

# BRIDGE GENERAL NOTES

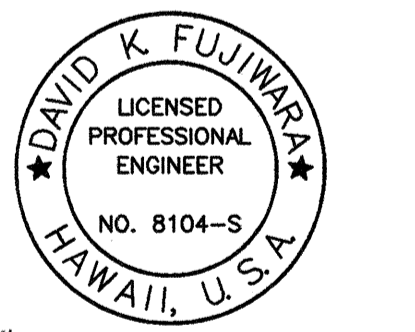
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(43)	2000	5	65

1. *General Specifications:* Hawaii Department of Transportation, Standard Specifications for Road and Bridge Construction, 1995. Together with Special Provisions prepared for this contract.
2. *Design Specifications:* AASHTO 1992 Standard Specifications for Highways, Bridges (Fifteenth Ed.) and its subsequent interim specifications with Interim Supplements and modifications by the Highways Division, Department of Supplements and modifications by the Highways Division, Department of Transportation, State of Hawaii.
3. *Loads:*
  - (A) *Dead Load:* An allowance of 20 PSF for future wearing surface of asphalt concrete has been provided in the design.
  - (B) *Live Load:* AASHTO HS20-44 or Interstate Loading
  - (C) *Seismic Loads:* Acceleration coefficient - 0.42  
Design Seismic Performance Category - D
4. *Materials:*
  - (A) Except as noted all concrete shall have a 28 day compressive strength  $f_c' = 4,000\text{psi}$ .
  - (B) All reinforcing steel shall be ASTM A615, grade 60 unless otherwise noted.
5. *Reinforcement:*
  - (A) The minimum 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 = 1 1/2"
      - B. Bottom bars = 1 1/4" except as otherwise noted.
    - (2) Abutments, piers and retaining walls = 2"
    - (3) Concrete cast against and permanently exposed to earth = 3"
    - (4) Concrete cast against forms and later exposed to earth = 2"
    - (5) Except as noted all others 1 1/2".
  - (B) Reinforcing bars shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
  - (C) Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of bars (for non bundled bars). But in no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate.
  - (D) All dimensions relating to reinforcing bars (e.g. spacing of bars, etc..) 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. *Structural Steel:*
  - (A) All structural steel shapes and plates shall meet the requirements of ASTM A36 and be hot-dipped galvanized after fabrication, unless noted otherwise.
  - (B) Steel pipes shall conform to ASTM A53 Type E or S, Grade B.
  - (C) Workmanship shall be in accordance with the latest AASHTO and AWS codes.
  - (D) Unless shown otherwise, all embedded bolts, anchors, plates, inserts, etc., shall be hot-dipped galvanized after fabrication.
  - (E) All anchor bolts, washers and nuts shall be ASTM A449 hot dip galvanized after fabrication, unless otherwise noted.
  - (F) Unless shown otherwise, all connections shall be ASTM A325N bolts and galvanized.
  - (G) No holes other than those specially detailed shall be allowed through structural steel members.
7. *Construction Notes:*
  - (A) See Standard Specifications and Special Provisions.
  - (B) For the installation of anchor bolts the contractor shall provide rigid templates to maintain the proper locations and shall protect such anchor bolts at all times during the period of construction.
  - (C) Except as otherwise noted, all vertical dimensions are measured plumb.
  - (D) The Contractor shall verify all dimensions, elevations, and site conditions and not rely upon these plans for stream location, finish grades, etc. Conditions may differ from those shown.
  - (E) The Contractor shall verify the location of all utility lines and notify the respective owners before commencing the work of excavation, including any temporary piling or sheeting.
  - (F) For concrete finish see standard specifications and special provisions.
  - (G) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".
  - (H) Large impacting or vibratory type of equipment will not be permitted in the drilling of holes.
8. *General:*
  - (A) All items noted incidental will not be paid for separately.
  - (B) Standard detail drawings 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) The Contractor shall be solely responsible for any damage to the existing structure, utility lines both overhead and underground, and any adjacent property or structure throughout the work and shall repair such damage at his own expense, to the satisfaction of the Engineer.
  - (D) The Contractor shall provide adequate traffic signage and warning devices for motorist throughout the work.
  - (E) Additional as-built plans for the existing structures are available from the Highways Design Branch located at the Department of Transportation, Highways Division, Kakuhihewa Building, Room 688, 601 Kamokila Boulevard, Kapolei, HI 96707. The phone number is 692-7546.

9. *Foundation:*
  - (A) *General:*
    - (1) Some footings are located near streams. Construction at these locations may be complicated by the presence of water and cobbles or boulders. Shoring for excavation may be required for the construction of these footings.
    - (2) The Contractor should be aware that conditions exist where the excavation of a footing located lower than an adjacent footing may undermine the higher footing. The Contractor shall take precautions not to detrimentally affect the higher footings.
    - (3) The Contractor shall be aware of work being done on steep slopes. Temporary measures may be required to stabilize the slopes.
    - (4) Unless otherwise noted all finish grades shall match existing grades.

DATE	*****
SURVEY PLOTTED BY	*****
DRAWN BY	*****
CHECKED BY	*****
QUANTITIES BY	*****
CHECKED BY	*****
ORIGINAL PLAN	No. _____
NOTE BOOK	No. _____



*David K. Fujiwara*  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GENERAL NOTES**

HAWAII BELT ROAD  
SEISMIC RETROFIT OF VARIOUS BRIDGES  
VICINITY OF PAPAIKOULU, HAWAII  
PROJECT NO. BR-019-2(43)

SCALE: AS NOTED      DATE: August 12, 1999

**SHEET No. G1.3 OF 3 SHEETS**