

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H2A/G-02-05M	2014	7	30

GENERAL NOTES:

- A. GENERAL SPECIFICATIONS: Hawaii Standard Specifications for Road and Bridge Construction, 2005 Edition, along with Special Provisions prepared for this contract.
- B. DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012, including its subsequent interim specifications.
- C. DESIGN LOADS: Live Load: HL-93
- D. WELDING: Welding of structural steel, reinforcing steel and galvanized steel shall conform to the latest edition of AWS D 1.1, AWS D 1.4 and AWS D 19.0, respectively. Welding rod shall be of chemical compositions as close as possible to base metal. E70xx electrode (low-hydrogen). Weld metal containing greater than 0.75% silicon when welding zinc-coated or galvanized metal shall not be used. Warpage or distortion of steel assembly shall be minimal. The steel fabricator shall follow standard (AWS) welding codes, processes and procedures, good welding technique, practices and control to assure quality product and to ensure minimal distortion and warpage to steel.
- E. CONCRETE: Concrete shall have minimum compressive strength f_c = 5,000 p.s.i. at 28-days. Water/Cement Ratio (W/C) = 0.42
- F. CURING COMPOUND: Apply curing compound immediately after placing concrete in the concrete form. Concrete shall be cured for recommended period in accordance with applicable standards.
- G. REINFORCING STEEL: Reinforcing steel shall conform to ASTM A 615, Grade 60, unless otherwise noted.
- H. STRUCTURAL STEEL: Structural steel shall conform to ASTM A 36, and shall be galvanized (hot-dip process) after fabrication, unless othewise specified. Zinc (hot-dip) coating shall conform to applicable ASTM specifications.
- I. STRUCTURAL FASTENERS: Structural bolts, including nuts and washers shall be galvanized (hot-dip process) after fabrication, unless otherwise specified. Zinc (hot-dip) coating shall conform to ASTM A 153. ASTM A325 high-strength bolts shall not be hot-dip zinc coated.
- J. ANCHOR ROD: Anchor rods, including nuts and washers, shall be galvanized (hot-dip process) after fabrication, unless otherwise noted. Stainless steel anchor rods shall not be hot-dip zinc coated. See Special Provisions.

- K. NEW EXPANSION JOINT SYSTEM: (See Special Provisions)
- L. ADHESIVE MATERIAL: Adhesive for anchoring or doweling shall be of structural application, low viscosity and moisture-insensitive. Submit to the Engineer for approval the product technical data exhibiting the bonding tensile strength versus embedment length. Bonding tensile strength for #5 dowel shall have a capacity greater than 18.6 kips ($A = 0.31 \times f = 60 \text{ k.s.i.}$). Remove all fines and clean holes thoroughly, and prepare surface profile according to manufacturer's recommendations. Pour adhesive in only when concrete is dry. Pour concrete only after the adhesive has elapsed the specified cure time in accordance with the manufacturer's specifications. See Special Provisions.
- M. REINFORCEMENT:
- Unless otherwise noted, the clear spacing measured from the surface of the concrete to the surface of the reinforcing bars shall be as follows:
 - Formed concrete exposed to the weather: 2-inches
 - Concrete deposited against earth: 3-inches
 - Minimum clear spacing between bars shall be $1\frac{1}{2}$ times the diameter of the bar for non-bundled bars or $1\frac{1}{2}$ times the diameter derived from the equivalent area of the bundled bars, but in no case shall the clear distance between the bars be less than $1\frac{1}{2}$ times the maximum aggregate size or $1\frac{1}{2}$ inches.
 - Dimensions refering to the spacing of reinforcing bars are taken to the center of the bars, unless otherwise noted.
 - Reinforcing bars shall be detailed in accordance with the latest ASSHTO LRFD Bridge Design Specifications, including its subsequent interim revisions.
 - Reinforcing bars shall be securely tied at all intersections and at all lap splices except where the spacing of intersections is less than 12-inches in either direction, in which case alternate intersections shall be tied.

CONSTRUCTION NOTES:

- A. See Standard Specifications and Special Provisions.
- B. All items noted incidental shall not be paid for separately.

- C. The Contractor, as required, shall take appropriate erosion control measures during the construction to prevent soils from eroding into the stream. The Contractor shall adopt construction measures to prevent any material, including fine aggregate, from falling into the joint opening. Throughout the construction work, water leakage from the opening at the expansion joint shall be controlled and keep it in a waterproof condition.
- D. The Contractor shall reconstruct existing expansion joint blocks and complete final grade to match existing roadway elevation, in both longitudinal and transverse directions.
- E. The Contractor, during the concrete repair work, shall take appropriate measures to control dust and noise levels. Remnants resulting from concrete removal shall not be stockpiled anywhere in construction zone area, or within State highway rights-of-way. Remove all debris, dust, oil and grease, clean thoroughly and restore all travel lanes to safe conditions at the end of each working day.
- F. Before commencing with work, the Contractor shall take field measurements and compare field conditions with those dimensions shown on the plans. Report immediately all omissions, discrepancies or errors to the Engineer.
- G. The Contractor shall verify the locations of all existing steel reinforcing bars prior to commencing with concrete removal work.
- H. The Contractor shall verify the locations of all existing utility lines and notify the respective owners before commencing with work. The Contractor shall be responsible for all coordination, permitting, inspection services and agreements required by utility companies to expedite project work.
- I. Unless otherwise noted, chamfer all exposed concrete edges one-half inch ($\frac{1}{2}$ ").
- J. The Contractor shall repair damages sustained in the process of completing work to the existing concrete structure and new concrete, and repair mortar at no extra cost to the State. Repair damages as close to the existing condition, or according to the requirements prescribed in the contract.
- K. All existing reinforcing bars and bolts that are cut at existing concrete surfaces shall be undercut and embedded with one inch (1") minimum cover into the existing concrete, unless otherwise noted.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
	NOTED BY	

db4/ast2/ksq/sk/kipadn3/

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES
BRIDGES at VARIOUS LOCATIONS
INTERSTATE ROUTE H-2 JOINT REPAIR
WAIAWA INTERCHANGE to WAHIAWA INTERCHANGE
Project NO. H2A/G-02-05M

Scale: As NotedDate: Aug. 2013

SHEET No. Q2 OF 22 SHEETS