INDEX TO DRAWINGS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	~~FHI-1(C3):11~~ FHI-1(C3):11	~~1963~~ 1965	41	98

SHT. NO.	DESCRIPTION
1A	INDEX TO DRAWINGS.
1	GENERAL NOTES, SYMBOLS & ABBREVIATIONS, ESTIMATED QUANTITIES.
2	LAYOUT PLAN. STA. 111+03.31 TO STA. 123+54.31
3	TYPICAL SECTION, PIER CAP CAMBER DIAGRAM.
4	DECK FINISH GRADE. STA. 110+00 TO STA. 125+00 PROFILE I.B. & O.B. GRADE CONTROL LINE.
5	PART. FOUND. PLAN. STA. 111+06.50 TO STA. 114+06.50 FOOTING & PILE ELEVATION SCHEDULE, FOUNDATION NOTES.
6	PART FOUNDATION PLAN. STA. 115+11.50 TO STA. 119+31.50
7	PART FOUNDATION PLAN STA. 120+30.50 TO STA. 123+30.50
8	TYPICAL LIMITS OF STRUCTURAL EXCAVATION, PAY-LINE & BACK-FILL.
9	PIER COLUMN & PILE FOOTING SCHEDULES.
10	TYPICAL FOUNDATION DETAILS.
11	TYPICAL FOUNDATION DETAILS & TYPICAL COLUMN SECTIONS.
12	TYPICAL COLUMN DETAILS. TOP PIER COLUMN ELEVATION SCHEDULE.
13	TYPICAL PIER CAP DETAIL, PIER LINE (1), I.B. & O.B. BRIDGES.
14	TYPICAL PIER CAP DETAIL, PIER LINE (1) I.B & O.B. BRIDGES.
15	TYPICAL PIER CAP DETAILS, PIER LINES (2) THRU (11) INCLU. I.B. & O.B. BRIDGES.
16	TYPICAL PIER CAP DETAILS, PIER LINES (2) THRU (11) INCLU. I.B & O.B. BRIDGES.
17	PLAN TOP PIER CAP. CONC. SEAT ELASTOMERIC BEARING PAD SCHEDULE.
18	CONCRETE SEAT DETAILS.
19	CONCRETE SEAT DETAILS, TYPICAL GIRDER DETAILS.
20	CONCRETE SEAT ELEVATION SCHEDULE.
21	CONCRETE SEAT ELEVATION SCHEDULE.
22	NORMAL DECK SECTION & DETAILS. STA. 111+06.50 TO STA. 123+30.50 TYPICAL BEAM "B" DETAILS.
23	DECK FRAMING PLAN, STA. 111+06.50 TO STA. 123+30.50
24	BEAM "C", "C1" SECTIONS & DETAILS.
25	BEAM "C", "C1" SECTIONS & DETAILS.
26	BEAM "D" SECTIONS & DETAILS.
27	BEAM "D" SECTIONS & DETAILS.
28	BEAM "E" SECTIONS & DETAILS.
29	BEAM "E" SECTIONS & DETAILS. TYPICAL MEDIAN BARRIER GUARD RAIL CONNECTION DETAILS.
30	PART DECK STEEL PLACEMENT DIAGRAM. SPANS #1 THRU #3 INCLUSIVE.
31	PART DECK STEEL PLACEMENT DIAGRAM SPANS #4 THRU #6 INCLUSIVE.
32	PART DECK STEEL PLACEMENT DIAGRAM SPANS #7 THRU #9 INCLUSIVE.
33	PART DECK STEEL PLACEMENT DIAGRAM SPANS #10 THRU #12 INCLUSIVE.
34	TYPICAL GIRDER DETAILS, P.G. IV A, P.G. IV C
35	TYPICAL GIRDER DETAILS, P.G. IV B
36	MISCELLANEOUS SUPER-STRUCTUCTURE DETAILS.
37	MISCELLANEOUS DETAILS
38	MISCELLANEOUS DETAILS
39	ABUTMENT "A" LAY-OUT PLAN & PILE LAY-OUT PLAN.
40	ABUTMENT "A" PLAN & ELEVATION.
41	ABUTMENT "A", NORMAL SECTION, PART FOUNDATION PLAN & PART LONGITUDINAL PLAN SECTION
42	WINGWALL NO 1 & 2, ELEVATION & SECTIONS.
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46	ABUTMENT "B", NORMAL SECTIONS.
47	WINGWALL NO. 3. ELEVATION & SECTIONS.
48	WINGWALL NO. 4, ELEVATION & SECTIONS.
49	ABUTMENT "A" & "B" GUARD RAIL. CONNECTION DETAILS.
50	TYPICAL DETAILS AT LIGHT STANDARD ON VIADUCT.
51	LOG OF BORINGS, B-14 THRU B-19
52	LOG OF BORINGS, B-20 THRU B-25
53	LOG OF BORINGS, B-26 THRU B-31
54	LOG OF BORINGS, B-32 THRU B-35
55	LOG OF BORINGS, B-36 THRU B-38
56	STANDARD BRIDGE DETAILS
57	STANDARD DETAILS, PRE-STRESSED CONCRETE PILES.
58	STANDARD DETAILS, METAL BRIDGE RAILINGS, SINGLE RAIL

ORIGINAL PLAN

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

PRINTED ON NO. 1000H CLEARPRINT

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
INDEX TO DRAWINGS

INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1 (C3):11
SCALE: AS NOTED

SHEET No. 1 OF 59 SHEETS

41. 1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(68)II I-HI-1(16)II	1968	41A	98

Rev. Jan. 29, 1969

GENERAL NOTES

MATERIALS:

1. ALL CONCRETE SHALL BE CLASS A-1 EXCEPT AS OTHERWISE NOTED ON PLANS. CONCRETE FOR PRESTRESSED CONCRETE GIRDERS SEE SPECIAL PROVISIONS AND AS NOTED UNDER DESIGN STRESSES BELOW.
2. PREFORMED FABRIC BRIDGE BEARING PADS ARE INCIDENTAL TO CONCRETE AND WILL NOT BE PAID FOR SEPARATELY.
3. SEE SPECIAL PROVISIONS FOR ADMIXTURE IN CONCRETE.
4. ALL PILES TO BE PRESTRESSED CONCRETE PILES TYPE I - SEE STANDARD DETAILS SHT. #56
5. ALL REINFORCING STEEL TO BE ASTM DESIGNATION A-15 BILLET STEEL, INTERMEDIATE GRADE EXCEPT AS OTHERWISE NOTED.

CONSTRUCTION METHODS:

1. SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION & EXPOSE ALL EXISTING UTILITY LINES & NOTIFY THE RESPECTIVE OWNERS BEFORE COMMENCING WORK OF EXCAVATION OR PILE DRIVING.
3. IN GENERAL TOP & EDGE OF CONCRETE DECK OF SUPERSTRUCTURE SHALL BE CONSTRUCTED TO FOLLOW THE FINISH ROADWAY VERTICAL CURVES, GRADES & SLOPES.
4. FOR CONCRETE FINISH SEE SPECIAL PROVISIONS. CONCRETE SEATS AND CREEP BLOCKS TO BE POURED MONOLITHICALLY WITH PIER.
5. SEE NORMAL SECTION, SHT. #22 FOR SURFACE FINISH.

REFERENCE:

1. REFER TO STANDARD DETAILED DRAWING SHTS. #55 THRU #57 INCLUSIVE, FOR DETAILS NOT COVERED BY THESE DRAWINGS.

DESIGN SPECIFICATIONS: AASHO.

STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (9TH EDITION) WITH SUBSEQUENT ADDITIONS AND MODIFICATIONS.

DESIGN LOADS:

H.S.-20-44 OR INTERSTATE LOADING.

DESIGN STRESSES:

1. R.C. BEAMS & SLABS: SEE AASHO SPECIFICATIONS EXCEPT AS OTHERWISE NOTED AND SEE SPECIAL PROVISIONS.

CLASS A-1	CLASS E-1
$f'c$ = 3,000 P.S.I.	$f'c$ = 4,500 P.S.I.
fc = 1,200 P.S.I.	fc = 1,800 P.S.I.
n = 10	n = 8

fs = 20,000 P.S.I. TENSION.

2. PRESTRESSED GIRDERS.
   $f'c$ = 5,500 P.S.I. | 1/2" DIA. 7 WIRE STRANDS, TENSIONING LOAD = 25,200 lbs PER STRAND.
   $f'ci$ = 4,500 P.S.I. |
   DESIGN LOAD = 20,160 lbs PER STRAND.
   FORMS MUST BE REMOVED AND THE BEAM INSPECTED BEFORE THE STRANDS ARE CUT.
3. PILE CAPACITY: AT ABUTMENT "A" - 32 TONS
   AT BENTS - SEE COL. SCHEDULE SHT. #9

ESTIMATED QUANTITIES.

FILTER MATERIAL		185 C.Y.
CONCRETE -	VIADUCT FOOTINGS	(4,130 C.Y.) LUMP SUM.
	ALL OTHERS.	(8,286 C.Y.) LUMP SUM.
REINFORCING STEEL - LUMP SUM.		(3,117,230 LBS.) L.S.
PRESTRESSED GIRDER - LUMP SUM.		32,225 LIN. FT.
PRESTRESSED CONCRETE PILES TYPE I	FURNISHING PILES	135,600 LIN. FT.
	DRIVING PILES	125,500 LIN. FT.
METAL BRIDGE RAILING (ONE RAIL TRAFFIC TYPE)		2,500 LIN. FT.
CONCRETE BRIDGE RAILING (ONE RAIL TRAFFIC TYPE)		2,648 LIN. FT.
STRUCTURAL EXCAVATIONS		14,300 C.Y.
LOAD TEST.		2 ONLY
CONCRETE BARRIER CURB		1,289 LIN. FT.

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

PRINTED ON NO. 1000H CLEARPRINT

SYMBOLS & ABBREVIATIONS

(1A) — PIER COLUMN NO.
NO. (1) INDICATES LOCATION PIER LINE NO. — ALPHABET (A) INDICATES COLUMN LINE ALPHABET.

(1) (2) — LOCATION CONC. SEAT LINE NO.
(00.0) — BOTTOM FOOTING ELEVATION.
[00.0] — PILE CUT-OFF ELEVATION.
{00.0} — PILE TIP ELEVATION
⬡ — TYPE I PILE
(A) 14 — ALPHABET (A) INDICATES SECTION DESIGNATION. NO. (14) INDICATES SHT.# DETAIL IS DRAWN ON.
B5 ⊕ — BORING NO. & DESIGNATION.
H.S. — HIGH STRENGTH REINF. BARS, A.S.T.M. DESIGNATION A-432 BILLET STEEL.
CPF-80 — CONT PILE FOOTING TYPE.
G-1, G-2 — GIRDER NUMBERS
P.G. IV — PRESTRESSED GIRDER TYPE.

A.
- ADJ. — ADJACENT.
- ALT. — ALTERNATE
- AZ. — AZIMUTH

B.
- BAL. — BALANCE
- ℄ — BASE LINE
- B.V.C. — BEGIN VERTICAL CURVE.
- B.F. — BOTH FACE.
- BOT., BOTT. — BOTTOM

C.
- ℄ — CENTER LINE.
- C.G. — CENTER OF GRAVITY, CHANGE OF GRADE.
- CL. — CLEAR & OR CLOSED.
- COL. — COLUMN
- CONN. — CONNECTION
- CONT. — CONTINUOUS

C.Y. CUBIC YARDS

D.
- DET. — DETAIL
- DIAG. — DIAGONAL
- DIA. — DIAMETER
- DRWG'S — DRAWINGS

E.
- EA. — EACH
- E.F. — EACH FACE
- E.P. — EDGE OF PAVING.
- EL., ELEV. — ELEVATION
- E.V.C. — END VERTICAL CURVE.
- EXP. — EXPANSION
- EXT. — EXTERIOR

F.
- F.F. — FAR FACE
- FTG. — FOOTING

G.
- GALV. — GALVANIZED.

I.
- I.B. — INBOUND
- INCLU. — INCLUSIVE.
- I.R. — INNER RING (COL. BARS)
- INT. — INTERIOR

J
- JT. — JOINT

L
- LOC. — LOCATION
- LG. — LONG.
- LONGIT. — LONGITUDINAL

L.S. LUMP SUM
LAM. LAMINATED

M.
- MAX. — MAXIMUM.
- MIN. — MINIMUM.

N.
- N.F. — NEAR FACE
- NO. — NUMBER

O.
- O.C. — ON CENTER
- OPN'G. — OPENING
- OB. — OUTBOUND
- O.R. — OUTER RING (COL BARS)

P
- ℗ — PLATE
- PT. — POINT.
- P.I. — POINT OF INTERSECTION

R
- R — RADIUS
- REF. — REFERENCE
- REINF. — REINFORCEMENT.
- R.C. — REINFORCED CONCRETE
- REQ'D — REQUIRED

S
- SECT., SEC. — SECTION
- SHT. — SHEET.
- SPC. — SPACES
- SPCG. — SPACING
- STA. — STATION
- STD. — STANDARD
- STIRR. — STIRRUP
- STR. — STRAIGHT.
- S.E. — SUPER-ELEVATION.
- SYMM. — SYMMETRICAL

SL. SLAB

T.
- T. — TOP
- TYP. — TYPICAL

V.
- VERT. — VERTICAL
- V.C. — VERTICAL CURVE.

W.
- W.P. — WORKING POINT.

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

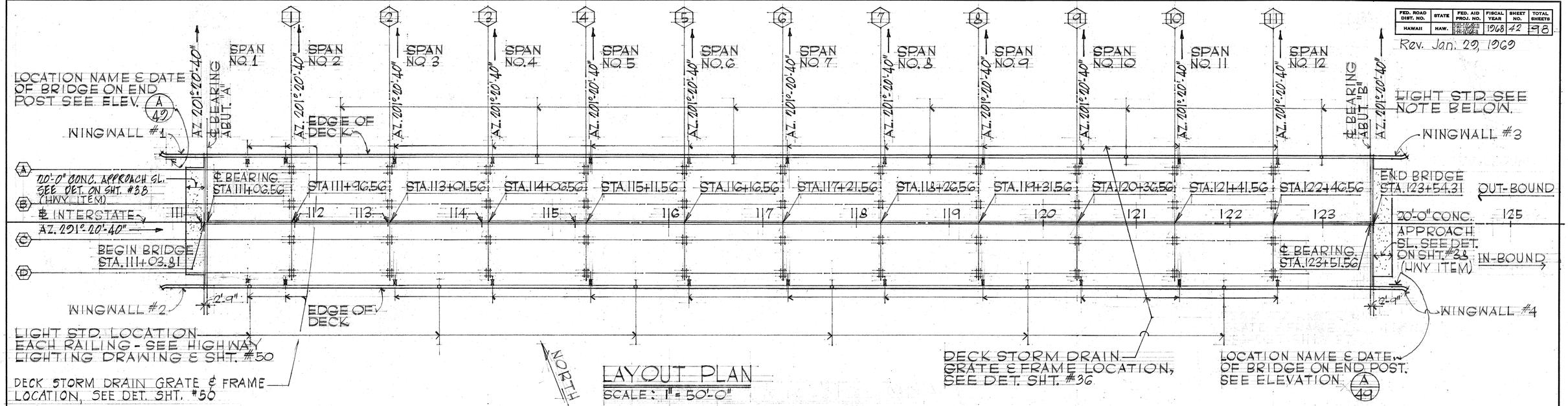
WAIMALU VIADUCT
GENERAL NOTES, SYMBOLS & ABBREVIATIONS & ESTIMATED QUANTITIES.
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

SHEET No. 1A OF 59 SHEETS

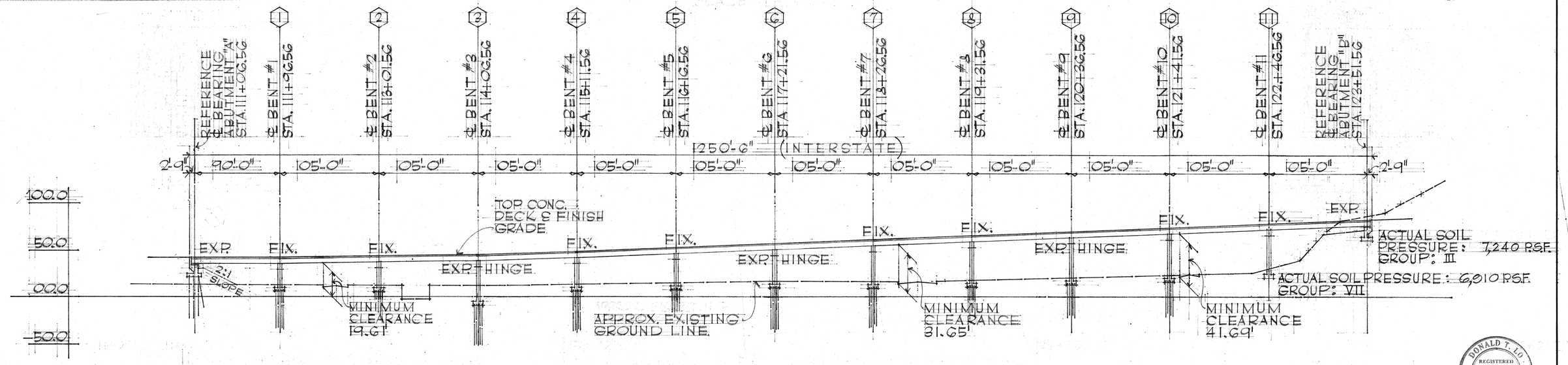
41 1A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[illegible]	1968	42	198

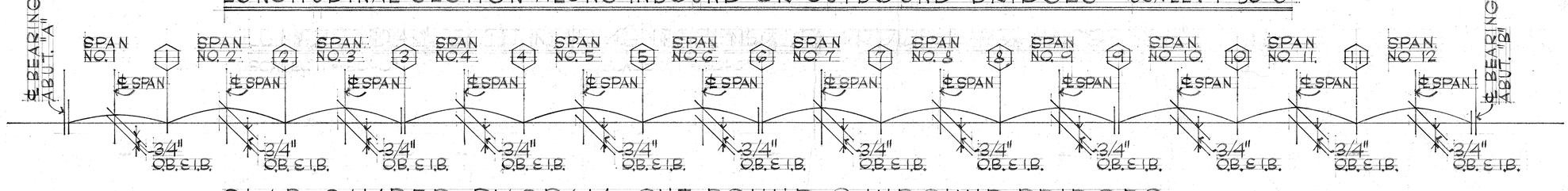
Rev. Jan. 29, 1969



LAYOUT PLAN
SCALE: 1" = 50'-0"



LONGITUDINAL SECTION ALONG INBOUND OR OUTBOUND BRIDGES
SCALE: 1" = 50'-0"



SLAB CAMBER DIAGRAM- OUT-BOUND & INBOUND BRIDGES
NO SCALE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
LAYOUT PLAN

STA. 111+03.81 TO STA. 123+54.31
INTERSTATE ROUTE H1
F.A.I. PROJ. NO. I-H1-1(63):11
SCALE AS NOTED.

SHEET No. 2 OF 59 SHEETS

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

PRINTED ON NO. 1000H CLEARPRINT

42

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(64)11	1968	43	98

Rev. Jan. 29, 1969

OUTBOUND BRIDGE

INBOUND BRIDGE

REFERENCE ℄ INTERSTATE

69'-2"

1'-2" | 10'-0" SHOULDER | 48'-0" TRAVELWAY | 10'-0" | 10'-0" | 48'-0" TRAVELWAY | 10'-0" SHOULDER | 1'-2"

12 EQUAL SPACES @ 5'-4½" = 64'-6"

2'-8¼" | 2'-8¼"

9¾" | C TO C JOIST SPA. | REFERENCE EDGE DECK | LEFT E.R. | REF. INSIDE EDGE OF CONCRETE RAILING | REF. ℄ COL. BELOW | RIGHT E.R. ℄ O.B. GRADE CONTROL | REF. ℄ COL. BELOW. | CLASS I SURFACE FINISH SEE SEC. 46.3 (O)(2) OF SPECIAL PROVISIONS | P.I. ℄ W.P. | PRECAST PRESTRESSED CONC. GIRDER (AASHO TYPE IV)

LEFT E.R. ℄ I.B. GRADE CONTROL | REF. ℄ COL. BELOW. | RIGHT E.R. | REF. ℄ COL. BELOW. | REF. INSIDE EDGE OF CONCRETE RAILING | 1'-11¾" | 9¾" | C TO C JOIST SPA. | REFERENCE EDGE DECK | CLASS I SURFACE FINISH SEE SEC 46.3(O)(2) OF SPECIAL PROVISIONS | P.I. ℄ W.P. | PRECAST PRESTRESSED CONC. GIRDER (AASHO TYPE IV)

−1.50 % S.E. THRUOUT | 9½" ℄ CSL. | CLASS I SURFACE FINISH SEE SEC. 46.3 (O)(2) OF SPECIAL PROVISIONS. | 9½" ℄ CSL. | −1.50 % S.E. THRUOUT

G-1 G-2 G-3 G-4 G-5 G-6 G-7 G-8 G-9 G-10 G-11 G-12 G-13 G-26 G-25 G-24 G-23 G-22 G-21 G-20 G-19 G-18 G-17 G-16 G-15 G-14

CONSTR. JOINT

TOP PIER CAP SLOPE

OUTLINE CREEP BLOCK WHERE OCCURS

5'-0" PLUMB | 4'-3" | 1'-6" | 6'-0" PLUMB | SURFACE FINISH FOR PIER CAP & COLUMN SEE NOTE #1 BELOW | 2'-0" | 2'-0" WIDE PLYWOOD PANELS, BOTH FACE, BOTT. & EACH END. (SEE NOTE 2 BELOW) | 6'-10" PLUMB | BOTT. PIER CAP LEVEL | 54"x72" (4'-6"x6'-0") RECTANGULAR COLUMN SECTION. (TYPICAL.) | 6'-0" PLUMB | 4'-3" | 5'-0" PLUMB | 1'-6"

16'-0" | 36'-0" | 19'-0" | 19'-0" | 38'-0" | 142'-0" OUT TO OUT. | 36'-0" | 16'-0"

4'-0" | 4'-0" WIDE PLYWOOD PANELS, EACH FACE (TYPICAL)

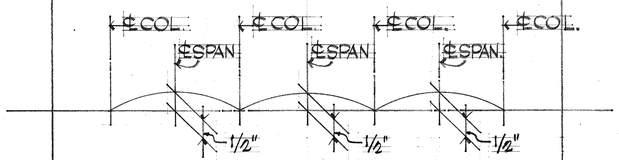
APPROXIMATE EXISTING GROUND LINE.

A | B | C | D

NOTE:

1.- SURFACES OF PIER CAPS & COLS. SHALL RECEIVE AN "ORDINARY SURFACE FINISH" (SEE SEC. 46.3(O)(1) OF SPECIAL PROVISIONS) WITH THE FOLLOWING EXCEPTIONS.
   (a.) AFTER HOLES OR DEPRESSIONS ARE CLEANED AND FILLED WITH MORTAR THE SURFACE SHALL REMAIN UNFINISHED (NO RUBBING WITH CARBORUNDUM STONE).
   (b.) ALL FINS AT FORM JOINTS SHALL REMAIN UNFINISHED.

2.- AT THE OPTION OF THE CONTRACTOR, OTHER MATERIALS OR METHODS MAY BE SUBSTITUTED TO ACHIEVE THE 2'-0" WIDE PLYWOOD PANEL EFFECT SUBJECT TO THE ENGINEER'S APPROVAL.



PIER CAP CAMBER DIAGRAM (SOFFIT ONLY)

NORMAL SECTION THRU VIADUCT

SCALE : 3/16"=1'-0"

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

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HIGHWAYS DIVISION

WAIMALU VIADUCT
TYPICAL SECTION

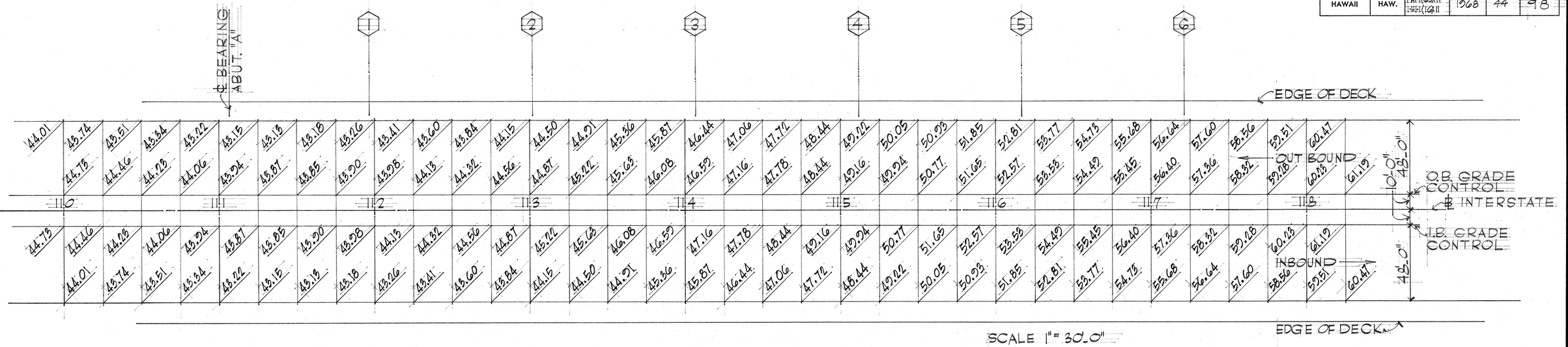
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE AS NOTED.

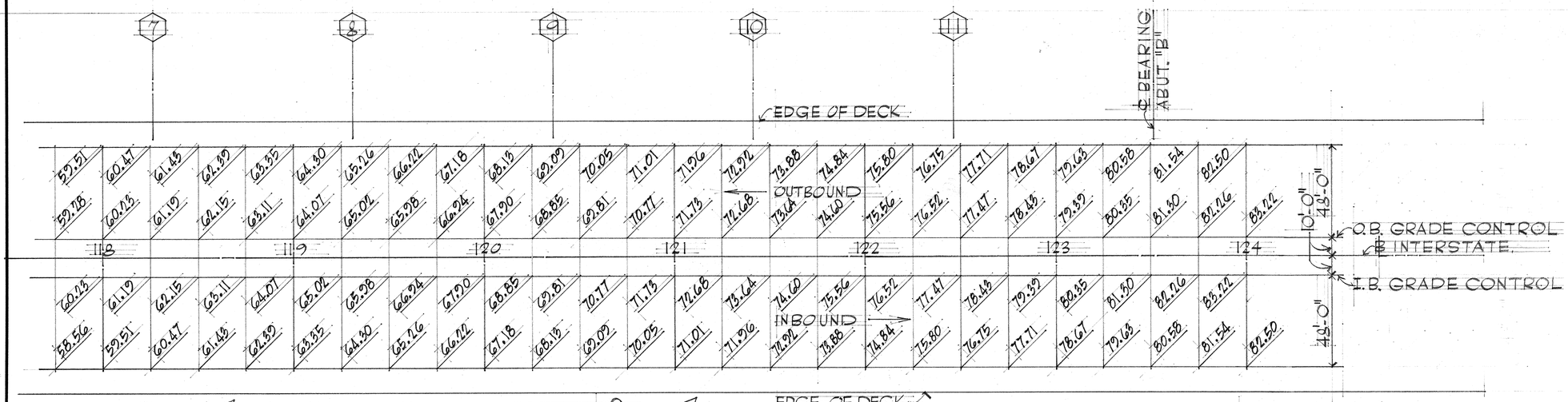
SHEET No. 3 OF 59 SHEETS

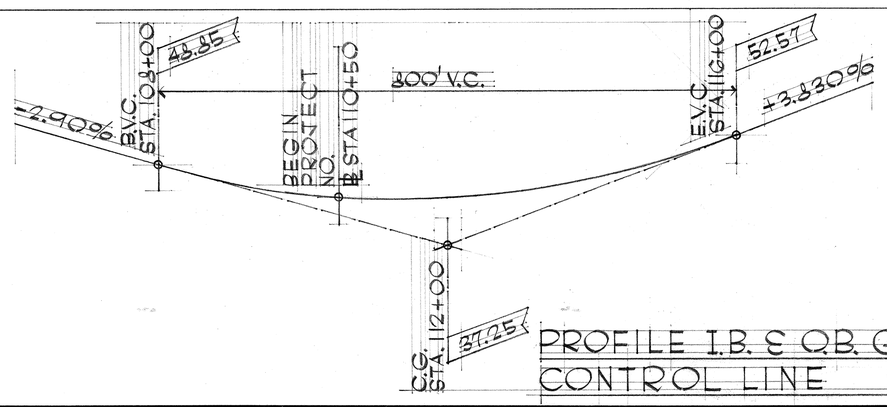
DS-2-6

41 83

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHI-1(63)11 FHI-1(64)11	1968	44	98







PROFILE I.B. & O.B. GRADE CONTROL LINE NO SCALE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

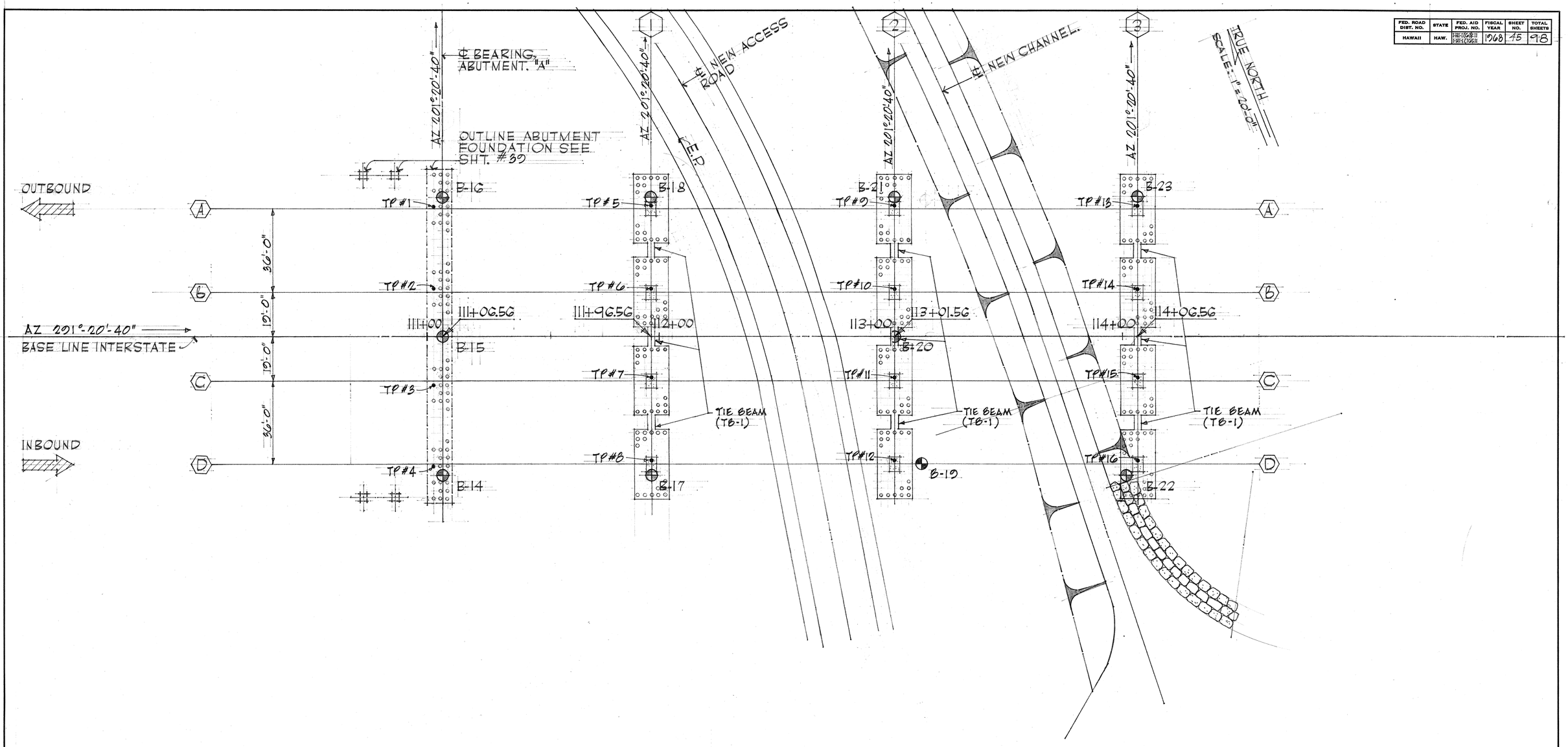
WAIMALU VIADUCT
DECK FINISH GRADE
STA. 110+00 TO STA. 124+00
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE 1" = 30'-0"

SHEET No. 4 OF 59 SHEETS

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

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHI-1(G3)11 FHPS-1(G3)11	1968	45	98



FOOTING AND PILE ELEVATIONS

LOCATION \ PIER COLUMN NUMBERS	ABUTMENT "A"	1A	2A	2C	3A	4A	5A	5C	6A	6C	7A	8A	9A	10A	11A	ABUTMENT "B"
		1B	2B	2D	3B	4B	5B	5D	6B	6D	7B	8B	9B	10B	11B	
		1C			3C	4C					7C	8C	9C	10C	11C	
		1D			3D	4D					7D	8D	9D	10D	11D	
PILE CUTOFF ELEVATION	+29.0	+3.0	-8	-8	-8	+3.0	+6.0	+6.0	+8.0	+8.0	+8.0	+9.5	+12.0	+13.0	—	—
BOT OF FTG. ELEVATION	+28.5	+2.5	-8.5	-8.5	-8.5	+2.5	+5.5	+5.5	+7.5	+7.5	+7.5	+9.0	+11.5	+12.5	SEE PLAN	SEE PLAN
PILE TIP ELEVATION	-45	-60	-115	-75	-55	-70	-95	-80	-95	-70	-60	-60	-40	-20	—	—

FOUNDATION NOTES:

1. CONTRACTOR SHALL DRIVE 44 TEST PILES AS SHOWN. LOCATION OF TEST PILES MAY BE MODIFIED SLIGHTLY WITH THE APPROVAL OF THE ENGINEER.
2. TEST PILES #14 & #28 SHALL BE LOAD TESTED. (SEE NOTE #6)
3. TEST PILES SHOWN ON PLAN MAY BE DRIVEN FROM EXISTING GROUND BEFORE EXCAVATION.
4. REFER TO SHEETS #9, #10 & #11 FOR FOUNDATION SCHEDULES AND DETAILS.
5. REFER TO SHEETS #50, #51, #52, #53 & #54 FOR BORING LOGS.
6. AN ADDITIONAL TEST PILE SHALL BE USED AT EACH LOAD TEST PILE TO SUPPORT MEASURING DEVICES.

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HAWAII, U.S.A.

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
PART FOUNDATION PLAN
STA 111+06.56 TO STA. 114+06.56
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (G3):11
SCALE 1" = 20'-0"

SHEET No. 5 OF 59 SHEETS

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

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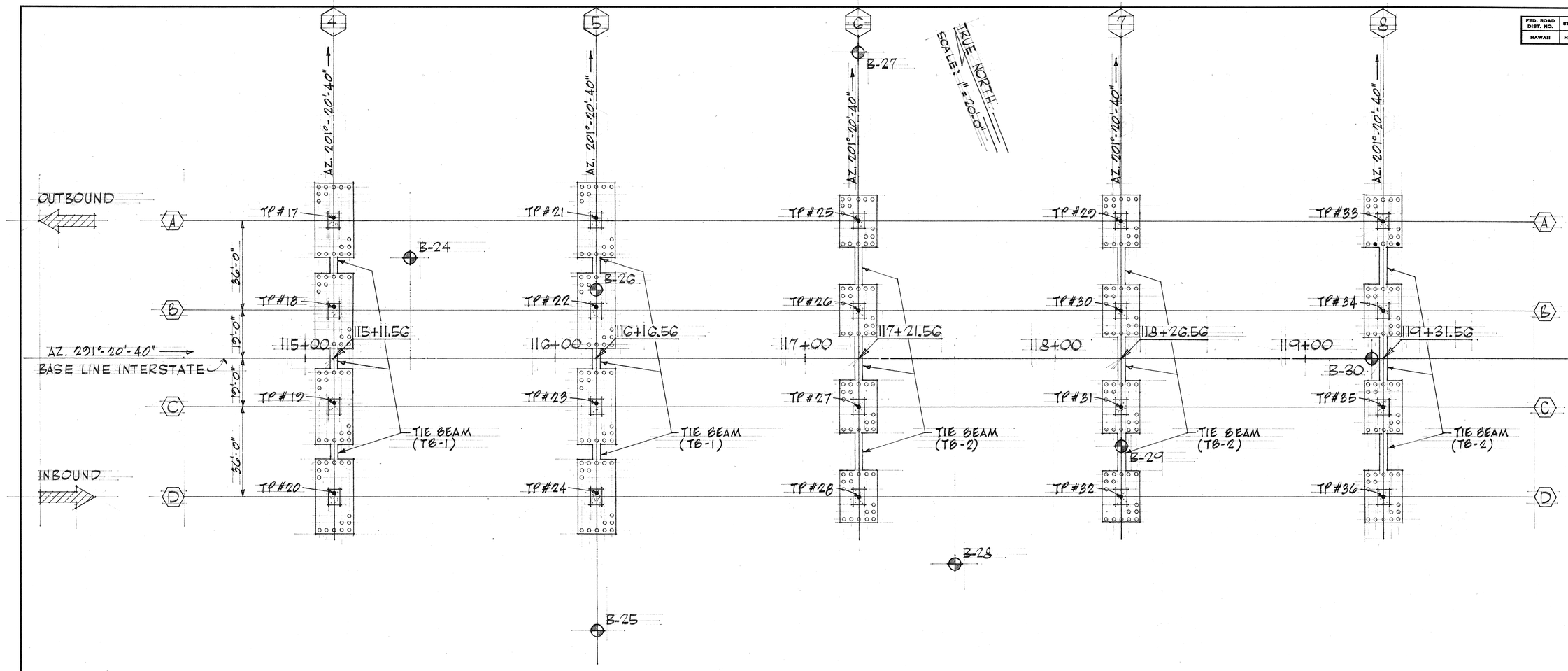
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(66)11	1968	46	98



FOR FOUNDATION NOTES, SEE SHEET #5

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

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT

PART FOUNDATION PLAN

STA 115+11.56 TO STA. 119+31.56

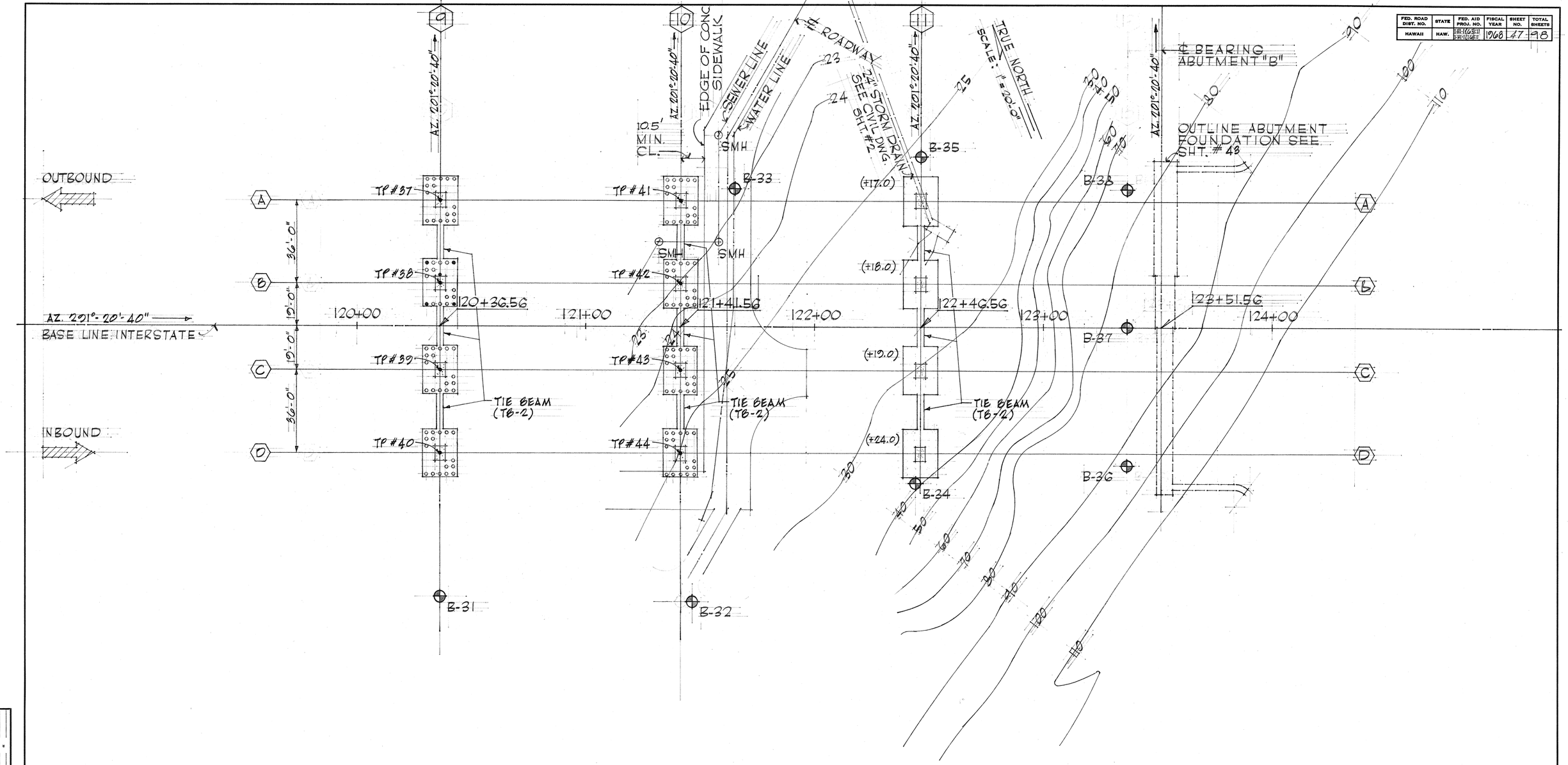
INTERSTATE ROUTE H-1

F.A.I. PROJ. NO. I-HI-1(63):11

SCALE 1" = 20'-0"

SHEET No. 6 OF 59 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	(H-1)(63)11 (H-1)(16)6	1968	47	98



FOR FOUNDATION NOTES, SEE SHEET #5

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WAIMALU VIADUCT
PART FOUNDATION PLAN
STA 120+36.56 TO STA. 123+36.56
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE 1" = 20'-0"

SHEET No. 7 OF 59 SHEETS

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

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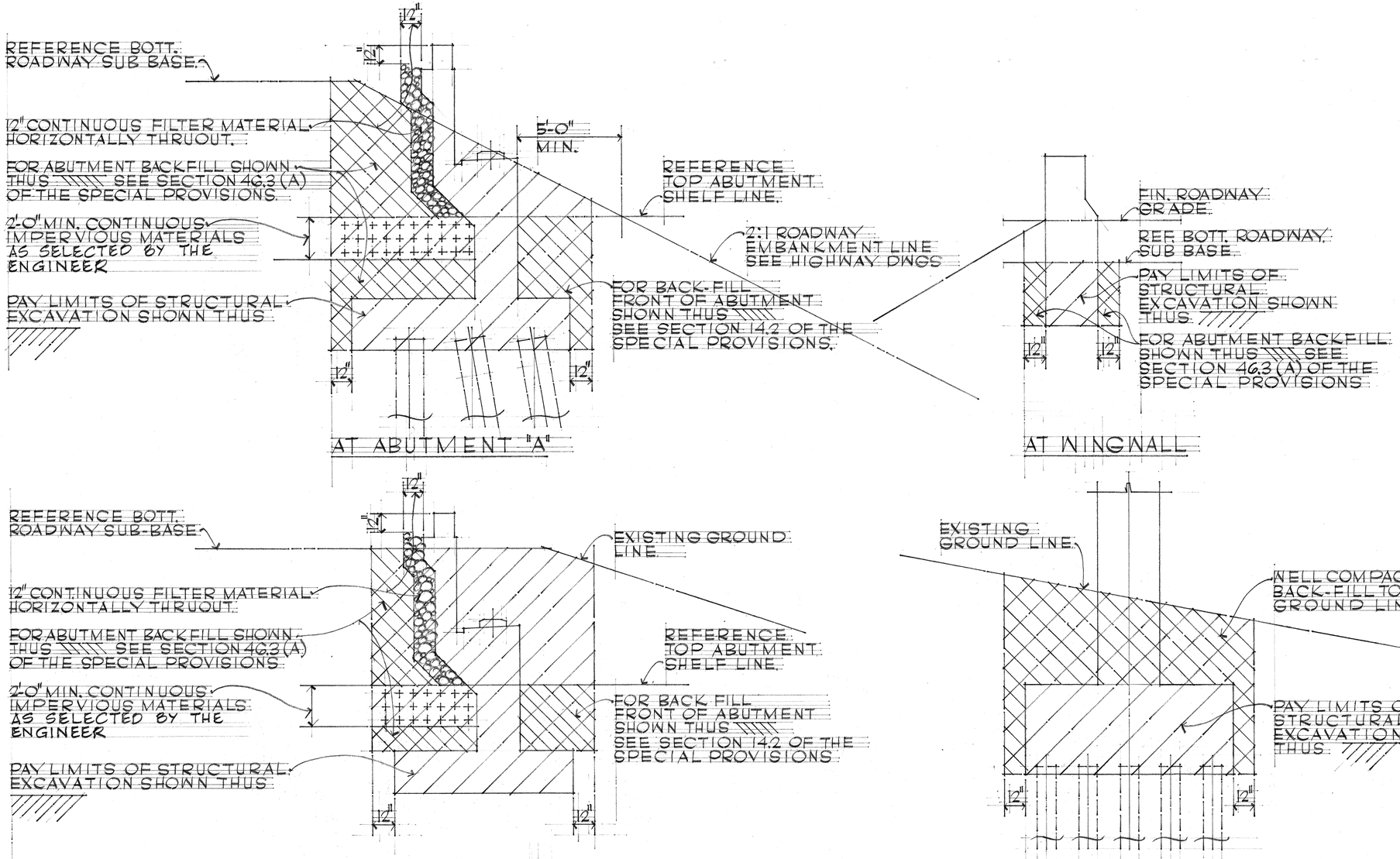
41 98

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(16)11	1968	48	98



TYPICAL LIMITS OF STRUCTURAL EXCAVATION - PAY LINE & BACKFILL NO SCALE

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
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HIGHWAYS DIVISION

NAIMALU VIADUCT
TYPICAL LIMITS OF STRUCTURAL EXCAVATION, PAYLINE & BACKFILL
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63): 11
SCALE: AS NOTED

SHEET No. 8 OF 59 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

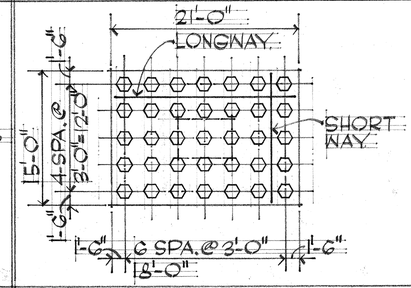
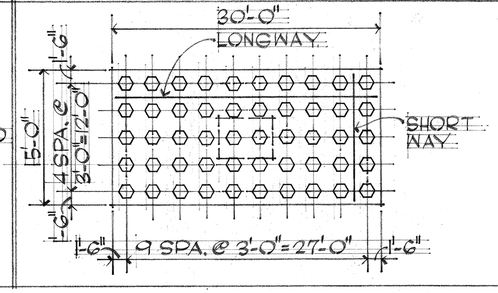
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(10)11	1968	40	98

PIER COLUMN SCHEDULE

PIER COLUMN NUMBERS / LOCATION		1A 1D	1B 1C 2A 2D	2B 2C	3A 3B 3C 3D	4A 4D 5A 5D	4B 4C 5B 5C	6A 6B 6C 6D	9A 9B 9C 9D	7A 7B 7C 7D	8A 8B 8C 8D	10A 10B 10C 10D	11A 11B 11C 11D
SOFFIT OF PIER CAP	COLUMN CONC.	4'-6"X6'-0" 88-#14 { 48 O.R. / 40 I.R.	4'-6"X6'-0" 48-#14 O.R.	4'-6"X6'-0" 48-#11 O.R.	4'-6"X6'-0" 40-#10 O.R.	4'-6"X6'-0" 72-#14 { 40 O.R. / 32 I.R.	4'-6"X6'-0" 40-#14 O.R.	4'-6"X6'-0" 40-#10 O.R.		4'-6"X6'-0" 72-#14 { 40 O.R. / 32 I.R.		4'-6"X6'-0" 88-#14 { 48 O.R. / 40 I.R.	4'-6"X6'-0" 88-#14 { 48 O.R. / 40 I.R.
DOWELS (EACH COL.) TOP OF FTG.	CLASS E CONC.	48-#14 O.R.	48-#14 O.R.	48-#11 O.R.	40-#10 O.R.	40-#14 O.R.	40-#14 O.R.	40-#10 O.R.		40-#14 O.R.		48-#14 O.R.	48-#14 O.R.
PILE FOOTING TYPE.	CLASS A1 CONC.	PF-50	PF-50	PF-50	PF-50	PF-50	PF-50	PF-35		PF-35		PF-35	SEE DETAIL SHT.#11
PILE CAPACITY (TONS)		32 T	32 T	32 T	32 T	32 T	32 T	45 T		45 T		45 T	—

NOTE: ALL #14 COLUMN STEEL TO BE CONTINUOUS FROM FOOTING UNLESS CONTRACTOR ELECTS TO BUTT WELD BARS AT SPLICE. NO DOWELING OF #14 BARS WILL BE PERMITTED.

PILE FOOTING SCHEDULE

MARK	DESCRIPTION	DEPTH	BOTT. REINF. LONG WAY.	BOTT. REINF. SHORT WAY.
PF-35		5'-6"	36-#11	29-#11
PF-50		6'-6"	44-#11	35-#9

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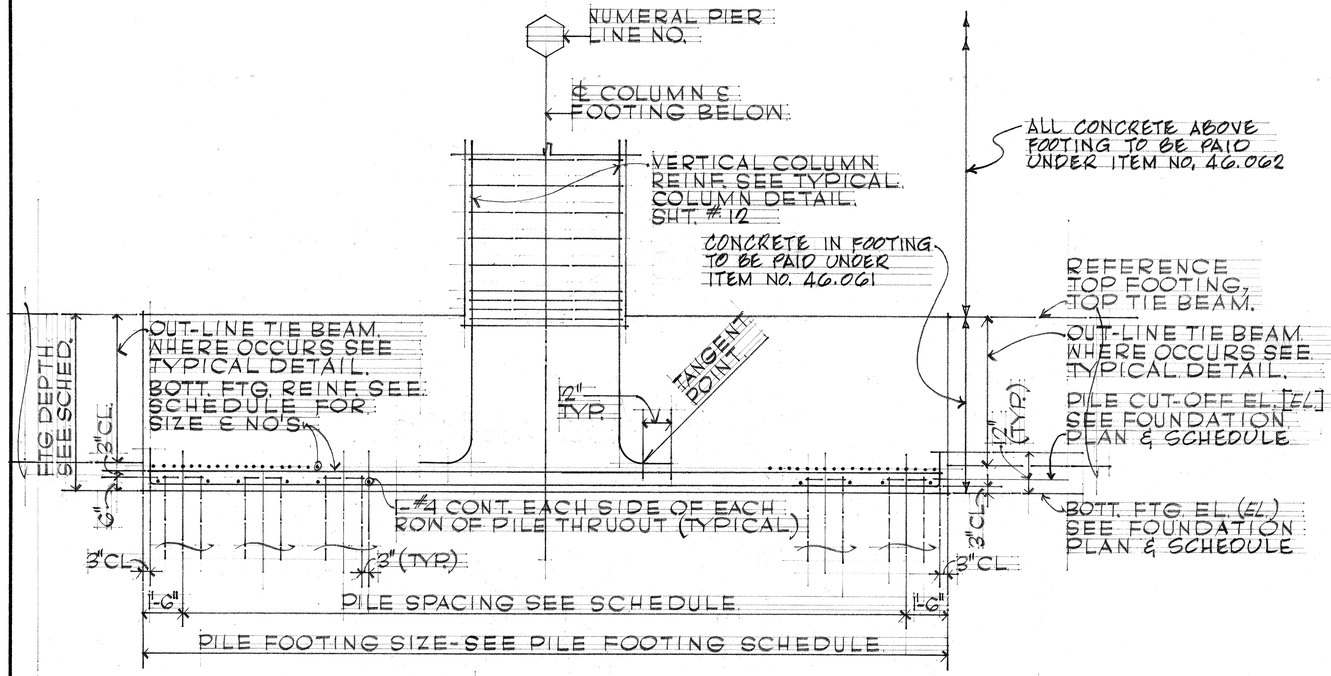
WAIMALU VIADUCT
PIER COLUMN & PILE FOOTING SCHEDULES
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE AS NOTED

SHEET No. 9 OF 59 SHEETS

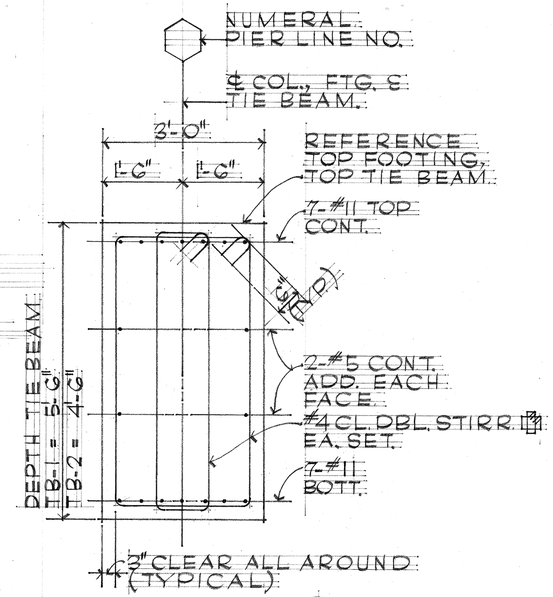
41 (9)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(69)11 I-HI-1(16)11	1968	50	98



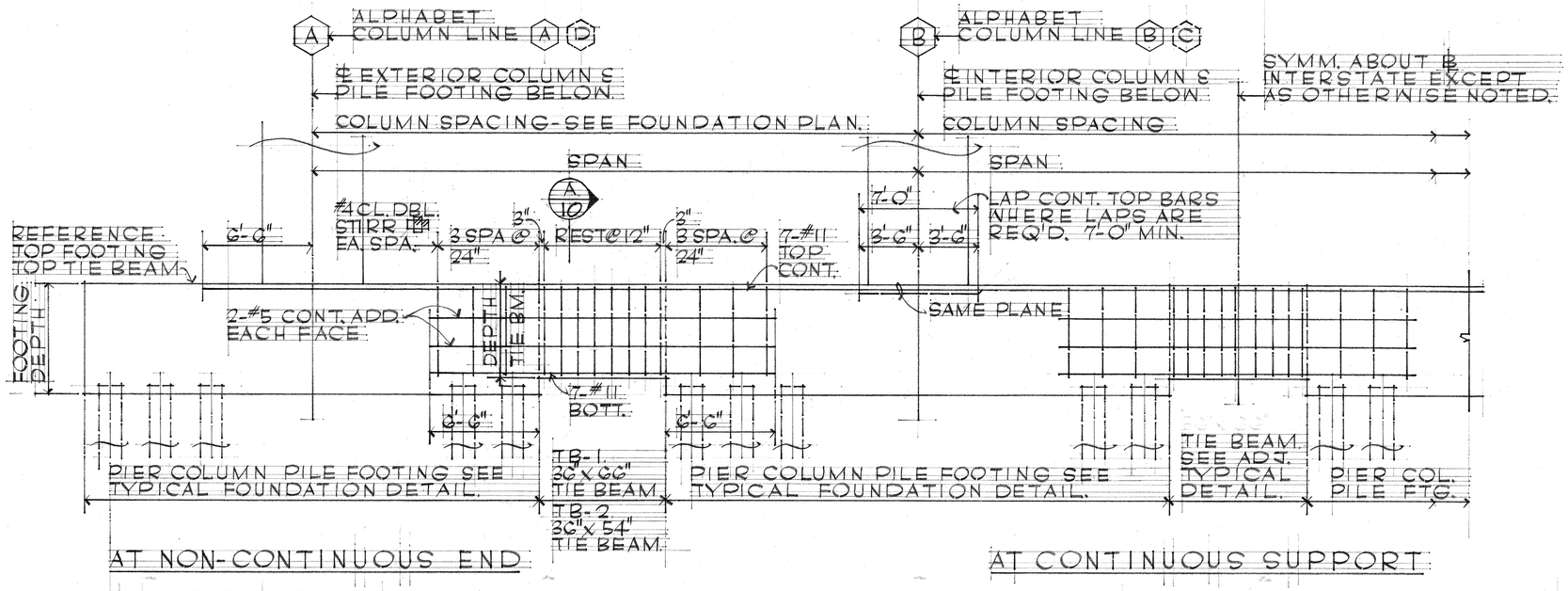
TYPICAL PIER COLUMN PILE FOOTING FOUNDATION DETAIL

NO SCALE.



SECTION A/10

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



AT NON-CONTINUOUS END

AT CONTINUOUS SUPPORT

TYPICAL TIE-BEAM TO PILE FOOTING REINFORCEMENT DETAILS AS SHOWN NO SCALE

TIE BEAM TO SPREAD FOOTING REINFORCEMENT DETAILS SIMILAR

ORIGINAL PLAN | NOTE BOOK No. ____

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

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HIGHWAYS DIVISION

NAIMALU VIADUCT
TYPICAL FOUNDATION DETAILS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE AS NOTED.

SHEET No. 10 OF 59 SHEETS

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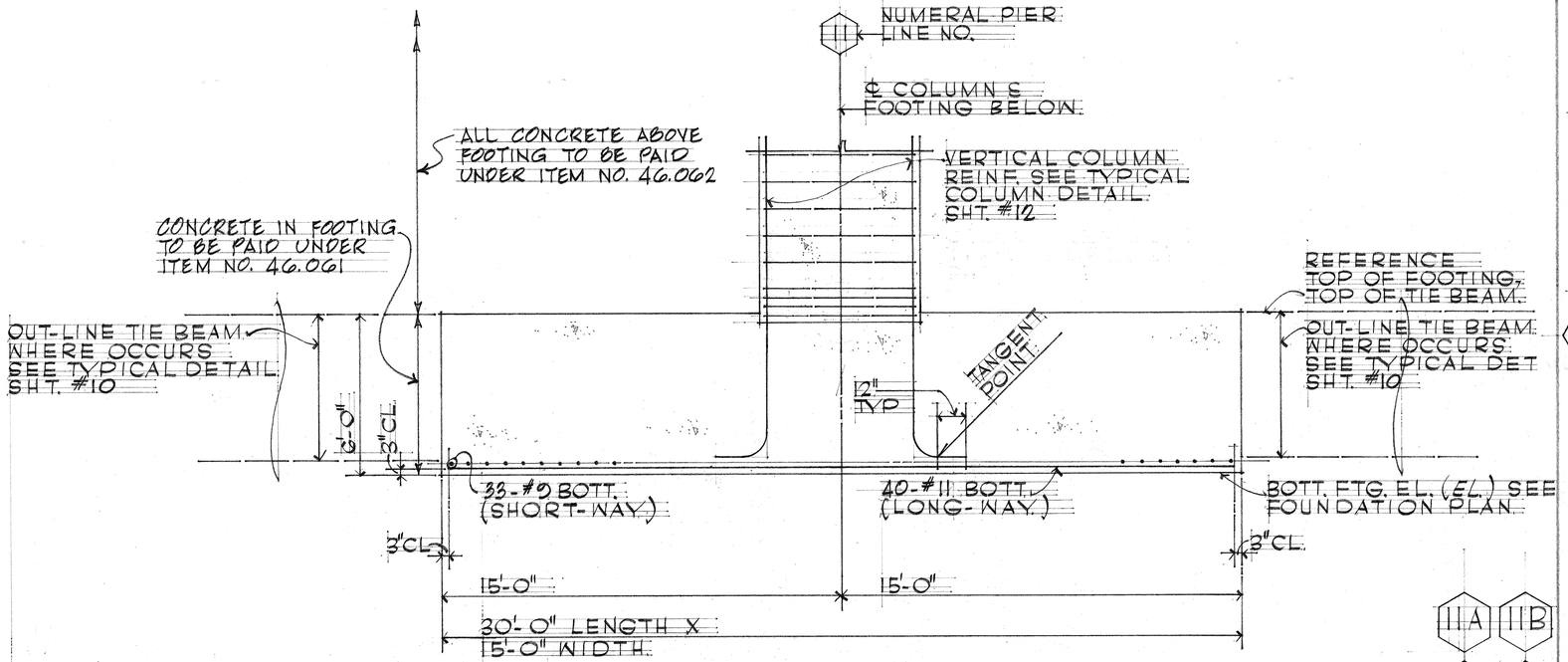
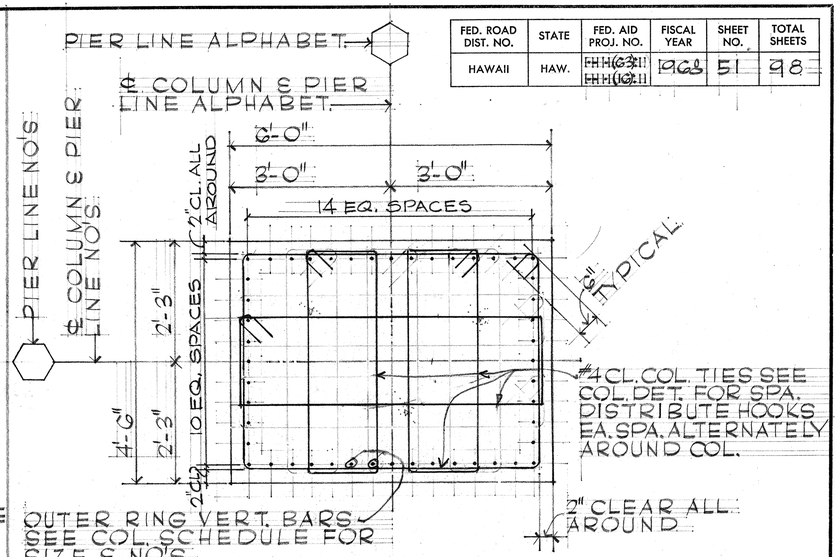
50 (1)

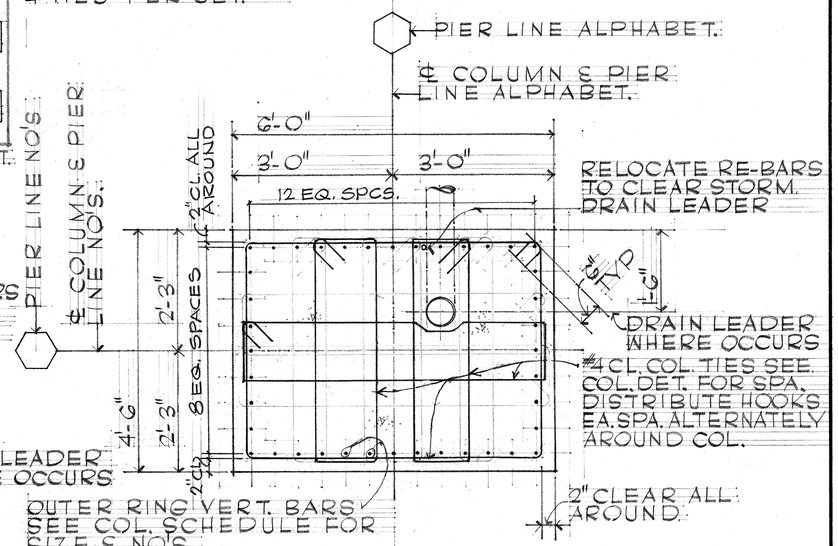
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	~~FH H(63) 11~~ ~~FH H(10) 11~~	1963	51	98



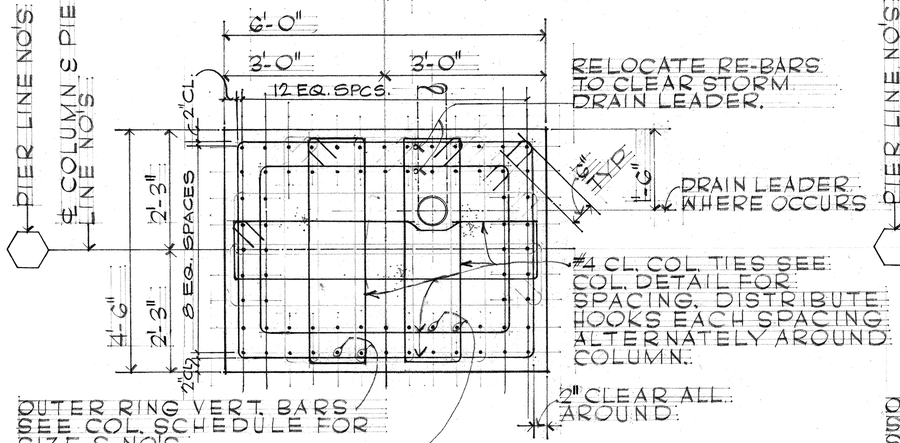
TYPICAL PIER COLUMN SPREAD FOOTING FOUNDATION DETAIL AT IIA IIB IIC IID

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

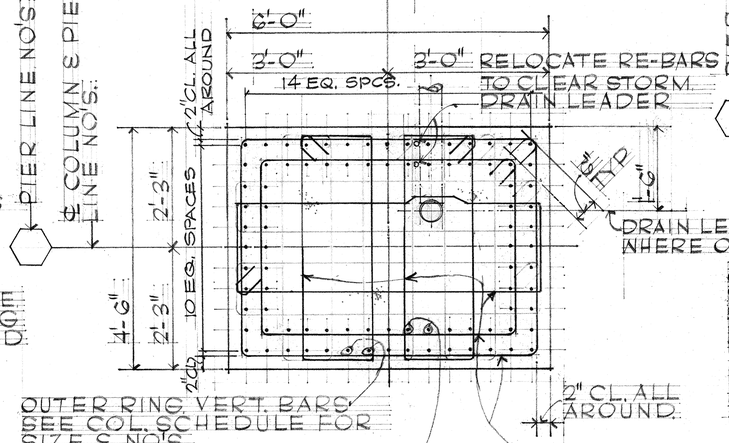




SINGLE RING RECTANGULAR TIE COLUMN SECTION



For additional Steel Pier #2 See Detail (E) Sheet # CO 30A C.C.O #10.



DOUBLE RING RECTANGULAR TIE COLUMN SECTIONS

TYPICAL COLUMN SECTIONS SCALE: 3/4" = 1'-0"

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HIGHWAYS DIVISION

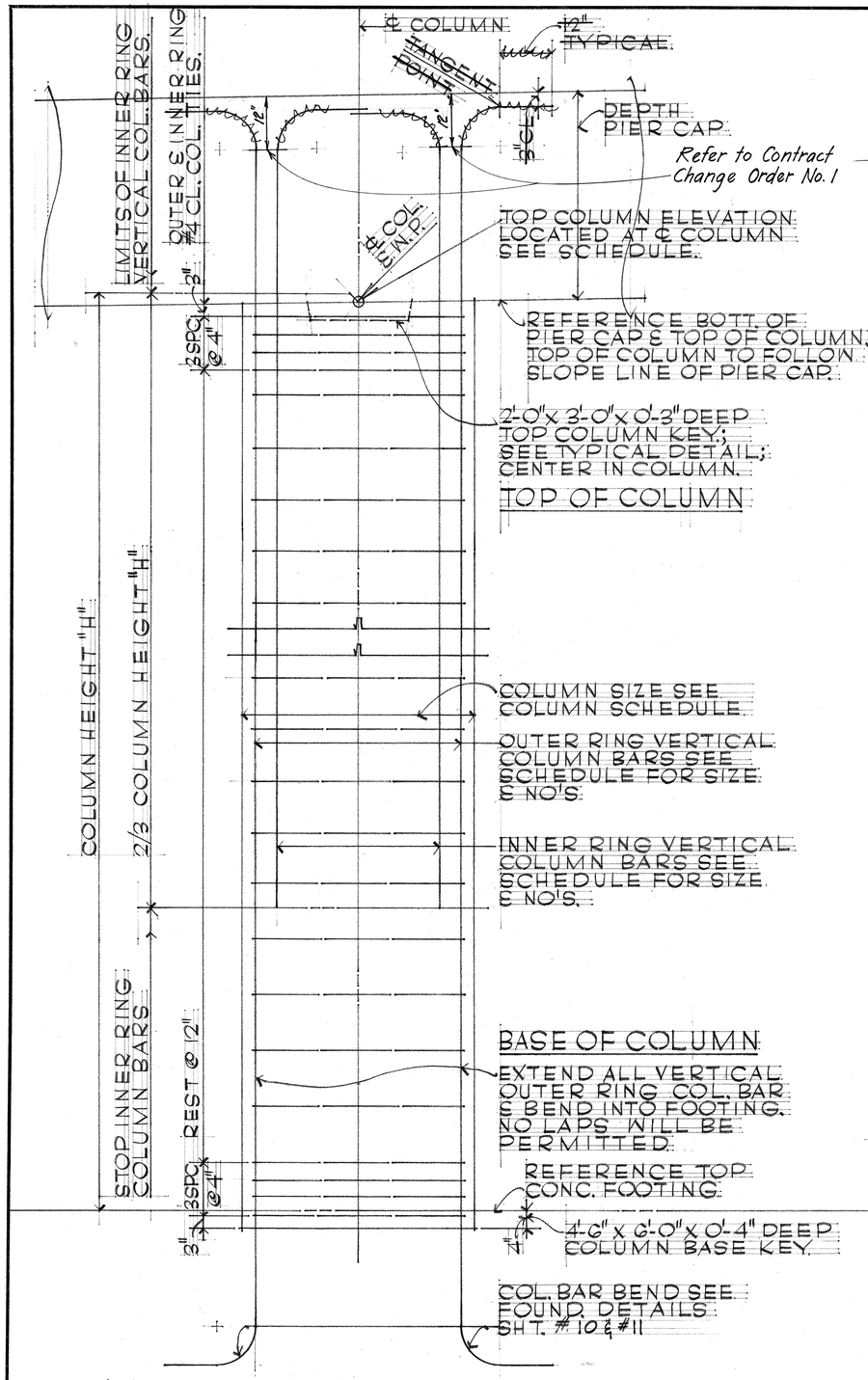
WAIMALU VIADUCT
TYP. FOUND. DETAIL & TYP. COL. SECTIONS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63)11
SCALE AS NOTED.

SHEET No. 11 OF 54 SHEETS

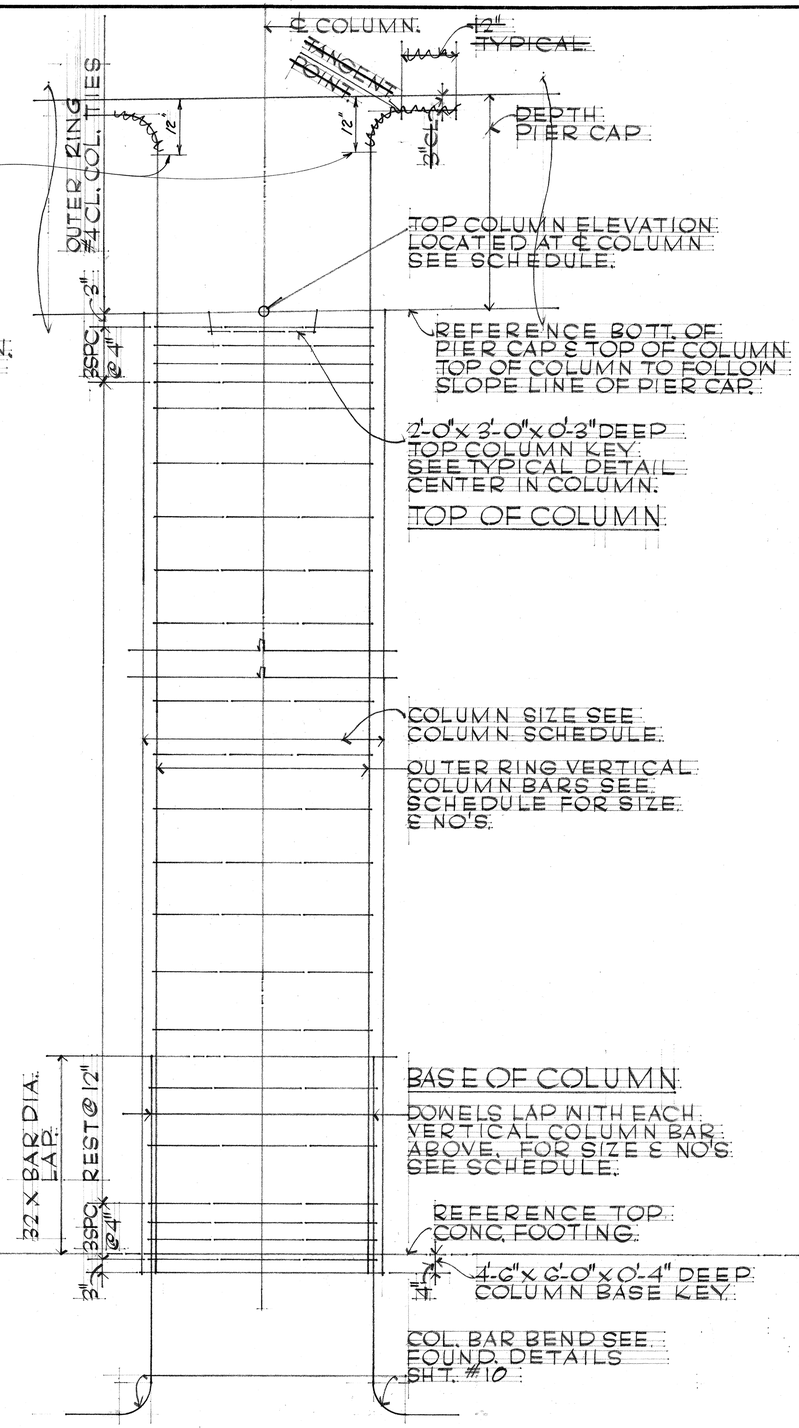
PRINTED ON NO. 1000H CLEARPRINT

51

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(10)11	1968	52	98

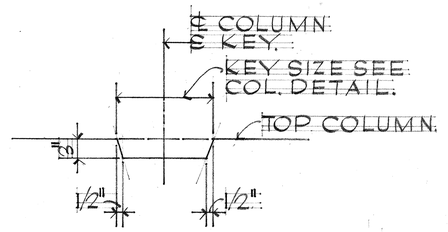


AT #14S COLUMN BARS



AT #10 & #11 COLUMN BARS

TYPICAL COLUMN DETAILS NO SCALE



TYPICAL TOP COLUMN KEY DETAIL. NO SCALE.

TOP PIER COLUMN ELEVATION (AT ℄ COLUMN)

COLUMNS	ELEVATION
1A 1B 1C 1D	31.54
2A 2B 2C 2D	32.45
3A 3B 3C 3D	34.28
4A 4B 4C 4D	37.05
5A 5B 5C 5D	40.70
6A 6B 6C 6D	44.87
7A 7B 7C 7D	48.89
8A 8B 8C 8D	52.91
9A 9B 9C 9D	56.94
10A 10B 10C 10D	60.95
11A 11B 11C 11D	64.97

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NOTE BOOK No.
SURVEY PLOTTED BY
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HIGHWAYS DIVISION

WAIMALU VIADUCT
TYPICAL COLUMN DETAILS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE AS NOTED

SHEET No. 12 OF 59 SHEETS

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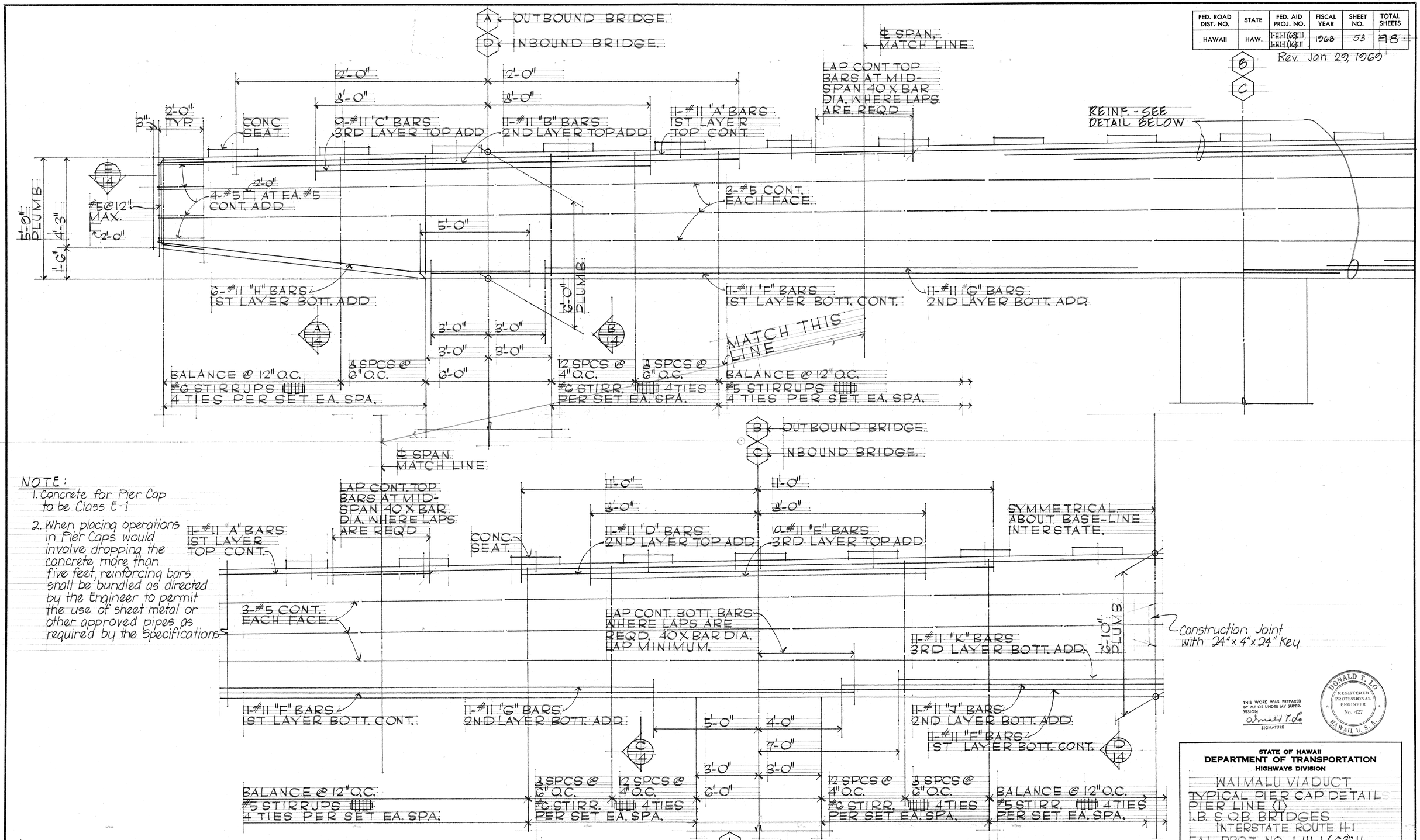
52

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(16)11	1968	53	98

Rev. Jan. 29, 1969



NOTE:

1. Concrete for Pier Cap to be Class E-1
2. When placing operations in Pier Caps would involve dropping the concrete more than five feet, reinforcing bars shall be bundled as directed by the Engineer to permit the use of sheet metal or other approved pipes as required by the Specifications.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
TYPICAL PIER CAP DETAIL
PIER LINE (1)
I.B. S.O.B. BRIDGES
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63)11
SCALE: 1/2" = 1'-0"

TYPICAL PIER CAP DETAILS PIER LINE-NO (1) OUTBOUND & INBOUND BRIDGES

NOTE: FOR PIER CAP TO TRANSVERSE BEAM "D" ADDED BEAM REINF. SEE SHTS #26 & #27

SHEET No. 13 OF 59 SHEETS

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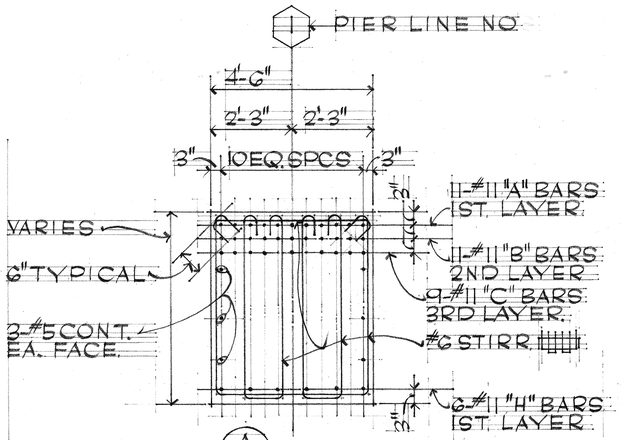
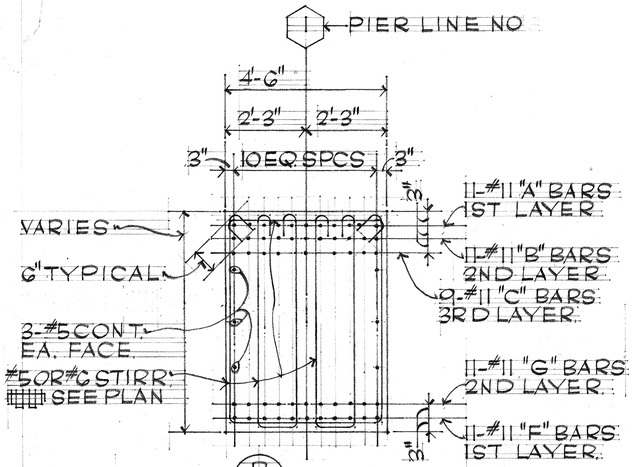
53

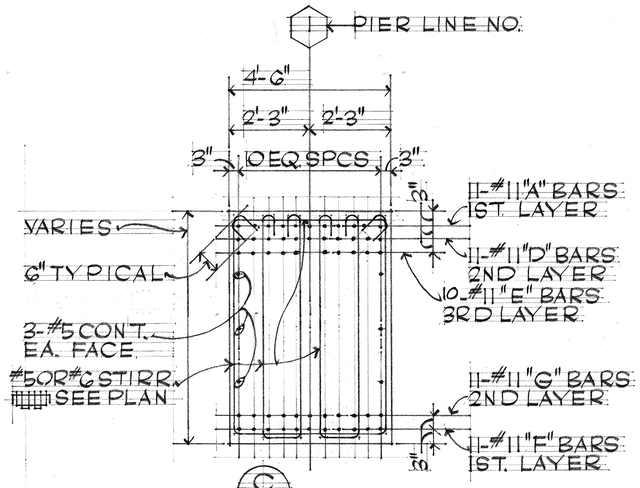
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(62):11 I-HI-1(16):11	1968	54	98



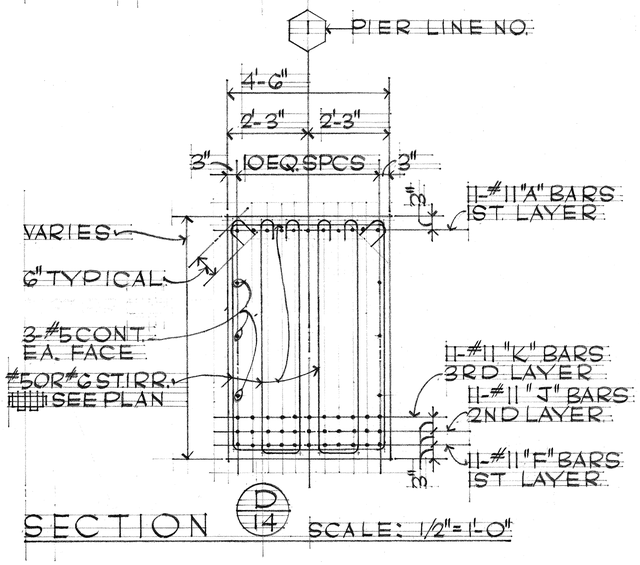
SECTION A/14 SCALE: 1/2"=1'-0"



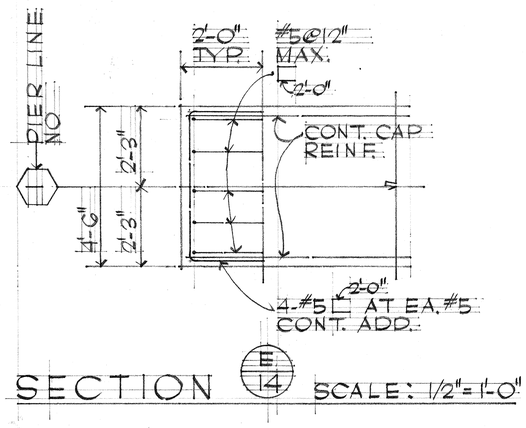
SECTION B/14 SCALE: 1/2"=1'-0"



SECTION C/14 SCALE: 1/2"=1'-0"



SECTION D/14 SCALE: 1/2"=1'-0"



SECTION E/14 SCALE: 1/2"=1'-0"

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NOTE BOOK	TRACED BY	"
	DESIGNED BY	"
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HAWAII, U. S. A.

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SIGNATURE

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

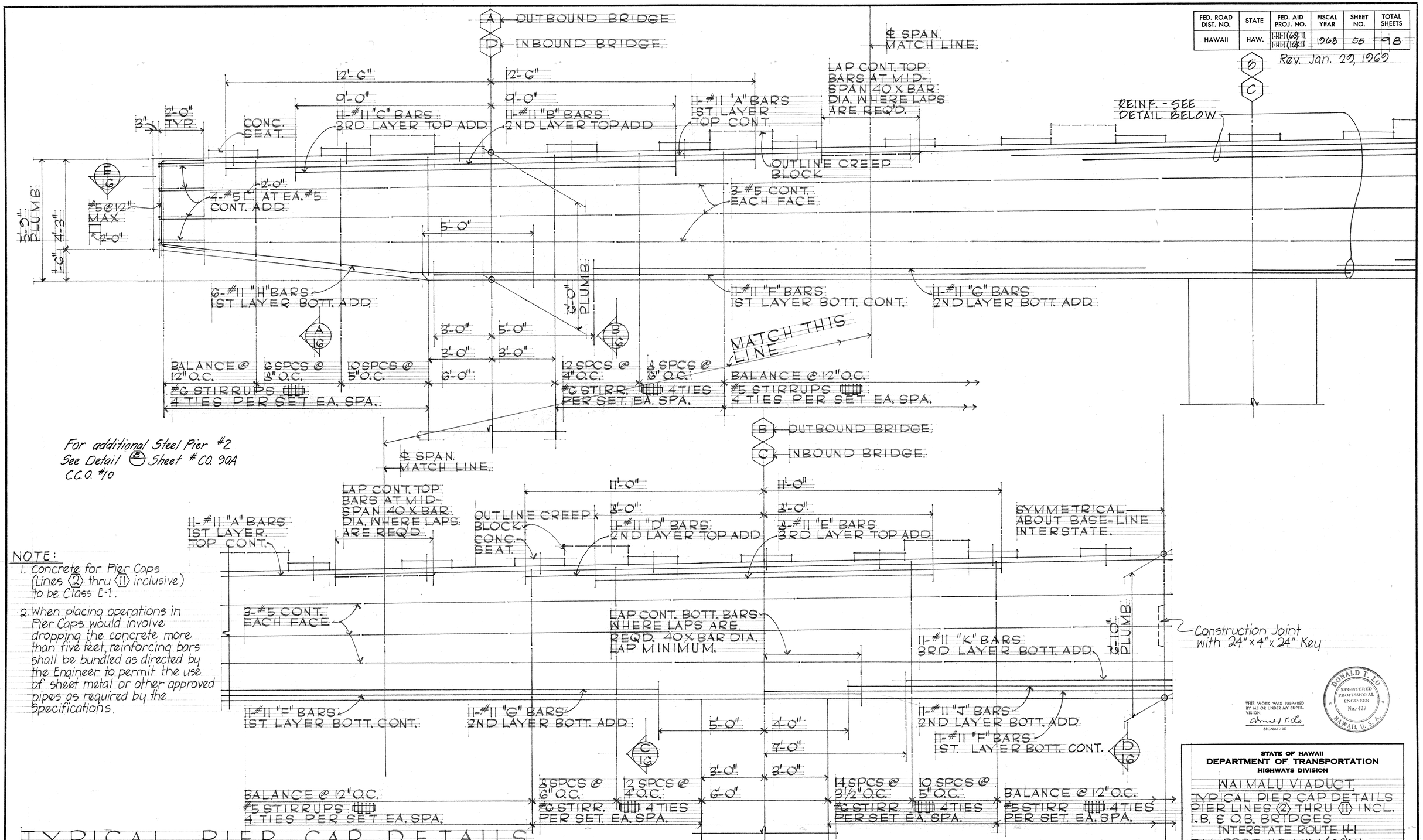
WAIMALU VIADUCT
TYPICAL PIER CAP DETAIL
PIER LINE 1
I.B. & O.B. BRIDGES
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(62):11
SCALE: AS NOTED

SHEET No. 14 OF ~~59~~ SHEETS

54

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(16):11	1968	55	98

Rev. Jan. 20, 1969



For additional Steel Pier #2
See Detail (B) Sheet # CO. 90A
C.C.O. #10

NOTE:

1. Concrete for Pier Caps (Lines ⟨2⟩ thru ⟨11⟩ inclusive) to be Class E-1.
2. When placing operations in Pier Caps would involve dropping the concrete more than five feet, reinforcing bars shall be bundled as directed by the Engineer to permit the use of sheet metal or other approved pipes as required by the Specifications.

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

TYPICAL PIER CAP DETAILS

PIER LINE NO'S ⟨2⟩ THRU ⟨11⟩ INCLUSIVE - OUTBOUND & INBOUND BRIDGES

NOTE: FOR PIER CAP TO TRANSVERSE BEAM "C", "C1" & "D" ADDED BEAM REINF. SEE SHTS #24, #25, #26 & #27

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
SIGNATURE

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

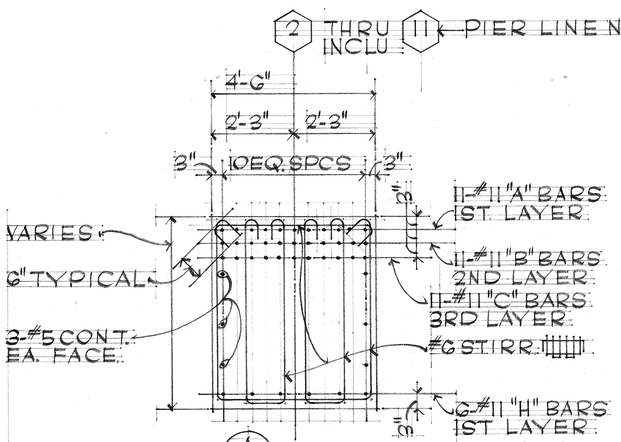
WAIMALU VIADUCT
TYPICAL PIER CAP DETAILS
PIER LINES ⟨2⟩ THRU ⟨11⟩ INCL.
I.B. & O.B. BRIDGES
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE: AS NOTED

SHEET No. 15 OF 59 SHEETS

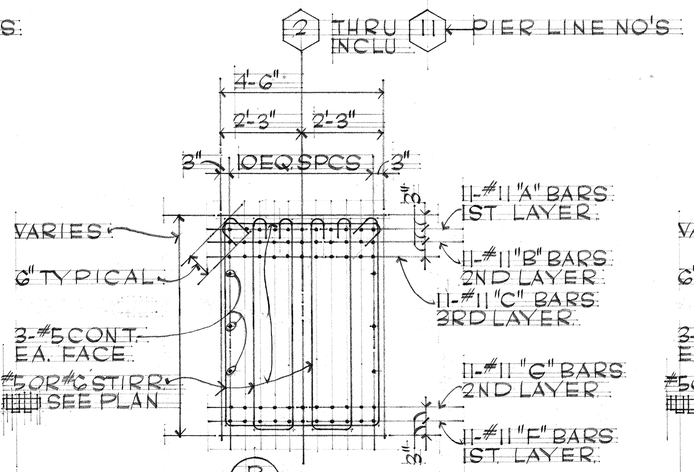
PRINTED ON NO. 1000H CLEARPRINT

55

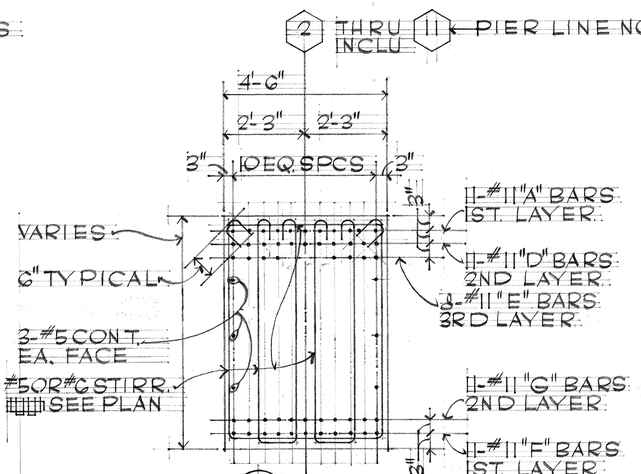
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(10)11	1968	56	98



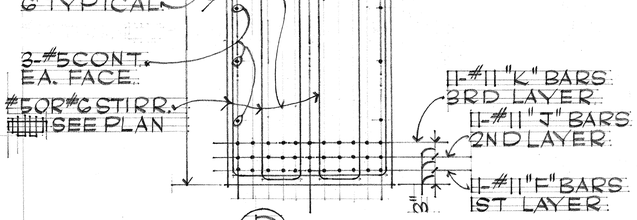
SECTION A 16 SCALE: 1/2"=1'-0"



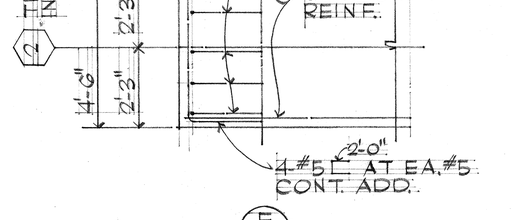
SECTION B 16 SCALE: 1/2"=1'-0"



SECTION C 16 SCALE: 1/2"=1'-0"



SECTION D 16 SCALE: 1/2"=1'-0"



SECTION E 16 SCALE: 1/2"=1'-0"

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

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REGISTERED PROFESSIONAL ENGINEER No. 427 DONALD T. LO HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
TYPICAL PIER CAP DETAILS
PIER LINES 2 THRU 11 INCL.
I.B. & O.B. BRIDGES
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

SHEET No. 16 OF ~~59~~ SHEETS

59 16

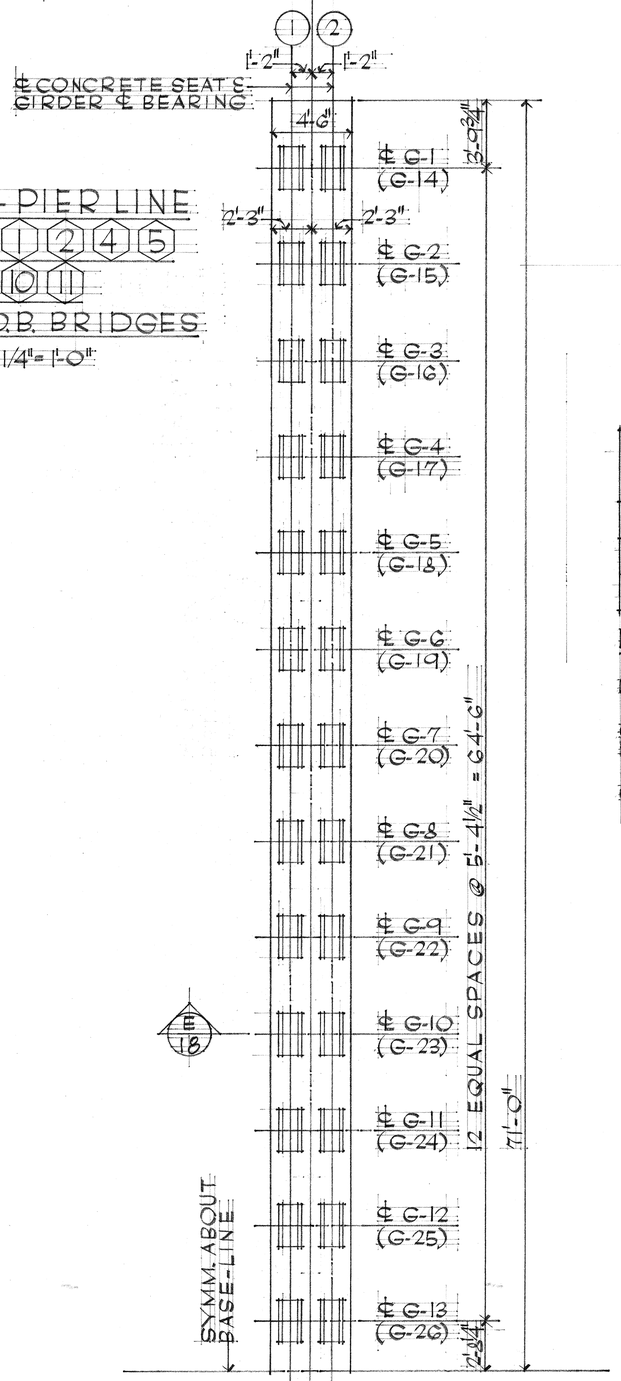
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHI-1(63):11 FHI-1(16):11	1968	57	98

PIER LINE NO'S (1) (2) (4) (5) (7) (8) (10) (11)

TO BARBER'S PT. AT FIXED END — TO HONOLULU AT FIXED END

PLAN-PIER LINE NO'S (1) (2) (4) (5) (7) (8) (10) (11) I.B. & O.B. BRIDGES

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

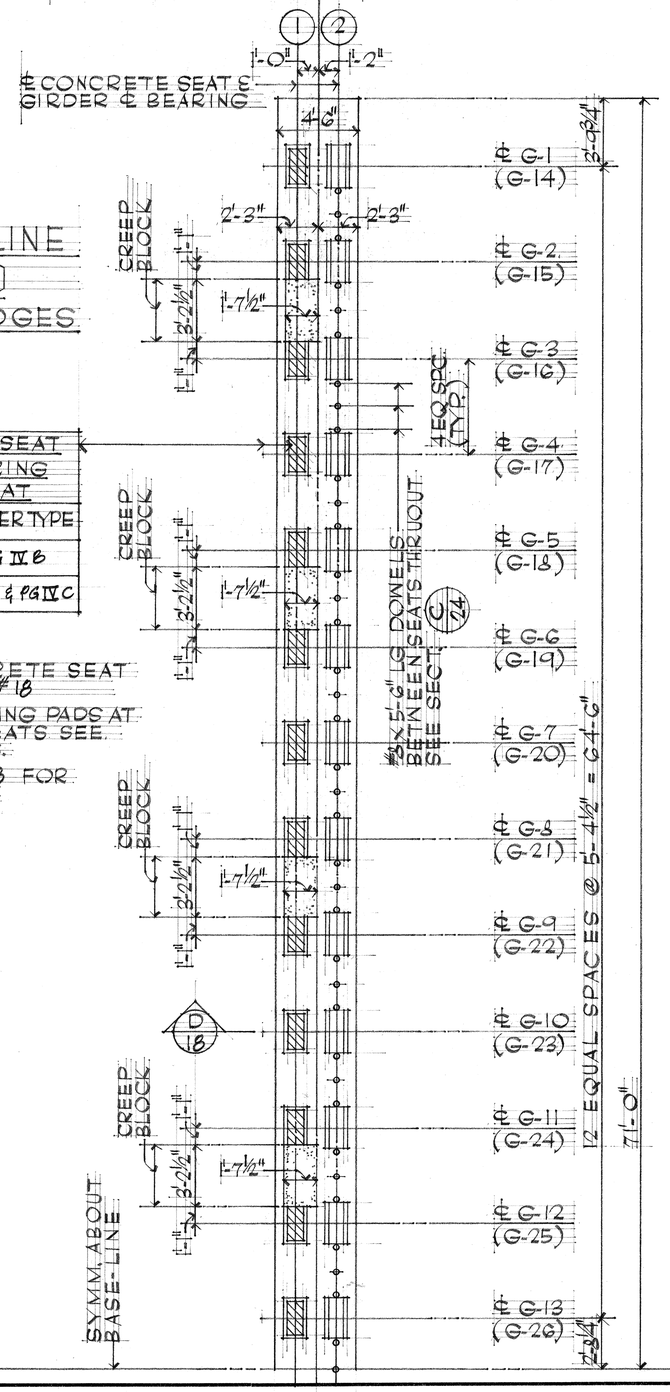


PIER LINE NO'S (3) (6) (9)

TO BARBER'S PT. AT EXPANSION END — TO HONOLULU AT HINGED END

PLAN-PIER LINE NO'S (3) (6) (9) I.B. & O.B. BRIDGES

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



TYPICAL CONCRETE SEAT ELASTOMERIC BEARING PAD SIZE EACH SEAT

WIDTH	DEPTH	LENGTH	GIRDER TYPE
9"	1" (2-½" LAM)	26"	PG IV B
10"	1" (2-½" LAM)	26"	PG IV A & PG IV C

NOTE:

FOR TYPICAL CONCRETE SEAT DETAILS SEE SHEET #18

ELASTOMERIC BEARING PADS AT GIRDER CONCRETE SEATS SEE SPECIAL PROVISIONS.

REFER TO SHEET #23 FOR GIRDER LOCATIONS.

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

PRINTED ON NO. 1000H CLEARPRINT

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

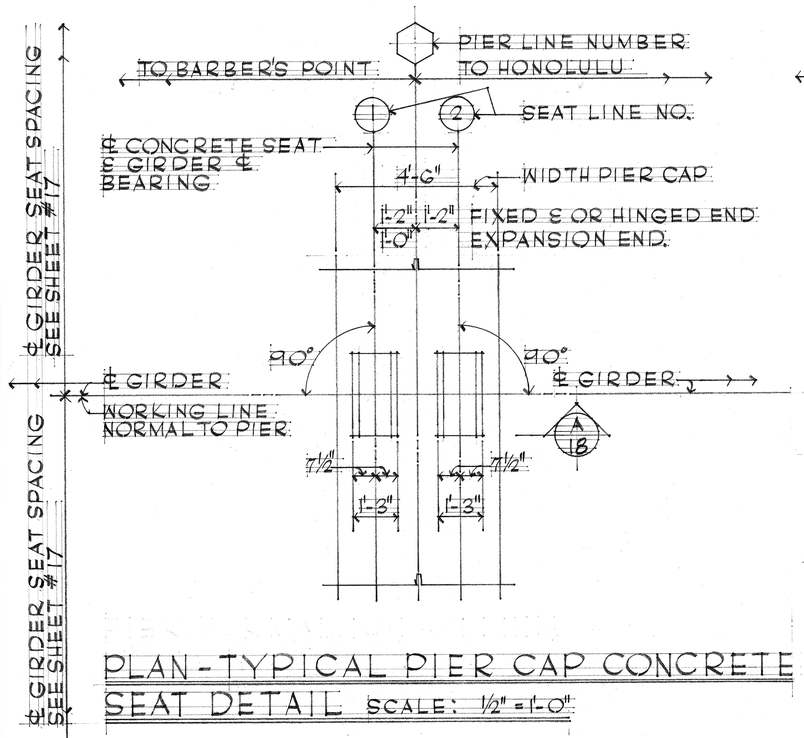
WAIMALU VIADUCT
PLAN-TOP PIER CAPS

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

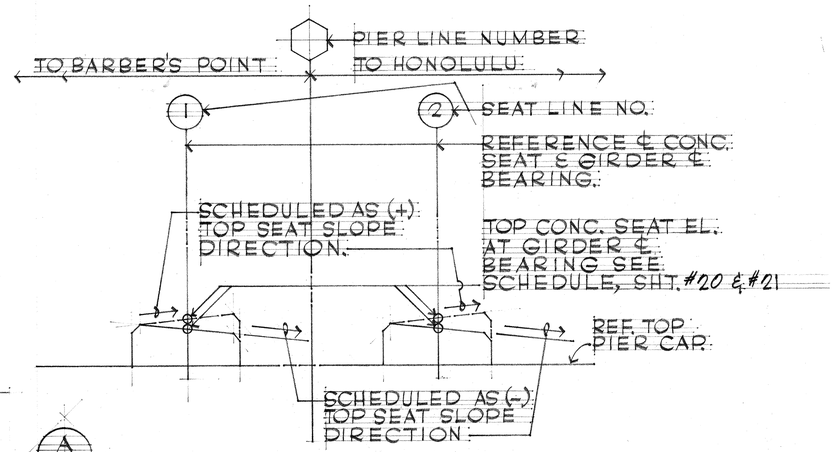
SHEET No. 17 OF 59 SHEETS

57

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(68)11 I-HI-1(16)11	1968	58	98

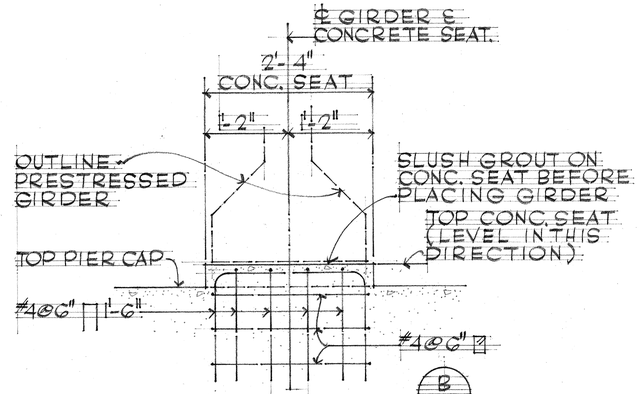


PLAN - TYPICAL PIER CAP CONCRETE SEAT DETAIL SCALE: ½" = 1'-0"



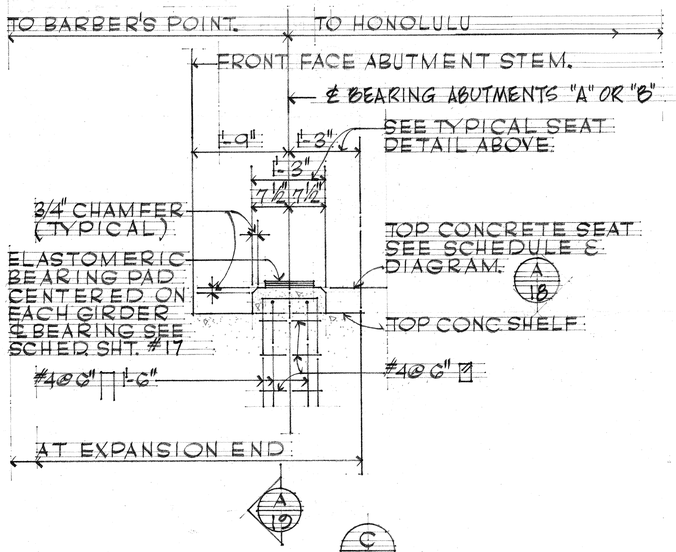
A 18 DIAGRAM - VARIOUS CONDITIONS OF TOP CONCRETE SEAT SLOPE AND DESIGNATIONS NO SCALE

NOTE: TOP SEAT SLOPE DIRECTION NORMAL TO CONCRETE SEAT.



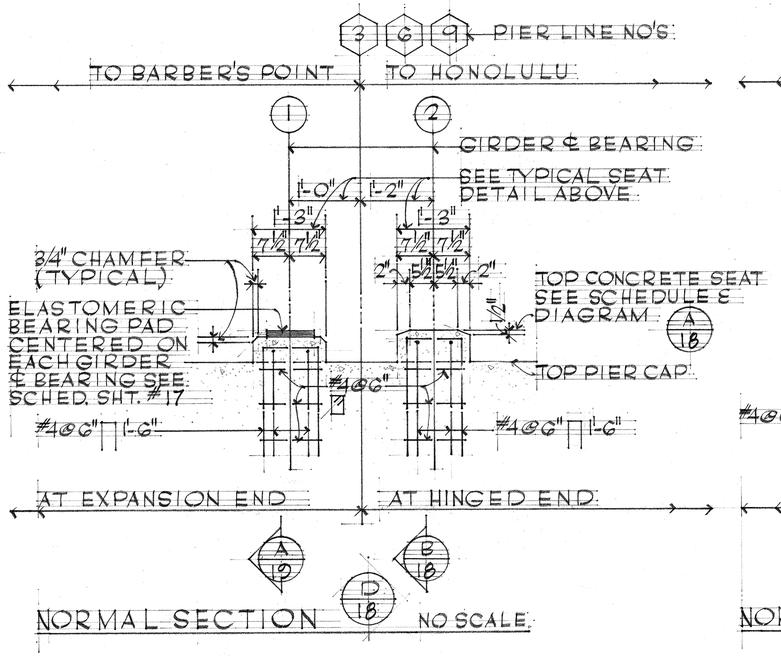
SECTION SCALE: 1" = 1'-0"

NOTE: REFER TO SHTS #20 & #21 FOR SEAT ELEVATION SCHEDULE & SLOPE.

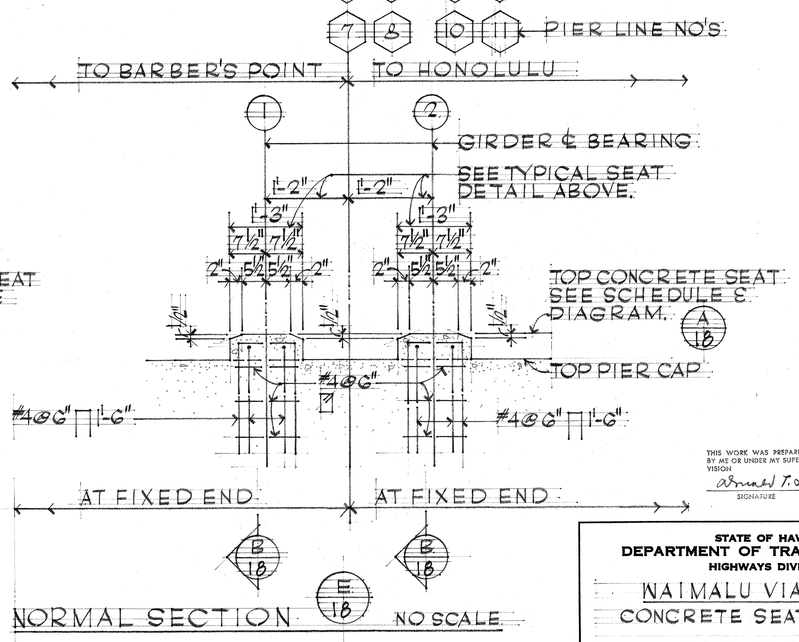


NORMAL SECTION NO SCALE

ABUTMENT "A" AS SHOWN. ABUTMENT "B" SIMILAR EXCEPT OPPOSITE HAND.



NORMAL SECTION NO SCALE



NORMAL SECTION NO SCALE

TYPICAL CONCRETE SEAT DETAILS

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Donald T. Lo
SIGNATURE

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NAIMALU VIADUCT
CONCRETE SEAT DETAILS

INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

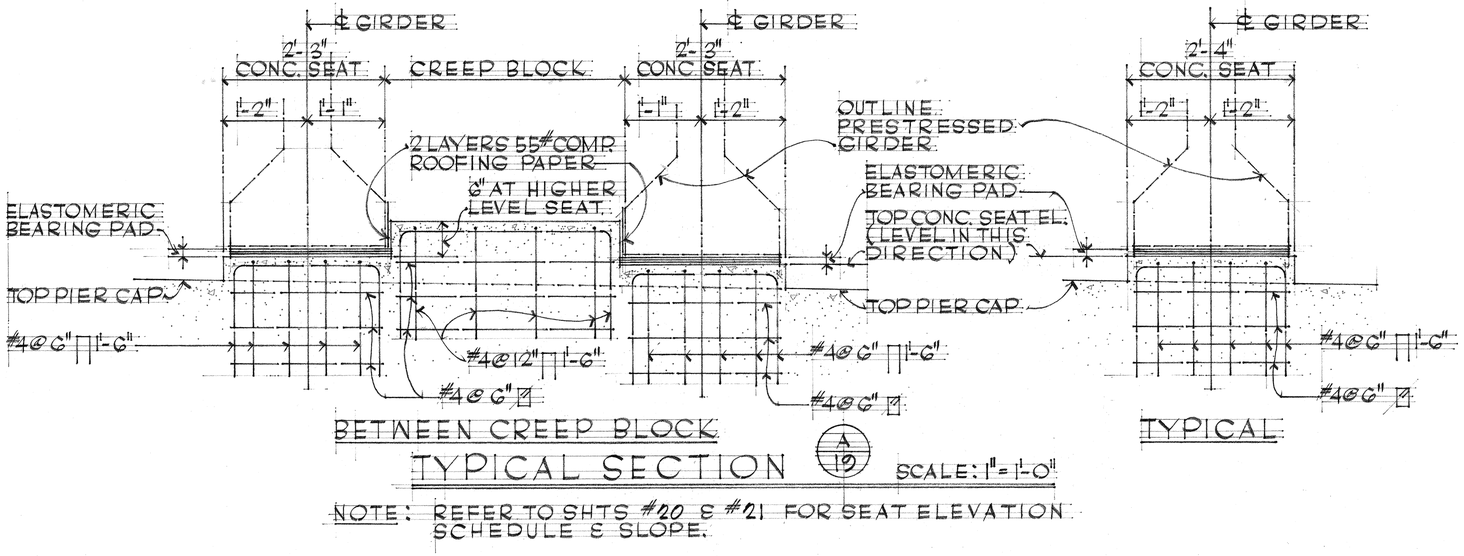
SHEET No. 18 OF ~~59~~ SHEETS

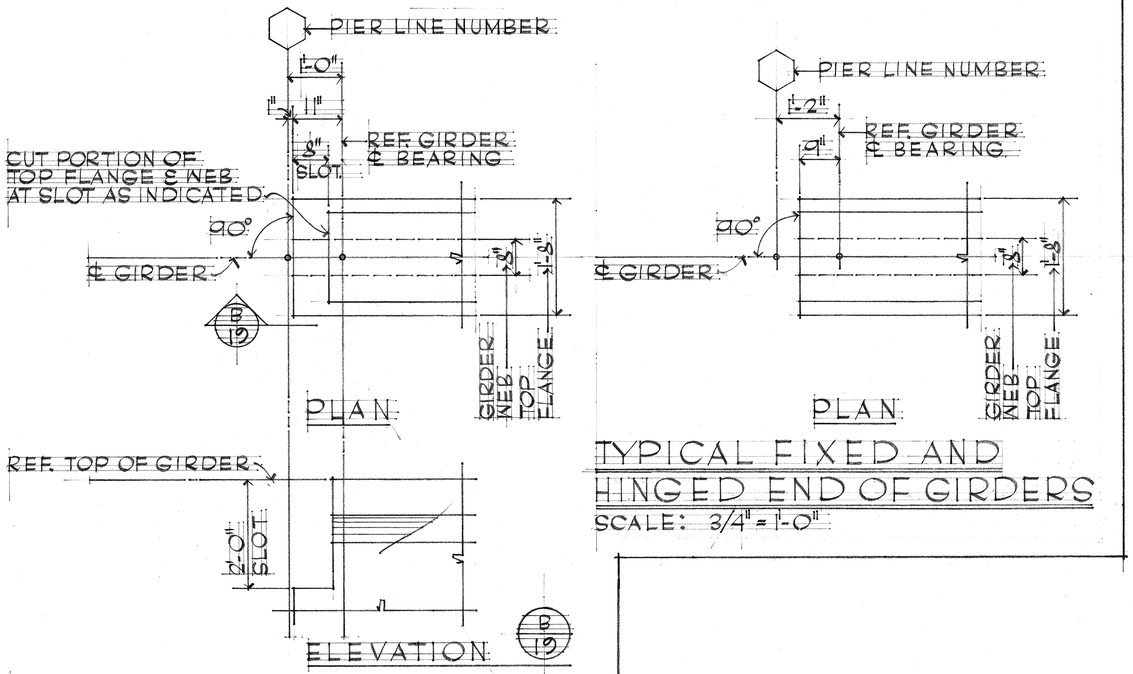
58

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

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1 (63):11 I-HI-1 (10):11	1968	59	98





TYPICAL GIRDER DETAILS

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

DONALD T. LO
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No. 427
HAWAII, U. S. A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
CONCRETE SEAT DETAILS
TYPICAL GIRDER DETAILS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE: AS NOTED

SHEET No. 19 OF 59 SHEETS

59

PRINTED ON NO. 1000H CLEARPRINT

TOP GIRDER CONCRETE SEAT ELEVATION AND SLOPE SCHEDULE
(AT GIRDER ℄ BEARING)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(16)11	1968	60	98

ABUTMENT "A"

		DIRECTION	TOP SEAT SLOPE	DIRECTION	①	②	DIRECTION	TOP SEAT SLOPE	DIRECTION	①	②	DIRECTION	TOP SEAT SLOPE	DIRECTION	①	②	DIRECTION	TOP SEAT SLOPE	DIRECTION	①	②	DIRECTION	TOP SEAT SLOPE	DIRECTION	①	②	DIRECTION	TOP SEAT SLOPE	DIRECTION	①	②	DIRECTION	TOP SEAT SLOPE	DIRECTION	①
					①					②					③					④					⑤					⑥					⑦					⑧
OUTBOUND BRIDGE	G 1	37.66	(+) 0.06%	(+)	37.82	37.80	(+)	0.89%	(+)	38.71	38.74	(+)	1.75%	(+)	40.43	40.60	(+)	2.64%	(+)	42.31	42.41	(+)	3.46%	(+)	46.96	47.19	(+)	3.83%	(+)	51.02	51.21	(+)	3.83%	(+)	55.15	55.24	(+)	3.83%	(+)	59.17
	G 2	37.74			37.90	37.88				38.79	38.82				40.51	40.68				43.39	43.49				47.04	47.27				51.10	51.29				55.23	55.32				59.25
	G 3	37.82			37.98	37.96				38.87	38.90				40.59	40.76				43.47	43.57				47.12	47.35				51.18	51.37				55.31	55.40				59.33
	G 4	37.90			38.06	38.04				38.95	38.98				40.67	40.84				43.55	43.65				47.20	47.43				51.26	51.45				55.39	55.48				59.41
	G 5	37.98			38.14	38.12				39.03	39.06				40.75	40.92				43.63	43.73				47.28	47.51				51.34	51.53				55.47	55.56				59.49
	G 6	38.07			38.23	38.21				39.12	39.15				40.84	41.01				43.72	43.82				47.37	47.60				51.43	51.62				55.56	55.65				59.58
	G 7	38.15			38.31	38.29				39.20	39.23				40.92	41.09				43.80	43.90				47.45	47.68				51.51	51.70				55.64	55.73				59.66
	G 8	38.23			38.39	38.37				39.28	39.31				41.00	41.17				43.88	43.98				47.53	47.76				51.59	51.78				55.72	55.81				59.74
	G 9	38.31			38.47	38.45				39.36	39.39				41.08	41.25				43.96	44.06				47.61	47.84				51.67	51.86				55.80	55.89				59.82
	G10	38.39			38.55	38.53				39.44	39.47				41.16	41.33				44.04	44.14				47.69	47.92				51.75	51.94				55.88	55.97				59.90
	G11	38.47			38.63	38.61				39.52	39.55				41.24	41.41				44.12	44.22				47.77	48.00				51.83	52.02				55.96	56.05				59.98
	G12	38.55			38.71	38.69				39.60	39.63				41.32	41.49				44.20	44.30				47.85	48.08				51.91	52.10				56.04	56.13				60.06
	G13	38.63	(+) 0.06%	(+)	38.79	38.77	(+)	0.89%	(+)	39.68	39.71	(+)	1.75%	(+)	41.40	41.57	(+)	2.64%	(+)	44.28	44.38	(+)	3.46%	(+)	47.93	48.16	(+)	3.83%	(+)	51.99	52.18	(+)	3.83%	(+)	56.12	56.21	(+)	3.83%	(+)	60.14
	G26	38.63	(+) 0.06%	(+)	38.79	38.77	(+)	0.89%	(+)	39.68	39.71	(+)	1.75%	(+)	41.40	41.57	(+)	2.64%	(+)	44.28	44.38	(+)	3.46%	(+)	47.93	48.16	(+)	3.83%	(+)	51.99	52.18	(+)	3.83%	(+)	56.12	56.21	(+)	3.83%	(+)	60.14
	G25	38.55			38.71	38.69				39.60	39.63				41.32	41.49				44.20	44.30				47.85	48.08				51.91	52.10				56.04	56.13				60.06
	G24	38.47			38.63	38.61				39.52	39.55				41.24	41.41				44.12	44.22				47.77	48.00				51.83	52.02				55.96	56.05				59.98
	G23	38.39			38.55	38.53				39.44	39.47				41.16	41.33				44.04	44.14				47.69	47.92				51.75	51.94				55.88	55.97				59.90
	G22	38.31			38.47	38.45				39.36	39.39				41.08	41.25				43.96	44.06				47.61	47.84				51.67	51.86				55.80	55.89				59.82
	G21	38.23			38.39	38.37				39.28	39.31				41.00	41.17				43.88	43.98				47.53	47.76				51.59	51.78				55.72	55.81				59.74
	G20	38.15			38.31	38.29				39.20	39.23				40.92	41.09				43.80	43.90				47.45	47.68				51.51	51.70				55.64	55.73				59.66
	G19	38.07			38.23	38.21				39.12	39.15				40.84	41.01				43.72	43.82				47.37	47.60				51.43	51.62				55.56	55.65				59.58
	G18	37.98			38.14	38.12				39.03	39.06				40.75	40.92				43.63	43.73				47.28	47.51				51.34	51.53				55.47	55.56				59.49
	G17	37.90			38.06	38.04				38.95	38.98				40.67	40.84				43.55	43.65				47.20	47.43				51.26	51.45				55.39	55.48				59.41
	G16	37.82			37.98	37.96				38.87	38.90				40.59	40.76				43.47	43.57				47.12	47.35				51.18	51.37				55.31	55.40				59.33
INBOUND BRIDGE	G15	37.74			37.90	37.88				38.79	38.82				40.51	40.68				43.39	43.49				47.04	47.27				51.10	51.29				55.23	55.32				59.25
	G14	37.66	(+) 0.06%	(+)	37.82	37.80	(+)	0.89%	(+)	38.71	38.74	(+)	1.75%	(+)	40.43	40.60	(+)	2.64%	(+)	43.31	43.41	(+)	3.46%	(+)	46.96	47.19	(+)	3.83%	(+)	51.02	51.21	(+)	3.83%	(+)	55.15	55.24	(+)	3.83%	(+)	59.17

NOTE: REFER TO SHT #18 FOR SEAT DETAILS & SCHEDULE DESIGNATION

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NAIMALU VIADUCT
CONCRETE SEAT ELEVATION SCHEDULE
INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1(63)11
SCALE: AS NOTED

SHEET No. 20 OF 59 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

60

TOP GIRDER CONCRETE SEAT ELEVATION & SLOPE SCHEDULE (AT GIRDER ℄ BEARING)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-I(63)11 I-HI-I(64)11	1968	61	98

		⑧ ②	DIRECTION	TOP SEAT SLOPE	DIRECTION	⑨ ①	⑨ ②	DIRECTION	TOP SEAT SLOPE	DIRECTION	⑩ ①	⑩ ②	DIRECTION	TOP SEAT SLOPE	DIRECTION	⑪ ①	⑪ ②	DIRECTION	TOP SEAT SLOPE	DIRECTION	ABUTMENT "B" ①
OUTBOUND BRIDGE	G 1	59.26	(+)	3.83%	(+)	63.09	63.28	(+)	3.83%	(+)	67.21	67.30	(+)	3.83%	(+)	71.23	71.32	(+)	3.83%	(+)	75.19
	G 2	59.34	↑	↑	↑	63.17	63.36	↑	↑	↑	67.29	67.38	↑	↑	↑	71.31	71.40	↑	↑	↑	75.27
	G 3	59.42	↑	↑	↑	63.25	63.44	↑	↑	↑	67.37	67.46	↑	↑	↑	71.39	71.48	↑	↑	↑	75.35
	G 4	59.50	↑	↑	↑	63.33	63.52	↑	↑	↑	67.45	67.54	↑	↑	↑	71.47	71.56	↑	↑	↑	75.43
	G 5	59.58	↑	↑	↑	63.41	63.60	↑	↑	↑	67.53	67.62	↑	↑	↑	71.55	71.64	↑	↑	↑	75.51
	G 6	59.67	↑	↑	↑	63.50	63.69	↑	↑	↑	67.62	67.71	↑	↑	↑	71.64	71.73	↑	↑	↑	75.60
	G 7	59.75	↑	↑	↑	63.58	63.77	↑	↑	↑	67.70	67.79	↑	↑	↑	71.72	71.81	↑	↑	↑	75.68
	G 8	59.83	↑	↑	↑	63.66	63.85	↑	↑	↑	67.78	67.87	↑	↑	↑	71.80	71.89	↑	↑	↑	75.76
	G 9	59.91	↑	↑	↑	63.74	63.93	↑	↑	↑	67.86	67.95	↑	↑	↑	71.88	71.97	↑	↑	↑	75.84
	G10	59.99	↑	↑	↑	63.82	64.01	↑	↑	↑	67.94	68.03	↑	↑	↑	71.96	72.05	↑	↑	↑	75.92
	G11	60.07	↑	↑	↑	63.90	64.09	↑	↑	↑	68.02	68.11	↑	↑	↑	72.04	72.13	↑	↑	↑	76.00
	G12	60.15	↑	↑	↑	63.98	64.17	↑	↑	↑	68.10	68.19	↑	↑	↑	72.12	72.21	↑	↑	↑	76.08
	G13	60.23	(+)	3.83%	(+)	64.06	64.25	(+)	3.83%	(+)	68.18	68.27	(+)	3.83%	(+)	72.20	72.29	(+)	3.83%	(+)	76.16
INBOUND BRIDGE	G26	60.23	(+)	3.83%	(+)	64.06	64.25	(+)	3.83%	(+)	68.18	68.27	(+)	3.83%	(+)	72.20	72.29	(+)	3.83%	(+)	76.16
	G25	60.15	↑	↑	↑	63.98	64.17	↑	↑	↑	68.10	68.19	↑	↑	↑	72.12	72.21	↑	↑	↑	76.08
	G24	60.07	↑	↑	↑	63.90	64.09	↑	↑	↑	68.02	68.11	↑	↑	↑	72.04	72.13	↑	↑	↑	76.00
	G23	59.99	↑	↑	↑	63.82	64.01	↑	↑	↑	67.94	68.03	↑	↑	↑	71.96	72.05	↑	↑	↑	75.92
	G22	59.91	↑	↑	↑	63.74	63.93	↑	↑	↑	67.86	67.95	↑	↑	↑	71.88	71.97	↑	↑	↑	75.84
	G21	59.83	↑	↑	↑	63.66	63.85	↑	↑	↑	67.78	67.87	↑	↑	↑	71.80	71.89	↑	↑	↑	75.76
	G20	59.75	↑	↑	↑	63.58	63.77	↑	↑	↑	67.70	67.79	↑	↑	↑	71.72	71.81	↑	↑	↑	75.68
	G19	59.67	↑	↑	↑	63.50	63.69	↑	↑	↑	67.62	67.71	↑	↑	↑	71.64	71.73	↑	↑	↑	75.60
	G18	59.58	↑	↑	↑	63.41	63.60	↑	↑	↑	67.53	67.62	↑	↑	↑	71.55	71.64	↑	↑	↑	75.51
	G17	59.50	↑	↑	↑	63.33	63.52	↑	↑	↑	67.45	67.54	↑	↑	↑	71.47	71.56	↑	↑	↑	75.43
	G16	59.42	↑	↑	↑	63.25	63.44	↑	↑	↑	67.37	67.46	↑	↑	↑	71.39	71.48	↑	↑	↑	75.35
	G15	59.34	↓	↓	↓	63.17	63.36	↓	↓	↓	67.29	67.38	↓	↓	↓	71.31	71.40	↓	↓	↓	75.27
	G14	59.26	(+)	3.83%	(+)	63.09	63.28	(+)	3.83%	(+)	67.21	67.30	(+)	3.83%	(+)	71.23	71.32	(+)	3.83%	(+)	75.19

NOTE:
REFER TO SHT #18 FOR SEAT DETAILS & SCHEDULE DESIGNATION

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
CONCRETE SEAT ELEVATION SCHEDULE
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63)11
SCALE: AS NOTED

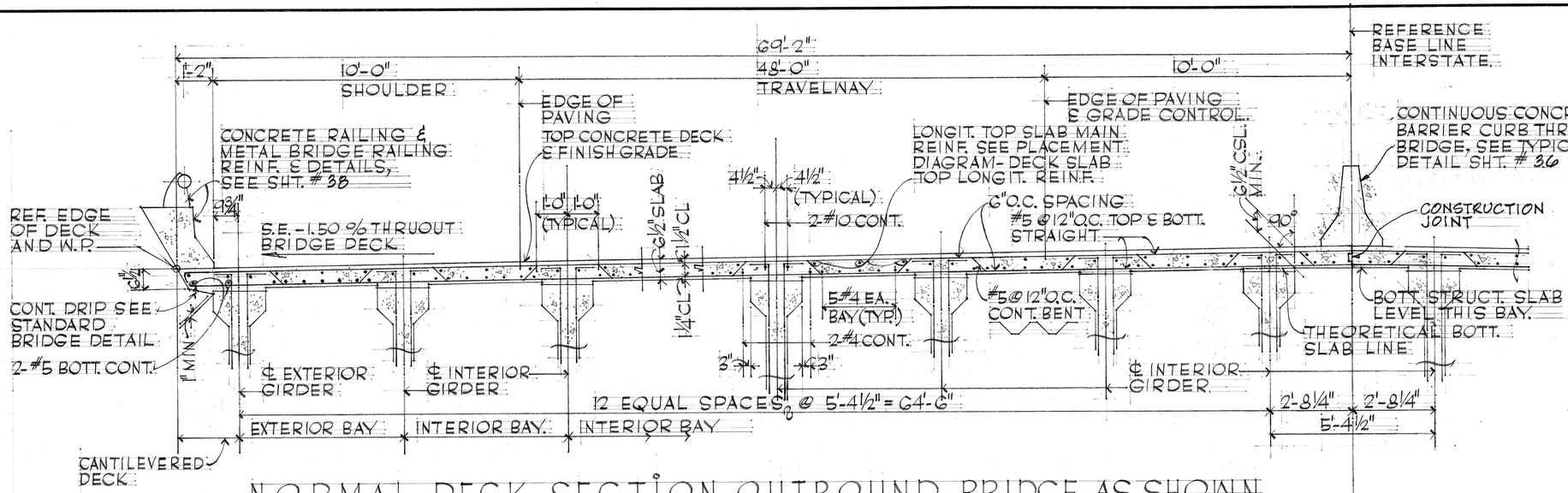
SHEET No. 21 OF 59 SHEETS

61

PRINTED ON NO. 1000H CLEARPRINT

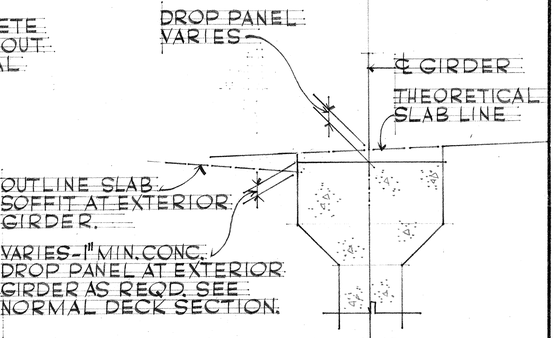
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(16):11	1968	C2	98

Rev. Jan. 20, 1969



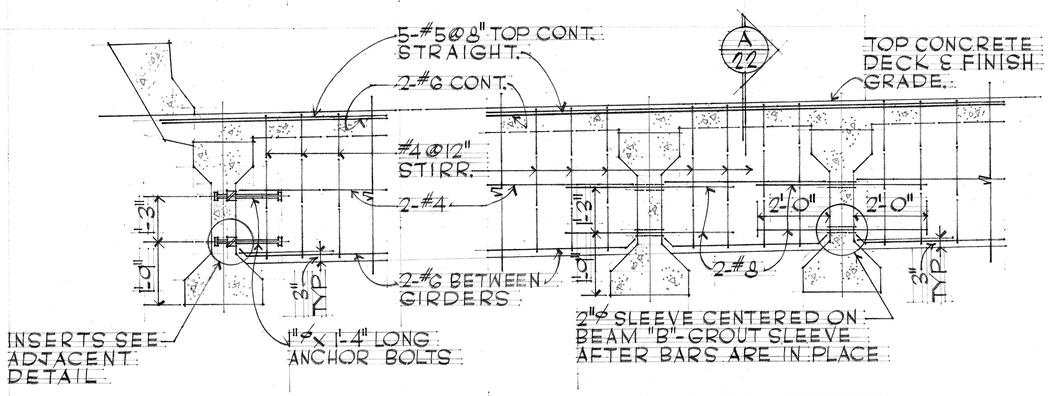
NORMAL DECK SECTION-OUTBOUND BRIDGE AS SHOWN

INBOUND BRIDGE SIMILAR EXCEPT OPPOSITE HAND SCALE: 1/2" = 1'-0"



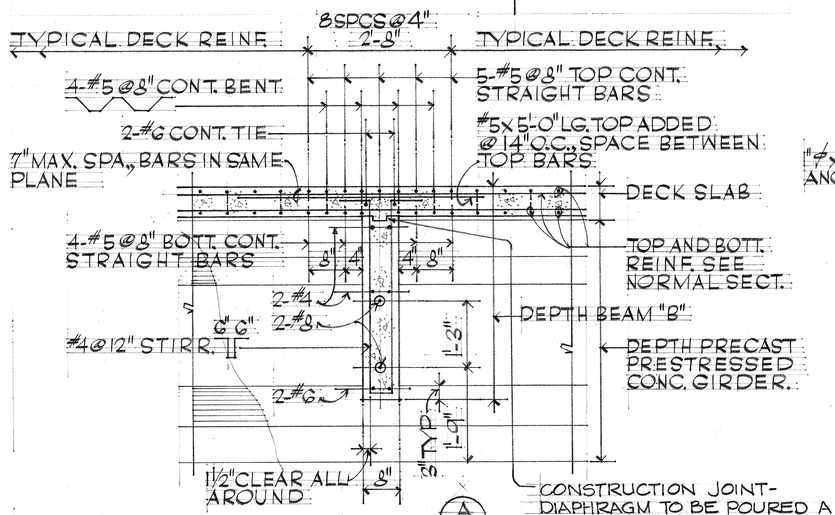
PRESTRESSED GIRDER DROP PANEL DETAIL

(NOT TO SCALE)



TYPICAL BEAM "B" DETAILS

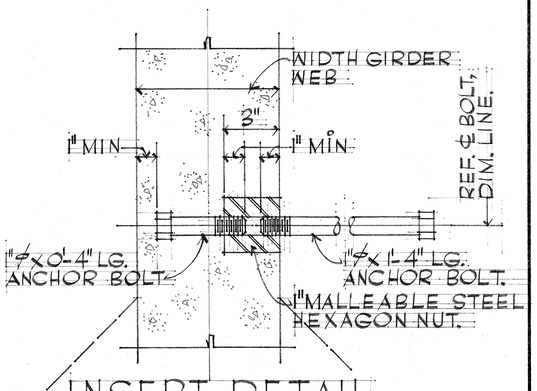
SCALE: 1/2" = 1'-0"



TYPICAL SECTION

A 22

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



INSERT DETAIL

SCALE: 3" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	TRACED BY	
NOTE BOOK	DESIGNED BY	
No.	QUANTITIES BY	
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Donald T. Lo
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT

NORMAL DECK SECTION & DETAILS

STA. 111+06.56 TO STA. 123+36.56

INTERSTATE ROUTE H-1

F.A.I. PROJ. NO. I-HI-1(63):11

SCALE AS NOTED.

SHEET No. 22 OF 59 SHEETS

62

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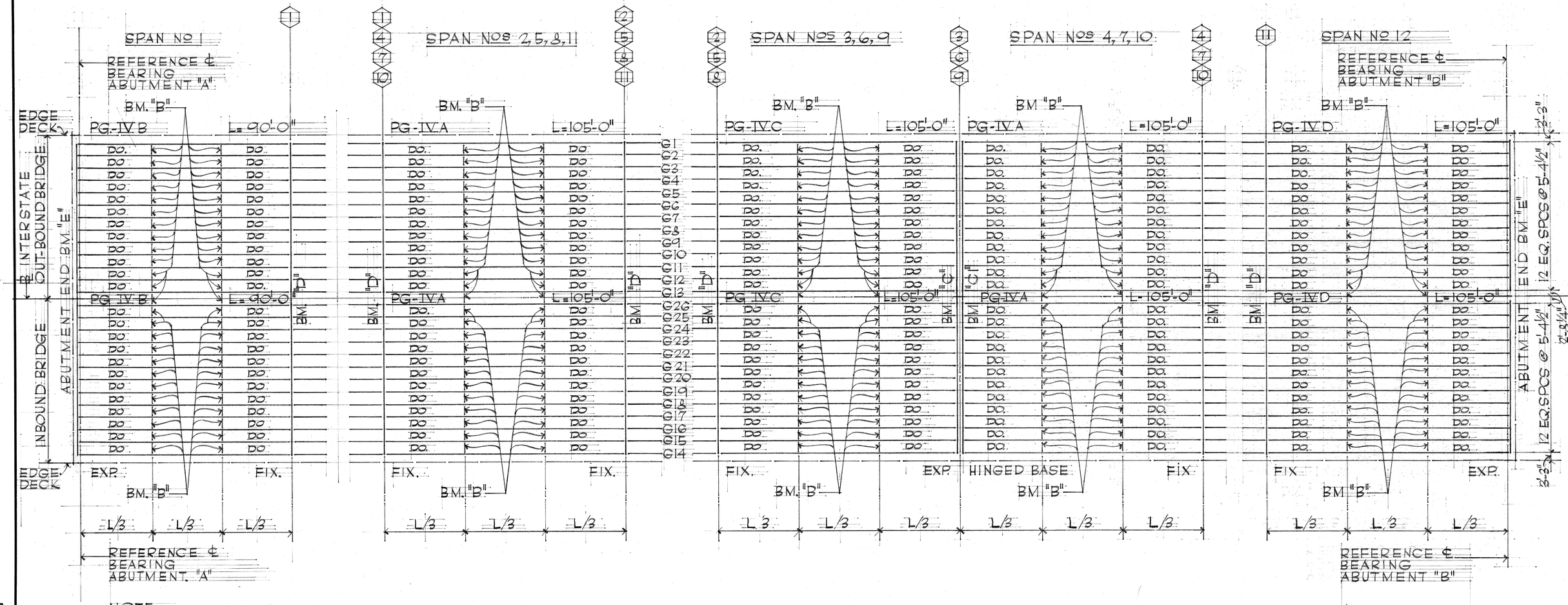
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(68)11	1968	C3	98



NOTE:

1. DIMENSION "L" EQUALS HORIZONTAL MEASUREMENT BETWEEN PIER ℄.
THE CONTRACTOR SHALL DETERMINE TOTAL LENGTH OF GIRDER.

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

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HAWAII, U. S. A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
DECK FRAMING PLAN
STA. 111+06.56 TO STA. 123+36.56
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE 1" = 20'-0"

SHEET No. 23 OF ~~59~~ SHEETS

(63)

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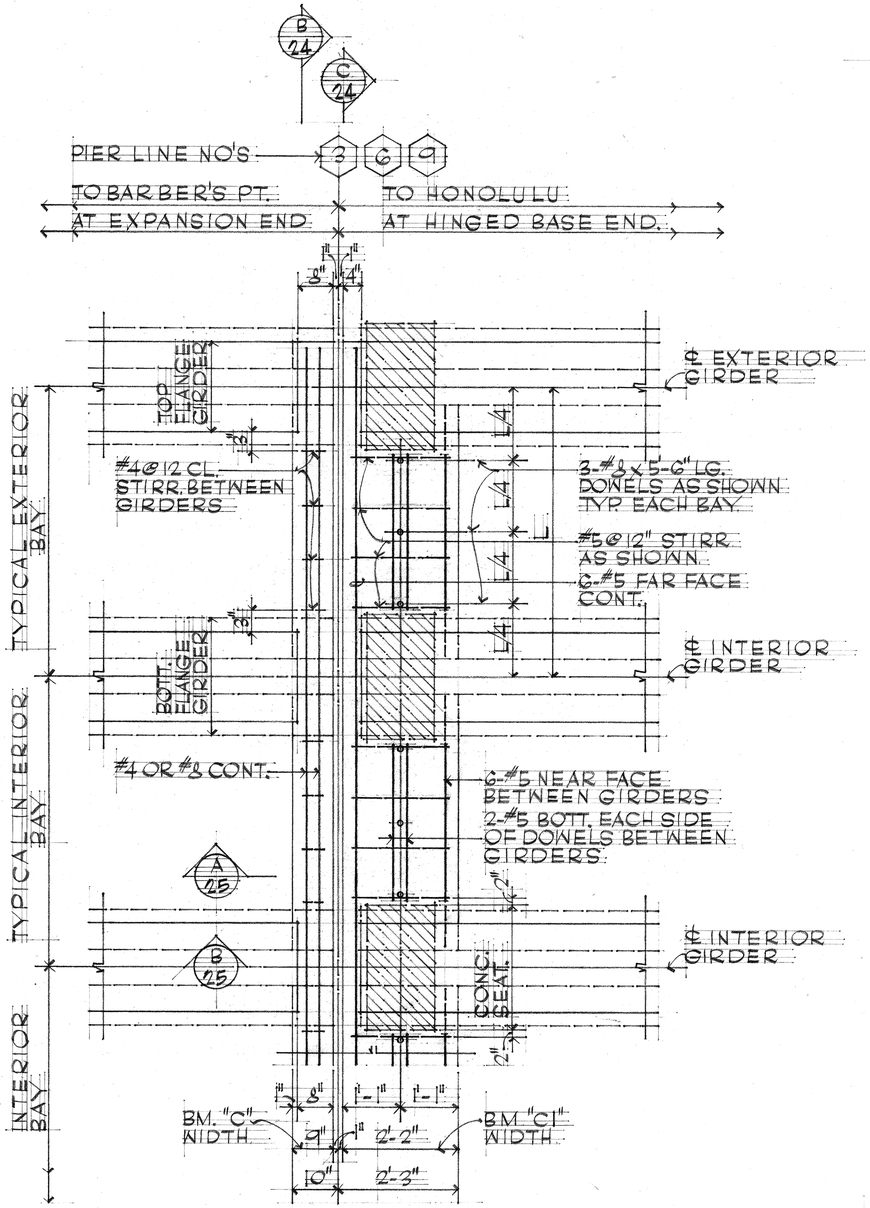
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(76):11	1968	24	98

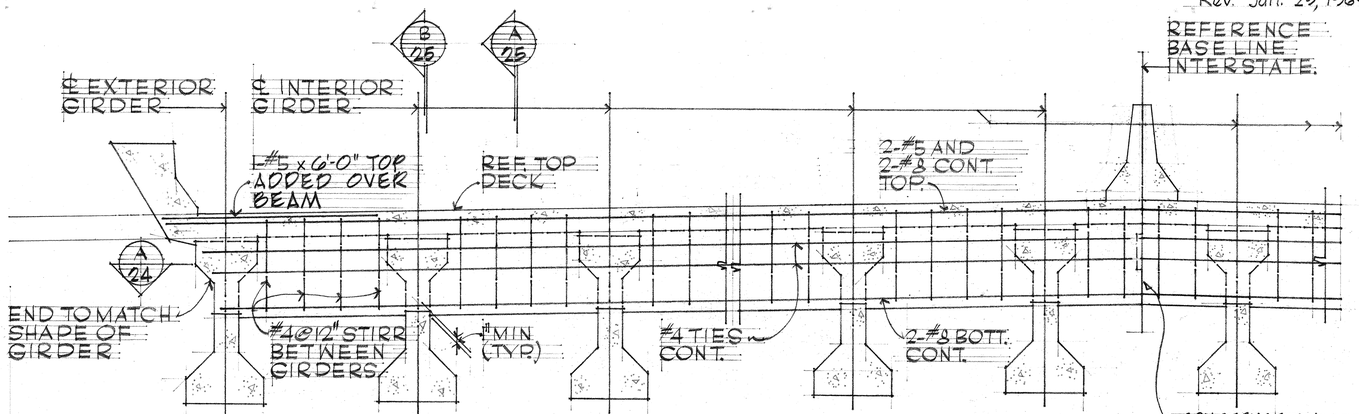
Rev. Jan. 20, 1969



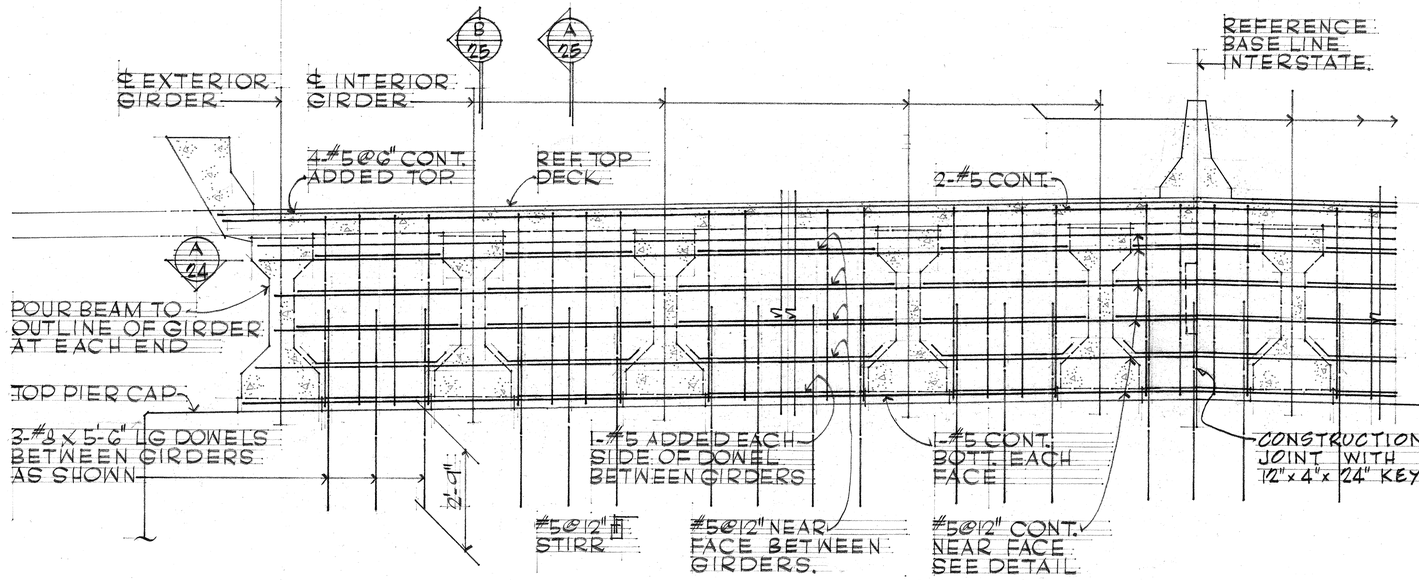
AT PIER LINES 3 6 9

TYPICAL SECTION

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



B/24 ELEVATION - TYPICAL BEAM "C" SCALE: 1/2" = 1'-0"



C/24 ELEVATION - TYPICAL TRANSVERSE BEAM "C1"

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

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

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No. 427
HAWAII, U.S.A.

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Donald T. Lo
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
BEAM "C", "C1" SECT'S & DET'S.
STA.

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

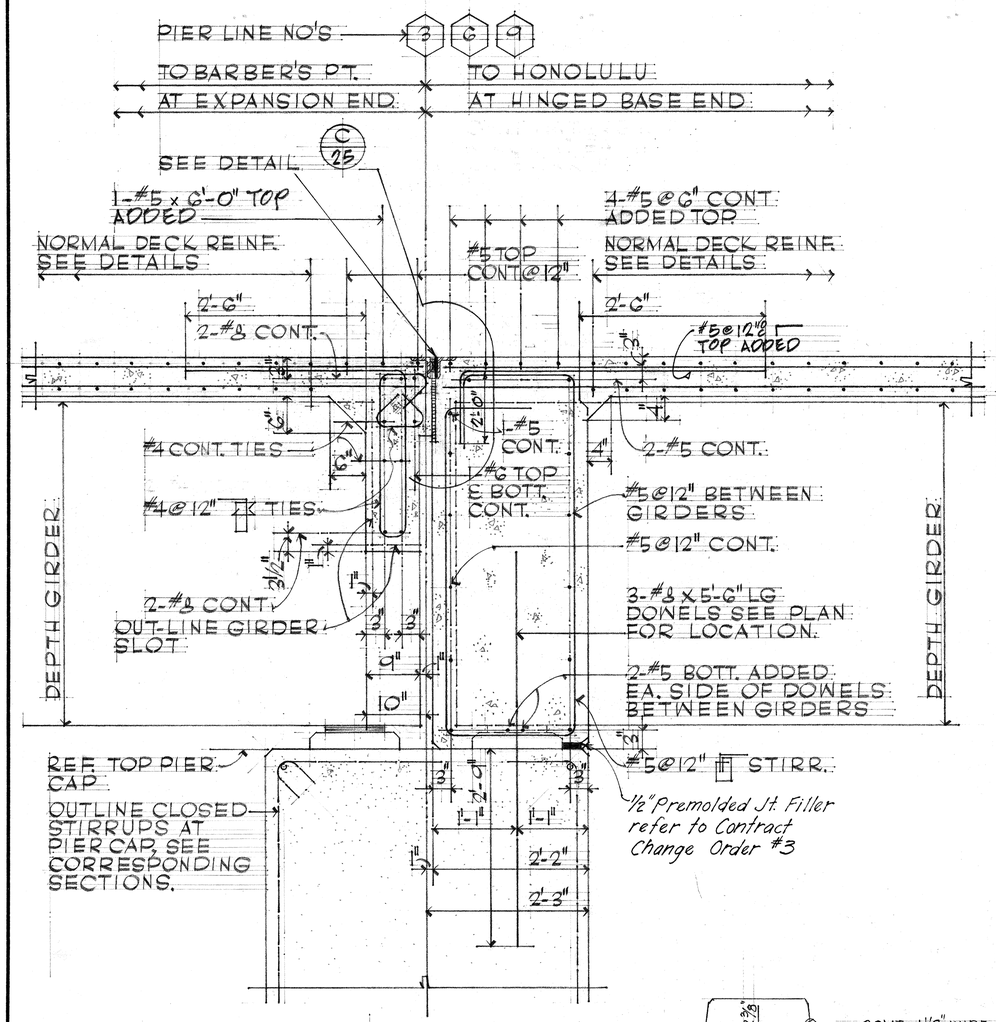
SHEET No. 24 OF ~~59~~ SHEETS

PRINTED ON NO. 1000H CLEARPRINT

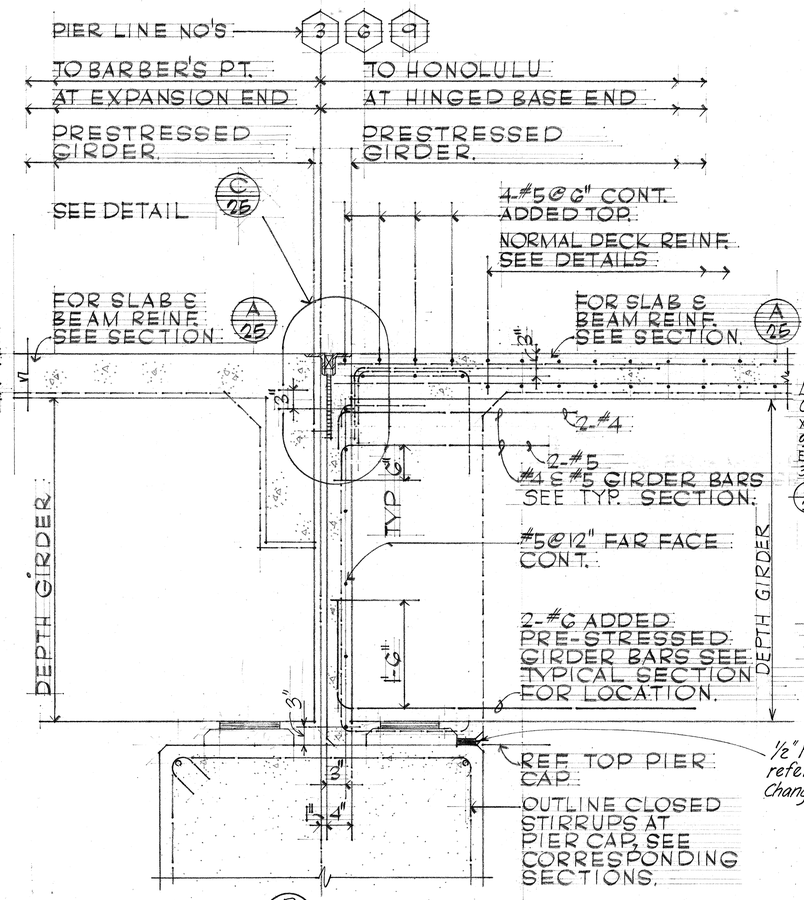
64

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(10)11	1968	65	98

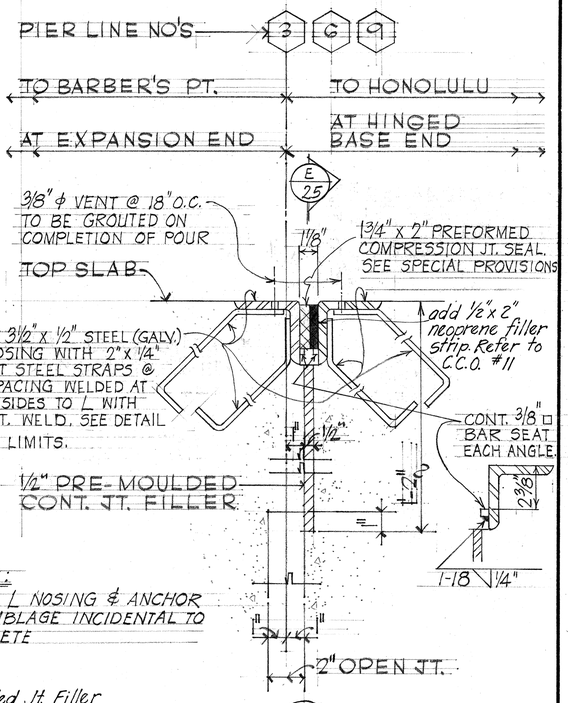
Rev. 1/29/69



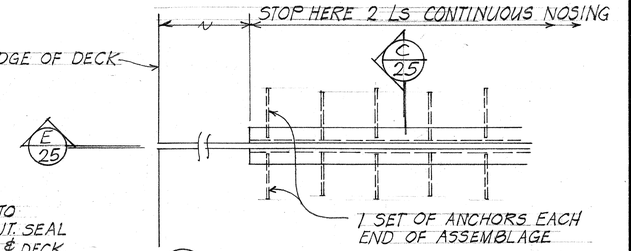
SECTION A/25 SCALE: 1" = 1'-0"
BETWEEN GIRDERS



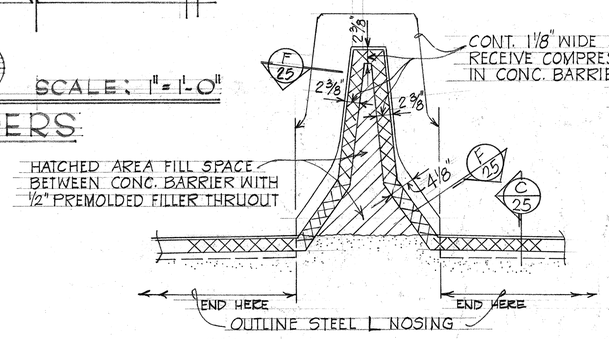
SECTION B/25 SCALE: 1" = 1'-0"
AT GIRDERS



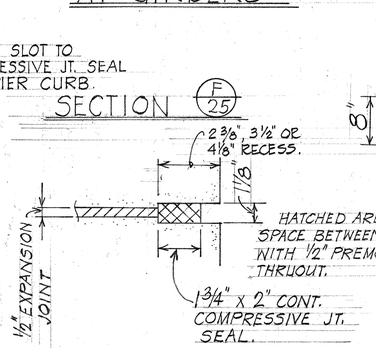
DETAIL C/25 SCALE: 3" = 1'-0"

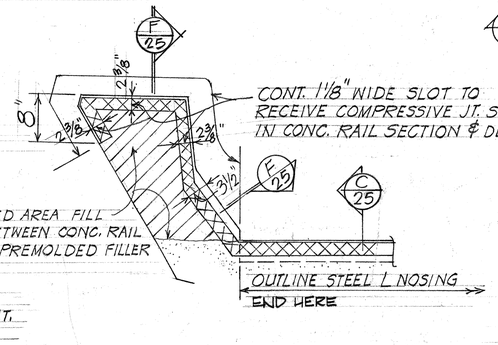


D/25 PART PLAN LIMITS OF PROTECTIVE L NOSING



AT CONCRETE BARRIER CURB





AT CONCRETE RAILING

TYPICAL ELEVATION E/25 SCALE: 1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
BEAM "C", "C1" SECT'S & DET'S.
STA.

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

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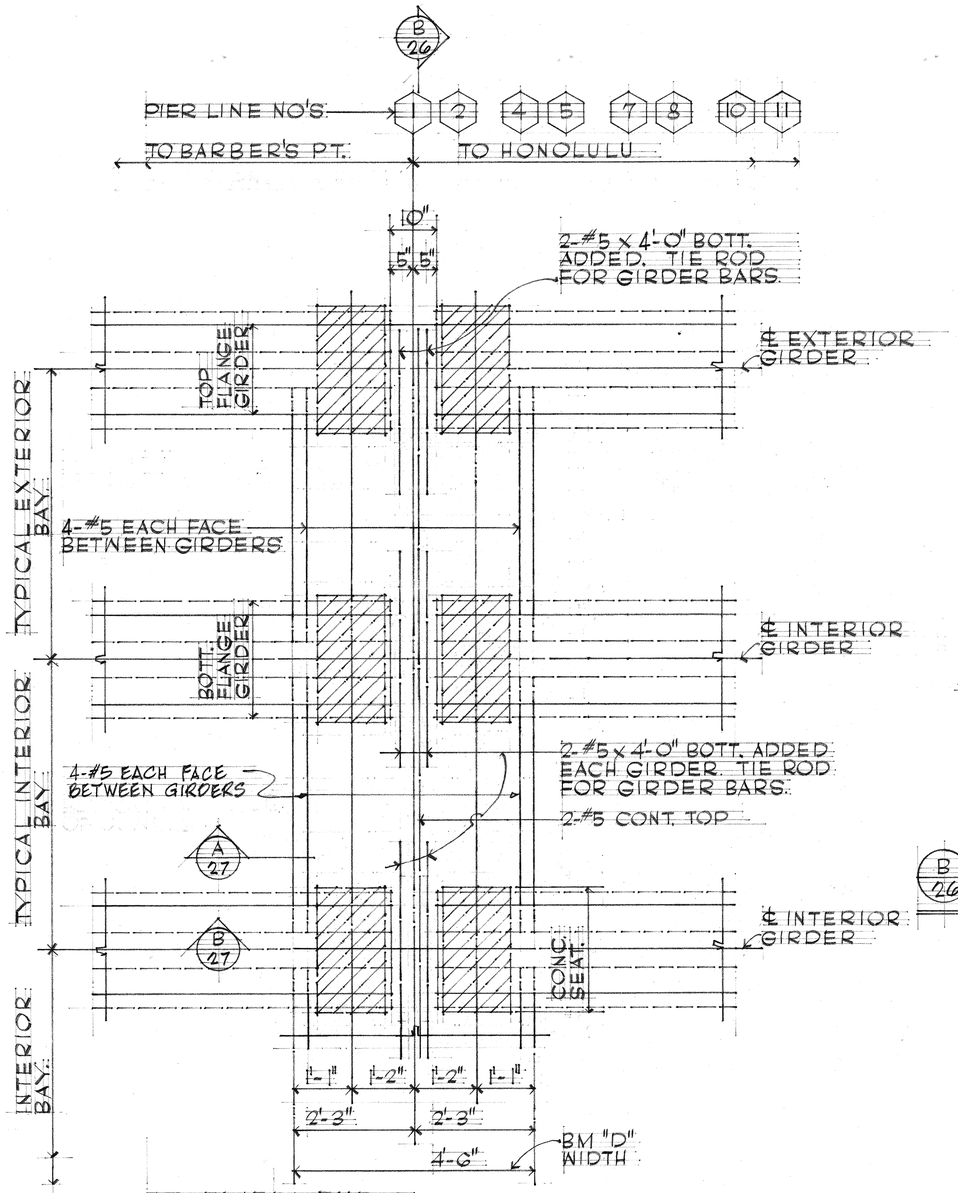
SHEET No. 25 OF 59 SHEETS

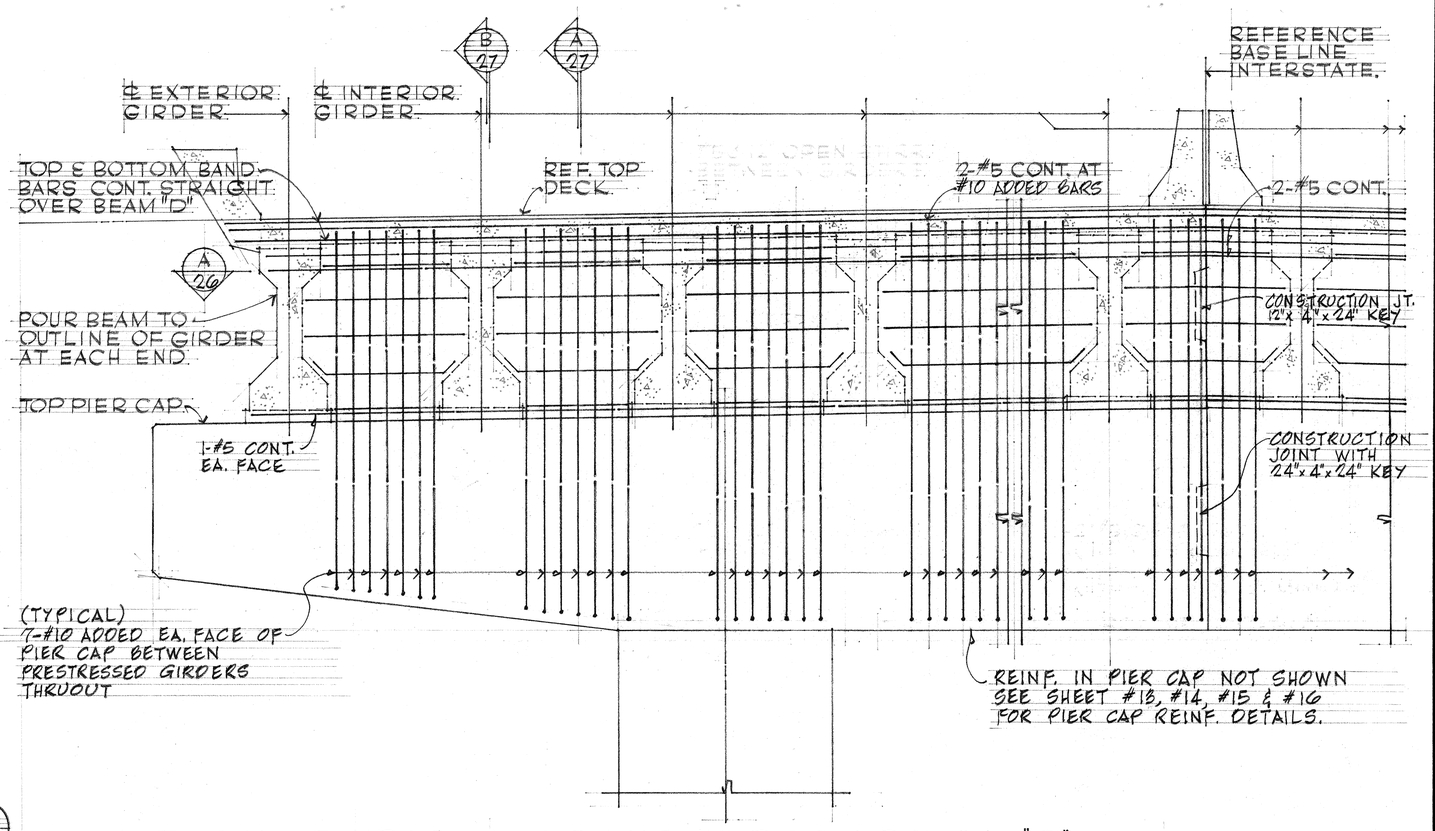
65

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(103)11	1968	66	98



TYPICAL SECTION

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



B 26 ELEVATION - TYPICAL TRANSVERSE BEAM "D" SCALE: 1/2" = 1'-0"

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
BEAM "D", SECT'S & DET'S.
STA.

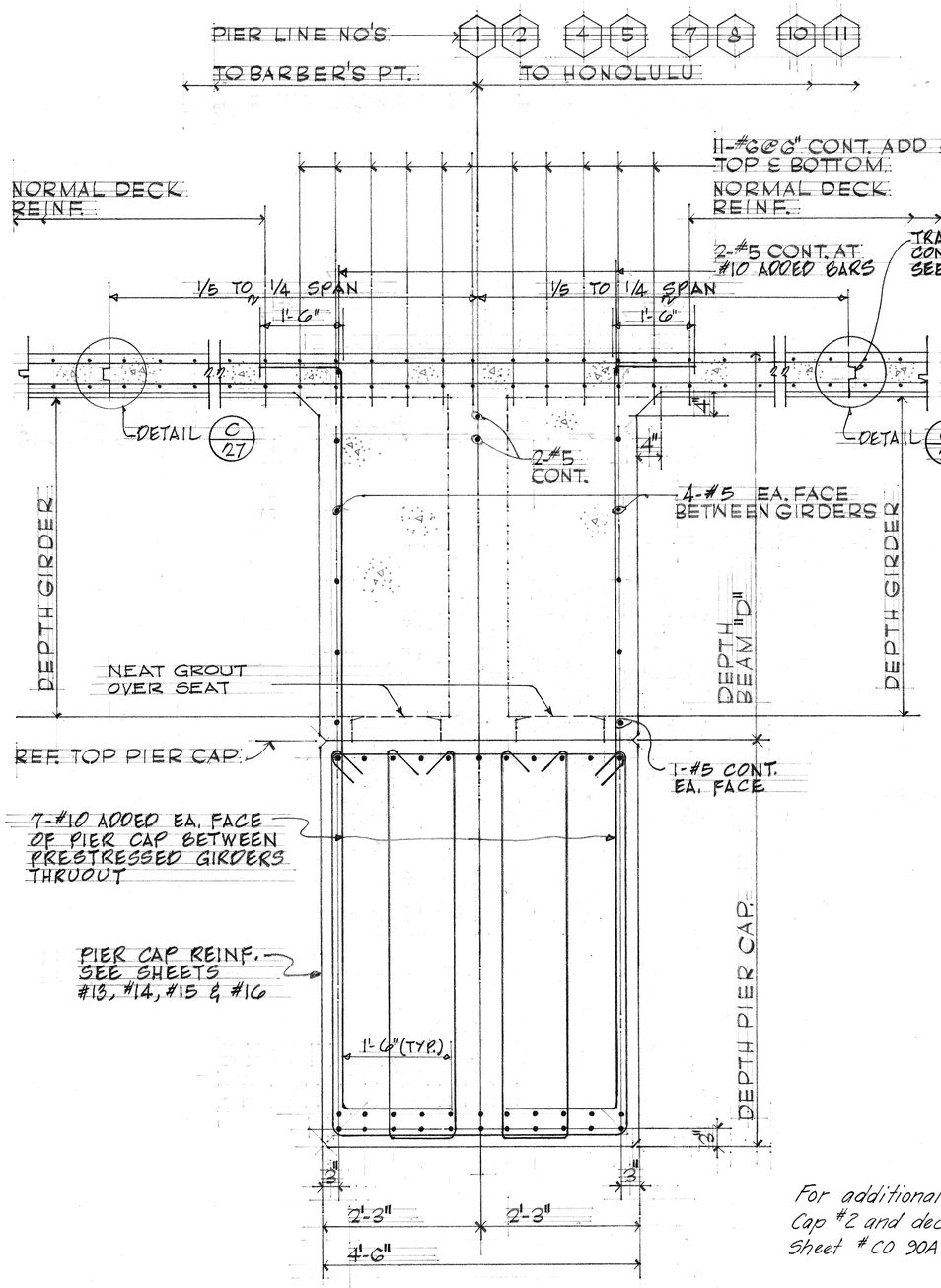
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE: AS NOTED

SHEET No. 26 OF 59 SHEETS

66

PRINTED ON NO. 1000H CLEARPRINT

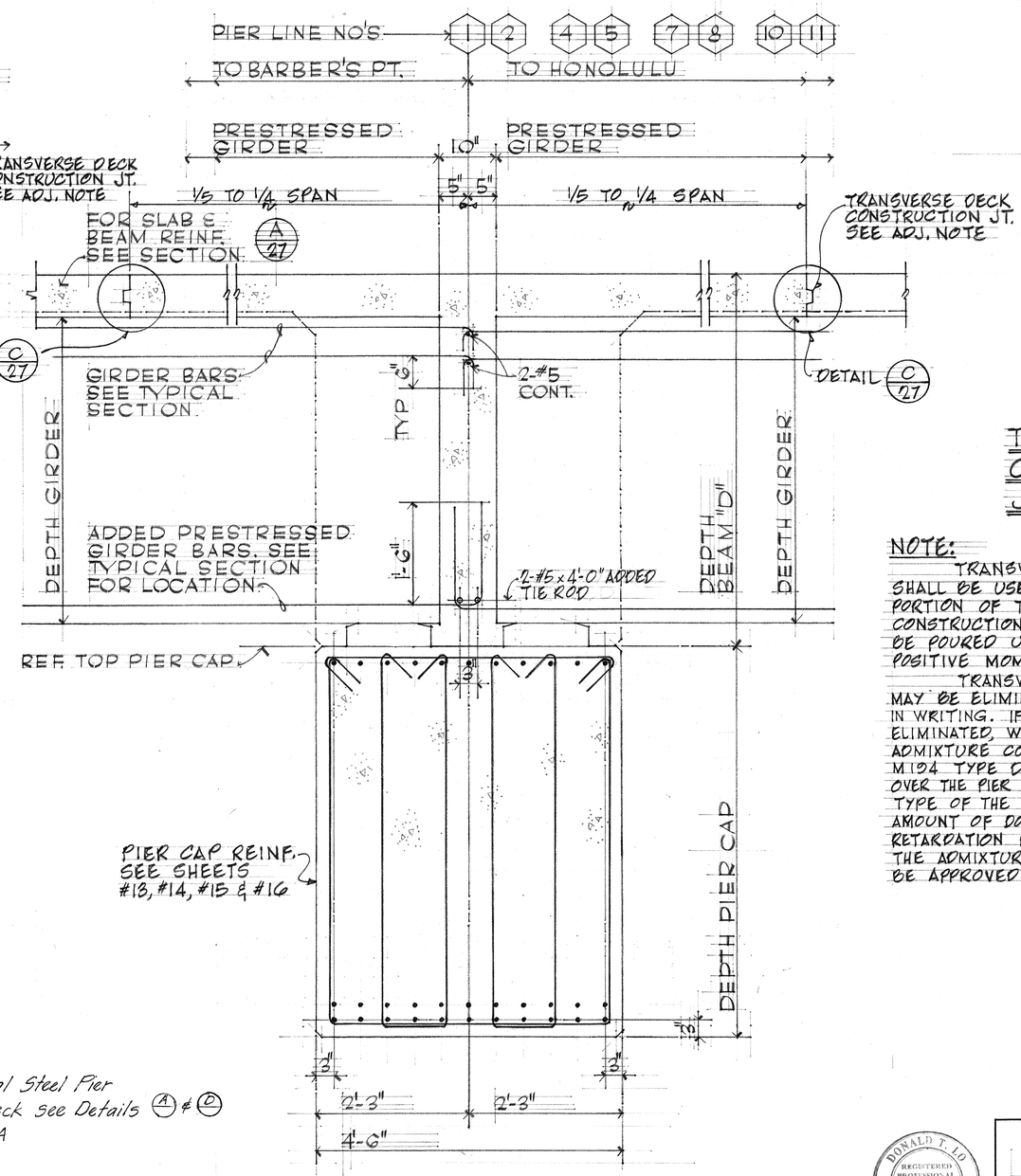
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(16)11	1968	27	59



AT FIXED END

SECTION A 27 SCALE: 1"= 1'-0"

BETWEEN GIRDERS

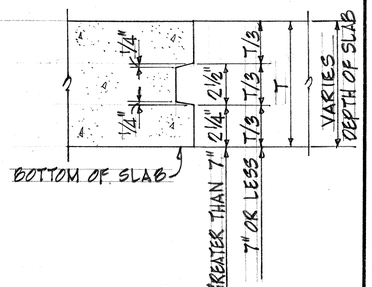


AT FIXED END

SECTION B 27 SCALE: 1"= 1'-0"

AT GIRDERS

For additional Steel Pier Cap #2 and deck see Details A & D Sheet # CO 30A



TYPICAL SLAB CONSTRUCTION JOINT DETAILS C 27

NOTE:

TRANSVERSE DECK CONSTRUCTION JOINT SHALL BE USED AT THESE LOCATIONS. THE PORTION OF THE POUR INDICATED BETWEEN CONSTRUCTION JOINTS OVER THE PIER SHALL NOT BE POURED UNTIL THE POURS FOR THE ADJACENT POSITIVE MOMENT AREAS HAVE BEEN COMPLETED.

TRANSVERSE DECK CONSTRUCTION JOINTS MAY BE ELIMINATED IF PERMITTED BY THE ENGINEER IN WRITING. IF THE CONSTRUCTION JOINTS ARE ELIMINATED, WATER REDUCING AND RETARDING ADMIXTURE CONFORMING TO AASHO DESIGNATION: M194 TYPE D, SHALL BE ADDED TO THE DECK CONCRETE OVER THE PIER WITHIN THE INDICATED JOINTS. THE TYPE OF THE ADMIXTURE SHALL BE SUCH THAT THE AMOUNT OF DOSAGE USED WILL PRODUCE THE RETARDATION REQUIRED. THE TYPE AND DOSAGE OF THE ADMIXTURE, AND THE METHOD OF POUR SHALL BE APPROVED BY THE ENGINEER.

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

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Donald T. Lo
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NAIMALU VIADUCT
BEAM "D", SECT'S & DET'S
STA. ____
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63)11
SCALE: AS NOTED

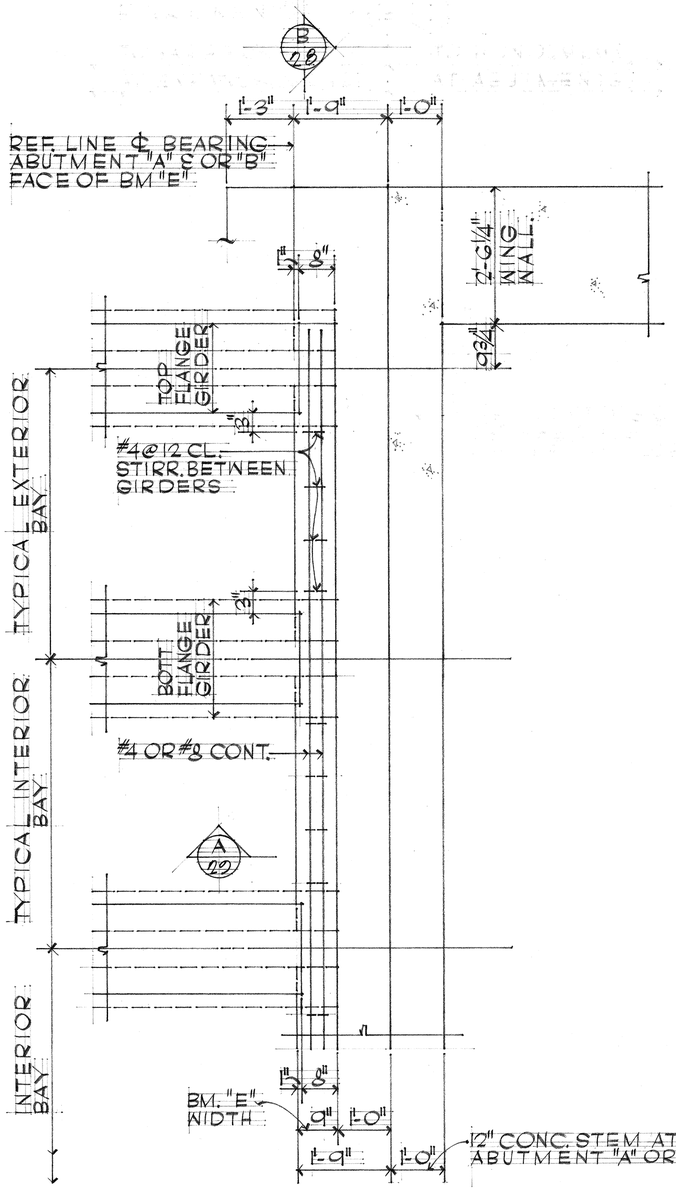
SHEET No. 27 OF 59 SHEETS

27

PRINTED ON NO. 1000H CLEARPRINT

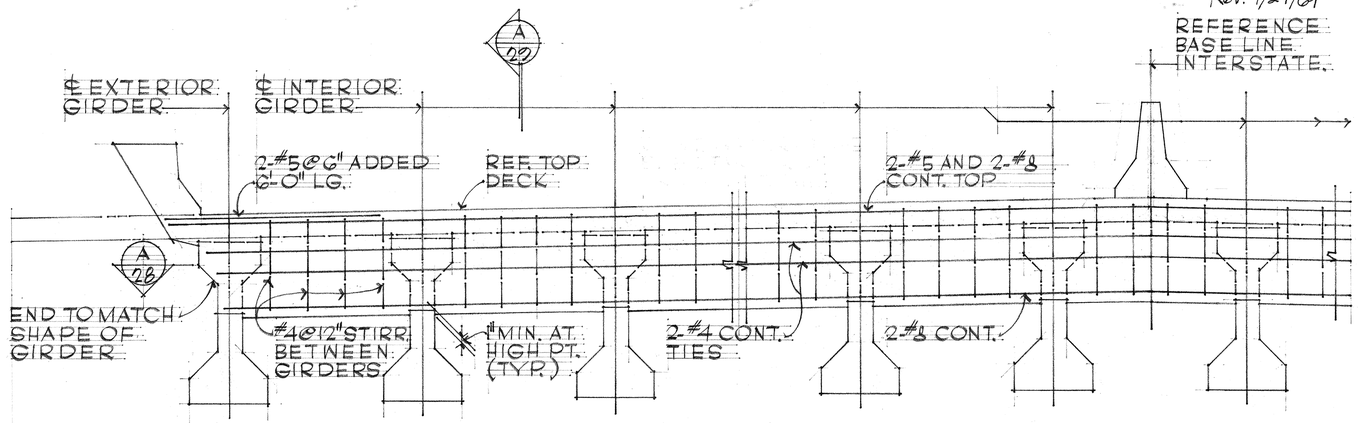
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(76)11	1968	28	98

Rev. 1/29/69



TYPICAL SECTION A 28

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



B 28 ELEVATION - TYPICAL BEAM "E"

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

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII U. S. A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NAIMALU VIADUCT
BEAM "E" SECT'S & DET.'S

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63)11
SCALE: AS NOTED

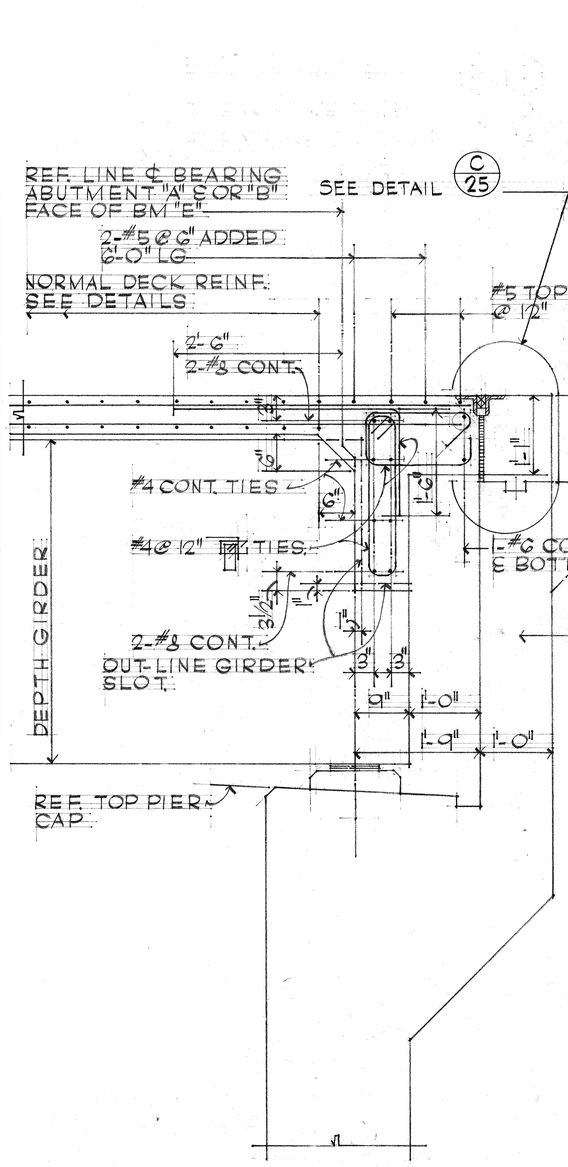
SHEET No. 28 OF 59 SHEETS

GS

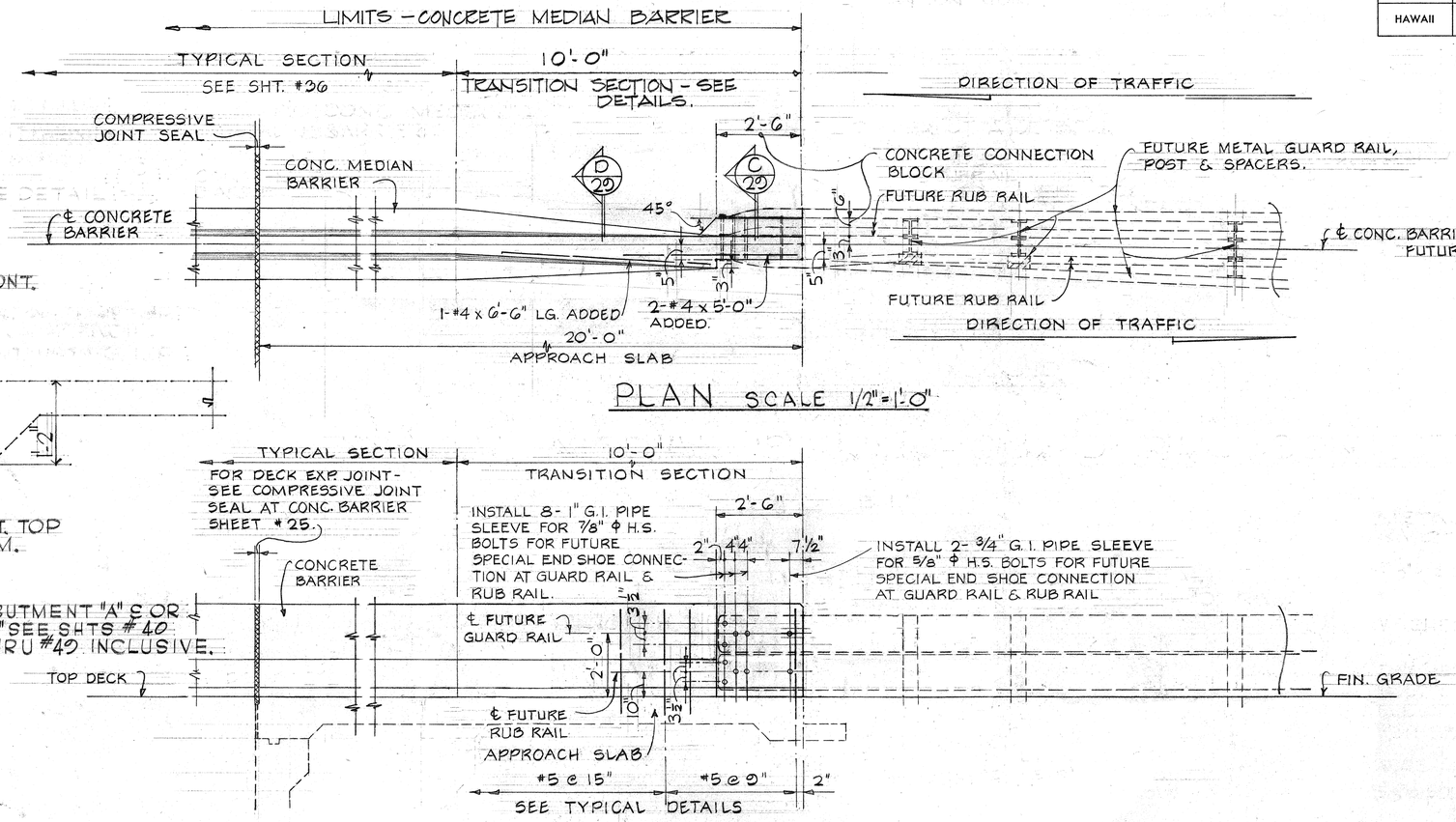
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(16):11	1968	20	98

Rev. 1/29/69



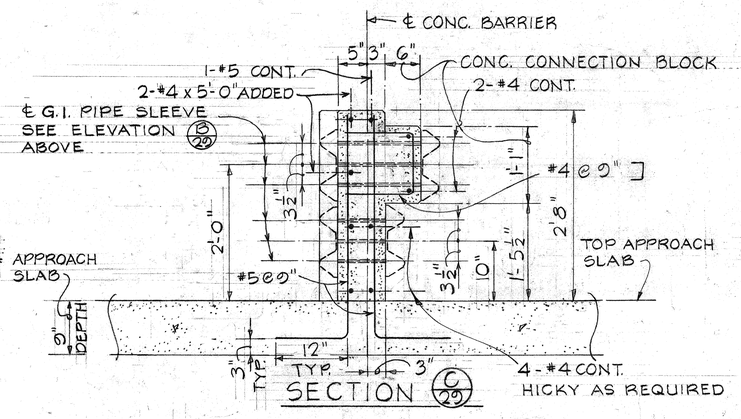
SECTION (A/29) SCALE: 1" = 1'-0"
BETWEEN GIRDERS



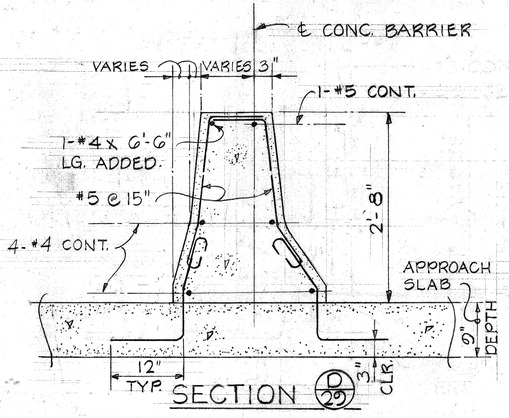
PLAN SCALE 1/2" = 1'-0"

(B/29) ELEVATION SCALE 1/2" = 1'-0"

END CONNECTION DETAIL - METAL GUARDRAIL AT MEDIAN BARRIER



SECTION (C/29)



SECTION (D/29)

TYPICAL DETAILS THRU CONCRETE BARRIER SCALE: 1" = 1'-0"

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
BEAM "E" SECT'S & DET'S

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE: AS NOTED

SHEET No. 20 OF 59 SHEETS

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

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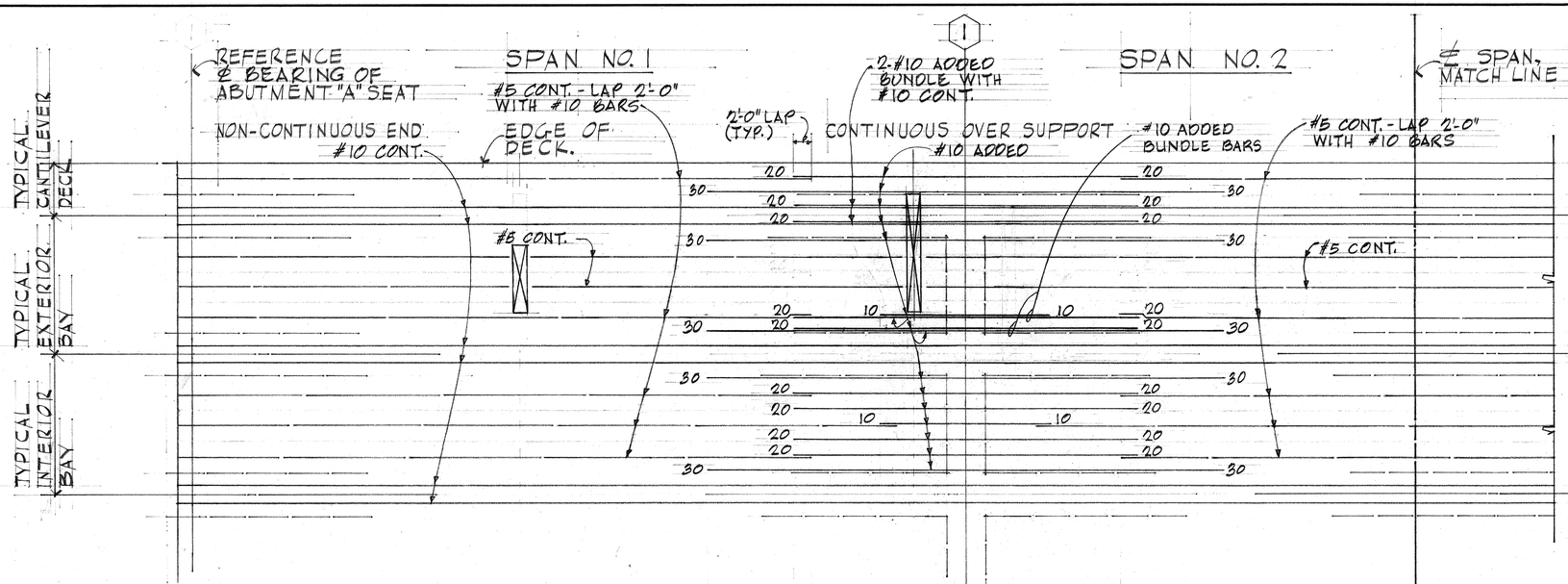
DD-A-C-2 Kats

(63)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	(3)H-1(63)11 (3)H-1(64)11	1968	70	98

Rev. 1/29/69

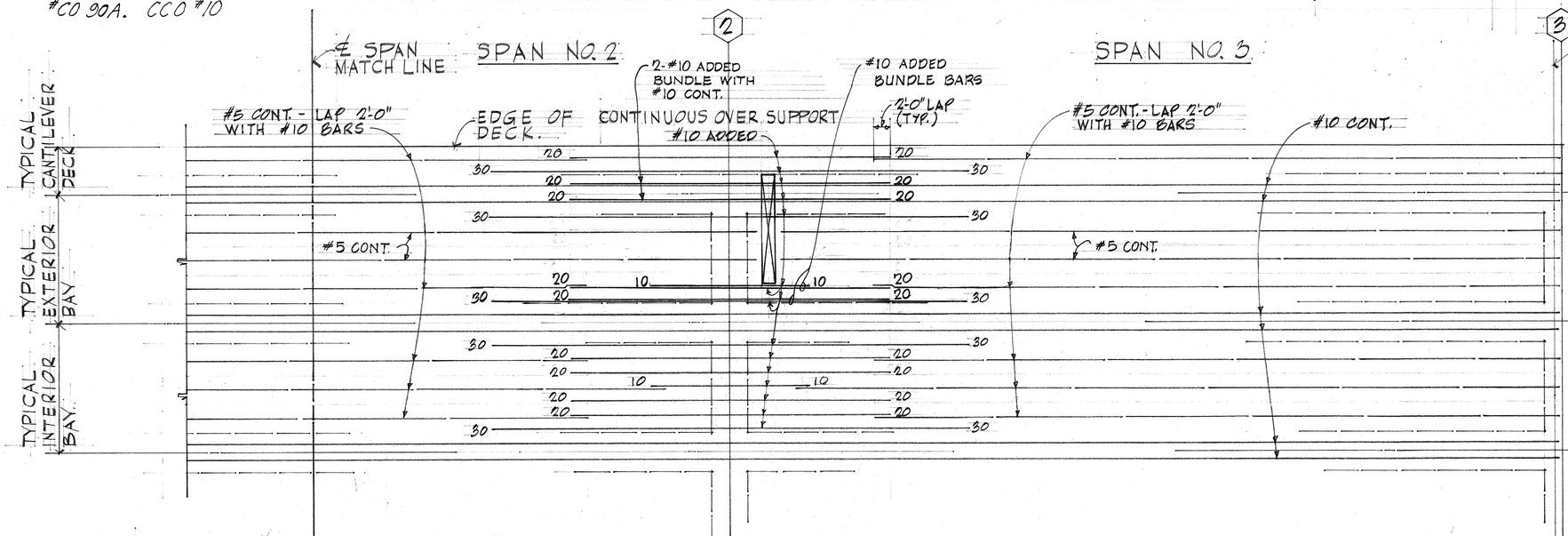


PART TYPICAL PLACEMENT DIAGRAM. - DECK SLAB TOP LONGITUDINAL REINFORCEMENT.
(INBOUND & OUTBOUND BRIDGES - SPANS NO. 1, NO. 2 & NO. 3)

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

NOTE:
1. NUMBER AT ENDS OF BARS INDICATE DISTANCE IN FEET FROM PIER LINE NO.
2. FOR ADDITIONAL SLAB REINFORCEMENT DETAILS SEE NORMAL SECTION.
3. FOR ADDITIONAL TOP REINFORCEMENT SEE SHEET #22

For additional Steel Pier #1&2 See Detail ⓒ Sheet #CO 90A. CCO #10



PART TYPICAL PLACEMENT DIAGRAM. - DECK SLAB TOP LONGITUDINAL REINFORCEMENT.
(INBOUND & OUTBOUND BRIDGES - SPANS NO. 1, NO. 2 & NO. 3)

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

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
PART DECK STEEL PLACEMENT DIAGRAM
SPANS #1 THRU #3 INCLUSIVE.
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. 1-H1-1(63):11
SCALE AS NOTED

SHEET No. 30 OF 59 SHEETS

70

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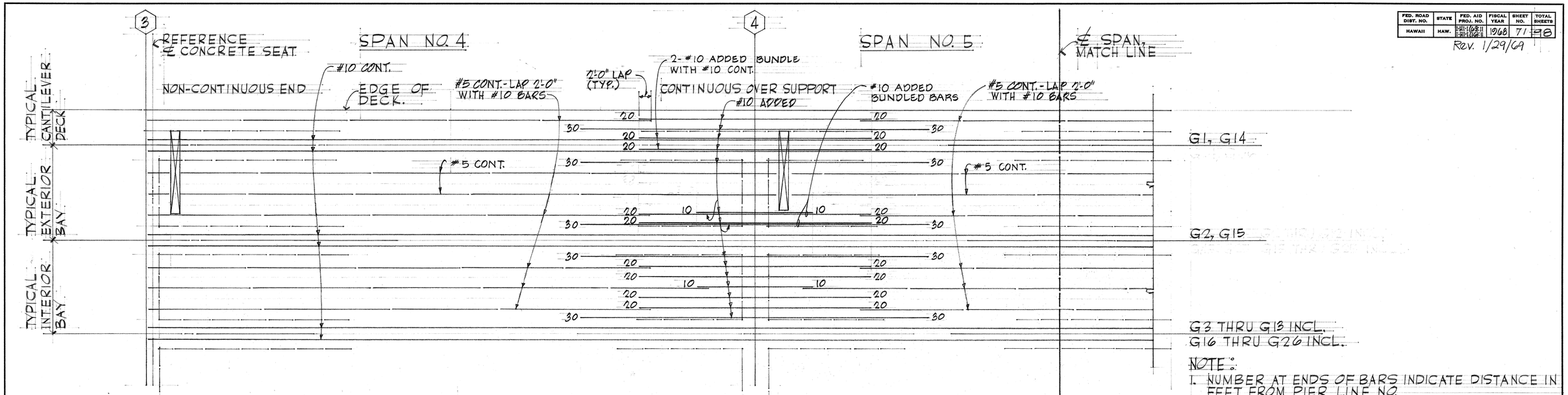
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(66)11	1968	71	98

Rev. 1/29/69



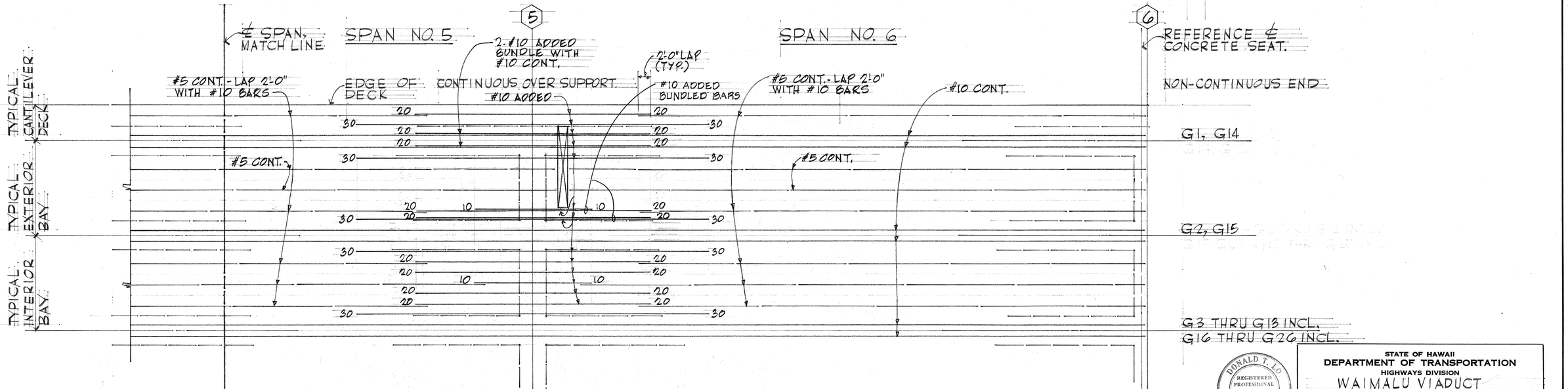
PART TYPICAL PLACEMENT DIAGRAM. - DECK SLAB TOP LONGITUDINAL REINFORCEMENT.

(INBOUND & OUTBOUND BRIDGES - SPANS NO. 4, NO. 5 & NO. 6)

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

NOTE:

1. NUMBER AT ENDS OF BARS INDICATE DISTANCE IN FEET FROM PIER LINE NO.
2. FOR ADDITIONAL SLAB REINFORCEMENT DETAILS SEE NORMAL SECTION.
3. FOR ADDITIONAL TOP REINFORCEMENT SEE SHEET # 22



PART TYPICAL PLACEMENT DIAGRAM. - DECK SLAB TOP LONGITUDINAL REINFORCEMENT.

(INBOUND & OUTBOUND BRIDGES - SPANS NO. 4, NO. 5 & NO. 6)

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

ORIGINAL PLAN
NOTE BOOK No.

SURVEY PLOTTED BY DATE
DRAWN BY "
TRACED BY "
DESIGNED BY "
QUANTITIES BY "
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DONALD T. LO
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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT

PART DECK STEEL PLACEMENT DIAGRAM

SPANS #4 THRU #6 INCLUSIVE.

INTERSTATE ROUTE H-1

F.A.I. PROJ. NO. I-HI-1 (63):11

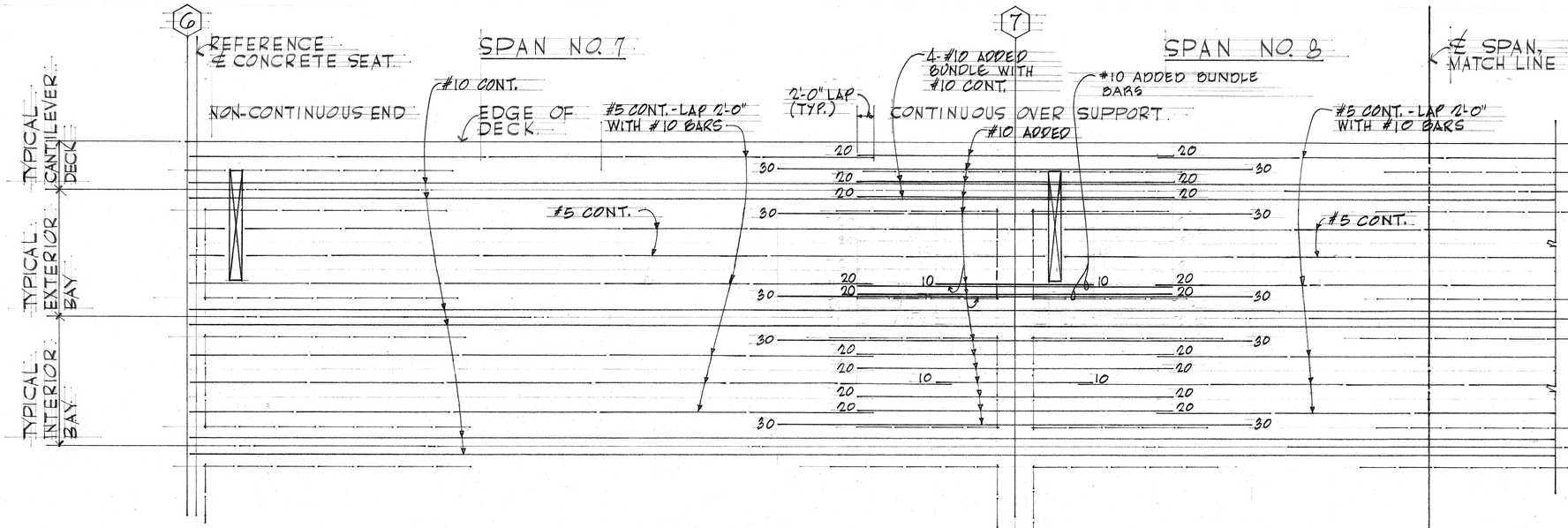
SCALE AS NOTED

SHEET No. 31 OF 59 SHEETS

71

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(64):11	1968	72	98

Rev. 1/29/69

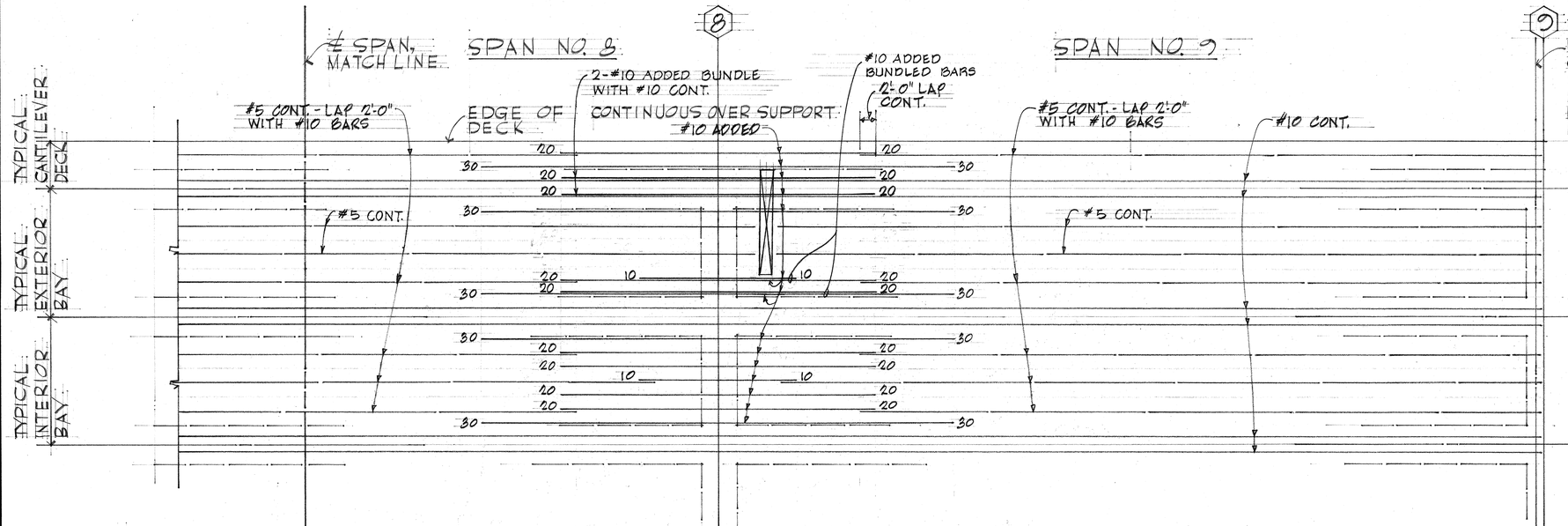


PART TYPICAL PLACEMENT DIAGRAM - DECK SLAB TOP LONGITUDINAL REINFORCEMENT

(INBOUND & OUTBOUND BRIDGES - SPANS NO. 7, NO. 8 & NO. 9)

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

NOTE:
1. NUMBER AT ENDS OF BARS INDICATE DISTANCE IN FEET FROM PIER LINE NO.
2. FOR ADDITIONAL SLAB REINFORCEMENT DETAILS SEE NORMAL SECTION.
3. FOR ADDITIONAL TOP REINFORCEMENT SEE SHEET #22



PART TYPICAL PLACEMENT DIAGRAM. - DECK SLAB TOP LONGITUDINAL REINFORCEMENT.

(INBOUND & OUTBOUND BRIDGES - SPANS NO. 7, NO. 8 & NO. 9)

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

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

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SIGNATURE

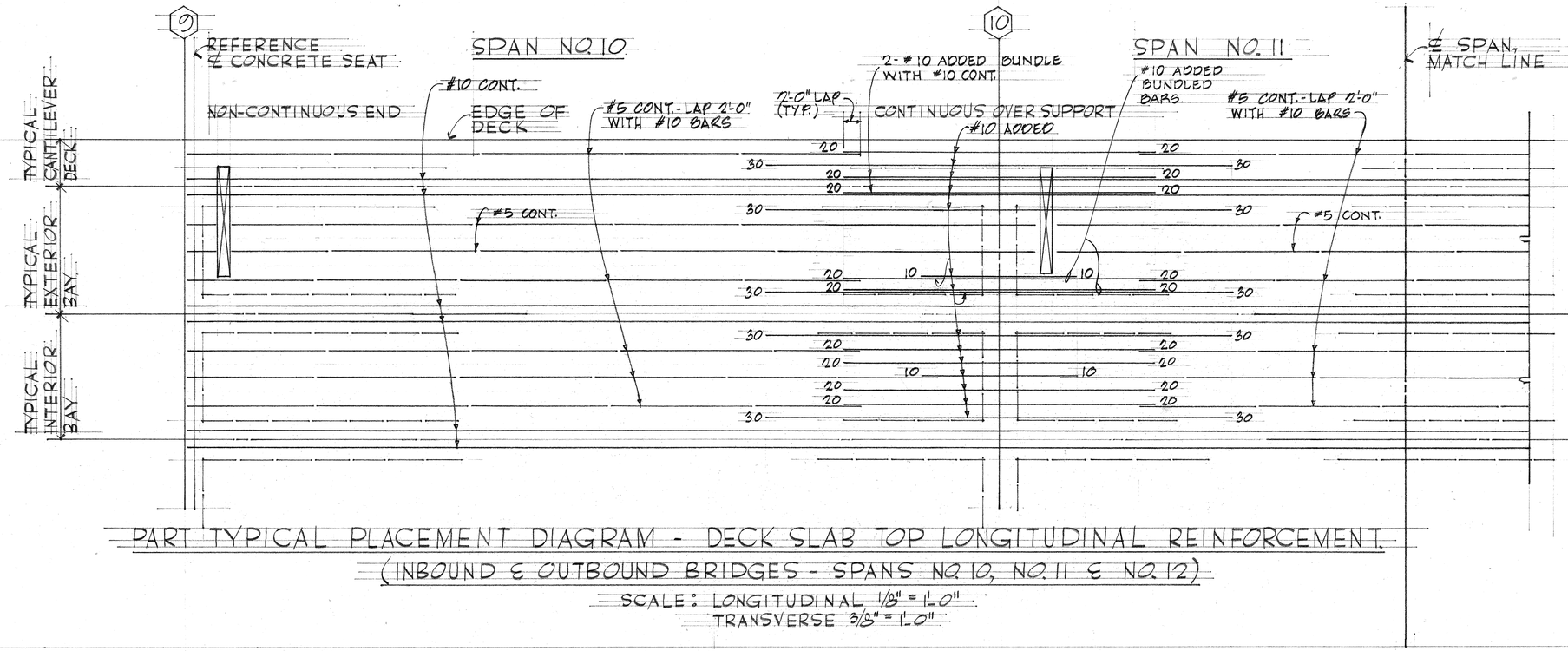
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIMALU VIADUCT
PART DECK STEEL PLACEMENT DIAGRAM.
SPANS #7 THRU #9 INCLUSIVE
INTERSTATE ROUTE H-1
F.A.I PROJ. NO. I-HI-1(63):11
SCALE AS NOTED

SHEET No. 72 OF 98 SHEETS

72

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11, I-HI-1(16):11	1968	73	98

Rev. 1/29/69



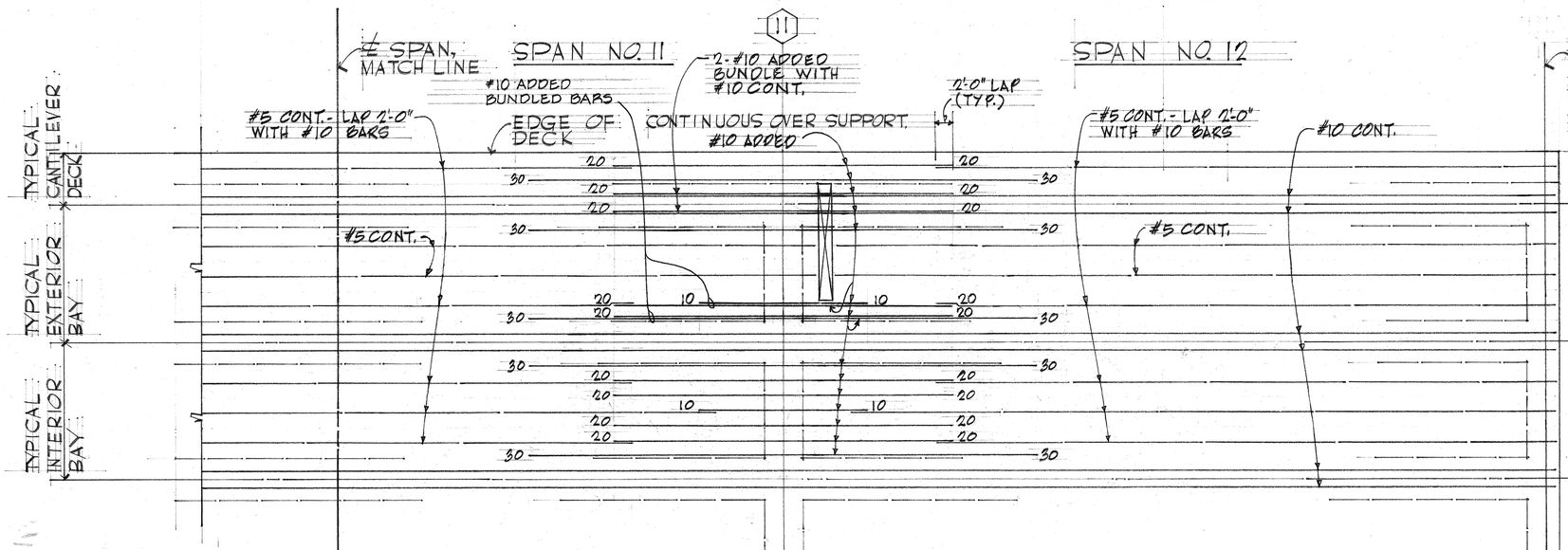
NOTE:

1. NUMBER AT ENDS OF BARS INDICATE DISTANCE IN FEET FROM PIER LINE NO.
2. FOR ADDITIONAL SLAB REINFORCEMENT DETAILS SEE NORMAL SECTION.
3. FOR ADDITIONAL TOP REINFORCEMENT SEE SHEET #22

PART TYPICAL PLACEMENT DIAGRAM - DECK SLAB TOP LONGITUDINAL REINFORCEMENT.

(INBOUND ℄ OUTBOUND BRIDGES - SPANS NO. 10, NO. 11 ℄ NO. 12)

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



PART TYPICAL PLACEMENT DIAGRAM - DECK SLAB TOP LONGITUDINAL REINFORCEMENT.

(INBOUND ℄ OUTBOUND BRIDGES - SPANS NO. 10, NO. 11 ℄ NO. 12)

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

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

DONALD T. LO
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No. 427
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Donald T. Lo
SIGNATURE

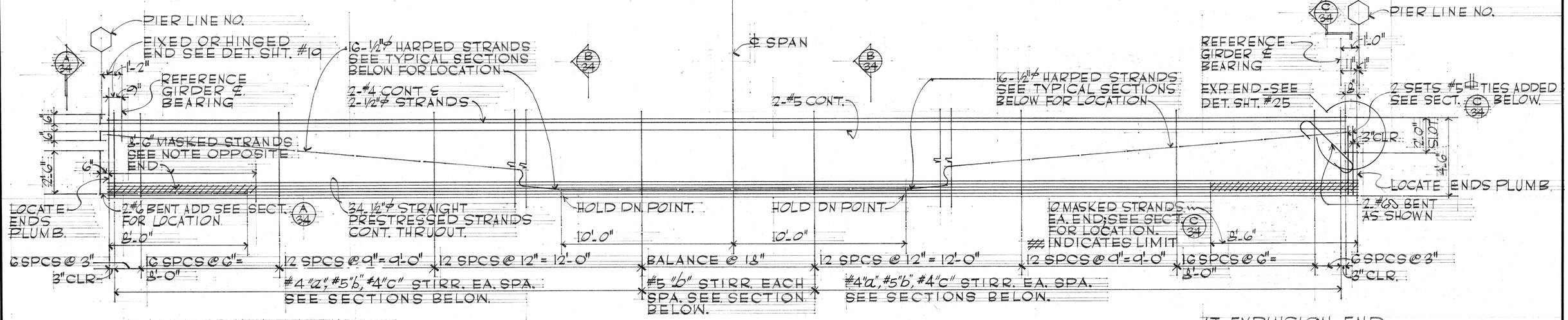
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
PART DECK STEEL PLACEMENT DIAGRAM
SPANS #10 THRU #12 INCLUSIVE
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE AS NOTED

SHEET No. 33 OF 59 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(16):11	1968	74	98



AT FIXED OR HINGED ENDS

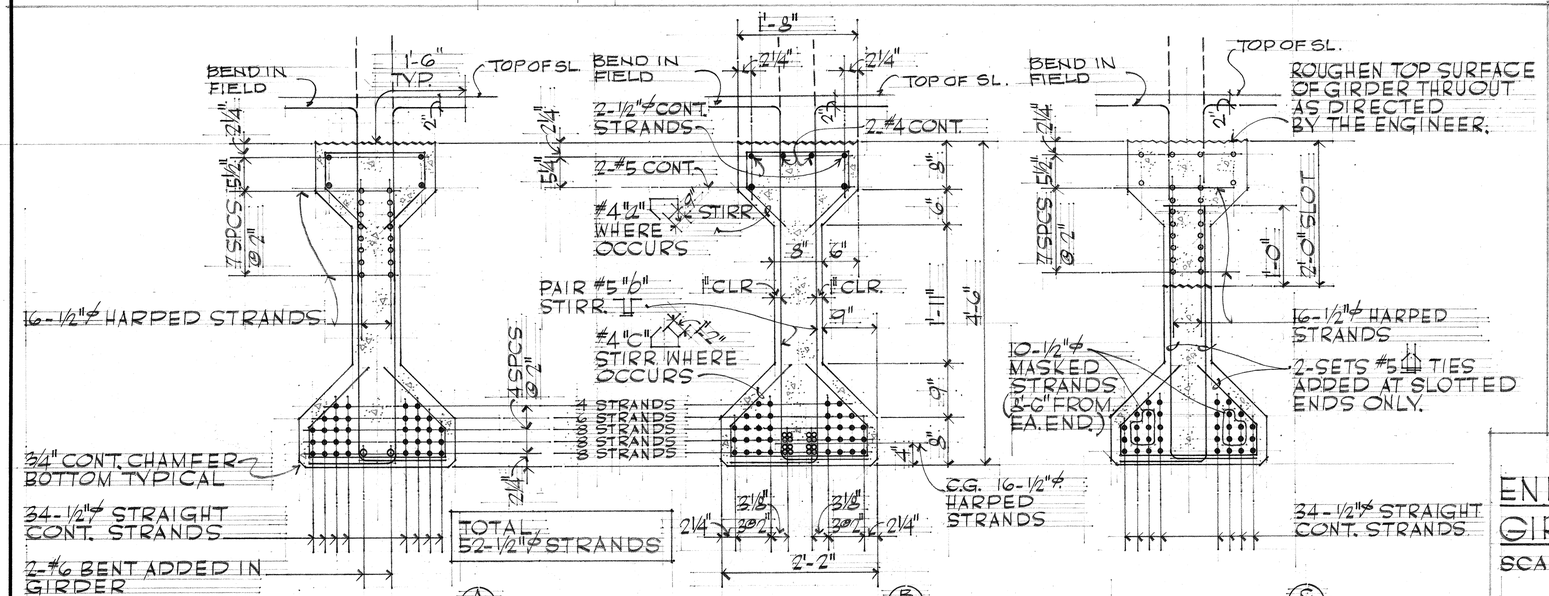
AT EXPANSION END

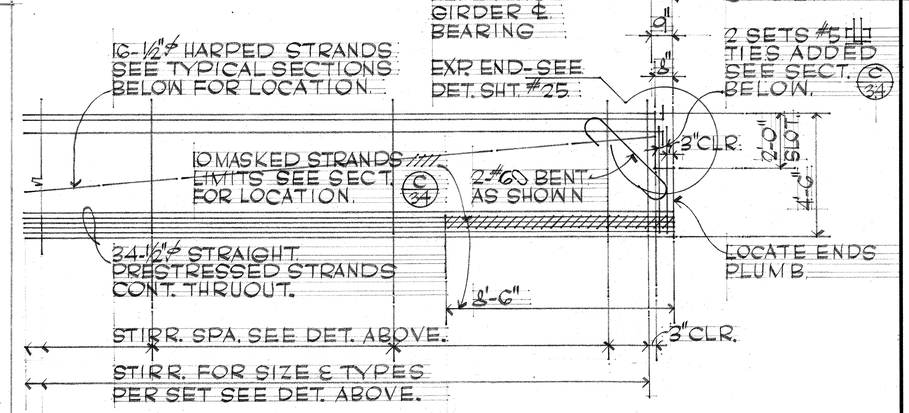
TYPICAL PRESTRESSED GIRDER TYPE P.G.IV.C DETAIL AS SHOWN SCALE: 3/8" = 1'-0"

(TYPE P.G.IV.A SIMILAR EXCEPT FOR END DETAILS - SEE FRAMING PLAN SHT. #23) D 34

(TYPE P.G.IV.D SIMILAR EXCEPT FOR END DETAIL AT EXPANSION END SEE DETAIL.

NOTE: 1. ALL GIRDER STIRRUPS TO BE PLACED PLUMB.
2. FOR ADDITIONAL ANCHORS IN PRESTRESS GIRDER FOR BEAM CONNECTIONS SEE SHTS #22.





AT EXPANSION END

TYPICAL GIRDER SECTIONS SCALE: 1" = 1'-0"

END DETAIL OF PRESTRESS GIRDER P.G.IV.D AT EXP. END

SCALE: 3/8" = 1'-0" D 34

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

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Donald T. Lo
SIGNATURE

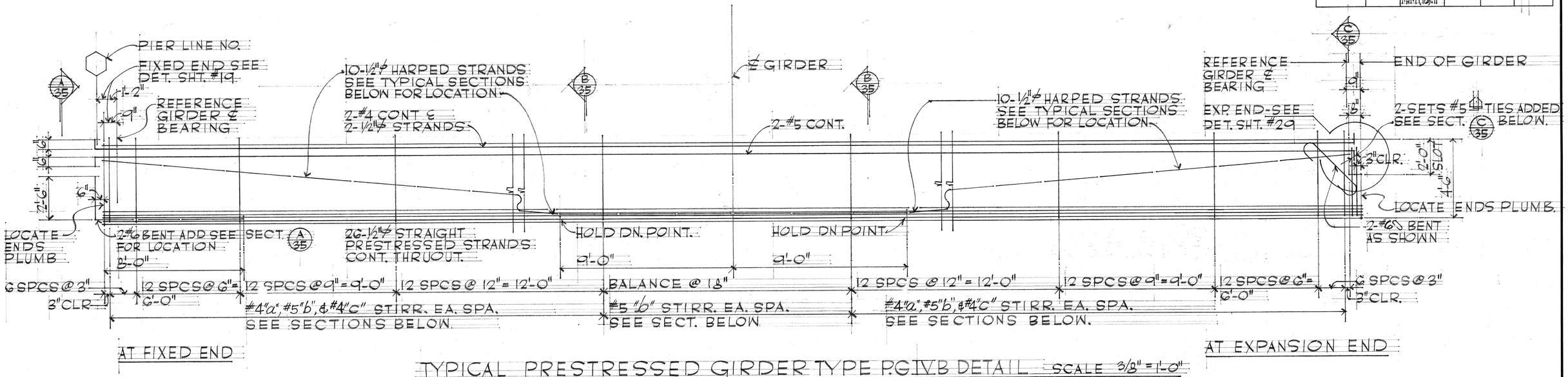
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
TYPICAL GIRDER DETAILS
P.G.IV.A, P.G.IV.C
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-H 1-1 (63):11
SCALE AS NOTED

SHEET No. 34 OF 59 SHEETS

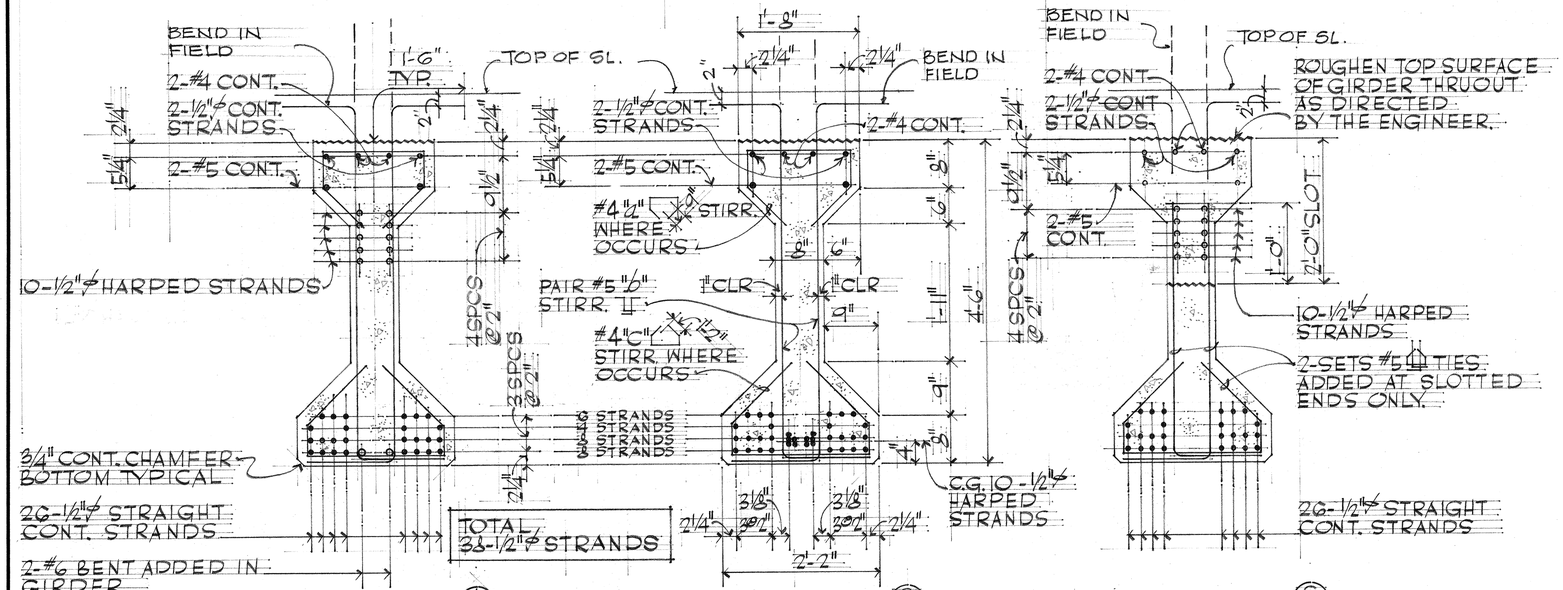
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(10):11	1968	75	98



TYPICAL PRESTRESSED GIRDER TYPE PGIVB DETAIL SCALE 3/8" = 1'-0"

NOTE! 1. ALL GIRDER STIRRUPS TO BE PLACED PLUMB.
2. FOR ADDITIONAL ANCHORS IN PRESTRESS GIRDER FOR BEAM CONNECTIONS SEE SHTS #22



TYPICAL GIRDER SECTIONS SCALE: 1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
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REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

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SIGNATURE

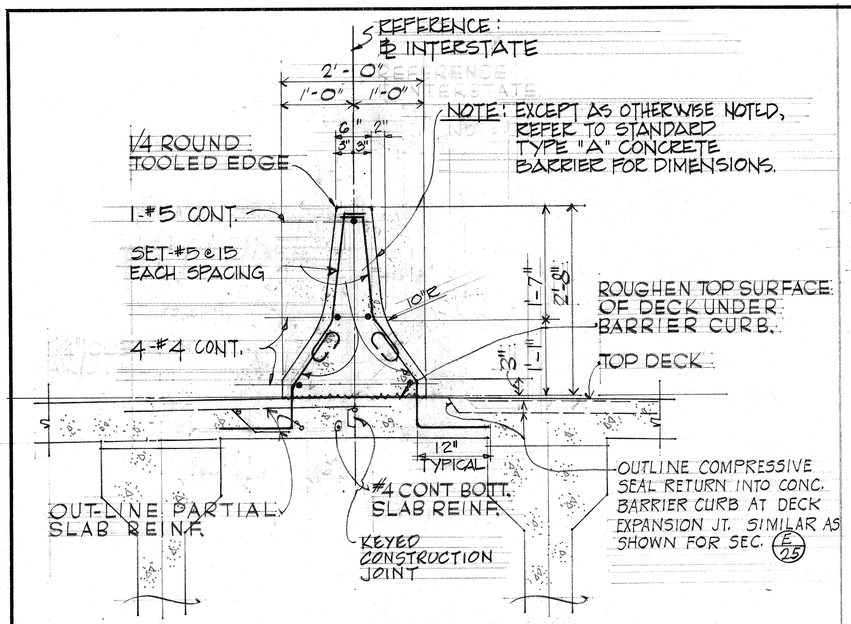
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
TYPICAL GIRDER DETAILS
PG-IVB
INTERSTATE ROUTE H 1
F.A.I. PROJ. NO. I-H 1-1 (63):11
SCALE AS NOTED.

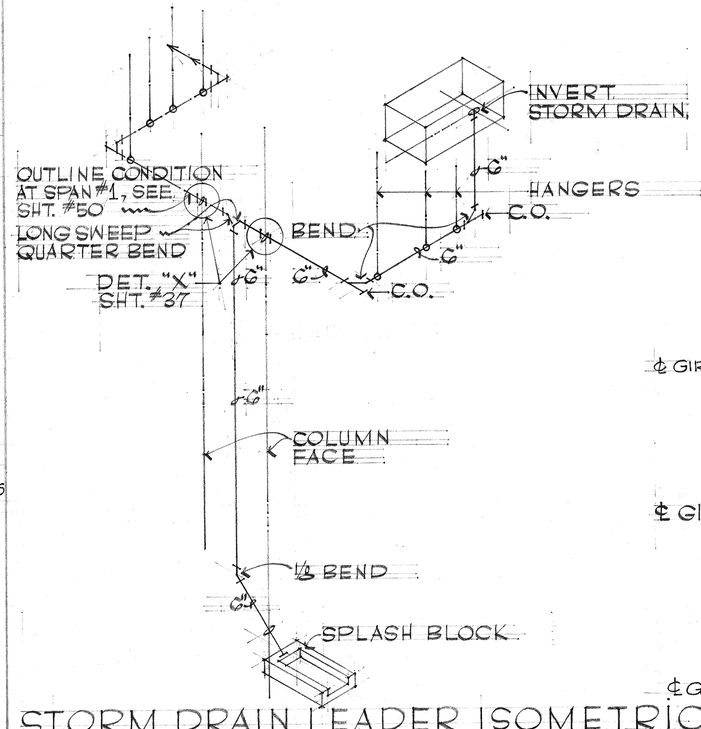
SHEET No. 35 OF 59 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	~~I-H-1(23)11~~ I-H-1(G2)11	1968	76	98

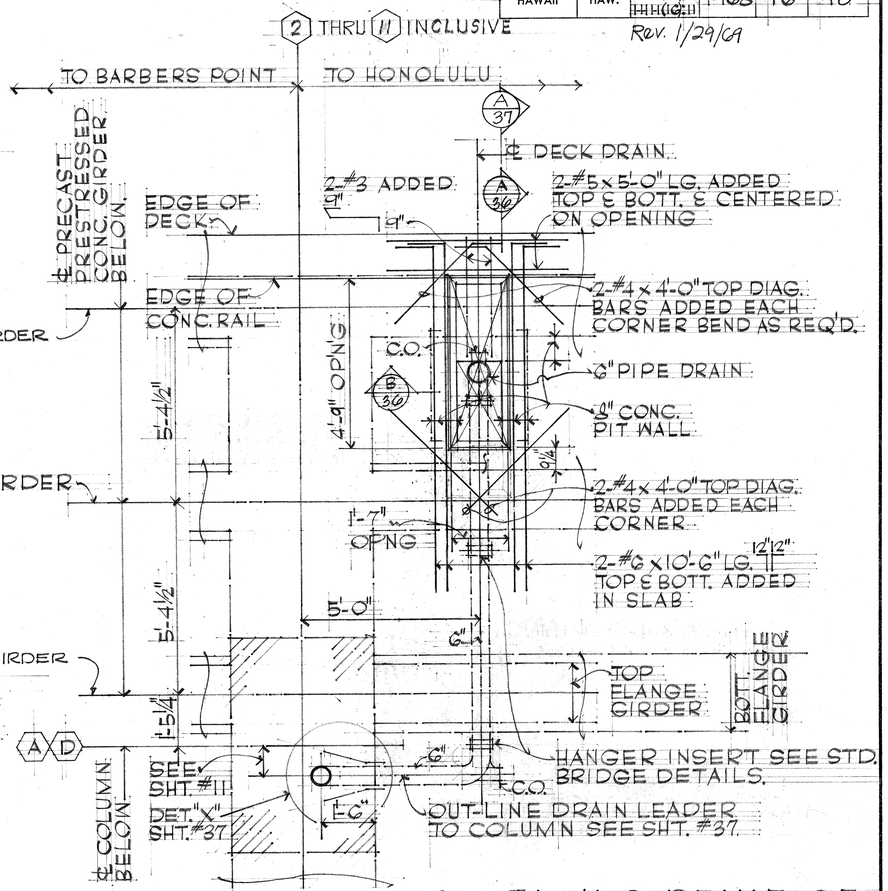
Rev. 1/29/69



TYPICAL SECTION THRU CONCRETE BARRIER CURB SCALE: 1"=1'-0"



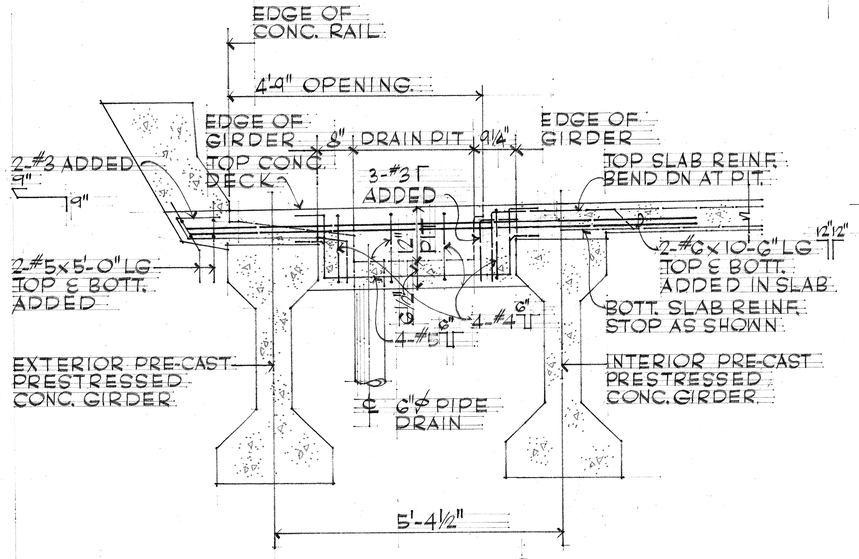
STORM DRAIN LEADER ISOMETRIC SCHEMATIC DIAGRAM NO SCALE



PLAN-TYPICAL LOCATION & REINF. OF DECK STORM DRAIN OPENINGS

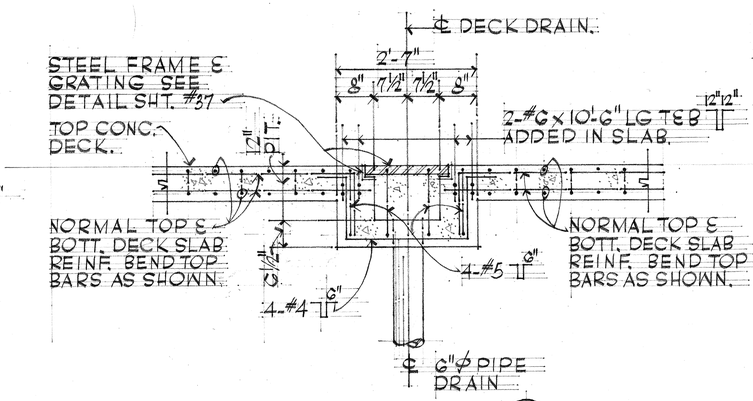
SCALE: 1/2" = 1'-0"

NOTE:
REFER TO SHT. #37 FOR ADDITIONAL DECK DRAIN DETAILS.



TYPICAL ELEVATION A/36

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



TYPICAL SECTION B/36

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

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

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U.S.A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
MISCELLANEOUS SUPERSTRUCTURE DETAILS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-H1-1 (G2):11
SCALE: AS NOTED.

SHEET No. 36 OF ~~59~~ SHEETS

PRINTED ON NO. 1000H CLEARPRINT

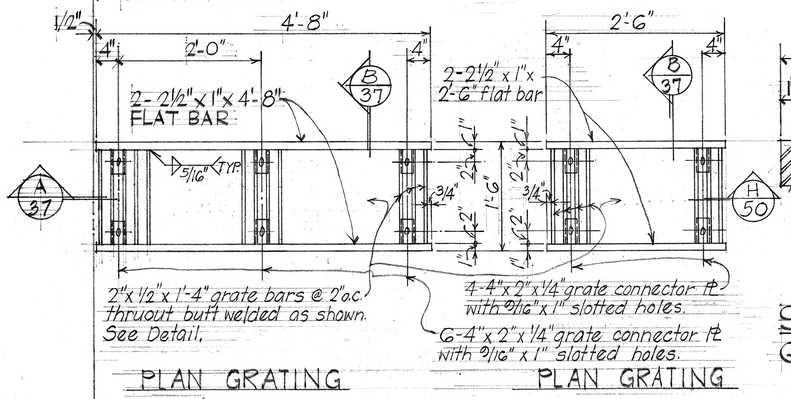
DO-A-6-2 Kats

REV. 1-29-69

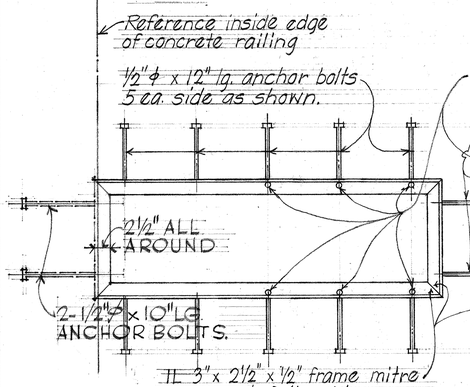
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	~~HH(C3)1~~ ~~HH(10)1~~	1968	77	98

NOTE: Shop drawings for frame & grating will be required. Levelling bolts & nuts shall be provided with frame to facilitate placing of frame.

REF. INSIDE EDGE OF CONC. RAILING.

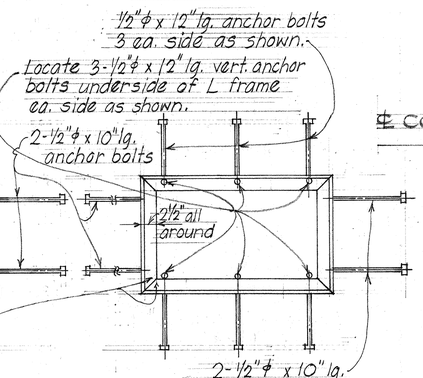


PLAN GRATING

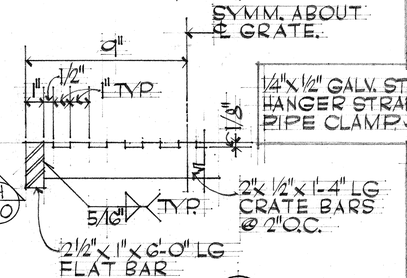


PLAN FRAME TYPE GF-I

PLAN GRATING

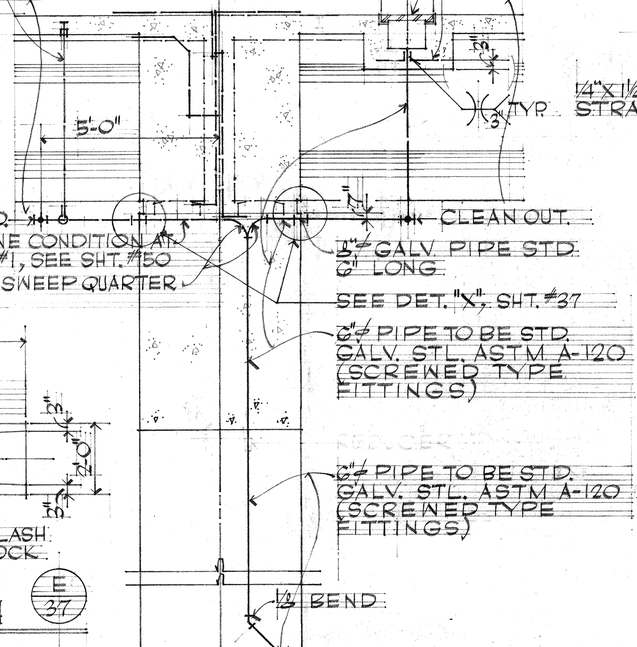


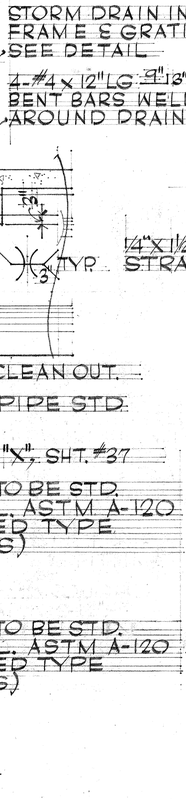
PLAN FRAME TYPE GF II

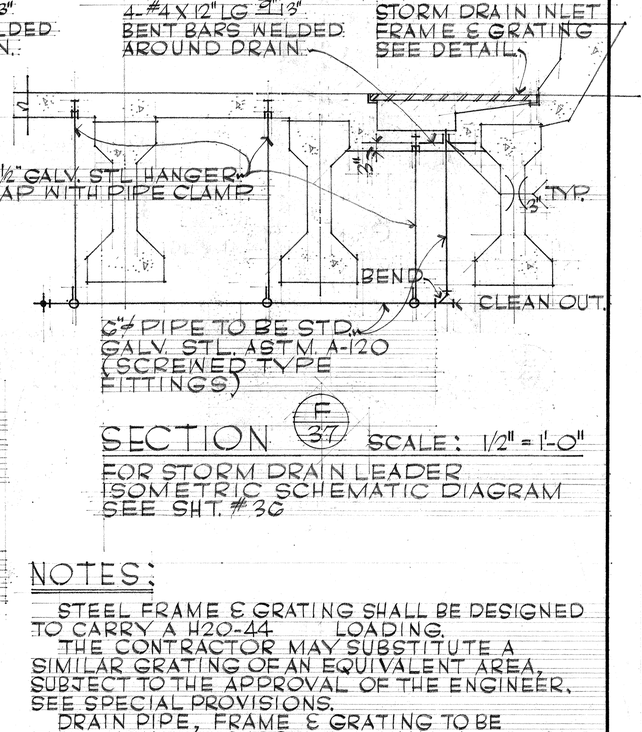


SECTION D 37 NO SCALE

GRATE BAR DETAIL







SECTION F 37 SCALE: 1/2" = 1'-0"

FOR STORM DRAIN LEADER ISOMETRIC SCHEMATIC DIAGRAM SEE SHT. #36

NOTES:

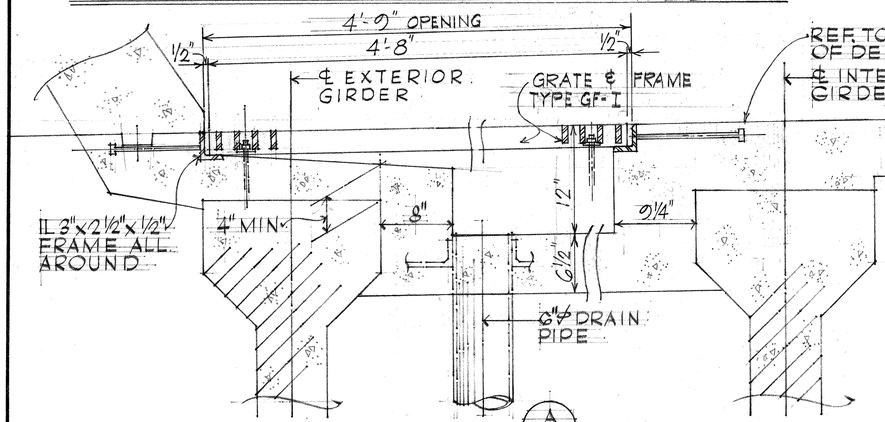
STEEL FRAME & GRATING SHALL BE DESIGNED TO CARRY A H20-44 LOADING.

THE CONTRACTOR MAY SUBSTITUTE A SIMILAR GRATING OF AN EQUIVALENT AREA, SUBJECT TO THE APPROVAL OF THE ENGINEER, SEE SPECIAL PROVISIONS.

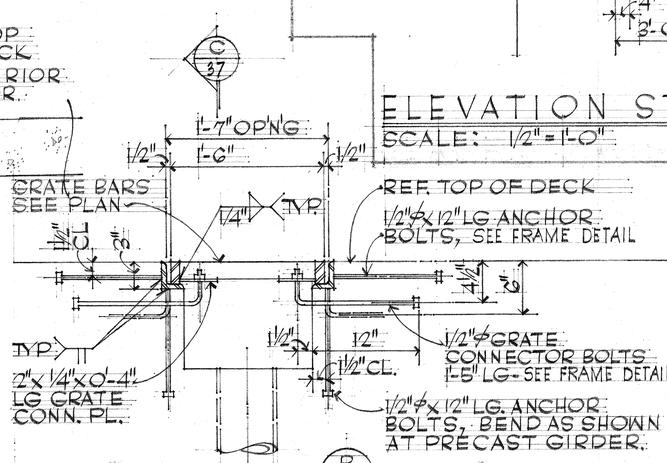
DRAIN PIPE, FRAME & GRATING TO BE INCIDENTAL TO CONCRETE & SHALL NOT BE PAID FOR SEPARATELY.

ENTIRE GRATING ASSEMBLAGE, BOLTS & ANCHORS TO BE HOT DIPPED GALVANIZED.

TYPICAL DECK DRAIN GRATE & FRAME SCALE: 1"= 1'-0"



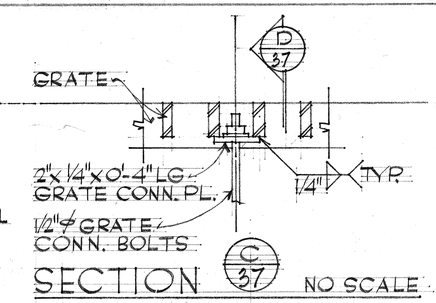
SECTION A 37 SCALE: 1½" = 1'-0"



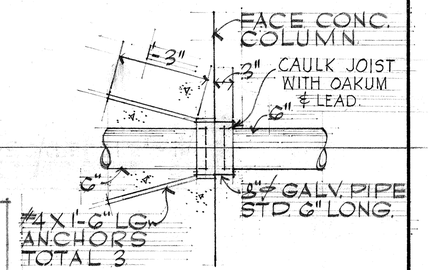
SECTION B 37 SCALE: 1½" = 1'-0"

ELEVATION STORM DRAIN LEADER

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



SECTION NO SCALE



DETAIL "X"

SCALE: 1" = 1'-0"

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SIGNATURE

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
MISCELLANEOUS DETAILS

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63)11
SCALE AS NOTED.

SHEET No. 37 OF 59 SHEETS

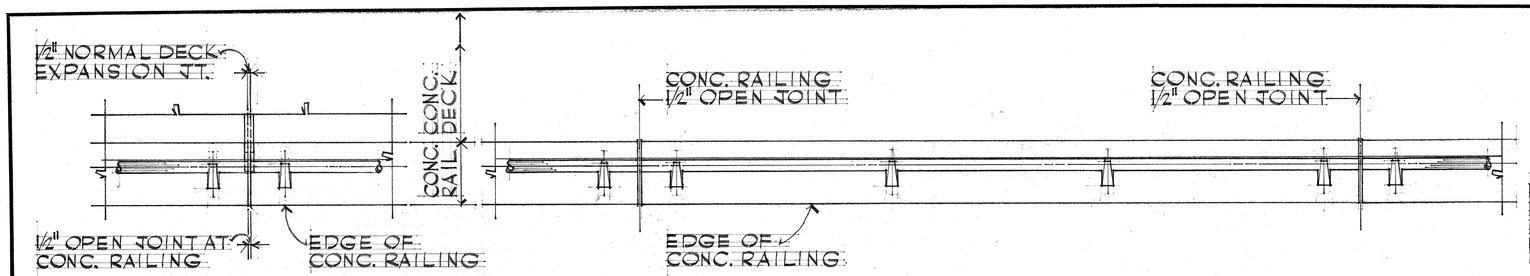
TYPICAL DECK STORM DRAIN GRATE & FRAME DETAILS

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

PRINTED ON NO. 1000H CLEARPRINT

REV. 1-29-69

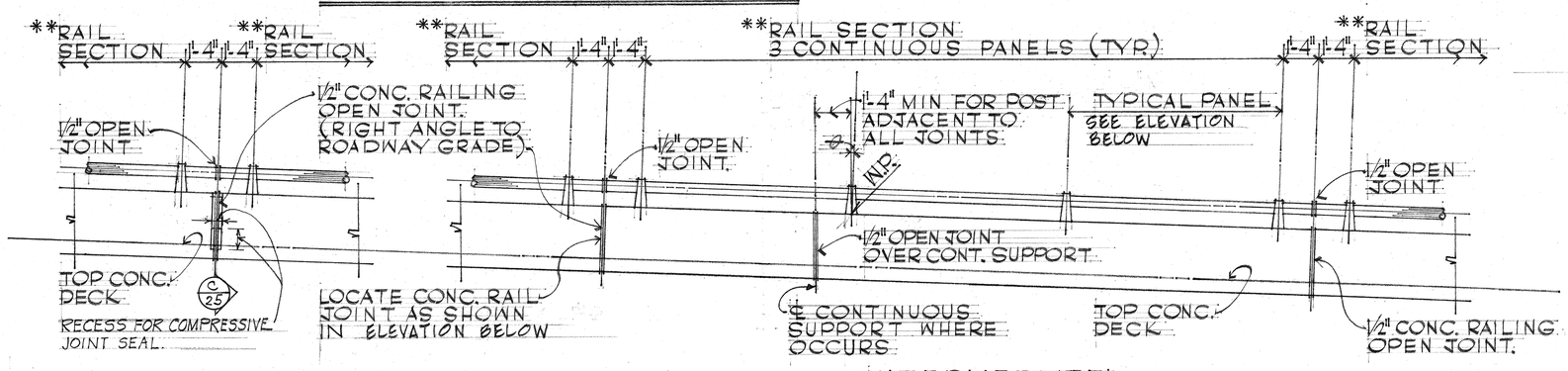
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(64):11	1968	78	98



AT DECK EXPANSION JOINT

INTERMEDIATE

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



AT DECK EXPANSION JOINT

INTERMEDIATE

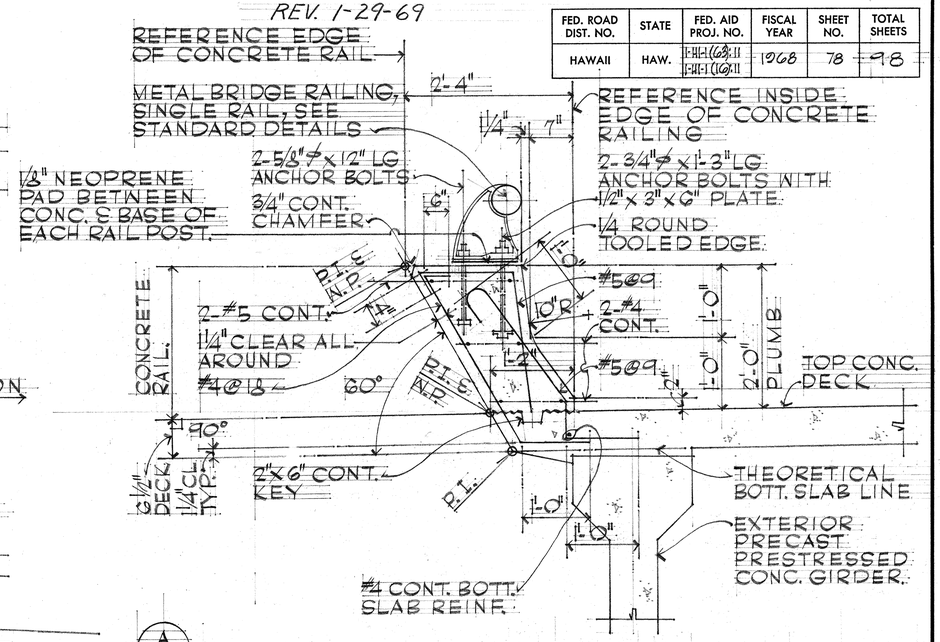
EXTERIOR RAILING ELEVATION SCALE: 3/8" = 1'-0"

**NOTE!!

THE CONTRACTOR SHALL LAYOUT THE RAILING TO PROVIDE 3 CONT. PANELS AS SHOWN IN ELEVATION BELOW. SINGLE PANEL WILL NOT BE PERMITTED

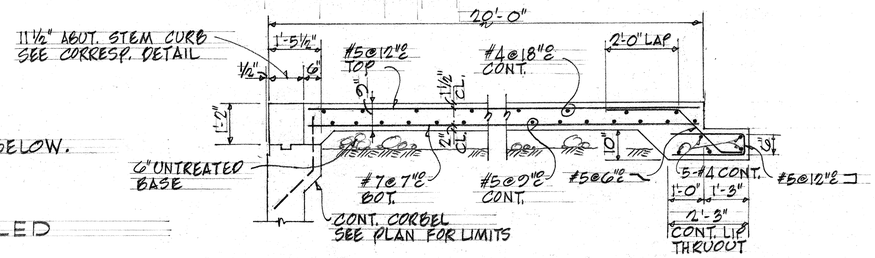
RAIL POST SHALL BE NORMAL TO GRADE.

PROVIDE DOUBLE POSTS AT EACH EXPANSION JOINT, FIXED BRIDGE JOINT ℄ AS SHOWN ON DETAILED DRAWINGS.

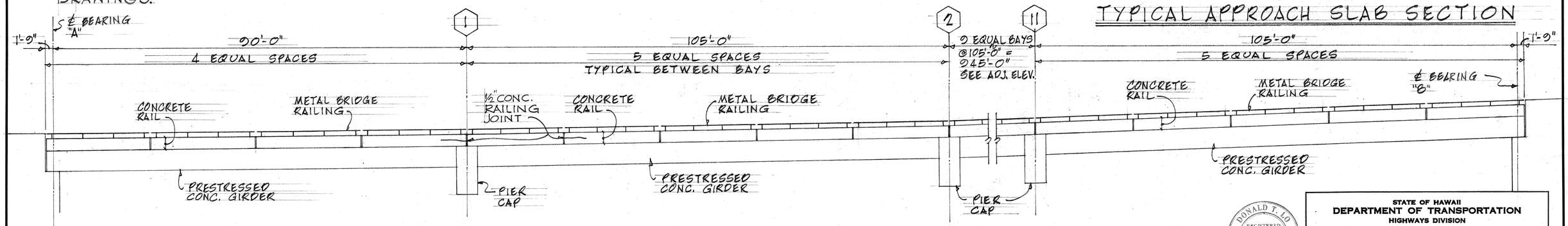


A 38 TYPICAL CONCRETE RAILING SECTION

SCALE: 1" = 1'-0"



TYPICAL APPROACH SLAB SECTION



ELEVATION OF CONCRETE RAIL & METAL BRIDGE RAILING

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
MISCELLANEOUS DETAILS

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE AS NOTED.

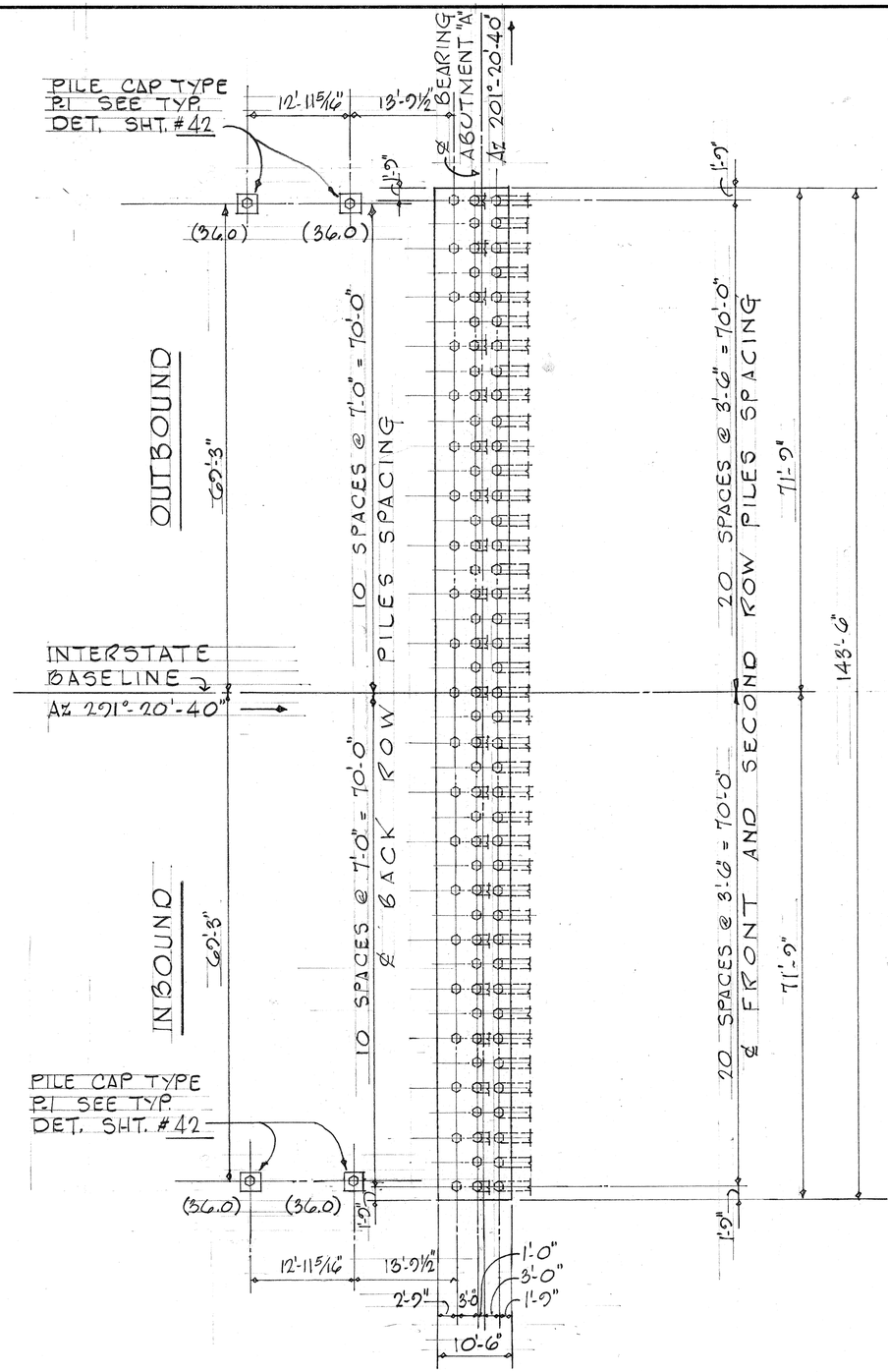
SHEET No. 38 OF 59 SHEETS

78

PRINTED ON NO. 1000H CLEARPRINT

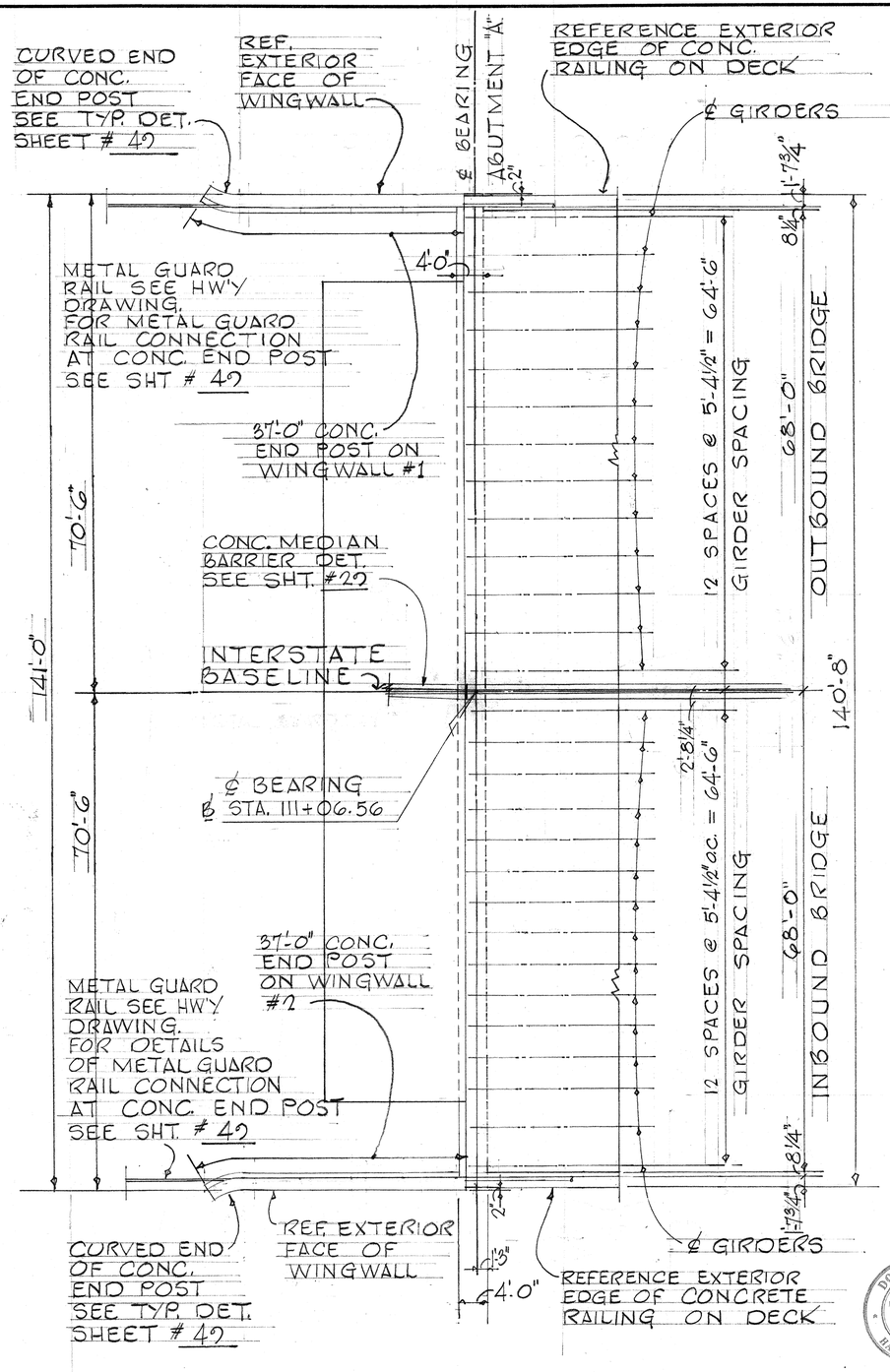
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(10)11	1968	39	98

REV. 1-29-69



PILE LAYOUT PLAN

SCALE 1" = 10'-0"



LAYOUT PLAN

SCALE 1" = 10'-0"

SYMBOLS

- VERTICAL PILES
- BATTER PILES
  DIRECTION OF BATTER

ALL BATTER PILES TO BE DRIVEN ON A 3:12 SLOPE

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Donald T. Lo
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
ABUTMENT "A" LAYOUT PLAN & PILE LAYOUT PLAN.
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63)11
SCALE: AS NOTED.

SHEET No. 39 OF 59 SHEETS

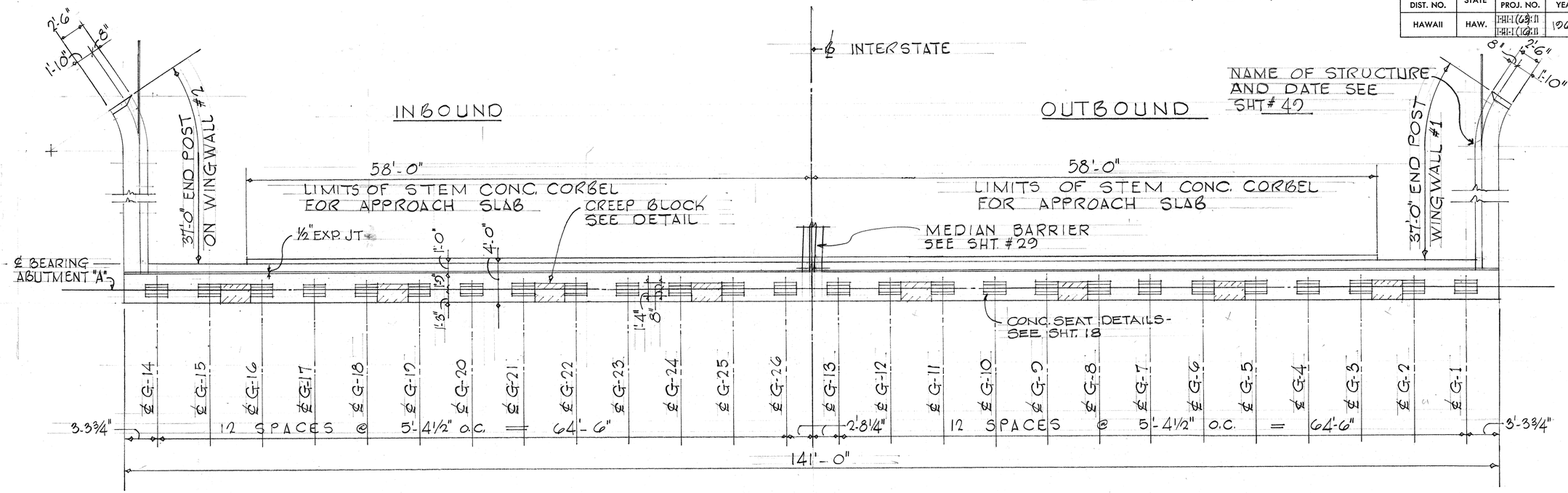
ABUTMENT "A"

PRINTED ON NO. 1000H CLEARPRINT

39

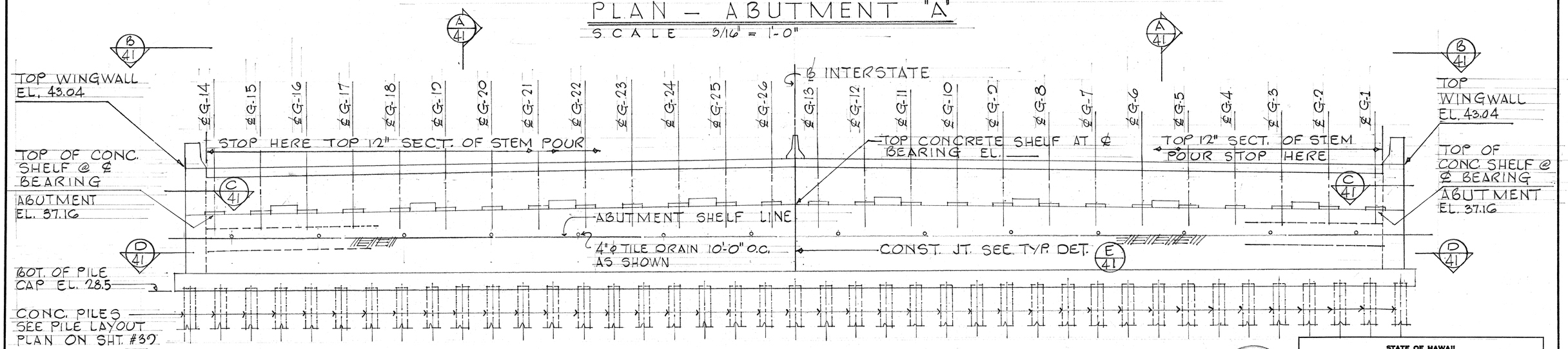
REV. 1-29-69

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHI-I(03)11 FHI-I(10)11	1968	80	98



PLAN — ABUTMENT "A"

SCALE 3/16" = 1'-0"



INBOUND OUTBOUND

ELEVATION - ABUTMENT "A"

SCALE 3/16" = 1'-0"

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

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DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

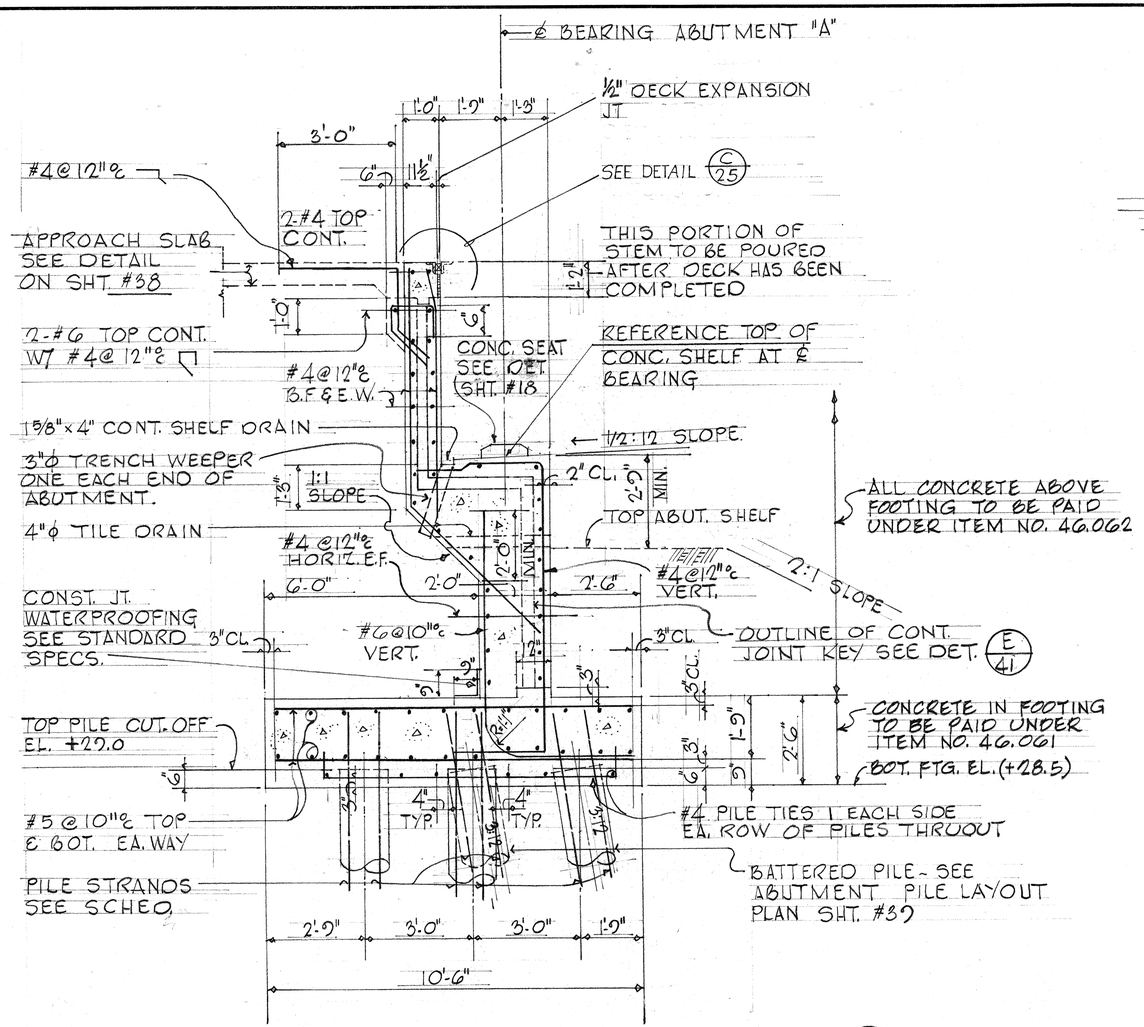
WAIMALU VIADUCT
ABUTMENT "A"
PLAN & ELEVATION
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (03):11
SCALE: AS NOTED

SHEET No. 40 OF 59 SHEETS

S 0

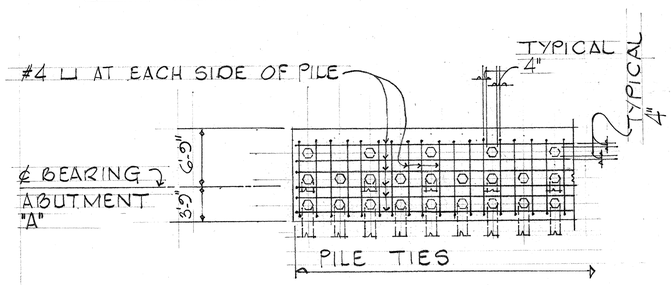
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(62):11 I-HI-1(63):11	1968	81	98

REV. 1-29-69

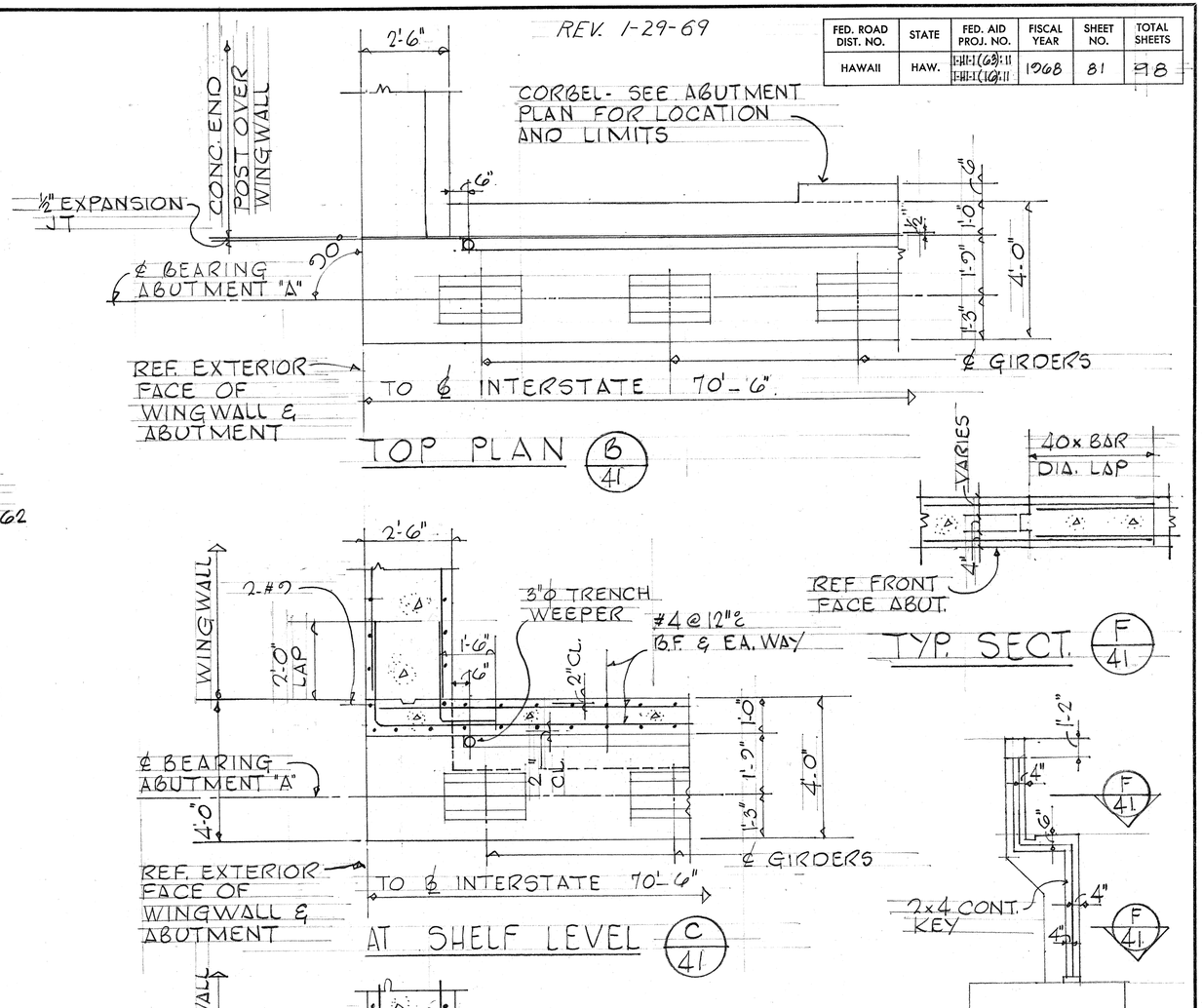


NORMAL ABUTMENT "A" SECTION (A/41)

SCALE 1/2" = 1'-0"



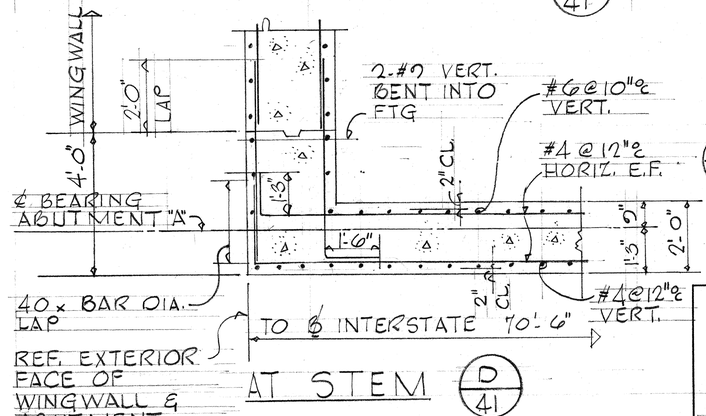
PART FOOTING PLAN - TYPICAL ARRANGEMENT OF PILE TIES REINFORCEMENT SCALE 1/8" = 1'-0"



TOP PLAN (B/41)

TYP. SECT. (F/41)

AT SHELF LEVEL (C/41)



AT STEM (D/41)

ABUT. "A" LONGITUDINAL SECTIONS

SCALE 1/2" = 1'-0"

ELEVATION

E/41 TYP. CONST. JT. DET. AT ABUT. A & B SC. 1/4" = 1'-0"

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
ABUT. "A" - NORMAL SECT., PART FOUND. PLAN & PART LONGIT. PLAN SECT.
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE: AS NOTED

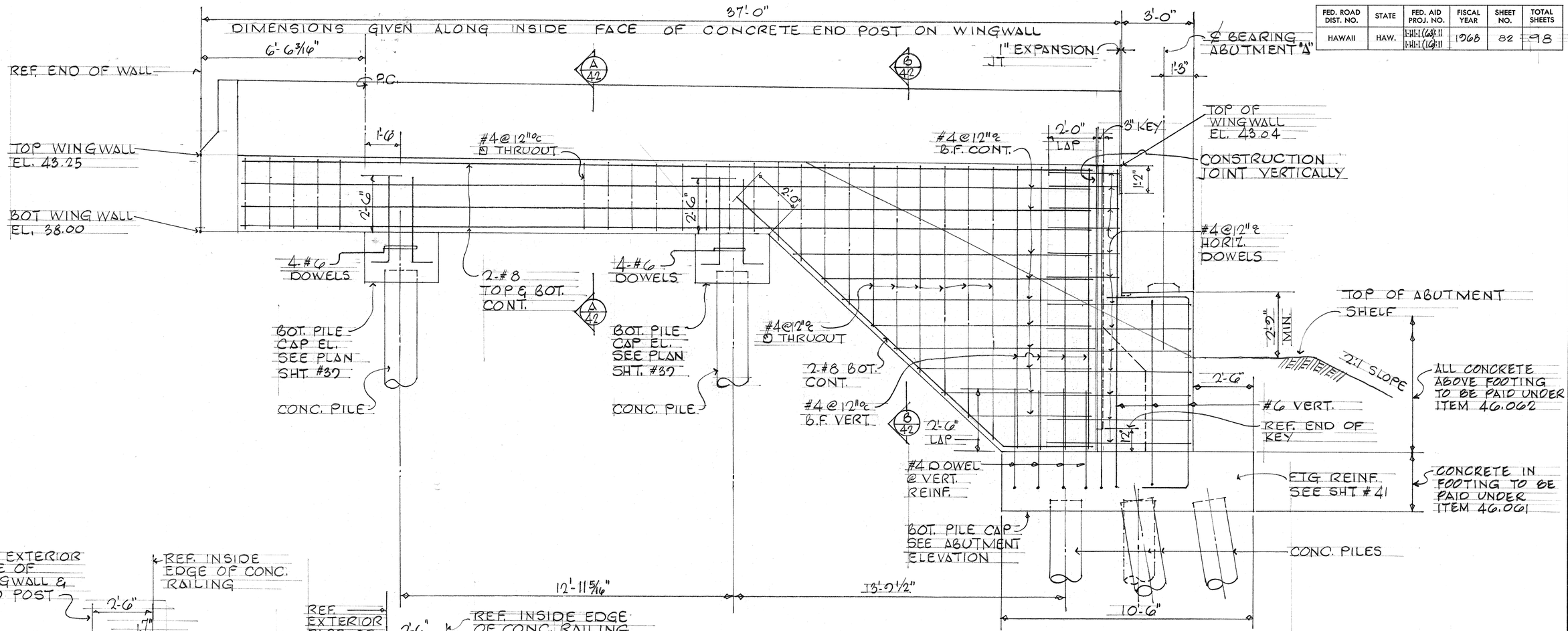
SHEET No. 41 OF 59 SHEETS

S 1

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

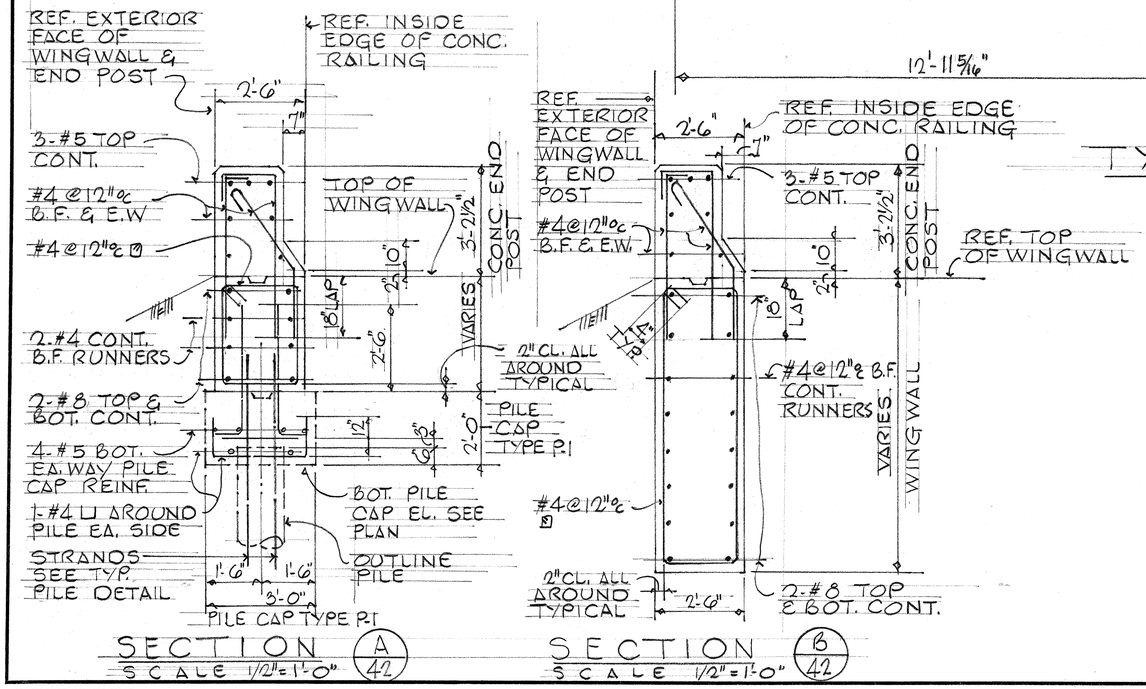
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(76)11	1968	82	98



TYPICAL WINGWALL NOS 1 & 2 ELEVATION

SCALE 1/2" = 1'-0"

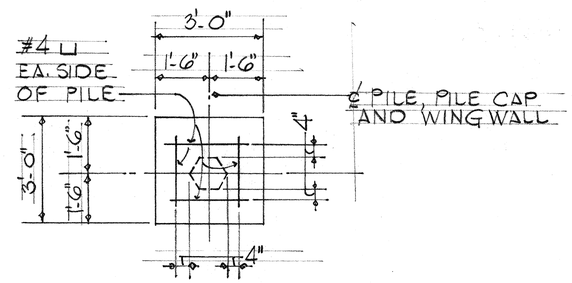


SECTION A/42 — SCALE 1/2"=1'-0"

SECTION B/42 — SCALE 1/2"=1'-0"

TYPICAL ARRANGEMENT OF PILE TIES REINFORCEMENT AT P.1

SCALE 1/2" = 1'-0"



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REGISTERED PROFESSIONAL ENGINEER
No. 427
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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
WINGWALL NO. 1 & 2
ELEVATION & SECTIONS
INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1(63)11
SCALE: AS NOTED

SHEET No. 42 OF 59 SHEETS

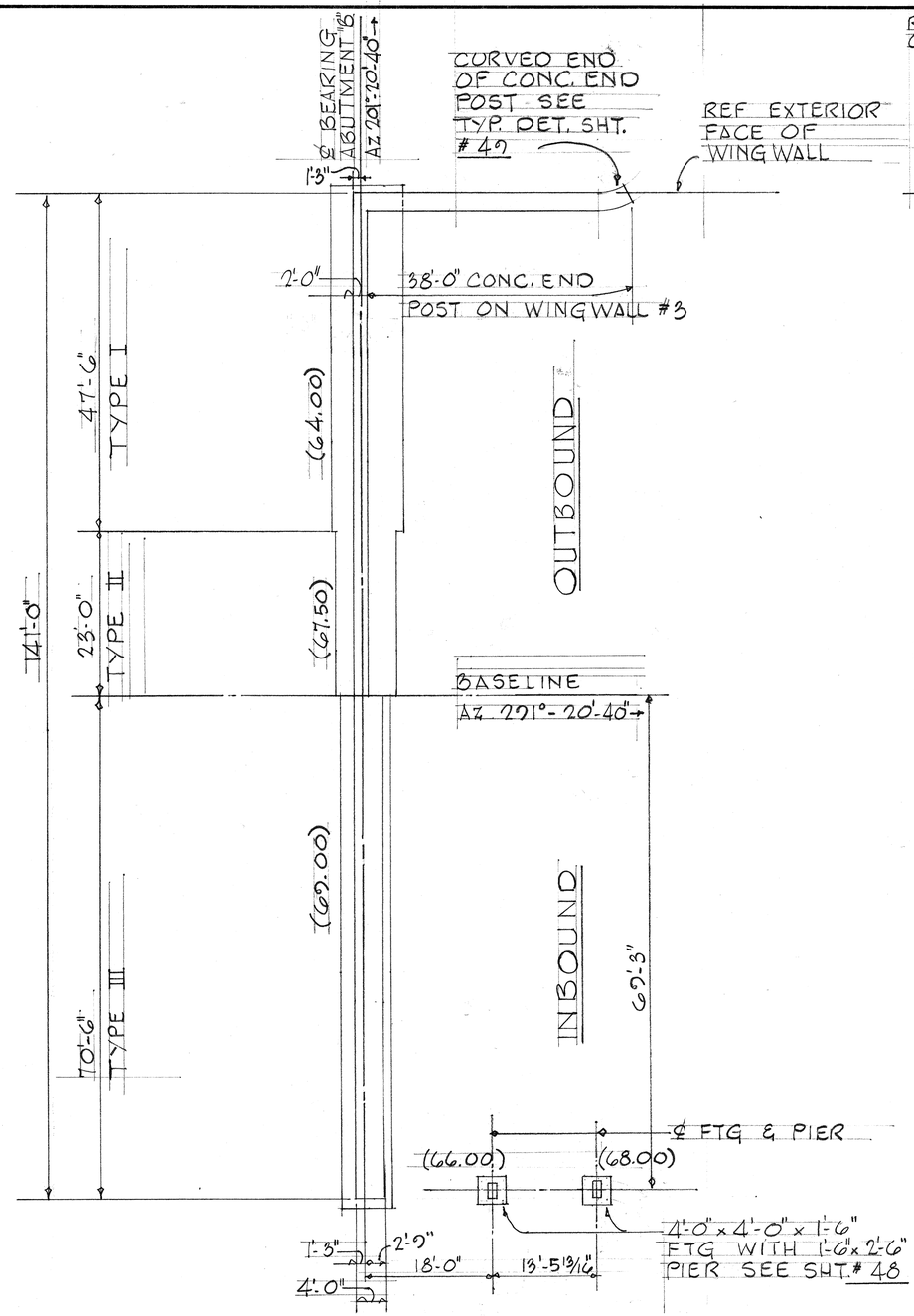
S 2

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

PRINTED ON NO. 1000H CLEARPRINT

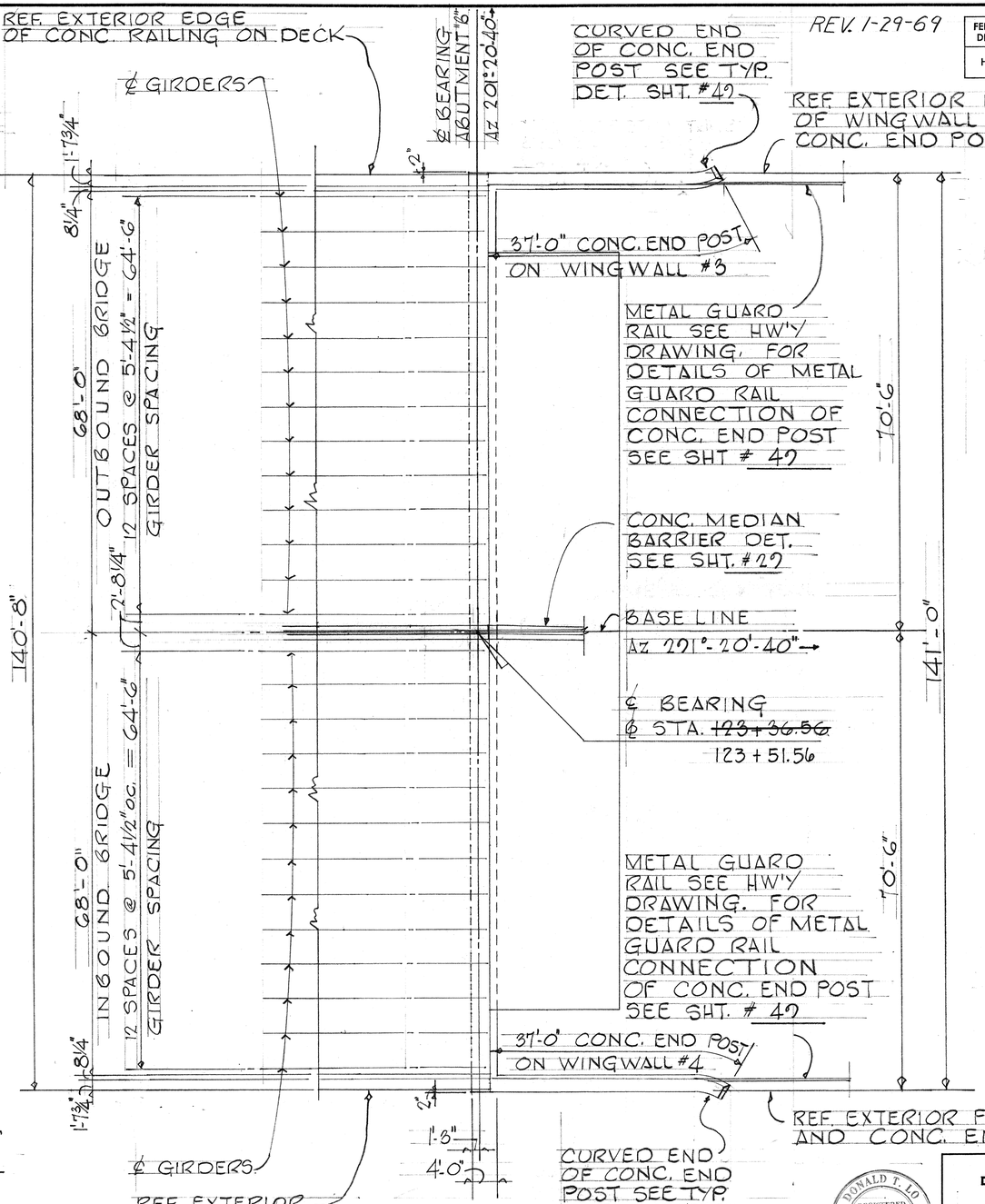
REV. 1-29-69

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	~~FHPI (6)(3)II~~ FHPI (16)II	1968	83	98



FOOTING LAYOUT PLAN

SCALE 1" = 10'-0"



LAYOUT PLAN

SCALE 1" = 10'-0"

ABUTMENT "B"

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

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REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

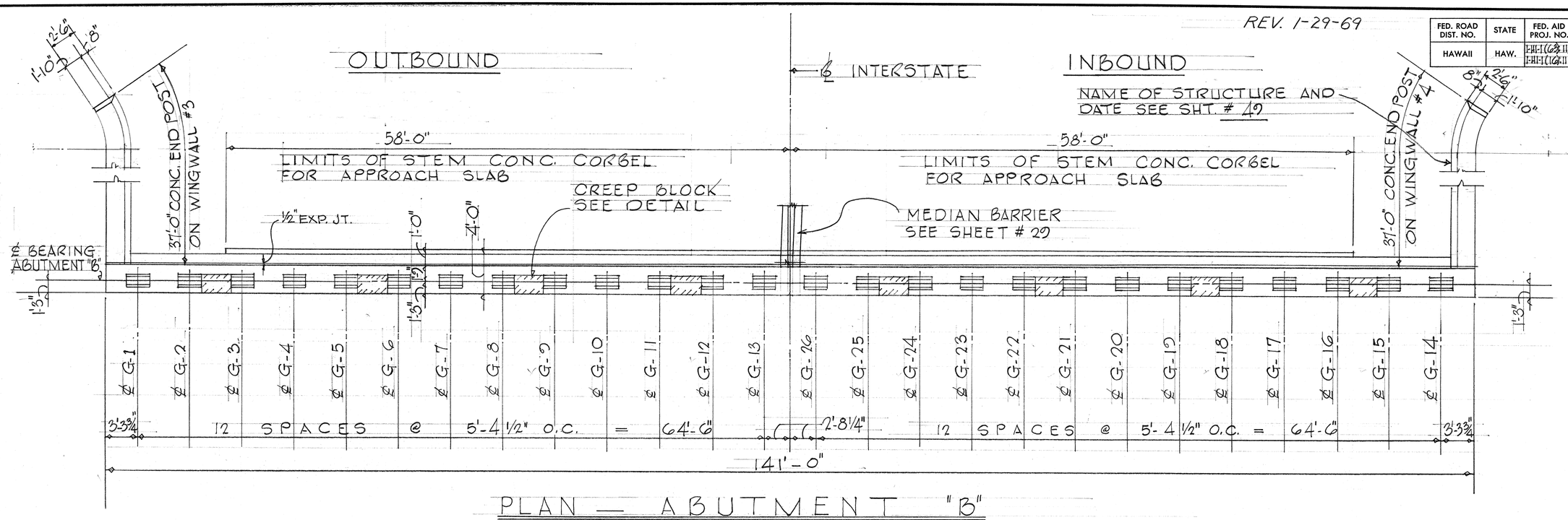
NAIMALU VIADUCT
ABUTMENT "B" LAYOUT PLAN & FOOTING LAYOUT PLAN.
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. 1-HI-1 (63)11
SCALE: AS NOTED

SHEET No. 43 OF 59 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

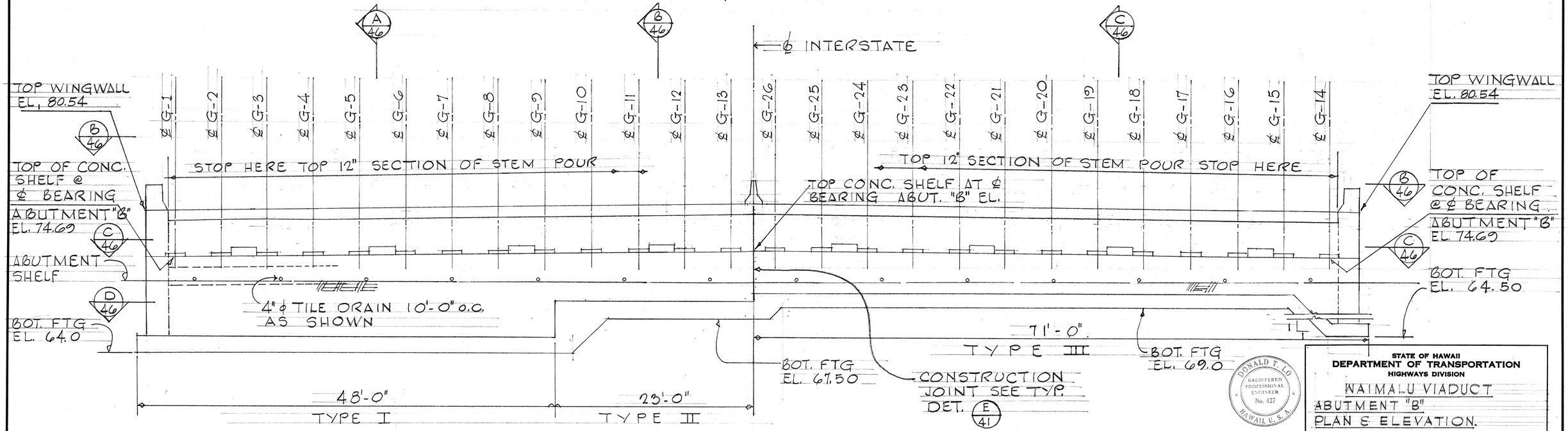
REV. 1-29-69

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(6)&II I-HI-1(16)II	1968	84	98



PLAN — ABUTMENT "B"

SCALE 3/16" = 1'-0"



ELEVATION — ABUTMENT "B"

SCALE 3/16" = 1'-0"

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

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

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Donald T. Lo
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

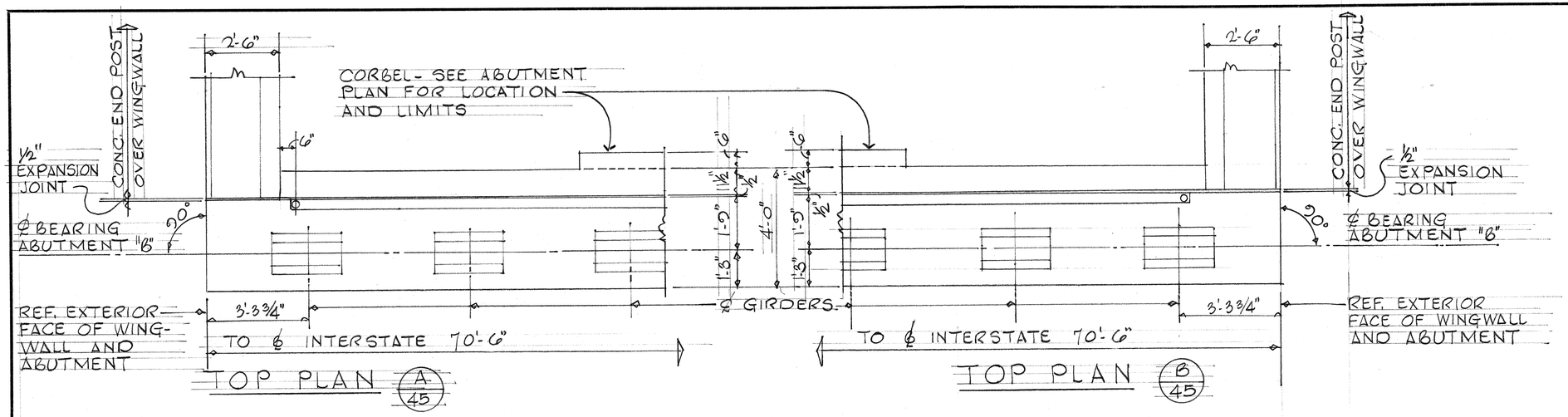
WAIMALU VIADUCT
ABUTMENT "B"
PLAN & ELEVATION.
INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1 (6)II
SCALE: AS NOTED

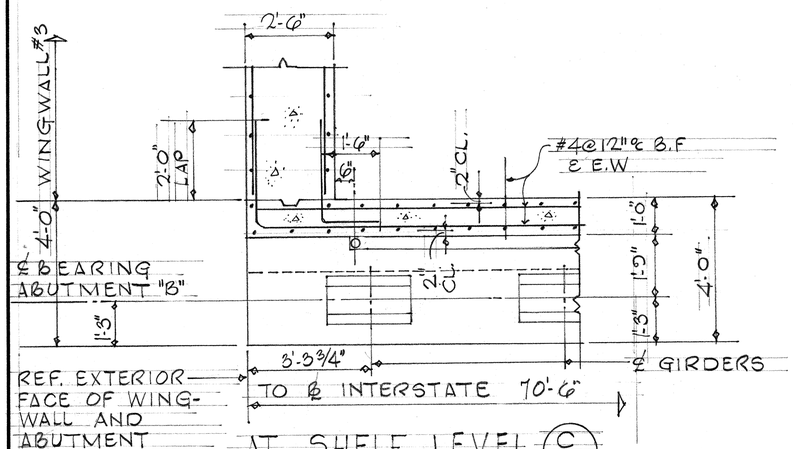
SHEET No. 44 OF 59 SHEETS

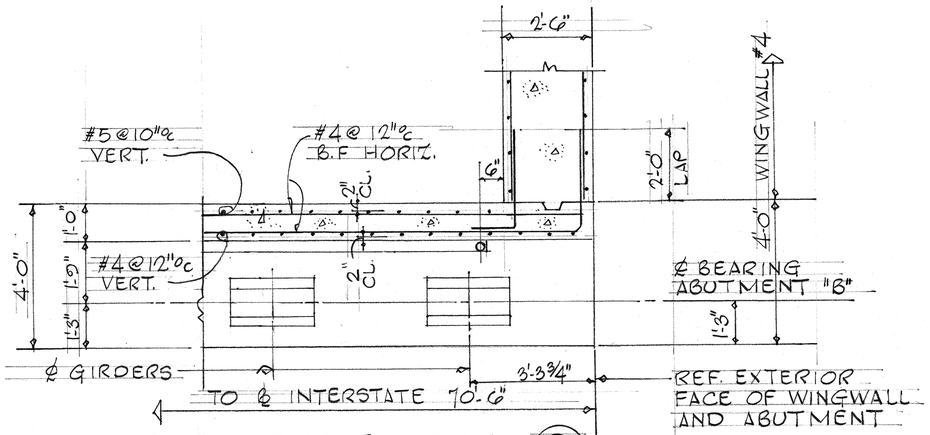
S 41

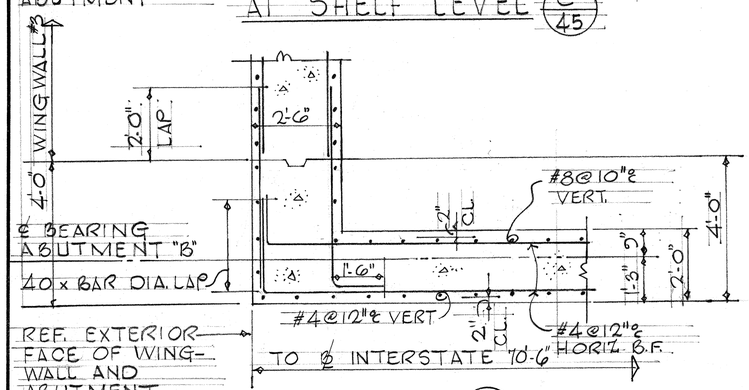
PRINTED ON NO. 1000H CLEARPRINT

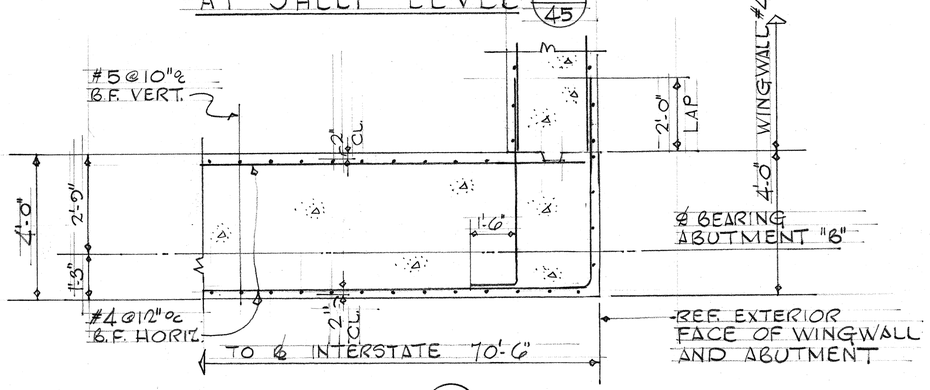
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(64):11	1968	85	98











ABUTMENT "B" LONGITUDINAL SECTIONS SCALE 1½" = 1'-0"

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

PRINTED ON NO. 1000H CLEARPRINT

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

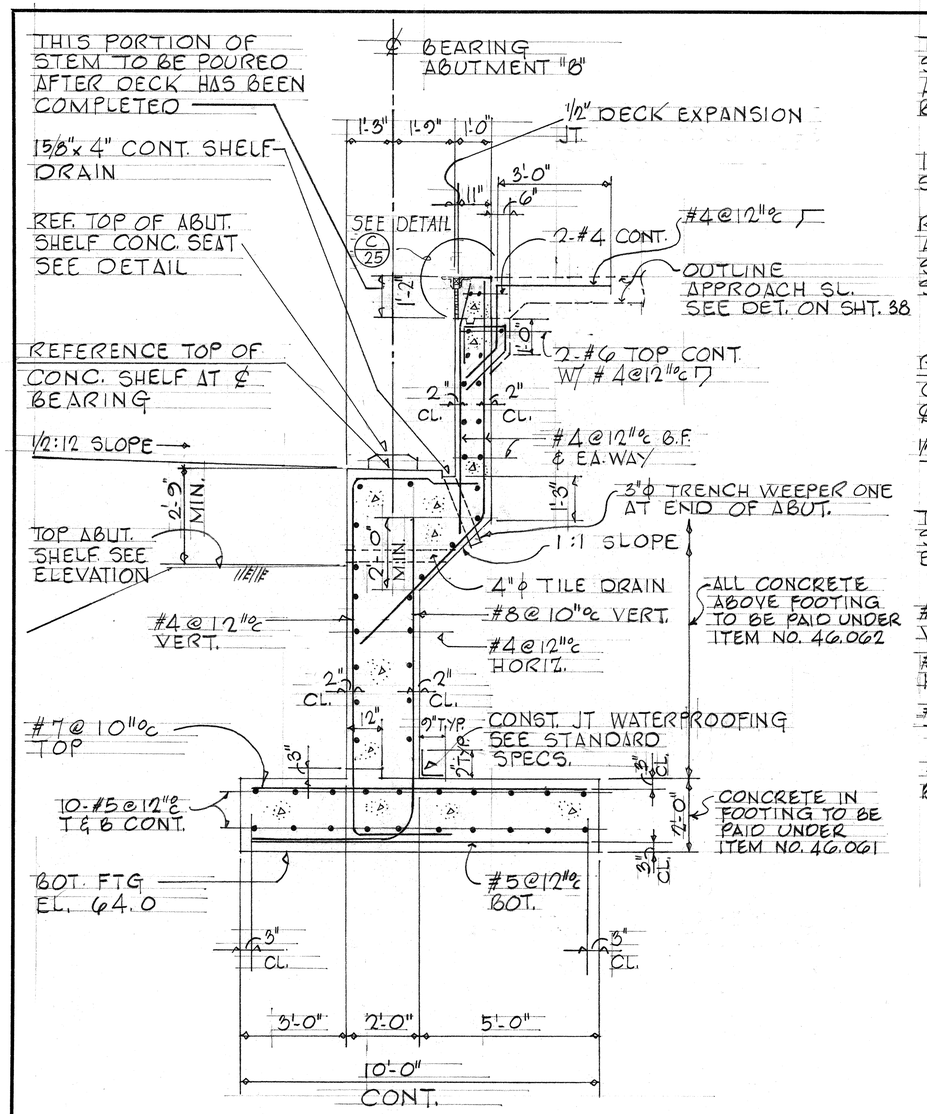
NAIMALU VIADUCT
ABUTMENT "B"
LONGITUDINAL SECTIONS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

SHEET No. 45 OF 59 SHEETS

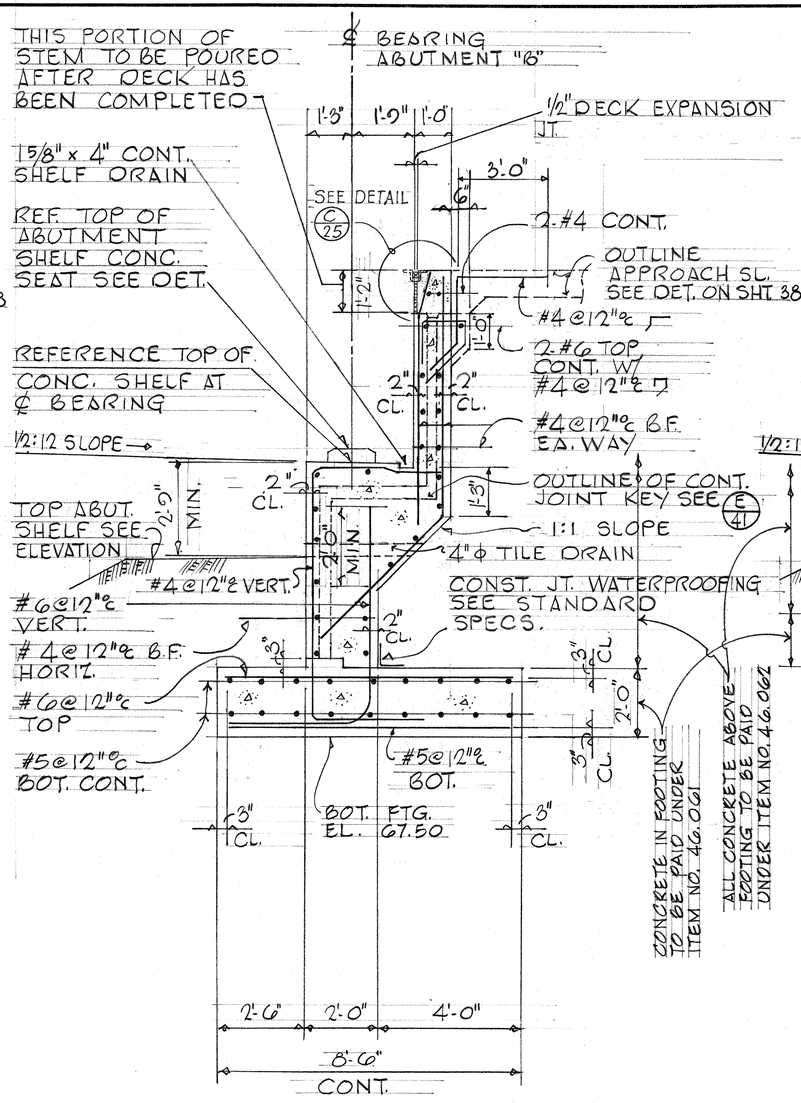
S 5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-HI-(63)11 F-HI-(64)11	1968	86	98

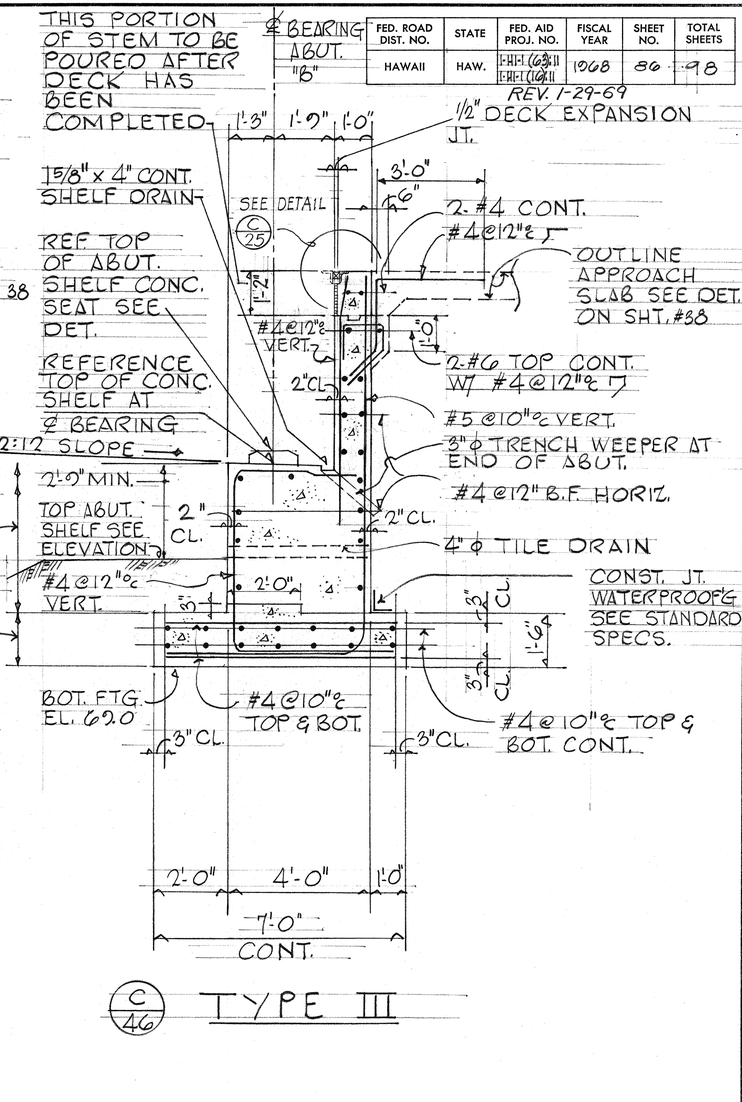
REV. 1-29-69



A/46 TYPE I



B/46 TYPE II



C/46 TYPE III

NORMAL ABUTMENT "B" SECTIONS

SCALE 1/2" = 1'-0"

NOTE
STEM CONC. CORBEL LIMITS SEE ABUTMENT PLAN

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

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Donald T. Lo
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

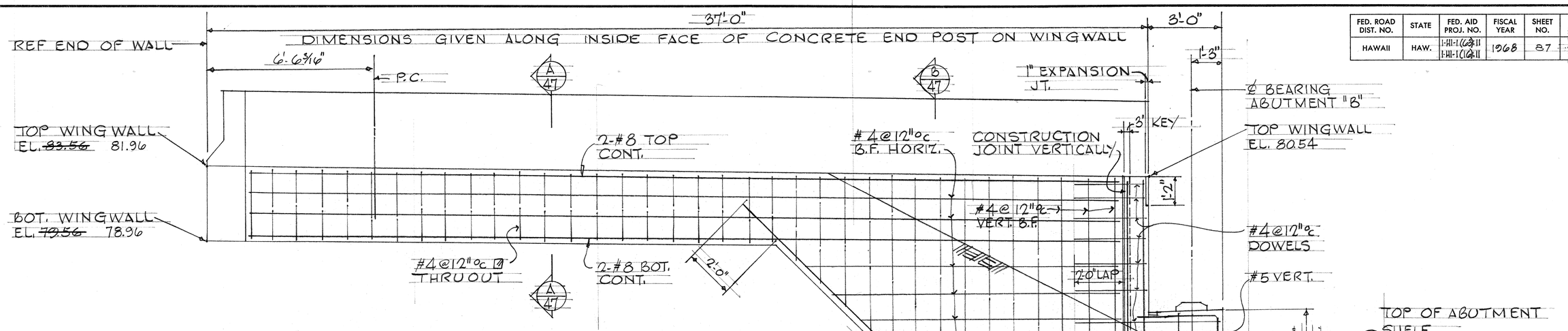
WAIMALU VIADUCT
ABUTMENT "B"
NORMAL SECTIONS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63):11
SCALE: AS NOTED

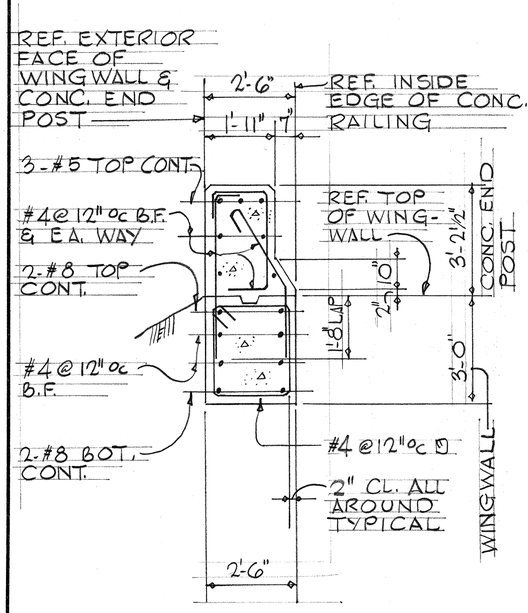
SHEET No. 46 OF 54 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

S G

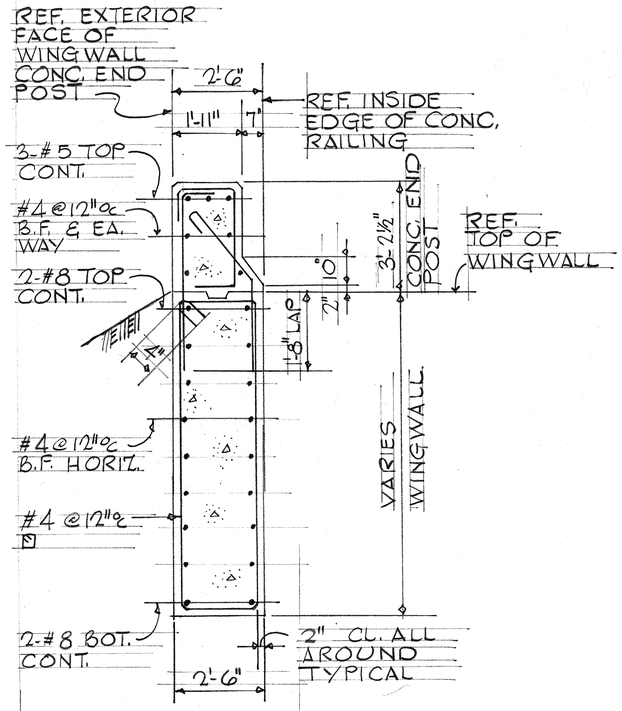
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(16)11	1968	87	98





SECTION A 47

SCALE 1/2" =



SECTION B 47

SCALE 1/2" = 1'-0"

TYPICAL WINGWALL NO. 3 ELEVATION

SCALE 1/2" = 1'-0"

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

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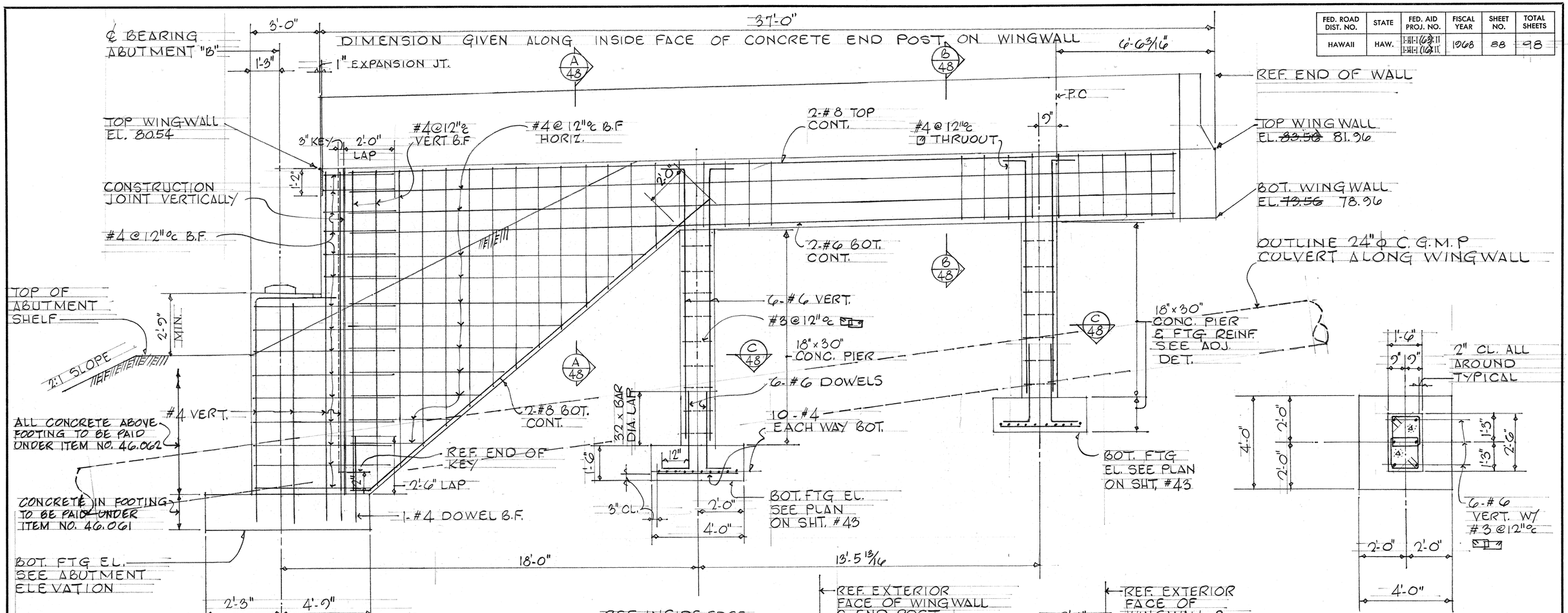
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
WINGWALL NO. 3,
ELEVATION & SECTIONS
INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1(63):11
SCALE: AS NOTED

SHEET No. 47 OF 59 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(16)11	1968	88	98

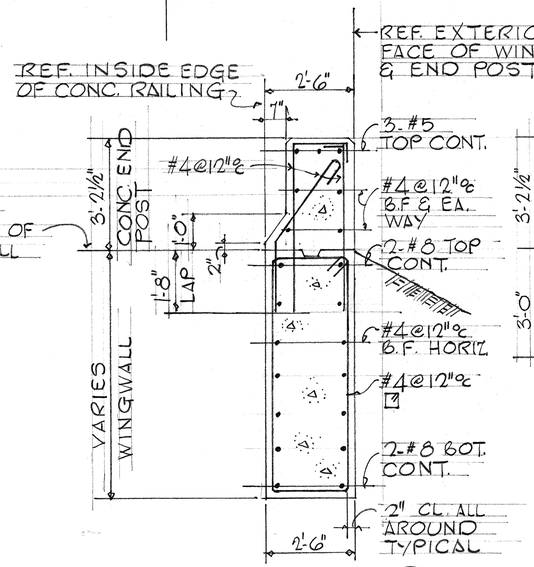


TYPICAL WINGWALL NO. 4 ELEVATION

SCALE 1/2" = 1'-0"

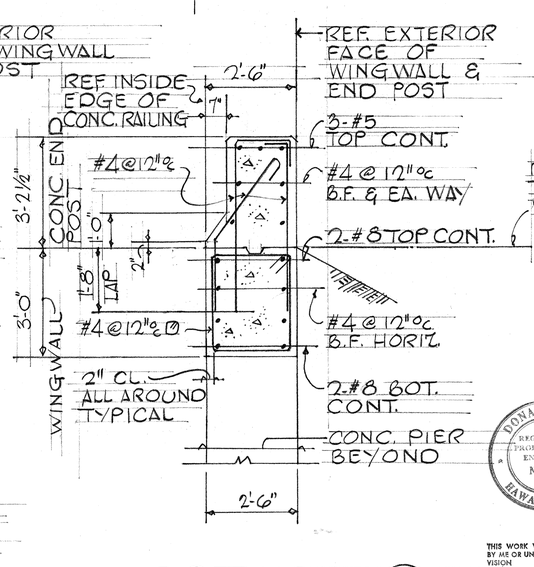
SECTION C/48

SCALE 1/2" = 1'-0"



SECTION A/48

SCALE 1/2" = 1'-0"



SECTION B/48

SCALE 1/2" = 1'-0"

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NOTE BOOK	DESIGNED BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

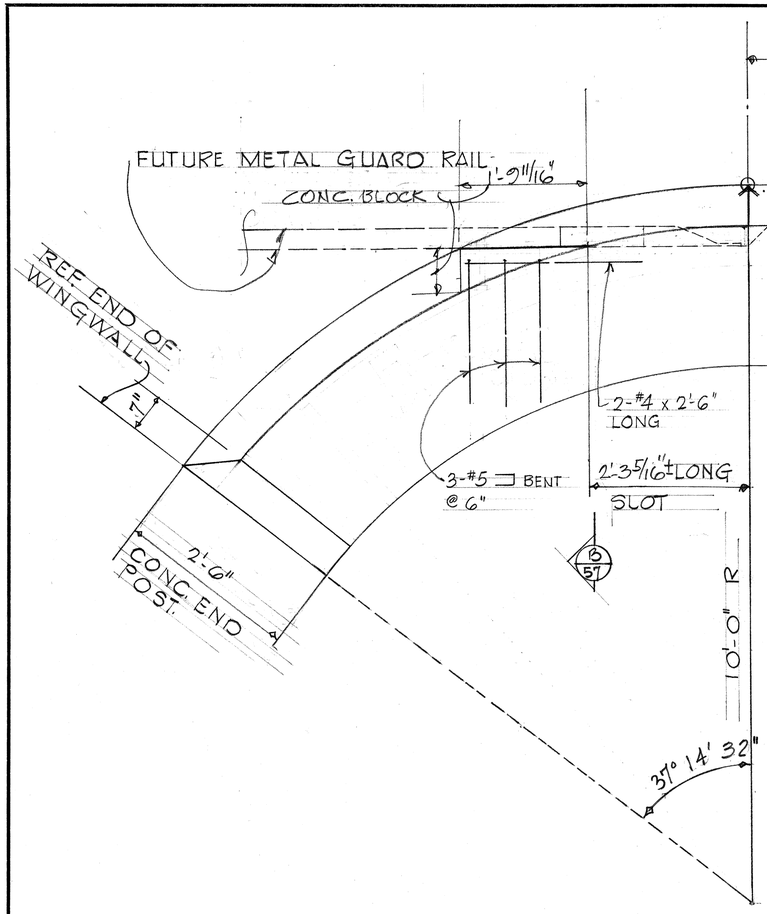
NAIMALU VIADUCT
WINGWALL NO. 4,
ELEVATION & SECTIONS
INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1(63)11
SCALE: AS NOTED

SHEET No. 48 OF 59 SHEETS

PRINTED ON NO. 1000N CLEARPRINT

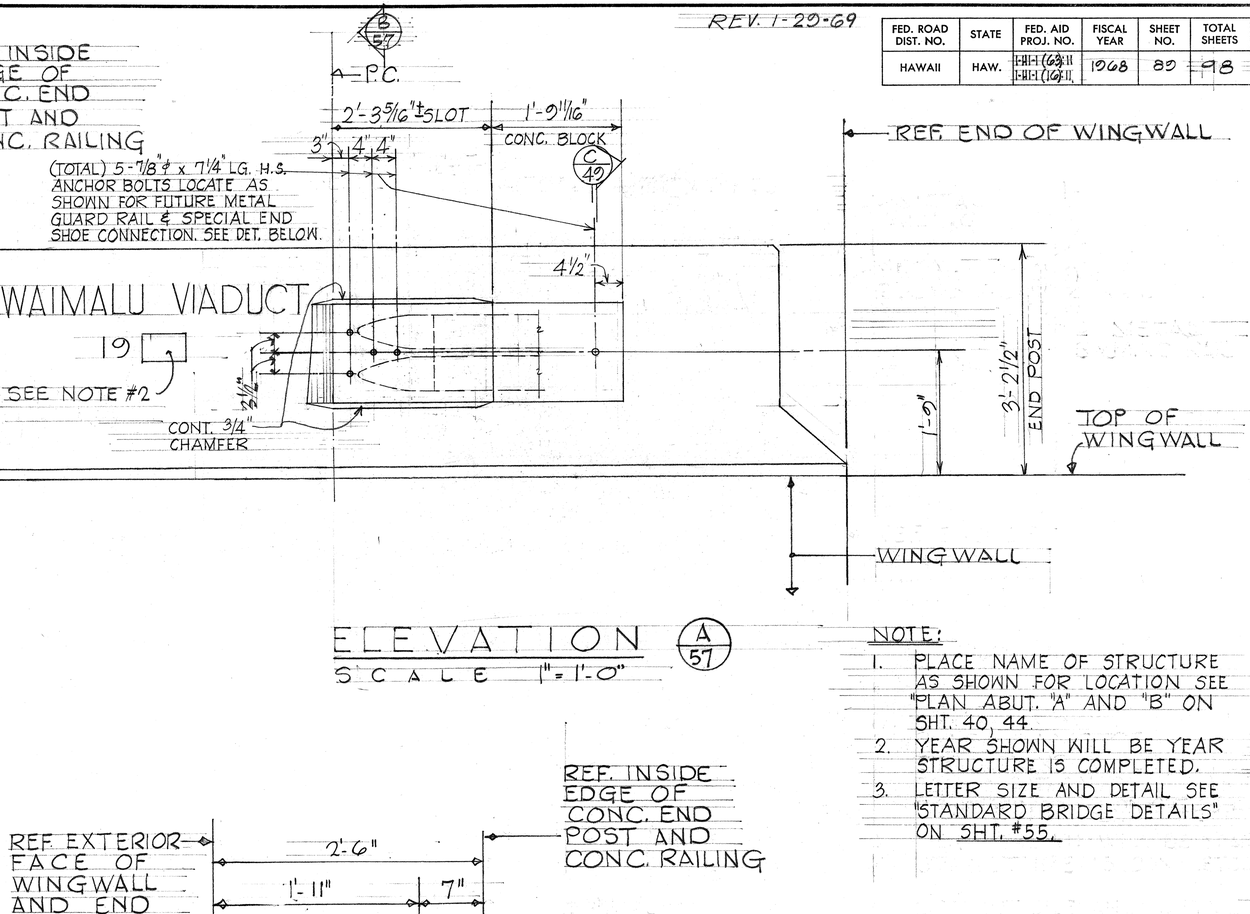
REV. 1-29-69

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(16)11	1968	80	98



PLAN

SCALE 1" = 1'-0"



ELEVATION A/57

SCALE 1" = 1'-0"

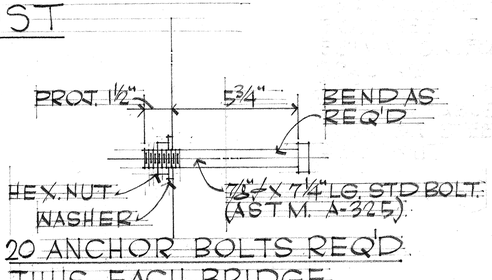
NOTE:

1. PLACE NAME OF STRUCTURE AS SHOWN FOR LOCATION SEE "PLAN ABUT. "A" AND "B" ON SHT. 40, 44.
2. YEAR SHOWN WILL BE YEAR STRUCTURE IS COMPLETED.
3. LETTER SIZE AND DETAIL SEE "STANDARD BRIDGE DETAILS" ON SHT. #55.

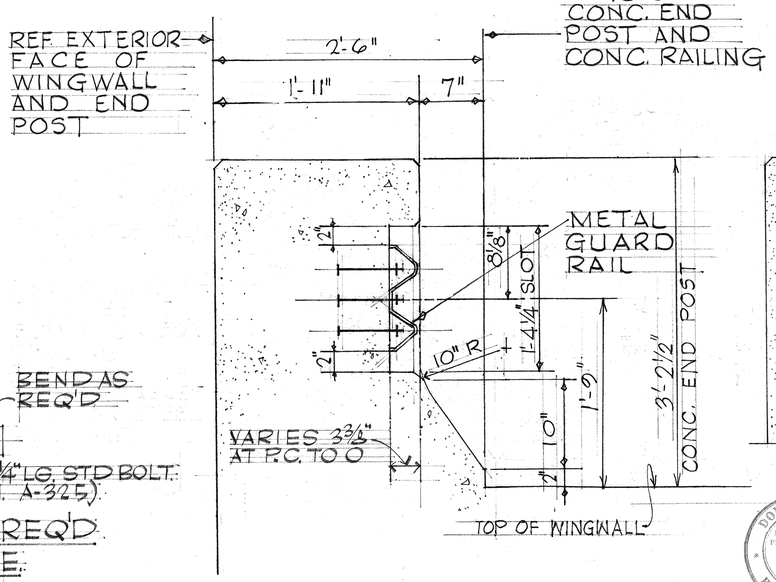
TYPICAL METAL GUARD RAIL CONNECTION DETAILS AT CONCRETE END POST

CURVE DATA

ϕ = 37° 14' 32"
R = 10'
Lc = 6.5'

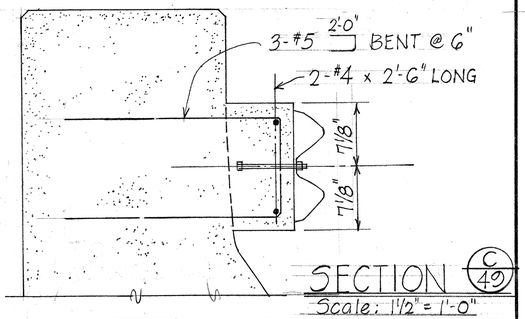


20 ANCHOR BOLTS REQ'D THUS EACH BRIDGE.
(BOLTS, NUTS & WASHERS SHALL BE GALVANIZED)



SECTION B/57

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



SECTION C/42

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

ORIGINAL PLAN
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REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

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SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

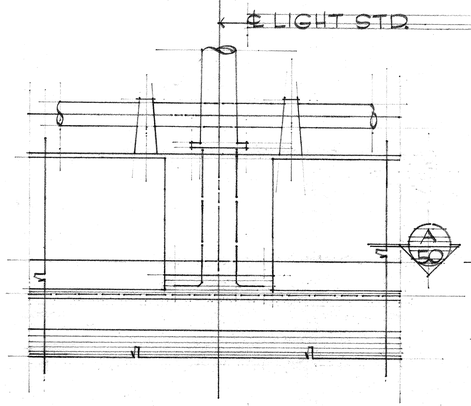
WAIMALU VIADUCT
ABUTMENT "A" & "B" GUARD RAIL CONNECTION DETAILS
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63)11
SCALE: AS NOTED

SHEET No. 49 OF 59 SHEETS

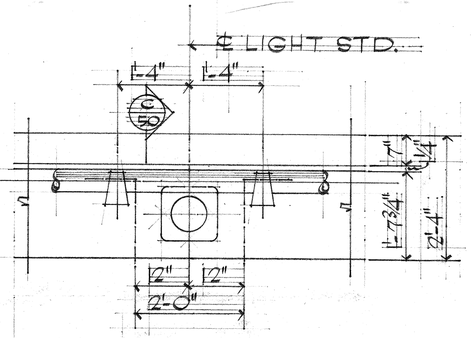
PRINTED ON NO. 1000H CLEARPRINT

REV. 1-29-69

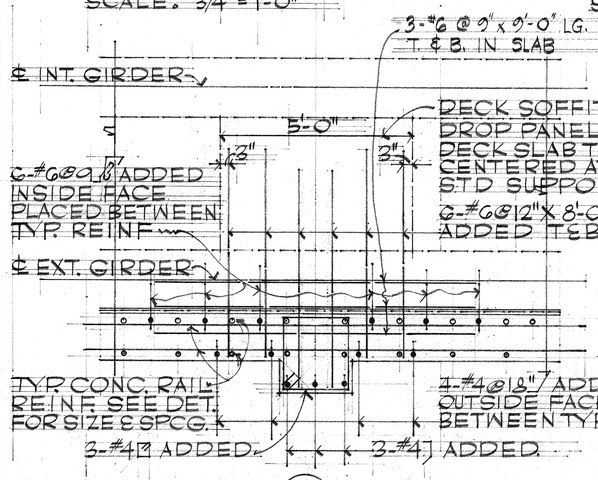
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(64):11	1968	50	98



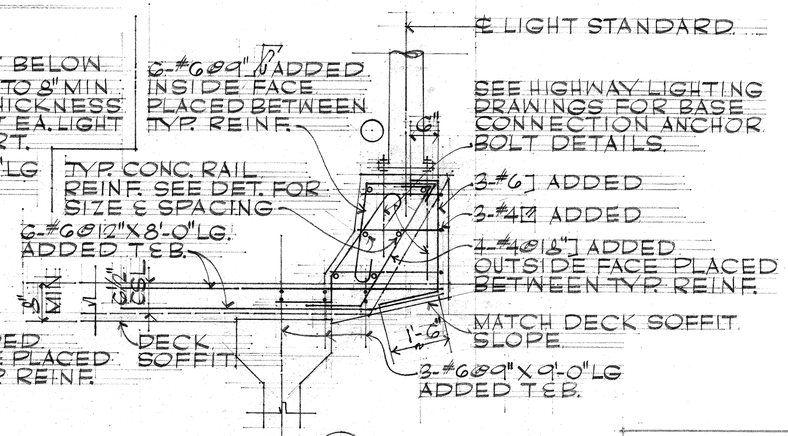
PART ELEVATION
SCALE: 3/4" = 1'-0"



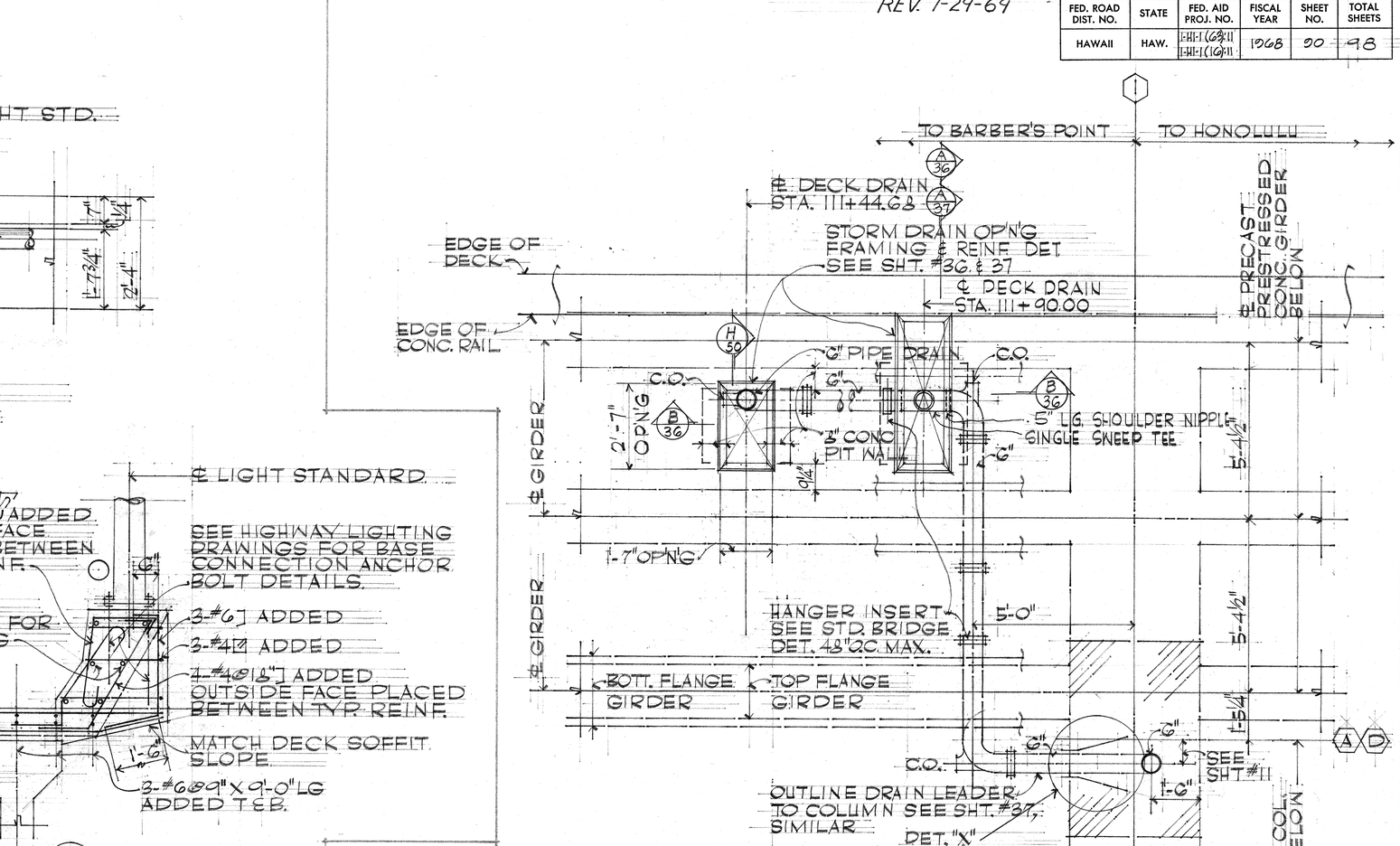
PART PLAN
SCALE: 3/4" = 1'-0"



SECTION A 50 SCALE: 1/2" = 1'-0"



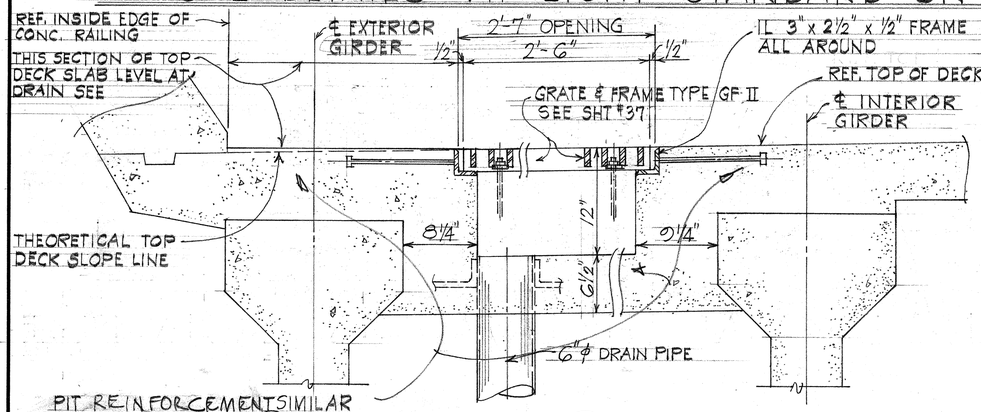
SECTION C 50 SCALE: 3/4" = 1'-0"



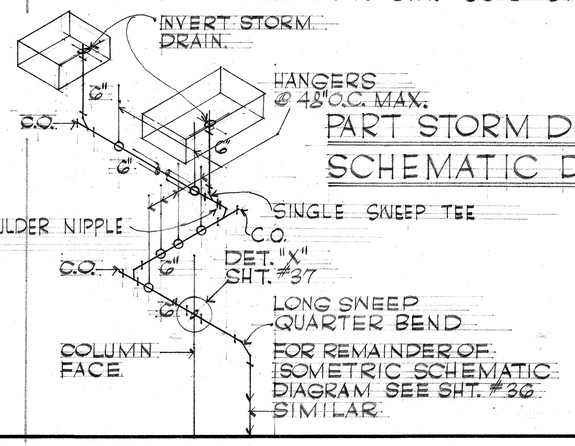
PLAN - SPAN NO 1 - TYPICAL LOCATION & REINF. OF DECK STORM DRAIN OPENINGS. SCALE: 1/2" = 1'-0"

NOTE: REFER TO SHT. #36 & #37 FOR ADDITIONAL DECK DRAIN DETAILS.

TYPICAL DETAILS AT LIGHT STANDARD ON VIADUCT



SECTION H 50 SCALE: 1½" = 1'-0"



PART STORM DRAIN LEADER ISOMETRIC SCHEMATIC DIAGRAM NO SCALE.

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NAIMALU VIADUCT
TYP DET. AT LIGHT STD. ON VIADUCT & MISCELLANEOUS DETAILS.
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE AS NOTED.

SHEET No. 50 OF 59 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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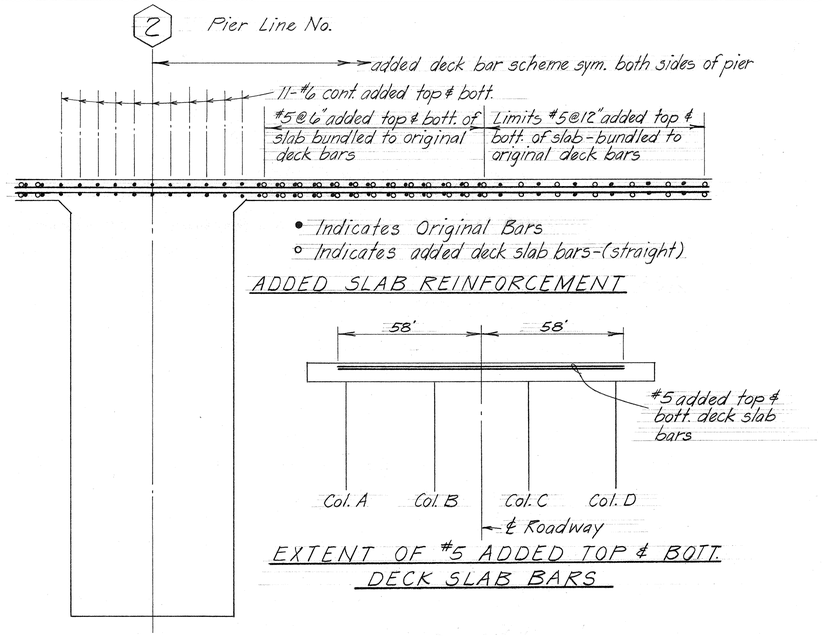
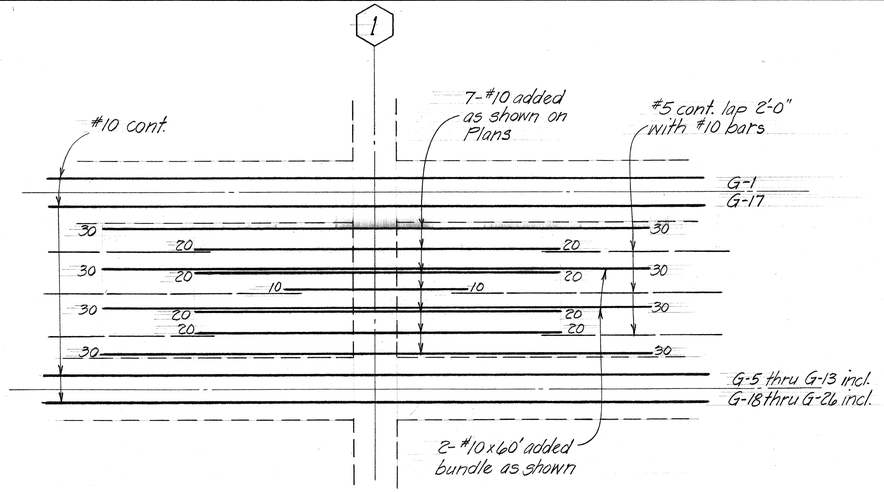
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63):11 I-HI-1(10):11	1968	C0220A	28



DETAIL (A)

NOTE:
See Contract Plans for additional Details.

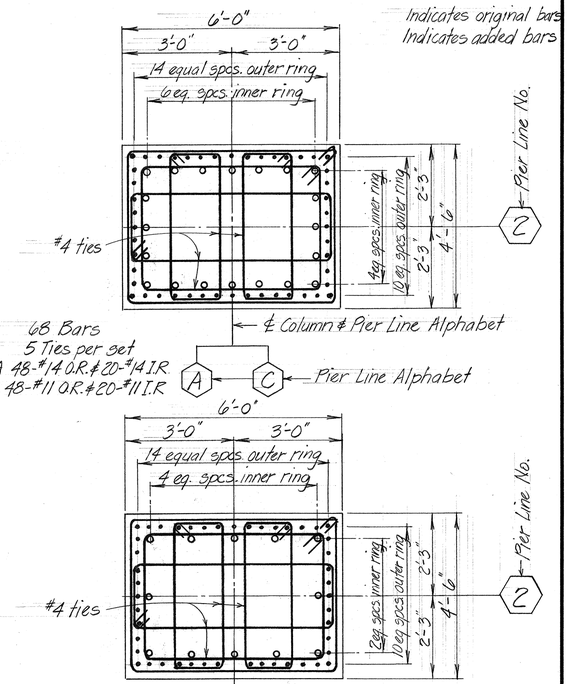


ADDED LONG. SLAB REINFORCEMENT AT PIER NO. 1

DETAIL (C)

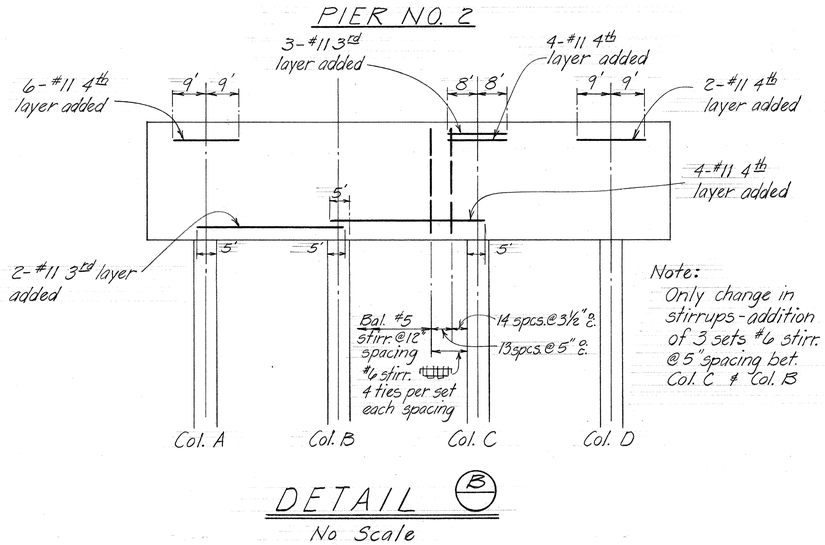
Scale: Longit. 1/8" = 1'-0"
Trans. 1/2" = 1'-0"

Note:
added bars @ top of column only.

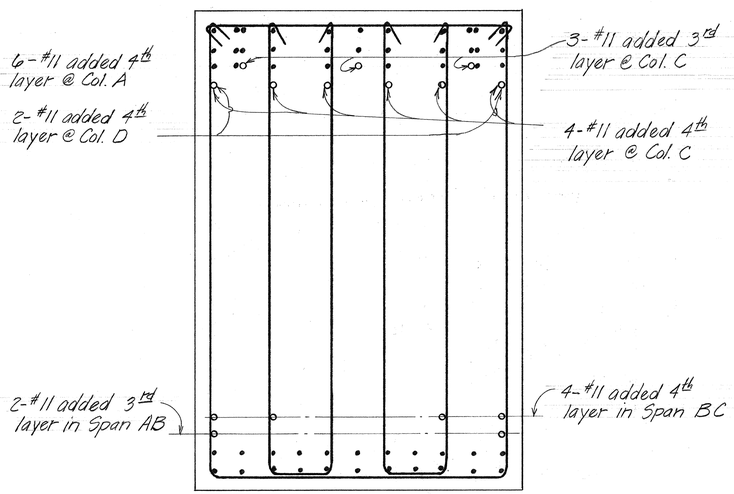


ADDED PIER 2 COL. BARS

DETAIL (E)



DETAIL (B)
No Scale



PIER NO. 2
DETAIL (D)

THIS SHEET IS AN "AS-BUILT" SUPPLEMENT

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
ADDED REINFORCEMENT FOR ANTICIPATED SETTLEMENT AT PIER NUMBER 2
"AS BUILT PLANS"

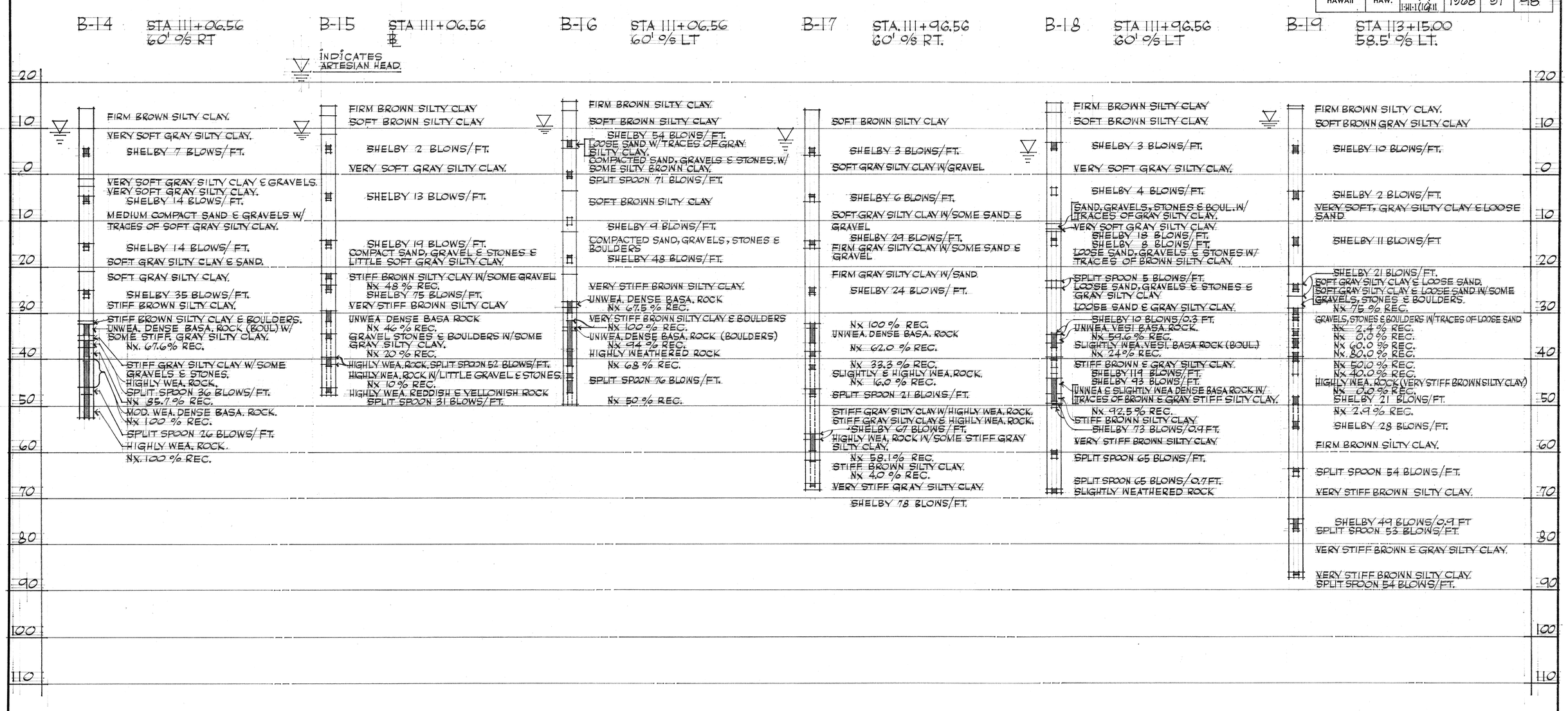
F.A.I. PROJ. NO. I-HI-1(63):11 June 1971

SHEET No. OF SHEETS

C 0 2 2 0 A

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(62)11 I-HI-1(10)11	1968	91	98



ORIGINAL PLAN

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HAWAII, U. S. A.

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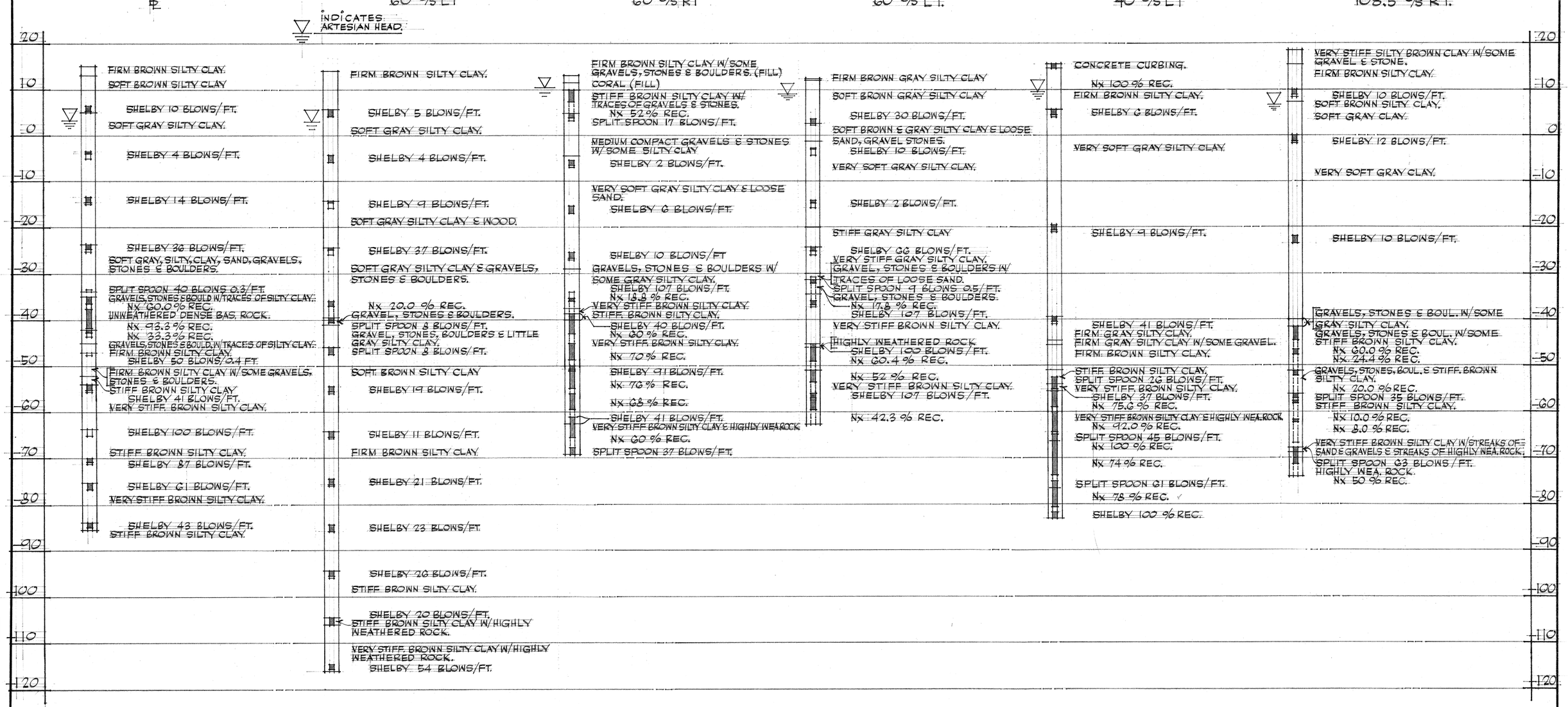
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
LOG OF BORINGS
B-14 THRU B-19
INTERSTATE ROUTE H-1
FAI. PROJ. NO. I-HI-1(62):11
SCALE AS NOTED

SHEET No. 51 OF ~~59~~ SHEETS

51

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63)11 I-HI-1(10)11	1968	92	98



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
LOG OF BORINGS
B-20 THRU B-25
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63):11
SCALE AS NOTED.

SHEET No. 52 OF 59 SHEETS

92

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(23)11 I-HI-1(16)11	1968	93	98

INDICATES ARTESIAN HEAD.

B-26 STA 116+16.56, 27' % LT.

- CONCRETE CURBING
- FIRM BROWN SILTY CLAY.
- SHELBY 4 BLOWS/FT.
- VERY SOFT BROWN SILTY CLAY.
- SHELBY 3 BLOWS/FT.
- VERY SOFT GRAY SILTY CLAY.
- SHELBY 2 BLOWS/FT.
- SHELBY 6 BLOWS/FT.
- VERY SOFT GRAY SILTY CLAY W/SOME GRAVEL.
- SHELBY 11 BLOWS/FT.
- SOFT BROWN SILTY CLAY.
- SHELBY 18 BLOWS/FT.
- STIFF BROWN SILTY CLAY.
- SHELBY 37 BLOWS/FT.
- HIGHLY WEA. ROCK. Nx 16 % REC.
- Nx 16 % REC.
- SPLIT SPOON 54 BLOWS/FT. Nx 12 % REC.
- Nx 38 % REC.
- SPLIT SPOON 78 BLOWS/FT.

B-27 STA. 117+21.56, 122' % LT.

- FIRM BROWN SILTY CLAY.
- SHELBY 10 BLOWS/FT.
- FIRM BROWN SILTY CLAY W/GRAVELS.
- SOFT GRAY SILTY CLAY.
- SHELBY 4 BLOWS/FT.
- VERY SOFT GRAY SILTY CLAY.
- SHELBY 5 BLOWS/FT.
- SOFT BROWN SILTY CLAY.
- SHELBY 12 BLOWS/FT.
- FIRM BROWN SILTY CLAY
- STIFF BROWN SILTY CLAY. SHELBY 21 BLOWS/FT.
- FIRM BROWN SILTY CLAY.
- SHELBY 22 BLOWS/FT.
- HIGHLY WEA. ROCK & STIFF BROWN SILTY CLAY. Nx 84% REC.
- Nx 74% REC.
- SPLIT SPOON 39 BLOWS/FT.
- HIGHLY WEA. ROCK. Nx 60 % REC.
- MOD. WEA. VES. BAS. ROCK. Nx 100 % REC.

B-28 STA 117+60, 82' % RT.

- FIRM BROWN SILTY CLAY.
- SHELBY 12 BLOWS/FT.
- SOFT GRAY SILTY CLAY.
- SHELBY 5 BLOWS/FT.
- VERY SOFT GRAY SILTY CLAY.
- SHELBY 3 BLOWS/FT.
- UNWEA. DENSE BASA. ROCK (BOUL.) Nx 78.3 % REC.
- GRAVELS STONES & BOULDERS. Nx 38.0 % REC.
- GRAVEL, STONES, BOUL & STIFF BROWN SILTY CLAY. Nx 31.9 % REC.
- HIGHLY WEA. ROCK & STIFF BROWN SILTY CLAY. SPLIT SPOON 18 BLOWS/FT.
- HIGHLY WEA. ROCK & STIFF BROWN SILTY CLAY W/GRAVELS & STONES.
- UNWEA. VESI BASA. ROCK. Nx 85.7 % REC.
- UNWEA. DENSE BASA. ROCK. Nx 98.0 % REC.

B-29 STA. 118+26.56, 35' % RT.

- ASPHALTIC CONCRETE
- UNTREATED BASE (CORAL)
- FIRM. BROWN SILTY CLAY.
- SHELBY 18 BLOWS/FT.
- SOFT BROWN SILTY CLAY.
- SHELBY 4 BLOWS/FT.
- SHELBY 10 BLOWS/FT.
- VERY SOFT GRAY SILTY CLAY.
- SHELBY 11 BLOWS/FT.
- GRAVEL, STONES & BOULDERS W/FEW GRAY & BROWN SILTY CLAY. Nx 42.1 % REC. Nx 80.0 % REC. Nx 68.0 % REC.
- Nx 80.0 % REC.
- GRAVEL, STONES & BOUL. W/FEW BROWN SILTY CLAY. Nx 13.3 % REC.
- SPLIT SPOON 61 BLOWS/0.6 FT.
- GRAVELS, STONES & BOUL W/FEW BROWN & GRAY SILTY CLAY. Nx 100 % REC.
- GRAVELS, STONES & BOUL W/FEW BROWN SILTY CLAY. Nx 70.0 % REC. Nx 100 % REC.
- UNWEA. DENSE BASA. ROCK. Nx 94.0 % REC.

B-30 STA. 119+27, 8' % LT.

- STIFF BROWN SILTY CLAY.
- FIRM BROWN SILTY CLAY.
- SHELBY 11 BLOWS/FT.
- VERY SOFT GRAY SILTY CLAY.
- SHELBY 9 BLOWS/FT.
- SHELBY 7 BLOWS/FT.
- GRAVELS, STONES & BOUL. W/TRACES OF GRAY, SILTY CLAY. Nx 100 % REC. Nx 100 % REC.
- UNWEA. DENSE BASALTIC ROCK. Nx 100 % REC. Nx 92.5 % REC.
- MOD WEA. ROCK. Nx 100 % REC.

B-31 STA 120+36.56, 118' % RT.

- STIFF BROWN SILTY CLAY W/HIGHLY WEA. ROCK.
- SPLIT SPOON 27 BLOWS/FT. HIGHLY WEATHERED ROCK. Nx 17.4 % REC.
- SLIGHTLY WEATHERED ROCK. Nx 12.0 % REC.
- VERY SOFT BROWN SILTY CLAY W/LITTLE GRAVEL.
- SPLIT SPOON 1 BLOW/FT.
- SOFT BROWN SILTY CLAY & SAND SHELBY 2 BLOWS/FT.
- VERY SOFT GRAYISH BROWN SILTY CLAY W/GRAVEL. SHELBY 1 BLOW/FT.
- VERY SOFT GRAY SILTY CLAY W/GRAVEL.
- FIRM BROWN SILTY CLAY W/GRAVEL. SHELBY 15 BLOWS/FT.
- HIGHLY WEATHERED ROCK. HIGHLY WEATHERED VESICULAR ROCK. Nx 100 % REC. Nx 0.0 % REC.
- HIGHLY WEATHERED ROCK. SPLIT SPOON 24 BLOWS/FT. FRACTURED MOD. WEA. VESICULAR ROCK. Nx 100 % REC.
- FRACTURED SLIGHTLY WEA. VESICULAR ROCK. SLIGHTLY WEA VESICULAR BASALTIC ROCK. Nx 100 % REC.
- HIGHLY WEATHERED ROCK Nx 80.0 % REC.
- SPLIT SPOON 56 BLOWS/FT. Nx 100 % REC. Nx 100 % REC.
- UNWEATHERED VESICULAR ROCK. Nx 100 % REC.

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

PRINTED ON NO. 1000H CLEARPRINT

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Donald T. Lo
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
LOG OF BORINGS
B-26 THRU B-31
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(23)11
SCALE AS NOTED.

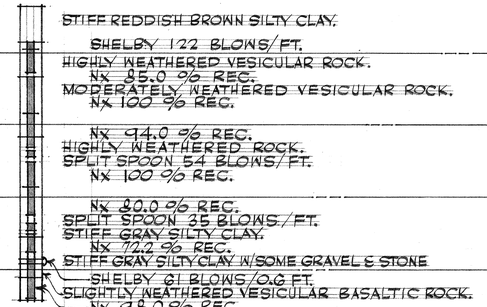
SHEET No. 53 OF 59 SHEETS

93

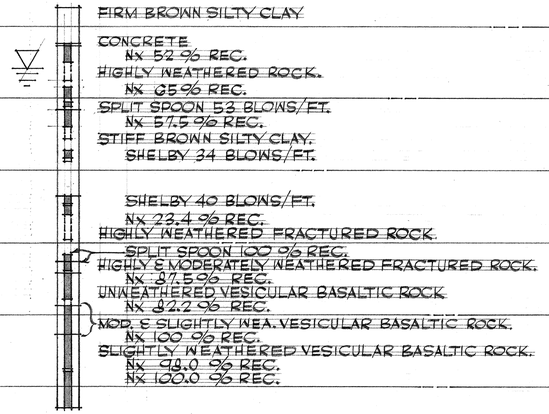
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	~~HHH(23)~~ ~~HHH(10)~~	1968	54	98

B-32 STA 121+46.56 120' % RT

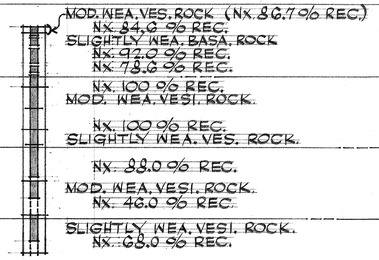
INDICATES ARTESIAN HEAD.



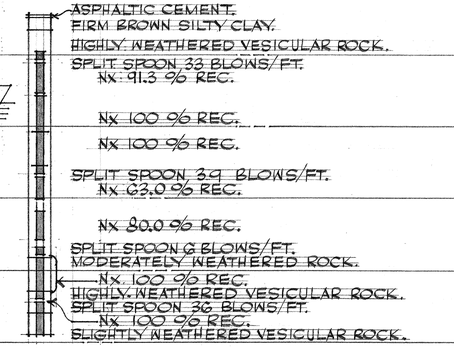
B-33 STA 121+65 60' % LT



B-34 STA 122+44.56 68' % RT



B-35 STA 122+46.56 74' % LT.



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

PRINTED ON NO. 1000H CLEARPRINT

DONALD T. LO REGISTERED PROFESSIONAL ENGINEER No. 427 HAWAII, U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIMALU VIADUCT
LOG OF BORINGS
B-32 THRU B-35
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(23):11
SCALE AS NOTED.

SHEET No. 54 OF ~~59~~ SHEETS

49 41

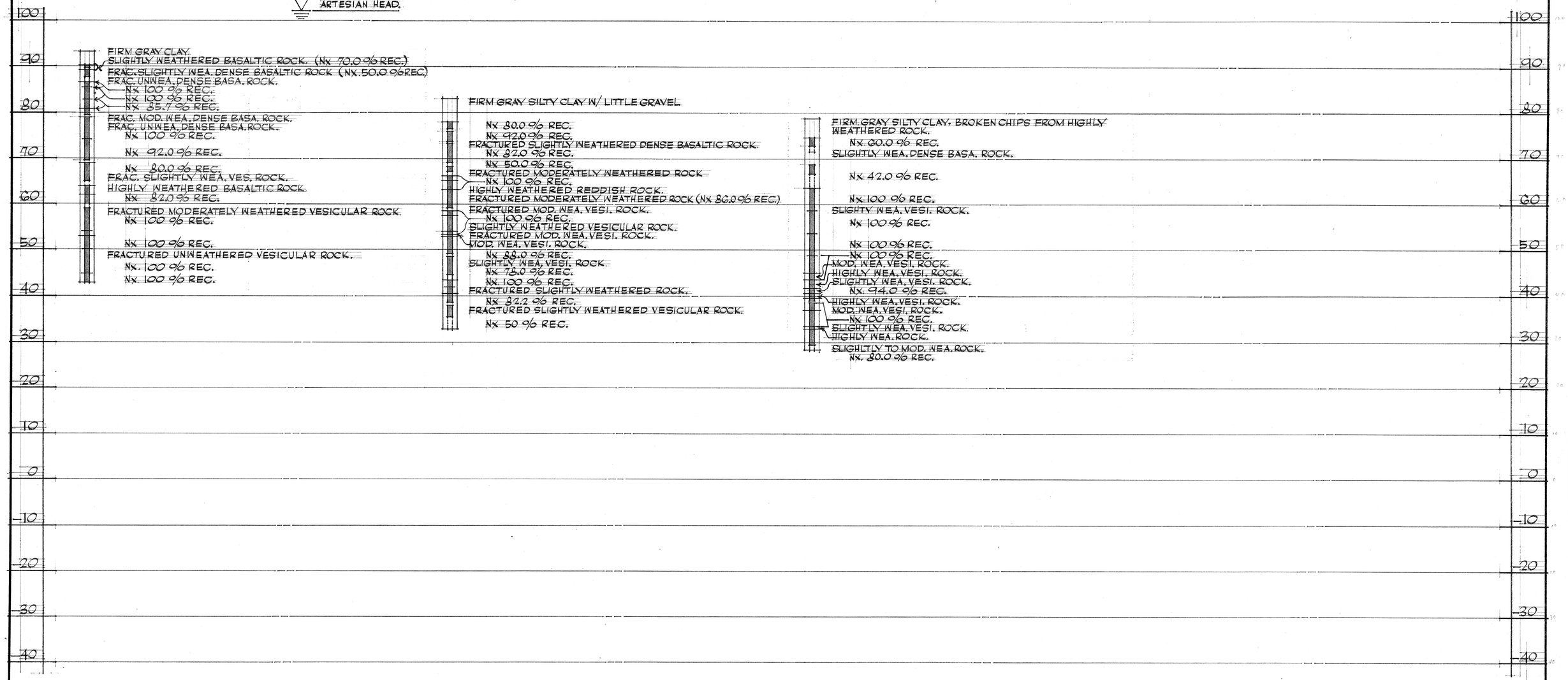
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	~~HH-(63)~~ II ~~HH-(10)~~ II	1968	55	98

B-36 STA 123+36.56 60' % RT

B-37 STA 123+36.56 ℄

B-38 STA 123+36.56 60' % LT

▽ INDICATES ARTESIAN HEAD.



ORIGINAL PLAN
NOTE BOOK No.

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

PRINTED ON NO. 1000H CLEARPRINT

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII, U. S. A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

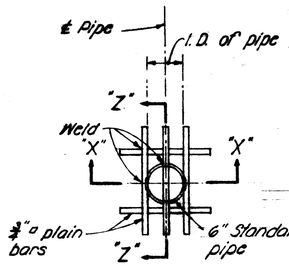
WAIMALU VIADUCT
LOG OF BORINGS
B-36 THRU B-38
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63): II
SCALE AS NOTED.

SHEET No. 55 OF ~~59~~ SHEETS

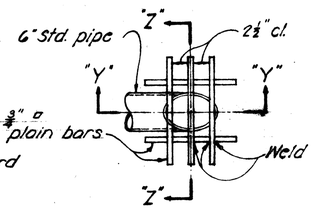
5 D 5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[illegible]	1968	96	98

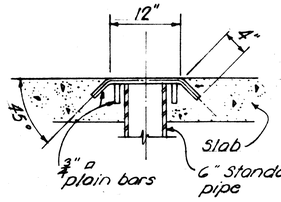
REVISION
Jan. '67
Feb. '67
Apr. 67



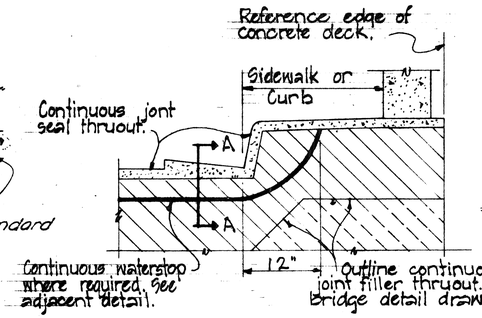
PLAN



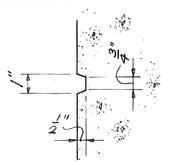
PLAN



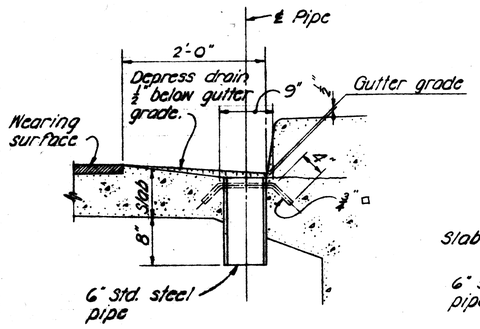
SECTION "Z-Z"



ELEVATION



END POST GROOVE DETAIL
Scale: 3"=1'-0"



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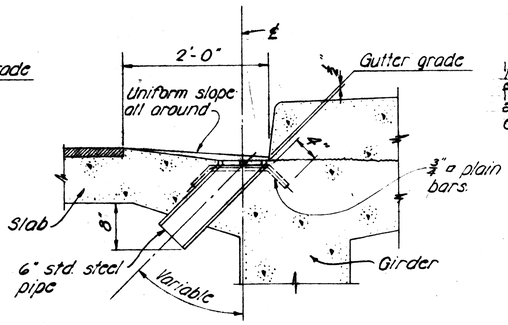
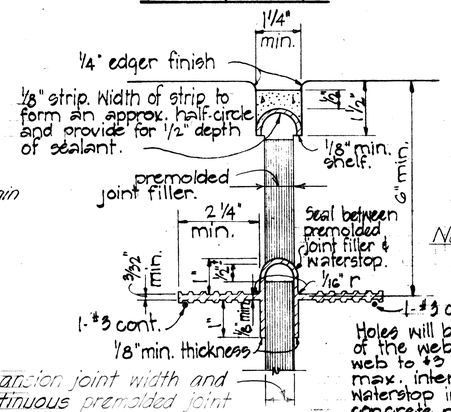


SECTION "Y-Y"



Expansion joint width and continuous premolded joint filler, see contract drawings.

SECTION "A-A"

Waterstop to have 3 or more pairs of raised ribs to provide 0.1 sq. in. min. rib cross-section area on each half of the waterstop. Height of ribs to be 5/32" min.

Nailing Strip:
Nail or staple to form or premolded joint filler.

Holes will be permitted in the outer ½" of the web for wires, rings, etc. tie web to #3 reinforcing bars at 12" max. intervals to support the waterstop in proper position during concrete placement. Alternative detail may be submitted for approval of the Engineer.

TYPICAL EXPANSION JOINT DETAIL

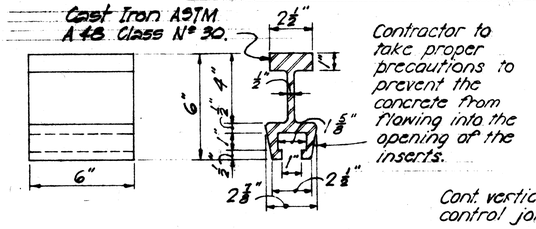
GENERAL NOTES

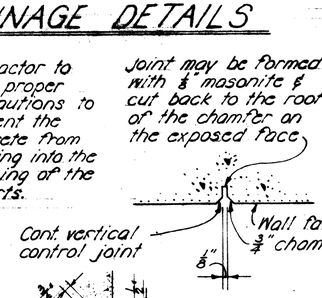
Elastometric Pads: Top & bottom of bridge bearing pads shall be secured against displacement with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for separately.

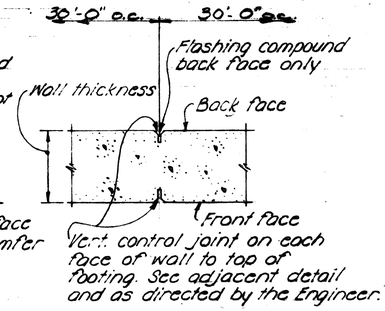
1. The Contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation.
2. All concrete shall be Class A-1 unless otherwise noted.
3. Clearance for reinforcing bars shall be as follows, unless otherwise noted:
   a. - 1½" For stirrups of beams & pier caps.
   b - 2" For ties of columns.
   c. - 2" For formed walls.
   d - 3" For footings.
4. Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top surfaces of the concrete seats shall be finished with a steel trowel to a smooth level at the elevation shown on the plans.
5. Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
6. Reinforcing bars shall be securely tied at all intersections & lap splices & shall be held in place during pouring to maintain their proper locations as shown on plans.
7. Splices of reinforcing - See Special Provisions.
8. Minimum spacing between parallel bars shall be 2½ times the diameter of bars, but in no case shall the clear distance between the bars be less than 1½ times the maximum size of the coarse aggregate.
9. All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
10. Forms for all exposed surfaces of separation structures and surfaces of retaining walls visible from a traveled way or from a populated area shall be plywood except that metal forms may be permitted provided a surface finish satisfactory to the Engineer can be obtained and the use of such forms is approved in writing by the Engineer. Forms for round columns shall be made of materials that will give a smooth finish and true dimensions as given in the plans. Forms for prestressed concrete members shall be either metal or plywood.
11. Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
12. Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered ¾" x ¾". See Standard Specifications.
13. Concrete finish - See Special Provisions.
14. All welders and welding procedures shall be qualified according to the requirements of the Special Provisions.
15. Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.

NOTE:
Metal drains shall be considered incidental to Class A-1 Concrete in both concrete and steel bridges and will not be paid for separately.
Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.

TYPICAL DRAINAGE DETAILS



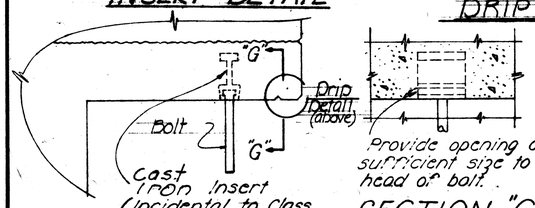




CONTROL JOINT DETAIL

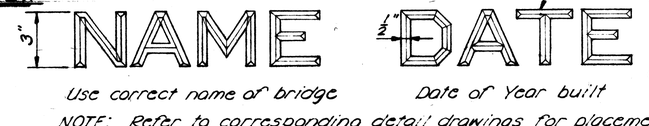
DRIP DET.

INSERT DETAIL



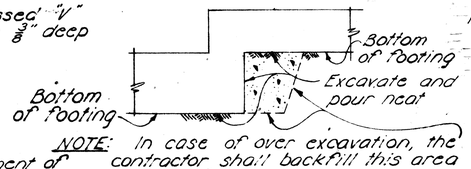
SECTION "G-G"

DETAIL of PIPE HANGERS & INSERTS



NOTE: Refer to corresponding detail drawings for placement of such names & dates at end post.
Exact details & spacing of letters & figures shall be as directed by the Engineer. See Note #15.

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST



NOTE: In case of over excavation, the contractor shall backfill this area with minimum class D-1 concrete at his own expense.

TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD BRIDGE DETAILS

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63)11

Scale as Noted Date:

SHEET No. 56 OF 59 SHEETS

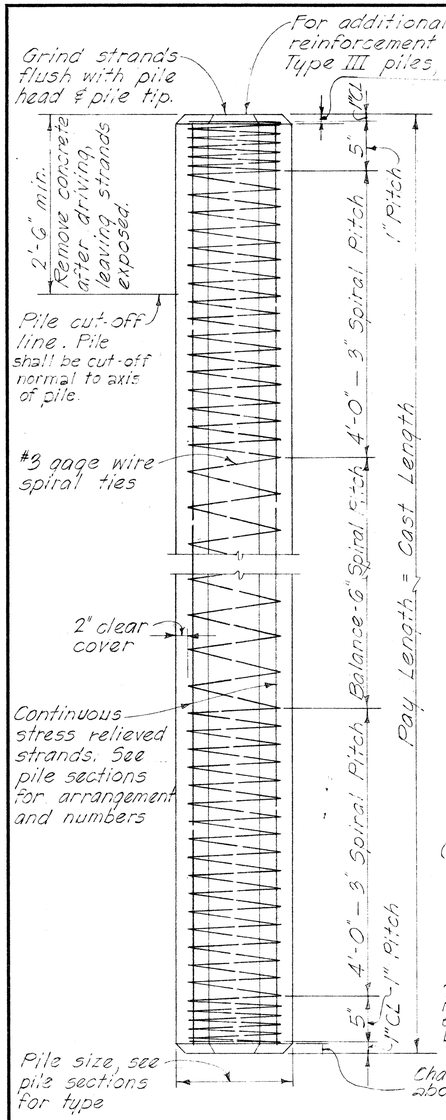
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

PRINTED ON NO. 10000 CLEARPRINT

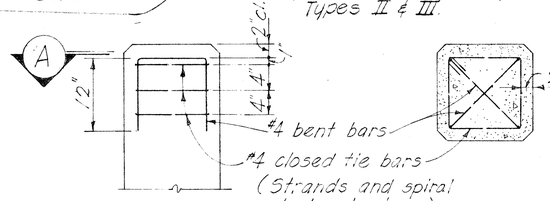
96

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(63)11 I-H-1(69)11	1968	97	98

Revision: Feb. 67, Mar. 67
Jan. 68, June 68
Aug. 68, Oct 68
Jan. 29, 1969

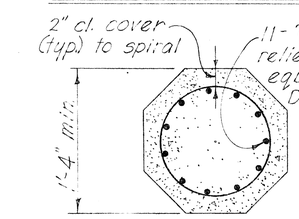


TYPICAL PILE DETAIL



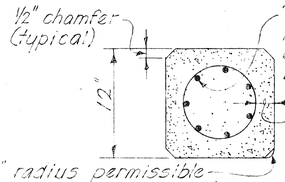
PART ELEVATION — SECTION (A)

TYPICAL ADDED REINFORCEMENT PILE ENDS - TYPE II & III ONLY

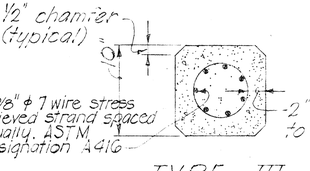


Note: All types of pile spiral reinforcement shall be cold drawn steel wire ASTM A-82

TYPE I



TYPE II



TYPE III

TYPICAL SECTIONS THRU PILES

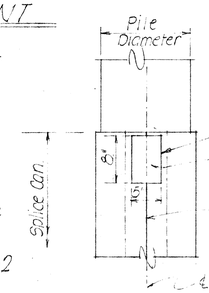
Max. Length "L" *	Max. Length "L" *	Length "L" *
Type I "L" = 53'-0"	Type I "L" = 75'-0"	Type I "L" over 75'-0"
12" Type II "L" = 50'-0"	12" Type II "L" = 72'-0"	12" Type II "L" over 72'-0"
10" Type III "L" = 46'-0"	10" Type III "L" = 66'-0"	10" Type III "L" over 66'-0"
0.30 L — 0.70 L	0.21 L — 0.58 L — 0.21 L	0.15 L — 0.35 L — 0.35 L — 0.15 L

* The length "L" is the distance end to end of pile.

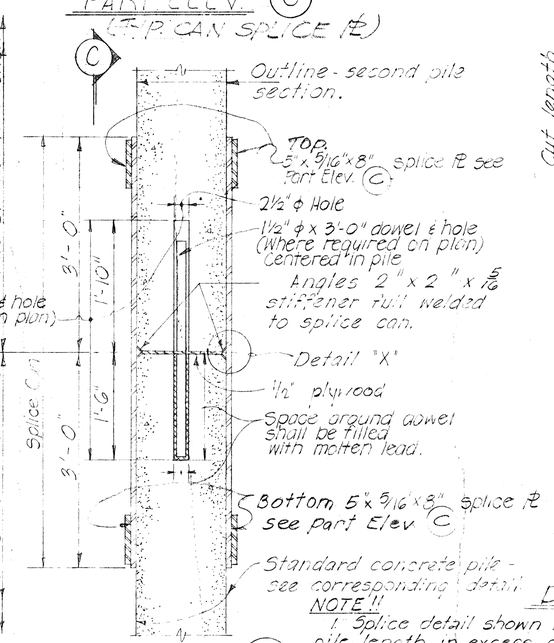
1 POINT PICK-UP — 2 POINT PICK-UP — 3 POINT PICK-UP

NOTE: Unless special lifting devices are attached for pick-up points, pick-up points shall be plainly marked on all piles after removal of the forms and all lifting shall be done at these points. The use of special embedded or attached lifting devices, the employment of other pick-up points or any other method of pick-up shall be subject to approval by the Engineer.

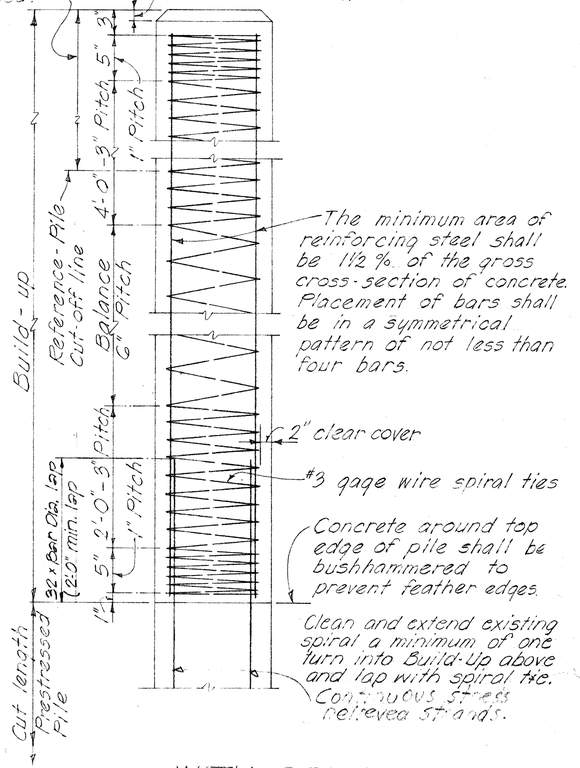
NOTE: Concrete in pile build-ups without driving shall be Class A-1 Concrete. Concrete in pile build-ups with driving shall have a minimum compressive cylinder strength f'c of 5000 p.s.i. at 28 days. Build-ups may be driven if the specimen of concrete from which the piles were poured develops a strength of at least 3500 p.s.i. but not earlier than 7 days.



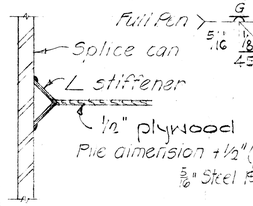
PART ELEV. (C) (TYPICAL SPLICE ϕ)



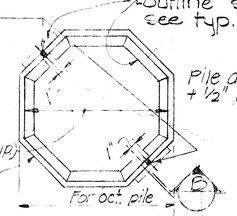
SECTION (B)



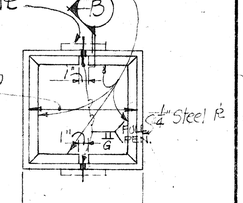
WITH DRIVING
TYPICAL PILE BUILD-UP DETAIL



DETAIL "X"



TYPE I



TYPE II & III

NOTE:
1. Splice detail shown above shall not be used except for pile length in excess of 100'-0" long. (See Specifications)
2. Structural steel for splice can shall be ASTM A-36.

NOTE: All welding shall conform to the latest Specifications for Welded Highway & Railway Bridge of the American Welding Society.

TYPICAL PILE SPLICE DETAILS (FOR PRESTRESSED CONCRETE PILES WHEN CAST IN TWO OR MORE SECTIONS)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
PRESTRESSED CONCRETE PILES

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63)11

SHEET No. 57 OF 59 SHEETS

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

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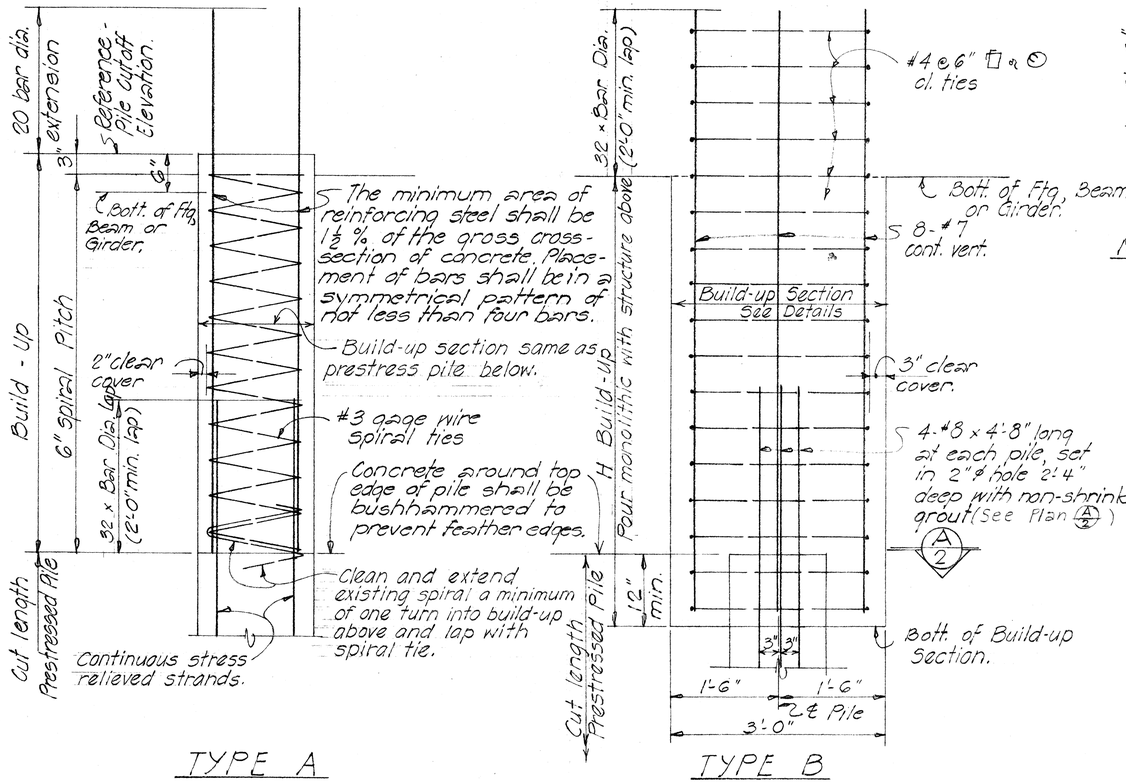
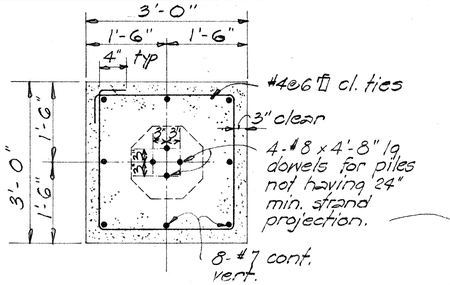
57

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(63);11 I-HI-1(16);11	1968	97-A	98

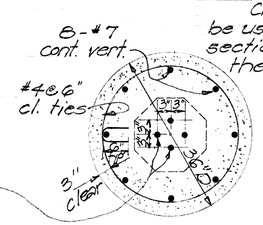
Revision : Jan. 29, 1969



TYPE A — TYPE B



SQUARE BUILD-UP



CIRCULAR BUILD-UP

SECTION (A/2)

Note !! Circular section may be used instead of square section if approved by the Engineer.

WITHOUT DRIVING - TYPICAL PILE BUILD-UP DETAILS

Notes:

1. Portion of pile embedded into footing shall be of sound concrete. Damaged portions shall be removed and pile cut-off elev. lowered as required by the Engineer.
2. When height of depressed portion of footing (H) exceeds 4', the depressed section shall be poured separately from the main body of the footing.
3. Depressed portion of footing may be omitted for pile heads embedded at least 4" into footing provided at least 90% of the piles in each footing have the minimum embedment into footing as shown in contract plans.

NOTE: Selection of pile build-up type without driving to be determined by the Engineer.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

PRESTRESSED CONCRETE PILES

INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(63);11

Oct. 1968

SHEET No. 57A OF 59 SHEETS

97-A

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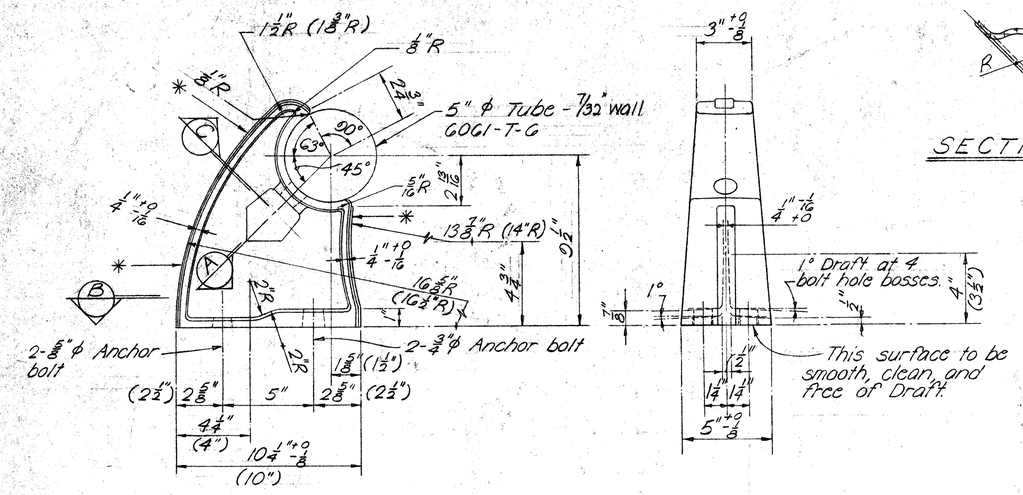
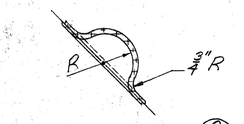
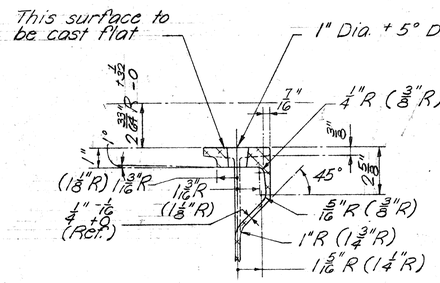
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[illegible]	[illegible]	28	98

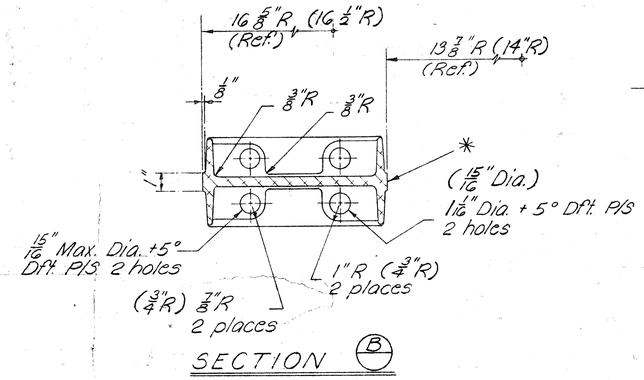


SIDE ELEVATION

END ELEVATION

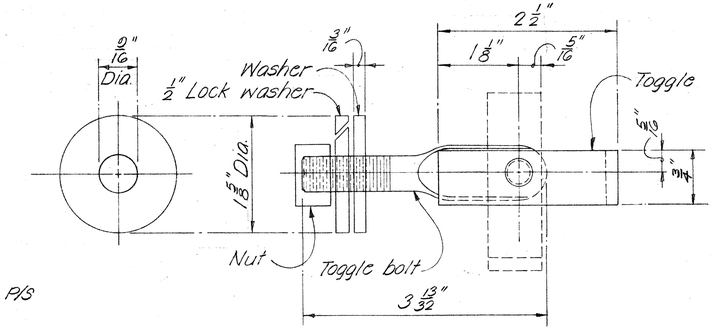






NOTE:

Toggle Bolt Material - 1/2"-13 N.C. 1335 C.R. - Steel heat treated R.C. 32-38 ASTM-A354.
Toggle Material - 1015 H.R. steel pickled and oiled. Round edges ASTM-A303.
Washer Material - SAE 1020 H.R. steel plates. ASTM-A-7. Break sharp edges.
Nut - 1/2"-13 American hex. nut - Heavy Material 1035 C.R. - Steel heat treated ASTM A325 Grade 2H.
Cadmium plating on steel - Type N.S. .0005" thick ASTM-A165. (all parts).
For cast post specifications, see Special Provisions.



WASHER

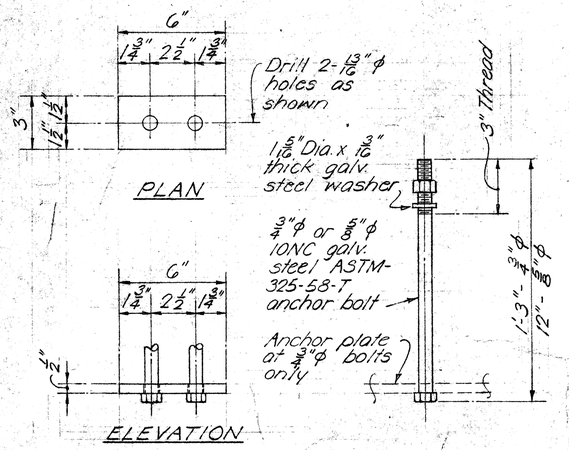
SIDE ELEVATION ASSEMBLAGE

NOTE:

* Casting to be supplied with a standard scratch brush finish on entire gating rib surface and as indicated by an asterisk (*). Finish shall be approved by the Engineer.
Casting to be neatly trimmed and any protruding flash to be broken off.
For cast post specifications, see Special Provisions.
Unless otherwise specified, draft angles to be 3°, corner radii to be 3/32" R, fillet radii to be 3/8" R, casting tol. to be ±1/16", wall thickness to be ±1/32".
Dimensions may be as shown or as shown in parenthesis ( ).

TYPICAL RAIL POST DETAILS

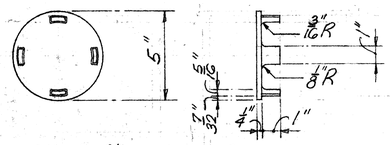
Scale: 3" = 1'-0"



ANCHOR BOLT DETAIL

TYPICAL RAIL POST ANCHOR BOLT ASSEMBLY

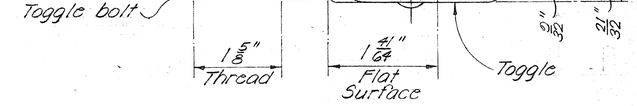
Scale: 3" = 1'-0"



All draft angles = 3°

RAIL CAP DETAIL

Scale: 3" = 1'-0"



TOP PLAN

1/2" ϕ TOGGLE BOLT DETAILS

Full Scale

GENERAL NOTES

Metal bridge railing shown is for Aluminum bridge railing. See Special Provisions for alternate railing in steel.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL BRIDGE RAILINGS
SINGLE RAIL
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1 (63)11
Scale as noted Date:

SHEET No. 52 OF 59 SHEETS

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

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