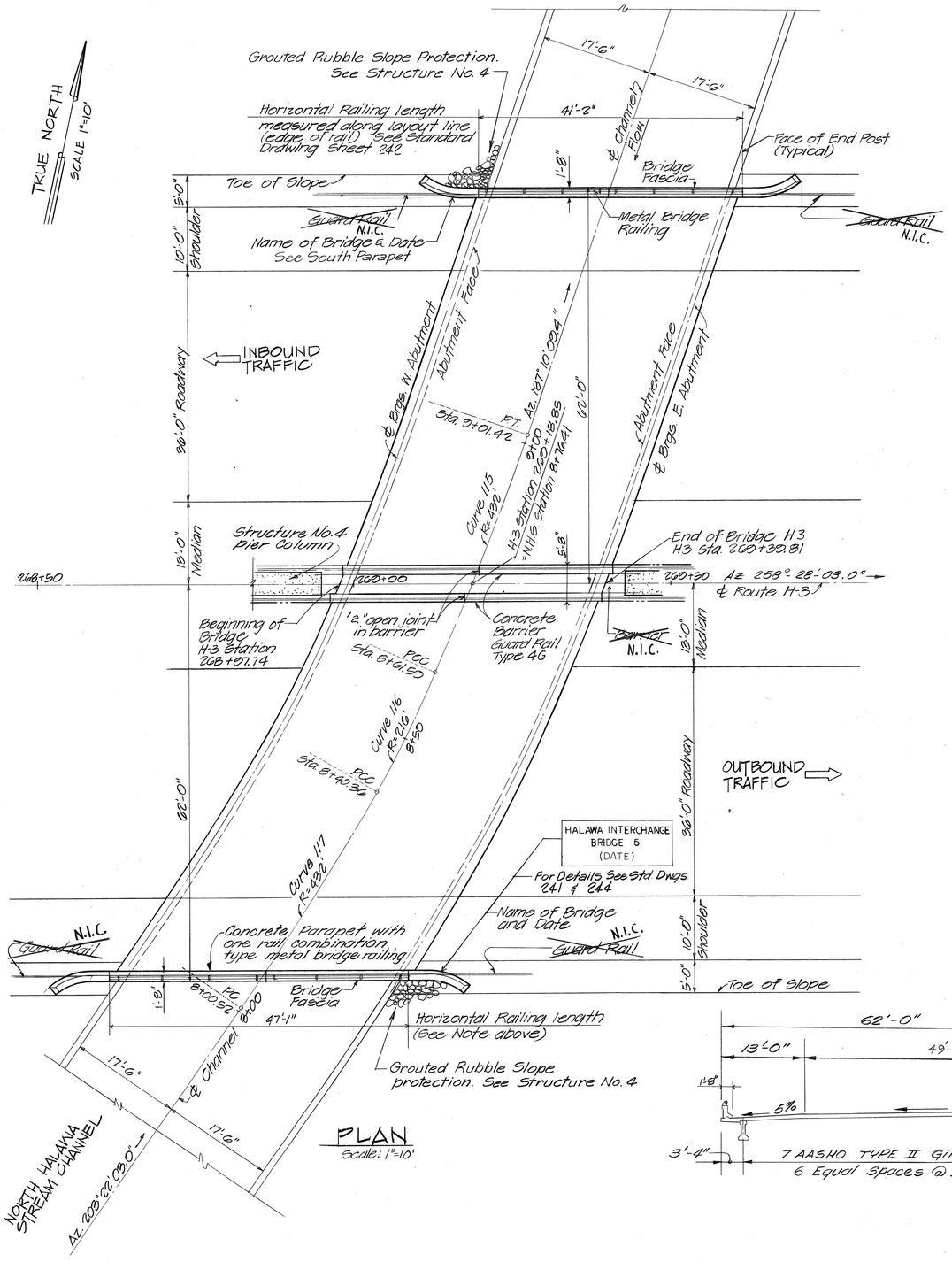
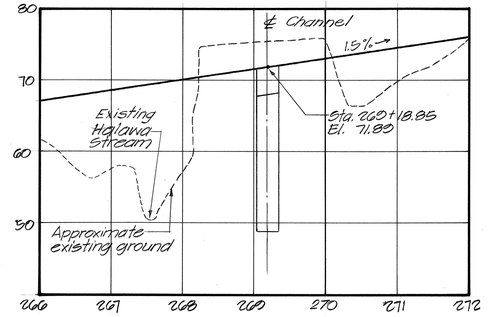
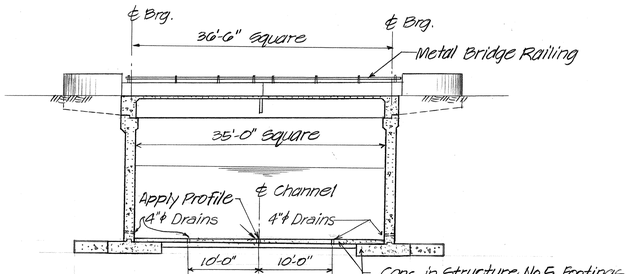
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	201	362



PLAN
Scale: 1"=10'



PROFILE- INTERSTATE ROUTE H-3
SCALES: HORIZ: 1"=100'; VERT: 1"=10'

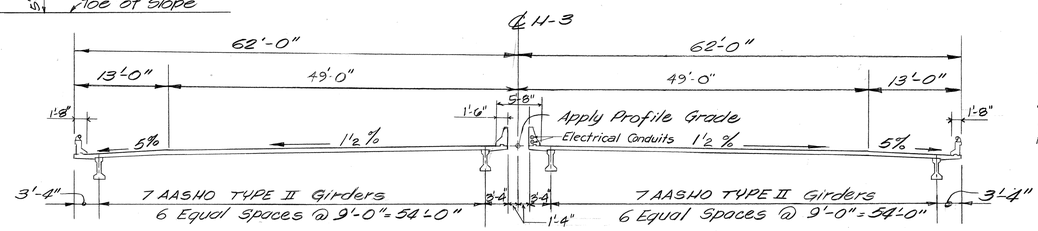


LONGITUDINAL SECTION
SCALE: 1" = 10'-0"

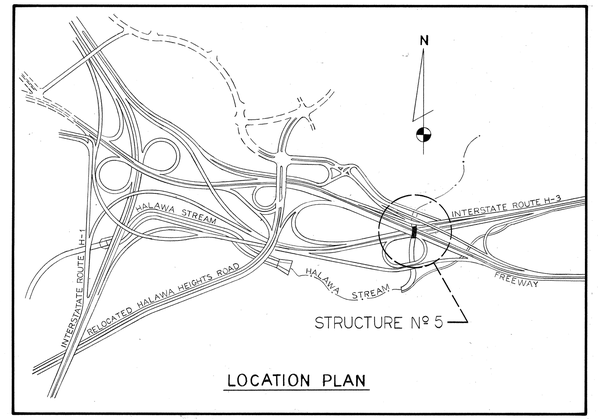
For Channel Profile see Drainage plans

CURVE DATA

CURVE NO.	115	116	117
Δ	5°-17'-00.0"	5°-37'-53.6"	5°-16'-59.9"
R	432.00	216.00	432.00
L	39.84	21.23	39.84
T	19.93	10.62	19.93



BRIDGE SECTION
SCALE: 1" = 10'



LOCATION PLAN

ESTIMATED QUANTITIES

ITEM NO	ITEM	UNIT	QUANTITY
206.60	STRUCTURE EXCAVATION FOR BRIDGES	C.Y.	235
206.81	FILTER MATERIAL FOR STRUCTURES	C.Y.	200
503.073	CONCRETE IN STRUCTURE NO 5 (EXCEPT FOOTING)	L.S.	(330 CY)
503.074	CONCRETE IN STRUCTURE NO. 5 FOOTINGS	L.S.	(231 CY)
504.321	TYPE II PRESTRESSED CONC. GIRDERS IN STRUCTURE NO. 5	L.S.	(582 L.F)
507.10	METAL BRIDGE RAILING - ONE RAIL ON PARAPET	L.F.	89
507.70	CONCRETE BRIDGE PARAPET, INCLUDING END POST	L.F.	129
602.012	REINFORCING STEEL IN STRUCTURE NO. 5	L.S.	(116,200 lb)
606.416	GUARD RAIL TYPE 4G	L.F.	84

BRIDGE NOTES:

1. DESIGN SPECIFICATIONS: "Standard Specifications for Highway Bridges" A.A.S.H.O. 1969 with subsequent additions and modifications by the State of Hawaii" Department of Transportation.
2. DESIGN LIVE LOAD: HS 20-44 or Interstate loading.
3. DESIGN STRESSES: f'c = 3000 psi See Sheet 55 for Prestressed Conc. Girder Design Stresses.
   fc = 1200 psi fs = 20,000 psi tension
   n = 10
4. MATERIALS: All Reinf. Steel to be ASTM Designation A615 Grade 40.
5. See Structure No. 4 for Construction Sequence.
6. No backfill shall be placed behind abutments until conc. in deck slab, channel slab and struts has developed a strength of at least 3000 psi in compression. Backfilling shall be placed uniformly and simultaneously at each abutment to avoid unequal lateral earth pressure.
7. For General Notes see Sheet 241
8. For Metal Bridge Railing Details, see Sheets 242 & 243
9. For End Post Details see Sheet 244
10. For Struct. Exc. & Filter Mat'l. Payment Limits & Jt. Details see Sh. 8W.

THOMAS R. KUEE REGISTERED PROFESSIONAL ENGINEER No. 1856 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Thomas R. Kuee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HALAWA INTERCHANGE STRUCTURE NO. 5

H-3 OVER NORTH HALAWA STREAM

GENERAL PLAN & PROFILE

PROJ. No. I-H1-1(89):13 DATE: MAY 1971

SHEET No. 75 OF 55 SHEETS

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

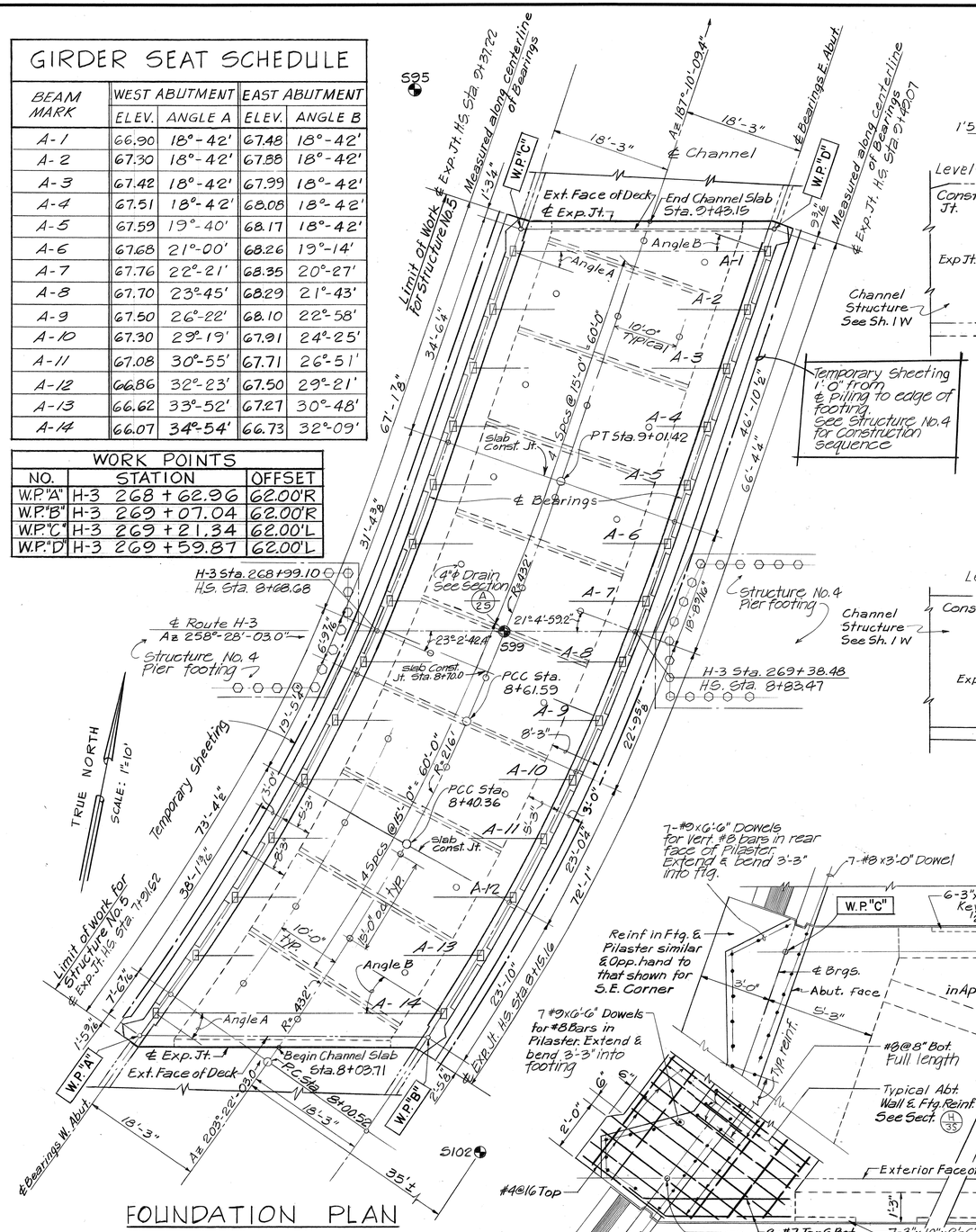
201

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89)13	1971	202	362

GIRDER SEAT SCHEDULE

BEAM MARK	WEST ABUTMENT		EAST ABUTMENT	
	ELEV.	ANGLE A	ELEV.	ANGLE B
A-1	66.90	18°-42'	67.48	18°-42'
A-2	67.30	18°-42'	67.88	18°-42'
A-3	67.42	18°-42'	67.99	18°-42'
A-4	67.51	18°-42'	68.08	18°-42'
A-5	67.59	19°-40'	68.17	18°-42'
A-6	67.68	21°-00'	68.26	19°-14'
A-7	67.76	22°-21'	68.35	20°-27'
A-8	67.70	23°-45'	68.29	21°-43'
A-9	67.50	26°-22'	68.10	22°-58'
A-10	67.30	29°-19'	67.91	24°-25'
A-11	67.08	30°-55'	67.71	26°-51'
A-12	66.86	32°-23'	67.50	29°-21'
A-13	66.62	33°-52'	67.27	30°-48'
A-14	66.07	34°-54'	66.73	32°-09'

WORK POINTS			
NO.	STATION		OFFSET
W.P."A"	H-3	268+62.96	62.00'R
W.P."B"	H-3	269+07.04	62.00'R
W.P."C"	H-3	269+21.34	62.00'L
W.P."D"	H-3	269+59.87	62.00'L



FOUNDATION PLAN

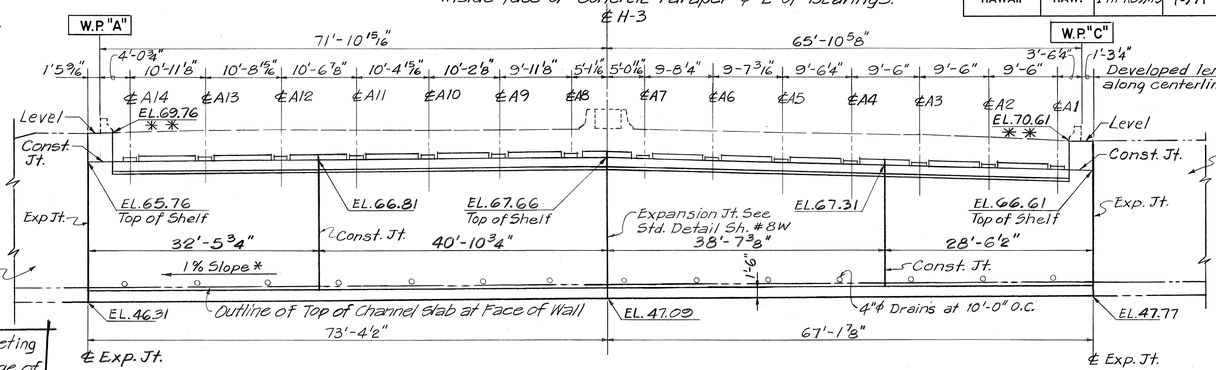
LEGEND

Borings

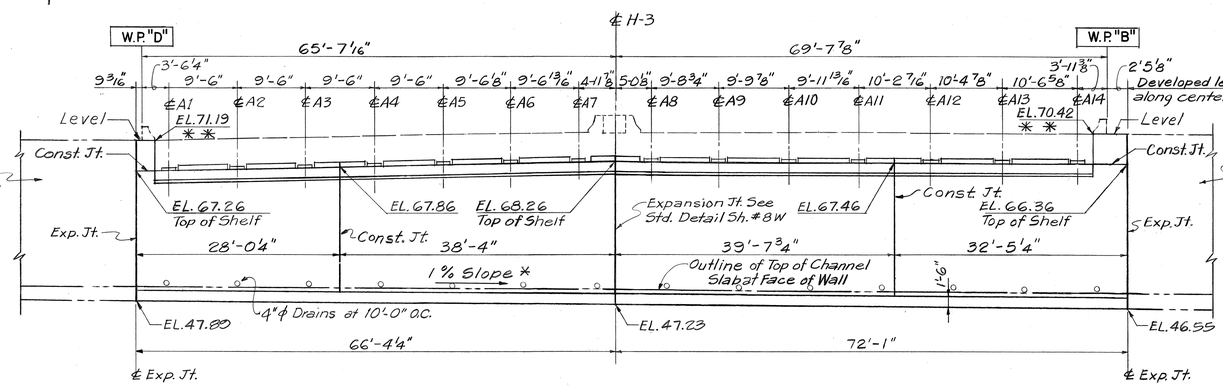
For Additional Borings in vicinity of Bridge See Structure No. 4 Sheet

* NOTE: 1% Slope measured along ℄ of Channel

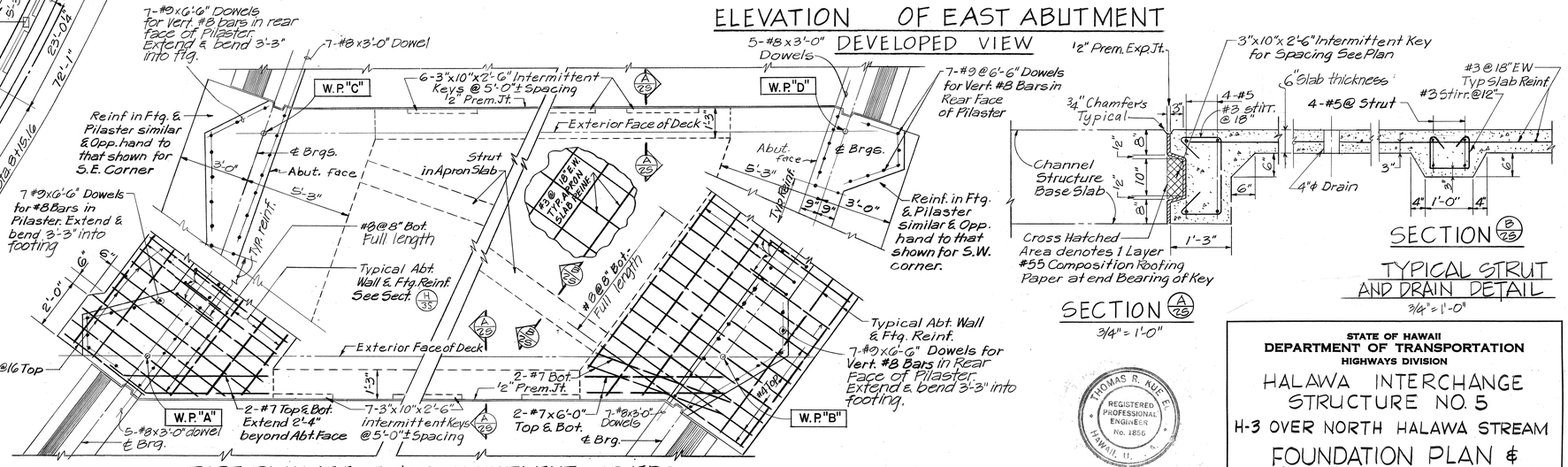
** NOTE: Elevation is Top of Deck at Intersection of inside face of Concrete Parapet & ℄ of Bearings.



ELEVATION OF WEST ABUTMENT
DEVELOPED VIEW



ELEVATION OF EAST ABUTMENT
DEVELOPED VIEW



PART PLAN OF FOOTINGS AT ABUTMENT CORNERS
SHOWING JOINT CONNECTION TO CHANNEL STRUCTURE

SCALE: ⅜" = 1'-0"

SECTION B/28

SECTION A/26

3/4" = 1'-0"

TYPICAL STRUT AND DRAIN DETAIL

3/4" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HALAWA INTERCHANGE STRUCTURE NO. 5
H-3 OVER NORTH HALAWA STREAM
FOUNDATION PLAN & ABUTMENT ELEVATIONS

PROJ. No. I-H1-1(89):13 DATE: MAY 1971

SHEET No. 25 OF 55 SHEETS

THOMAS R. KUE E. REGISTERED PROFESSIONAL ENGINEER No. 1856 HAWAII, U.S.A.

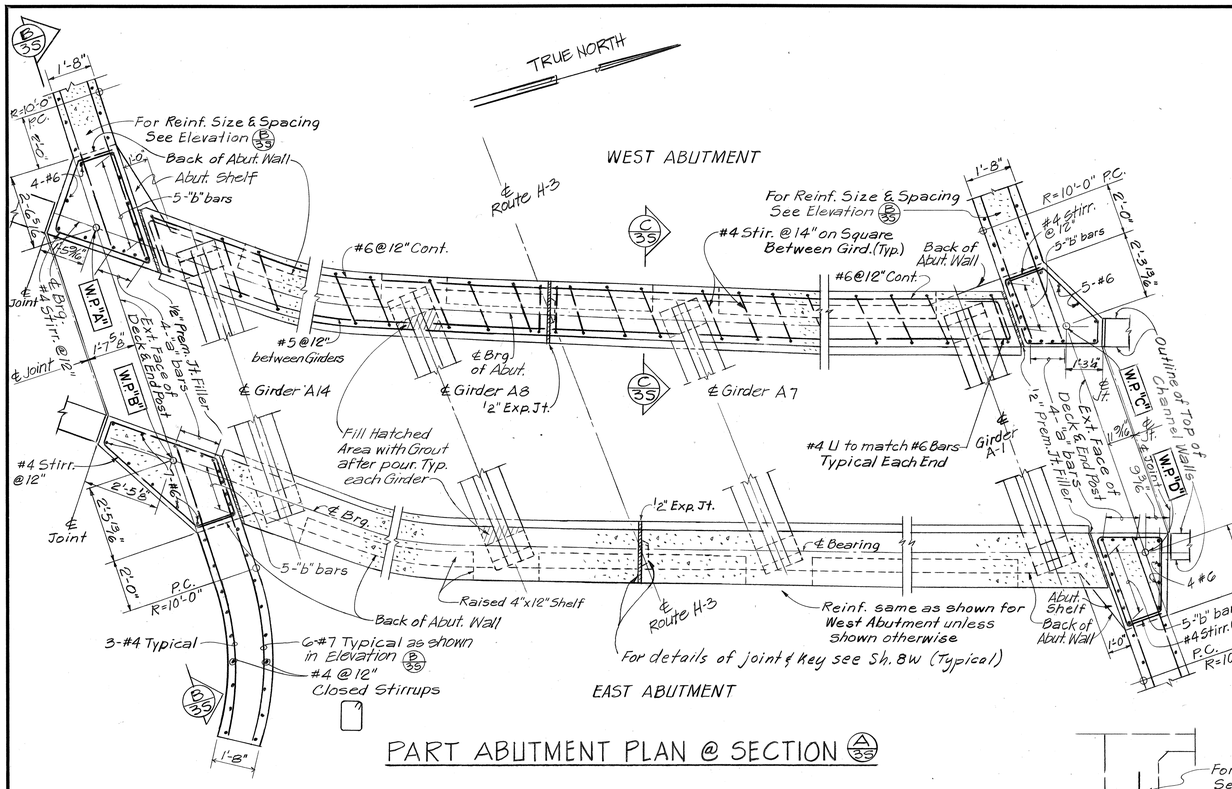
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Thomas R. Kue

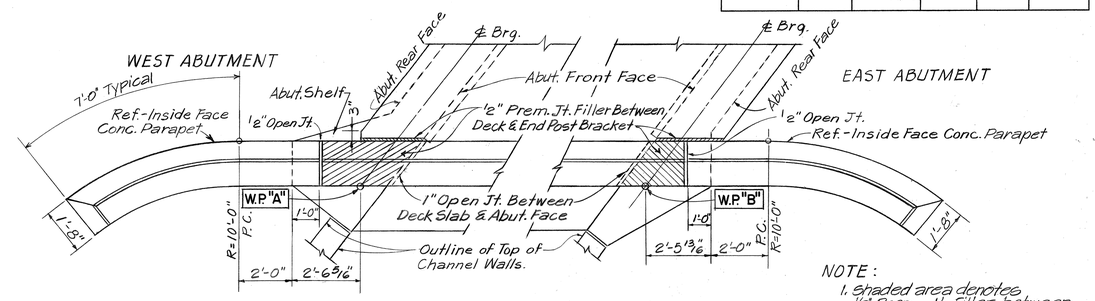
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
No.	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

202

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	203	362

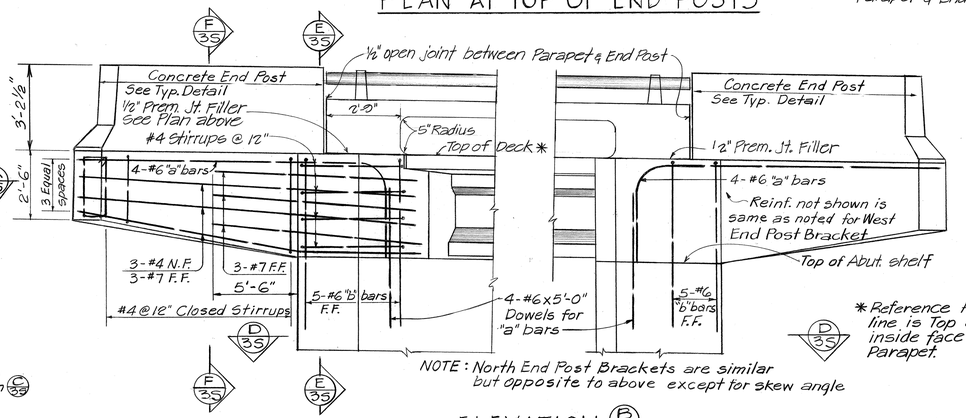


PART ABUTMENT PLAN @ SECTION A/35



NOTE:
1. Shaded area denotes 1/2" Prem. Jt. Filler between Parapet & End Post Bracket.

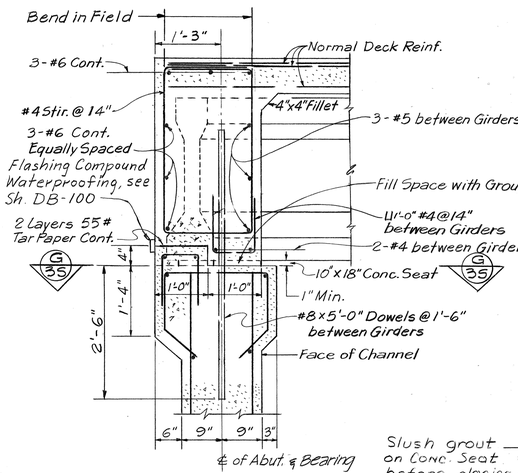
PLAN AT TOP OF END POSTS



* Reference Finished Grade line is Top of deck at inside face of Concrete Parapet.

NOTE: North End Post Brackets are similar but opposite to above except for skew angle

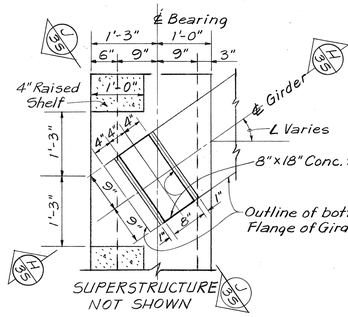
ELEVATION B/35 (SHOWING SOUTH END POST BRACKETS)



TYPICAL SECTION C/35 (NORMAL OR RADIAL TO ABT. ℄)

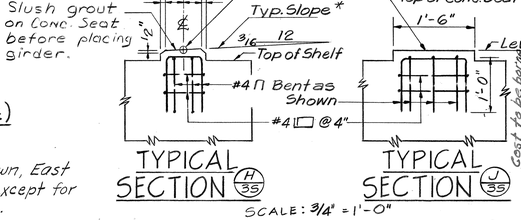
SCALE: 3/4" = 1'-0"

* West Abutment shown, East Abutment similar except for direction of slope.



SECTION G/35 TYPICAL GIRDER SEAT

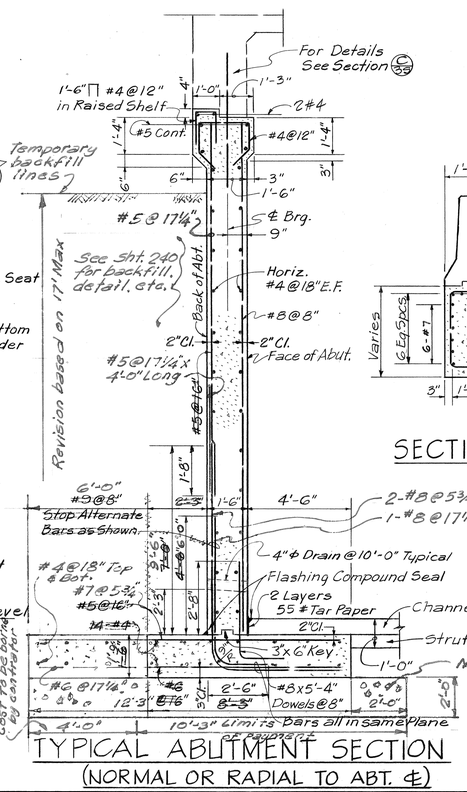
SCALE: 3/4" = 1'-0"



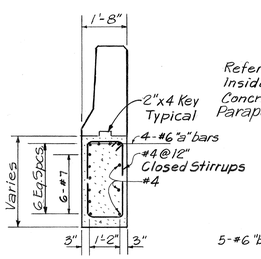
TYPICAL SECTION H/35

TYPICAL SECTION J/35

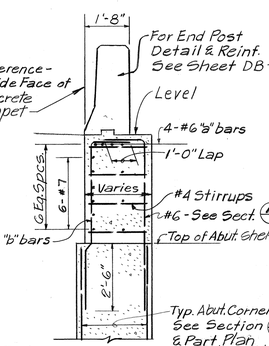
SCALE: 3/4" = 1'-0"



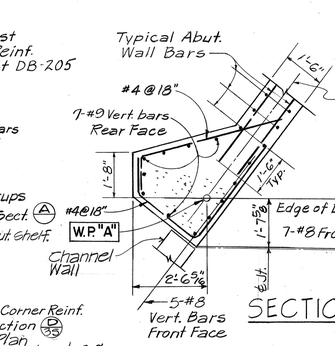
TYPICAL ABUTMENT SECTION (NORMAL OR RADIAL TO ABT. ℄)



SECTION F/35



SECTION E/35



SECTION D/35

NOTES:

1. Payment for excavation shall be made under the applicable contract item.
2. Payment for placement of foundation material shall include all incidentals necessary for complete inplace construction.
3. For details not shown, see contract plans.
4. Excavation and foundation materials beyond the original contract plan dimensions shall be borne by the contractor. (As shown.)

THOMAS R. RUE REGISTERED PROFESSIONAL ENGINEER No. 1856 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Thomas R. Rue

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HALAWA INTERCHANGE STRUCTURE NO. 5

H-3 OVER NORTH HALAWA STREAM

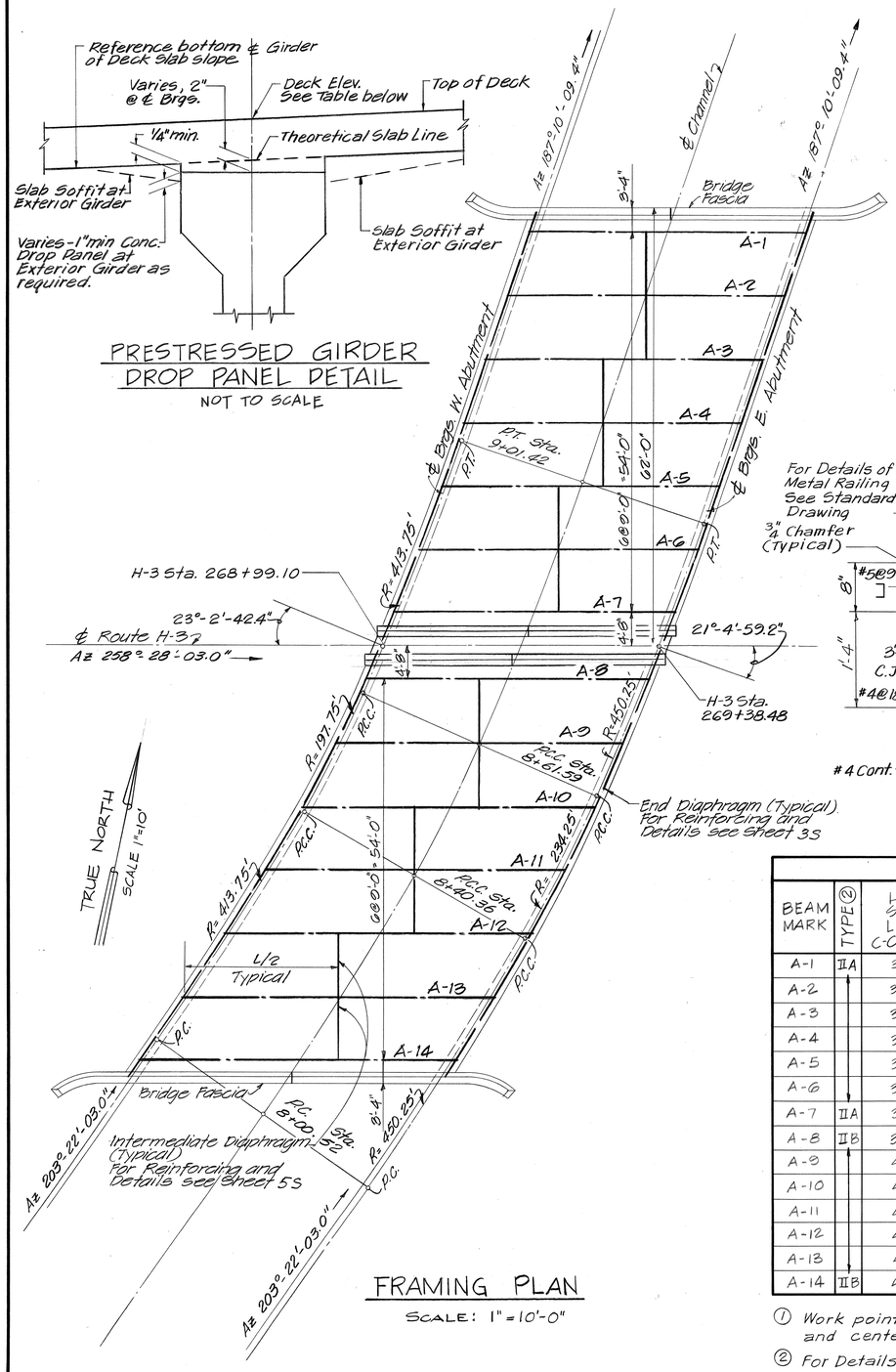
ABUTMENT DETAILS

PROJ. No. I-H1-1 (89):13 DATE: MAY 1971

SHEET No. 35 OF 55 SHEETS

203

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(89)13	1071	204	362

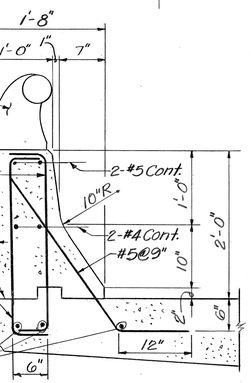


FRAMING PLAN

SCALE: 1"=10'-0"

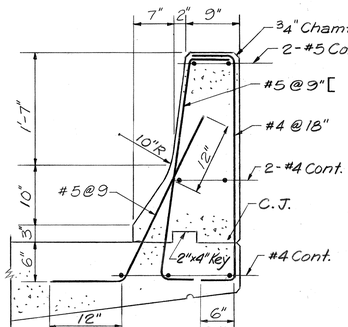
PRESTRESSED GIRDER DROP PANEL DETAIL

NOT TO SCALE



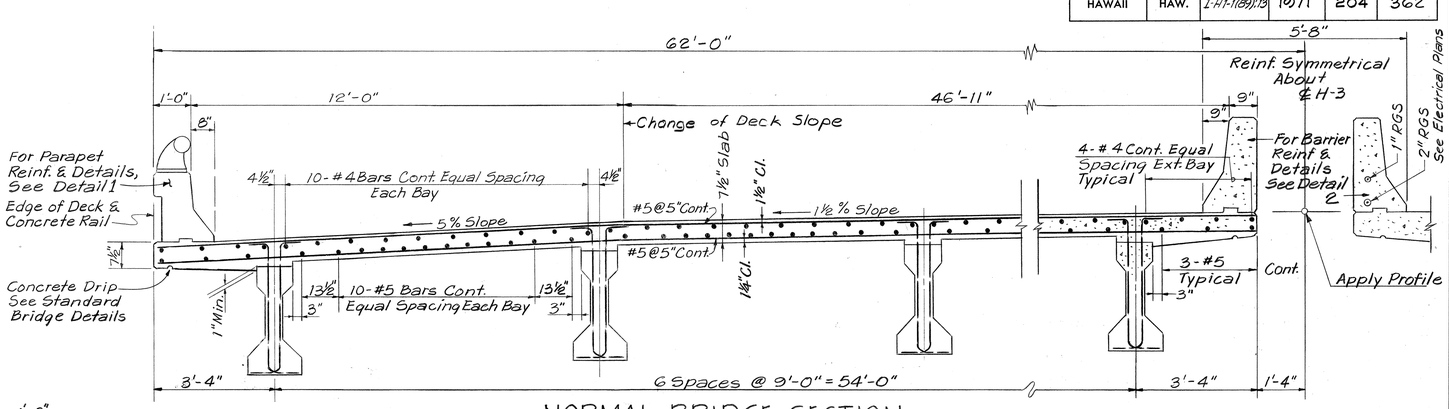
DETAIL 1

SCALE: 1"=1'-0"



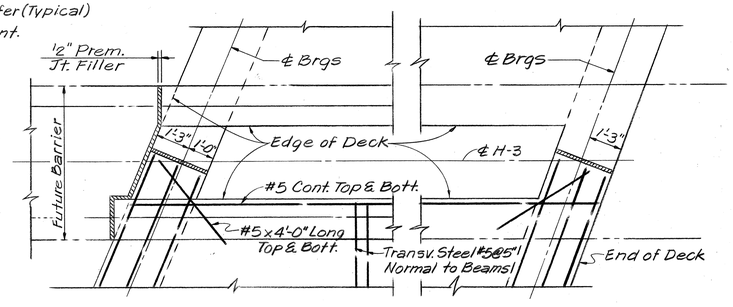
DETAIL 2

SCALE: 1"=1'-0"



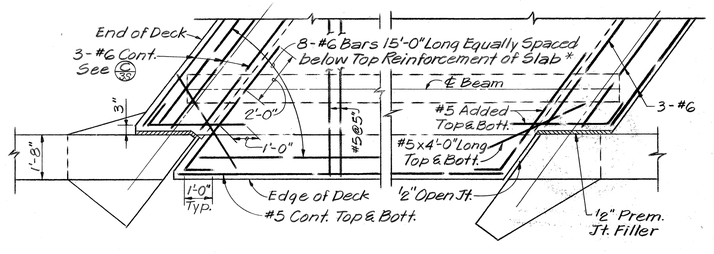
NORMAL BRIDGE SECTION

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



PARTIAL DECK PLAN AT BARRIER

SCALE: 3/8"=1'-0"



PARTIAL DECK PLAN AT ABUTMENT CORNERS

* SW & NE corners of both Inbound and Outbound Roadway Decks.

SCALE: 3/8"=1'-0"

BEAM SCHEDULE

BEAM MARK	TYPE (2)	HORIZ. SPAN LENGTH C-C BRGS.	WEST ABUTMENT			EAST ABUTMENT		
			WORK POINT STA (1)	OFFSET	DECK ELEV.	WORK POINT STA (1)	OFFSET	DECK ELEV.
A-1	IIA	38.53	H3 269 +20.21	58.67L	70.69	H3 269 +58.74	58.67L	71.27
A-2		38.53	H3 269 +17.16	49.67L	71.09	H3 269 +55.69	49.67L	71.67
A-3		38.53	H3 269 +14.12	40.67L	71.21	H3 269 +52.65	40.67L	71.78
A-4		38.53	H3 269 +11.07	31.67L	71.30	H3 269 +49.60	31.67L	71.87
A-5		38.60	H3 269 +07.96	22.67L	71.38	H3 269 +46.56	22.67L	71.96
A-6		38.87	H3 269 +04.62	13.67L	71.47	H3 269 +43.49	13.67L	72.05
A-7	IIA	39.20	H3 269 +01.05	4.67L	71.55	H3 269 +40.25	4.67L	72.14
A-8	IIB	39.57	H3 268 +97.08	4.67R	71.49	H3 269 +36.65	4.67R	72.08
A-9		40.06	H3 268 +92.89	13.67R	71.29	H3 269 +32.95	13.67R	71.89
A-10		40.88	H3 268 +88.13	22.67R	71.09	H3 269 +29.01	22.67R	71.70
A-11		41.80	H3 268 +82.89	31.67R	70.87	H3 269 +24.69	31.67R	71.50
A-12		42.54	H3 268 +77.35	40.67R	70.65	H3 269 +19.89	40.67R	71.29
A-13		43.18	H3 268 +71.48	49.67R	70.41	H3 269 +14.66	49.67R	71.06
A-14	IIB	43.87	H3 268 +65.28	58.67R	69.86	H3 269 +09.15	58.67R	70.52

(1) Work point is the intersection of centerline of prestressed beam and centerline of bearings.

(2) For Details of Beams See Sheet 5S

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

THOMAS R. KUEBEL REGISTERED PROFESSIONAL ENGINEER No. 1856 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Thomas R. Kuebel

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HALAWA INTERCHANGE STRUCTURE NO. 5

H-3 OVER NORTH HALAWA STREAM

FRAMING PLAN, BEAM SCHEDULE, DECK REINF. & DETAILS

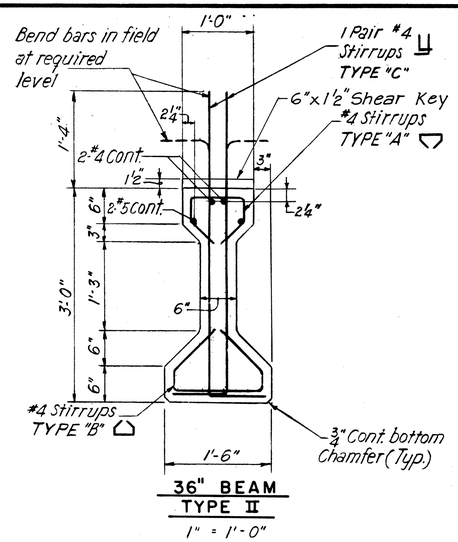
PROJ. No. I-H1-1(89):13 DATE: MAY 1971

SHEET No. 45 OF 55 SHEETS

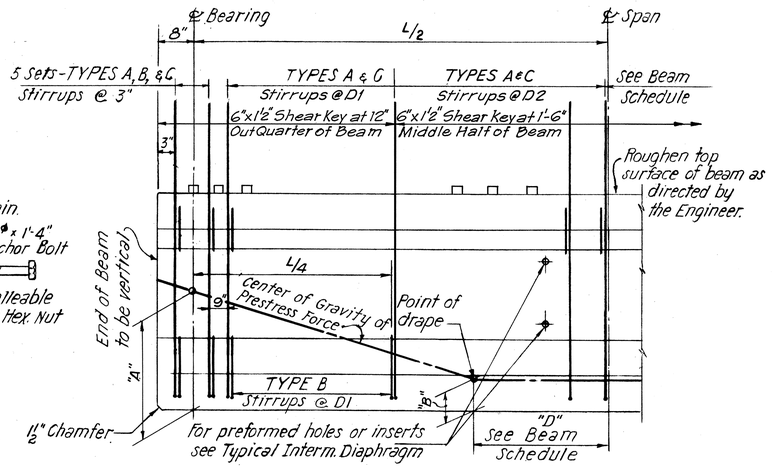
2 0 4

504

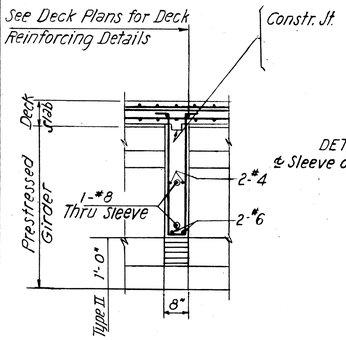
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-HI-1(89):13	1971	205	362



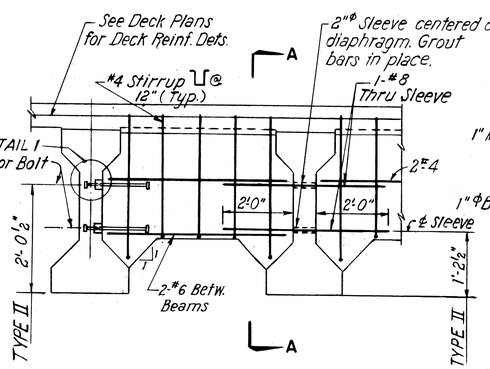
36" BEAM
TYPE II
1" = 1'-0"



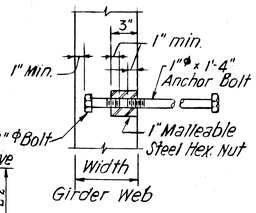
LONGITUDINAL SECTION
No Scale



SECTION A-A
No Scale



TYPICAL INTERMEDIATE DIAPHRAGM
No Scale



DETAIL 1
1½" = 1'-0"

NOTES FOR PRESTRESSED BEAMS

1. Pretensioned strands shall be 7 wire ½"ϕ stress-relieved steel strands (Area = 0.153 in²) with an ultimate strength of 270 KSI. See Specifications.
   Initial Strand Stress = 189 KSI
   Strand Design Stress = 154 KSI
2. Non-prestressed reinforcing steel shall have a yield strength of 40 KSI.
3. Concrete shall have a 28 day strength of 5500 P.S.I.
4. Values of deflection based upon E_{beam} 3,800,000 P.S.I.
5. The calculated camber includes the effects of the prestress force and the weight of the beam after removal from bed. See Note 15.
6. The dead load deflection includes the combined effects of the weight of slab, haunch and diaphragm and the superimposed dead loads.
7. Strands on any one line shall be placed symmetrically about ℄ of beam.
8. Strands shall be placed starting on the outside points and shall be uniformly spaced across the beam.
9. Final strand patterns shall be submitted to the Engineer for approval.
10. Bundling of prestressing reinforcement shall comply with the notes and details shown on this drawing.
11. Adjustment of slab haunch for camber shall be determined by the Engineer.
12. Lifting devices, as approved by the Engineer shall be placed close to ℄ bearings. Location to be approved by the Engineer. In no case is a stirrup to be used as a lifting device.
13. See Framing Plans for layout, type, mark numbers, and length of individual girders. See Framing Plan for locations of diaphragms.
14. There shall be no change in the structural capacity of the prestressed girders as shown on the plans.
15. Camber values shown in Tables assume no losses or any camber growth of the beam.

BEAM SCHEDULE

BEAM TYPE	WORKING FORCE P F(KIPS)	CALC. CAMBER (INCHES) (SEE NOTE 5.)	DEAD LOAD DEFLECTION (IN.) (SEE NOTE 6)	LOCATION OF CENTER OF GRAVITY OF PRESTRESS FORCE			STIRRUPS TYPE "A" & "C"		REQUIRED MIN. ULTIMATE CONC. STRENGTH BEFORE RELEASE OF STRANDS(P.S.I.)	REMARKS
				DIST. TO PT. OF DRAPE "D"	DIST. "A" (IN)	DIST. "B" (IN)	NO. OF STIRRUPS AT SPCG. D1	SPCG. D2		
II A	353	7/16"	5/16"	6'-8"	9.98"	5.63"	12 @ 9"	18"	4000	1'2" x 6" Key Req'd.
II B	424	5/8"	7/16"	7'-4"	9.98"	5.81"	14 @ 9"	18"	4000	1'2" x 6" Key Req'd.

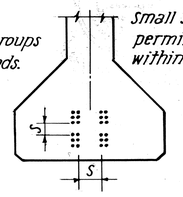
BUNDLING OF PRESTRESSING REINFORCEMENT

ARRANGEMENT AND CLEARANCE FOR POST TENSIONED UNITS

1. Horizontal clearance between units equals 2" min.
2. Units may be bundled vertically in groups of 3 maximum.
3. Vertical clearance between bundled units equals 3" min.
4. Approval of the Engineer is required for deviation.

ARRANGEMENT AND CLEARANCE FOR PRETENSIONED STRANDS

1. Strands may be bundled in groups as shown or in groups consisting of a maximum of 6 strands and separated at the ends.
2. The minimum distance "S" between groups or individual strands is 2" for ½" strands.
3. "S" is measured between centers of adjacent strands.
4. Approval of the Engineer is required for deviation.



THOMAS R. KUEHL
REGISTERED PROFESSIONAL ENGINEER
No. 1855
HAWAII, U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Thomas R. Kuehl

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HALAWA INTERCHANGE
STRUCTURE NO. 5
H-3 OVER NORTH HALAWA STREAM
PRESTRESSED BEAMS

PROJ. No. I-H1-1 (89):13 DATE: MAY 1971

SHEET No. 55 OF 55 SHEETS

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