

GENERAL NOTES

1. The project includes excavating; installing bedcourse material and culverts; constructing grated drop inlets, concrete headwalls, concrete jacket, and curb and gutters; backfilling; restoring pavement structure; and relocating existing utilities.
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 50 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 be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
6. Contractor shall provide for access to and from all existing side streets and/or driveways at all times.
7. Where pedestrian walkways exist, they shall be maintained in passable condition or other facilities for pedestrians shall be provided. Passage between walkways at intersections shall likewise be provided.
8. During working hours, the Contractor shall provide for through traffic. During non-working hours, all trenches shall be covered with a safe non-skid bridging material and all lanes shall be open to traffic.
9. All traffic control devices including cones, barricades, etc. shall comply with the "Statewide Guideline for Work Zone Traffic Control Devices" dated September 13, 2000.
10. All existing speed limit signs covered during the lane closure period shall be uncovered upon the removal of the lane closure including construction warning/regulatory signs.

REFERENCE:

1. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.

GENERAL:

1. All items noted incidental will not be paid for separately.
2. The Contractor shall verify the locations of all existing utility lines and notify their respective owner before commencing with any work.
3. The Contractor shall verify all grades and dimensions in the field before commencing with any work.
4. The Contractor shall be solely responsible for the protection of adjacent property, utilities and existing and new structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer. He shall conduct his work in such a manner and provide such temporary shoring or other measures as may be necessary to insure the safety of all concerned and to protect existing structures.
5. Structural excavation, structure backfill, and reinforcing steel shall not be paid for separately, but shall be considered incidental to Item No. 604.8100 - Type "I" Concrete Headwall, 4.00 ft to 4.99 ft.

DESIGN SPECIFICATIONS - AASHTO:

1. AASHTO LRFD Bridge Design Specifications, 1998, with 1999 and 2000 interim revisions.

MATERIALS:

1. Reinforced concrete  
for concrete headwall: f'c = 4,000 psi
2. Reinforcing steel: ASTM A 615, Grade 60.
3. Admixture in concrete: See Special Provisions

CONSTRUCTION METHODS:

1. Refer to Hawaii Standard Specifications for Road, Bridges and Public Works Construction, 1994 Edition and Special Provisions.
2. Except as noted otherwise, all dimensions are measured plumb.
3. For concrete finish, see Special Provisions.
4. Steel reinforcing shall be supported, bent and placed as per the ACI Detailing Manual, 1994.
5. The minimum cover measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as noted otherwise:
- a. Concrete cast or finished to a smooth surface: 2"
- b. Concrete cast against and permanently exposed to earth: 3"
6. At time concrete is placed, reinforcing shall be free from mud, oil, laitance or other coatings adversely affecting bond capacity.
7. Reinforcement, dowels and other embedded items shall be positively secured before pouring.
8. All dimensions relating to reinforcing bars (e.g. spacing of bars, etc.) are to centers of bars unless noted otherwise.
9. All footings shall bear on firm undisturbed natural soils or properly compacted embankment fill.

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10. Excavation for all footings and footing keys shall be accomplished by maintaining as near a vertical cut as possible. In the event of over-excavation, the space between the footing or footing key and ground shall be filled with a minimum of Class D concrete at the Contractor's expense and as directed by the Engineer.

DRAINAGE NOTES

1. Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract items.
2. The Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at no cost to the State.
3. The following work shall not be paid for separately but shall be incidental to the various contract items:
- a. Demolishing, removing, and disposing existing drainage inlet and headwall;
- b. Connecting the 18-inch culvert to the existing grated drop inlet;
- c. Providing structural backfill material.
4. For details of culvert trench and pavement restoration, see Sheet No. H3.
5. Concrete shall be Class A unless otherwise noted.
6. Unless noted otherwise, chamfer all exposed concrete edges three-quarters (3/4) of an inch.

LEGEND

o j p	Exist. Joint Pole	— d — 24 —	Exist. 24" Drain Line
o p p	Exist. Power Pole	o s d m h	Exist. Storm Drain Manhole
o e m h	Exist. Electric Manhole	□ g d i	Exist. Grated Drop Inlet
— w — 12 —	Exist. 12" Water Line	— c b —	Exist. Catch Basin
o w m h	Exist. Water Manhole	⊙ m o n	Exist. Monument
o w v	Exist. Water Valve Box	⊥	Exist. Traffic Sign With 1 Post
□ w m	Exist. Water Meter	□ t a p b	Exist. Traffic Signal Pull Box
■ W M	Exist. Water Meter to be Adjusted	o t a p	Exist. Traffic Signal Pole
o a v	Exist. Water Air Valve	○	Exist. Highway Lighting Standard
— f h —	Exist. Fire Hydrant		
— s — 12 —	Exist. Sewer Line		
o s m h	Exist. Sewer Manhole		

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

GENERAL NOTES AND LEGEND

HANA HWY. DRAINAGE IMPROVEMENTS

Vicinity of Paia to Kuau

Project No. 36B-01-00

Date: Sept. 2001

SHEET No. 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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### CHLORINATION OF WATER SYSTEMS:

1. Liquid chlorine or calcium hypochlorite, conforming to AWWA standards shall be used for the chlorination of the project.
2. Prior to chlorination, the project shall be thoroughly flushed.
3. The interior surfaces of the project shall be exposed to the chlorinating solution for a minimum of 24 hours and the chlorine residual shall not be less than 10 ppm after such time.
4. Should calcium hypochlorite be used, no solid and/or undissolved portion of the compound shall be introduced into any section of the project to be chlorinated.
5. At the end of the 24-hour disinfection period, representative samples shall be taken and analyzed to assure a chlorine residual of at least 10 ppm.
6. Should the results indicate adequate chlorination, the project shall be thoroughly flushed and filled with water from the existing system and again tested for chlorine residual. The flushing shall be considered adequate if the test results indicate that the water in the project has a comparable chlorine residual as the water in the existing system.
7. Following the acceptable flushing of the project, two consecutive sets of acceptable samples, taken at least 24 hours apart, from representative points in the project shall be taken and subjected to microbiological tests. At least one set of samples shall be collected from every 1,200 feet of the new water main, plus one from the end of the line and at least one set from each branch. Positive results will not be acceptable and the process will be repeated.
8. Analysis for residual chlorine shall be made in accordance with "Standard Methods for the Examination of Water and Wastewater," American Public Health Association, 20th Edition.
9. Microbiological tests shall be made in accordance with "Standard Methods for the Examination of Water and Wastewater," American Public Health Association, 20th Edition.
10. All measurements for chlorine residual and microbiological tests shall be performed by a laboratory approved by the Director.
11. The Developer/Contractor shall be responsible for all costs associated with all of the foregoing.

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY <u>RS</u>	<u>9/6/00</u>
NOTE BOOK	TRACED BY _____	
<u>dp3100a00aen</u>	DESIGNED BY <u>BT</u>	
<u>enamnotes.dgn</u>	QUANTITIES BY _____	
	CHECKED BY _____	

STATE OF HAWAII  
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**GENERAL NOTES**

**HANA HWY. DRAINAGE IMPROVEMENTS**

**Vicinity of Paia to Kuau**

**Project No. 36B-01-00**

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SHEET No. 2 OF 2 SHEETS