

BRIDGE GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-0100(57)	2001	7	88

1. General Specifications: Hawaii Department of Transportation, Standard Specifications for Road, Bridge, and Public Works Construction, 1995. Together with Special Provisions prepared for this contract.

2. Design Specifications: AASHTO 1998 LRFD Bridge Design Specifications (Second Edition) and its subsequent interim specifications with Interim 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) All concrete strengths shall be as noted below:

Specified Compressive Strength, f'c (28 days)

(1) Column footings	5,500 PSI (For Hanawi Bridge Only)
(2) Drilled Shafts	6,000 PSI
(3) Except as noted otherwise all others	4,000 PSI

(B) All reinforcing steel shall be ASTM A615, grade 60 unless otherwise noted.

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" 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.
(H) The Contractor shall notify the Engineer of any anchor bolts or any other connections, such as connection bolts and welds, that are severely deteriorated and may need to be replaced.

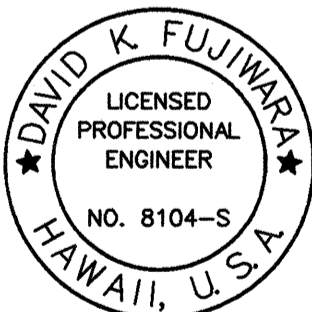
7. Construction Notes:
(A) See Standard Specifications and Special Provisions.
(B) For the installation of anchor bolts the contractor shall provide rigid templates to maintain the proper locations and shall protect such anchor bolts at all times during the period of construction.
(C) Except as otherwise 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.
(I) The concrete surfaces shall be roughened to a full amplitude of 1/4 of an inch.

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.

10. Drilled Shafts
(A) Vertical bar splices:
(1) No lap splice.
(2) Butt weld or mechanical splice only.
(3) Staggered splice points not more than 33% of total at one point.
(4) Minimum of 30" vertically between splice points.
(B) Lap splice length for #6 spiral reinforcement is 3'-0".
(C) Concrete or other non-corrosive spacing devices shall be used to maintain the reinf. cage in position within the shaft.
(D) Spirals may be discontinuous at footing reinforcing to allow for placing footing reinforcements. The discontinuous spirals shall be terminated with a 135° hook around vertical reinforcement.

SURVEY PLOTTED BY _____	DATE _____
DRAWN BY _____	DATE _____
TRACED BY _____	DATE _____
NOTED BY _____	DATE _____
CHECKED BY _____	DATE _____
ORIGINAL PLAN	NO. _____



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 PEPEKEO, HAWAII - UNIT 1
FEDERAL-AID PROJECT NO. BR-0100(57)

SCALE: AS NOTED DATE: March 2001

SHEET No. G1.5 OF 5 SHEETS