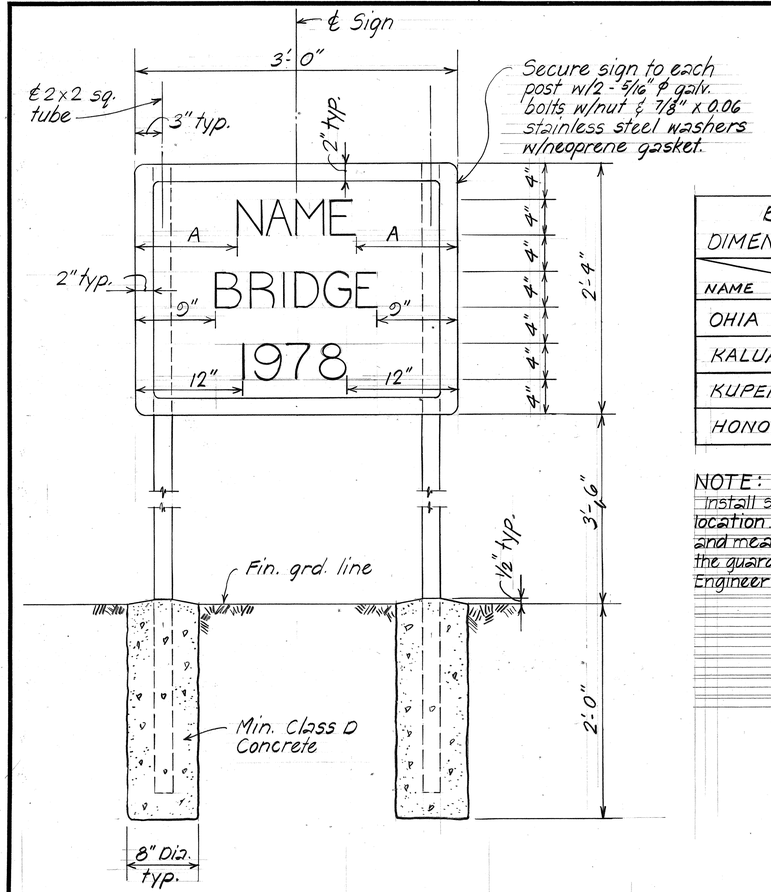
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	05-0900(10)	1978	10	23



TYPICAL BRIDGE NAME SIGN DETAIL Scale: 1½" = 1'-0"

BRIDGE NAME DIMENSION SCHEDULE	
NAME \ DIMENSION	A
OHIA	12"
KALUAAHA	4"
KUPEKE	8"
HONOMUNI	4¾"

NOTE:
Install sign parallel to highway. See "Bridge Plan" for location. The location indicated on the plan is approximate and measured from end of bridge, and 2'-0" behind the guard rail. The exact location to be determined by the Engineer in the field.

ESTIMATED QUANTITIES

ITEM No. \ NAME	ITEM	OHIA	KALUAAHA	KUPEKE	HONOMUNI	UNIT	TOTAL
206.6000	Structure Exc. for Bridges (Except Honomuni Bridge)	60 C.Y.	79 C.Y.	51 C.Y.		C.Y.	190 C.Y.
206.6001	Structure Excavation for Honomuni Bridge				66 C.Y.	C.Y.	66 C.Y.
206.7200	Structure Backfill	30 C.Y.	37 C.Y.	23 C.Y.	36 C.Y.	C.Y.	126 C.Y.
206.8000	Filter Material				1 C.Y.	C.Y.	1 C.Y.
503.1080	Concrete in Honomuni Bridge				61 C.Y.	C.Y.	61 C.Y.
503.6000	Precast Concrete Abut. for Ohia & Kaluaaha Bridges	48 L.F.	60 L.F.			L.F.	108 L.F.
503.6010	Precast Concrete Abut. for Kupeke Bridge			45 L.F.		L.F.	45 L.F.
504.7410	Prestressed Conc. Planks.	693 S.F.				S.F.	693 S.F.
504.7411	Prestressed Conc. Planks		756 S.F.			S.F.	756 S.F.
504.7412	Prestressed Conc. Planks			525 S.F.		S.F.	525 S.F.
504.7413	Prestressed Conc. Planks				309 S.F.	S.F.	309 S.F.
602.0080	Reinforcing Steel in Honomuni Bridge				1000 LBS.	LBS.	1000 LBS.
650.1000	Bridge Name Sign	2 EA.	2 EA.	2 EA.	2 EA.	EA.	8 EA.
202.0440	Removal of Timber Decks.					Lump Sum	

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY T.K.M.
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

GENERAL NOTES:

DESIGN SPECIFICATIONS:
Standard Specification for Highway Bridges (11th Edition) with subsequent interim Specifications. (AASHTO).

DESIGN LOADS: HS-20-44

MATERIALS:
1. Reinforced Concrete - Class A
2. Reinforcing Steel - ASTM A615 Grade 40
3. Prestressed Concrete - See prestressing notes.
4. Epoxy Grout - shall be high early strength type (1000 psi min. compressive strength @ 4 hr.) approved by the Engineer & applied in strict accordance with the manufacturer's recommendations.
5. Steel Shapes & Plates - ASTM A-36

CONSTRUCTION METHODS:
1. See Standard Specification for Road & Bridge Construction, 1976 Edition & Special Provisions.
2. Preformed fabric pads shall be securely fastened to the Abutments before placement of the prestressed planks.
3. Precast Abutments shall be placed true to final grade & alignment on a 1" thick grout bed before the grout has attained its initial set. The Abutments shall not be disturbed once the grout has set.
4. All anchor bolts and Structural Steel Shapes & Plates shall be hot dip galvanized after fabrication.

GENERAL:
1. All items noted incidental will not be paid for separately.
2. The Contractor shall verify all dimensions in the field before commencing with the work.
3. The Contractor shall verify the location of all existing utilities near the bridge and notify their respective owners before commencing work.

PRESTRESSING NOTES:
1. Concrete shall have a 28 day compressive strength of f'c = 6,000 psi.
2. Concrete shall have a cement content of not less than 7.0 sacks, nor more than 8.5 sacks per cubic yard.
3. The concrete shall attain a compressive strength f'ci = 4,000 psi before the strands are released.
4. Prefensioned strands shall be 7 wire, ½" ϕ, stress relieved steel strands (area = .153 sq. in.) with an ultimate strength of 270 ksi.
5. Total loss due to creep, shrinkage, elastic shortening and relaxation of steel = 45,000 psi.
6. Strand pattern shall be symmetrical about longitudinal ℄ of the planks.
7. Strand release sequence shall not induce any lateral deflection of the planks.
8. Contractor shall submit his proposed strand pattern and releasing sequence to the Engineer for approval.
9. Lifting devises shall be placed as close as possible to the center line of bearing of the plank.

SYMBOL & ABBREVIATIONS

(A / 1) Detail or Section designation. Sheet number section is cut or detail is located.

Abut.	Abutment	Pav't	Pavement
Bndry	Boundry	P/S	Prestress
Br'g	Bearing	Rdwy	Roadway
Cl.	Clearance	Ref.	Reference
Cont.	Continuous	R.H.	Red Head
El.	Elevation	Str.	Stream
F.H.	Fire Hydrant	Typ.	Typical
Fin.	Finish	W.M.H.	Water Man Hole
Ftg.	Footing	W.P.	Working Point.
Grd., gr.	Grade		
Hwy	Highway		
L.O.L.	Layout Line		
M.H.	Man Hole		

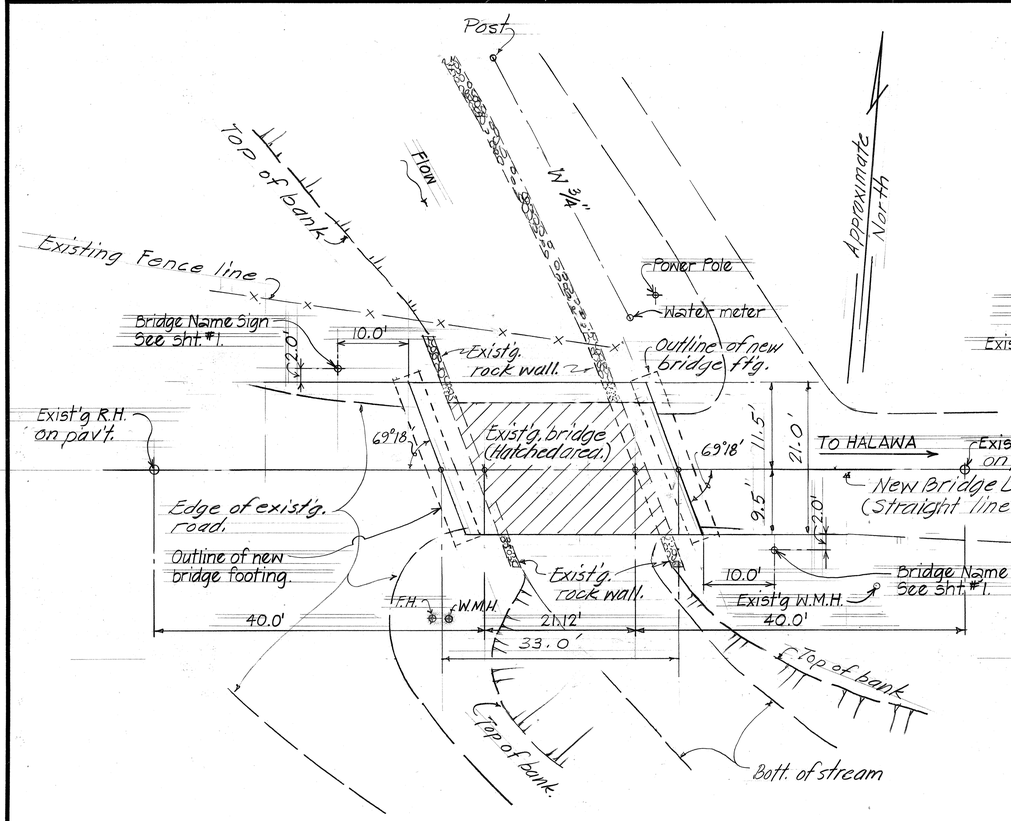
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

BRIDGE REPLACEMENT
OHIA, KALUAAHA, KUPEKE AND HONOMUNI BRIDGE

KAMEHAMEHA V HIGHWAY, MOLOKAI
Proj. No. 05-0900(10)
Scale: As noted Date: Jan. 1978

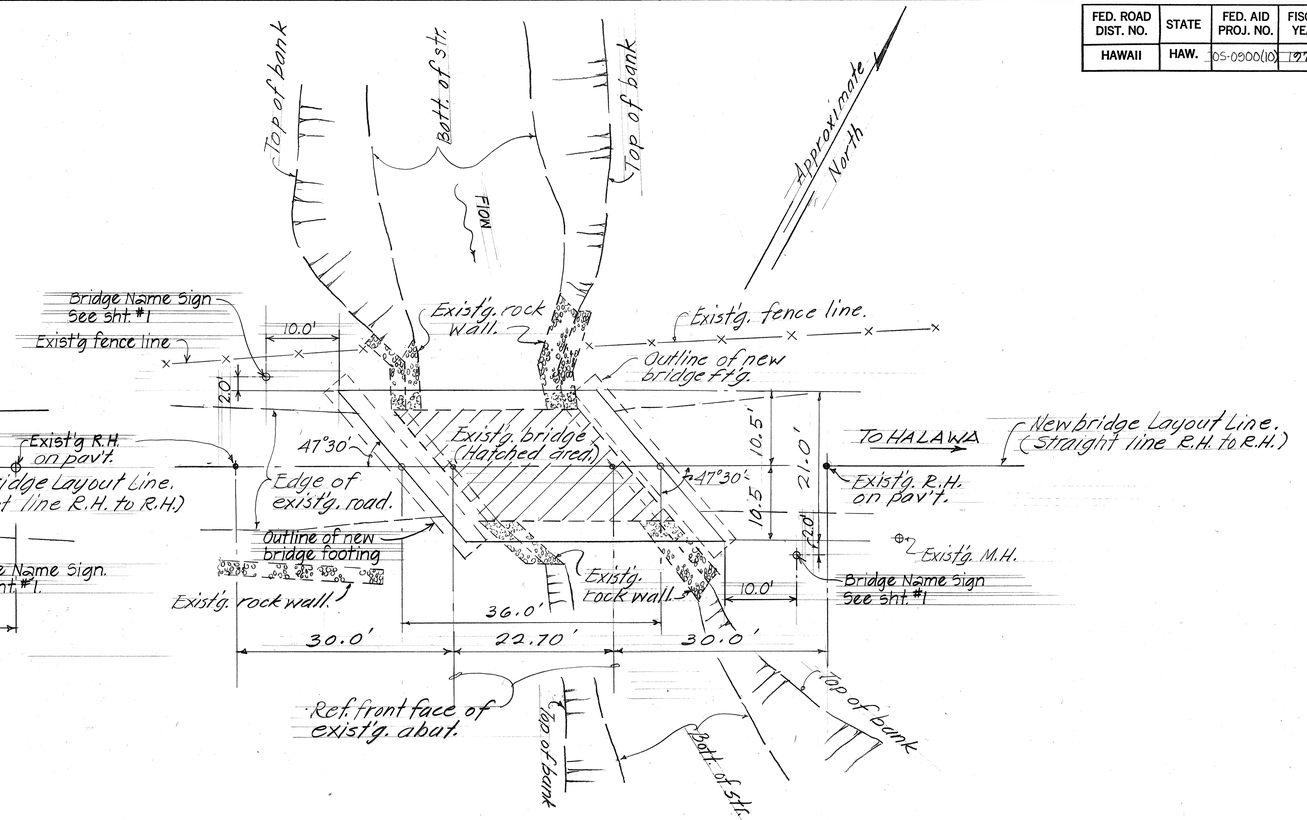
SHEET No. 1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	OS-0900(10)	1978	11	23



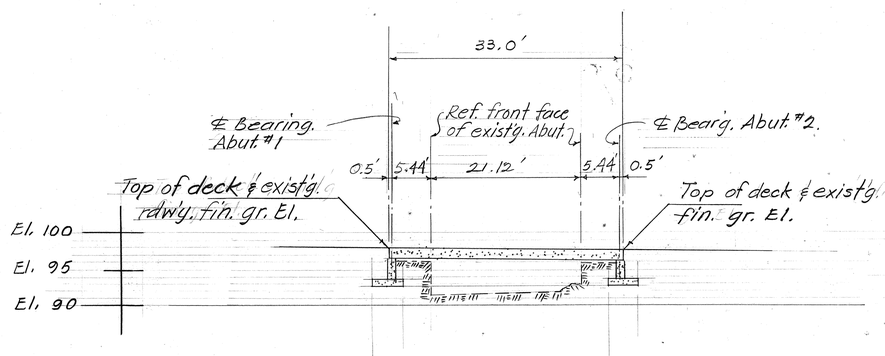
OHIA BRIDGE PLAN

Scale: 1"=10'



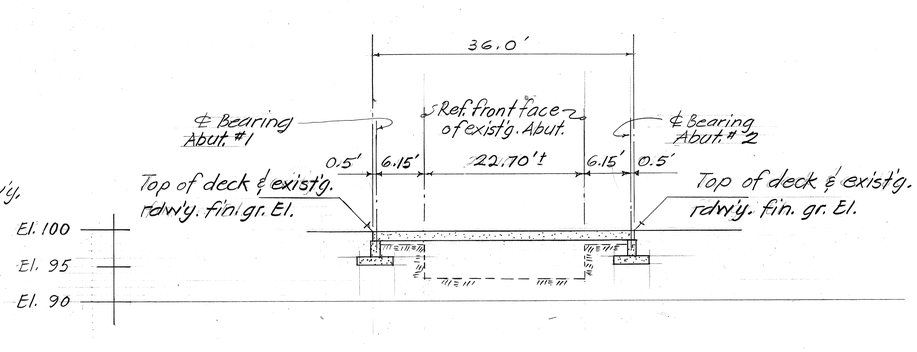
KALUAAHA BRIDGE PLAN

Scale: 1"=10'



OHIA BRIDGE L.O.L. PROFILE

scale: 1"=10'



KALUAAHA BRIDGE L.O.L PROFILE

scale: 1"=10'

ORIGINAL PLAN

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

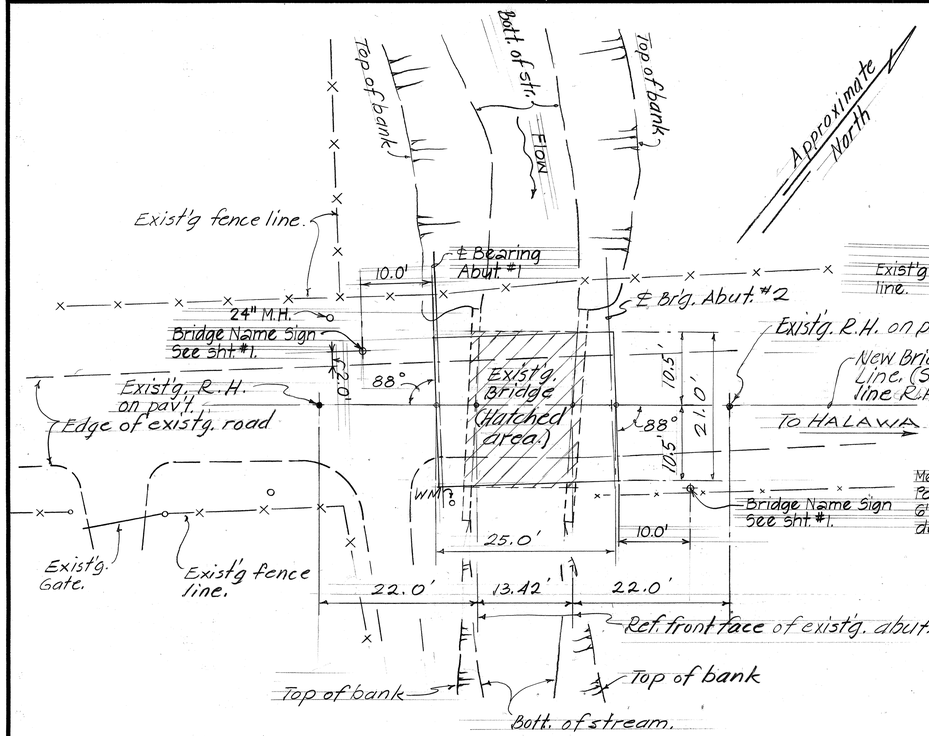
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

OHIA & KALUAAHA BRIDGE
PLAN & PROFILE

KAMEHAMEHA V HIGHWAY, MOLOKAI
Proj. No. OS-0900(10)
Scale: As Noted Date: Jan. 1978

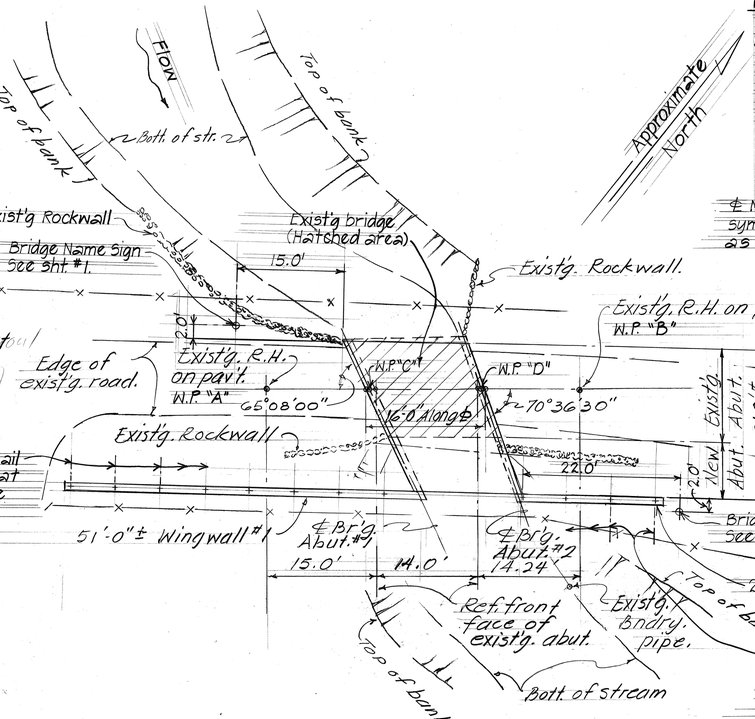
SHEET No. 2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	05-0900(10)	1978	12	23



KUPEKE BRIDGE PLAN

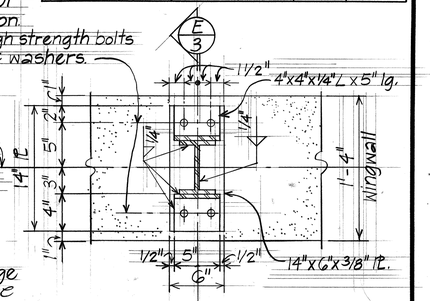
scale: 1"=10'

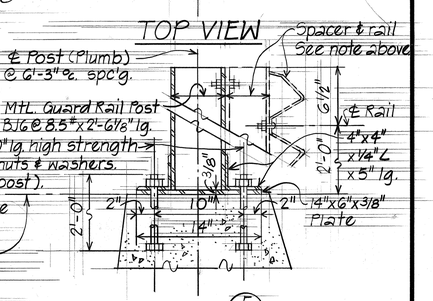


HONOMUNI BRIDGE PLAN

scale: 1"=10'

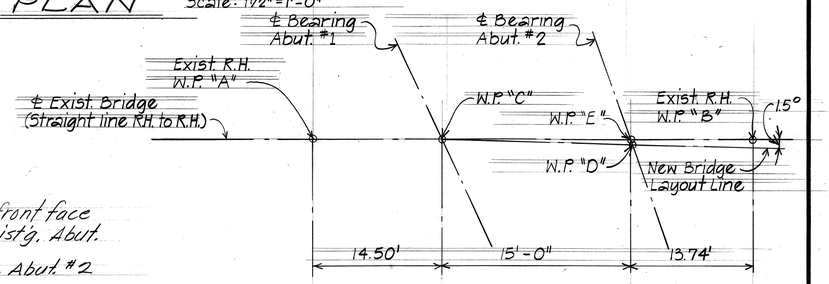
NOTE:
Metal Guard Rail & spacer block not shown. See std. det. sht. #DT-500 & #DT-501 for additional information.





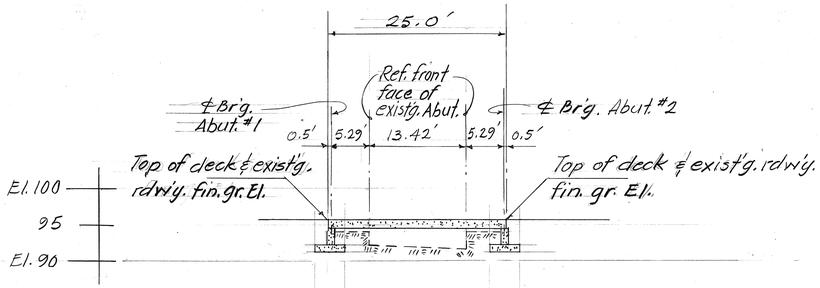
TYP. DET. FOR METAL GUARD RAIL POST ON WALL

Scale: 1½"=1'-0"



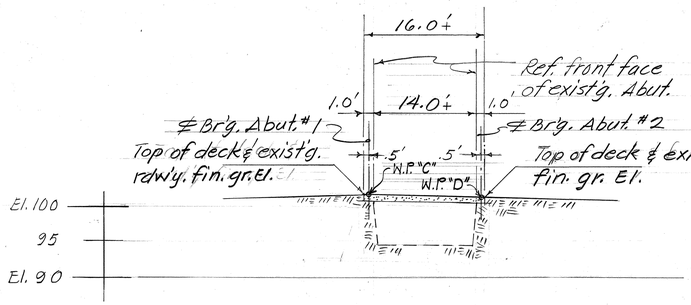
NEW BRIDGE LAYOUT LINE DIAGRAM

Scale: 1/8"=1'-0"



KUPEKE BRIDGE L.O.L. PROFILE

Scale: 1"=10'



HONOMUNI BRIDGE L.O.L. PROFILE

scale: 1"=10'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

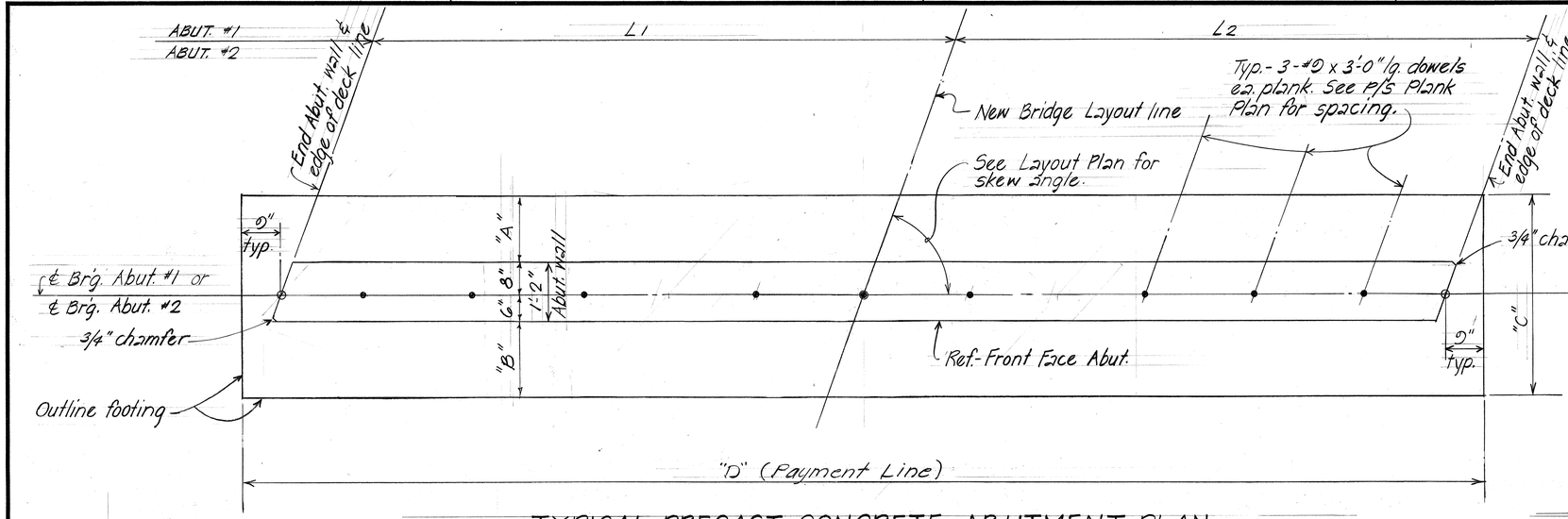
KUPEKE & HONOMUNI BRIDGE PLAN & PROFILE

KAMEHAMEHA V HIGHWAY, MOLOKAI
Proj. No. 05-0900(10)
Scale: As Noted Date: Jan. 1978

SHEET No. 3 OF 7 SHEETS

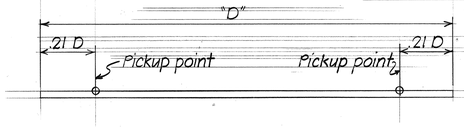
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	OS-0900(10)	1978	13	23



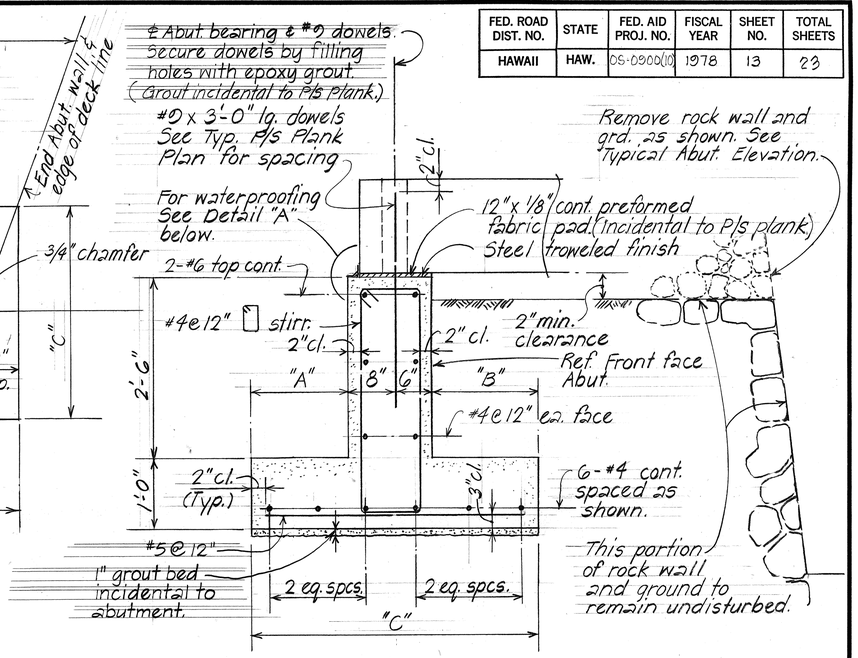
TYPICAL PRECAST CONCRETE ABUTMENT PLAN

Scale: 3/4" = 1'-0"



ABUTMENT LIFTING DIAGRAM

No Scale

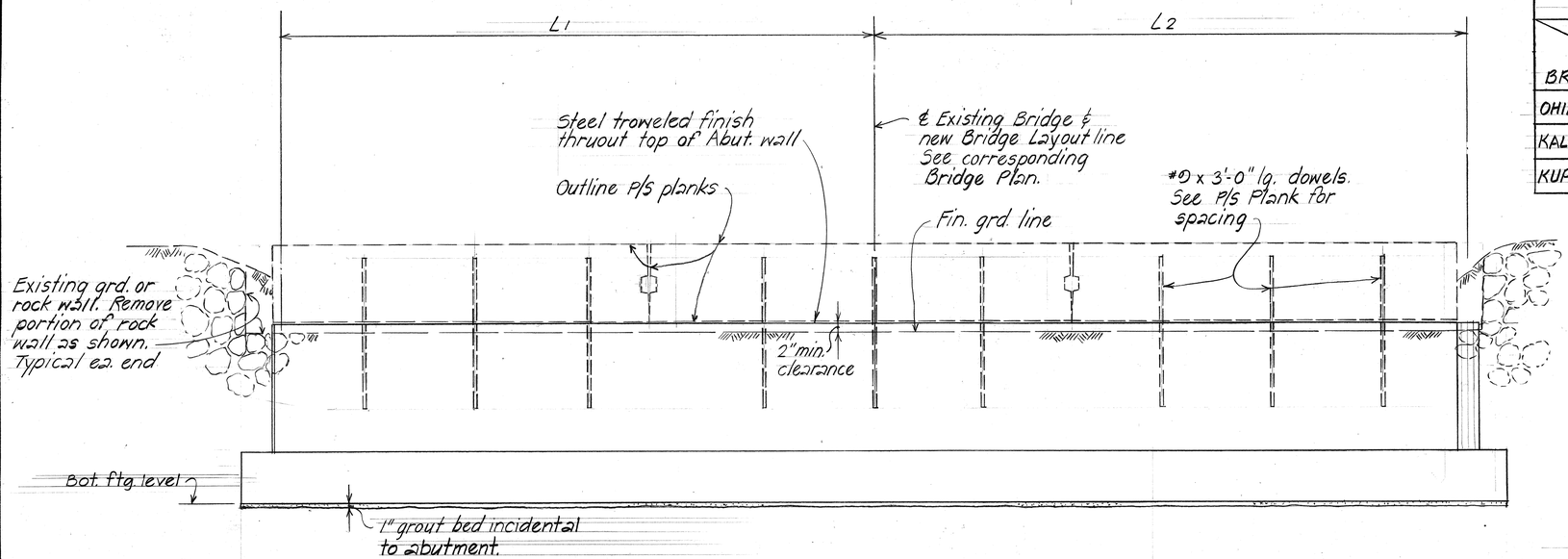


TYPICAL PRECAST CONCRETE ABUTMENT SECTION

Scale: 1" = 1'-0"

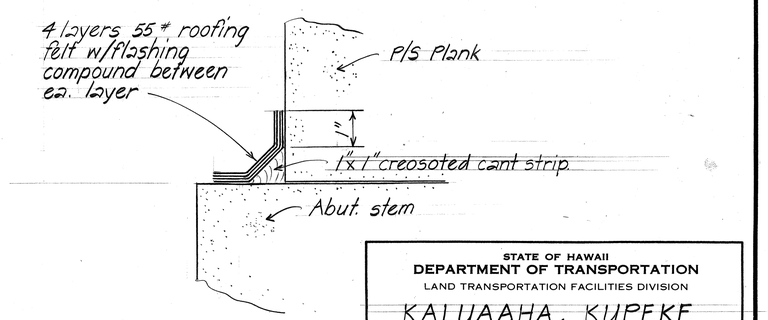
ABUTMENT DIMENSION SCHEDULE

LOCATION / BRIDGE	ABUTMENT #1						ABUTMENT #2					
	A	B	C	D	L1	L2	A	B	C	D	L1	L2
OHIA BRIDGE	1'-4"	1'-6"	4'-0"	23'-11½"	10'-2"	12'-3½"	1'-4"	1'-6"	4'-0"	23'-11½"	12'-3½"	10'-2"
KALUAAHA BRIDGE	1'-4"	1'-6"	4'-0"	29'-11¾"	14'-2⅞"	14'-2⅞"	1'-4"	1'-6"	4'-0"	29'-11¾"	14'-2⅞"	14'-2⅞"
KUPEKE BRIDGE	1'-0"	1'-1"	3'-3"	22'-6"	11'-4"	9'-8"	1'-0"	1'-1"	3'-3"	22'-6"	10'-6"	10'-6"



TYPICAL PRECAST CONCRETE ABUTMENT ELEVATION

Scale: 3/4" = 1'-0"



DETAIL "A"

(WATERPROOFING DETAIL)

Scale: 6" = 1'-0"

ORIGINAL PLAN

NOTE BOOK No.

SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

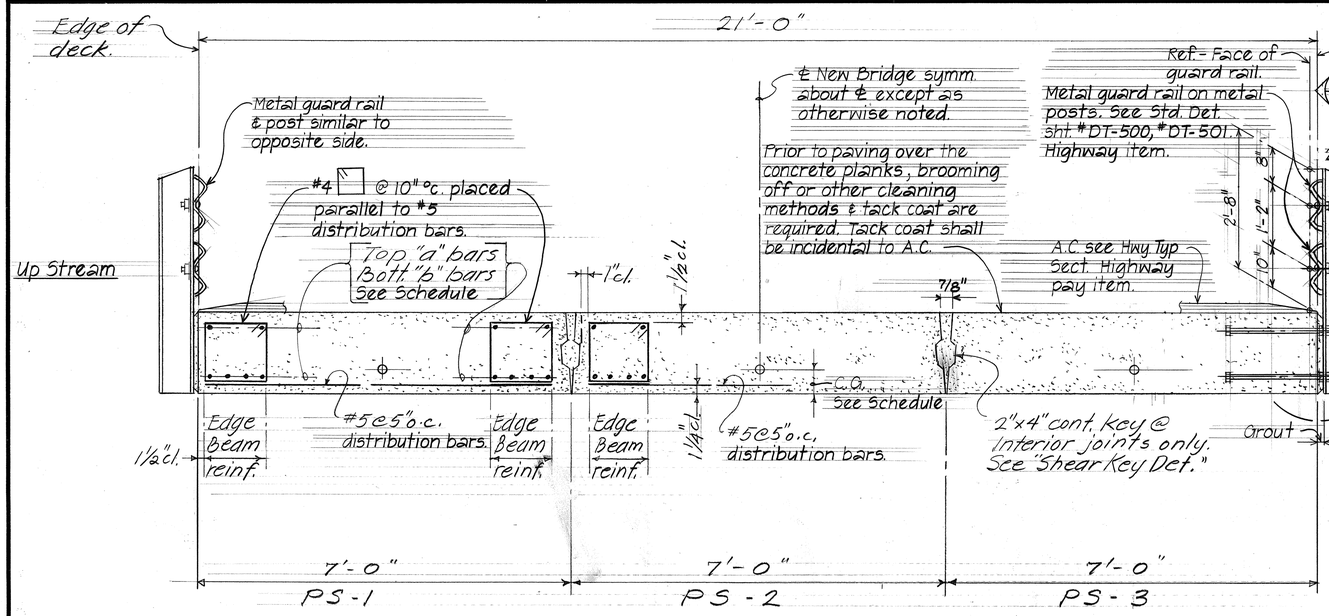
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

KALUAAHA, KUPEKE AND OHIA BRIDGE

TYPICAL ABUTMENT PLAN & DETAILS
KAMEHAMEHA V HIGHWAY, MOLOKAI
Proj. No. OS-0900(10)
Scale: As Noted Date: Jan. 1978

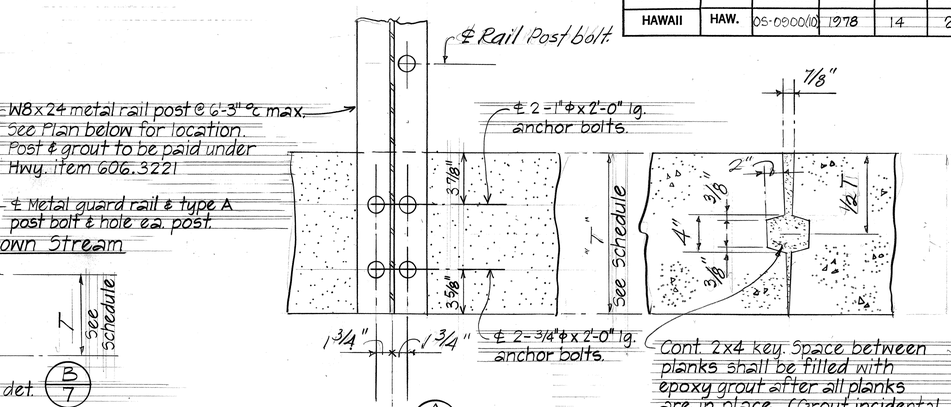
SHEET No. 4 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	OS-0900(10)	1978	14	23



TYPICAL TRANSVERSE DECK SECTION

Scale: 3/4"=1'-0"



SECTION A/5

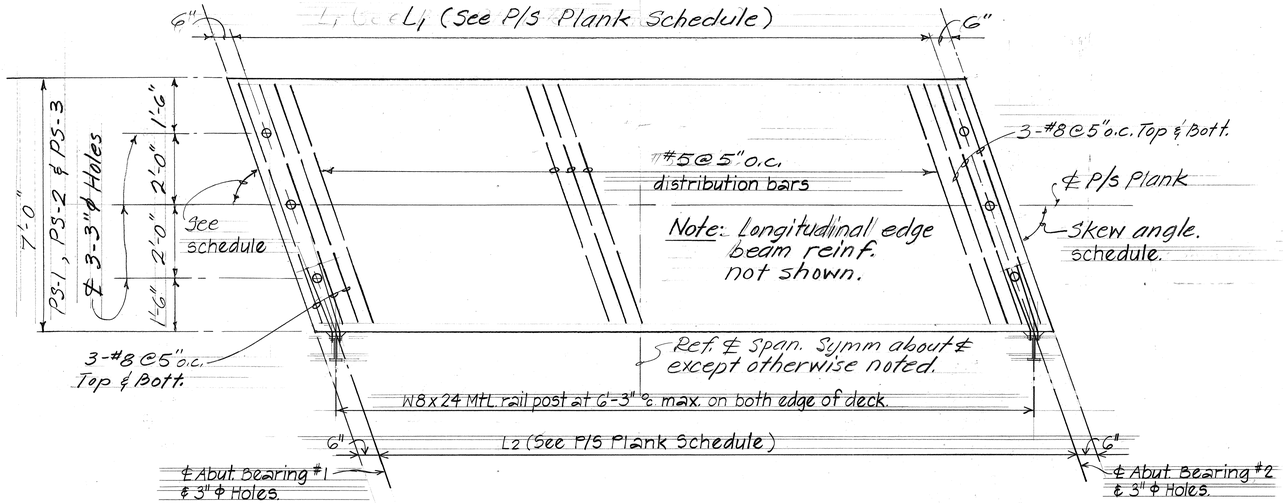
No Scale

SHEAR KEY DETAIL

No Scale

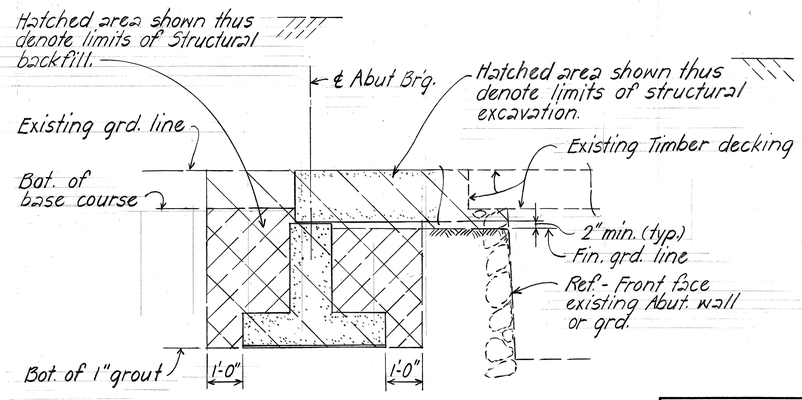
P/S CONCRETE PLANK SCHEDULE

Name of Structure	"T"	L_1	L_2	Angle	C.O.	Effective Prestress Force	Edge Beam Reinf.	
							Type "a" Bar	Type "b" Bar
Ohia Bridge	16"	32.0'	32.0'	69°18'00"	4 7/8"	881 K	2-#9@12	4-#9@4
Kaluaaha Bridge	18"	35.0'	35.0'	47°30'00"	5 3/8"	1080 K	2-#9@12	4-#9@4
Kupeke Bridge	13"	23'-11 3/4"	23'-11 3/4"	90°00'00"	3 7/8"	639 K	2-#9@9	4-#9@3



PLAN ~ TYPICAL PRESTRESSED CONCRETE PLANK

Scale: 1/2"=1'-0"



TYPICAL ABUTMENT STRUCTURAL EXCAVATION & STRUCTURAL BACKFILL PAYLINE

Not to Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

KALUAAHA, KUPEKE AND OHIA BRIDGE

SECTIONS AND DETAILS

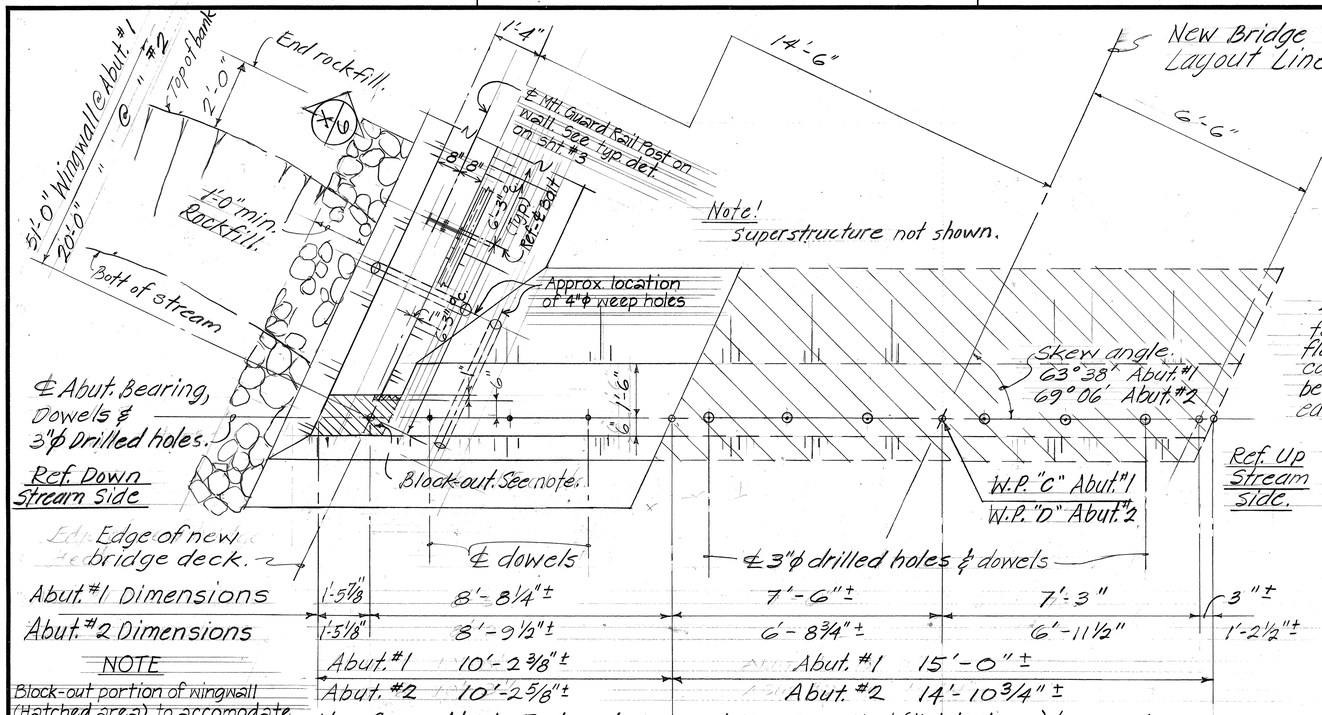
KAMEHAMEHA V HIGHWAY, MOLOKAI

Proj. No. OS-0900(10)

Scale: As Noted Date: Jan. 1978

SHEET No. 5 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	05-0900(10)	1978	15	23

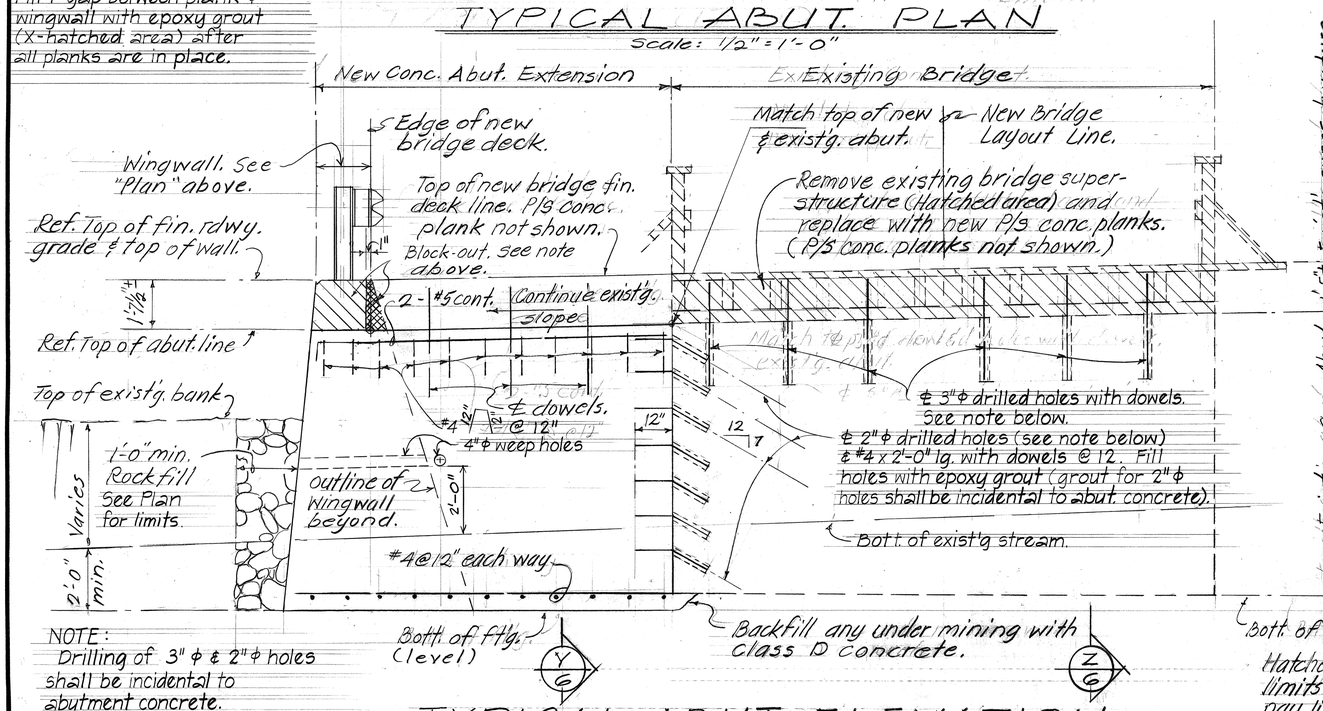


NOTE

Block-out portion of wingwall (Hatched area) to accomodate P/S plank and guard rail post. Fill 1" gap between plank & wingwall with epoxy grout (X-hatched area) after all planks are in place.

TYPICAL ABUT. PLAN

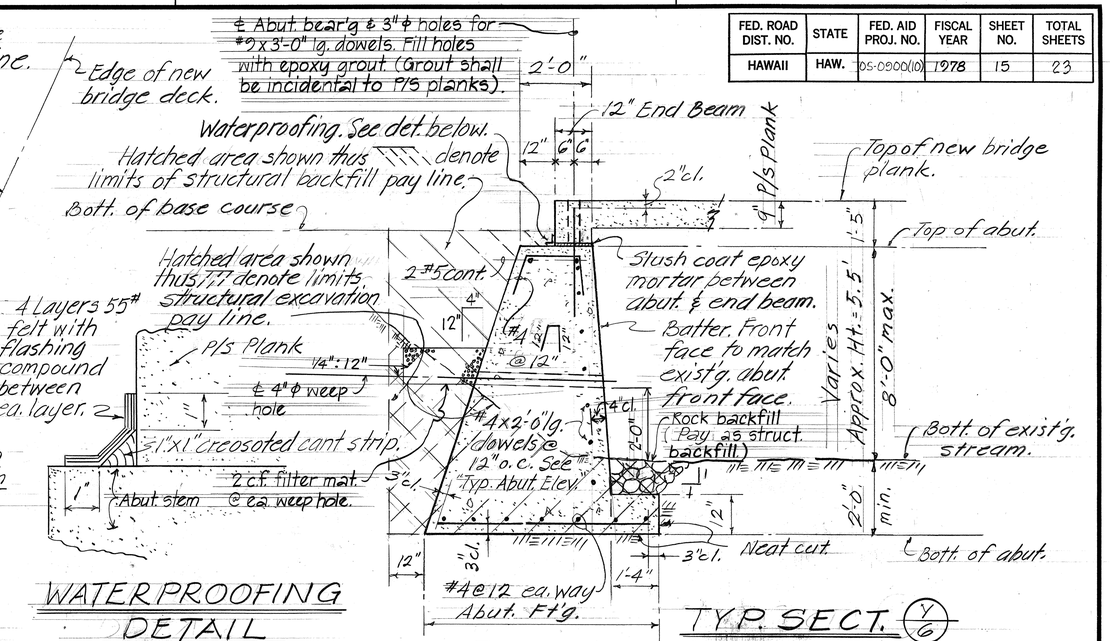
Scale: ½"=1'-0"



NOTE:
Drilling of 3"ϕ & 2"ϕ holes shall be incidental to abutment concrete.

TYPICAL ABUT. ELEVATION

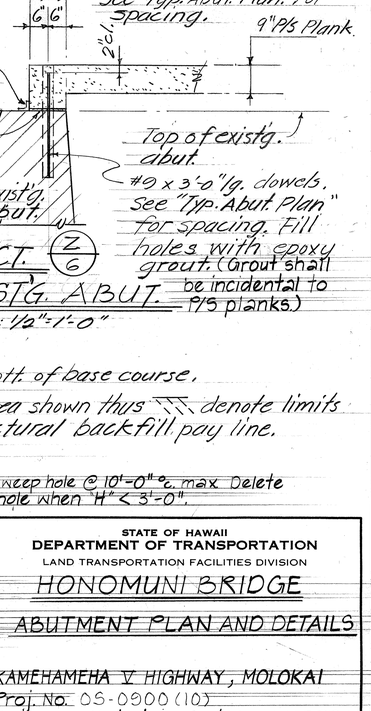
Scale: ½"=1'-0"



WATERPROOFING DETAIL

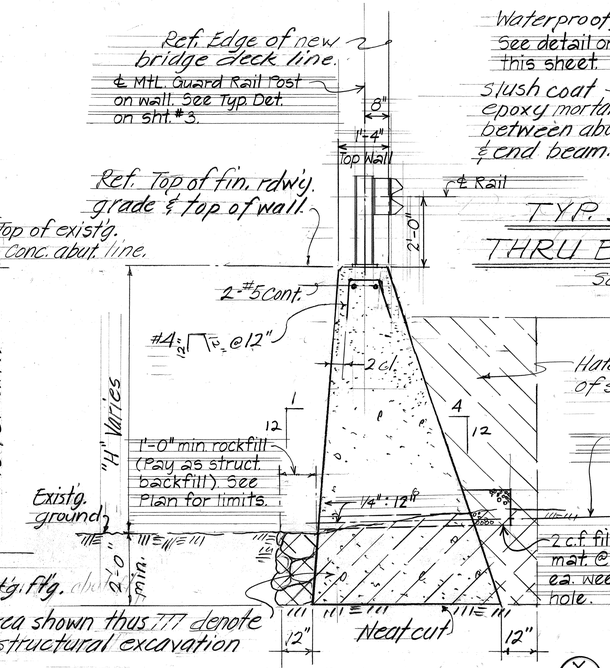
TYP. SECT. (Y/6) THRU NEW CONC. ABUT. EXTENSION

Scale: ½"=1'-0"



TYP. SECT. (Z/6) THRU EXIST'G. ABUT.

Scale: ½"=1'-0"



Hatched area shown thus denote limits of structural excavation pay line.

TYP. CONC. WINGWALL SECTION (X/6)

Scale: ½"=1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

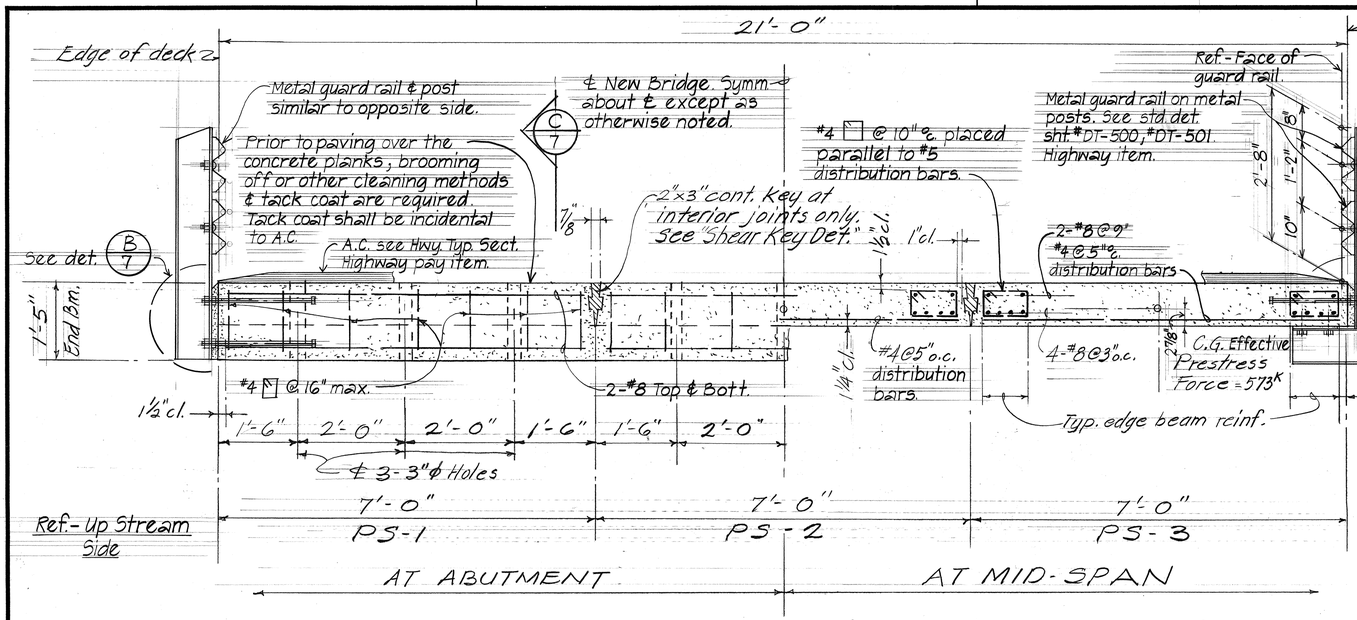
HONOMUNI BRIDGE

ABUTMENT PLAN AND DETAILS

KAMEHAMEHA V HIGHWAY, MOLOKAI
Proj. No. 05-0900(10)
Scale: As Noted Date: Jan. 1978

SHEET No. 6 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	05-0900(10)	1978	16	23

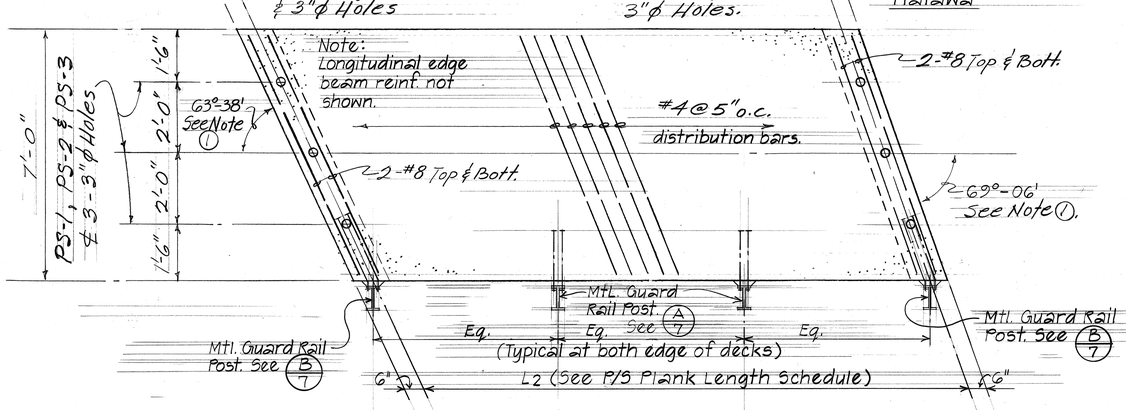


TYPICAL TRANSVERSE DECK SECTION

Scale: 3/4" = 1'-0"

DETAIL (A/7)

Scale: 3" = 1'-0"



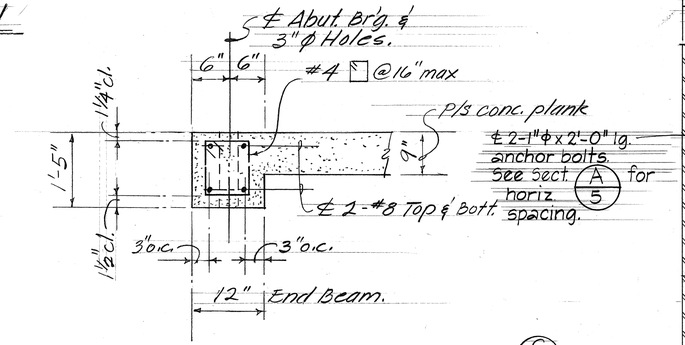
PLAN ~ TYPICAL PRESTRESSED CONCRETE PLANK

Scale: 1/2" = 1'-0"

NOTE (1)

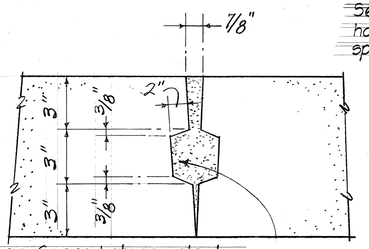
Contractor to varify dimensions and angles before casting planks.

P/S PLANK Nº	L_1	L_2
PS-1	15'-10½" See Note (1)	15'-1" See Note (1)
PS-2	15'-1" " " "	14'-3⅜" " " "
PS-3	14'-3⅜" " " "	13'-5¾" " " "



TYP. END BEAM DETAIL (C/7)

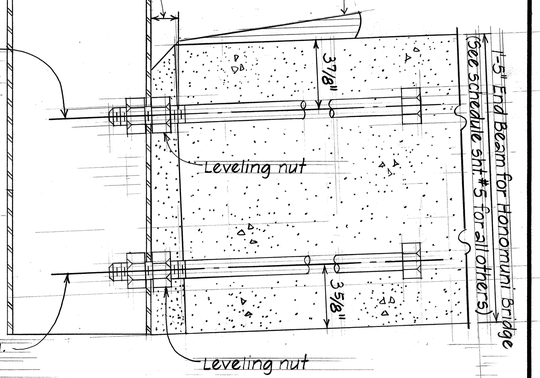
Scale: 3/4" = 1'-0"



Cont. 2x3 key. Space between plank shall be filled with epoxy grout after all planks are in place. (Grout shall be incidental to P/S planks.)

SHEAR KEY DETAIL

Scale: 3" = 1'-0"



DETAIL (B/7)

Scale: 3" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

HONOMUNI BRIDGE

SECTIONS AND DETAILS

KAMEHAMEHA V HIGHWAY, MOLOKAI
Proj. No. 05-0900(10)
Scale: As Noted Date: Jan. 1978

SHEET No. 7 OF 7 SHEETS