FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-2(55)	2004	53	112

BRIDGE GENERAL NOTES

1. General Specifications: Hawaii Department of Transportation, Standard Specifications for Road, Bridge and Public Works Construction, 1994, together with Special Provisions prepared for this contract.

2. Design Specifications:
   (A) AASHTO 1998 LRFD Bridge Design Specifications (Second Edition) and its subsequent interim specifications with interim supplements and modifications by the HDOT Highways Division.
   (B) HDOT Memorandum HWY-DB 2-7490 dated August 13, 2002 with subject title "Bridge Design Criteria, August 2002".

3. Loads:
   (A) Railing Test Level: TL-4

4. Materials:
   (A) All concrete strengths shall have a 28-day compressive strength of 4,000 psi unless otherwise noted. All concrete shall have a maximum W/C Ratio of 0.45.
   (B) A shrinkage reducing admixture (SRA), shall be added to the concrete mix unless otherwise noted. The minimum dosage requirement shall be 96 ounces per cubic yard of concrete. SRA shall limit the shrinkage strain to 0.000075 in/in at the concrete age of 60 days. The shrinkage strain shall be determined by a qualified testing laboratory, which is approved by the Engineer, according to ASTM C 157. The specimen curing period will be 7 days after casting in accordance to Structural Engineers Association of California (SEAOC) recommendations. The shrinkage specimen shall be cast with local aggregates.
   (C) The use of any calcium chloride in any concrete is prohibited.
   (D) All reinforcing steel shall be ASTM A 615 Grade 60 unless otherwise noted.
   (E) Reinforcing steel shall be ASTM A 706 where welded connections are required.
   (F) All structural steel shall be ASTM A 36 hot dip galvanized after fabrication, unless otherwise noted.
   (G) All anchor bolts, washers and nuts shall be AASHTO M164 hot dip galvanized after fabrication, unless otherwise specified.
   (H) Steel tubing shall conform to ASTM A500, Grade B.
   (J) All welding shall conform to the latest ANSI / AASHTO / AWS D1.5 Bridge Welding Code. All welds shall be ground smooth. Unless noted otherwise, all welding shall be shielded arc welding done with E70 electrodes.

5. Reinforcement:
   (A) The covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as otherwise shown:
      (1) Deck slabs
         a. Top bars = 2"
         b. Bottom bars = 1 1/4"
      (2) Concrete cast against and permanently exposed to earth = 3"
      (3) All others unless otherwise noted = 2".
   (B) Reinforcing bars shall be detailed in accordance with the latest edition of the AASHTO LRFD bridge design specifacations unless otherwise noted.
   (C) Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of bars (for non bundled bars). In no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate or 1 1/2".
   (D) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.
   (E) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.

6. Construction Notes:
   (A) The Contractor shall verify all dimensions and site conditions and shall report any discrepancies in writing to the Engineer before commencing work or ordering materials.
   (B) The Contractor shall verify all site conditions and not rely upon these plans for existing elevations and azimuths, stream channel location, roads, roadway gutters, curbs and sidewalks, etc.. Conditions may differ from those shown.
   (C) The Contractor shall be solely responsible for the protection of adjacent properties, 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.
   (D) The Contractor shall verify the location of all utility lines and notify the respective owners before commencing with excavation, and any temporary piling or sheeting.
   (E) In general, top of new concrete deck slab shall be constructed to follow the existing roadway vertical and horizontal curves and superelevations.
   (F) Except as otherwise noted, all vertical dimensions are measured plumb.
   (G) For concrete finish see Standard Specifications and Special Provisions.
   (H) Construction joints may be relocated or additional ones added subject to the approval of the Engineer.
   (J) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".
   (K) The Contractor shall verify the location and size of all existing reinforcing bars prior to drilling.
   (L) Drilled holes in existing concrete for reinforcing steel dowels shall not be left unfilled for more than 8 hours. Epoxy in drilled holes shall be able to develop the full strength of the dowels prior to pouring concrete around reinforcing steel dowels. Follow all manufacturer's recommendations for dowel and epoxy.
   (M) During the pour of the deck, the concrete portion of the deck within 1/4 of the span length on each side of all supports shall remain plastic until the deck pour is completed in the spans on each side of the supports.
   (N) Contractor shall unplug, clean and maintain existing drains during construction of the project. This work shall be incidental to the various Contract items.
   (P) Location of drilled holes shown in plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars. Final hole locations are subject to the approval of the Engineer.
   (Q) All reinforcing that is to remain shall not be damaged in any way.
   (R) The concrete surfaces which new concrete is poured against shall be cleaned and roughened to a full amplitude of 1/4 of an inch.

7. General:
   (A) All items noted incidental will not be paid for separately.
   (B) Standard Plans refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.
   (C) Plans of the existing bridge are available for review from the Highways Design Branch located at the State Department of Transportation, Highways Division Kakuhihewa Building, Room 609, 601 Kamokila Boulevard, Kapolei, HI 96707 (phone number 692-7586).

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

David K. Fujiwara — 4-30-04
SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE GENERAL NOTES

HAWAII BELT ROAD RESURFACING
East Paauilo Bridge to Kaala Bridge
Federal Aid-Project No. NH-019-2(55)

Scale: As Noted Date: April 2004

SHEET No. **S0.2** OF **61** SHEETS