenever possible, a product shall be used up completely before disposing of the container.

- g. Manufacturer's recommendations for proper use and disposal shall be followed.

- h. The Contractor shall conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention Plan

- a. Products shall be kept in original containers unless they are not resealable.
- b. Original labels and material safety data sheets (MSDS) shall be retained.
- c. Surplus products shall be disposed of according to manufacturers' instructions or local and State recommended methods.

3. Onsite and Offsite Product Specific Plan

- a. The following product specific practices shall be followed onsite:

1) Petroleum Based Products:

All onsite vehicles shall be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite shall be applied according to the manufacturer's recommendation.

2) Fertilizers:

Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to storm water. Storage shall be in a covered shed. The contents of any partially used bags of fertilizer shall be transferred to a sealable plastic bin to avoid spills.

3) Paints:

All containers shall be tightly sealed and stored when not required for use. Excess paint shall not be discharged to the highway drainage system but shall be properly disposed of according to manufacturers' instructions or State and local regulations.

4) Concrete Trucks:

Concrete trucks shall be allowed to wash out or discharge drum wash water only at a designated site. Water shall not be discharged in the highway drainage system or waters of the United States. The Contractor shall contact Drinking Water Branch, Department of Health at 586-4258 to receive permission to designate a disposal site. The Contractor shall clean disposal site as required or as requested by the Owner's representative.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	8	114

ORIGINAL PLAN	DATE	DESIGNED BY	DATE
NOTED BY		DESIGNED BY	
QUANTITIES BY		DESIGNED BY	
CHECKED BY		DESIGNED BY	

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
<b>WATER POLLUTION &amp; EROSION CONTROL NOTES</b>
<b>KANEOHE BAY DRIVE IMPROVEMENTS</b>
<b>Vicinity of Puohala St. to Kawa Bridge</b>
<b>Federal Aid Proj. No. STP-065-1(9)</b>
Date: Jan, 2003
SHEET No. 1 OF 2 SHEETS

WATER POLLUTION AND EROSION CONTROL NOTES: -Cont.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	9	114

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES: -Cont.

b. Offsite Vehicle Tracking:

A stabilized construction entrance shall be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance shall be cleaned daily or as required to remove any excess mud, cold planed materials, dirt or rock tracked from the site. Dump trucks hauling material from the construction site shall be covered with a tarpaulin.

4. Spill Control Plan

a. A spill prevention plan shall be posted to include measures to prevent and clean up each spill.

b. The Contractor shall be the spill prevention and cleanup coordinator. The Contractor shall designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel shall be posted in the material storage area and in the office trailer onsite.

c. Manufacturers' recommended methods for spill cleanup shall be clearly posted and site personnel shall be made aware of the procedures and the location of the information and cleanup supplies.

d. Materials and equipment necessary for spill cleanup shall be kept in the material storage area onsite.

e. All spills shall be cleaned up immediately after discovery.

f. The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

g. Spills of toxic hazardous material shall be reported to the appropriate State or local government agency, regardless of the size.

E. PERMIT REQUIREMENTS:

1. If a National Pollutant Discharge Elimination System (NPDES) Permit is required for Construction Activities of five acres or more, the Contractor shall submit to the Engineer four sets of the Water Pollution and Erosion Control Submittals as detailed in Subsection 209.04 of the specifications.

2. If an NPDES Permit for Construction Dewatering is required, the Contractor shall be responsible to obtain the Permit from the Department of Health, Clean Water Branch.

3. The Contractor shall comply with all applicable State and Federal Permit conditions. Permits may include but are not limited to the following:

a. NPDES Permit for Construction Activities

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
QUANTITIES BY	CHECKED BY	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

WATER POLLUTION & EROSION CONTROL NOTES

KANEOHE BAY DRIVE IMPROVEMENTS  
Vicinity of Puohala St. to Kawa Bridge  
Federal Aid Proj. No. STP-065-1(9)

Date: Jan, 2003

SHEET No. 2 OF 2 SHEETS