

STRUCTURAL GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-H1-1(241)	2003	803	816

DESIGN SPECIFICATIONS:

AASHTO LRFD Bridge Design Specifications, 2nd Edition, 1998 with all subsequent interim revisions.

REFERENCE:

Refer to Standard Plans for additional details and notes not covered by contract plans.

GENERAL:

- A. Refer to Hawaii Standard Specifications for Road, Bridge and Public Works Construction, 1994 Edition and Special Provisions.
- B. The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work.
- C. The Contractor shall verify all dimensions and existing conditions before commencing work. Any discrepancies and/or inconsistencies shall be reported to the Engineer for clarification.
- D. 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 caused by the Contractor's operations shall be at no additional cost to the State.
- E. The Contractor shall conduct his work in such a manner and provide temporary shoring or other measures as may be necessary to insure the safety of all concerned and to protect existing structures.
- F. Chamfer all exposed concrete edges three-quarters (3/4) of an inch unless noted otherwise.
- G. All vertical dimensions are measured plumb unless noted otherwise.
- H. As-built plans for existing structures are available from the Highways Design Branch located at the Department of Transportation, Highways Division, Room 609, 601 Kamokila Boulevard, Kapolei, Hawaii, 96707 (George Atiburcio, Phone No.: 692-7586).

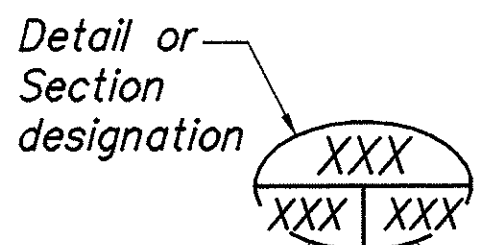
MATERIALS:

- A. Concrete: Class A, unless otherwise noted.
- B. Reinforcing Steel: ASTM A 615, Grade 60 deformed bars.
- C. Admixtures in concrete: See Special Provisions.
- D. Premolded joint fillers, roofing felt barriers, joint sealants, elastomeric bearing pads, non-shrink grouts, and other miscellaneous materials needed to complete the work shall be incidental to concrete and will not be paid for separately.
- E. Epoxy bonding agents shall conform to ASTM C881 Type IV or V, Class C, Grade as suitable for the use intended.
- F. Non-shrink grout shall be fluid, self-leveling high strength cementitious non-metallic grout suitable for grouting to the thickness required in a single lift and for dynamic loading. Grout shall conform to ASTM C1107 and attain a minimum compressive strength of 5,000 psi at 7 days, and 7,000 psi at 28 days.
- G. All welding shall be in accordance with the current edition of Bridge Welding Code ANSI/AASHTO/AWS D1.5.

CONSTRUCTION METHODS:

- A. Lap reinforcing bars 40 bar diameters at splices and stagger splices wherever possible, unless shown otherwise.
- B. For cast-in-place concrete, minimum concrete cover for reinforcing steel shall be as follows:  
Concrete cast against earth: 3"  
Concrete cast against forms and permanently exposed to earth backfill: 2"  
Beams and Walls: 2"
- C. At time concrete is placed, reinforcing shall be clean, free of soil, oil, laitance or other coatings adversely affecting bond.
- D. Reinforcing steel, dowels and other embedded items shall be positively secured before pouring concrete.
- E. Minimum clear spacing between parallel bars shall be one and one-half (1 1/2) times the diameter of the bars (for non-bundled bars), one and one-half (1 1/2) times the maximum size of aggregates or one and one-half (1 1/2) inches, whichever is greater.
- F. All dimensions relating to reinforcing bars (e.g. spacing of bars, etc.) are to centers of bars unless noted otherwise.
- G. All footings shall bear on firm undisturbed natural soils or properly compacted structural fill.
- H. All existing reinforcing and anchor bolts that can be incorporated in the new work shall be bent or cut as required and cleaned before being utilized in the new work.
- I. All existing reinforcing and anchor bolts that cannot be incorporated in the new work shall be completely removed or removed to a minimum depth of one and one-half (1 1/2) inches below the face of concrete and patched with mortar to match the surrounding surfaces.
- J. Removal of existing concrete shall be done in such a manner as to preclude any damage to the existing structures. Large vibratory type of equipment will not be permitted in the removal operation, nor for drilling of holes. Only small vibratory hand tools accepted by the Engineer will be allowed. Any damage to the existing structure due to the Contractor's operation or negligence shall be repaired at his expense with no cost to the State.
- K. Concrete mix design including admixtures such as high range water reducing admixture (superplasticizer) conforming to ASTM C494 Type F or G and reduced max. aggregate size may be needed due to limited headroom encountered at the seat extenders. Such adjustments to the mix design, additional testing to qualify such mix, and any special equipment required for concrete placement shall be considered incidental to concrete and shall be provided at no additional cost to the State.

SYMBOLS AND ABBREVIATIONS



Detail or Section designation

Sheet No. Section is cut or Detail Location

Sheet No. Detail is drawn

Abut. Abutment

A.B. Anchor Bolt

Alum. Aluminum

Approx. Approximate

Bas. Baseline

Bal. Balance

Beg. Begin, Beginning

Blk. Block

Bm. Beam

Bot. Bottom

Brg., Brgs. Bearing, Bearings

Cl., Clr. Center Line

Cl. Clear

Col. Column

Conc. Concrete

Cont. Continuous

CR Corrosion Resistant

Det. Detail

Dia. Diameter

D.I. Drain Inlet

Dim. Dimension

Dwg., Dwgs. Drawing, Drawings

EA, Ea., ea. Each

E.F. Each Face

E.W. Each Way

Elec. Electrical

Elev. Elevation

Exist. Existing

Exp., (E) Expansion

F.F. Front Face

Fin. Finish

Ftg. Footing

Ga. Gage, Gauge

Galv. Galvanized

G.D.I. Grated Drain Inlet

Gr. Grade

Horiz. Horizontal

H.S. High Strength

H.W. Headwall

Hwy. Highway

I.B. Inbound

I.D. Inside Diameter

Irr. Irrigation

Jt. Joint

LC Length of Curve

L.F., Lin. Ft. Linear Feet

Lg. Long

Longit. Longitudinal

L.S. Lump Sum

Light Std. Light Standard

Max. Maximum

Min. Minimum

MP Mile Post

N.D. Nominal Diameter

No., # Number

N.T.S. Not To Scale

O.B. Outbound

O.C. On Center

O.D. Outside Dimension

O/S, O/S Offset

P.C. Point of Curvature

PL, P Plate

R Radius

Rdwy. Roadway

Ref. Reference

Reinf. Reinforcement

Req'd. Required

Sect. Section

Sht. Sheet

Spcs. Spaces

Spcd. Spaced

Spcg. Spacing

Sta. Station

Std. Standard

Str. Straight

Struct. Structural

Symm. Symmetrical

T&B Top and Bottom

Thk. Thickness

T.O.F. Top of Footing

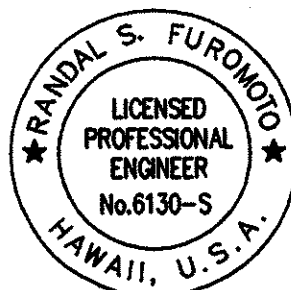
TS Tubular Steel

Typ. Typical

Var. Varies

Vert. Vertical

w/ With



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.

SIGNATURE

April 30, 2004  
EXPIRATION DATE  
OF THE LICENSE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

AUSTIN-BISHOP SEPARATION AND  
WAI'AU INTERCHANGE

F.A.I. Proj. No. BR-H1-1(241)

Scale: As Noted Date: Mar. 31, 2003

SHEET No. BS0.1 OF 14 SHEETS