

GENERAL NOTES

DESIGN SPECIFICATIONS

AASHTO Standard Specifications for Highway Bridges 13TH Edition, (1983) and Standard Specifications for Road and Bridge Construction (Hawaii 1985) and Special Provisions.

DESIGN LOADS

Live load HS 20-44
Seismic Coefficient C=0.04
Concrete normal weight 160 pcf.
Thermal rise of 10°F. Fall of 20°F
Weight of 1 1/2 Future AC wearing surface included in design.

DESIGN STRESSES

1) Reinforcing Steel :
Grade 60 fy = 60,000 psi fs = 24,000 psi.
Grade 40 fy = 40,000 psi fs = 20,000 psi.

2) Concrete:
Class A fc' = 3000 psi fc = 1200 psi.
5000 psi fc' = 5000 psi fc = 2000 psi.

MATERIALS

- All concrete shall be Class "A" except as noted below:
 - Viaduct Superstructure (Soffit, Girders, Hinge, Diaphragms, Bridge Deck, Pier Cap)
fc = 5000 psi @ 28 Days.
Cement shall be Type II.
- Reinforcing steel shall conform to the requirements of ASTM A615. Reinforcing Steel shall be Grade 40 unless otherwise noted.
- Prestressing Steel 1/2" φ, Seven wire stress relieved strands fs = 270 Ksi, conforming to ASTM A416.
- Steel shapes and plates shall be ASTM A36 unless otherwise noted. All exposed steel shall be hot dipped galvanized after fabrication. Shop drawings shall be submitted for all structural steelwork.

CONSTRUCTION METHODS

- See Standard Specifications for Road and Bridge Construction (Hawaii 1985) and Special Provisions.
- The top of the concrete bridge deck shall be constructed to follow the finish roadway vertical and horizontal curves and grades.
- Except as noted otherwise all vertical dimensions are measured plumb.
- The following cover requirements for reinforcing steel shall be observed unless otherwise noted:
 - Bridge Deck: Top Bars = 1 1/2"
Bottom Bars = 1 1/4"
 - Girders: Stirrups for exterior faces = 1 1/4"
Stirrups for interior faces = 1"
 - Abutment and Retaining Walls = 2"
- All reinforcing steel and post tensioning ducts shall be securely tied at intersections and splice locations so as to maintain proper location during placement of concrete.
- The contractor shall verify the location of any existing utility lines before commencing work
- The contractor shall be responsible for the methods of construction used and the safety of workmen during construction, including the use of falsework, bracing and temporary supports used.
For design of falsework and shoring for the

super structure, the Contractor is cautioned that certain portions of the site consist of soils which will not support imposed loads without excessive settlement of the falsework. A report titled "Structural Foundation Report on Hanamaulu Stream Bridge" dated August 1981 has been prepared by the Department of Transportation, Highways Division, Material Testing and Research Branch, Geotechnical Engineering Section. A copy of the report is available for review at the Department of Transportation.

SYMBOLS

A* Detail or Section designation
S-99 Sht. no detail or section is shown.

Section or Detail
Direction cut at.

ABBREVIATIONS

A		I		S	
Abut.	Abutment	I.D.	Inside Diameter	Sta.	Station
&	and			Sht.	Sheet
@	at.	J		Symm.	Symmetrical
B		Jt.	Joint	Sect.	Section
Bal.	Balance			Sp.	Space
Bl.	baseline	K		Stirr.	Stirrup
Bot.	bottom	Ksi	Kips per square inch.	Sim.	Similar
Brg.	Bearing			Std.	Standard
C				S.F.	Square Foot
Cl.	Centerline	L		T	
cfs	Cubic feet per second	Longit.	Longitudinal	Typ.	Typical
clr.	clear	L.F.	Lineal Foot	T.G.	Top of Grating
cont.	continuous	L.S.	Lump Sum	ThK.	Thick
Constr.	construction	M		T.S.	Structural Tube
col.	column	Min.	Minimum	T & B.	Top & Bottom
conc.	concrete	Max.	Maximum	V	
C.G.	Center of Gravity.	M.S.L.	Mean Sea Level.	Vert.	Vertical
c.y.	Cubic yard.			V.	Vent hole
C.J.	Construction Joint	N			
D		No.	Number	W	
Det.	Detail	NTS	Not to scale	Wt.	With
Dia.	Diameter	N.I.C.	Not in Contract.	wt.	weight
φ	Diameter				
D.H.	Drain hole	O		Y	
D.	Drain	O.C.	On Center	yrs.	years.
E		P			
Exist.	Existing	Pl	Plate		
El, Elev.	Elevation	pcf	pounds per cubic foot		
E.W.	Each way	psf	pounds per square foot		
E.F.	Each face	psi	pounds per square inch		
Ea.	Each				
Eq.	Equal				
Exp.	Expansion	R			
F		Rd.	Road		
Fin.	Finish	R/W	Right of Way		
Ft.	Foot.	RR.	Rail road		
G		Reinf.	Reinforcing		
Grd.	Ground	Req'd.	Required		
Ga.	Gage	Ref.	Reference.		
GRP.	Grouted Rubble Roving	R	Radius		
H					
Horiz.	Horizontal				
Ht.	Height.				

Depressed "V" Letters 3/8" deep

NAME DATE

Use correct name of bridge Date of Year built.

Note: Refer to corresponding detail drawings for placement of such names and dates at end post.
Exact details and spacing of letters and figures shall be as directed by the Engineer. Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer. Bridge name to be "HANAMAULU VIADUCT."

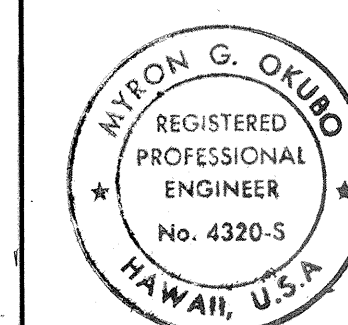
TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE

END POST.

No scale!

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(8)	1986	23	62

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



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Myron Okubo
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL SYMBOLS,
NOTES & ABBREVIATIONS
HANAMAULU VIADUCT
HANAMAULU-AHUKINI CUTOFF ROAD
Ahukini Road to Kauai Hardwoods
PROJECT NO. F-051-1(8)

SCALE: NONE DATE: JULY 1985
SHEET NO. S-2 OF S-39 SHEETS