

STRUCTURAL GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-19(001)	2018	20	30

1. General Specifications: Hawaii State Department of Transportation (HDOT), Hawaii Standard Specifications for Road and Bridge Construction, 2005, together with Special Provisions prepared for this contract.

2. Design Specifications:

(A) AASHTO 2014 LRFD Bridge Design Specifications (Seventh Edition) and its subsequent interim specifications with interim supplements and modifications by the HDOT Highways Division.

(B) HDOT Document dated August 8, 2014 with subject title "Design Criteria for Bridges and Structures"

3. Loads:

(A) Live Load: AASHTO HL-93 Truck Loading

4. Materials:

(A) All concrete strengths shall be as noted below:

Item No.	Structural Parts	Min. Compressive Strength f'c (28 Days)	Maximum Water/Cement (W/C)
(1)	Jointed Precast Panels (JPCP)	6000 psi	0.40
(2)	Concrete Jacket See Note 4.(E)	3500 psi	0.45
(3)	Precast Plank See Note 4.(E) and (F)	6000 psi	0.40
(4)	Except as noted otherwise, all others	3000 psi	0.49

(B) The use of any calcium chloride in any concrete is prohibited.

(C) All reinforcing steel shall be ASTM A615 Grade 60 deformed bars unless otherwise noted.

(D) All concrete shall be cured for a minimum of seven consecutive days immediately after pouring by the use of wet burlap, fog spraying, curing compound, or other approved methods.

(E) The concrete mix for Item No. (2) and (3) under Note 4.(A) shall contain 5 gal/cy of a corrosion inhibiting calcium nitrite admixture or 24 oz/cy of an amine carboxylate water-based migrating corrosion inhibiting admixture such as Cortec MCI 2005 NS or approved equal.

(F) The concrete mix for Item No. (3) under Note 4.(A) shall contain 128 oz/cy of a shrinkage reducing admixture such as Eclipse 4500, Masterlife SRA 20, or approved equal.

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) Concrete cast against and permanently exposed to earth = 3"

(2) All others unless otherwise noted = 2".

5. Reinforcement (Cont.):

(B) Reinforcing bars shall be detailed in accordance with the latest edition of the A.C.I. Detailing Manual 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" whichever is greater.

(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. Jointed Precast Concrete Pavement (JPCP) Notes:

(A) Except as otherwise noted, all vertical dimensions are measured plumb.

(B) Details and information for pavement width, pavement thickness, pavement boundaries, pavement layout (plans and profiles), cross slope, roadway sections, and pavement sections are shown in the Civil drawings.

(C) The Contractor shall not damage the epoxy coating on the dowels and deformed bars in any way during shipment, handling, or placement. Damaged epoxy coated dowels and deformed bars shall be replaced at no cost to the State. Repair of epoxy coating as approved by the Engineer shall meet ASTM A775.

(D) Polyethylene sheeting shall be 6 mils minimum thickness. Sheeting shall comply with ASTM C171.

(E) Under Slab Grout shall be cement-based, not-metallic, non-shrink, and meet the performance requirements of ASTM C1107, Grades A, B, and C. The grout shall also meet the requirements of the table below in regards to hardened height change, expansion, fluidity, and bleed. Compressive strength at time of opening to traffic shall exceed 50 psi.

Properties of Under Slab Grout

Property	Test Value	Test Method
Hardened Height Change @ 24 hours and 28 days	0.0 % to +0.2%	ASTM C 1090 *
Expansion	2.0% for up to 3 hours	ASTM C 940
Fluidity Test ** Efflux Time from Flow Cone		
(a) Immediately after mixing	Min. 20 sec. Max. 30 sec.	ASTM C 939
	Or Min. 9 sec. Max. 20 sec.	ASTM C 939 ***
(b) 30 minutes after mixing with remixing for 30 seconds	Max. 30 sec.	ASTM C 939
	Or Max 30 sec.	ASTM C 939 ***

6. Jointed Precast Concrete Pavement (JPCP) Notes, Cont.:

Properties of Under Slab Grout, Cont.

Property	Test Value	Test Method
Bleeding @ 3 hours	Max. 0.0 percent	ASTM C 940 ****

* Modify ASTM C 1090 to include verification at both 24 hours and 28 days.

** Adjustments to flow rates will be achieved by strict compliance with the manufacturer's recommendations.

*** Grout fluidity shall meet with the standard ASTM C939 flow cone test or the modified test described herein. Modify the ASTM C939 test by filling the cone to the top instead of to the standard level. The efflux time is the time to fill a one liter container placed directly under the flow cone.

****Modify ASTM C940 to conform with the wick induced bleed test as follows:

(a) Use a wick made of a 20-inch length of ASTM A416 seven wire 0.5-inch diameter strand. Wrap the strand with 2-inch wide duct or electrical tape at each end prior to cutting to avoid splaying of the wires when it is cut. Degrease (with acetone or hexane solvent) and wire brush to remove any surface rust on the strand before temperature conditioning.

(b) Condition the dry ingredients, mixing water, prestressing strand and test apparatus overnight at 65 to 75 degrees F.

(c) Mix the conditioned dry ingredients with the conditioned mixing water and place 800 ml of the resulting grout onto the 1,000 ml graduated cylinder. Measure and record the level of the top of the grout.


(d) Completely insert strand into the graduate cylinder center and fasten the strand so it remains essentially parallel with the vertical axis of the cylinder. Measure and record the level of the top of the grout.

(e) Store the mixed grout at the temperature range listed above in (b).

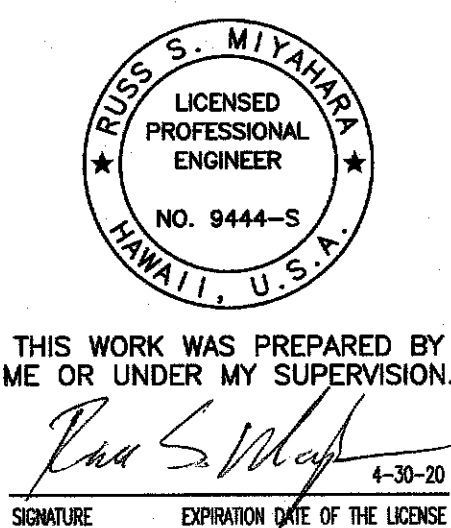
(f) Measure the level of the bleed water every 15 minutes for the first hour and hourly for two successive readings thereafter.

(g) Calculate the bleed water, if any, at the end of the three hour test period and the resulting expansion per the procedures outlined in ASTM C940, with the quantity of bleed water expressed as a percent of the initial grout volume. Note if the bleed water remains above or below the top of the original grout height. Note if any bleed water is absorbed into the specimen during the test.

APPROVED:


MANAGER AND CHIEF ENGINEER
DEPARTMENT OF WATER
COUNTY OF KAUAI

1/3/19
DATE



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STRUCTURAL GENERAL NOTES	
KAUAI EMERGENCY FLOOD REPAIRS & CLEANUP At Various Locations April 2018, Rte. 560 Proj. No. ER-19(001)	
Scale: None	Date: Mar. 2019
SHEET No. S02 OF 4 SHEETS	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-19(001)	2018	21	30

6. Jointed Precast Concrete Pavement (JPCP) Notes, Cont.:

- (F) Fill materials for holes and pockets shall be a cementitious, rapid-setting, non-shrink, zero bleed grout that will flow easily into the annular spaces of the dowel bars and holes and pockets, completely filling them without agitation. The material shall contain a latex as described below and meet the requirements of the Table of Latex Modified Grout Properties.
- (G) Joint filler/gasket material shall be a flexible polystyrene foam or accepted equal. Secure the gasket material to the sides of the panel as indicated on the plans. The gasket material shall fill the joint, preventing leakage of the grout into the joint.
- (H) Latex admixture shall meet the requirements of FHWA Research Report RD-78-35, except for curing or be an accepted equal that modifies the concrete properties as listed in the Table below.

Latex Modified Grout Properties

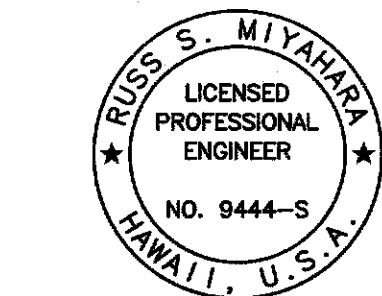
Characteristics	Requirements	Test Method
Minimum Compressive Strength: At 1 hour At 28 days	3,000 psi 6,000 psi	ASTM C109
Setting Time	Initial Set: 20 minutes Final Set: 30 minutes	ASTM C191
Crack Resistance	Time to Cracking > 28 days Potential for Cracking: Low	ASTM C1581
Bond Strength, 28 day	300 psi	ASTM C1583

7. Construction Notes:

- (A) Except as otherwise noted, all vertical dimensions are measured plumb.
- (B) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".

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

DRAWING NAME: 2A-001 ONCONV-18-008.5-KUHIO HWY STREAM PCC-01 C&G 10-05-20 JIMAHU AS-BUILT-SP-S0003 GENNOTES.DWG PLOT TIME: 10-06-20 15:01 PM



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

SIGNATURE: _____ EXPIRATION DATE OF THE LICENSE: 4-30-20

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

KAUAI EMERGENCY FLOOD REPAIRS & CLEANUP
At Various Locations April 2018, Rte. 560
Proj. No. ER-19(001)

Scale: None Date: Mar. 2019

SHEET No. S0.3 OF 4 SHEETS