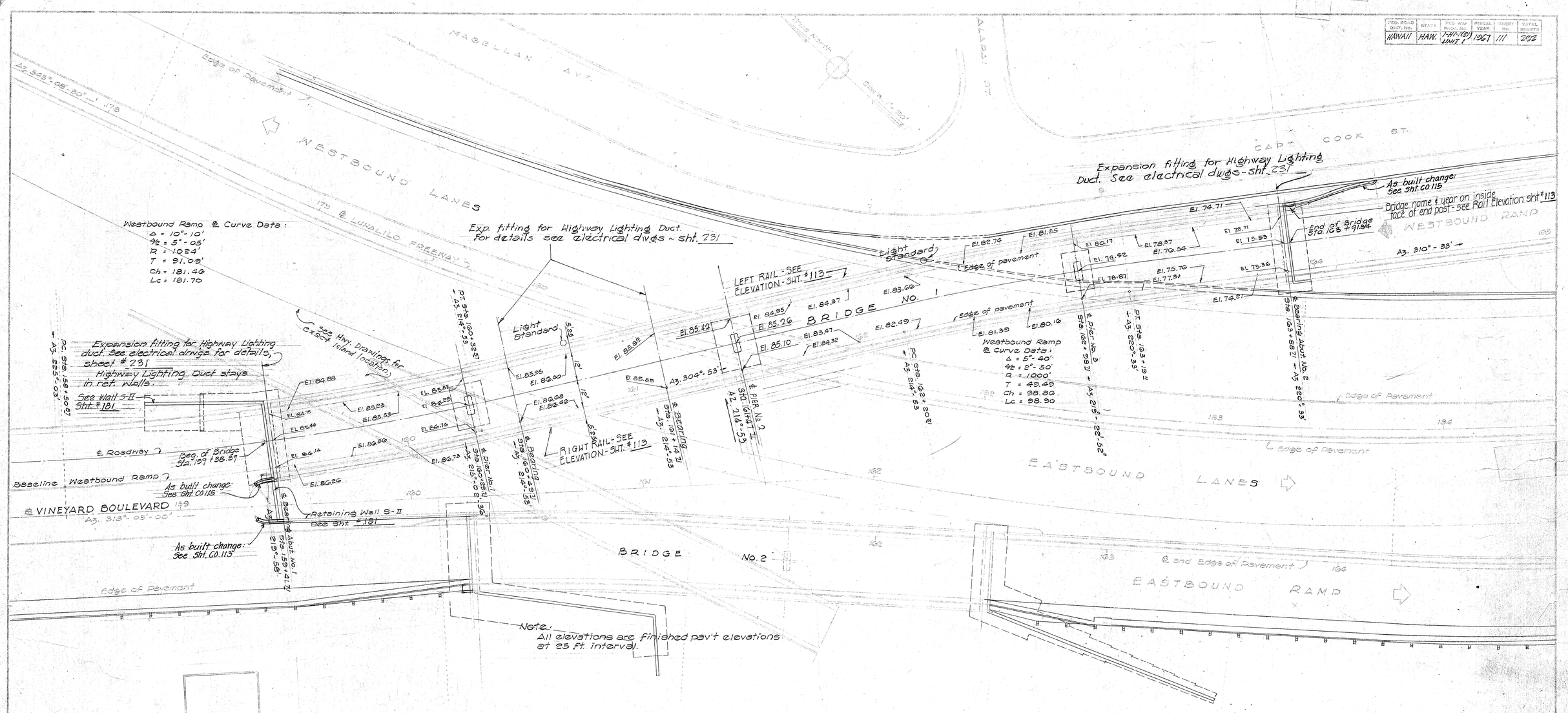
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	111	202



LAYOUT PLAN

Scale: 1" = 20'

ESTIMATED QUANTITIES

CONCRETE LUMP SUM	(1,834.00 CU. YDS)
REINFORCING STEEL - LUMP SUM	(547,920.00 LBS)
STRUCTURAL EXCAVATION	3,608.00 CU YDS
A.C. MIX NO V	110.00 TONS
FILTER MATERIAL	19.0 CU YDS
TACK COAT	3000 GALS
METAL BRIDGE RAILING	903.00 L.F.
STEEL EXP & FIXED BEARINGS (Lump Sum)	2,600.00 LBS.

GENERAL NOTES:

I. Design Data:
(1) H20-S-16-44
(2) fs = 20,000 PSI
(3) fc = 1,200 PSI
(4) n = 10
(5) Special concrete for columns see note on Sht. No 8

II Construction Methods
(1) Backfill behind abutments & wingwalls shall be complete in place before pouring concrete for the superstructure.
(2) Curbs and parapets shall not be poured until after release of false work.
(3) Finish — See Standard Specifications.
(4) Form — Forms for bottom slab of box girders shall be 5 ply panel board.
(5) Footings to be poured neat against undisturbed material.

MATERIALS

Except as otherwise noted all concrete to be Class A-1.

REFERENCE

Refer to Standard Drawings #S-1, #S-2, #S-3 for additional details not covered by these drawings.

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

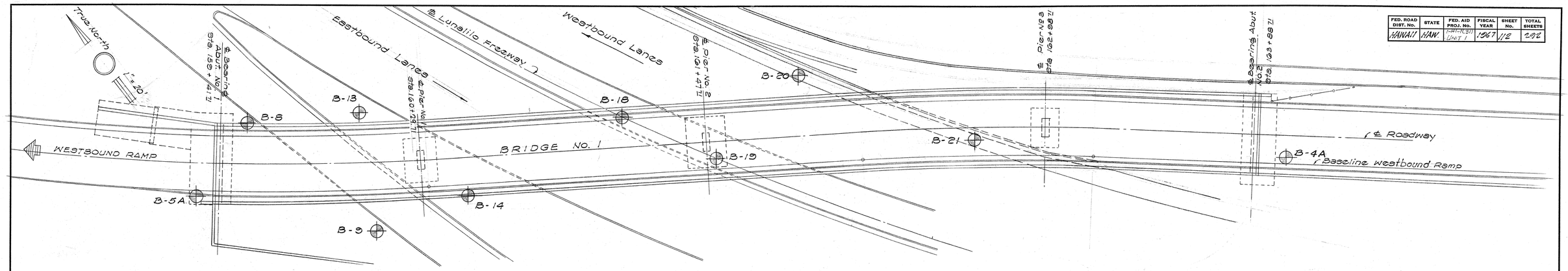
LUNALILO-VINEYARD OFF RAMP
LUNALILO ℄ Sta. 158 + 38.58 to Sta 163 + 91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
FAI Proj No. I-HI-1(31) Unit 1 May 1966

SHEET NO. 1 OF 22 SHEETS

111

ORIGINAL PLAN — SURVEY PLOTTED BY — DESIGNED BY S.H. — DRAWN BY S.H. — TRACED BY — QUANTITIES BY S.H. — QUANTITIES CHECKED BY J.F. — CHECKED BY A.Y. — DATE — NOTE BOOK — No.

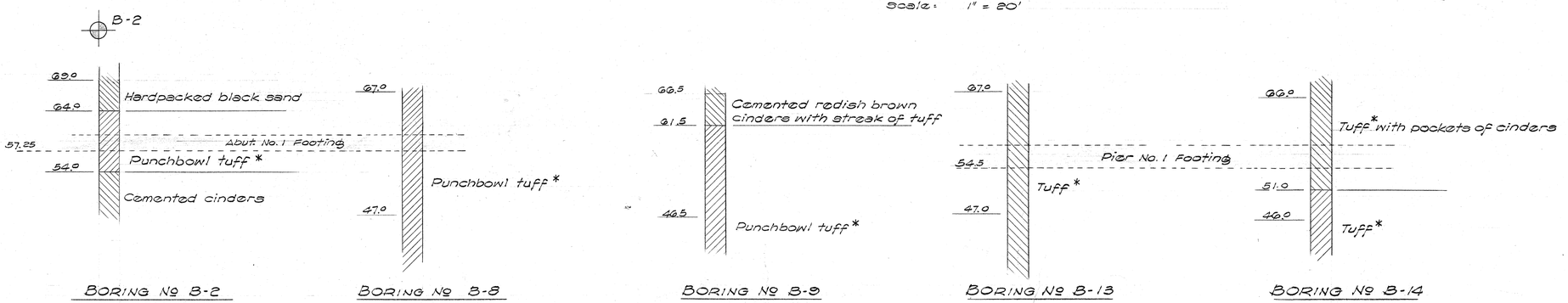
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	112	242



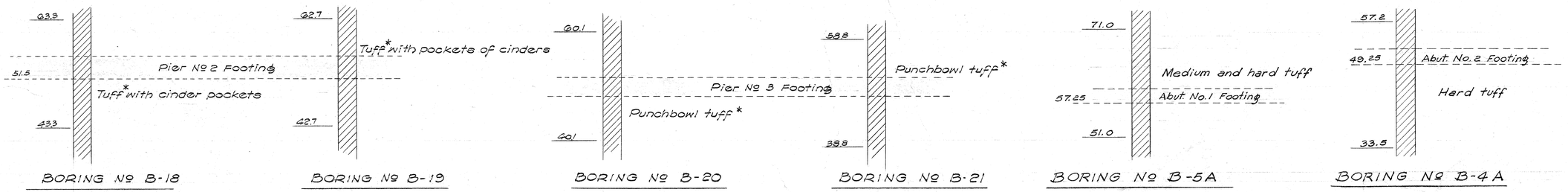
BORING LOCATION PLAN

Scale: 1" = 20'

* NOTE: Punchbowl tuff as used in these plans stands for "cemented volcanic ejecta" including fines up to boulders,
Bert Hirashima



BORING Nº B-2 | BORING Nº B-8 | BORING Nº B-9 | BORING Nº B-13 | BORING Nº B-14



BORING Nº B-18 | BORING Nº B-19 | BORING Nº B-20 | BORING Nº B-21 | BORING Nº B-5A | BORING Nº B-4A

BORING DATA

Scale: 1" = 10'

ORIGINAL PLAN	NOTE BOOK No.	DATE
		SURVEY PLOTTED BY
		DESIGN BY S.Y.H.
		DRAWN BY
		TRACED BY S.Y.H.
		QUANTITIES BY S.Y.H.
		QUANTITIES CHECKED BY A.A.Y.
		CHECKED BY A.A.Y.

ALFRED A. YEE
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SATOSHI DON SHIMAZU
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No. 710
HAWAII, U.S.A.

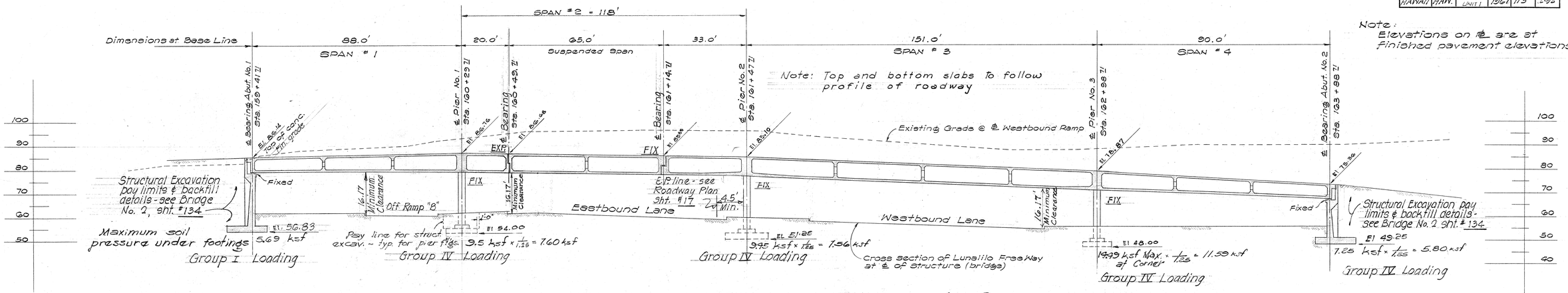
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1
LUNALILO-VINEYARD OFF RAMP
LUNALILO ℄ Sta 150+38.38 to Sta 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET to VICTORIA STREET
FAI Proj Nº I-HI-1(31)Unit 1 May 1966

SHEET No. 2 OF 22 SHEETS

112

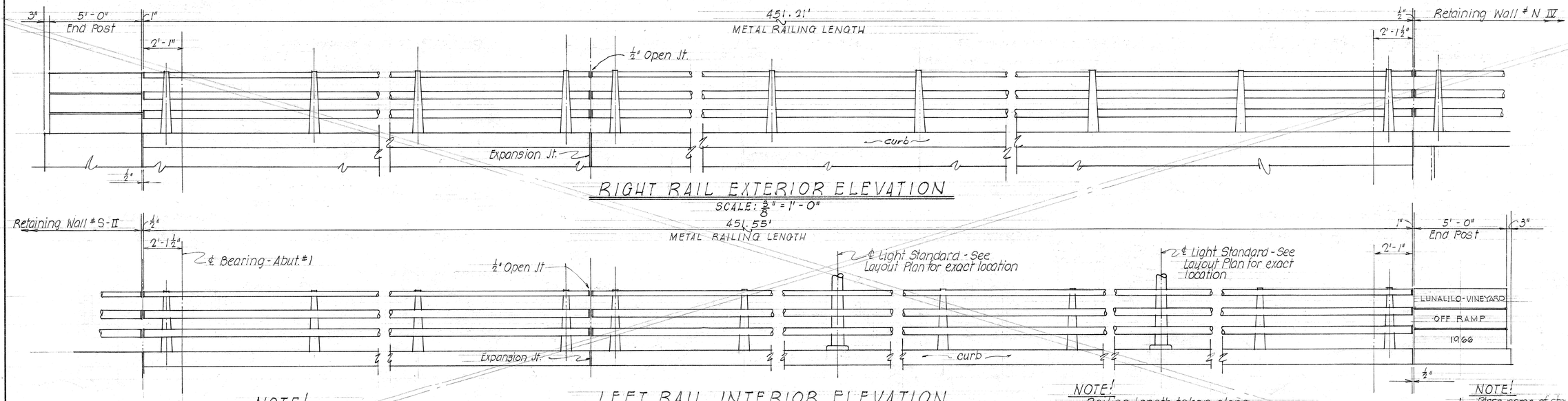
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-HI-1(31) UNIT 1	1967	113	232



LONGITUDINAL SECTION ALONG ℄ ROADWAY

Scale: 1" = 20'



RIGHT RAIL EXTERIOR ELEVATION

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

LEFT RAIL INTERIOR ELEVATION

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

NOTE!
for railing post spacing, details, and treatment of rail at Light Std., see Standard Sht. # 106

NOTE!
Railing length taken along inside face of rail.

NOTE!
1. Place name of structure as shown, for location - see Layout Plan.
2. Year shown will be year structure is completed.
3. Letter size & detail - see Standard Letter Drawing.

Note! As built changes: Metal Br. rail, 3 rail combination type with sidewalk to one combination type on parapet See Sht. CO 113

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP
LUNALILO ℄ Sta. 159+38.58 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET to VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

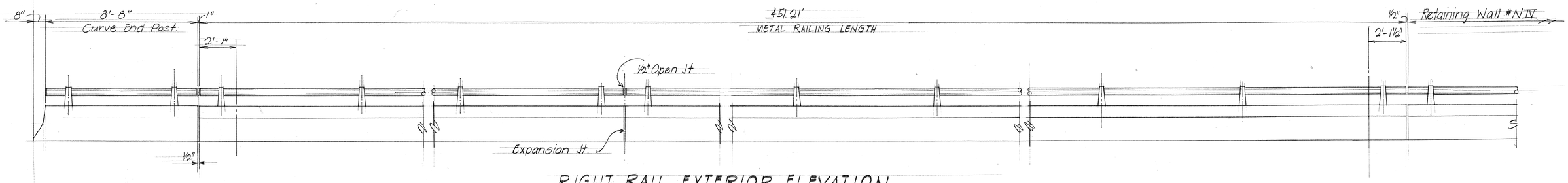
SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

SHEET No. 3 OF 22 SHEETS

113

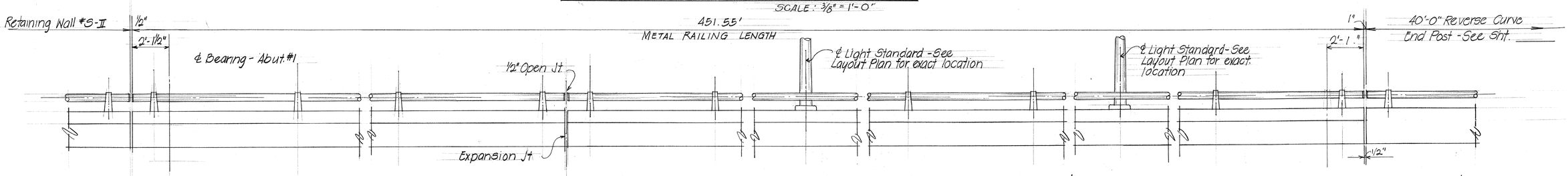
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



RIGHT RAIL EXTERIOR ELEVATION

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



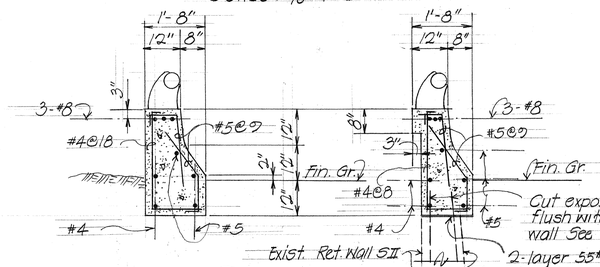
NOTE!
For railing post spacing details, and treatment of rail at Light Std., see Standard Sht. ____

LEFT RAIL INTERIOR ELEVATION

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

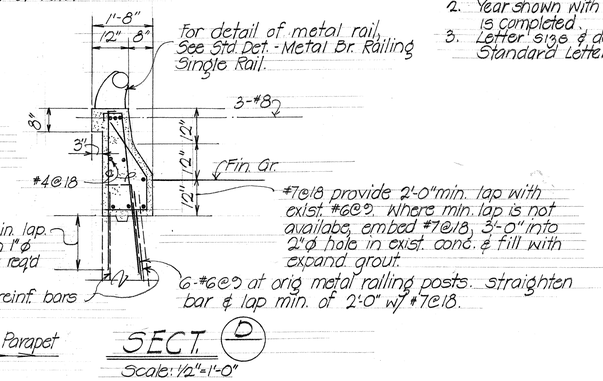
NOTE!
Railing length taken along inside face of rail.

NOTE!
1. Place name of structure as shown for location - see Layout Plan
2. Year shown with be year structure is completed.
3. Letter size & detail - see Standard Letter Drawing.



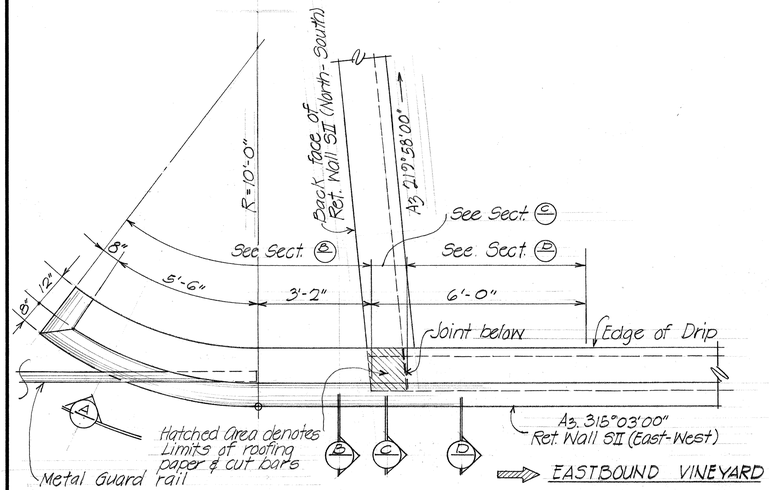
SECT. (B)

SECT. (C)



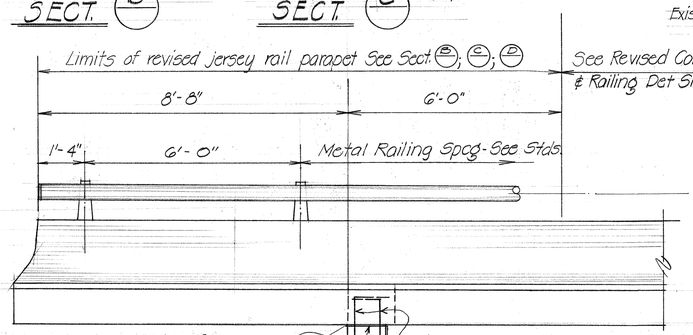
SECT. (D)

Scale: ½" = 1'-0"



REVISED PLAN RW SII

Scale: ½" = 1'-0"



SECTION (A)

Scale: ½" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 152+38.88 to Sta. 163+71.83

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

PELE STREET TO VICTORIA STREET

FAI Proj. No. I-HI-1(31) Unit 1

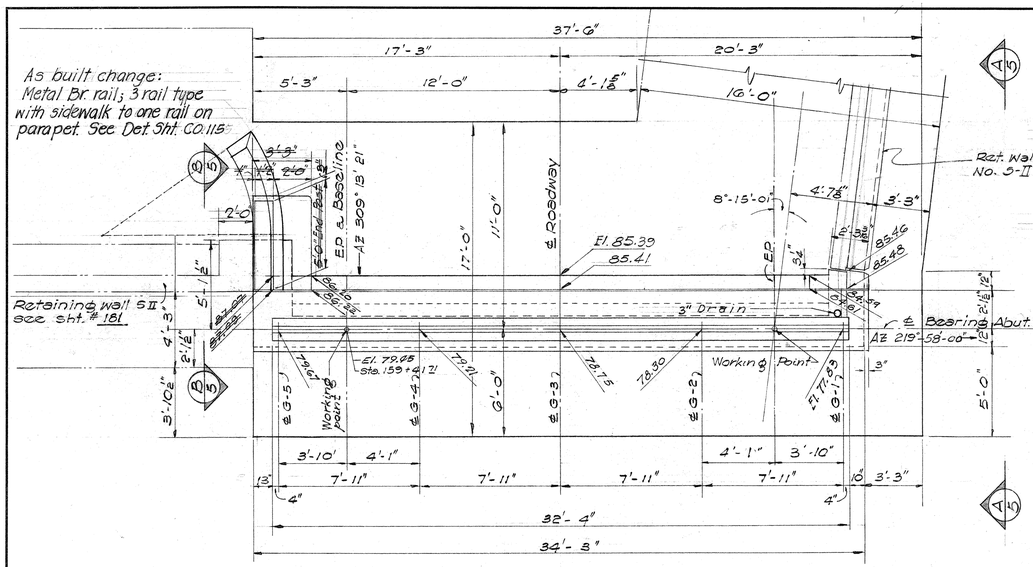
SHEET No. OF SHEETS

PRINTED ON NO. 1000H CLEARPRINT

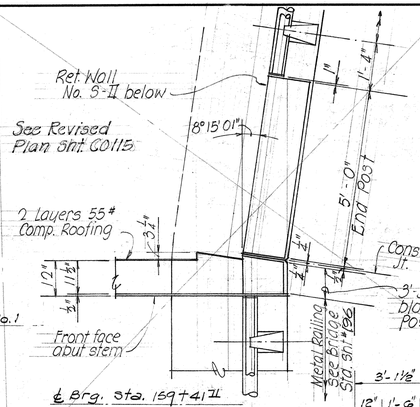
C 01 13 S1
C 01 1 13

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	T-HI-1(31) UNIT 1	1967	114	202

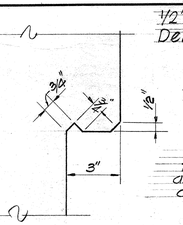
As built change:
Metal Br. rail; 3 rail type with sidewalk to one rail on parapet. See Det. Sht. C0.115



PLAN — ABUT. No. 1
Scale: 1/4" = 1'-0"

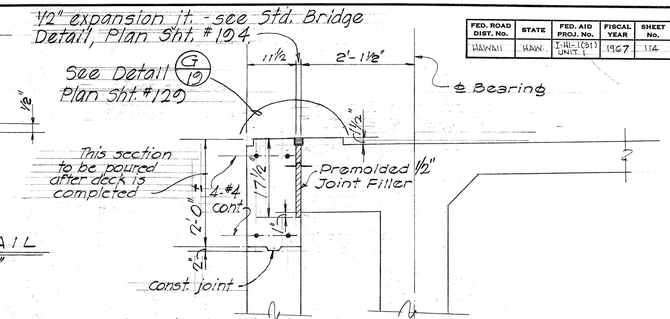


CONNECTION PLAN DETAIL OF ALUMINUM RAILING AT ABUTMENT NO. 1

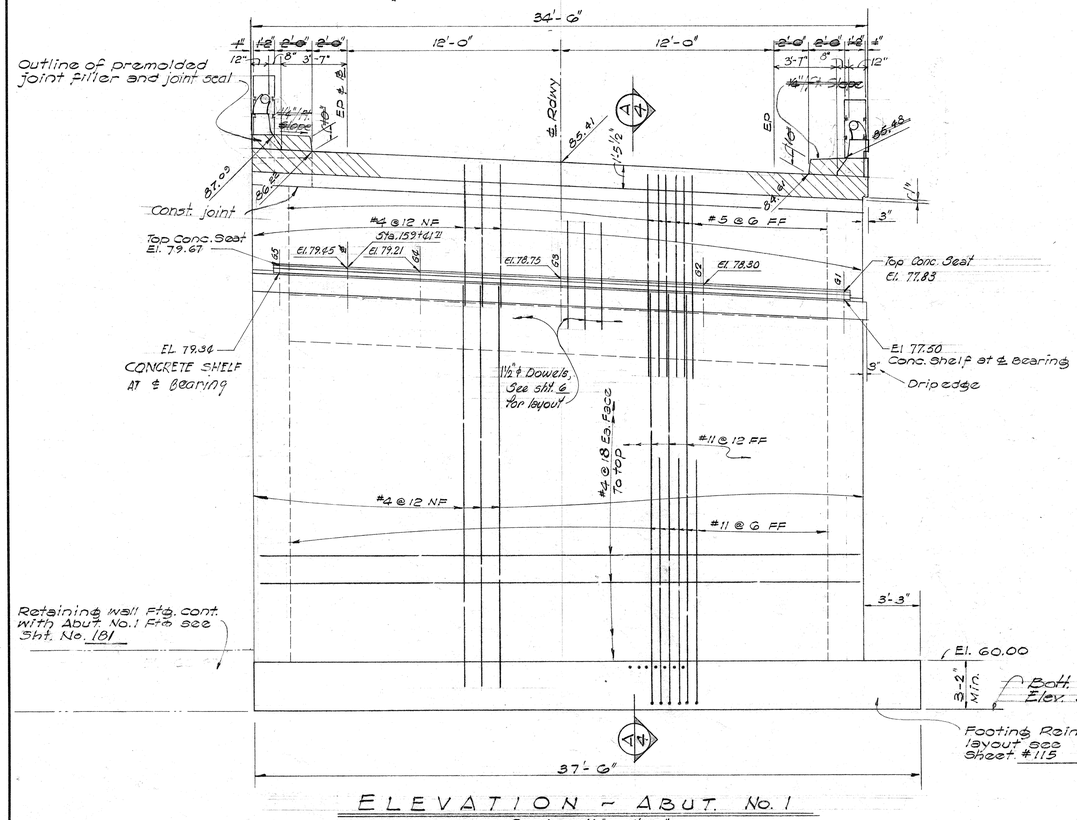


DRIP DETAIL
Scale: 3" = 1'-0"

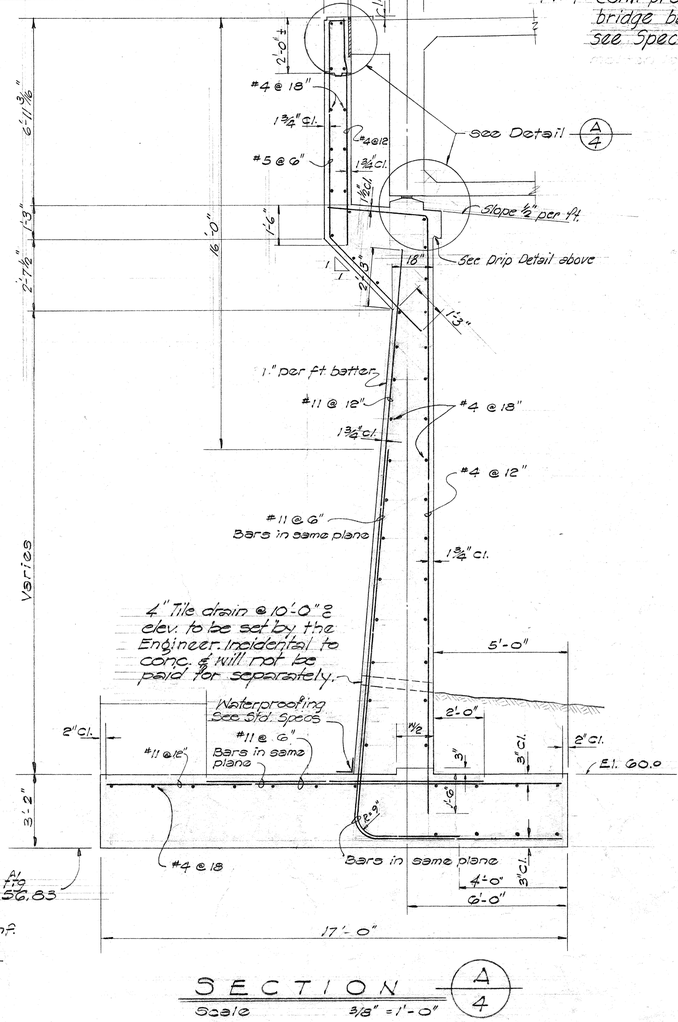
1/2" expansion jt. - see Std. Bridge Detail, Plan Sht. # 104



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



ELEVATION — ABUT. No. 1
Scale: 1/2" = 1'-0"



SECTION
Scale 3/8" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta 159+38.58 to Sta 163+91.82
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET to VICTORIA STREET
FA I Proj No I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

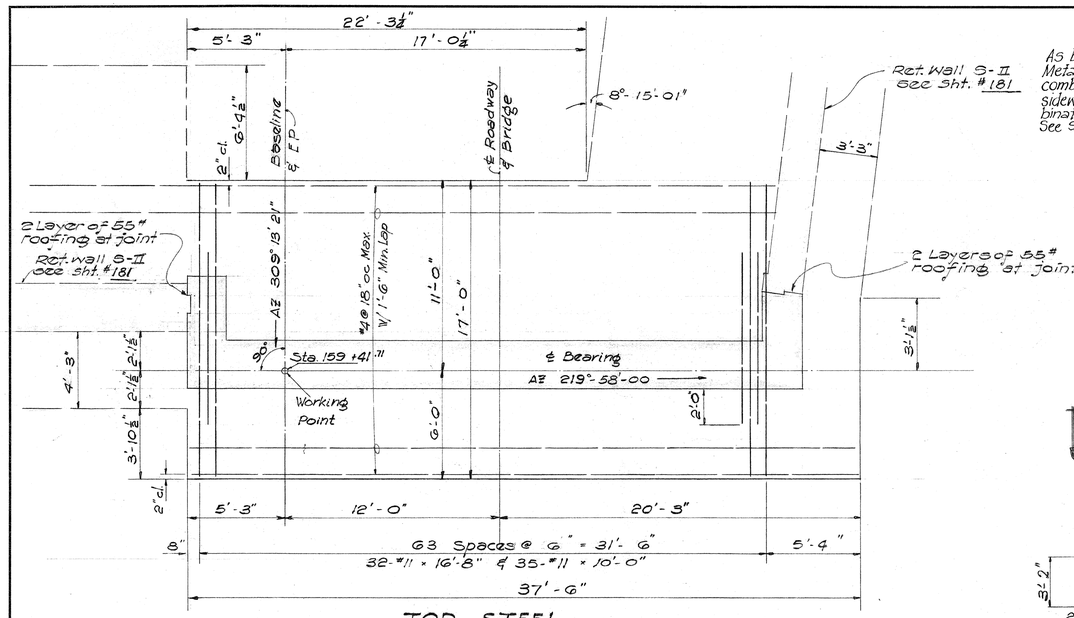
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

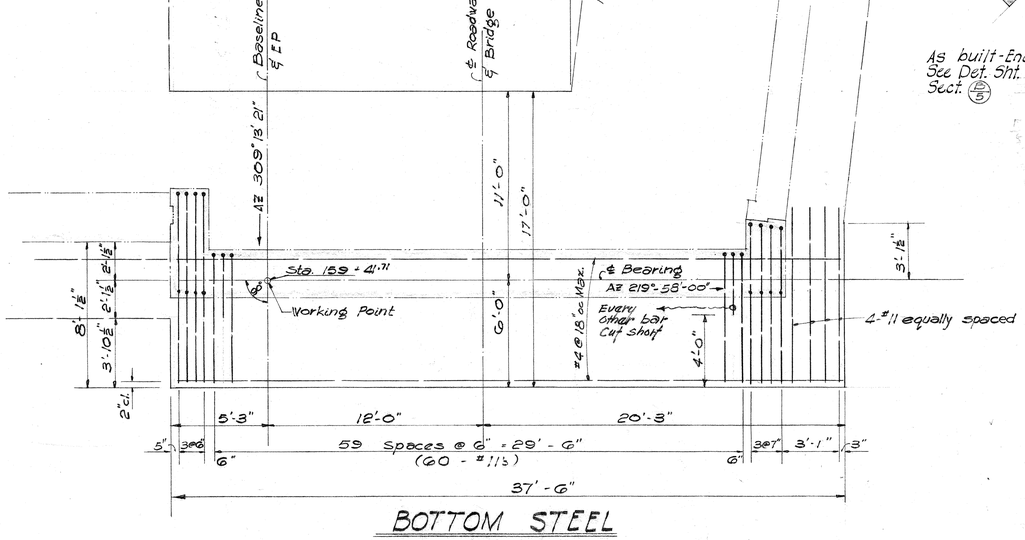
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
NOTE BOOK	QUANTITIES BY	
No.	QUANTITIES CHECKED BY	

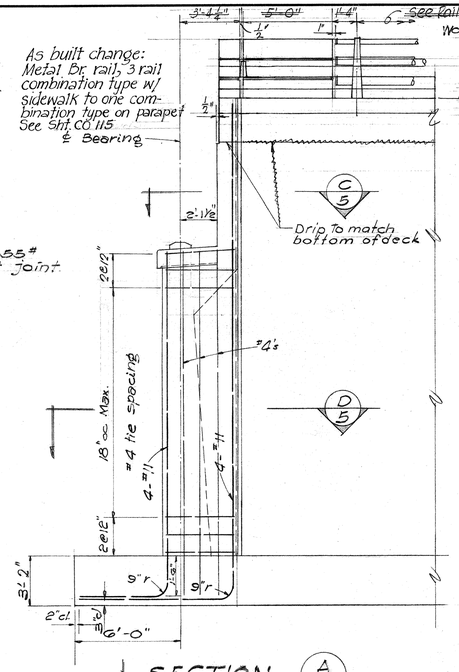
SHEET No. 4 OF 22 SHEETS

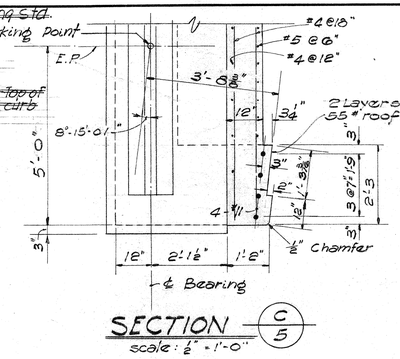
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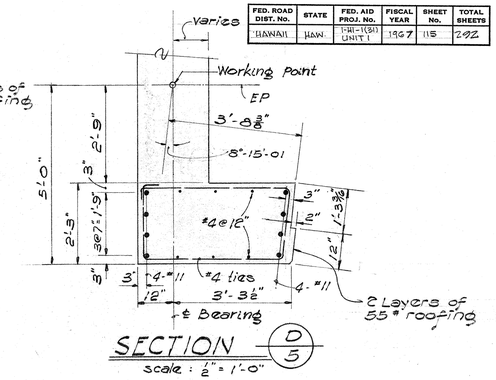
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT I	1967	115	292

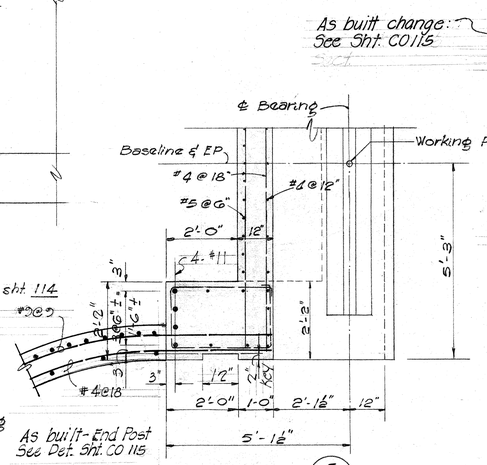


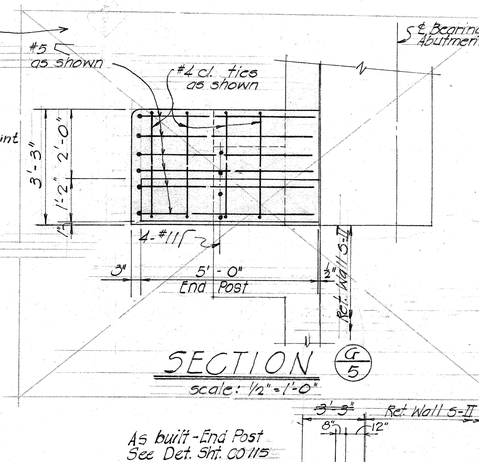


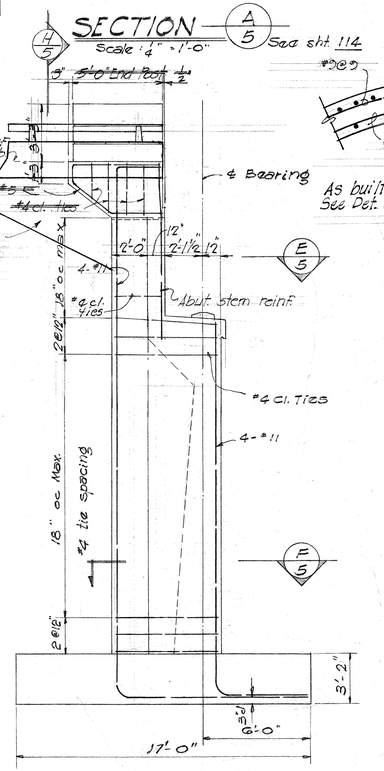


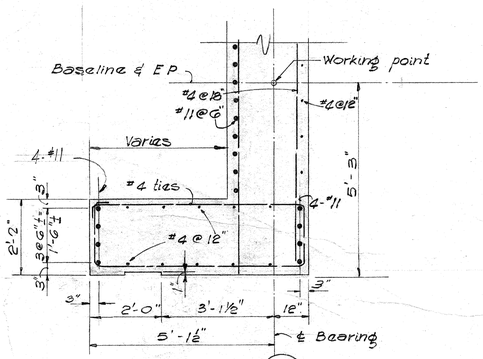


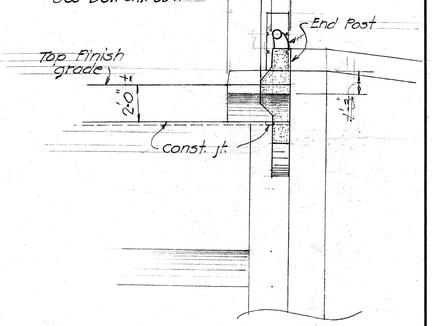












As built-End Post
See Det. Sht. CO 115

As built-End Post
See Det. Sht. CO 115

ABUTMENT NO 1 FOOTING STEEL PLAN

scale ¼" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta 159+38.58 to Sta 163+31.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
FAI Proj No. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

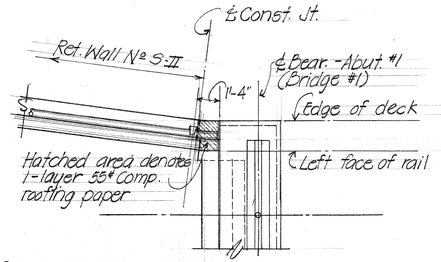
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

SHEET No. 5 OF 22 SHEETS

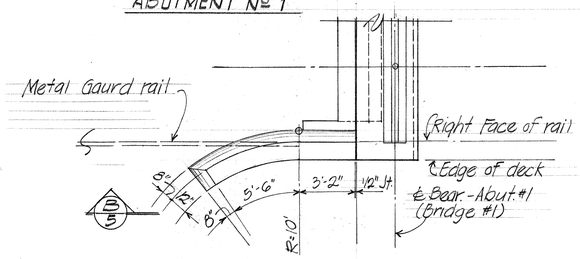
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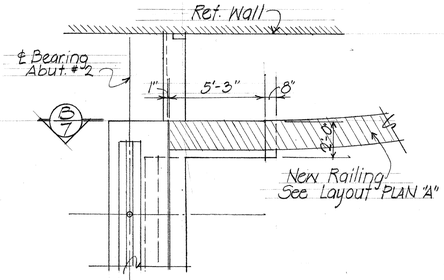
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HAWAII	HAW.				



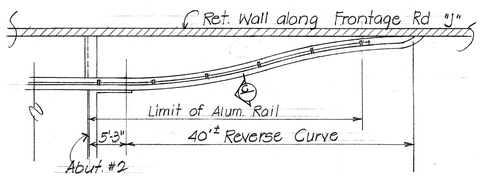
CONNECTION PLAN DETAIL OF ALUMINUM RAILING AT ABUTMENT Nº 1



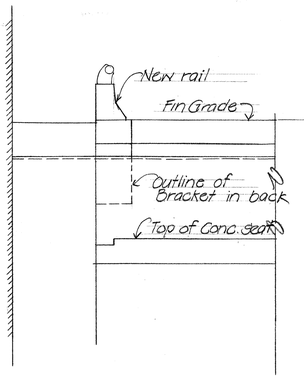
REVISED PLAN AT ABUT. #1 (Br. #1) Scale: 1/4"=1'-0"



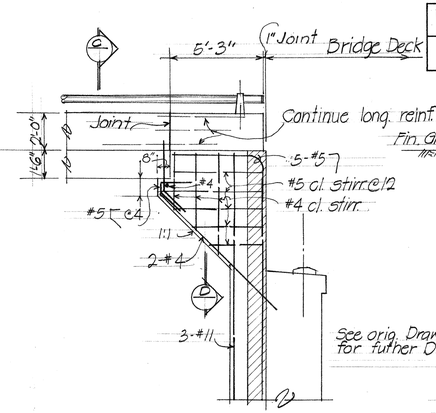
REVISED PLAN AT ABUT. #2 (Br. #1)
Scale: 1/4"=1'-0"



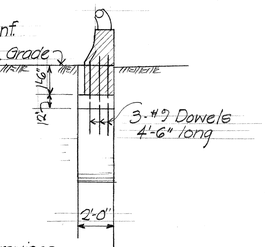
LAYOUT PLAN "A"
Scale: 1" = 10'-0"



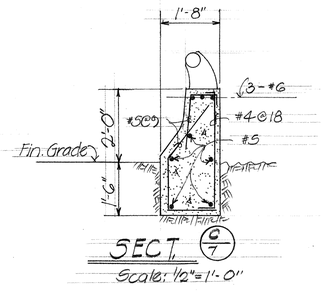
ELEV. ABUT. #2
Scale: 1/2" = 1'-0"



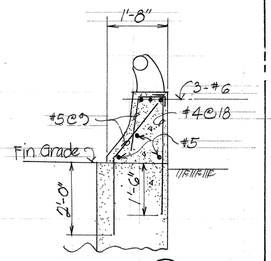
SECT. (B/7)
Scale: 1/2" = 1'-0"



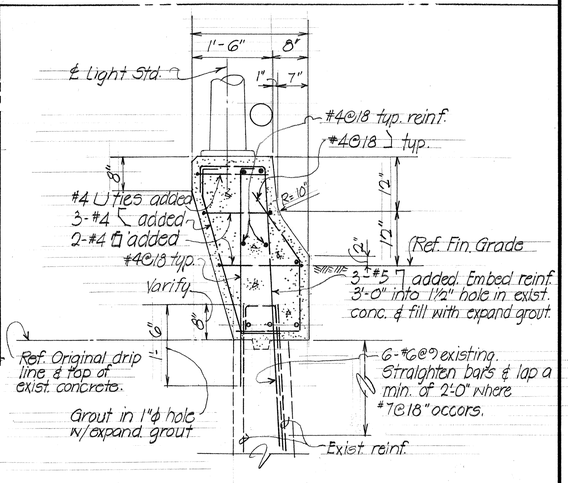
SECT. (C/7)



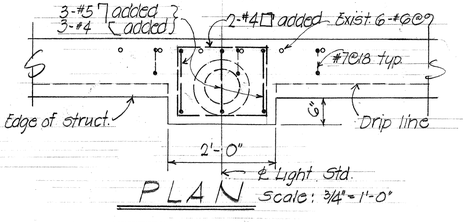
SECT. (C/7)
Scale: 1/2" = 1'-0"



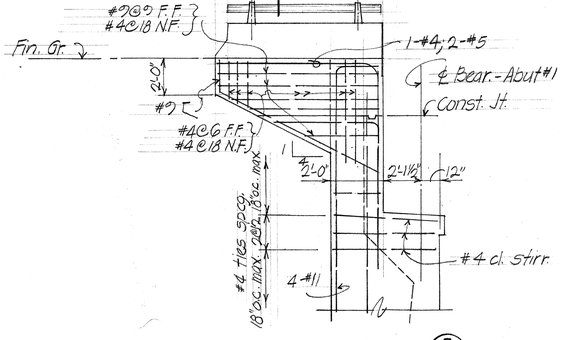
SECT. (D/7)
Scale: 1/2" = 1'-0"



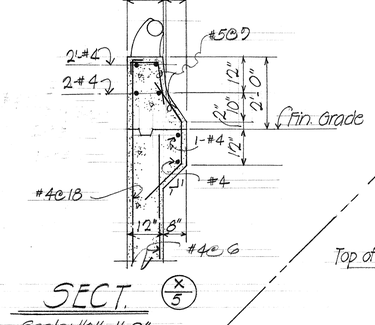
REVISED CONC. PARAPET & LIGHT STD.
Scale: 3/4" = 1'-0"



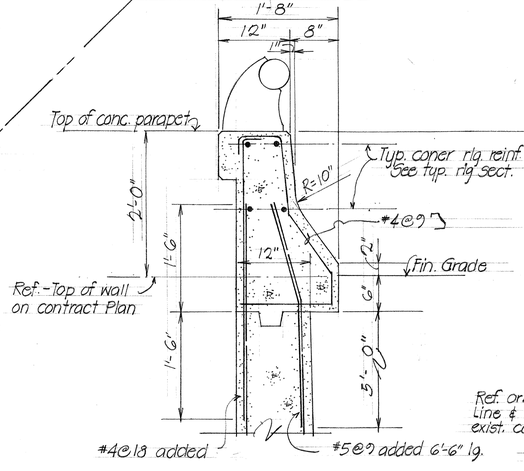
PLAN
Scale: 3/4" = 1'-0"



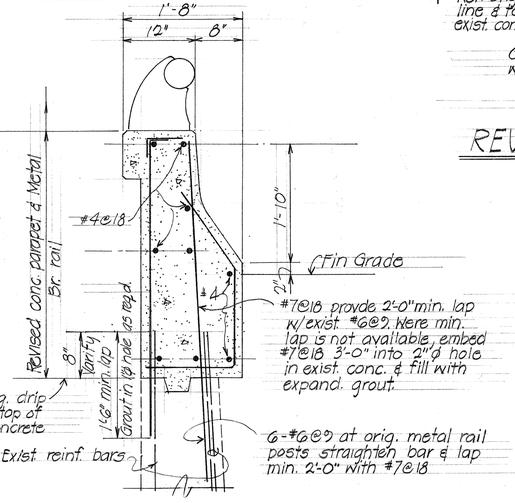
REVISED SECT (D/5)



SECT. (X/5)
Scale: 1/2" = 1'-0"



CONSTRUCTED ON NEW RET. WALL



CONSTRUCTED ON EXIST RET. WALL

REVISED CONC. RAILING DETAIL ON RET. WALL TYPE S II, S III & N IV
Scale: 1" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE - #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 180+38.88 to Sta. 163+91.62

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

PELE STREET TO VICTORIA STREET

F.A.I. Proj. Nº I-HI-1(31) Unit 1

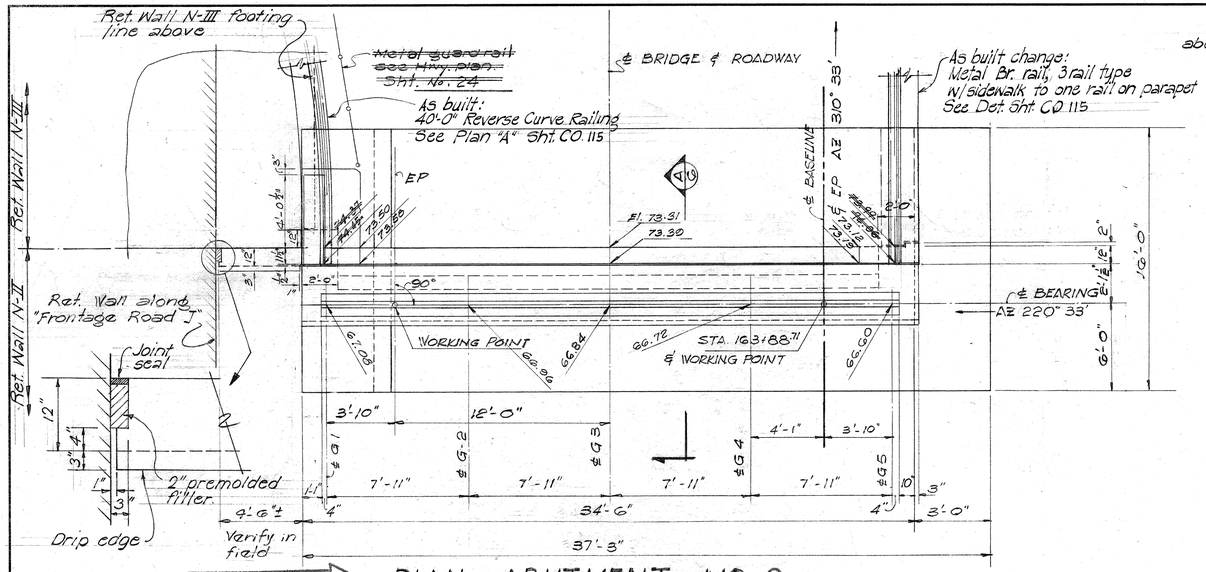
SHEET No. OF SHEETS

C0115S1

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(39) UNIT 1	1967	116	222

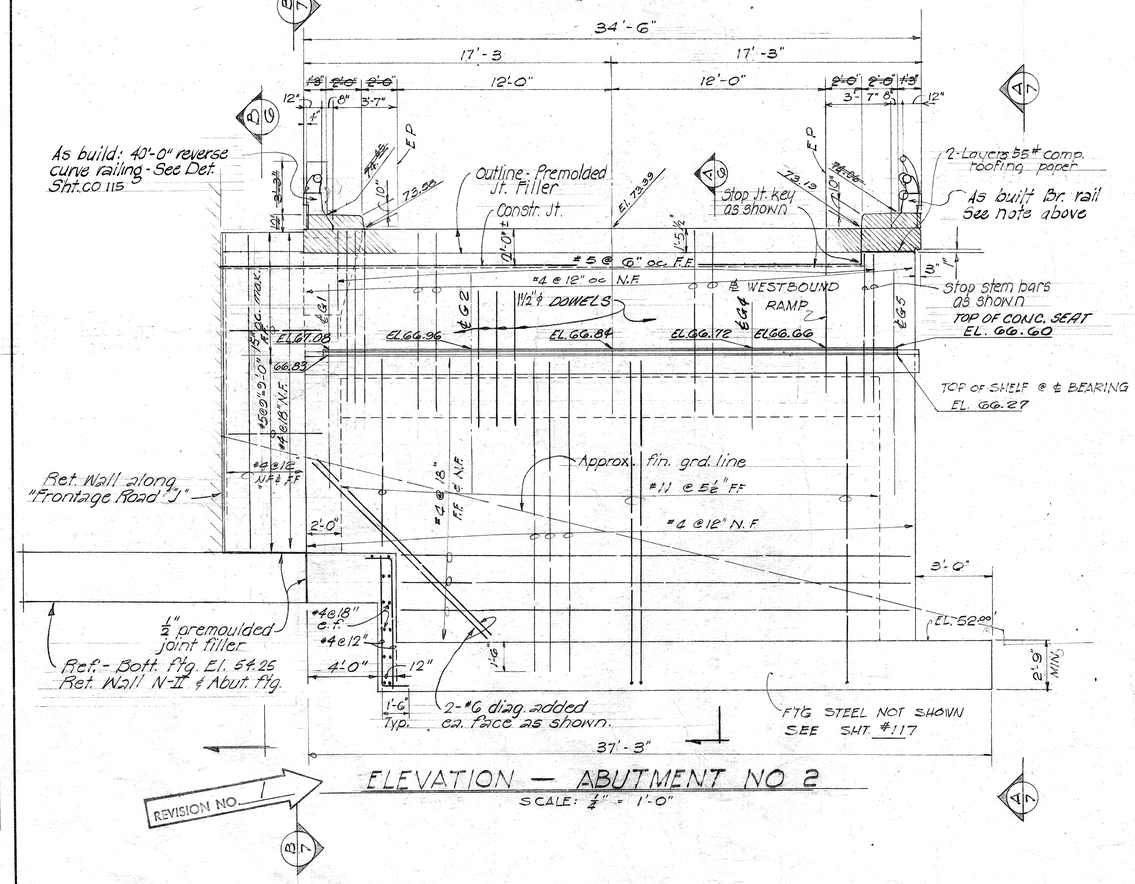
REV. 1 March 1968
CHANGED ABUT.



REVISION NO. 1

PLAN ~ ABUTMENT NO. 2

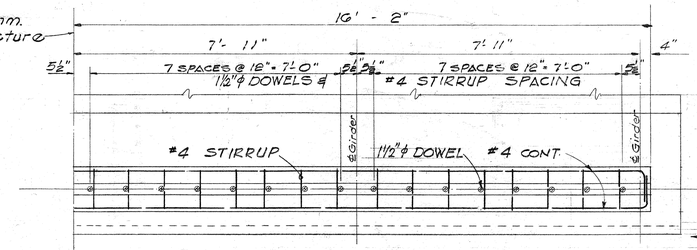
SCALE: 1/4" = 1'-0"



REVISION NO. 1

ELEVATION — ABUTMENT NO 2

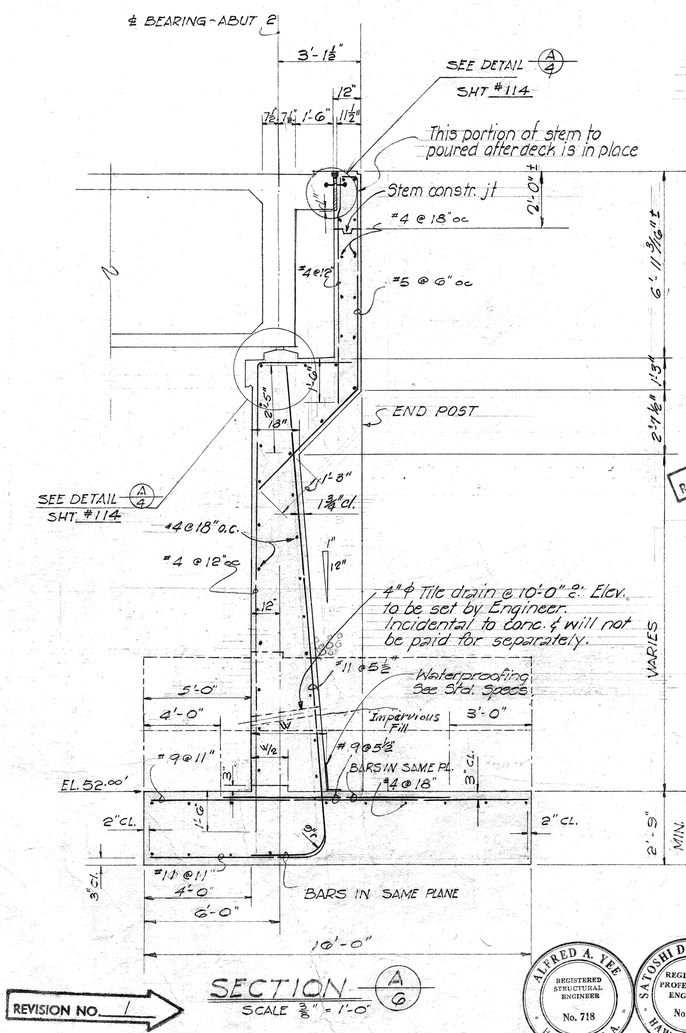
SCALE: 1/4" = 1'-0"



1½"℄ DOWELS ℄ #4 STIRRUP LAYOUT PLAN

ABUTMENT NO 1 & 2

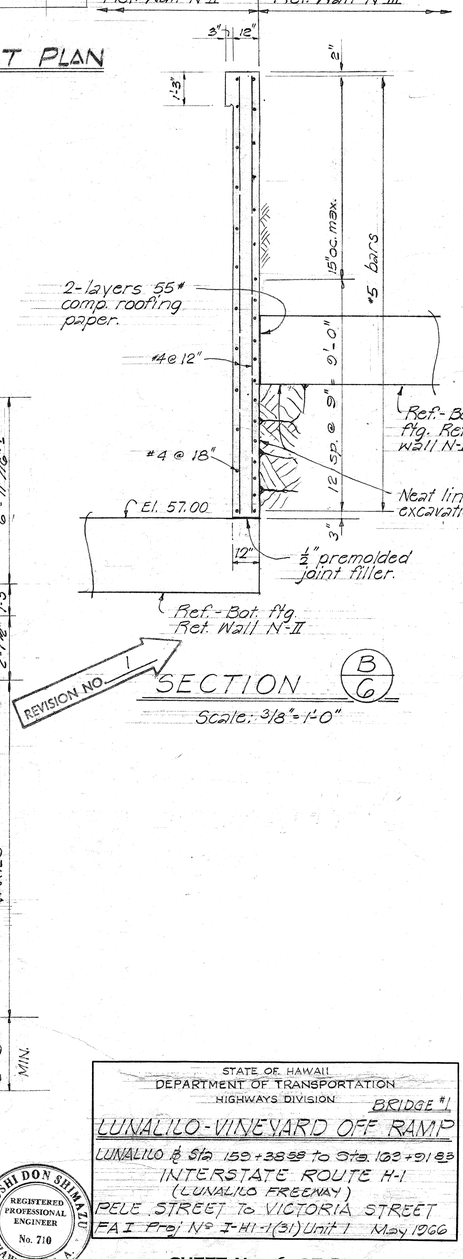
SCALE 1/2" = 1'-0"



REVISION NO. 1

SECTION A/6

SCALE 3/8" = 1'-0"



REVISION NO. 1

SECTION B/6

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

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+38.88 to Sta. 162+91.88

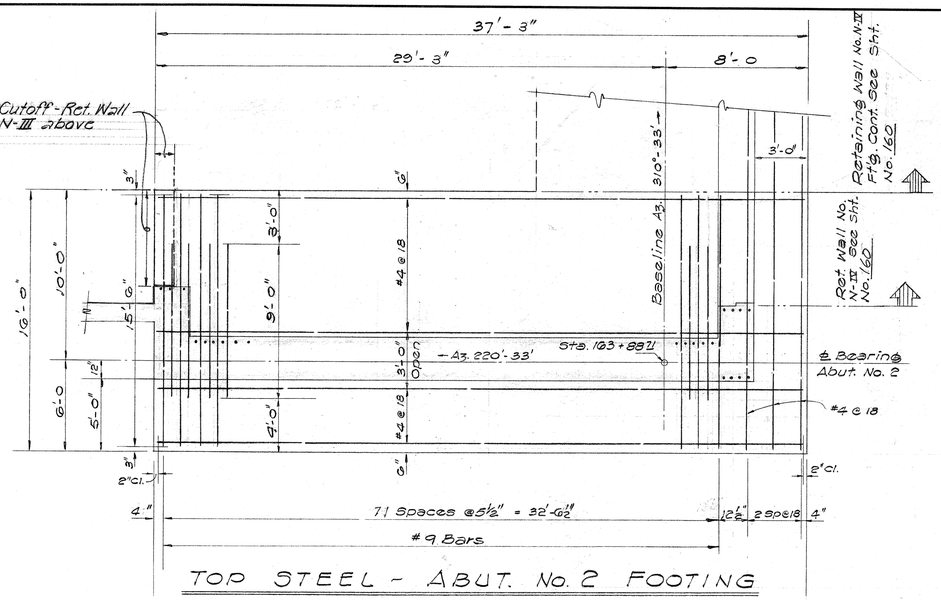
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

SHEET NO. 6 OF 222 SHEETS

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

PRINTED ON DIEPO 1000H CLEARPRINT

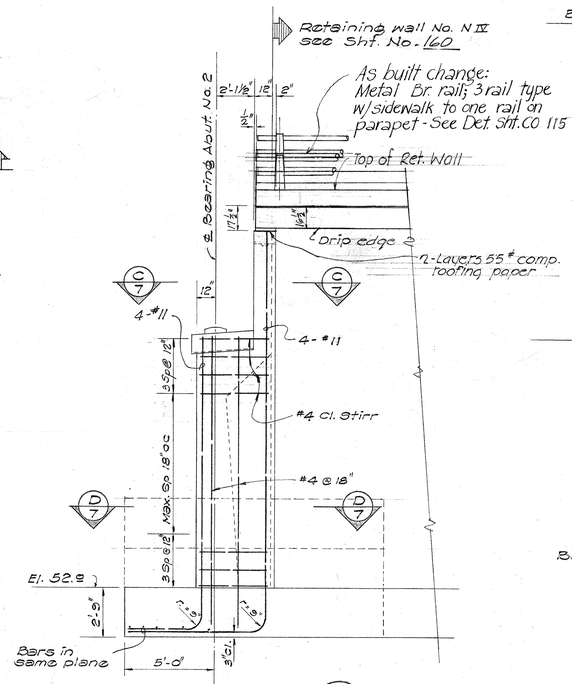
COPY



TOP STEEL - ABUT. No. 2 FOOTING

Scale: ¼" = 1'-0"

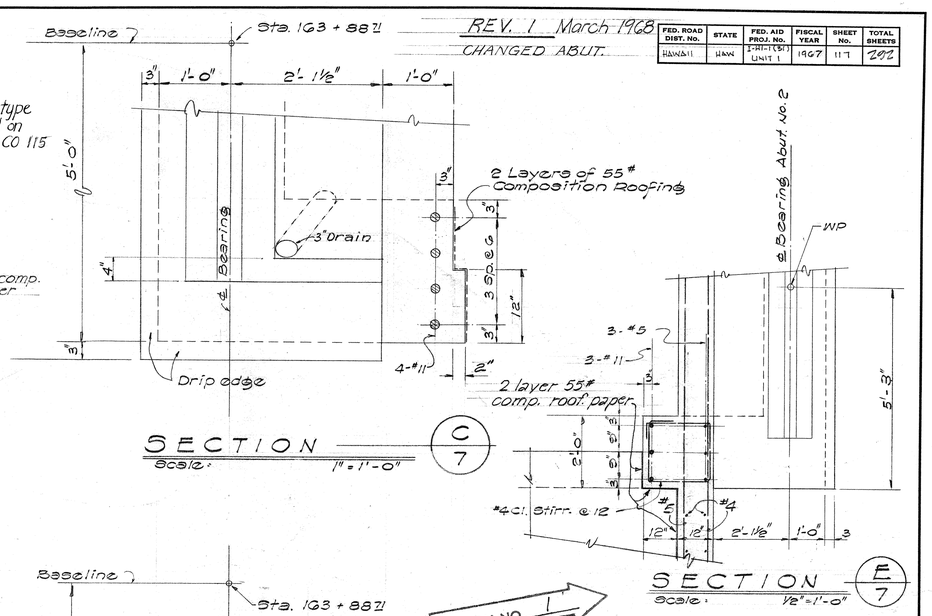
REVISION NO. 1



SECTION A/7 — See Sht. 116

Scale: ½" = 1'-0"

REVISION NO. 1



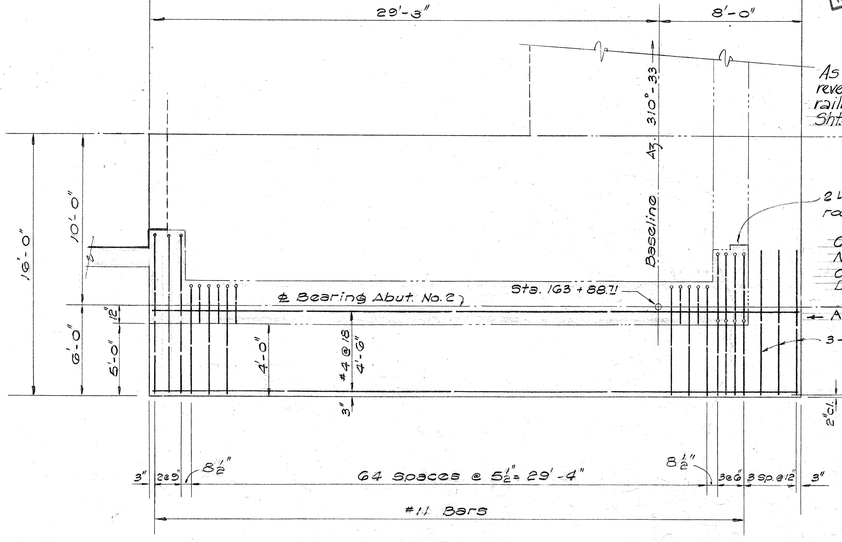
SECTION C/7

Scale: 1" = 1'-0"

SECTION E/7

Scale: ½" = 1'-0"

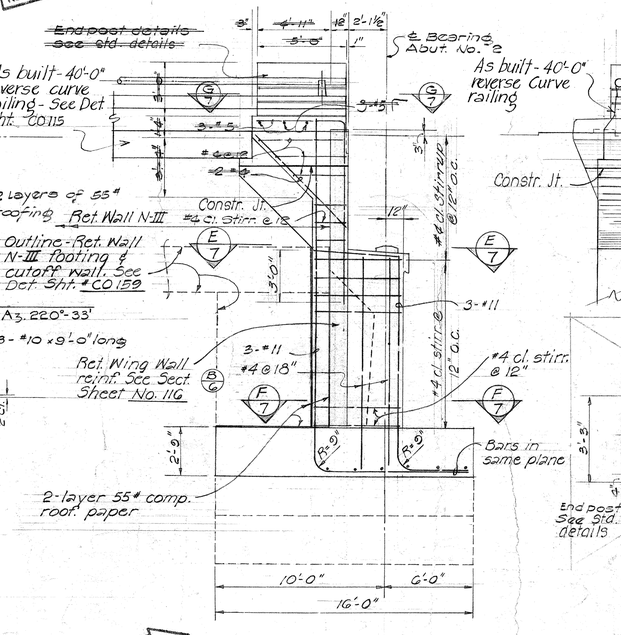
REVISION NO. 1



BOT. STEEL - ABUT. No. 2 FOOTING

Scale: ½" = 1'-0"

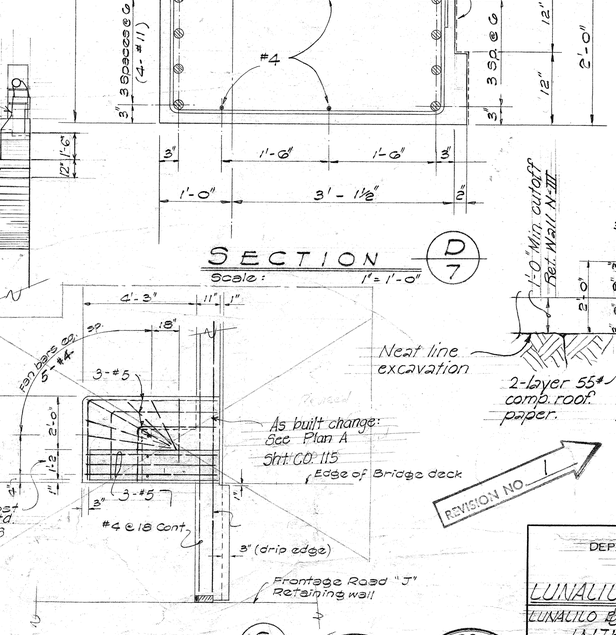
REVISION NO. 1



SECTION B/7 — See Sht. 116

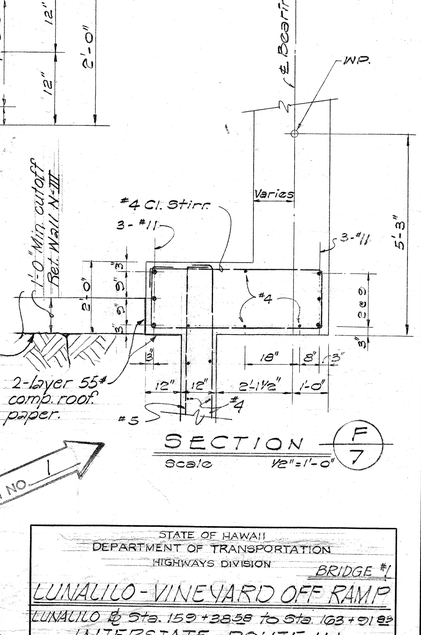
Scale: ½" = 1'-0"

REVISION NO. 1



SECTION G/7

Scale: ⅜" = 1'-0"



SECTION F/7

Scale: ½" = 1'-0"

REVISION NO. 1

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	117	202

REV. 1 March 1968
CHANGED ABUT.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BRIDGE #1

LUNALILO - VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+28.28 to Sta. 163+91.89

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

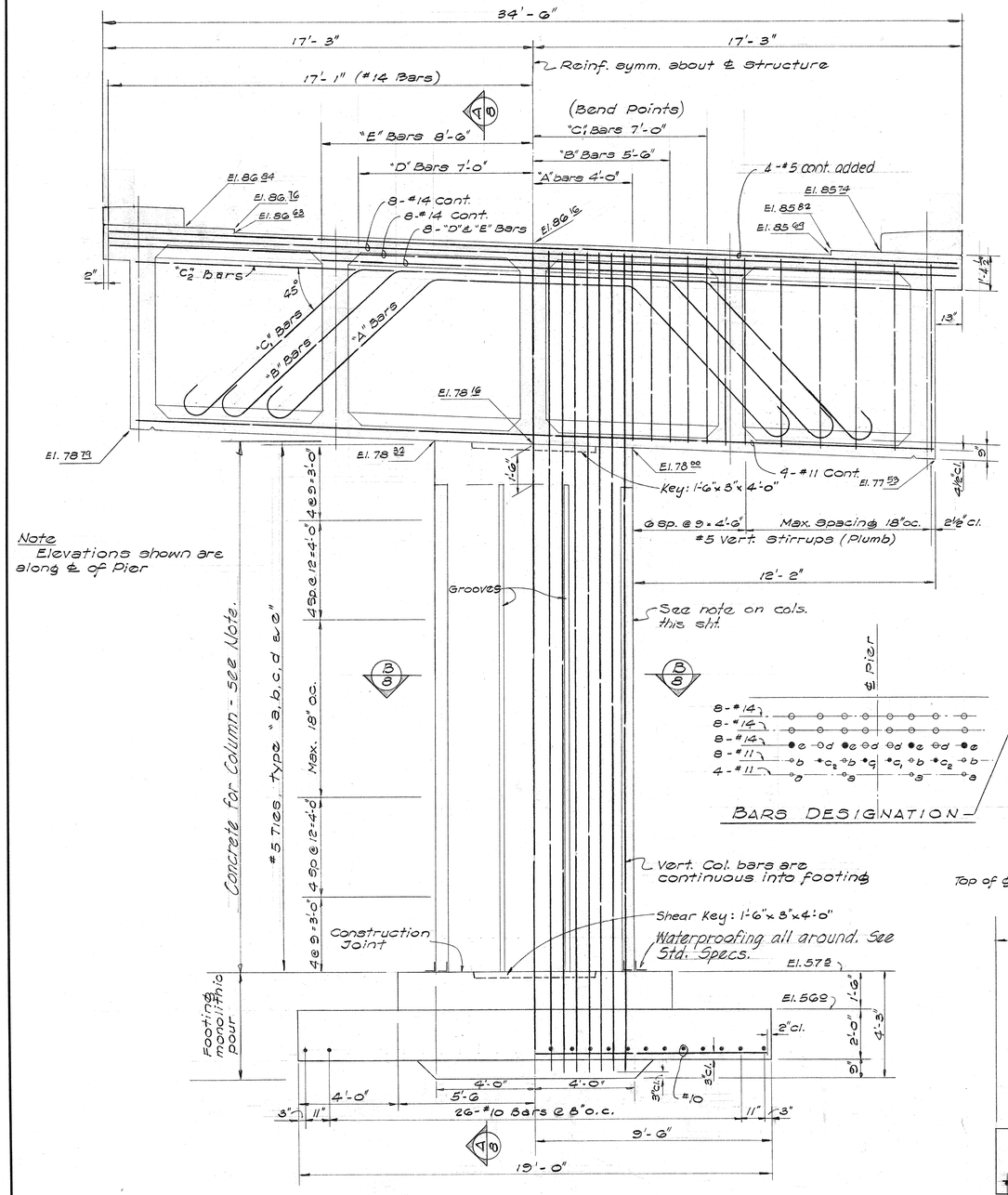
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

SHEET No. 7 OF 202 SHEETS

60117

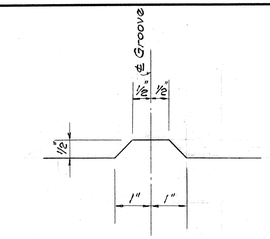
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	118	122



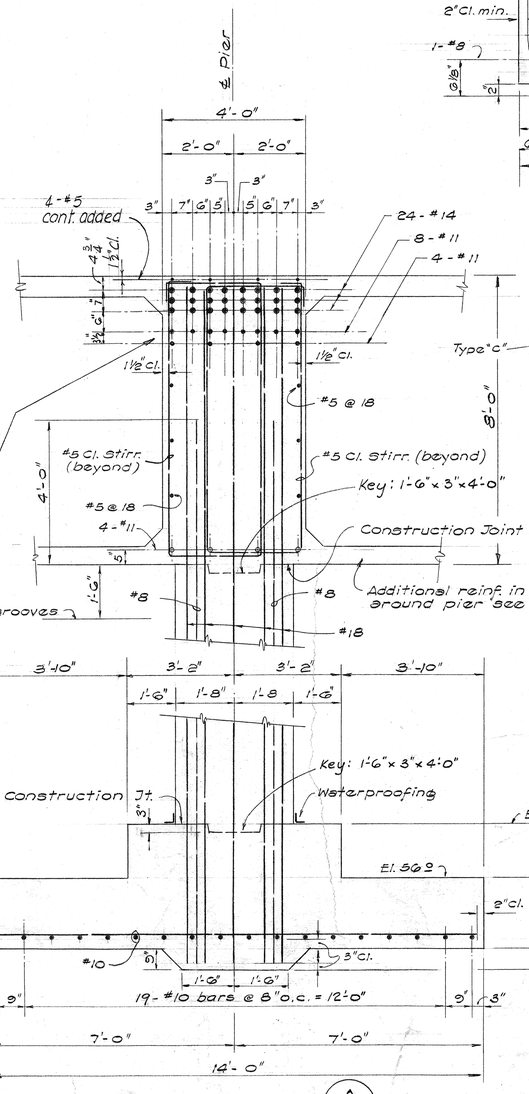
ELEVATION — PIER No 1

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



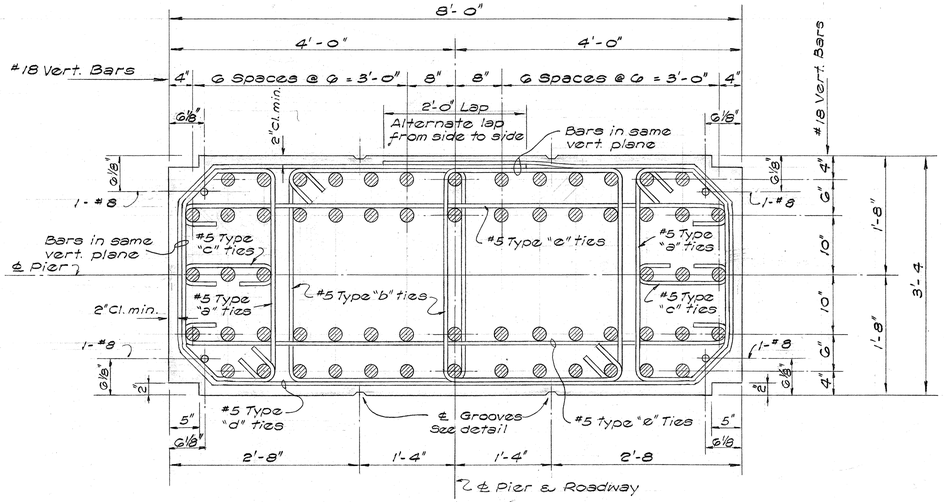
COL. GROOVE DETAIL

Half Size



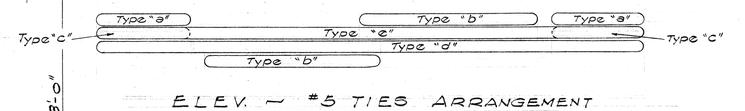
SECTION A/8

Scale: ½" = 1'-0"



SECTION B/8

Scale: 1" = 1'-0"



ELEV. — #5 TIES ARRANGEMENT

Not to scale

NOTES:
CONCRETE FOR COLUMNS
Quality — Class E-1

BARS DESIGNATION

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

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZE
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+38.58 to Sta. 163+21.83

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

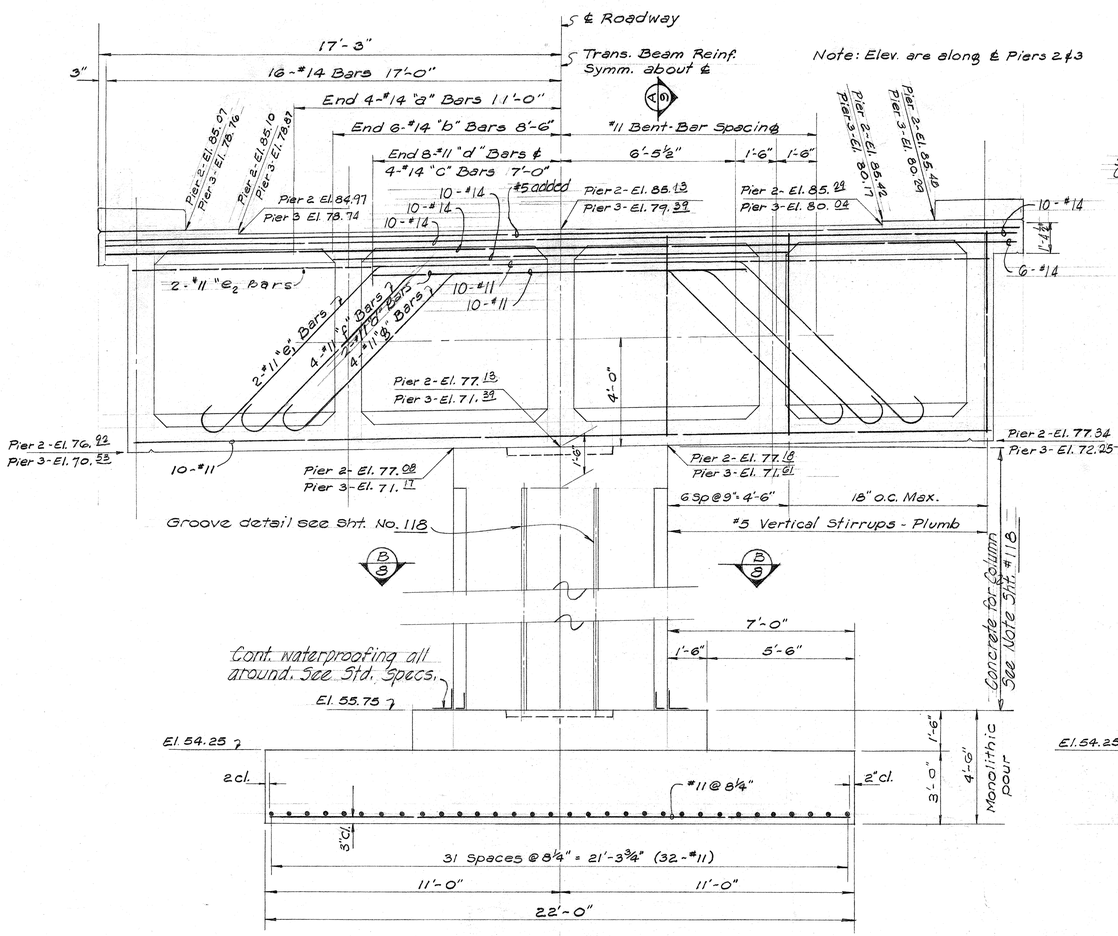
PELE STREET to VICTORIA STREET
FAI Proj No. I-HI-1(31) Unit 1 May 1966

SHEET No. 8 OF 22 SHEETS

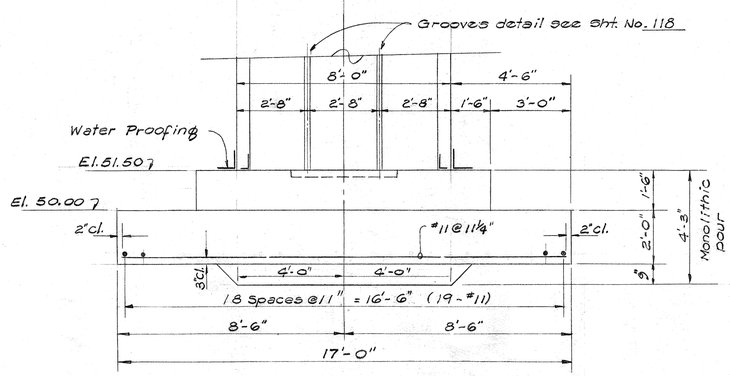
PRINTED ON DIEPO 1000H CLEARPRINT

118

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1 (51) UNIT 1	1967	119	222



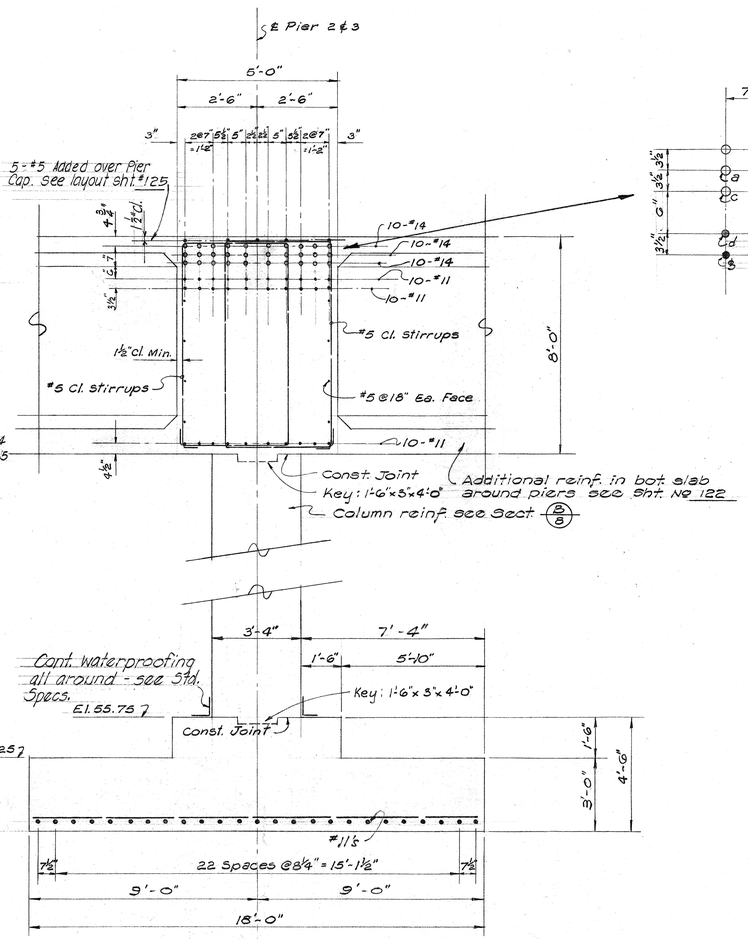
FOOTING - PIER 2

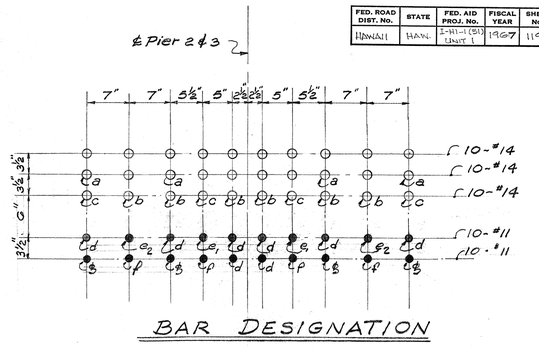


FOOTING - PIER 3

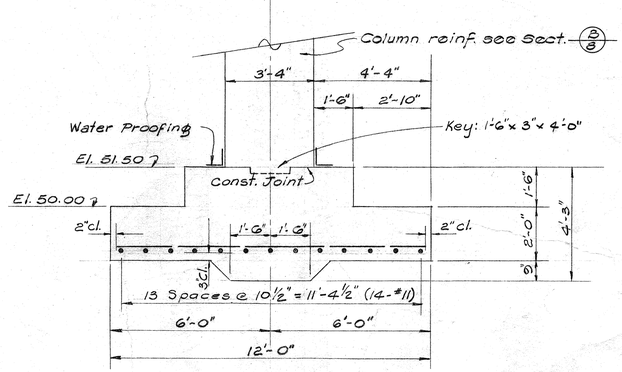
ELEVATION PIER 2 & 3 (A/01)

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





BAR DESIGNATION



FOOTING - PIER 2

FOOTING - PIER 3

SECTION A/9

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

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

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 7.0
HAWAII U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BRIDGE #1

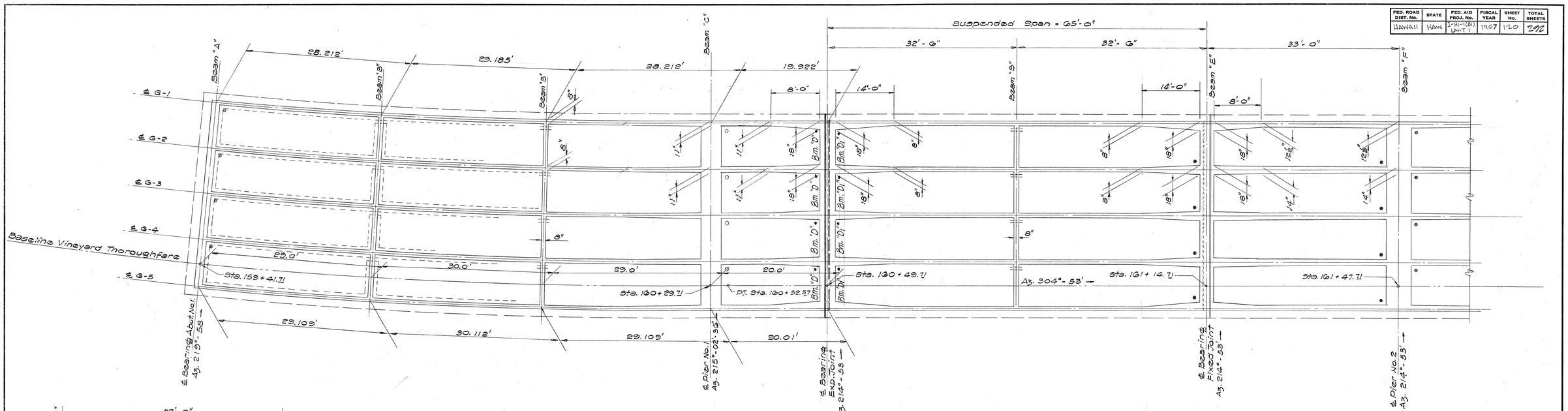
LUNALILO-VINEYARD OFF RAMP

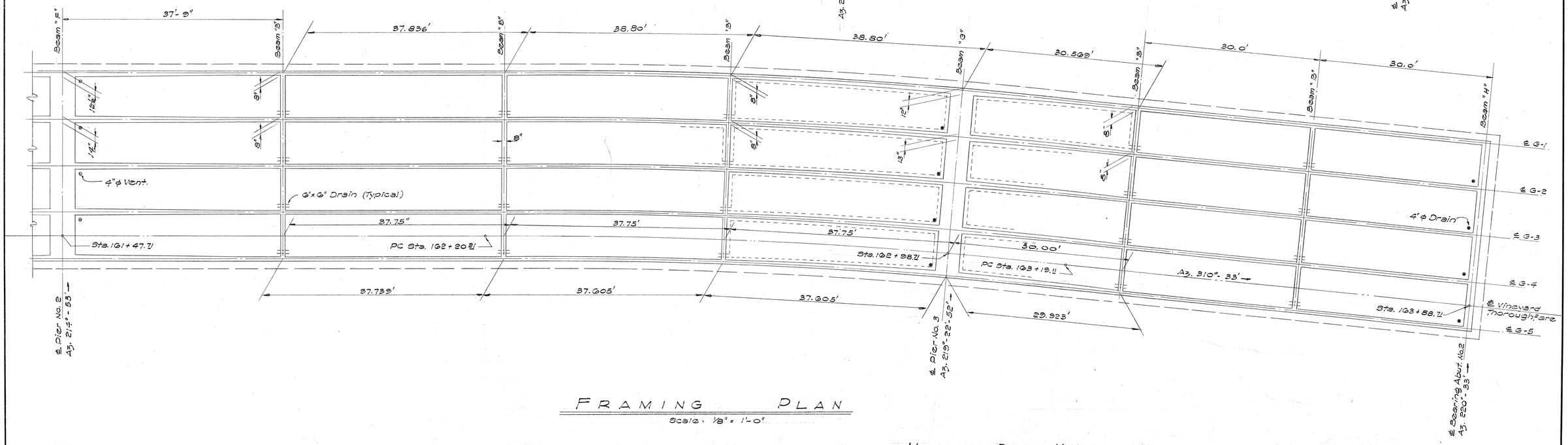
LUNALILO ℄ Sta. 152+38.58 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

SHEET No. 9 OF 22 SHEETS

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWN	I-HI-1(31) UNIT 1	1967	120	222





FRAMING PLAN

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

NOTE ON DRAIN HOLES

Drain holes to be located at the lowest point by the contractor with the approval of the Engineer.

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+38.38 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

SHEET No. 10 OF 22 SHEETS

120

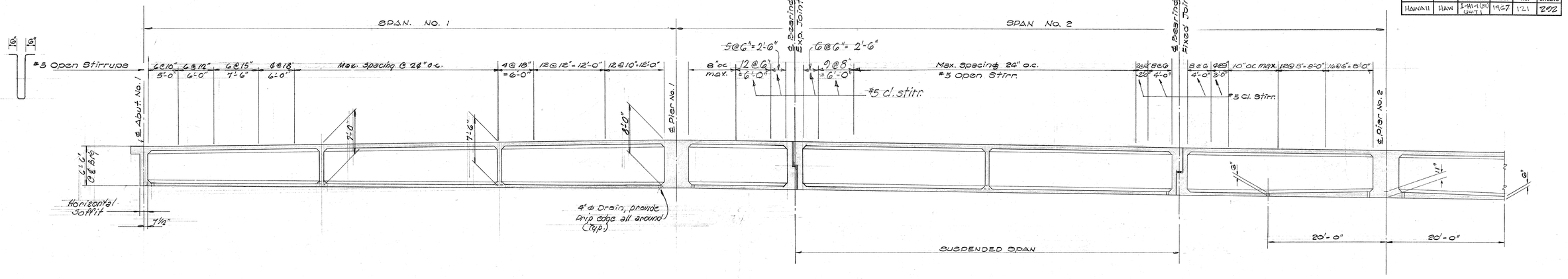
ORIGINAL PLAN

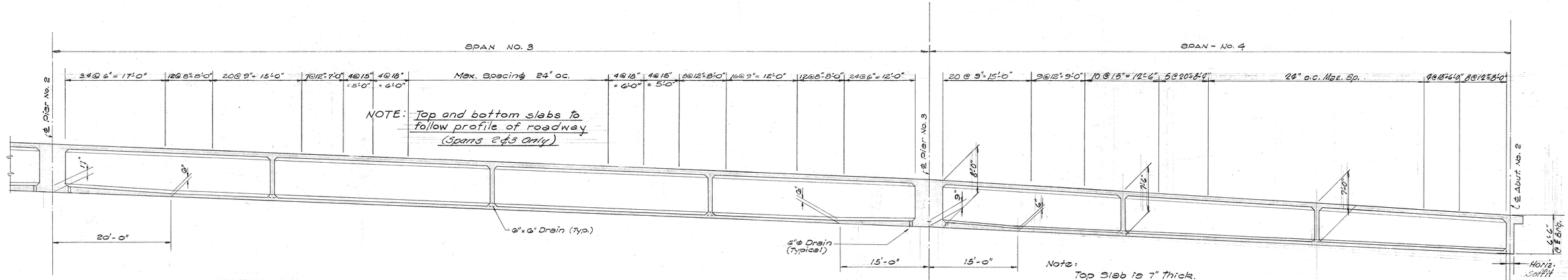
NOTE BOOK No.

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

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(30) UNIT 1	1967	121	202





GIRDER STIRRUP SPACING

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

ORIGINAL PLAN

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

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP
LUNALILO ℄ Sta. 159+38.28 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. NO. I-HI-1(31) Unit 1 May 1966

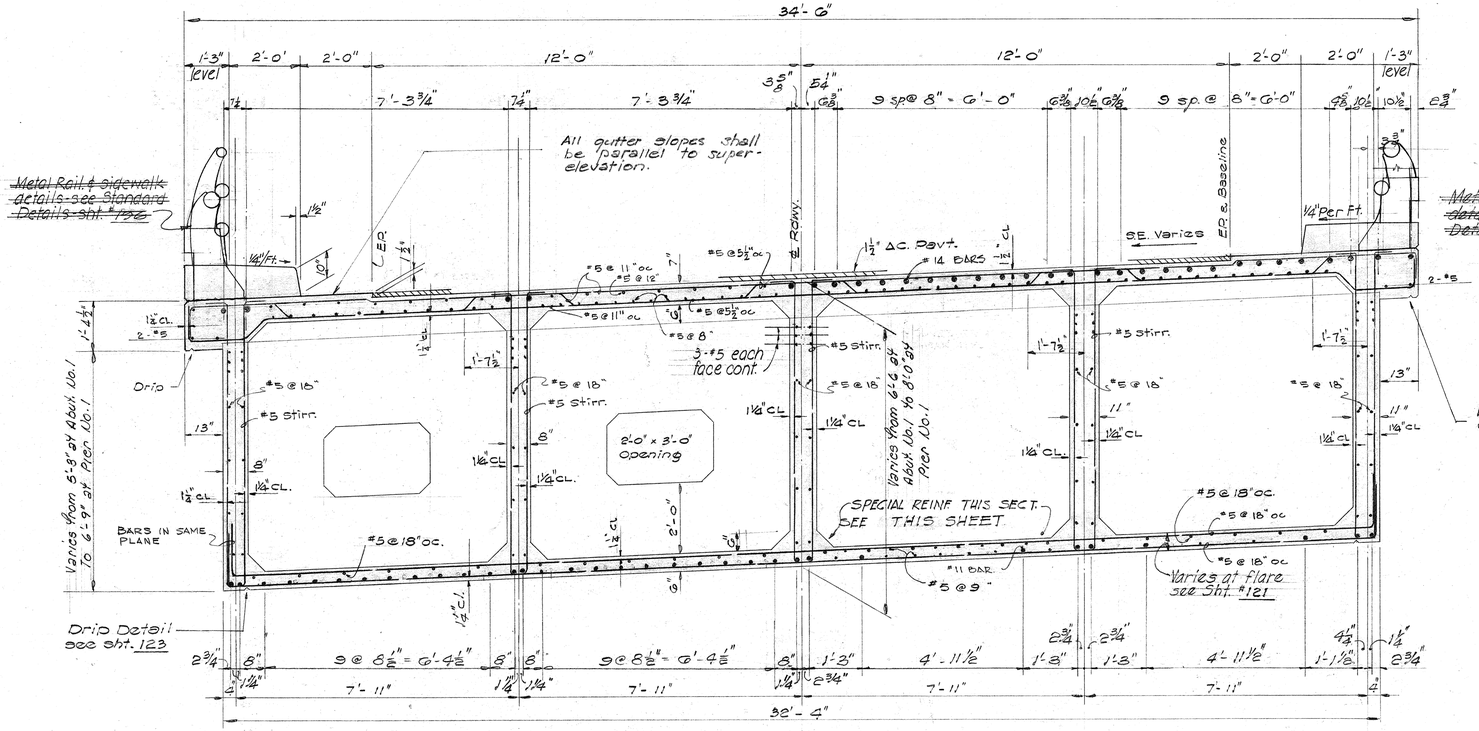
SHEET NO. 11 OF 22 SHEETS

121

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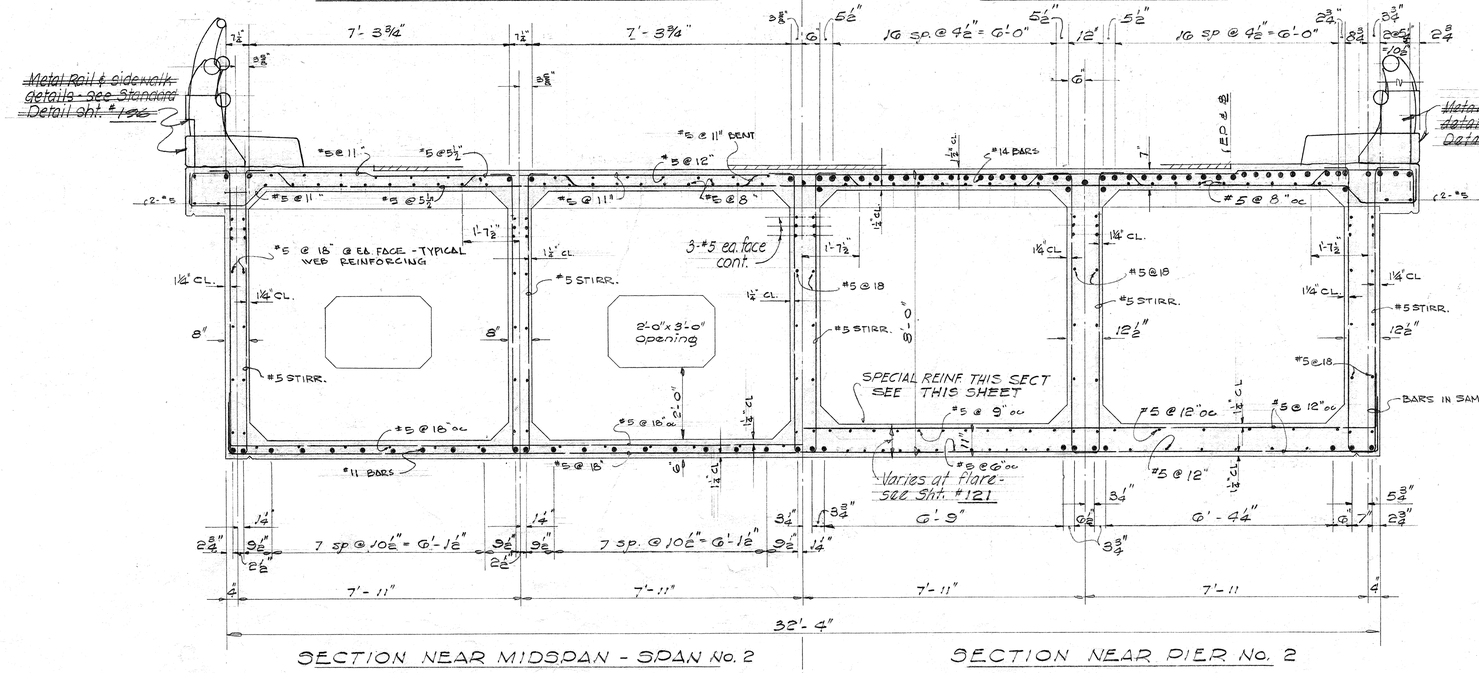
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	122	202

Note:
As built change:
Metal Br. rails 3 rail type
N/sidewalk to one rail on
parapet See Def. Sht. CO. 196 A
& CO. 196 B



SECTION NEAR MIDSPAN - SPAN No. 1

SECTION NEAR PIER No. 1

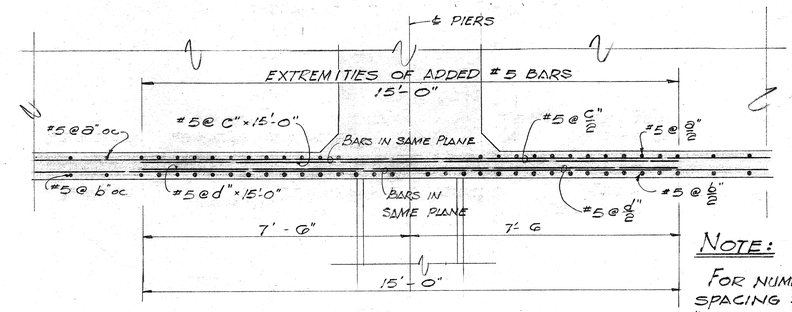


SECTION NEAR MIDSPAN - SPAN No. 2

SECTION NEAR PIER No. 2

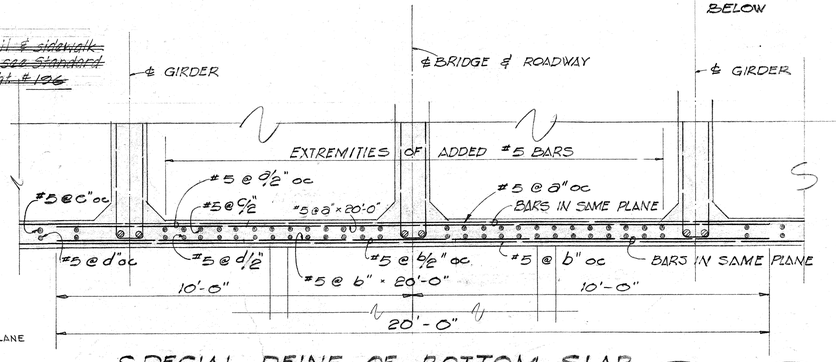
NORMAL SECTIONS

Scale: ½" = 1'-0"



NOTE:

FOR NUMERICAL SPACING SEE "SPACING SCHEDULE" BELOW



SPECIAL REINF. OF BOTTOM SLAB AROUND COLUMNS

NOT TO SCALE

SPACING SCHEDULE:

PIER 1

a = b = 18" a/2 = b/2 = 9"

c = d = 18" c/2 = d/2 = 9"

PIER 2 & 3

a = b = 12" a/2 = b/2 = 6"

c = 18" c/2 = 9" d = 12" d/2 = 6"

THE EXTREMETIES OF #5 @ a" & b" oc (12" oc) SHALL BE CARRIED OUT FOR A DISTANCE OF 10'-0" FROM ℄ PIER (BOTH WAYS) -- THEN USE #5 @ 18" oc TOP & BOT FACE.

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 713 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP
LUNALILO ℄ Sta. 159+38.58 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1968

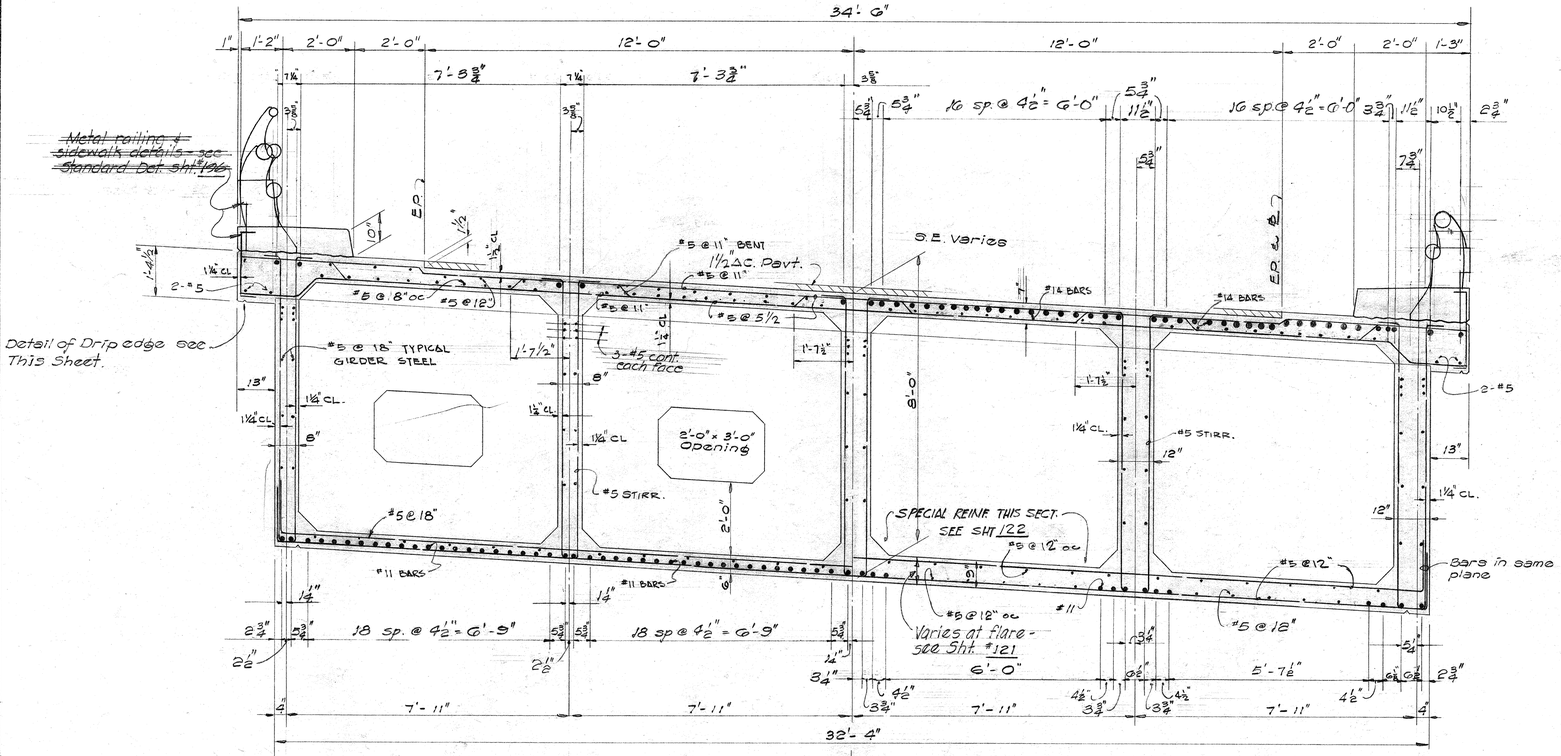
SHEET No. 12 OF 22 SHEETS

122

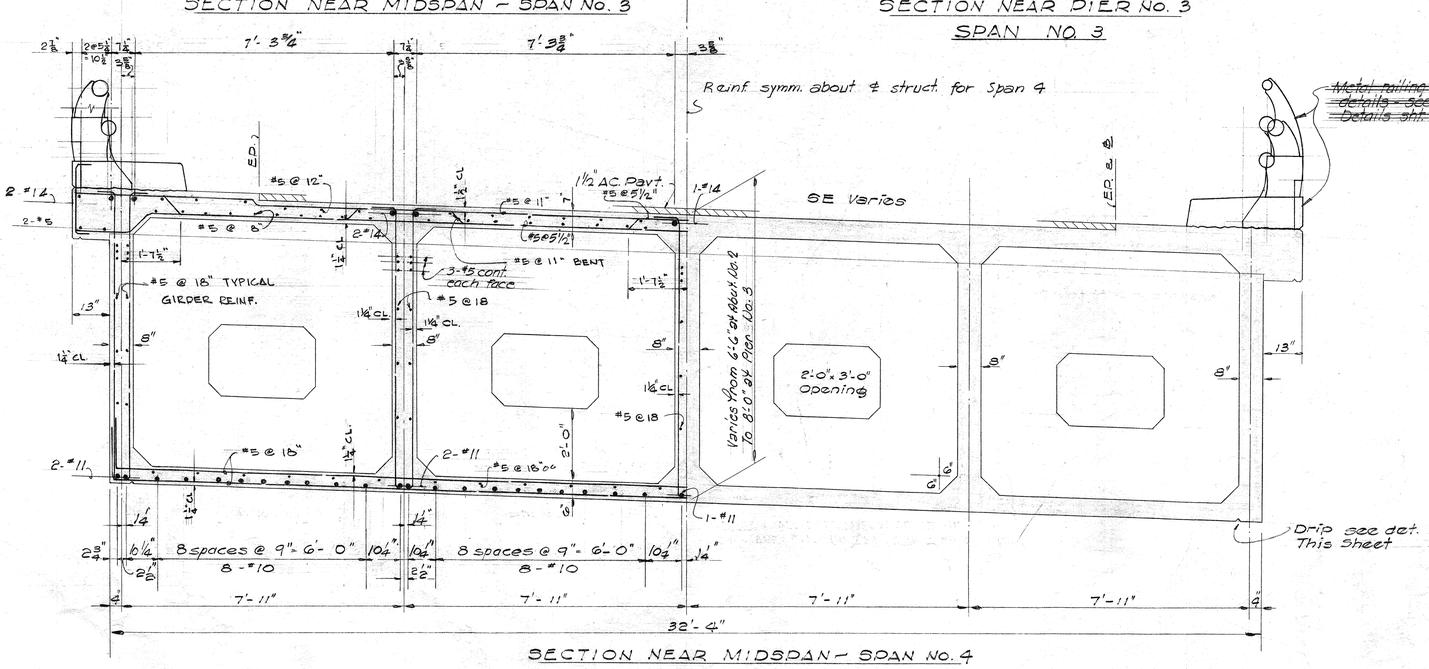
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY	

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(81) UNIT 1	1967	122	202



SECTION NEAR MIDSPAN - SPAN No. 3



SECTION NEAR PIER NO. 3
SPAN NO. 3

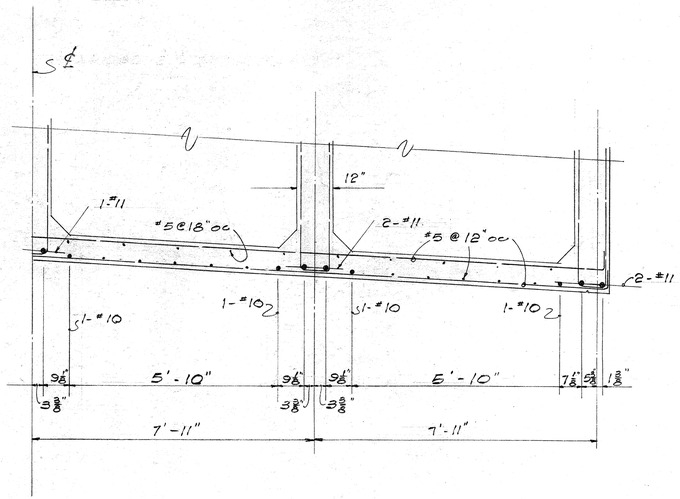
SECTION NEAR MIDSPAN - SPAN No. 4

NORMAL SECTIONS

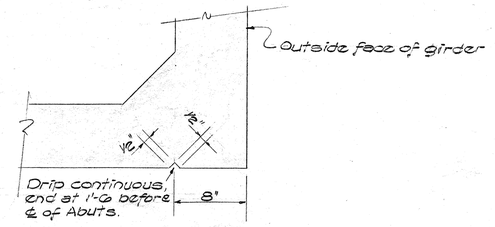
Scale: 1/2" = 1'-0"

NOTE!
Gutters on each side of bridge shall be in plane with Superelevation of deck.

Note!
As built change:
Metal Br. rail; 3 rail type with sidewalk to one rail on parapet. See Det. Sht. CO.196A & CO.196B



QUARTER SECTION NEAR PIER NO. 3
SPAN NO. 4
SCALE: 1/2" = 1'-0"



TYPICAL BOTTOM FLANGE DRIP DETAIL
Scale 1 1/2" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BRIDGE #L

LUNALILO - VINEYARD OFF RAMP
LUNALILO ℄ Sta. 159+38.58 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
FAI Proj. No. I-H1-1(81) Unit 1 May 1968

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

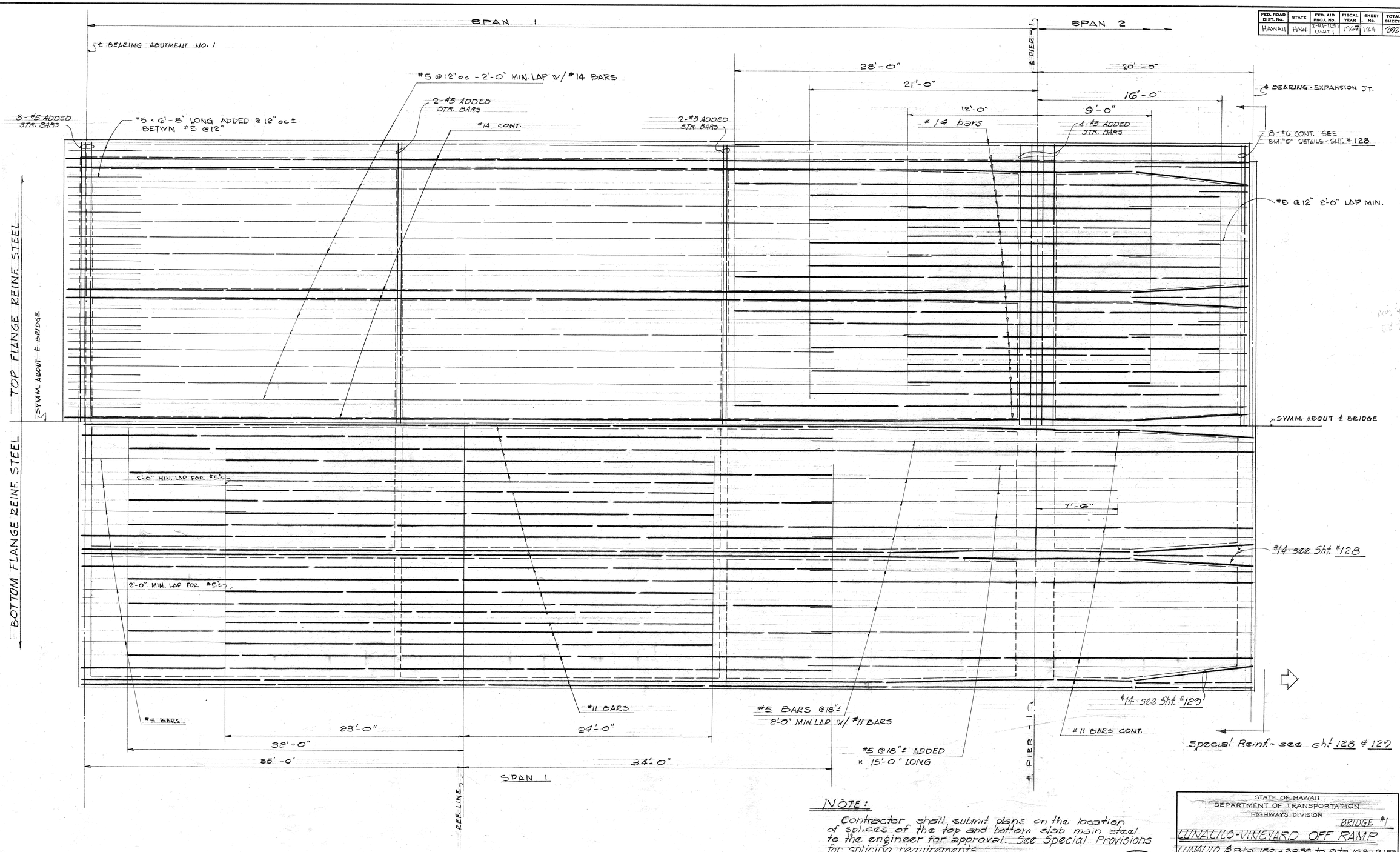
SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

SHEET No. 13 OF 22 SHEETS

123

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-H1-1(31) UNIT 1	1967	124	202



TOP & BOTTOM FLANGE REINFORCING STEEL PLAN

SCALE : HORZ. - 1/4" = 1'-0"
VERT. = 3/8" = 1'-0"

NOTE:

Contractor shall submit plans on the location of splices of the top and bottom slab main steel to the engineer for approval. See Special Provisions for splicing requirements.

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+38.58 to Sta. 163+91.89

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

DEE STREET TO VICTORIA STREET

FAI Proj. No. I-H1-1(31) Unit 1 May 1966

SHEET No. 14 OF 22 SHEETS

124

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

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(81) UNIT 1	1967	125	202

REVISION #1, 10/27/66 - CHANGE TOP FLANGE REINF. OVER PIER #2 & #3.

NOTE: Lap splices for #14 and #18 reinf. bars will not be permitted. Splices for #14 and #18 reinf. bars shall be made by welding. See Special Provisions.

℄ bearing - Fixed and

℄ PIER 2

33'-0" | 42'-0"

28'-0" | 35'-0"

19'-0" | 25'-0"

12'-0" | 16'-0"

#5 @ 12" w/ 2'-0" min. lap

2-#5 added str. bars

Bundled bars

5-#5 added str. bars

2-#5 added str. bars

SPAN NO. 3

#5 @ 12" w/ 2'-0" min. lap

2-#5 added str. bars

2-#5 added str. bars

Match Line "K"

℄ PIER 3

35'-0" | 41'-0"

26'-0" | 31'-0"

20'-0" | 21'-0"

13'-0" | 11'-0"

5-#5 added str. bars

2-#5 added str. bars

#5 @ 12" w/ 2'-0" min. lap

18 equal spaces

11 equal spaces

11 equal spaces

18 equal spaces

Top bar

Top bar (Symm. about ℄ bridge)

TOP FLANGE REINF. PLAN

#14 bars unless otherwise noted

BOTTOM FLANGE REINF. PLAN

#11 bars unless otherwise noted

Suspended Span See Sht. 126

#5 @ 6"

#5 @ 12" x 15'-0" Centered

#5 @ 6"

#5 @ 12" x 15'-0" long added

7'-6"

2½" 2½"

SINGLE BARS

2½" 2½"

BUNDLE BARS

MINIMUM SPACING OF #14 BARS

Special Reinf. for Suspension and see sht. 128 & 129

#5 @ 12" 2'-0" Min. Lap w/ #11 bars

31'-0" | 30'-0"

39'-0" | 36'-0"

47'-0" | 44'-0"

50'-0" | 52'-0"

76'-0" | 76'-0"

#5 @ 12" w/ 2'-0" min. lap

℄ PIER 2

℄ PIER 3

2'-0"

SPAN 2

℄ REF. LINE

NOTE: See note on sht 124

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+38.58 to Sta. 163+91.88

INTERSTATE ROUTE H-1 (LUNALILO FREEWAY)

PELE STREET TO VICTORIA STREET

FAI Proj. No. I-HI-1(81) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

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SHEET No. 15 OF 22 SHEETS

125

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

FLANGE REINFORCING PLAN

scale : horiz. 1/8" = 1'-0" vert 3/8" = 1'-0"

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REVISION #1 - 10/27/66 Change top flange reinf. Pier #3

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(30) UNIT 1	1967	126	202

SPAN 3

℄ PIER 3

SPAN 4

DIVISION NO.

#14 bars - refer to Flange Reinforcing Plan, Sht. #125 for loc. and extent.

#14 BAR CONT. WEB BARS

#5 @ 12" oc MAX. 2'-0" MIN. LAP W/ #14

#5 @ 12" x 6'-8" ADDED BARS

2-#5 ADDED STR. BARS

2-#5 ADDED STR. BARS

3-#5 ADDED STR. BARS

#5 @6"

SYMM. ABOUT ℄ BRIDGE

TOP FLANGE REINF. PLAN

REINF. SYMM. ABOUT ℄ BRIDGE

BOTTOM FLANGE REINF. PLAN

MATCH LINE "K"

8'-0"

#5 @ 12" oc MAX. 2'-0" MIN. LAP W/ #10 OR #11

#11 BARS

23'-0"

#10 BARS

23'-0"

#5 @ 18" MAX. 2'-0" MIN. LAP

31'-0"

30'-0"

℄ BEARING ABUT No. 2

℄ REF. LINE

SPECIAL REINF. FOR SUSPENSION ENDS ~ SEE SHT. #129 & #130

#5 @ 12" oc MAX. 2'-0" MIN. LAP

#11 CONT. BARS

REINF. SYMM. ABOUT ℄ SUSPENDED SPAN (2)

4-#5 added str. bars

#5 ADDED STR. BAR

TOP FLANGE REINF. PLAN

BOTTOM FLANGE REINF. PLAN

#11 BARS

17'-0"

23'-0"

29'-0"

32'-6"

℄ BEARING ~ SUSPENSION

NOTE:
See note on sht. #124

FLANGE REINFORCING PLANS

SCALE: HORZ: 3/16" = 1'-0" VERT.: 3/8" = 1'-0"

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

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

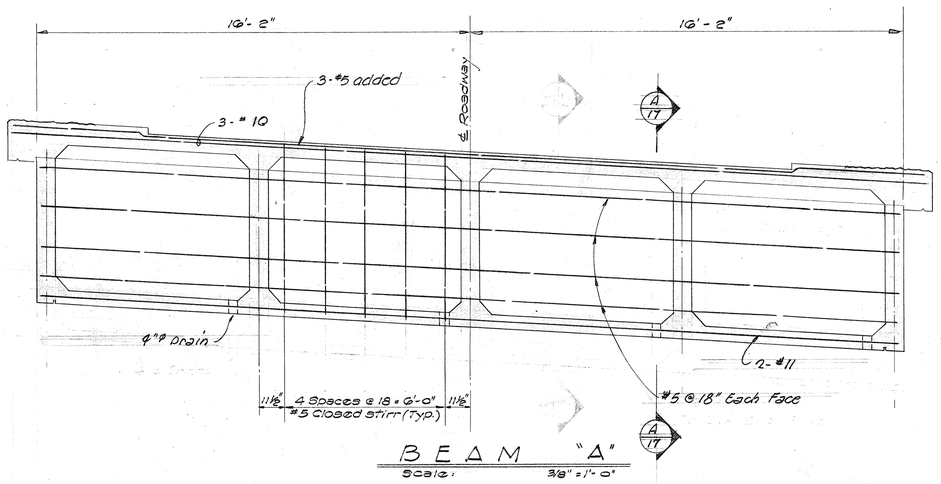
LUNALILO-VINEYARD OFF RAMP
LUNALILO ℄ Sta. 159+38.58 to Sta. 160+19.82
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1968

SHEET No. 16 OF 22 SHEETS

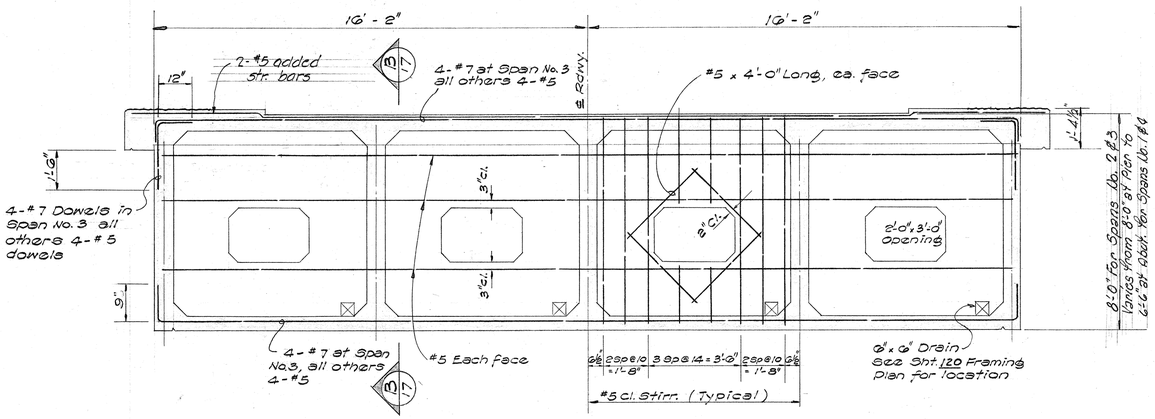
126

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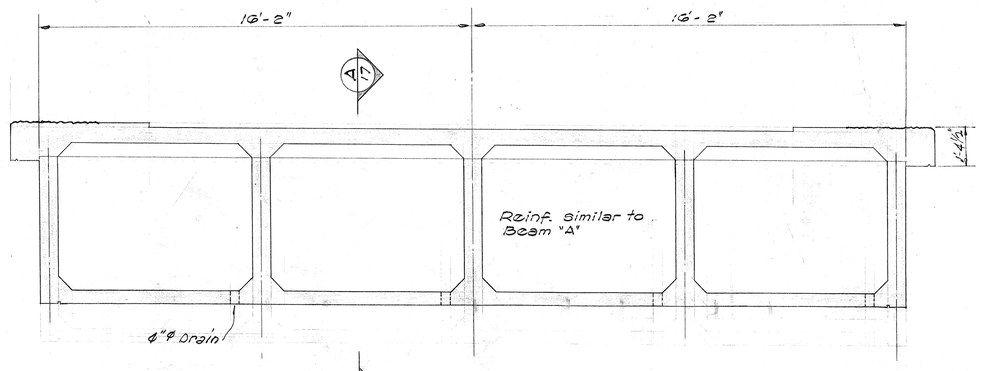
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	127	202



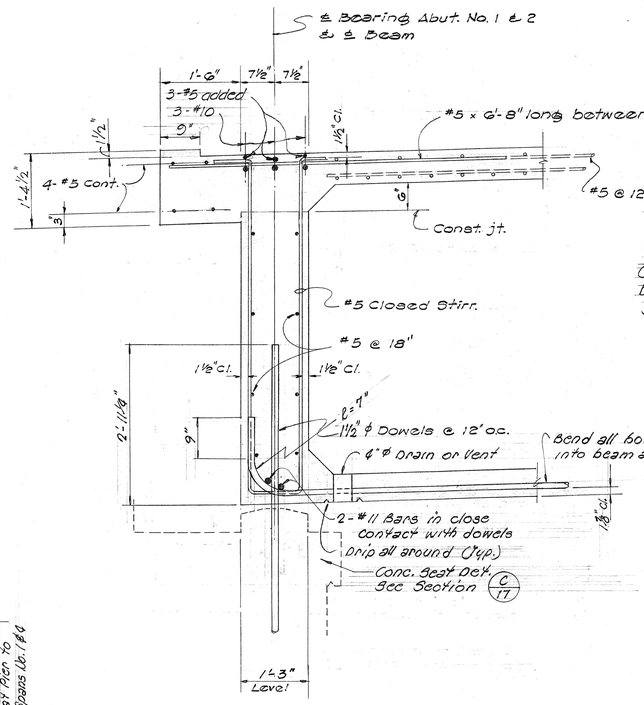
BEAM "A"
Scale: 3/8" = 1'-0"



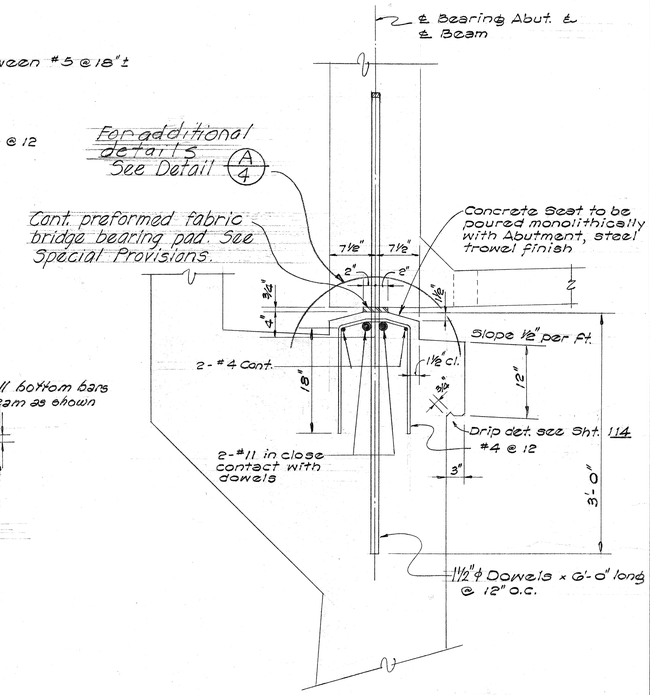
BEAM "B"
Scale: 3/8" = 1'-0"



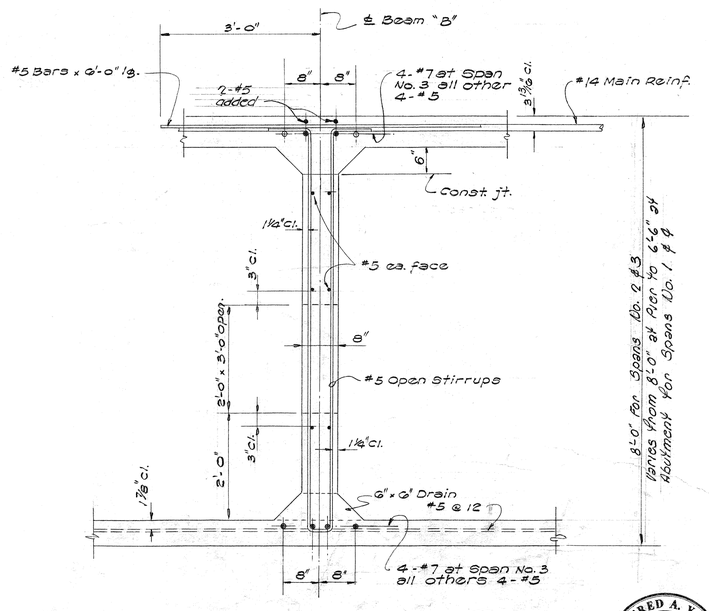
BEAM "H"
Scale: 3/8" = 1'-0"



SECTION A 17
Scale: 3/4" = 1'-0"



SECTION C 17
Scale 1" = 1'-0"



SECTION B 17
Scale: 3/4" = 1'-0"

ALFRED A. YEE
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HAWAII U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO-VINEYARD OFF RAMP
LUNALILO ℄ Sta 159+38.58 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

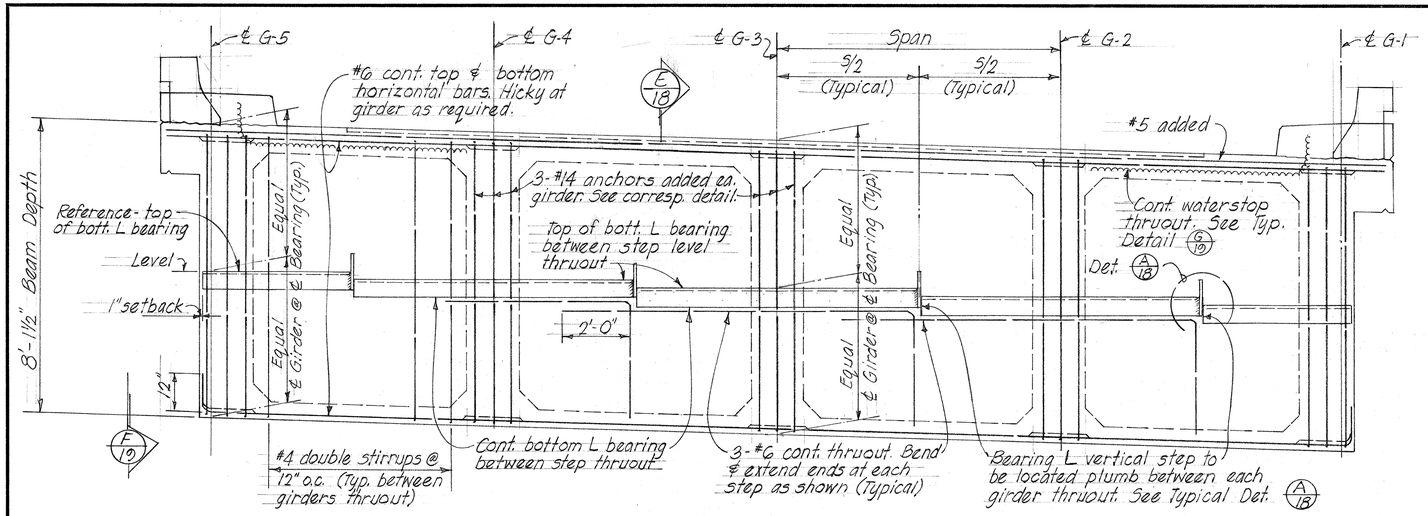
SHEET No. 17 OF 22 SHEETS

127

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

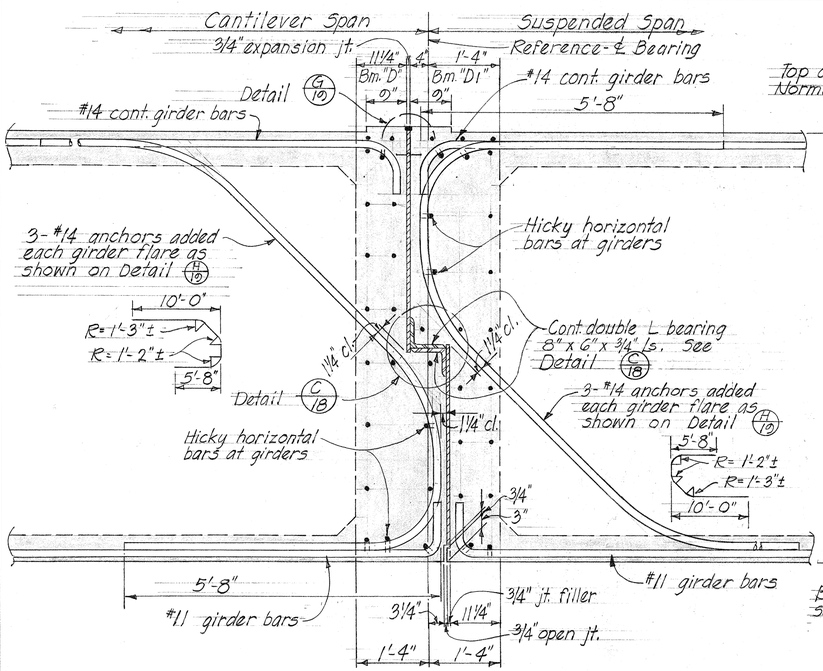
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IH-1-1(31) UNIT 1	1967	128	202

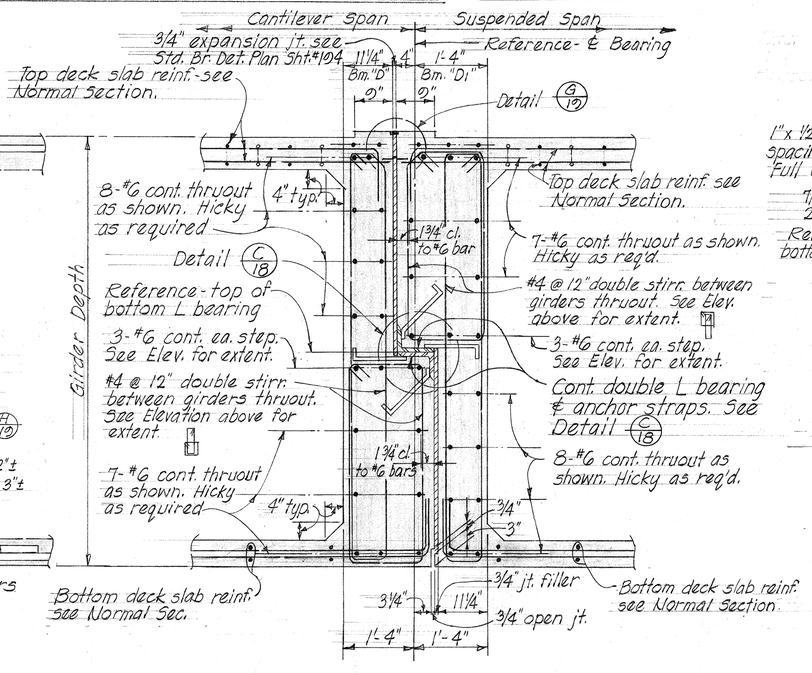


ELEVATION - TYPICAL BEAM "D" (CANTILEVER SUPPORT) AS SHOWN
BEAM "D1" (SUSPENDED END) SIMILAR EXCEPT REVERSED BEARING

Scale: ½" = 1'-0"



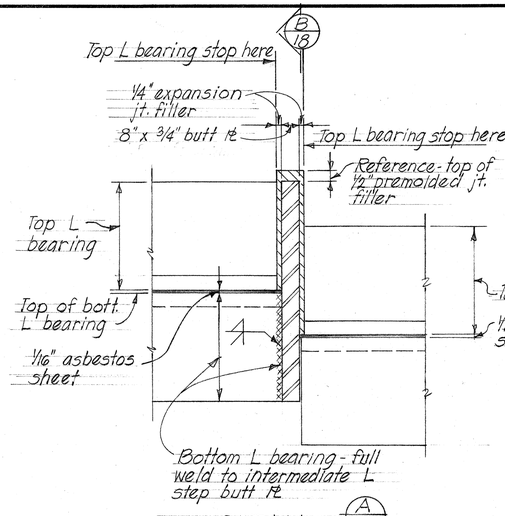
TYPICAL AT EACH GIRDER



BETWEEN GIRDERS

TYPICAL SECTION E/18

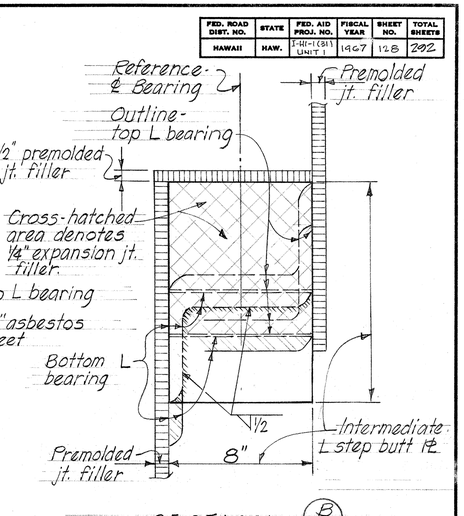
Scale: ¾" = 1'-0"



DETAIL A/18

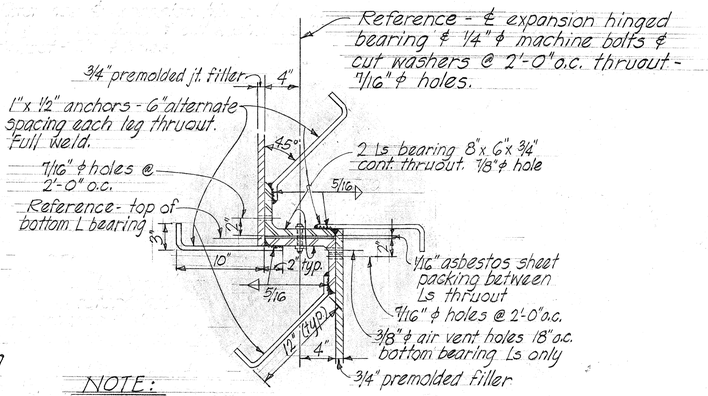
TYPICAL L BEARING STEP DETAIL

Scale: 3" = 1'-0"



SECTION B/18

Scale: 3" = 1'-0"



NOTE:
All L bearings to be hot dipped galvanized. See Specs.

BEARING DETAIL C/18

Scale: ½" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #1

LUNALILO - VINEYARD OFF RAMP

LUNALILO ℄ STA. 150 + 38.58 to STA. 163 + 01.83

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

PELE STREET TO VICTORIA STREET

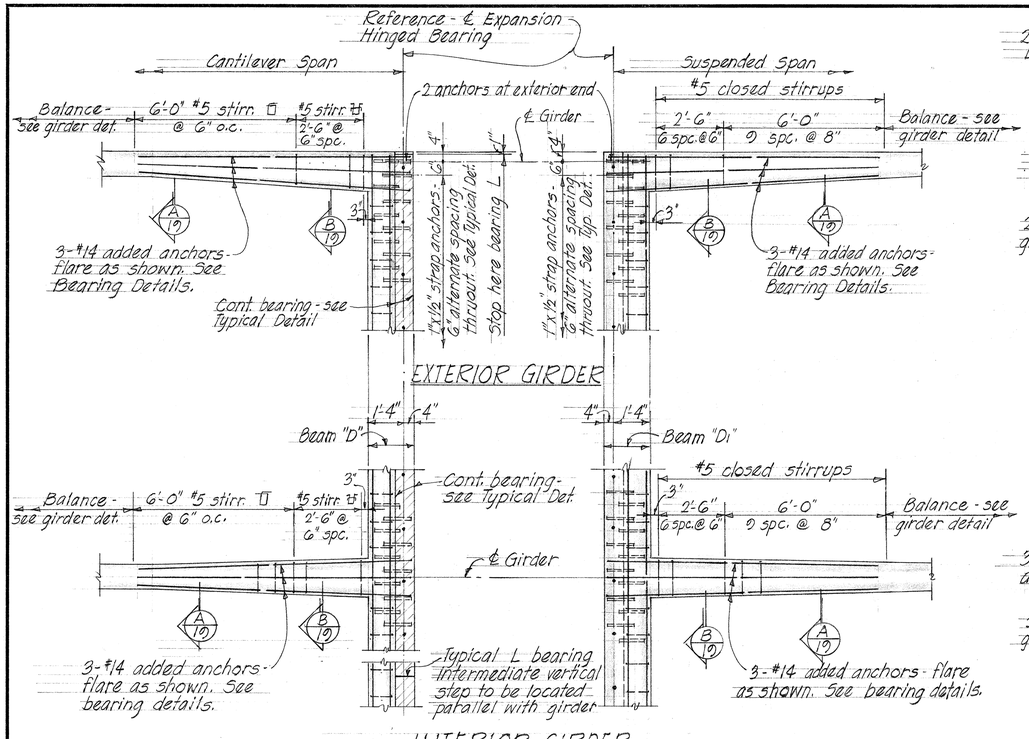
F.A.I. Proj. IH-1-1(31) Unit 1 May 1966

SHEET No. 18 OF 22 SHEETS

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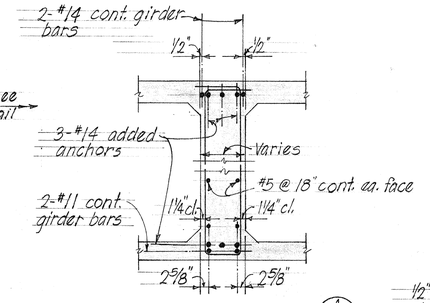
128

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-I(31) UNIT 1	1967	129	242



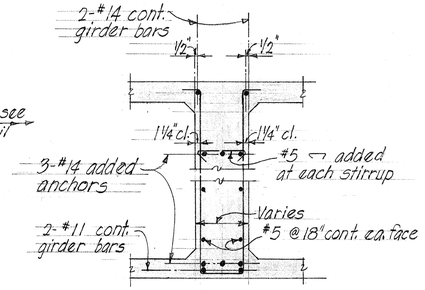
PLAN - TYPICAL SUPERSTRUCTURE SUSPENDED SPAN
CONTINUOUS EXPANSION BEARING JOINT DETAIL (H/10)

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



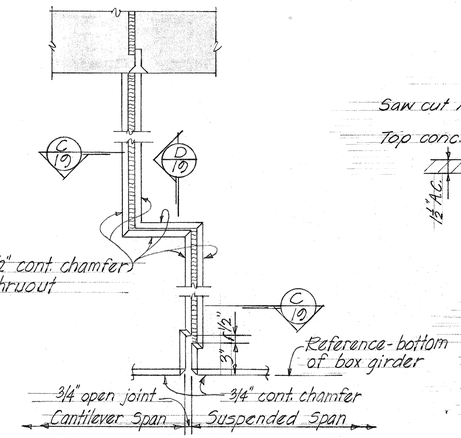
SECTION (A/10)

Scale: ½" = 1'-0"

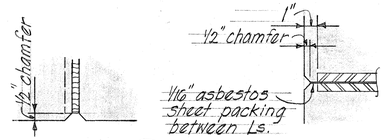


SECTION (B/10)

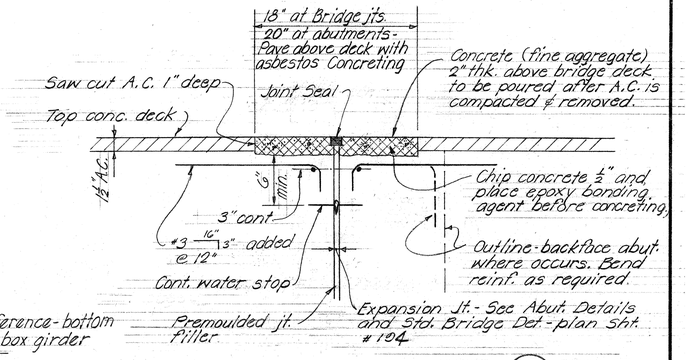
Scale: ½" = 1'-0"



END ELEVATION (F/10)



SECTION (C/10) SECTION (D/10)



TYPICAL DETAIL (G/10)

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #1

LUNALILO - VINEYARD OFF RAMP

LUNALILO ℄ Sta. 150+38.58 to Sta. 163+01.83

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

PELE STREET TO VICTORIA STREET

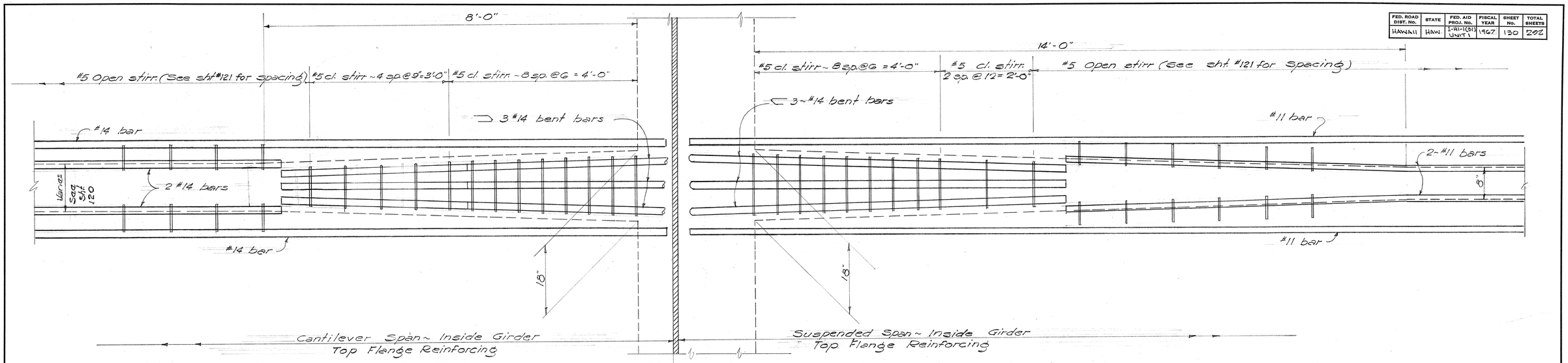
F.A.I. Proj. No. IH-1-1(31) Unit 1 May 1966

SHEET No. 10 OF 22 SHEETS

129

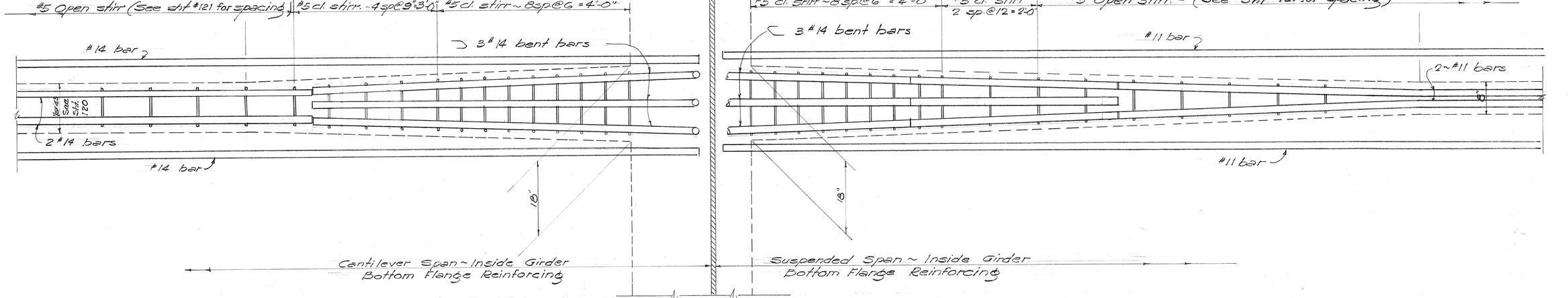
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(61) UNIT 1	1967	130	202



PLAN - INSIDE GIRDER - TOP FLANGE REINFORCING AT FIXED JOINT - BEAM "E" ONLY

Scale: 1" = 1'-0"



PLAN - INSIDE GIRDER - BOTTOM FLANGE REINFORCING AT FIXED JOINT - BEAM "E" ONLY

Scale: 1" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION — BRIDGE #1

LUNALILO - VINEYARD OFF RAMP
LUNALILO @ Sta. 159+38.58 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET to VICTORIA STREET
FAI Proj. NO. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

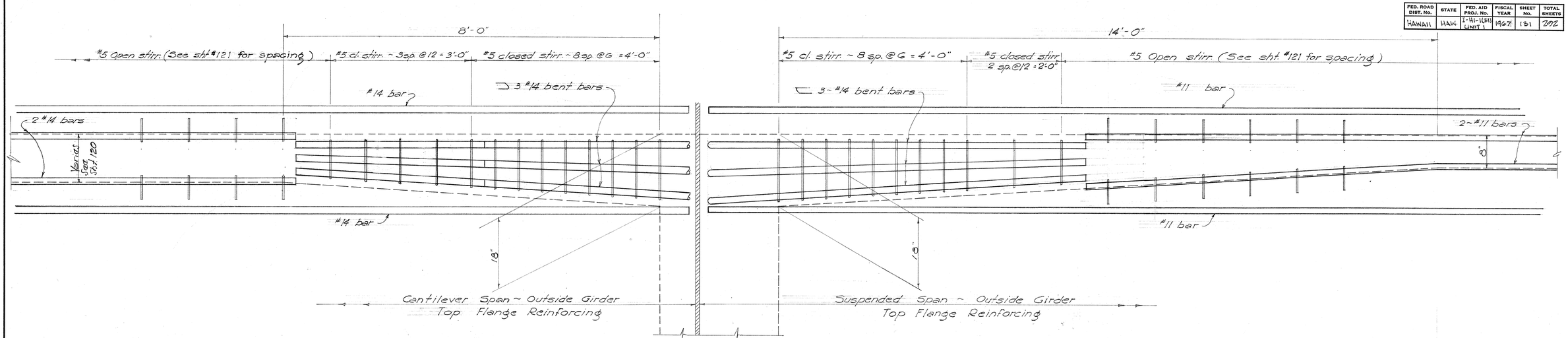
SAMUEL DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

SHEET No. 20 OF 22 SHEETS

130

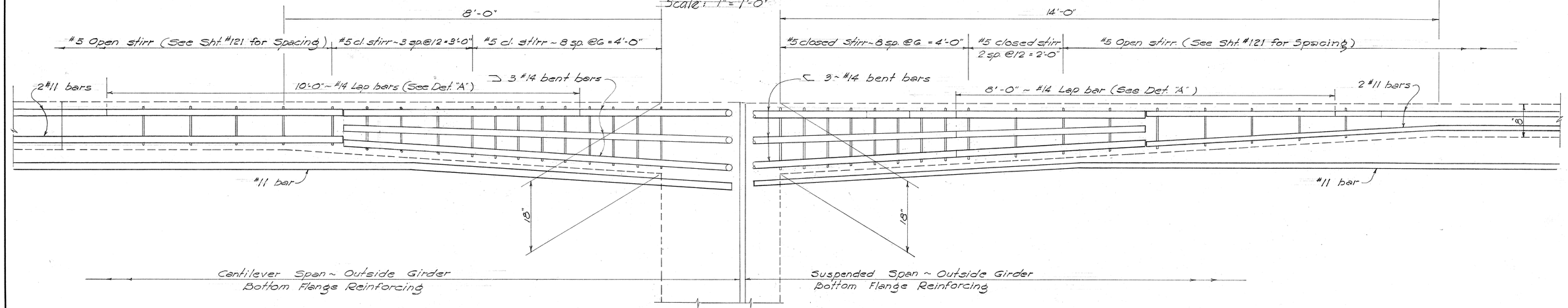
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(31) UNIT 1	1967	131	202



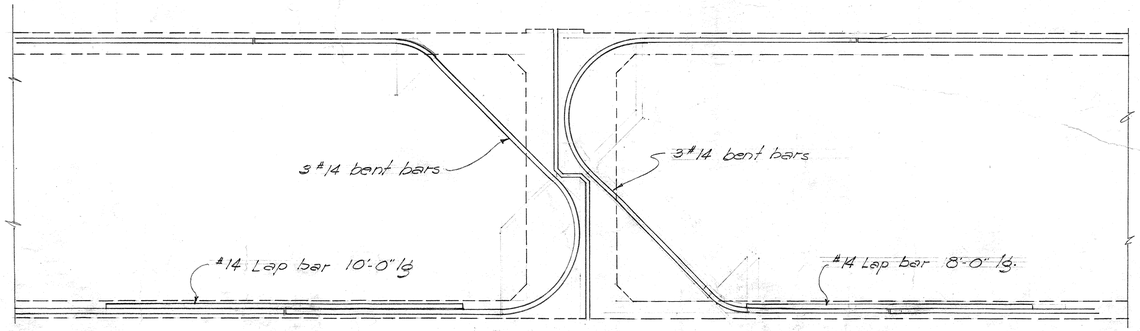
PLAN - OUTSIDE GIRDER - TOP FLANGE REINFORCING AT FIXED JOINT - BEAM "E" ONLY

Scale: 1" = 1'-0"



PLAN - OUTSIDE GIRDER - BOTTOM FLANGE RINFORCING AT FIXED JOINT - BEAM "E" ONLY

Scale: 1" = 1'-0"



DETAIL "A"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #1

KUNALILO - VINEYARD OFF RAMP
KUNALILO @ Sta. 159+38.58 to Sta. 163+91.83
INTERSTATE ROUTE H-1
(KUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

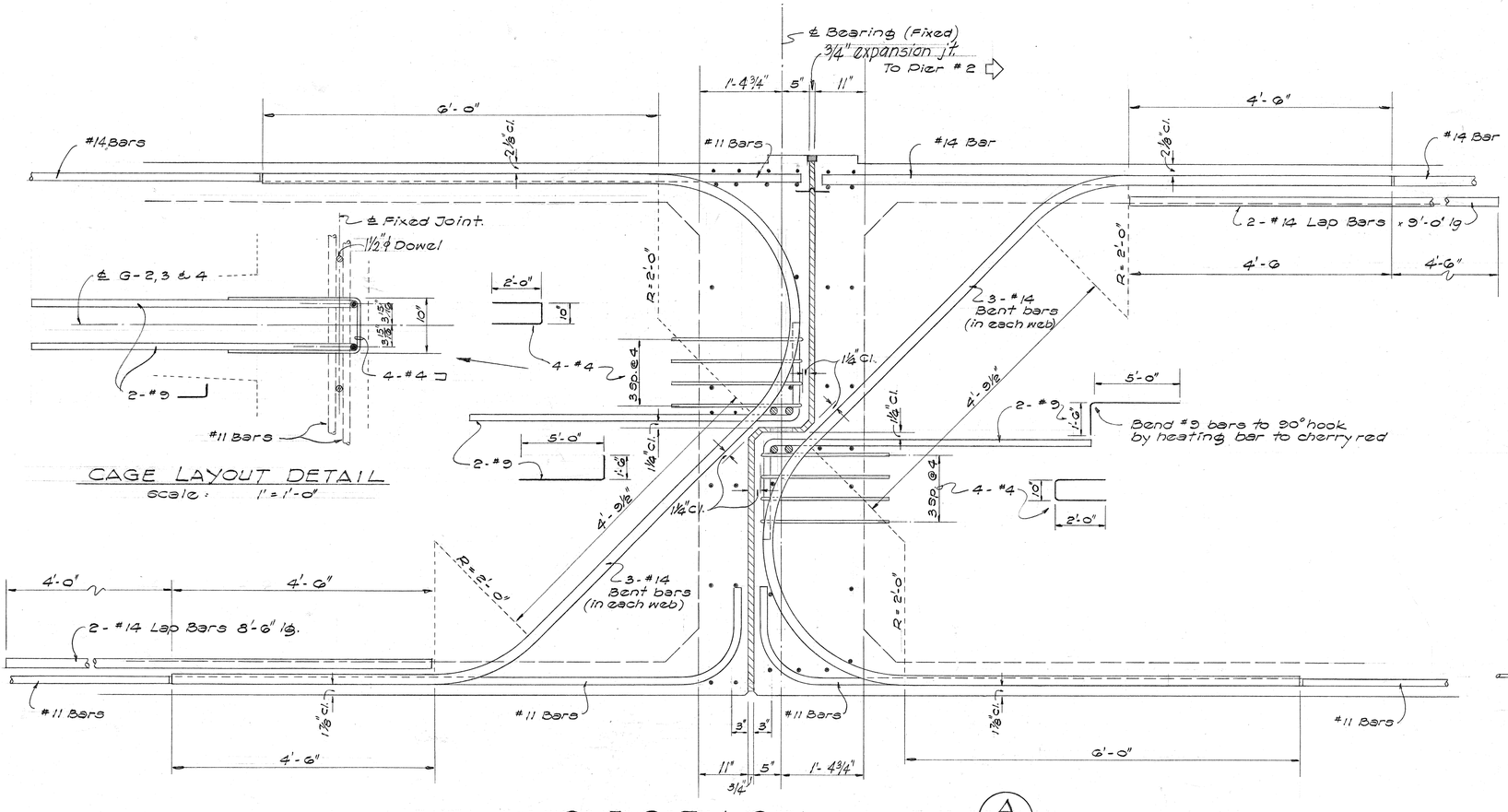
SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII U.S.A.

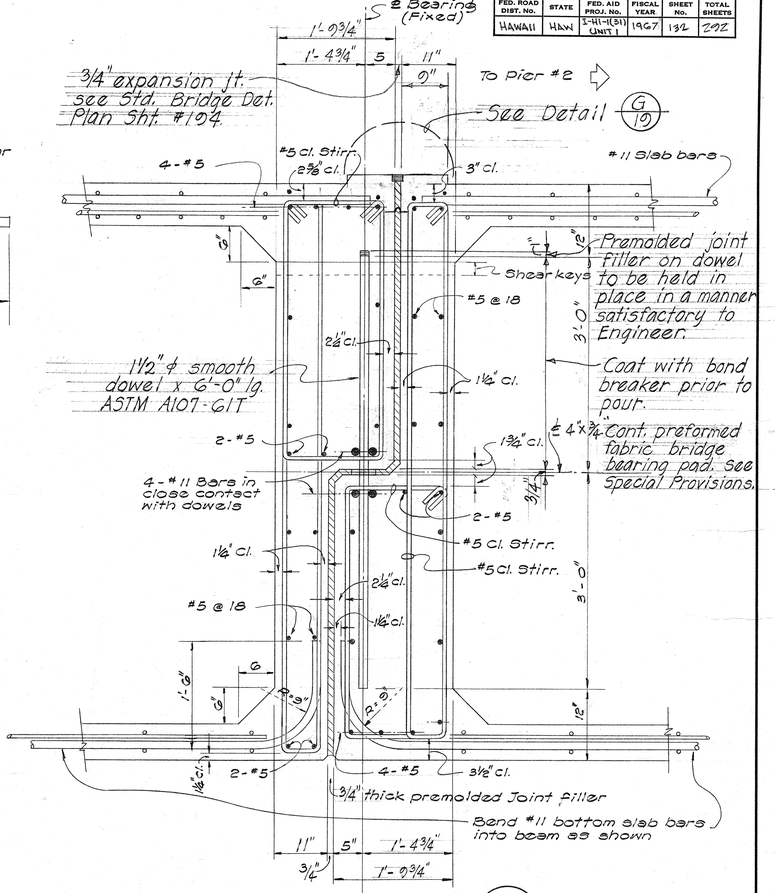
SHEET No. 21 OF 22 SHEETS

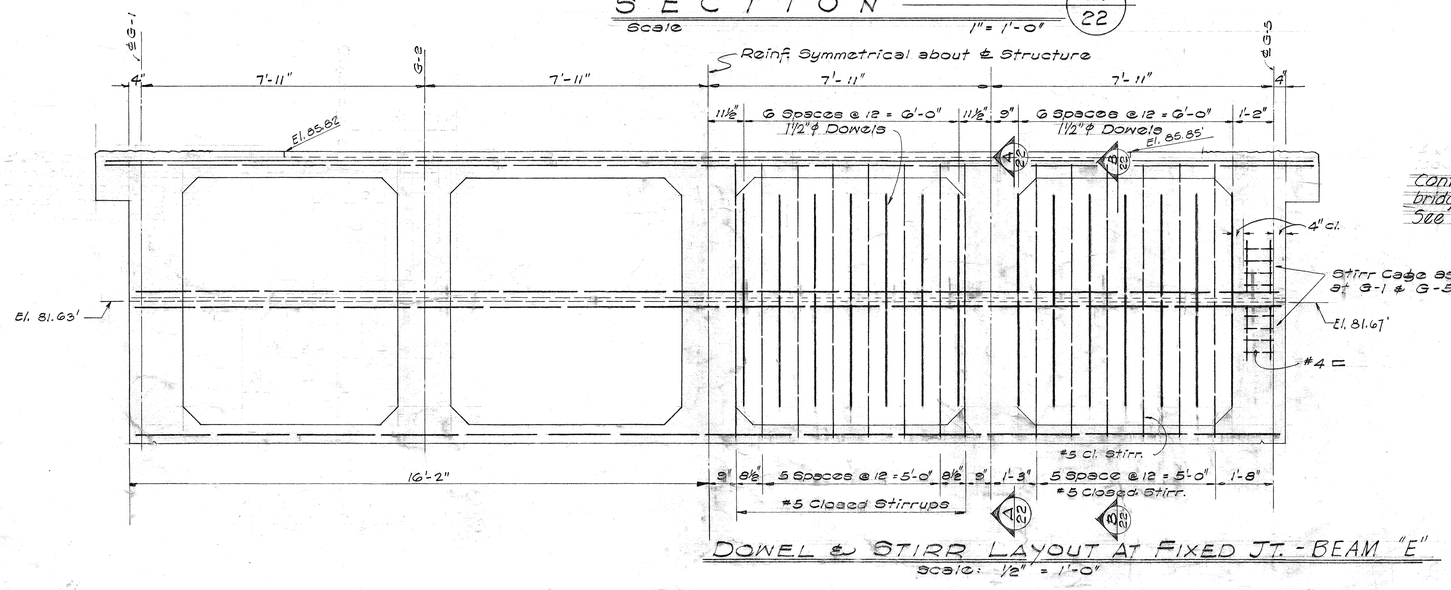
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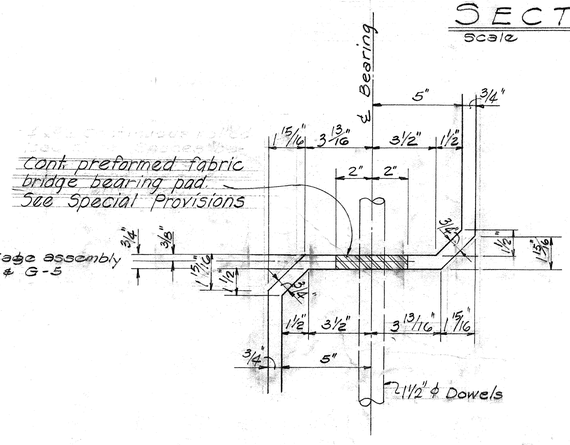
PRINTED ON DIEPO 1000N CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-III-1(31) UNIT 1	1967	132	292









ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BRIDGE #1

LUNALILO-VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+38.58 to Sta. 162+91.83
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET to VICTORIA STREET
FA-I Proj. No. I-H1-1(31)Unit 1 May 1966

SHEET No. 22 OF 22 SHEETS

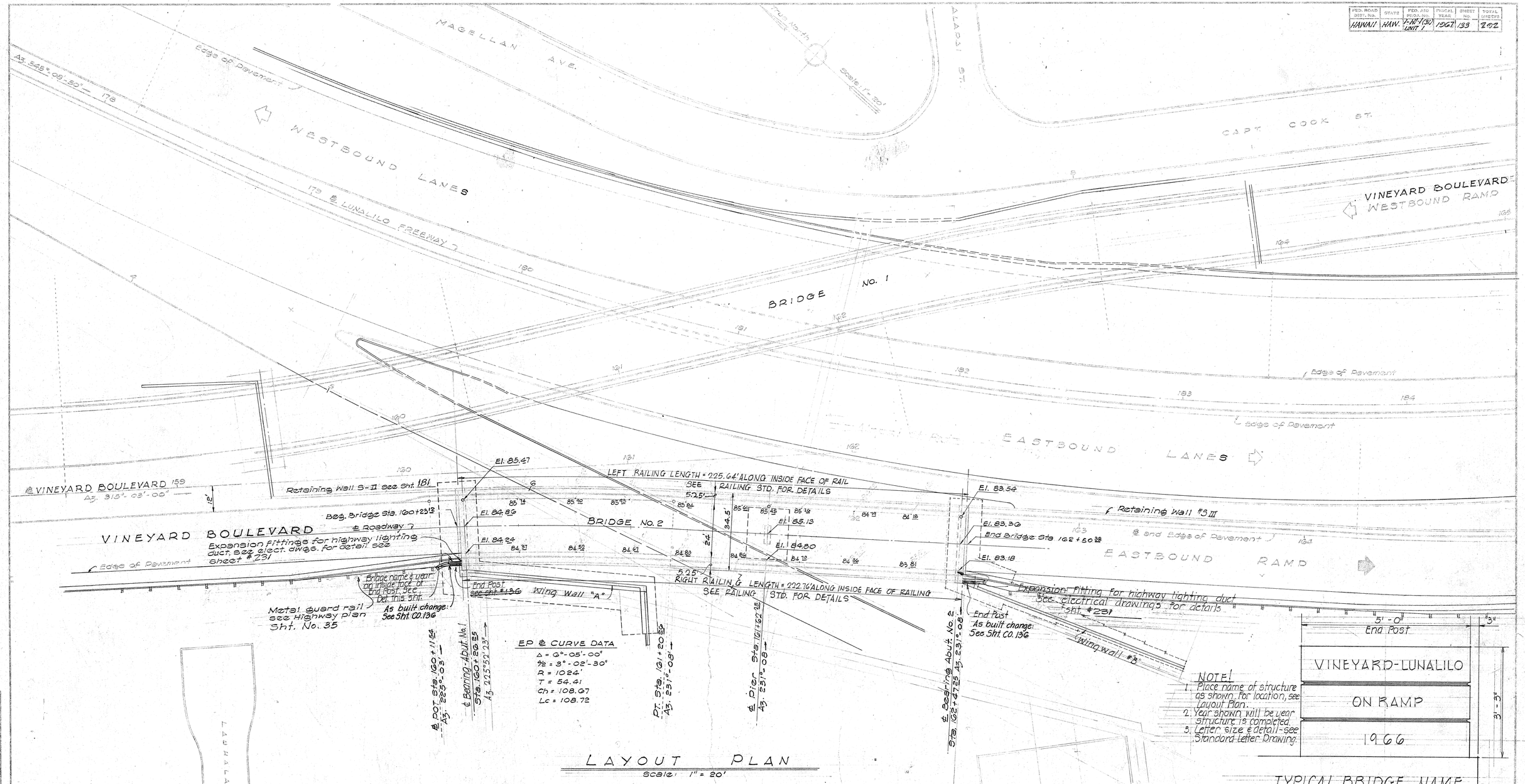
132

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

PRINTED ON DIEPO 1000H CLEARPRINT

81.

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(31) UNIT 1	1967	133	202



LAYOUT PLAN

Scale: 1" = 20'

NOTE:
All elevations are finish pav't. elevations at 25 ft. intervals.

ESTIMATED QUANTITIES

CONCRETE	LUMP SUM	(1,603.0 CU.YDS)
REINFORCING STEEL	LUMP SUM	(351,250.0 LBS.)
STRUCTURAL EXCAVATION	875.0	CU.YDS
A.C. MIX No. IV	52.0	TONS
FILTER MATERIAL	138.0	CU.YDS
TACK COAT	152.0	GALS
STEEL EXP. AND FIX. BEARINGS	LUMP SUM	(18,400 LBS)
METAL BRIDGE RAILING	449.0	L.F.

NOTE!
1. Place name of structure as shown for location, see Layout Plan.
2. Year shown will be year structure is completed.
3. Letter size & detail - see Standard Letter Drawing.

TYPICAL BRIDGE NAME AND YEAR LOCATION DETAIL

ORIGINAL PLAN	SURVEY PLOTTED BY:
	DRAWN BY: S.V.
	TRACED BY: S.V.
	NOTE BOOK:
	QUANTITIES CHECKED BY: J.F.
	CHECKED BY: J.F.
	DATE:
	No.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.38
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAP Proj No. I-H1-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

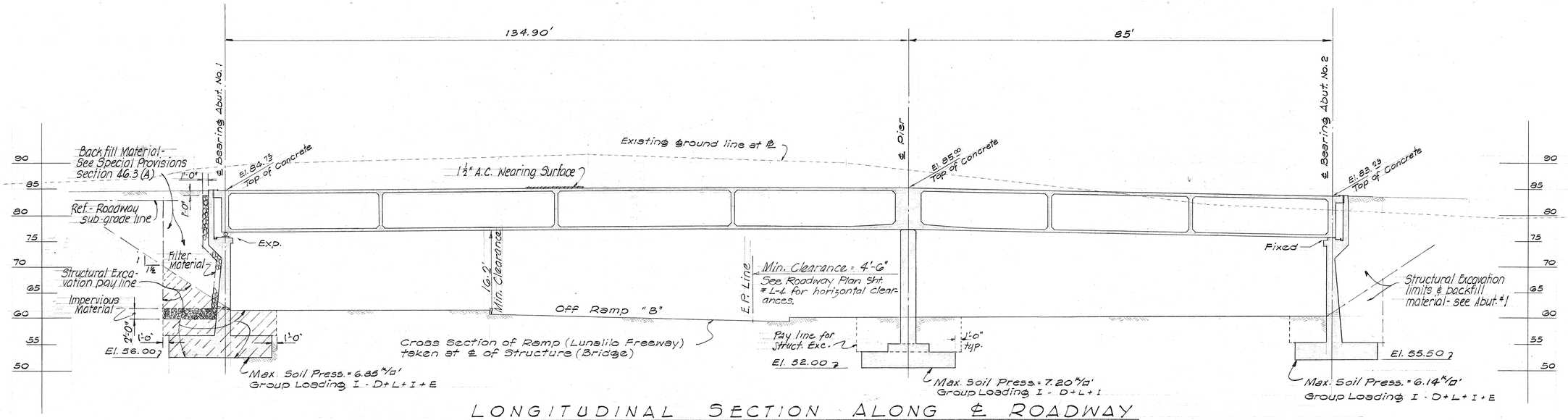
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

SHEET No. 1 OF 16 SHEETS

133

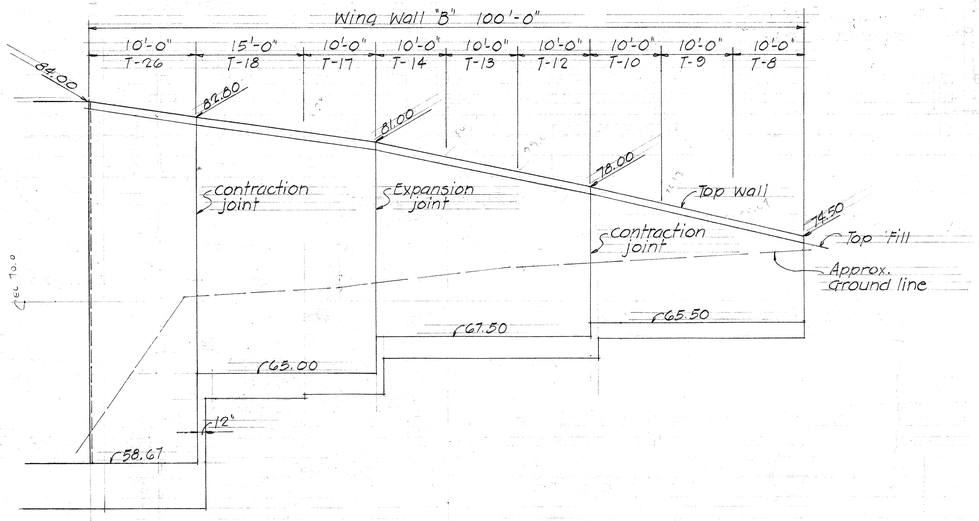
PRINTED ON DIETZ KOOH CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-H1-1(81) UNIT 1	1967	134	202



LONGITUDINAL SECTION ALONG ℄ ROADWAY

Scale: 1" = 10'



ELEVATION - WING WALL "B"

Scale: Horiz. 1" = 10'-0"
Vert. 1" = 5'-0"

GENERAL NOTES:

I. Design Data

(1) H 20-S-16-44 Loading
(2) f_s = 20,000 #/□"
(3) f_c = 1200 #/□"
(4) n = 10

II Construction Methods

(1) Backfill behind abutments & wingwalls shall be complete in place before pouring concrete for the superstructure
(2) Curbs and parapets shall not be poured until after release of false work.
(3) Finish – See Standard Specifications.
(4) Forms – Forms for bottom slab of box girders shall be 5 ply panel board.
(5) Foundations to be poured neat against undisturbed material.

III Materials

(1) Concrete - Class A-1
Except Pier Column - Class E-1

REFERENCE: Refer to Standard Drawings on Sht. Nos. 194, 195 and 196 for additional details not covered by these drawings.

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

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #2

VINEYARD-LUNALILO ON RAMP

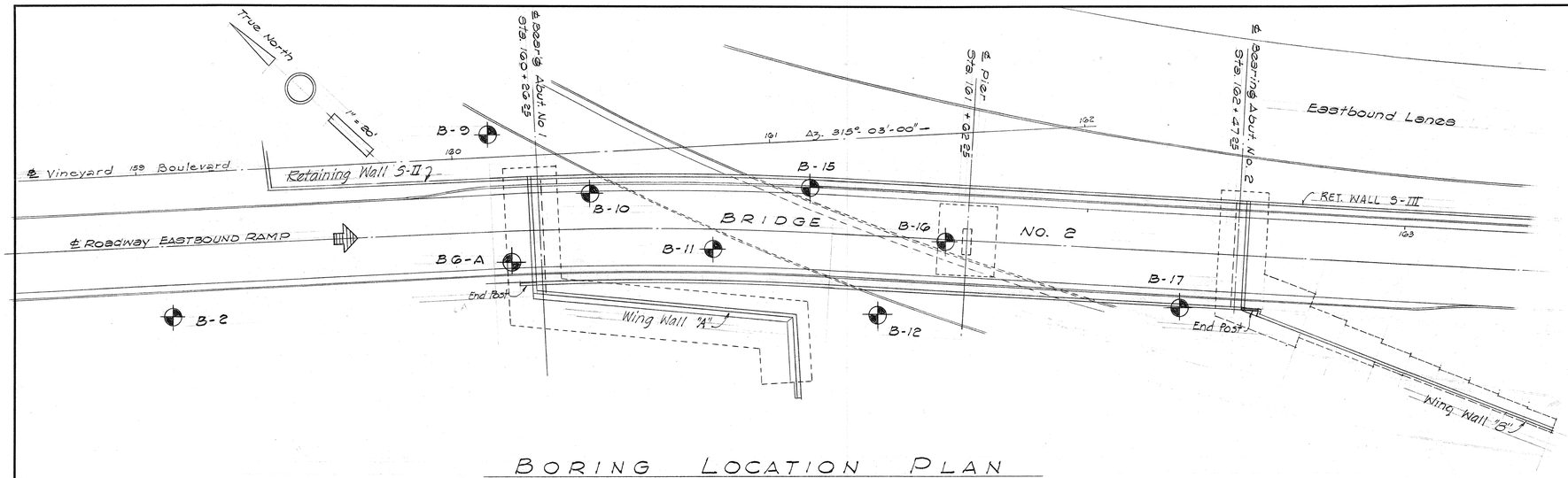
VINEYARD ℄ Sta 160+23.12 To Sta. 162+50.38
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-H1-1(81)Unit 1 May 1966

SHEET No. 2 OF 16 SHEETS

134

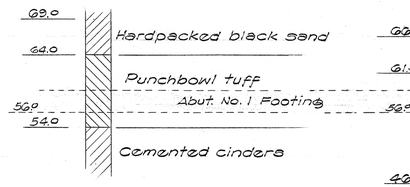
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT I	1967	135	242

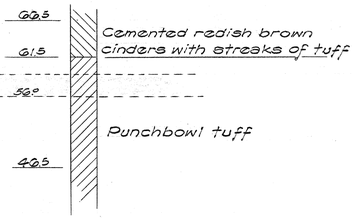


BORING LOCATION PLAN

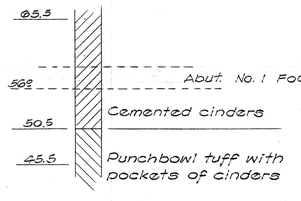
Scale: 1" = 20'



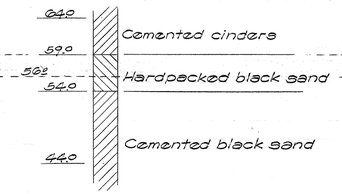
BORING Nº B-2



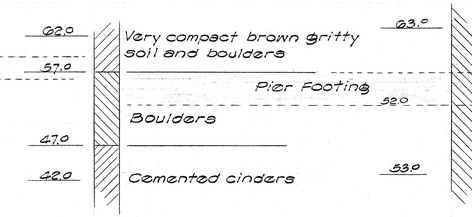
BORING Nº B-9



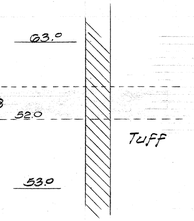
BORING Nº B-10



BORING Nº B-11

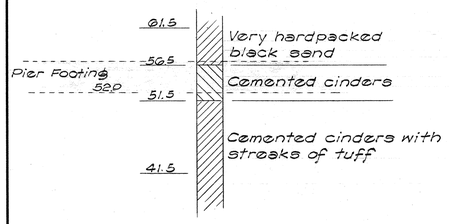


BORING Nº B-12

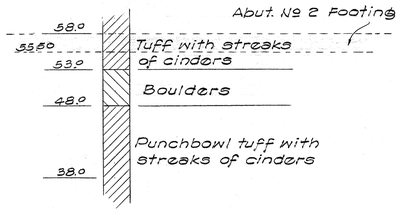


BORING Nº B-15

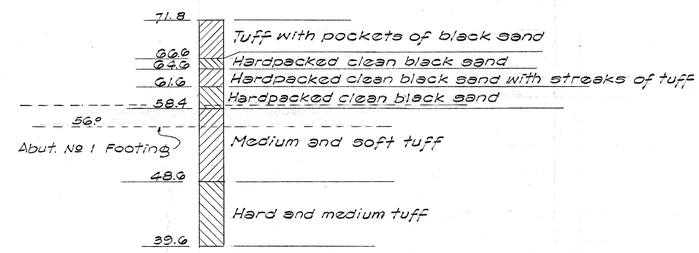
Note:
"Punchbowl tuff" as used here stands for "Cemented volcanic ejecta" containing fines & boulders



BORING Nº B-16



BORING Nº B-17



BORING Nº B G-A

BORING DATA

Scale: 1" = 10'

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

ORIGINAL PLAN

NOTE BOOK No.

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.38

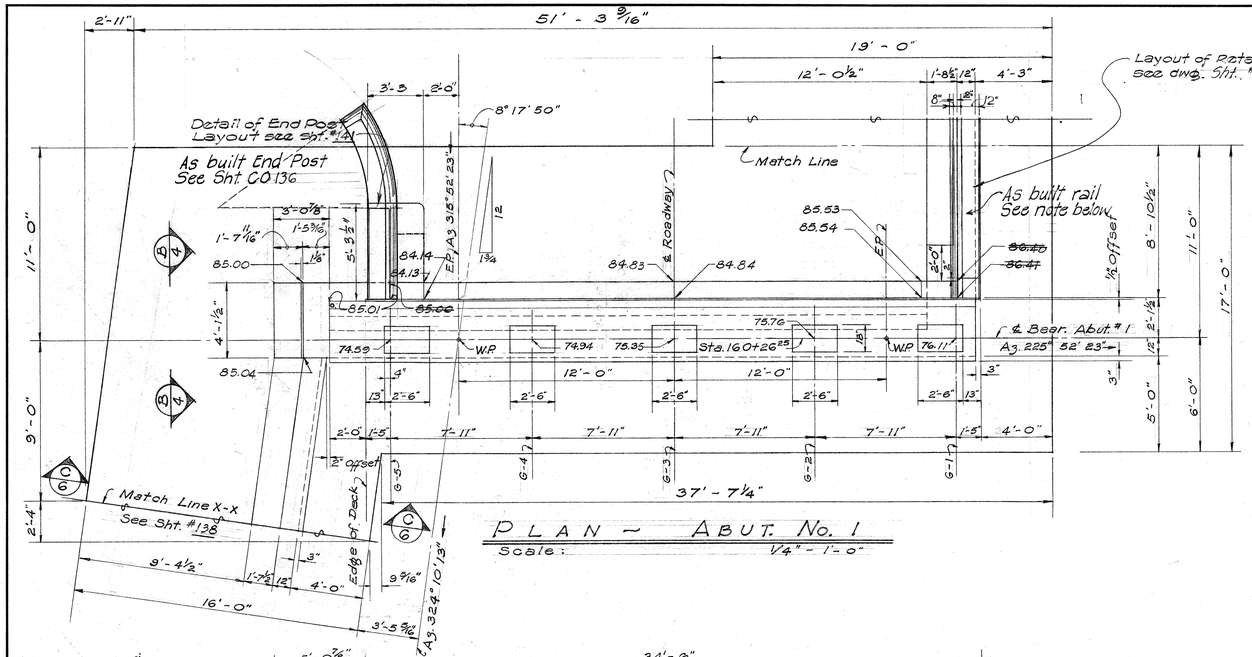
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
FAI Proj. Nº I-HI-1(31)Unit I May 1966

SHEET No. 3 OF 16 SHEETS

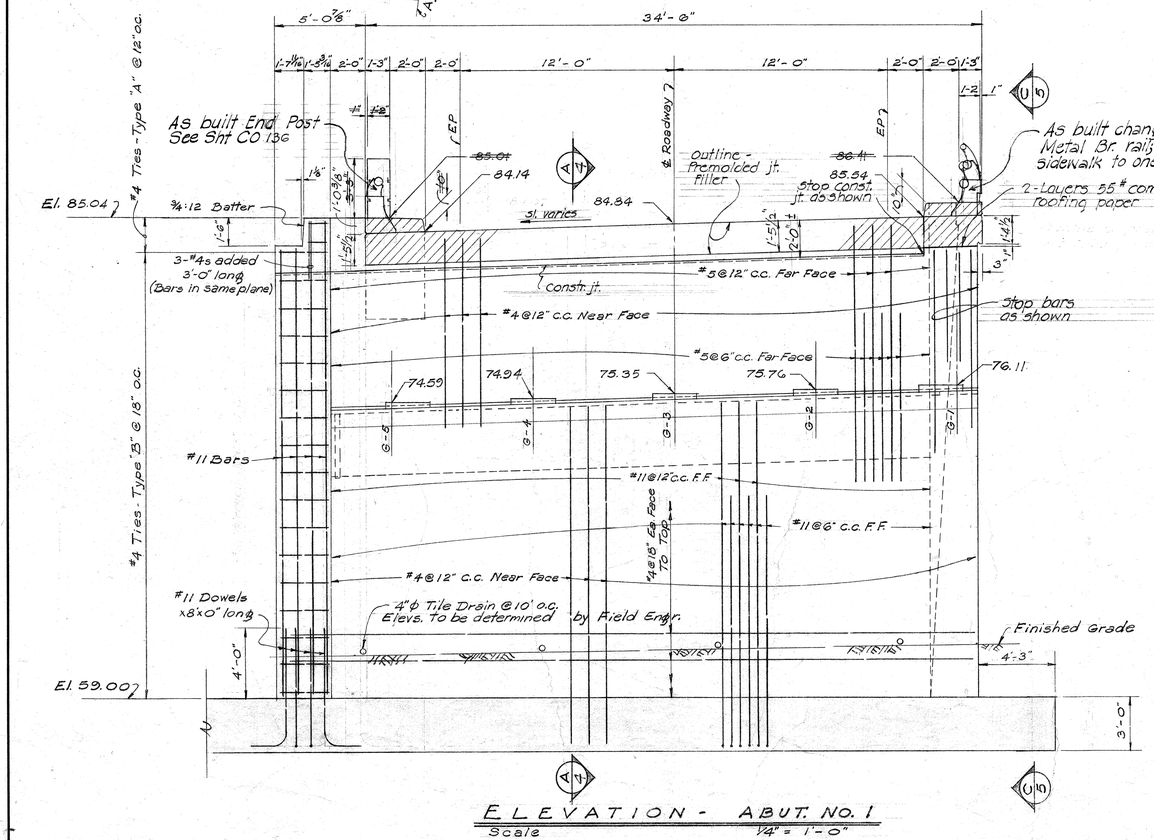
135

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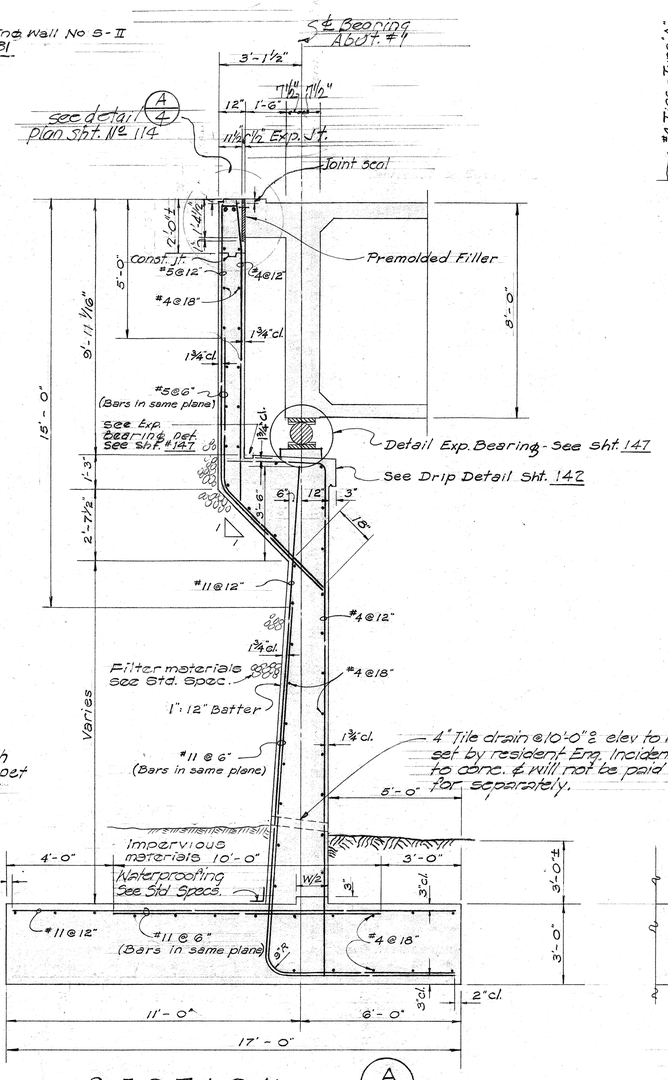
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	136	292



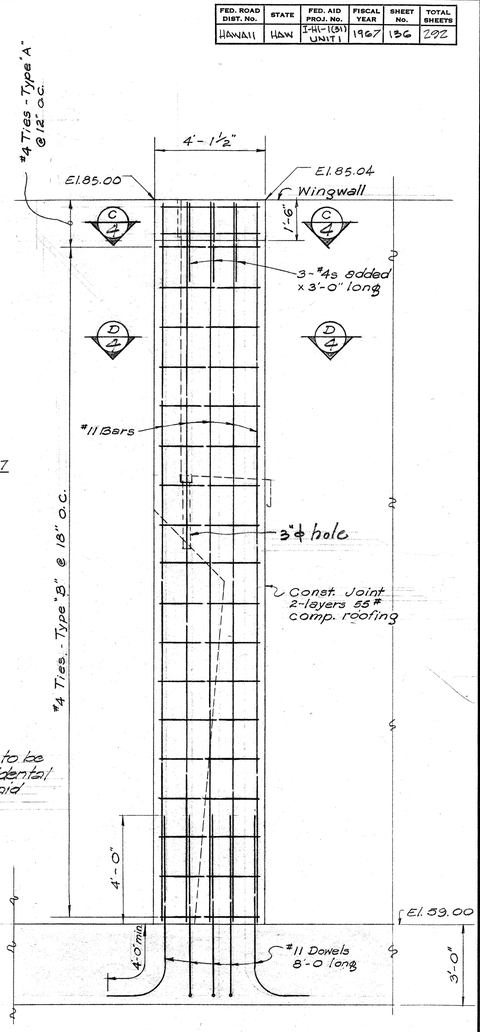
PLAN ~ ABUT. No. 1
Scale: 1/4" = 1'-0"



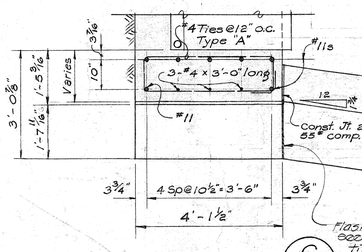
ELEVATION - ABUT. NO. 1
Scale 1/4" = 1'-0"



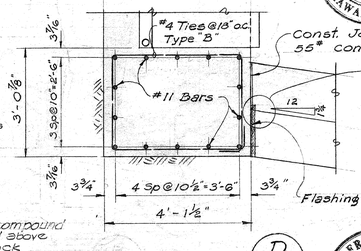
SECTION A/4
Scale: 3/8" = 1'-0"



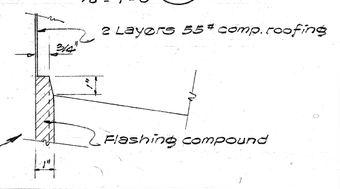
ELEVATION B/4
Scale: 3/8" = 1'-0"



SECTION C/4
Scale: ½" = 1'-0"



SECTION D/4
Scale: ½" = 1'-0"



SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BRIDGE #2
VINEYARD-LUNALILO ON RAMP
VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.38
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj No. I-HI-1(31)Unit 1 May 1966

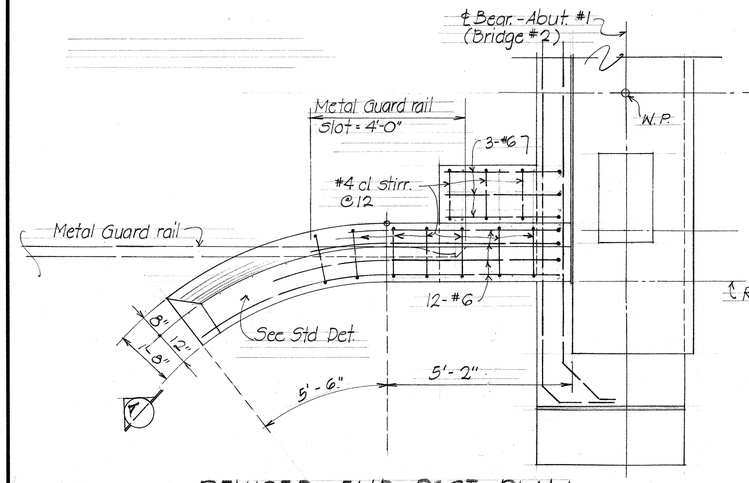
SHEET No. 4 OF 16 SHEETS

136

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

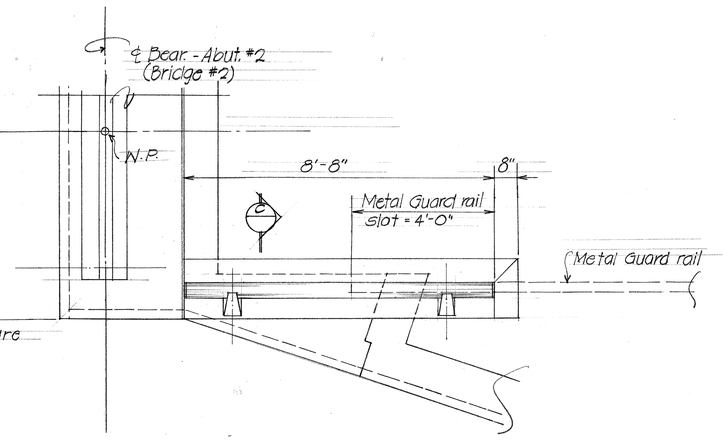
PRINTED ON DIEPO 100OH CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



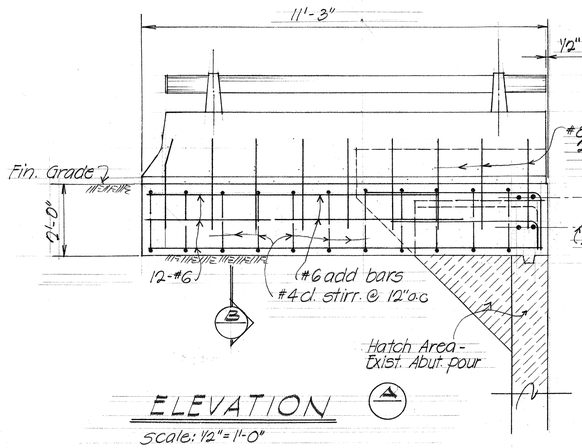
REVISED - END POST PLAN

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



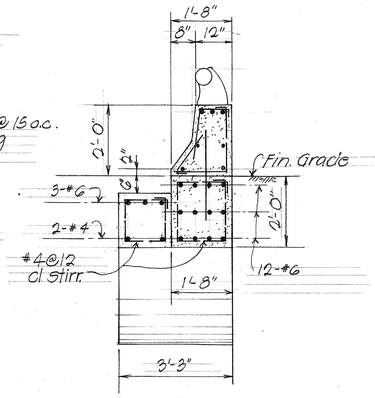
REVISED - END POST PLAN

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



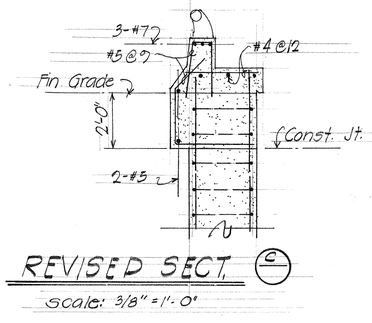
ELEVATION

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



SECTION

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



REVISED SECT.

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

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

PRINTED ON NO. 1000H CLEARPRINT

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE - #2

LUNALILO - VINEYARD OFF RAMP

LUNALILO ℄ Sta. 159+38.58 to Sta. 163+91.83

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

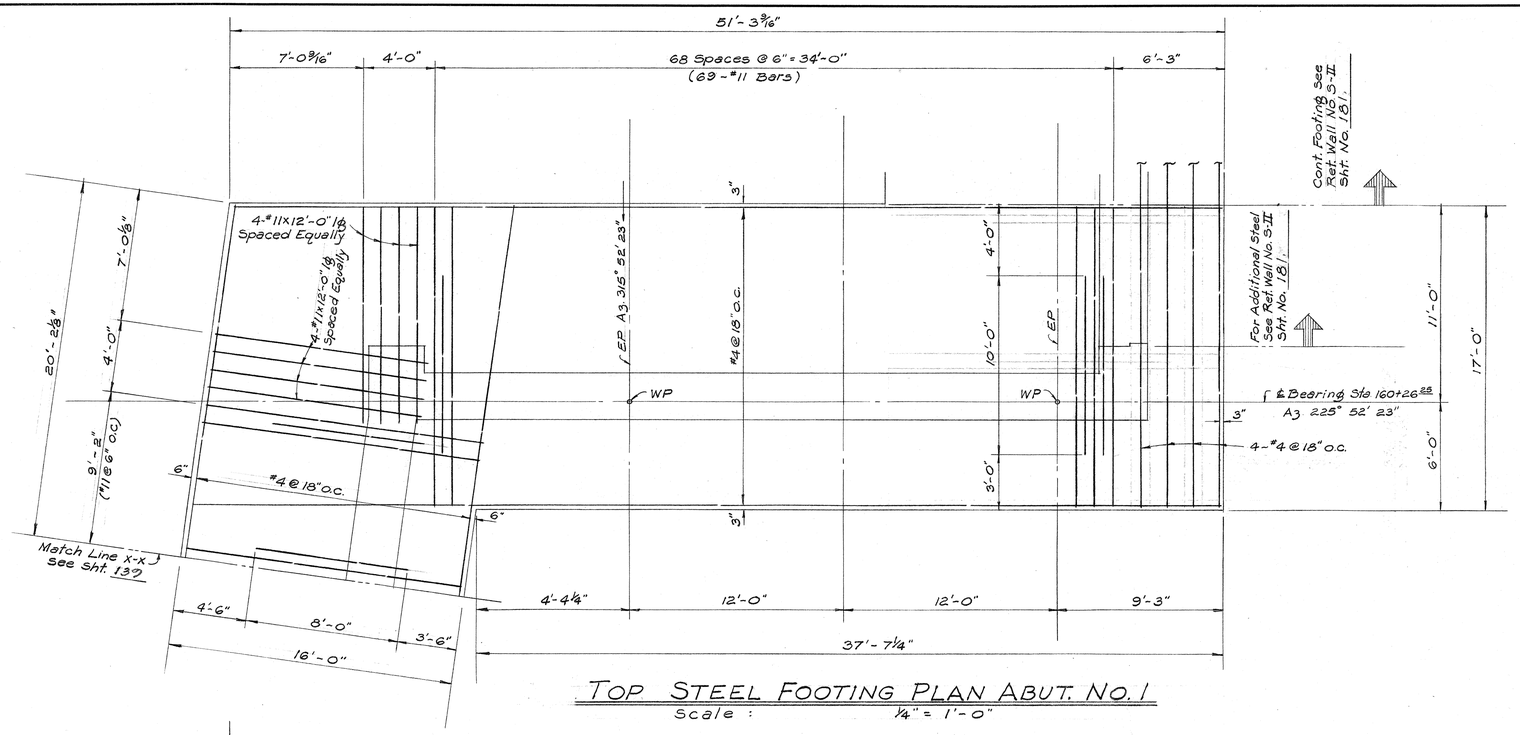
PELE STREET TO VICTORIA STREET

FAI Proj No. I-HI-1(31) Unit 1

SHEET No. OF SHEETS

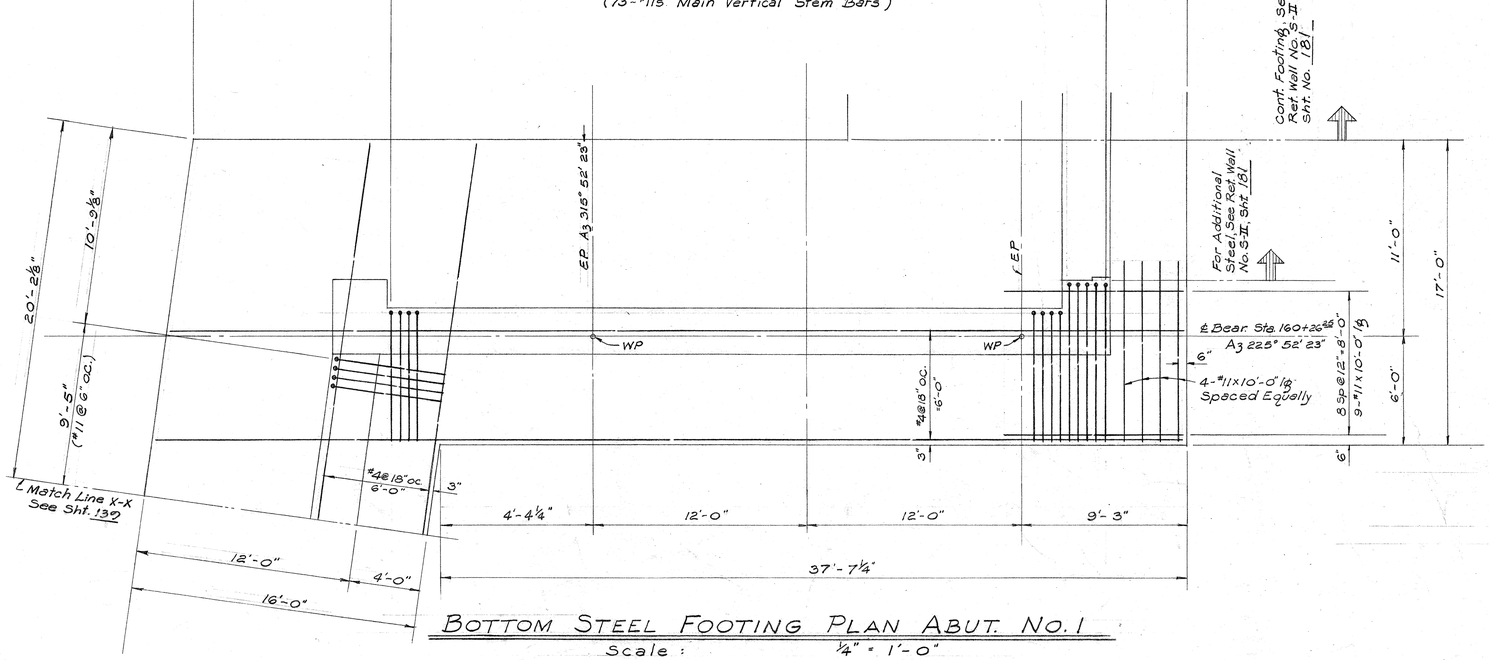
C01365 1

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWI	I-HI-1(31) UNIT 1	1967	137	202



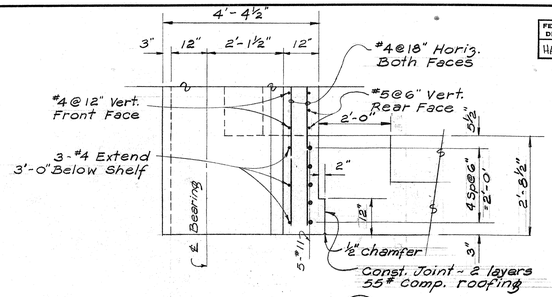
TOP STEEL FOOTING PLAN ABUT. NO. 1

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



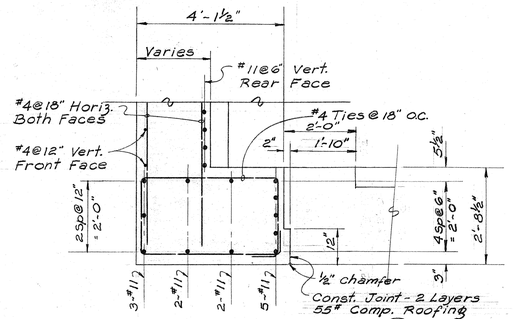
BOTTOM STEEL FOOTING PLAN ABUT. NO. 1

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

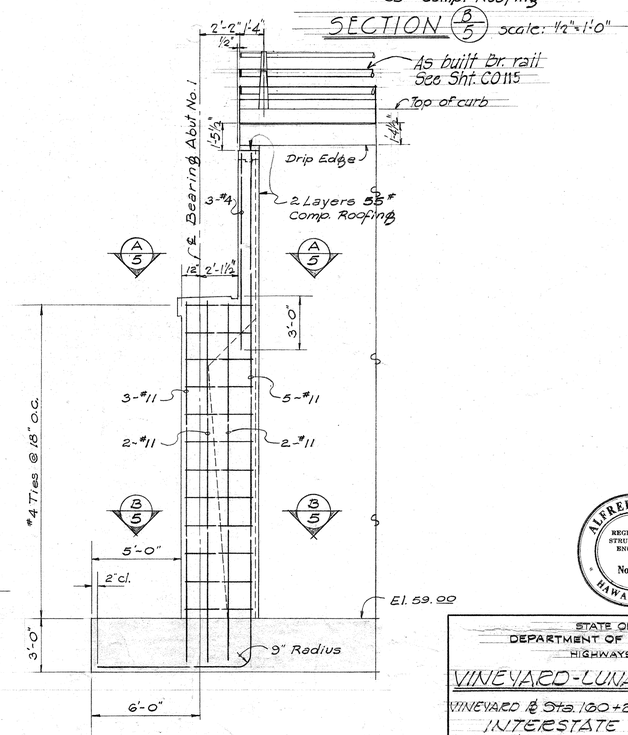


SECTION (A/5)

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



SECTION (B/5) scale: 1/2" = 1'-0"



ELEVATION (C/5)

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

See Sht. No. 136

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.30
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1-(31)Unit 1 May 1966

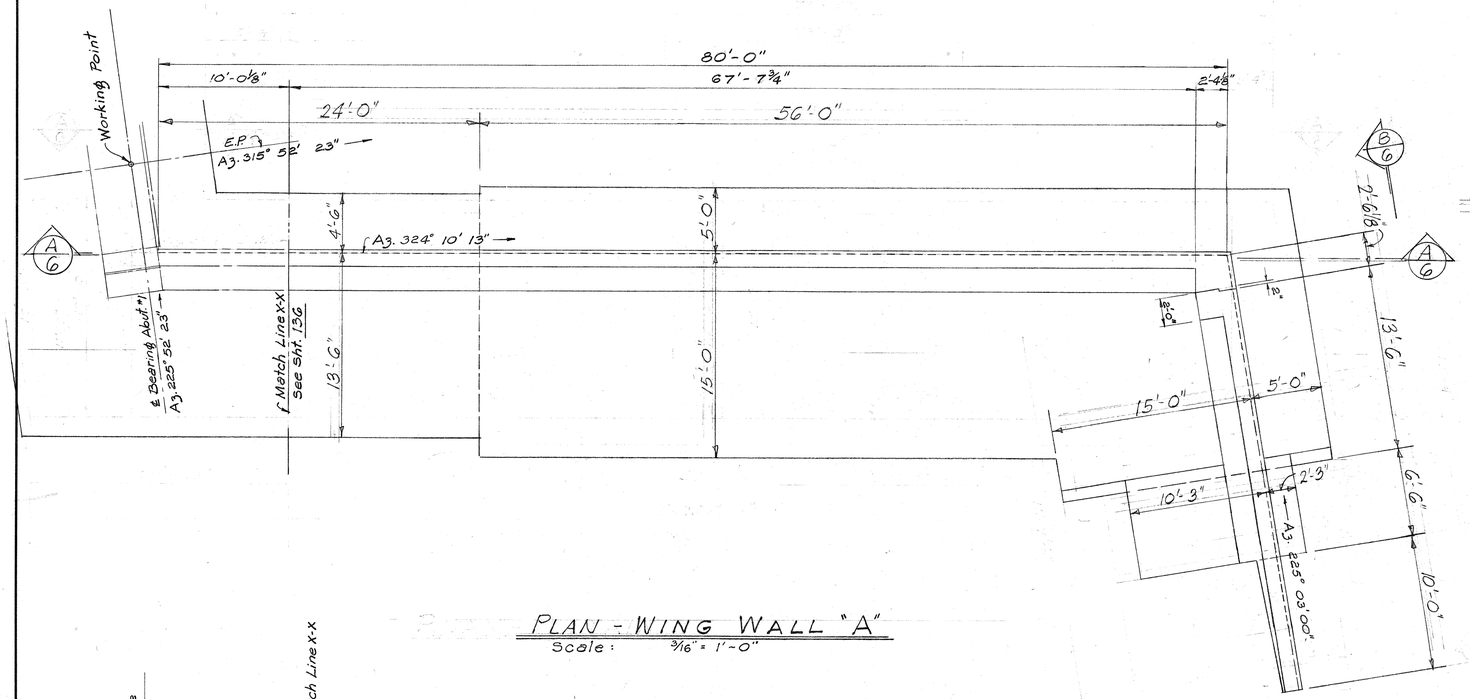
SHEET No. 5 OF 16 SHEETS

137

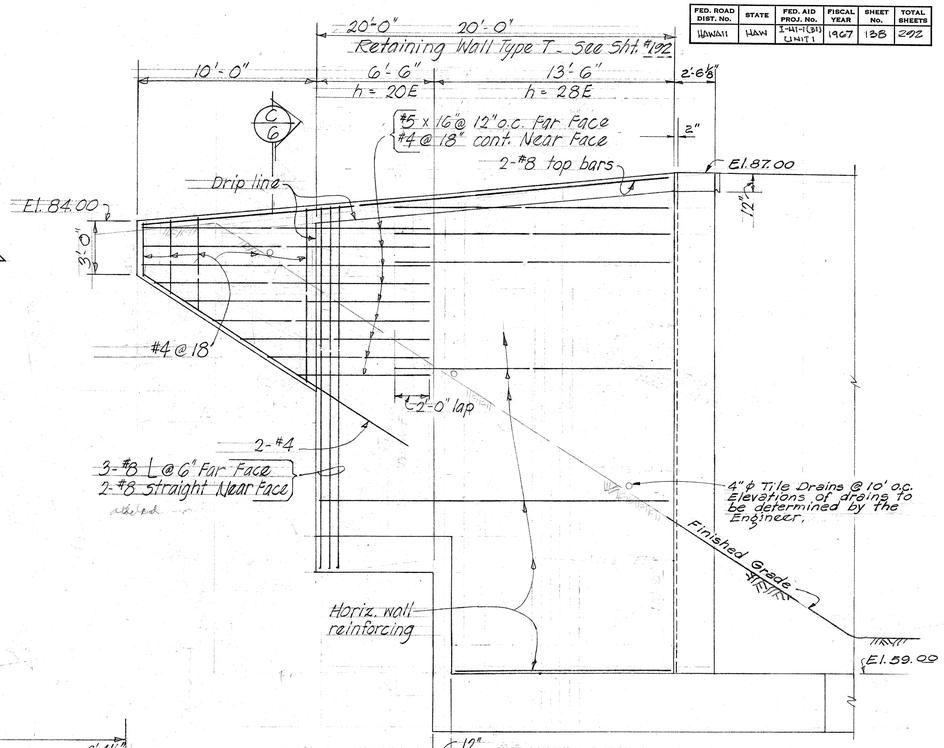
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
	TRACED BY	
NOTE BOOK	QUANTITIES BY	
	QUANTITIES CHECKED BY	
No.	CHECKED BY	

PRINTED ON DIEPO 1000H CLEARPRINT

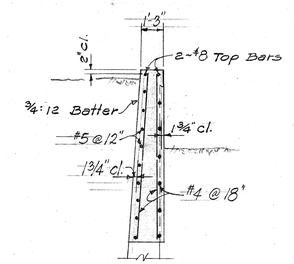
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	138	272



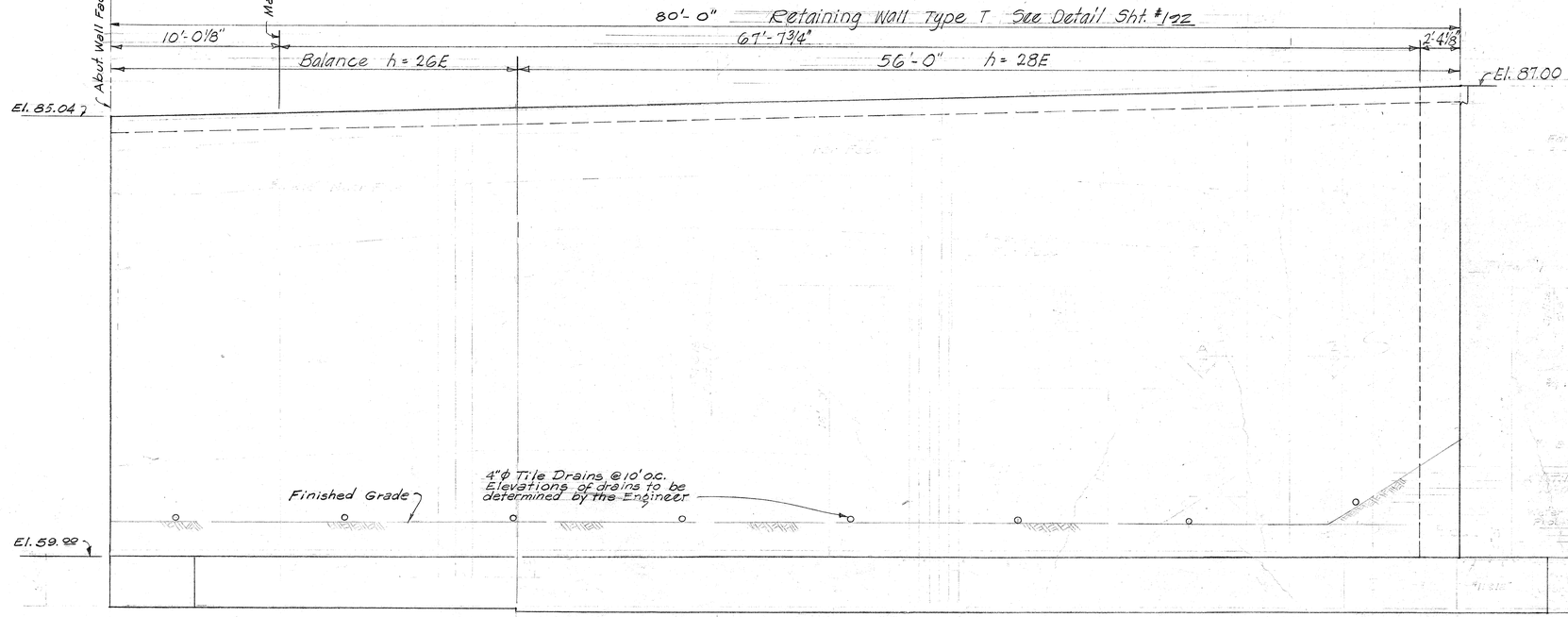
PLAN - WING WALL "A"
Scale: 3/16" = 1'-0"



ELEVATION (B/6)
Scale: 1/4" = 1'-0"



SECTION (C/6)
Scale: 1/4" = 1'-0"



ELEVATION (A/6)
Scale: 1/4" = 1'-0"

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

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

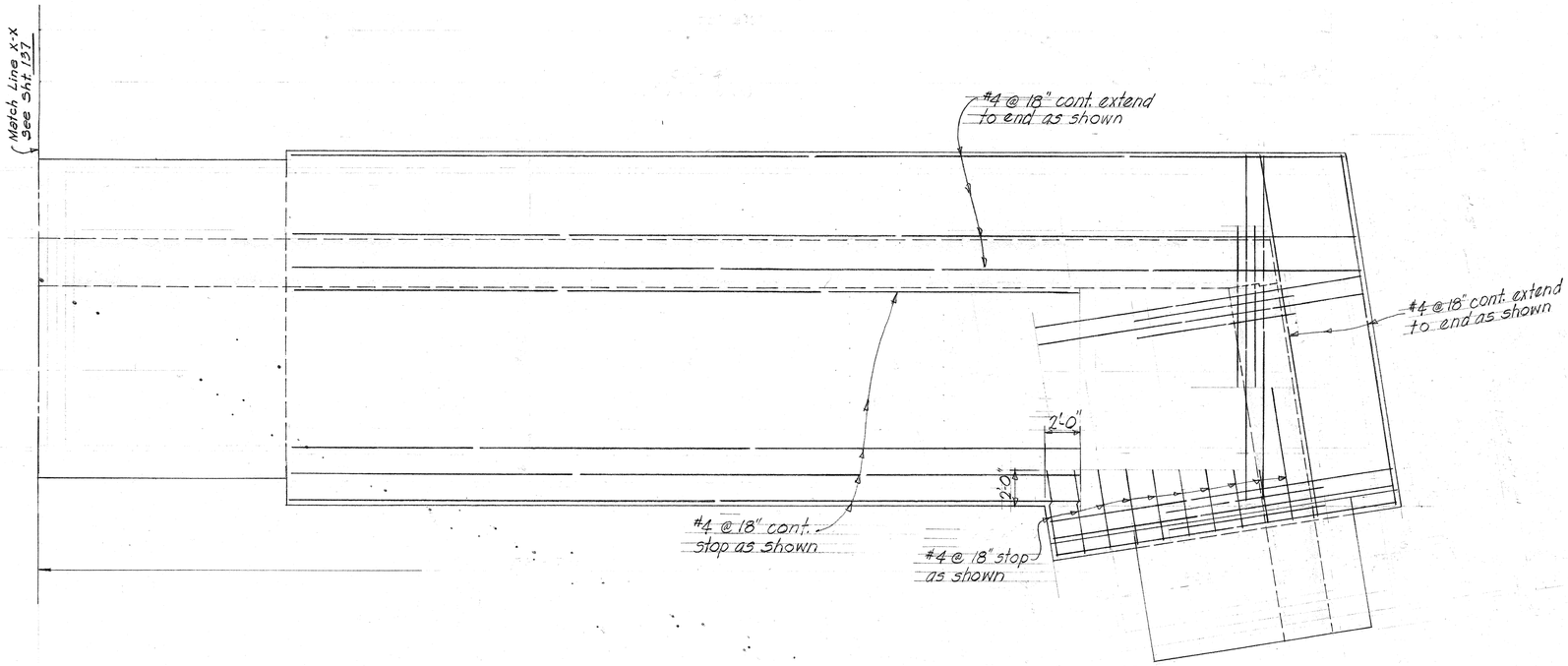
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2
VINEYARD-LUNALILO ON RAMP
VINEYARD & Sta. 160+23.12 TO Sta. 162+50.28
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

SHEET No. 6 OF 16 SHEETS

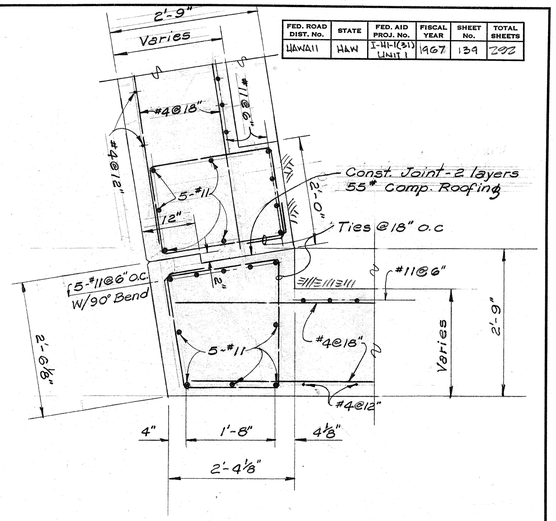
138

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) Unit 1	1967	139	282

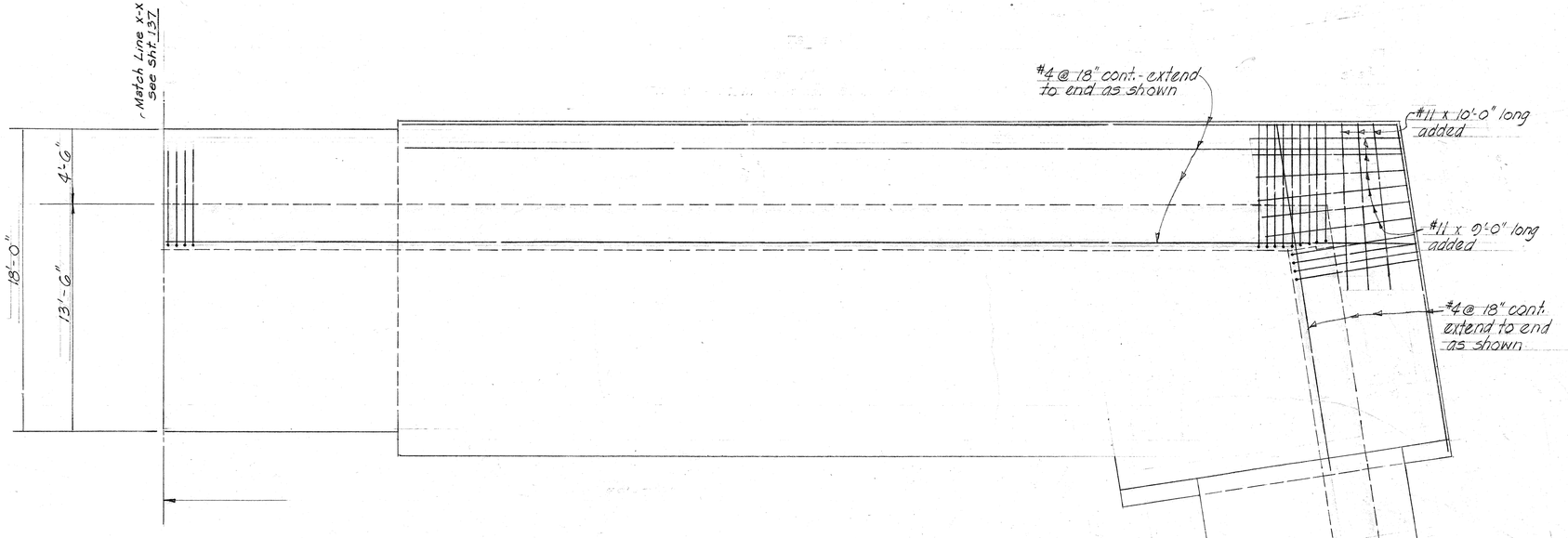


TOP STEEL - FOOTING PLAN - WING WALL "A"
Scale: 1/4" = 1'-0"



SECTION A/7
Scale: 3/4" = 1'-0"

See Sht. No 138



BOTTOM STEEL - FOOTING PLAN - WING WALL "A"
Scale: 1/4" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2

VINEYARD-LUNALILO ON RAMP
VINEYARD St. Sta. 160+23.2 TO St. Sta. 162+50.28
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

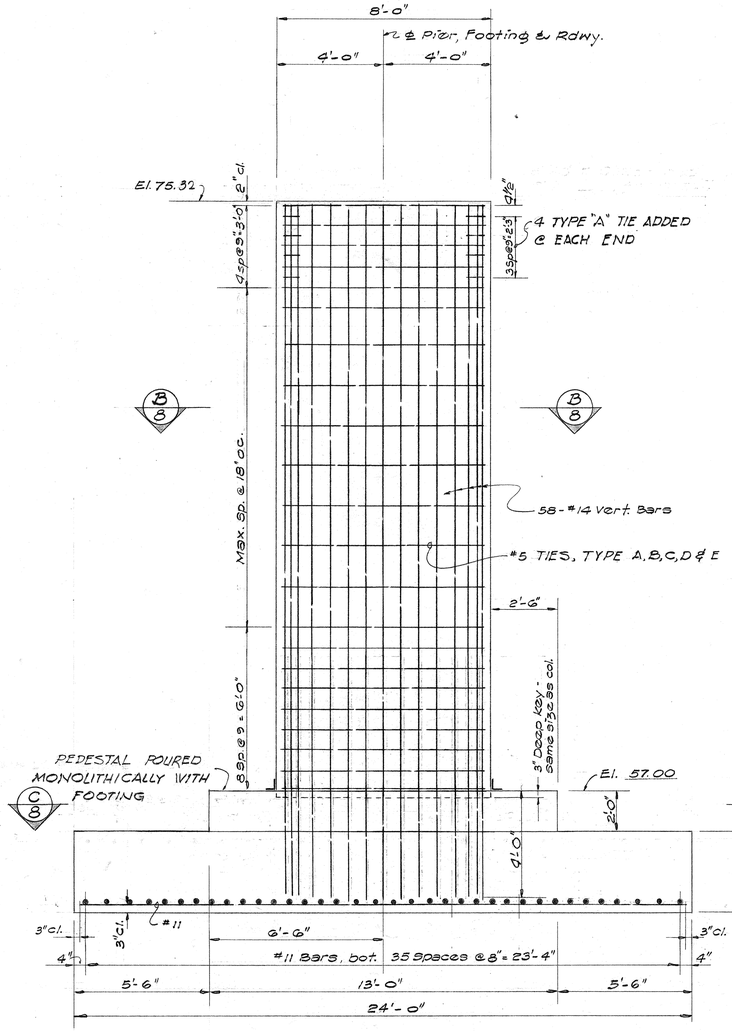
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

SHEET No. 7 OF 16 SHEETS

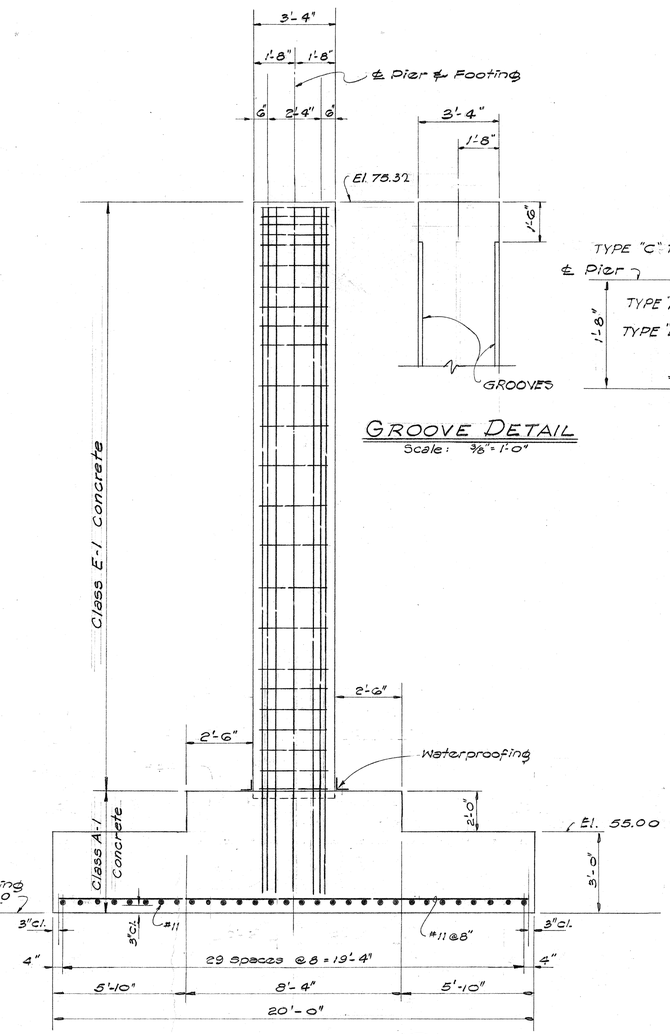
139

PRINTED ON DIEPO 1000H CLEARPRINT

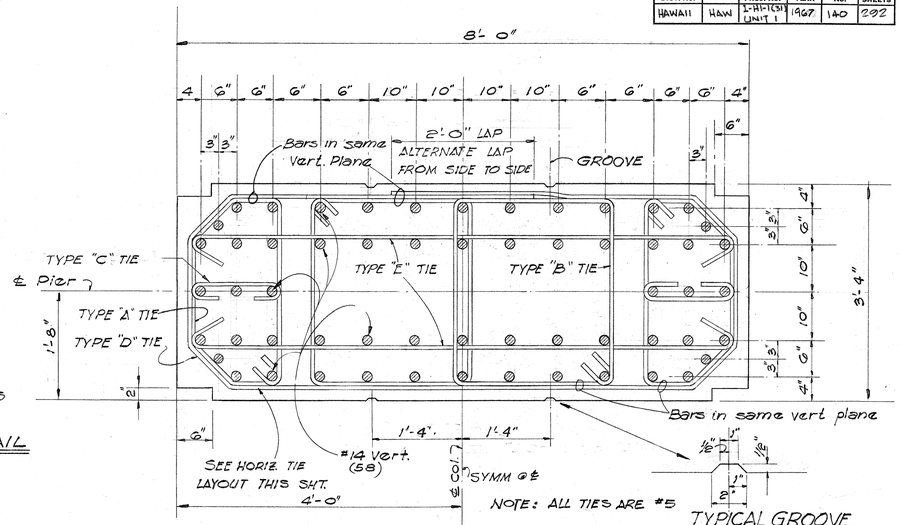
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	140	292



ELEVATION

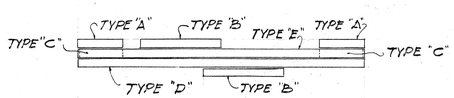


SECTION A 8



SECTION B 8
Scale: 1" = 1'-0"

DETAILS OF PIER
Scale: 3/8" = 1'-0"



#5 TIES ~ HORIZ. PLANE
NO SCALE

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

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 713 HAWAII, U.S.A.

SATOSHI DON SHIMAZU REGISTERED PROFESSIONAL ENGINEER No. 710 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2

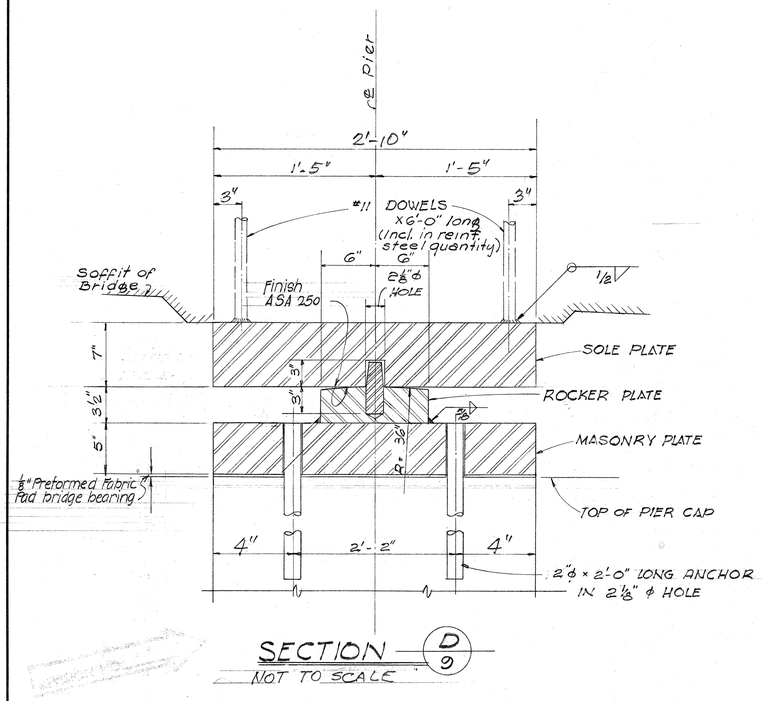
VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.38
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

SHEET No. 8 OF 16 SHEETS

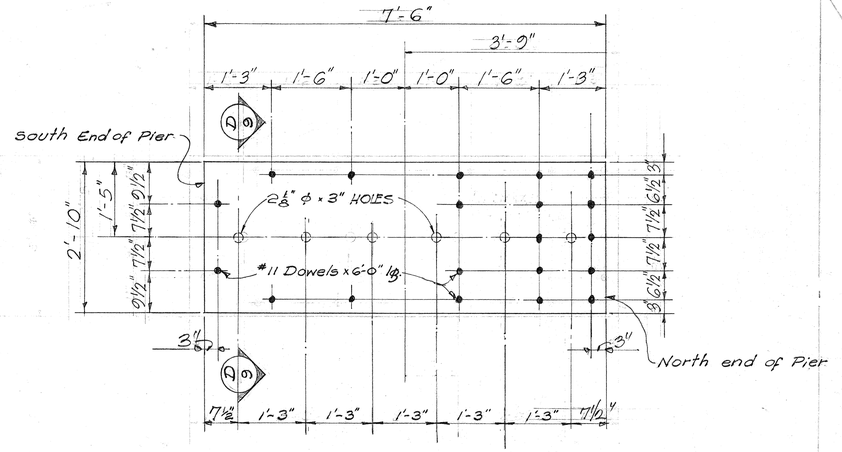
140

PRINTED ON DIEPO 100GH CLEARPRINT



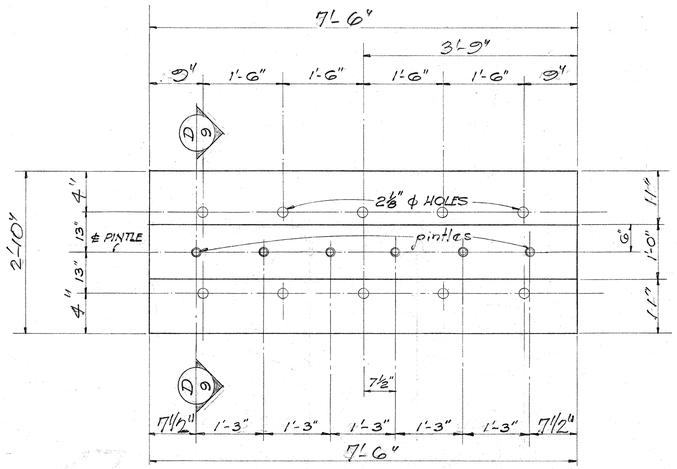
SECTION D/9

NOT TO SCALE



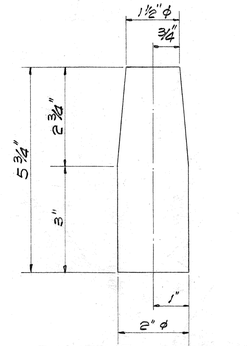
PLAN — SOLE PLATE

NOT TO SCALE



PLAN - ROCKER & MASONRY PLATE

NOT TO SCALE



PINTLE DETAIL

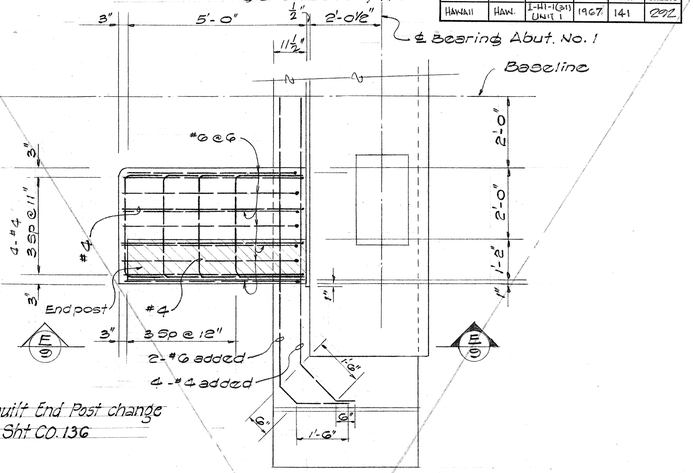
HALF SCALE

NOTES:

Sole, Rocker & Masonry Plates shall be of structural carbon steel conforming to ASTM A-36 and finished to the dimensions shown on plans. (Also, see Special Provisions) Sole plate, masonry ℘, and 2"ϕ anchor shall be hot-dip galvanized.

REVISION #1 - Revise Bearing details - 11/7/66

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	141	202

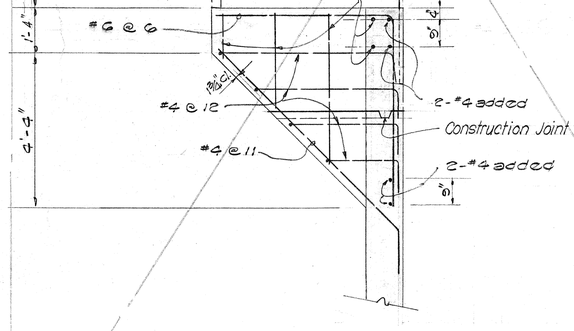


As built End Post change See Sht CO.136

(see sheet #136)

PLAN - END POST LAYOUT

Scale 1/2" = 1'-0"



SECTION E/9

Scale ½" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BRIDGE # 2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℘ Sta. 160+23.12 To Sta. 162+50.38
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

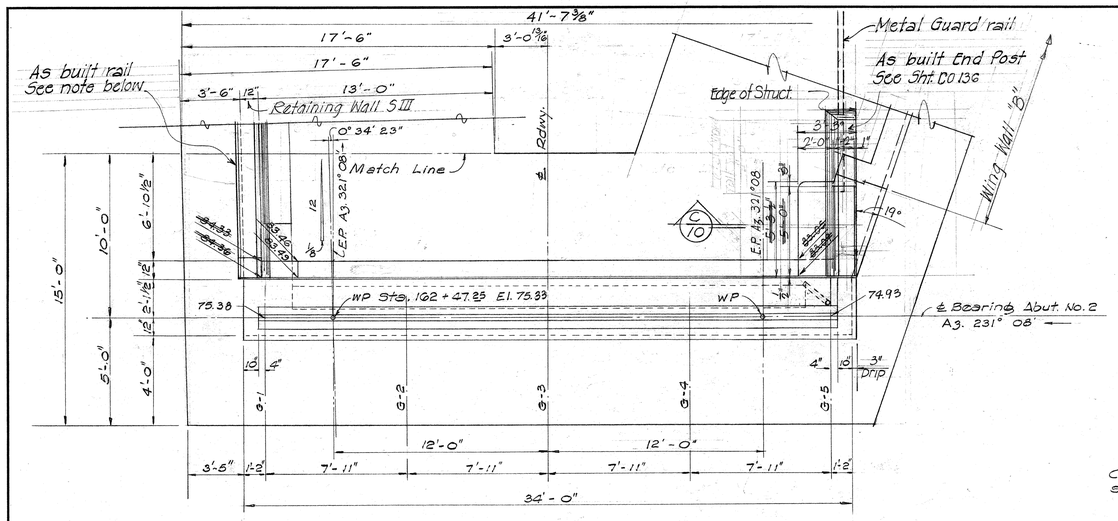
SHEET No. 9 OF 16 SHEETS

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

PRINTED ON DIEPO 1000H CLEARPRINT

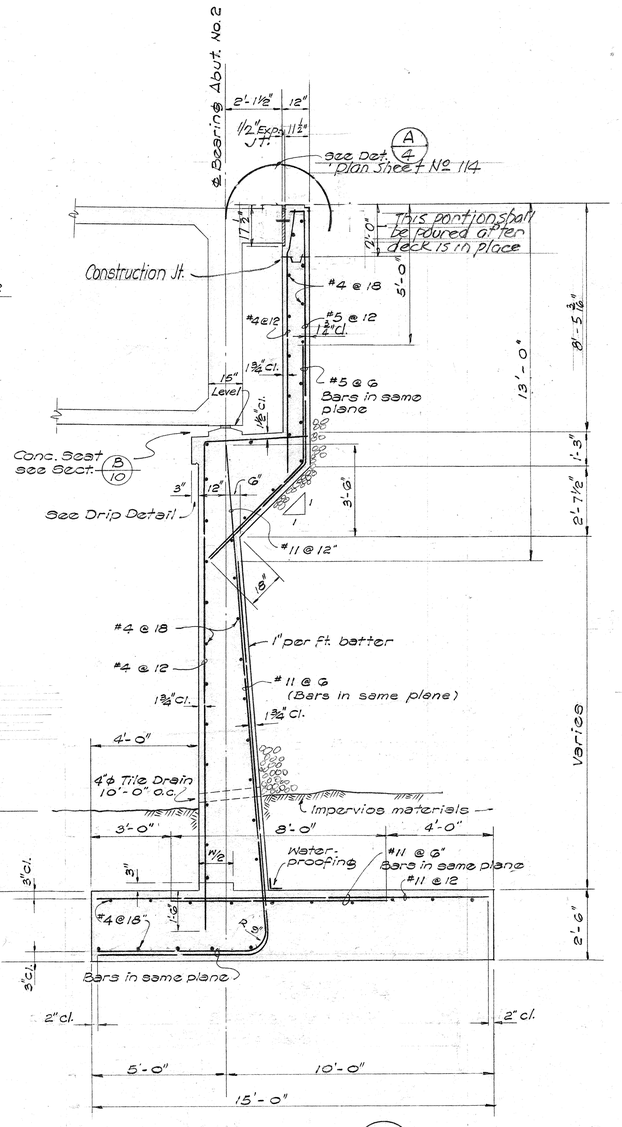
141

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(51) UNIT 1	1967	142	292



PLAN — ABUT. No. 2

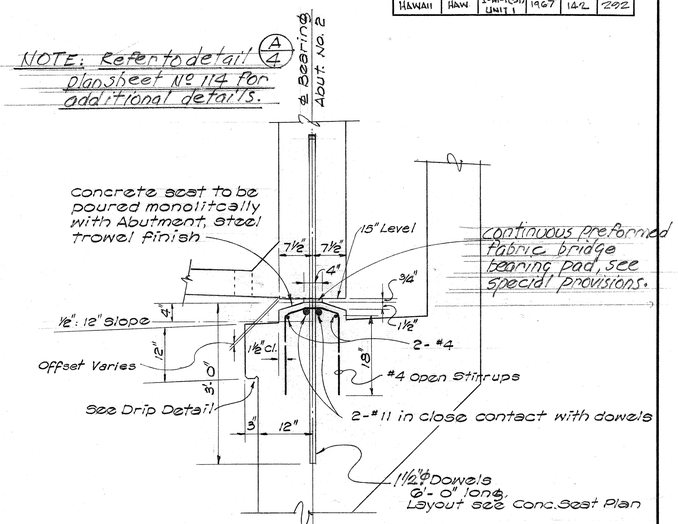
Scale: ½" = 1'-0"



SECTION A/10

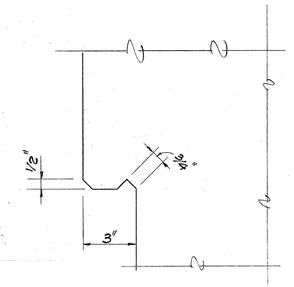
Scale: ⅜" = 1'-0"

NOTE: Refer to detail A/4 Plan Sheet No 114 for additional details.



SECTION B/10

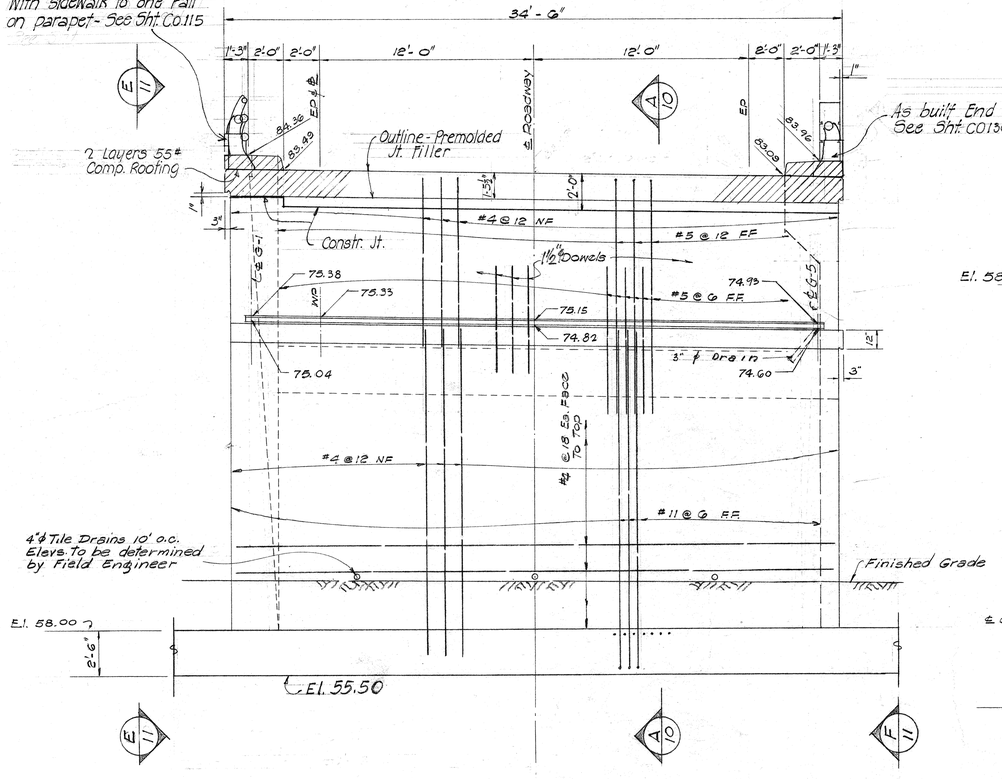
Scale: ⅜" = 1'-0"



DRIP DETAIL

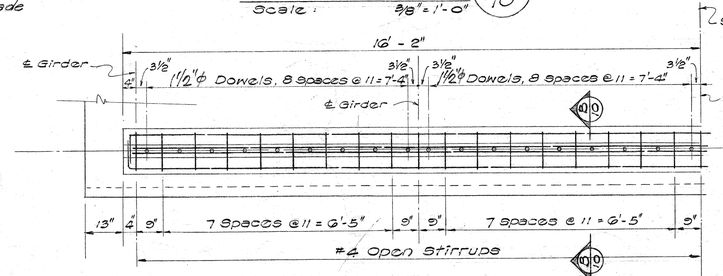
Scale: 3" = 1'-0"

As built change: Metal Pr. rail; 3 rail type with sidewalks to one rail on parapet - See Sht. CO.115



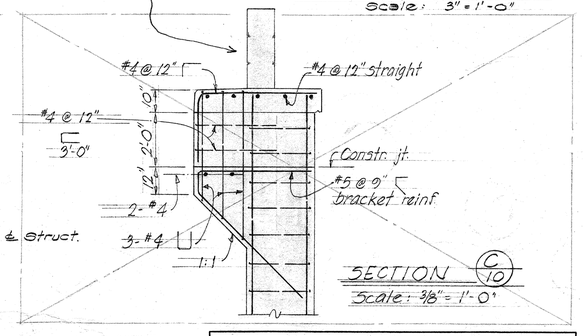
ELEVATION — ABUT. No. 2

Scale: ½" = 1'-0"



HALF PLAN — CONCRETE SEAT

Scale: ½" = 1'-0"



SECTION C/10

Scale: ⅜" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.38

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

PELE STREET To VICTORIA STREET

FAI Proj No. I-HI-1(31)Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

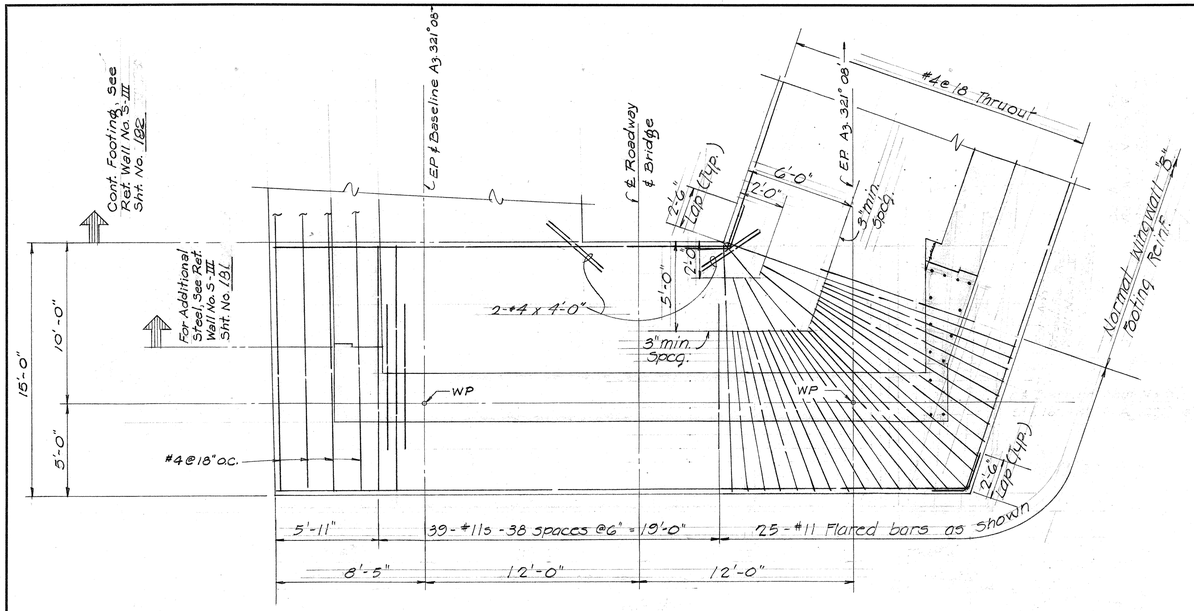
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

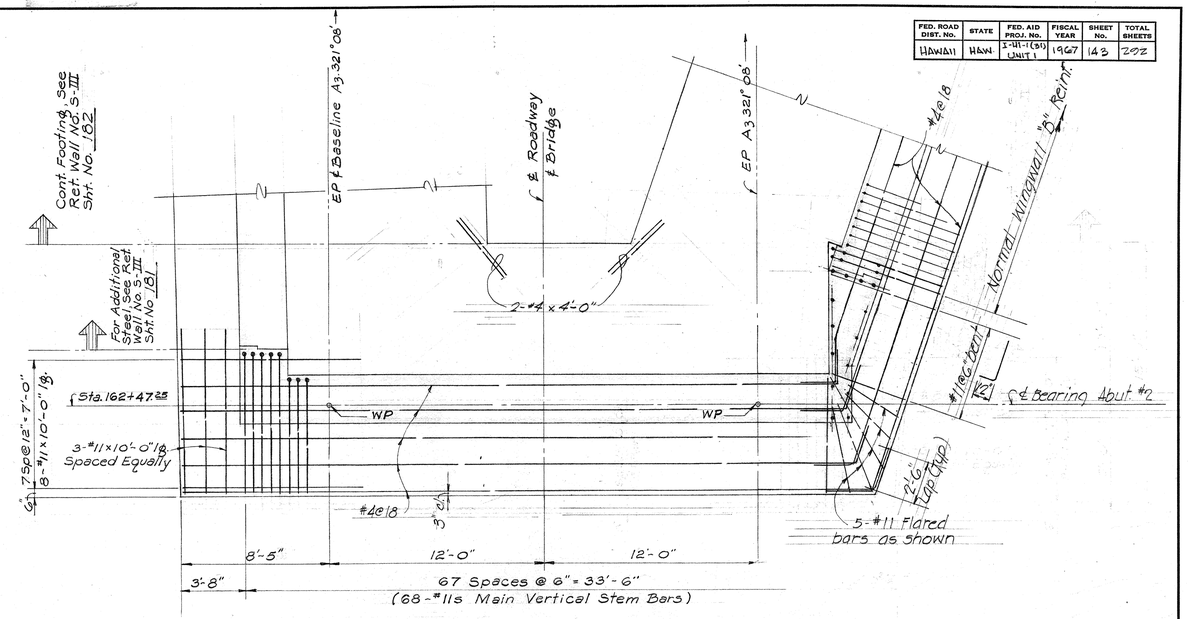
SHEET No. 10 OF 16 SHEETS

142

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWI	I-HI-1(31) UNIT 1	1967	143	202

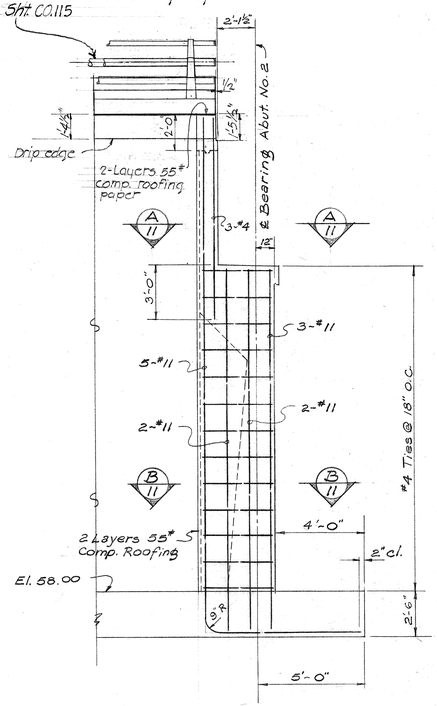




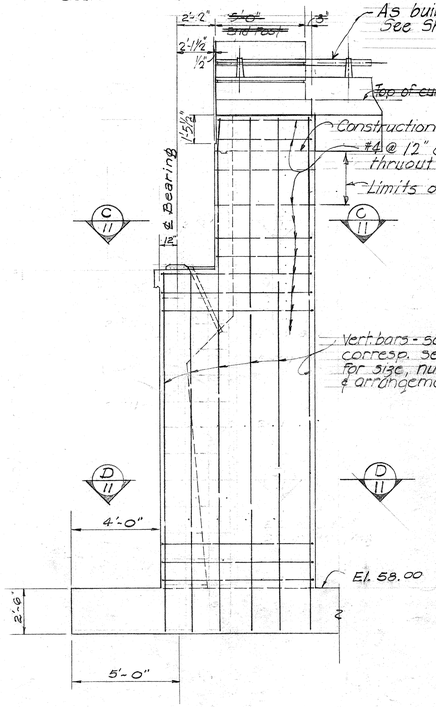
As built change: Metal Br rail; 3 rail type with sidewalk to one rail on parapet See Sht. C0.115

TOP STEEL FOOTING PLAN ABUT. NO. 2

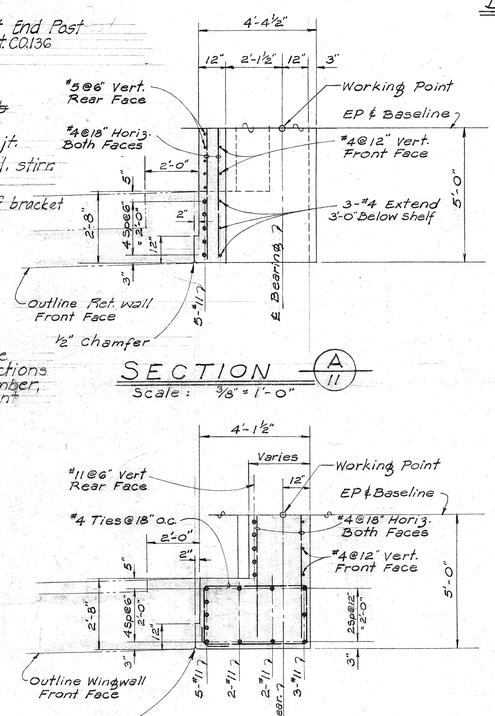
Scale: 1/4" = 1'-0"



ELEVATION (E/11)
Scale: 1/4" = 1'-0"
See Sht. No 10



ELEVATION (F/11)
Scale: 1/4" = 1'-0"
See Sht. No 10

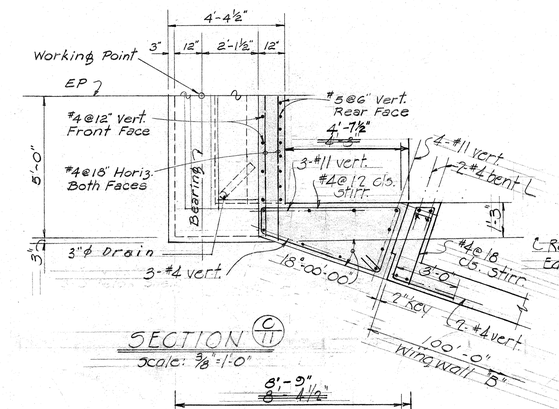


SECTION (A/11)
Scale: 3/8" = 1'-0"

SECTION (B/11)
Scale: 3/8" = 1'-0"

BOTTOM STEEL FOOTING PLAN ABUT. NO. 2

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



SECTION (C/11)
Scale: 3/8" = 1'-0"

SECTION (D/11)
Scale: 3/8" = 1'-0"

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION — BRIDGE #2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 TO Sta. 162+50.38
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj No. I-HI-1(31) Unit 1 — May 1966

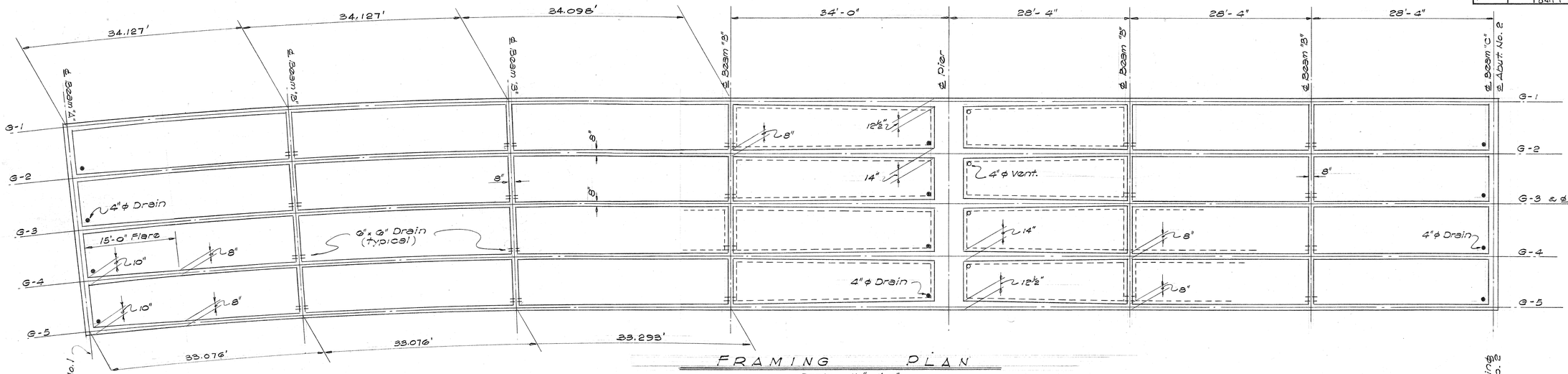
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
	TRACED BY	
	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY	
NOTE BOOK No.		

SHEET No. 11 OF 16 SHEETS

143

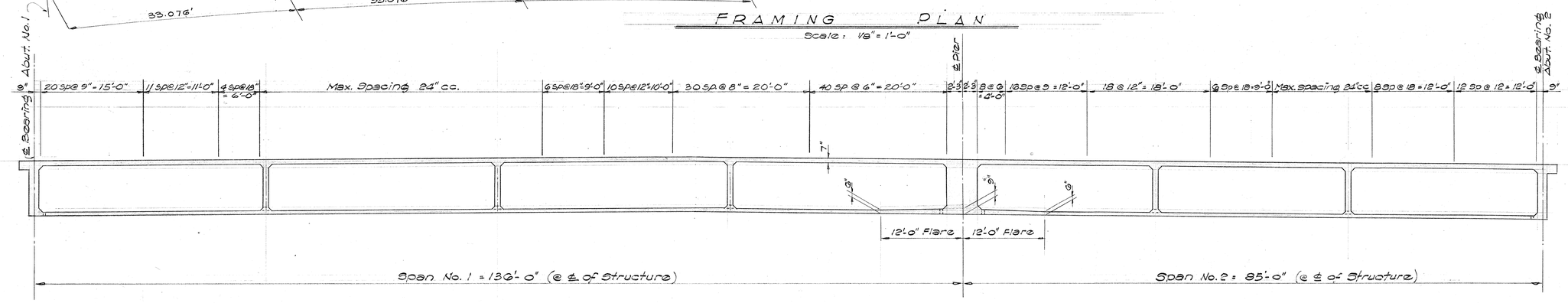
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	144	202



FRAMING PLAN

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



GIRDER STIRRUP SPACING

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

ORIGINAL PLAN

NOTE BOOK No.

SURVEY PLOTTED BY _____ DATE
DESIGN BY _____
DRAWN BY _____
TRACED BY _____
QUANTITIES BY _____
QUANTITIES CHECKED BY _____
CHECKED BY _____

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BRIDGE #2

VINEYARD - LUNALILO ON RAMP

VINEYARD ℄ Sta 160+23.12 To Sta. 162+50.38

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 - May 1966

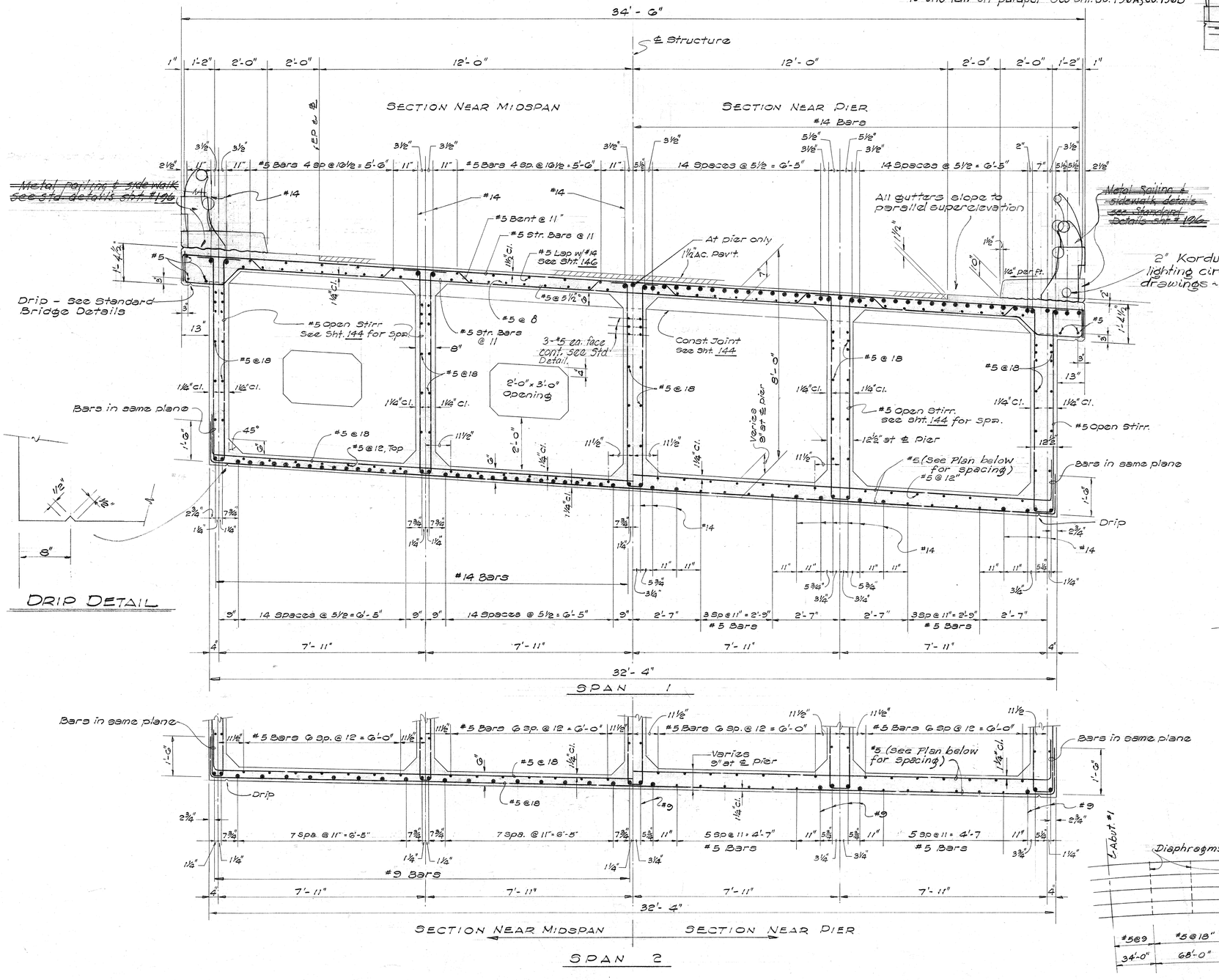
SHEET No. 12 OF 16 SHEETS

144

PRINTED ON DIEPO 100GH CLEARPRINT

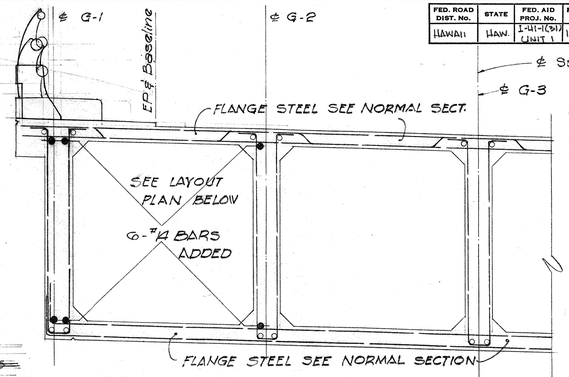
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) Unit 1	1967	145	222

Note!
As built change:
Metal Br. rail; 3 rail type with sidewalk to one rail on parapet - See Sht. CO. 196A; CO. 196B

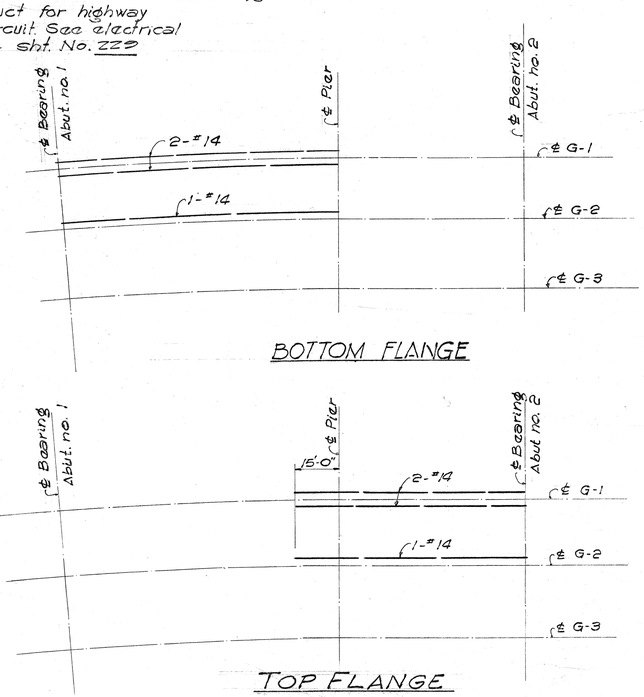


DRIP DETAIL

NORMAL SECTION
Scale: ½" = 1'-0"



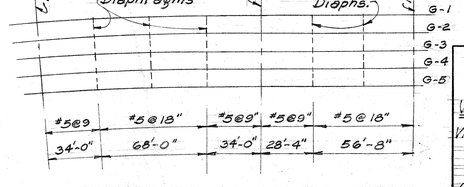
LOCATION OF ADDED #14 BARS
Scale: ⅜" = 1'-0"



BOTTOM FLANGE

TOP FLANGE

LAYOUT OF ADDED #14 BARS
No Scale



PLAN - BOTTOM SLAB TRANSVERSE REINF. LAYOUT
No Scale

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION — BRIDGE #2

VINEYARD - LUNALILO ON RAMP

VINEYARD & Sta. 160+23.12 To Sta. 162+50.28
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31) Unit 1 — May 1966

SHEET No. 13 OF 16 SHEETS

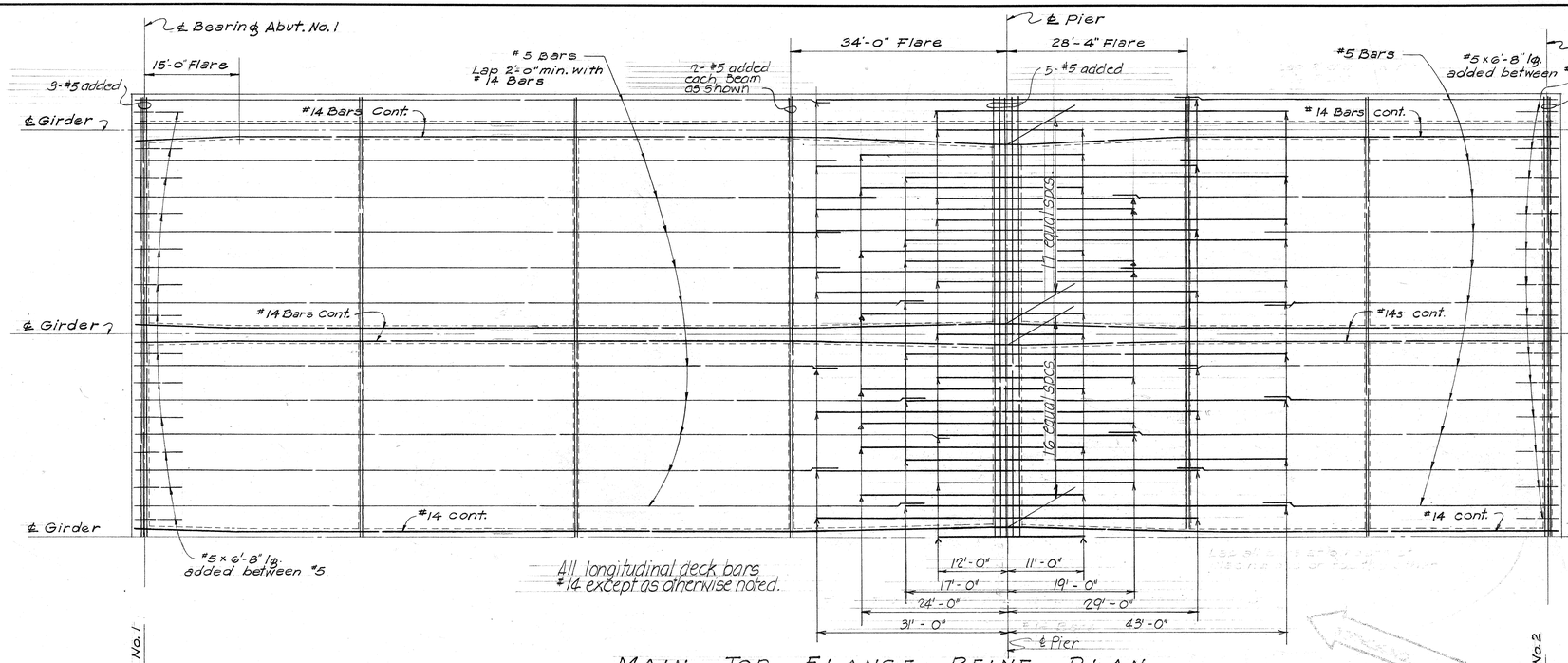
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	DESIGNED BY:	
	DRAWN BY:	
	TRACED BY:	
NOTE BOOK	QUANTITIES BY:	
No.	QUANTITIES CHECKED BY:	
	CHECKED BY:	

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145

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWAII	S-111-1(61) UNIT 1	1967	146	252

REVISION #1 10/27/66 - TOP FLANGE REINF REVISED OVER PIER

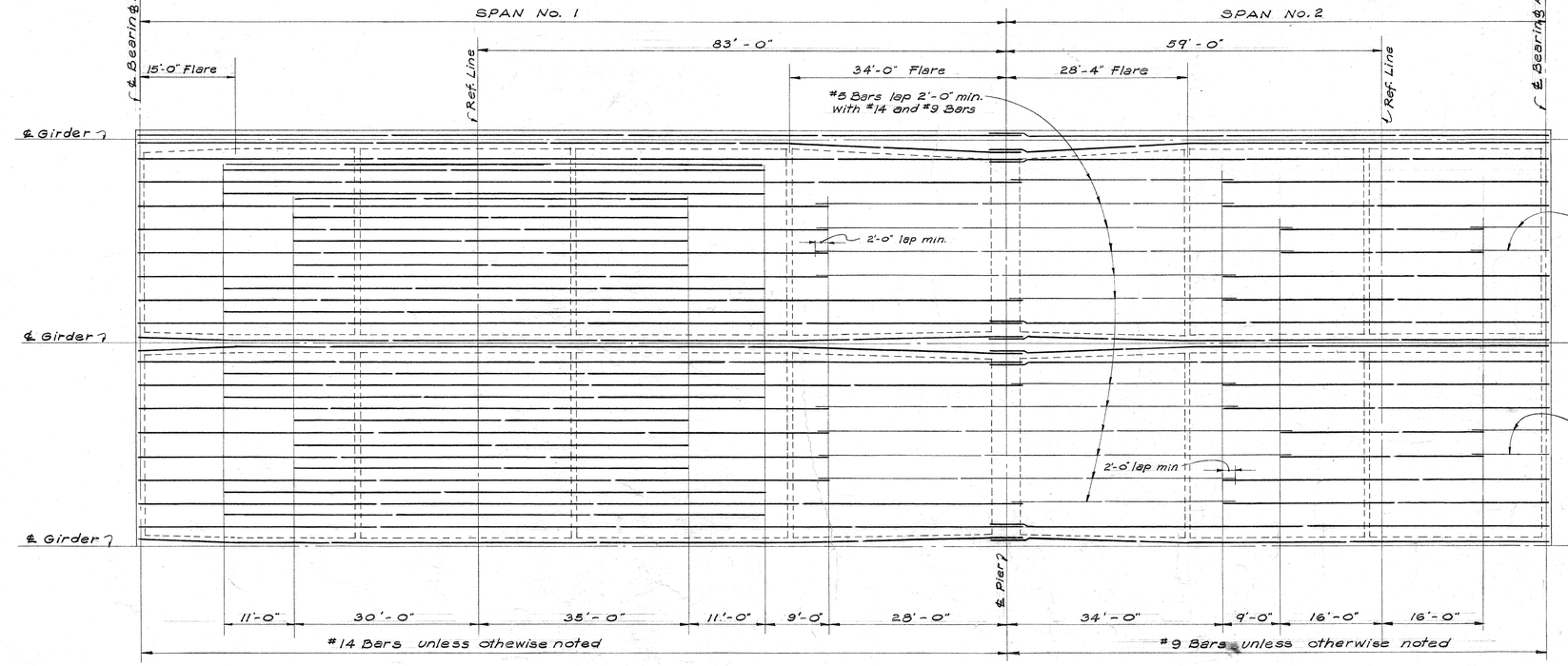


MAIN TOP FLANGE REINF. PLAN

Schematic Layout - scale: Length 3/32" = 1'-0" Width 3/8" = 1'-0"

NOTE!
Lap splices for #14 and #18 reinf. bars will not be permitted. Splices for #14 and #18 reinf. bars shall be made by welding, see special provisions.

Note: For Special Added Reinf. in Girders 1 & 2, See Sht. 145



MAIN BOT. FLANGE REINF. PLAN

Schematic Layout Scale: Length 3/32" = 1'-0" Width 3/8" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 TO Sta. 162+50.39
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Prg. No. I-HI-1(31) Unit 1 May 1966

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

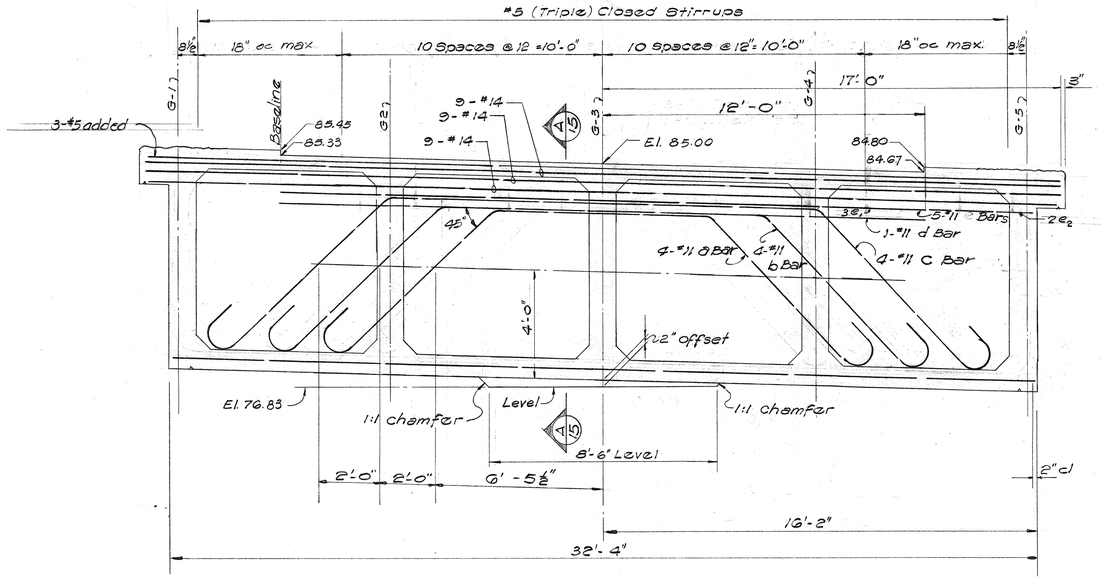
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

SHEET No. 14 OF 16 SHEETS

146

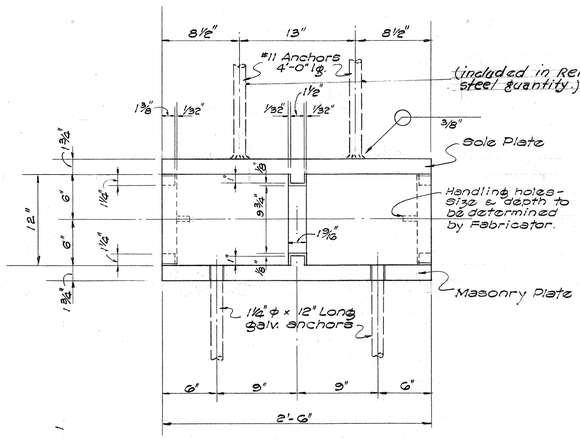
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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	147	202



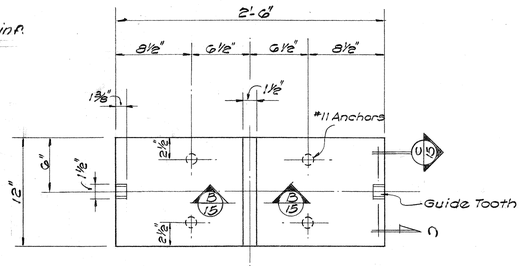
BEAM "D" (OVER PIER)

scale 3/8" = 1'-0"



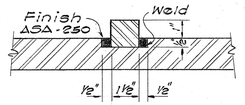
END ELEVATION

scale: 1½" = 1'-0"



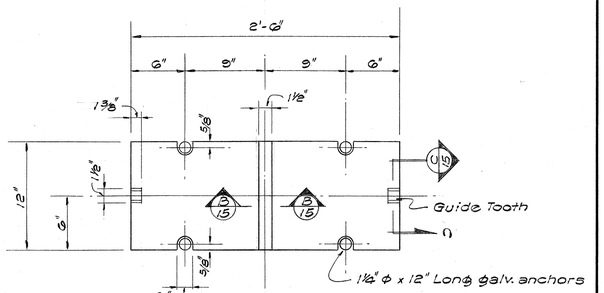
PLAN - SOLE PLATE

scale: 1½" = 1'-0"



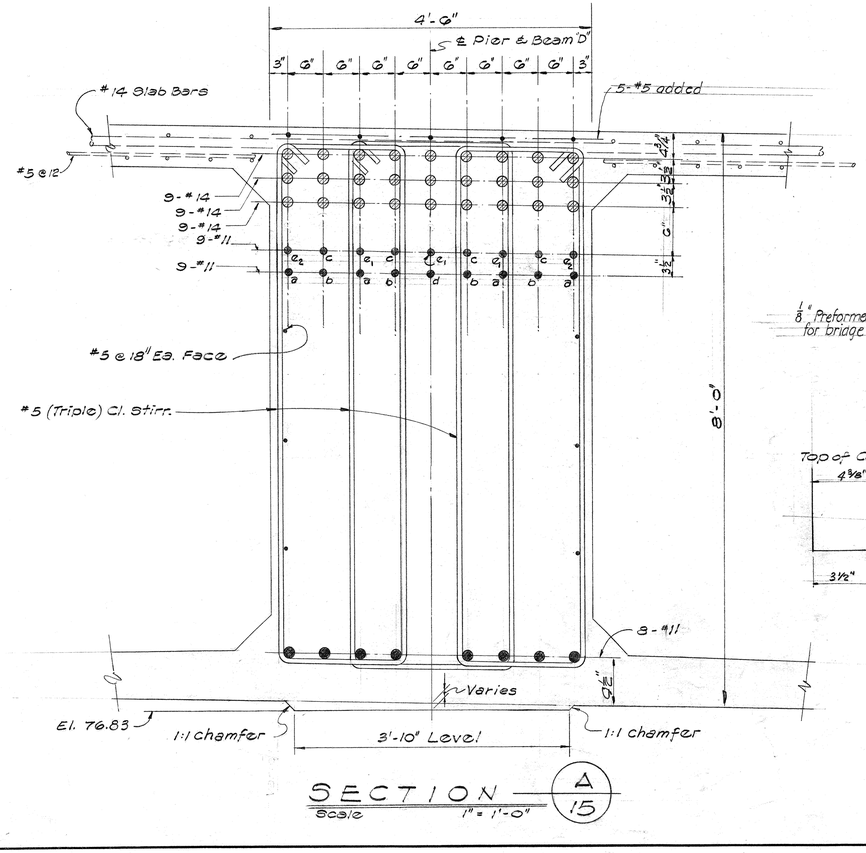
SECTION B/15

Scale: 3" = 1'-0"



PLAN - MASONRY PLATE

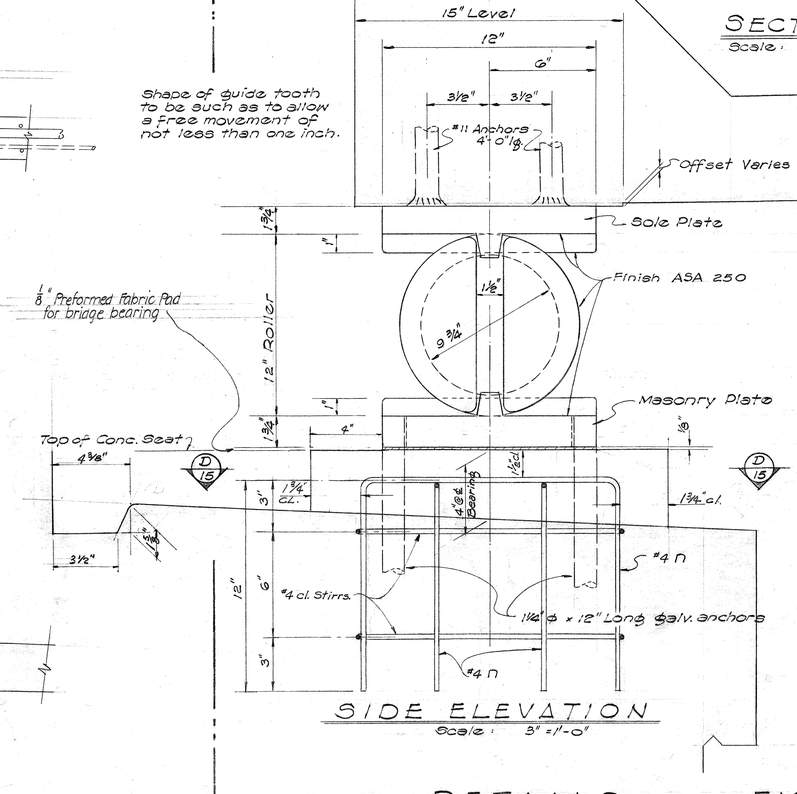
scale: 1½" = 1'-0"



SECTION A/15

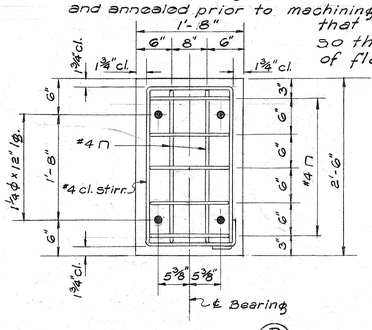
Scale 1" = 1'-0"

Shape of guide tooth to be such as to allow a free movement of not less than one inch.



SIDE ELEVATION

Scale: 3" = 1'-0"

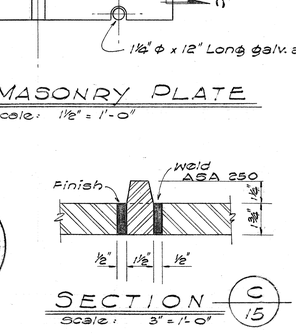


SECTION D/15

Scale: 1" = 1'-0"

NOTES:

All plates for bearing shall be Structural Carbon Steel ASTM Designation A-36
Rollers shall be Structural Carbon Steel ASTM Designation A235 (Class C-1)
They shall be accurately turned to the dimension shown on the drawings and shall be straight, smooth and free from flaws. They shall be forged and annealed prior to machining. The Contractor shall order forgings that are straight and of sufficient size so that the finished roller will be free of flaws and forge marks. Any rollers showing forge marks or flaws shall be rejected. (See Special Provisions)
Sole ℙ, roller, masonry ℙ and 1¼" ϕ x 12" anchor shall be hot-dip galvanized.



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DETAILS OF EXPANSION BEARING

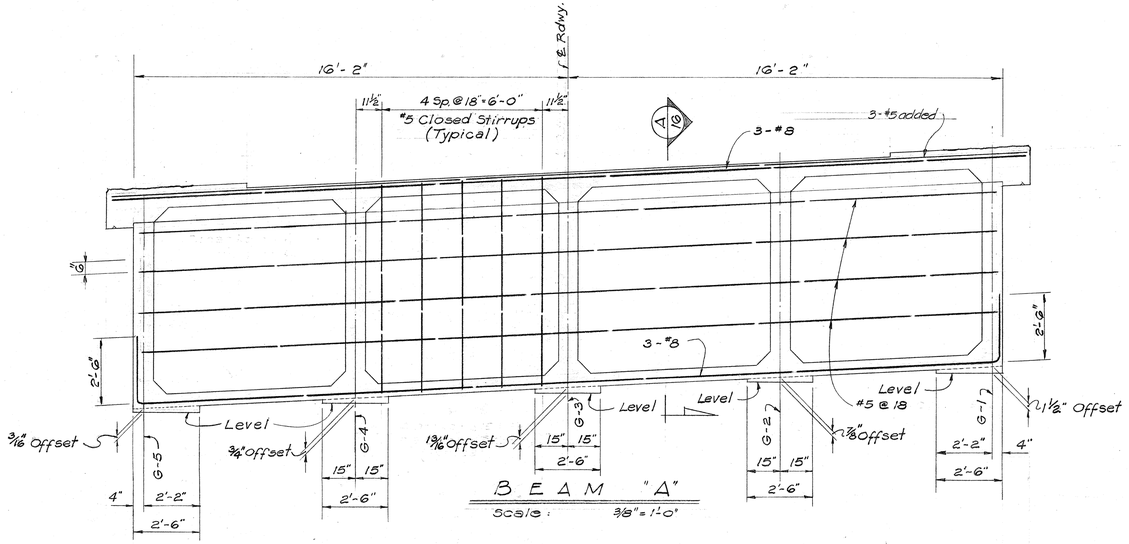
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2
VINEYARD-LUNALILO ON RAMP
VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.38
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
FAI Proj No. I-HI-1(31) Unit 1 May 1966

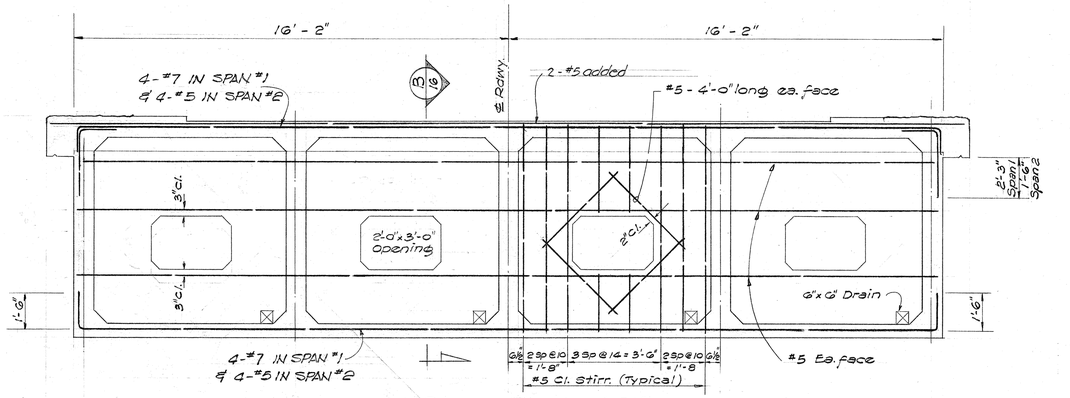
SHEET No. 15 OF 16 SHEETS

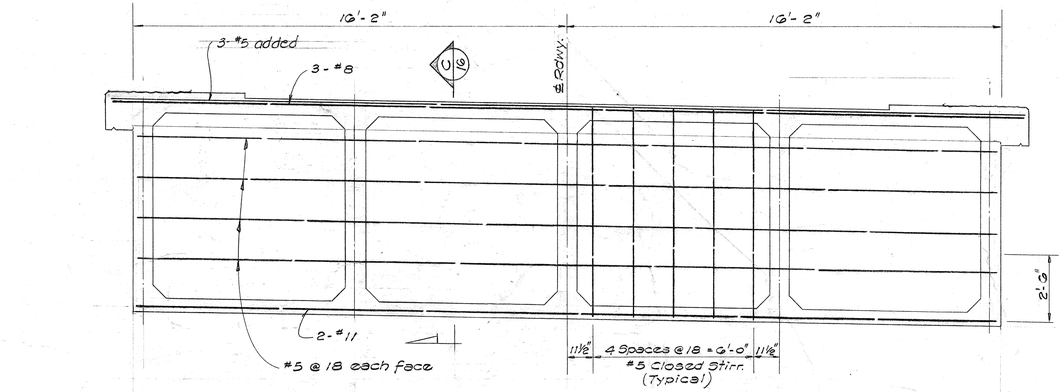
ORIGINAL PLAN	SURVEY PLOTTED BY:	DATE
	DESIGNED BY:	
	DRAWN BY:	
NOTE BOOK No.	TRACED BY:	
	QUANTITIES CHECKED BY:	
	CHECKED BY:	

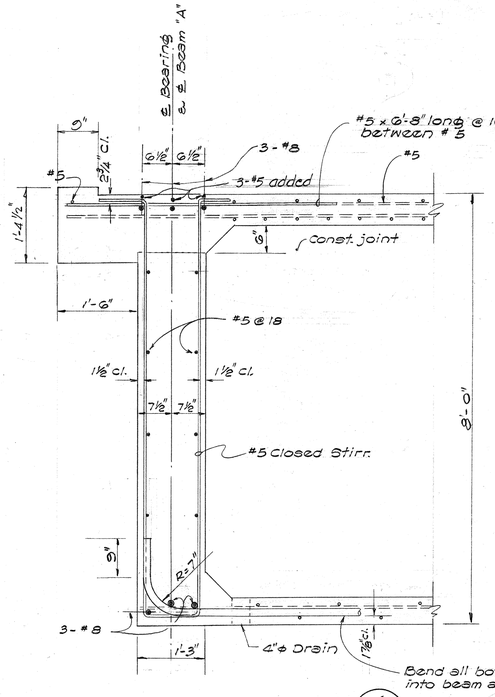
PRINTED ON DIEPO 1000H CLEARPRINT

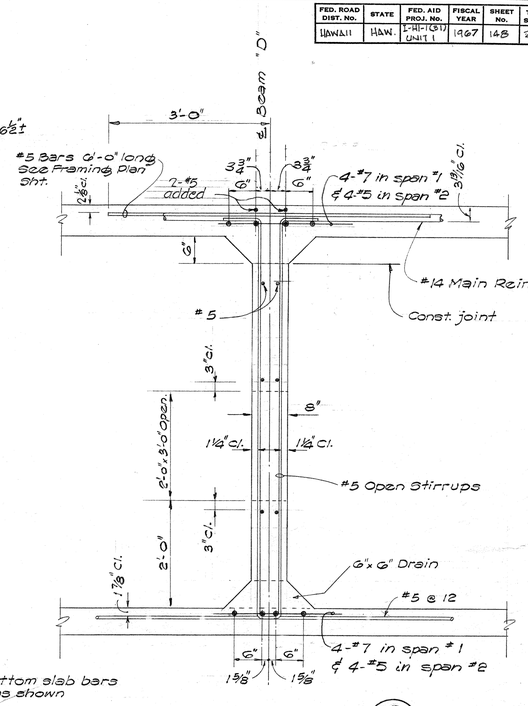
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	148	292

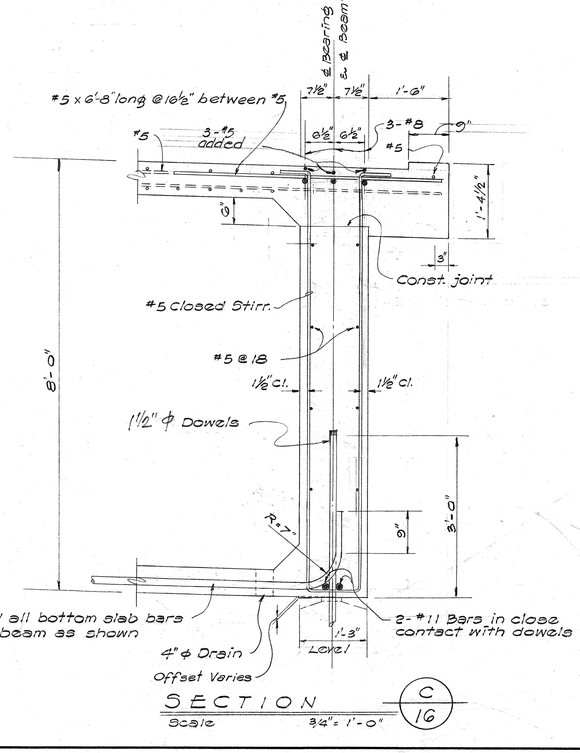












ALFRED A. YEE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION BRIDGE #2

VINEYARD-LUNALILO ON RAMP

VINEYARD ℄ Sta. 160+23.12 To Sta. 162+50.38

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)

PELE STREET To VICTORIA STREET

FAI Proj. No. I-HI-1(31) Unit 1 May 1966

SHEET No. 16 OF 16 SHEETS

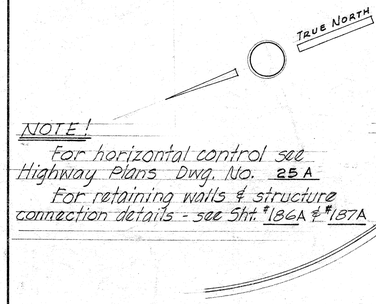
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	DESIGNED BY:	
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NOTE BOOK	QUANTITIES BY:	
	QUANTITIES CHECKED BY:	
No.	CHECKED BY:	

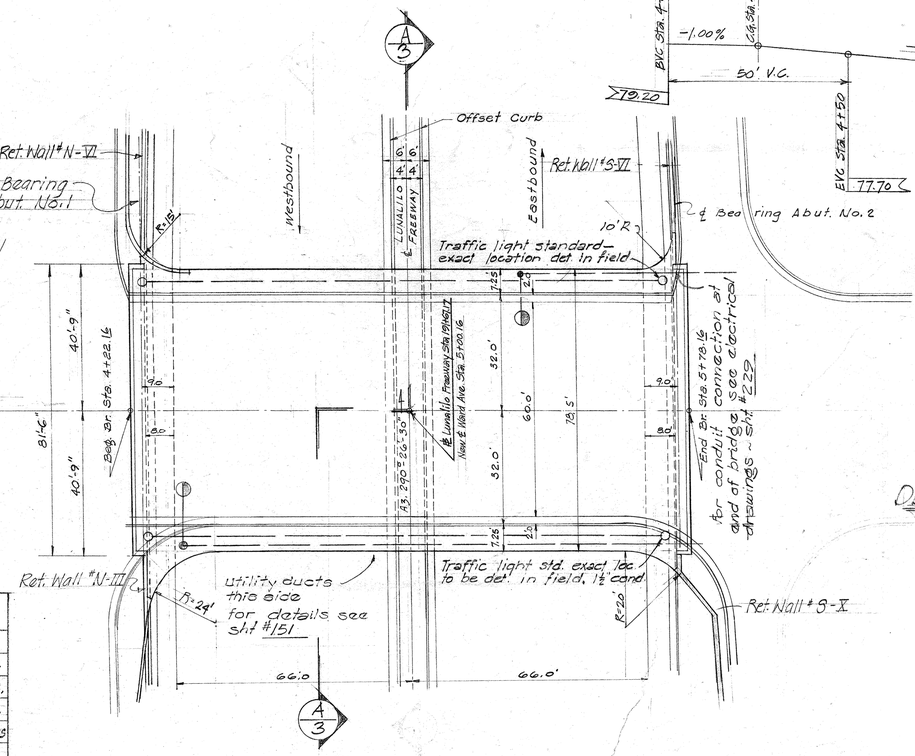
PRINTED ON DIEPO 1000H CLEARPRINT

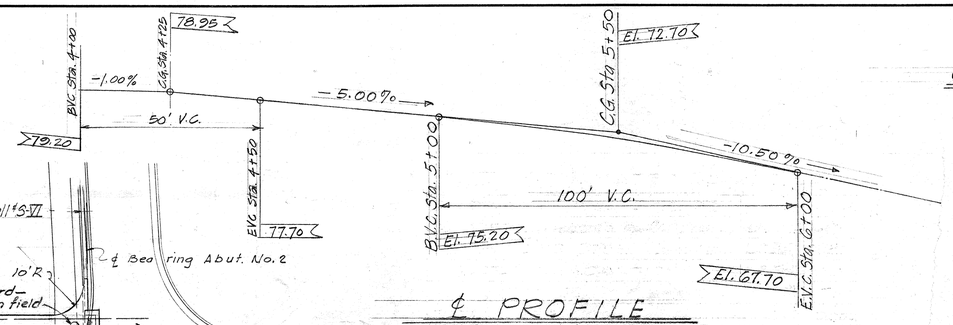
148

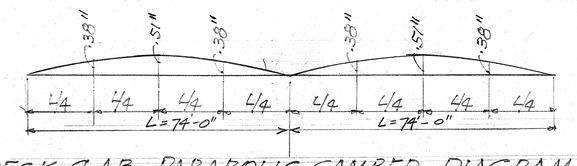
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	149A	292

NOTE!
For horizontal control see Highway Plans Dwg. No. 25A
For retaining walls & structure connection details - see Sht. #186A & #187A









GENERAL NOTES:

A. Design Data

1. Design Load
H 20 S-16-44

2. Cast in Place Conc.
f_c = 20,000 psi
f_{ci} = 3,000 psi
n = 10

3. Prestressed Beam
f_c' = 5,500 psi 28 days
f_{ci} = 4,000 psi @ transfer
1/2" ϕ strands ~ ASTM A-416
Tensioning Load = 25,200# } per strand
Design Load = 20,160# }

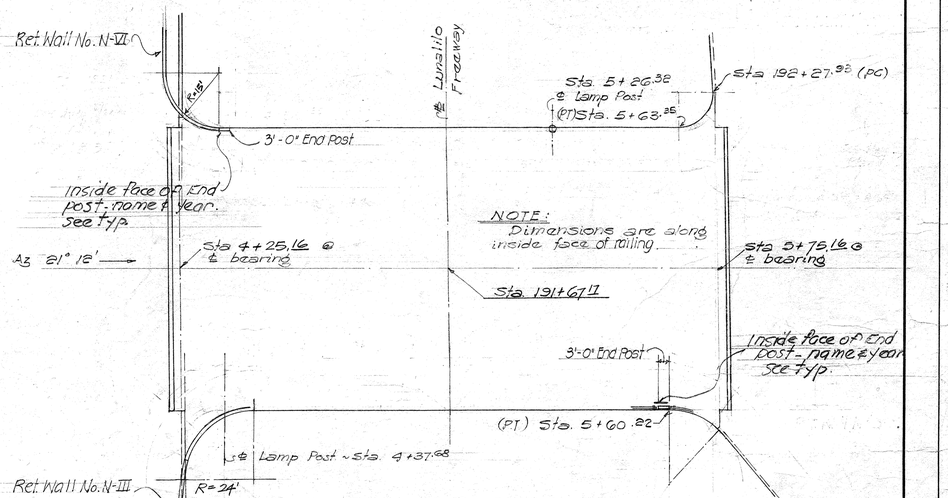
B. Construction Methods

1. All footings shall be excavated & poured to neat line.
2. All back-fill behind abutments shall be complete in place before placing prestress beams.
3. Curbs & railings shall not be poured until deck slab has gained sufficient strength - to be determined by resident engineer.
4. Finishes ~ see standard specifications.

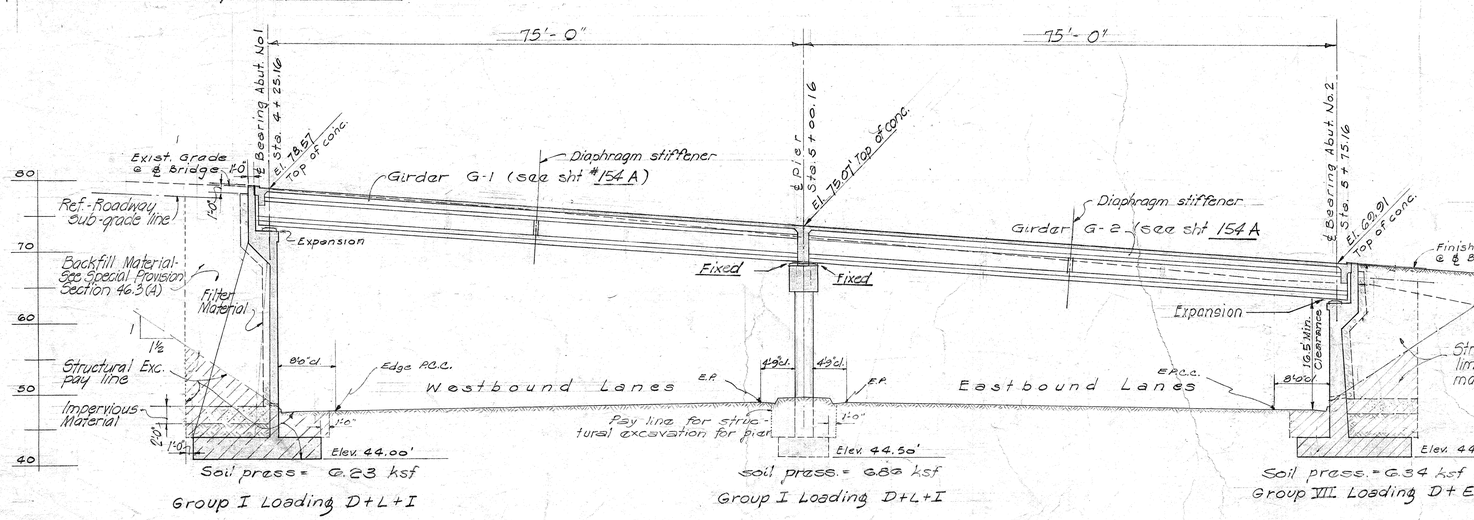
Reference -
Refer to Sht. Nos. 194 & 196 for additional details not covered by these drawings.

ESTIMATED QUANTITIES	
Prestressed Concrete Girders	1,840.0 l.f.
Concrete (Lump Sum)	1,117 c.y.
Reinforcing Steel (Lump Sum)	206,900 lbs.
Structural Excavation	6,588 c.y.
A. C. Mix No. V	92 tons
Filter Material	351 c.y.
Tack Coat	253 gals.
Metal Bridge Railing	200 l.f.

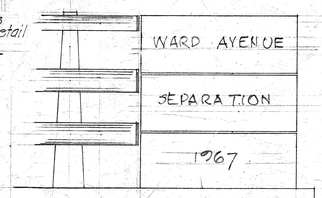
4/11/67 REVISION
Ward Ave. & Shifted 12.50' West & Revised ℄ Profile



NOTE!
For post spacing details, and treatment of railing at Light Sta, see Railing Sta Sht. # 196 and sht. # 186A
For railing on curve - see data & details sht. # 186A



LONGITUDINAL SECTION ALONG ℄ ROADWAY
Scale: 1" = 10'-0"



TYPICAL BRIDGE NAME & YEAR LOCATIONS & END POST

NOTE:
1. Place name of structure as shown for location see layout plan.
2. Year shown will be year structure is completed.
3. Letter size & detail - see Std. letter drawings.

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.
SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WARD AVENUE SEPARATION
LUNALILO ℄ Sta 191 + 79.52
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET to VICTORIA STREET
FAI. Proj No I-HI-1(31) Unit 1 4/11/67

SHEET No. 1 OF 8 SHEETS

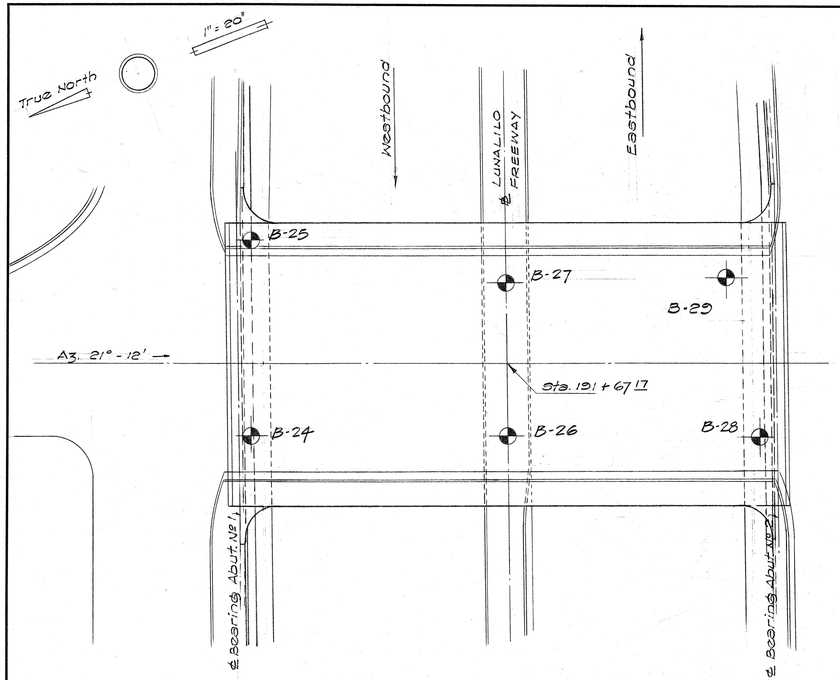
ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DESIGNED BY AJC	
	DRAWN BY AJC	
	TRACED BY AJC	
NOTE BOOK No.	QUANTITIES BY	
	CHECKED BY AJC	
	CHECKED BY SDS	

THIS SHEET SUPERCEDES SHEET 149

149A

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(31) UNIT 1	1967	150A	292



BORING LOCATION PLAN
Scale: 1" = 20'

4/11/67 REVISION
Ward Ave. & Shifted 12.38' West

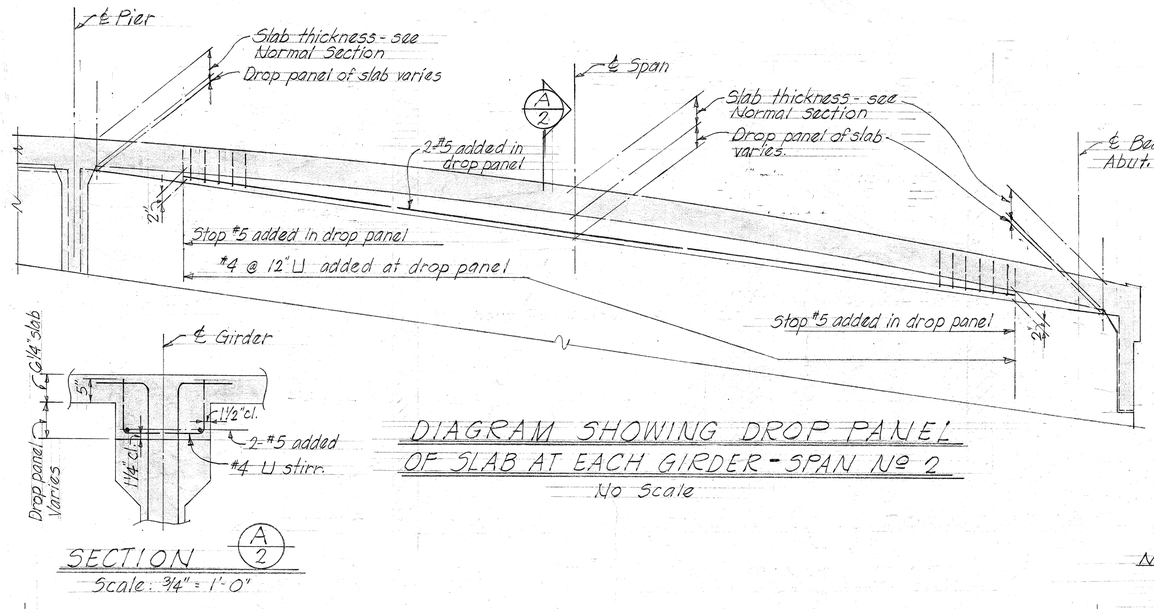
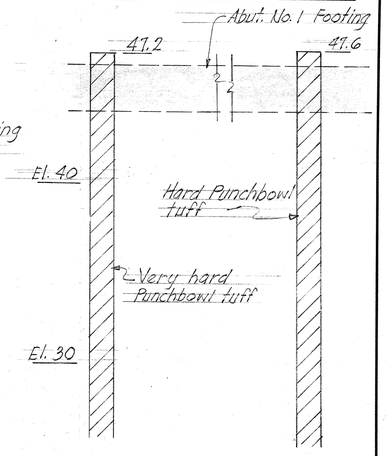


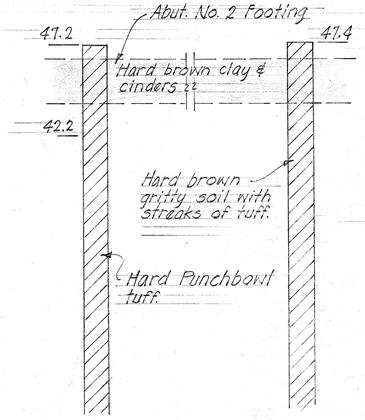
DIAGRAM SHOWING DROP PANEL OF SLAB AT EACH GIRDER - SPAN Nº 2
No Scale

SECTION A/2
Scale: 3/4" = 1'-0"



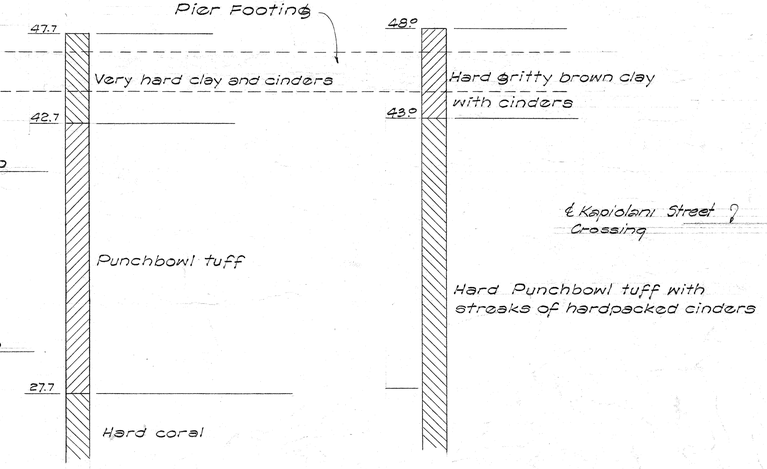
BORING Nº 24 BORING Nº 25

Note:
"Punchbowl tuff" as used here stands for "cemented volcanic ejecta" containing fines and boulders.

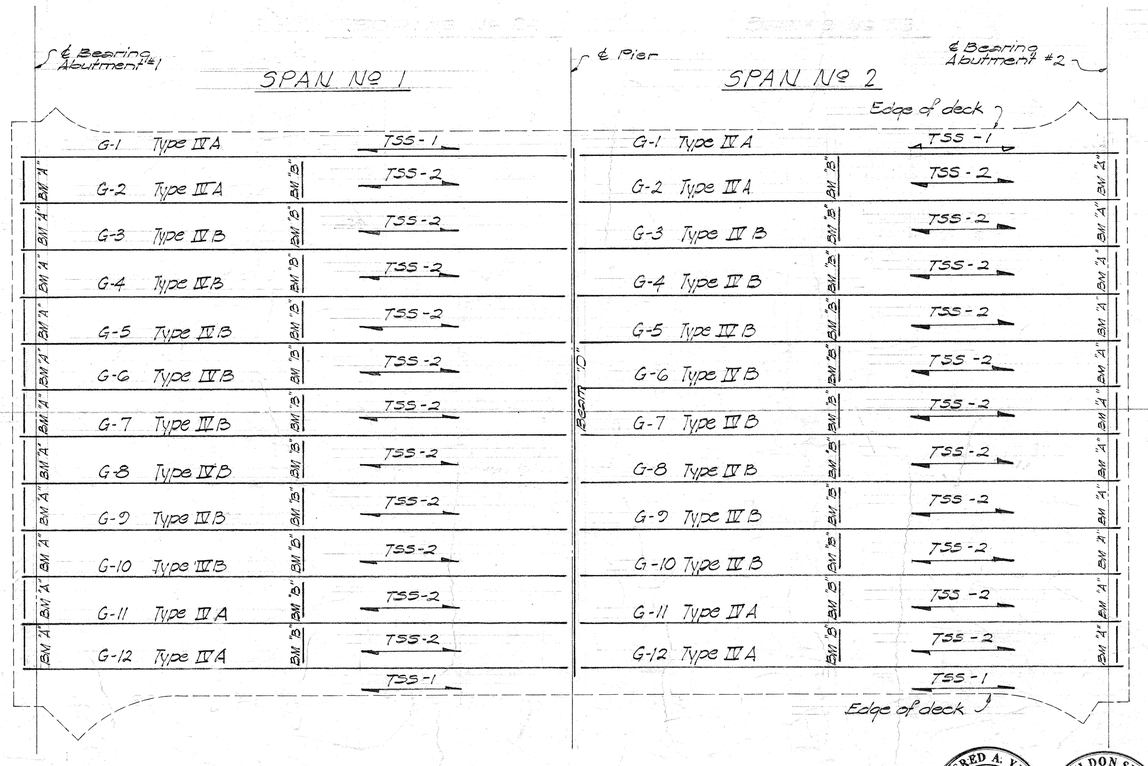


BORING Nº 28 BORING Nº 29

BORING DATA



BORING Nº 26 BORING Nº 27



DECK FRAMING PLAN
Scale: 1" = 10'-0"

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

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 718 HAWAII, U.S.A.

SATOSHI DON SHIMAZU REGISTERED PROFESSIONAL ENGINEER No. 710 HAWAII, U.S.A.

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PELE STREET to VICTORIA STREET
F.A.I. Proj. Nº I-HI-1(31) Unit 1 4/11/67

SHEET No. 2 OF 8 SHEETS

150A

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(81) UNIT 1	1967	151	292

Parabolic crown - varies - see Highway drawings

℄ Roadway

78'-6"

Highway lighting duct - 2" see electrical drawings

Details of railing & sidewalk similar to opposite side

Level

For site of conduits see bridge plan

detail "Y"

hole for conduits

4'-5½"

4'-10"

5'-9½"

5-#5 Between girders

2-#5 Bottom cont.

2-#5 Top cont.

2-#5 cont. as shown

#5@12" Stirr. "U" Between girders

6½" Uni. slab

7½"

Top longit. slab strip bars - see corresp. placement diagram for size, location and extent

1½" A.C.

#5@6" (Typ)

#5@12"o.c. bot. contin.

#5@12"o.c. bent. contin.

#5@12"o.c. top contin.

Details "X" & "X-X"

#4@12"o.c.

#4@12"o.c.

Slope: ¼" per ft.

See Std. Bridge Det. for Metal Rail

#4@12"o.c.

2-#4 cont.

Extra top bars: #5 x 1'-0" @ 14" o.c.

#4@12"o.c.

Highway lighting duct - 2" See electrical dwgs

For inserts see Detail - Sht. #153

5 spa. @ 12" = 5'-0" Typ. strp. Spa.

Weld 1-#8 x 2'-0" Dowel

6" Water main

SECTION NEAR PIER BEAM "D"

SECTION NEAR DIAPHRAGM BEAM "B"

NOTE!! Cast iron pipe hanger insert shall conform to specification for Gray Iron Castings of the A.S.T.M. Designation: A48-46 Class № 30.

NORMAL SECTION (LOOKING MAKAI) A/3 3/8" = 1'-0"

See sht. 149

2" galv. iron pipe for fire alarm system

2" galv. iron pipe for C&C

Varies 1'-3" to 2'-4"

Varies 10" to 1'-7½"

4'-10"

4-5" HECo Ducts

10"

2-4" Gas Mains

7⅝" 7⅝" 7⅝" 5" 10"

1'-9"

1'-0"

#5@12"

#4@12"

5" 5" 5" 5"

#5@18" U

First interior girder

2"-2" ℄

Varies

Cast iron pipe hanger insert. Fabricate inserts to same size as shown on std. Br. Det. Drawing for phosphor Bronze insert.

Steel clevis hanger Galvanized @ 8'-0" cc (Grinnell Catalog J-60, Fig. 220; or equal)

2"-5" anchor x 12"

Lateral brace see detail below

℄ Water main

G-11

G-12

2'-0"

NOTE: Steel clevis hanger & lateral brace to be painted w/ 1 coat primer & 1 coat grey rust preventive paint

See Detail "X-X" for complete details

DETAIL "X" Scale: ¾"=1'-0"

2-#5 Top Cont.

1½" Exp. Jt. see Std. Bridge Detail plan Sht. #196

See detail G/19 plan sht. №129.

Pre-moulded Joint Filler

See Sect.

#3 @12"oc

ABUTMENT WALL No. 1

1-#4 Bot. Cont.

outline of prestress bm.

2-#4 contin.

2-#7 top & bot. continuous

#3 stirrups

SECTION B/3 ¾"=1'-0"

2-3" S.C. Ducts

4-#4 long. bars equally spaced

#5@18" U

2" galv. iron pipe for fire alarm system

2" galv. iron pipe for C&C

First interior girder

2-#5 anchor x 18"

Lateral brace

Varies 1'-3" to 2'-4"

Varies 10" to 1'-7½"

DETAIL "X-X" Scale: ¾"=1'-0"

See detail G/19 plan sht. №129

1½" Expansion Jt. see Std. Bridge Detail plan sht. #196

2-#5 Top CONT.

½" Premoulded joint filler

#3 @12"oc

ABUTMENT WALL NO. 2

Construction Joint

2-#4 contin.

1-#4 Bot. CONT.

#3 stirrups

2-#7 Top & bot continuous

edge of prestress bm.

SECTION D/3 ¾"=1'-0"

Varies 1'-3" to 2'-4" at abutments

4'-10"

10" 5" 8 Equal Spaces @ 4'-4" = Steel Ducts (H.T.) 5" 10"

Varies 10" to 1'-7½"

1'-0"

5½"

℄ Ducts

#5@12"

#4@12"

Exterior girder

F/3

8"

DETAIL "Y" Scale: ¾"=1'-0"

Waterproofing all around pipe. For method of application see standard bridge details

6" ℄ water main or 4" ℄ gas main

1" premolded filler all around pipe in stem

2-#5 x 4'-0" lg. around hole, E.F. E.W.

Abutment stem

UTILITY MAINS AT ABUTS. SCALE: ½" = 1'-0"

Add #5 bars between conduits extend 2'-0" below bottom of conduits

Wrap Conduit With 3 Layers 45# Smooth Roofing Paper

1 Layer 90# Roofing Felt

R/C Jacket Outline See Roadway Plans

1'-10"

6"

8"

12"

℄ Conduits

4-#4 Cont. Added

Galvanized Steel Coupling (H.E. & H.T. Conduits Only)

#4 @ 9" ℄ bent bars

Galvanized Steel Conduits To 5' On Undisturbed Earth (H.E. Only)

Ref. - ℄ Bearing Abut. #1

3 Bolt Clamp

See Details "X", "X-X" & "Y" or Roadway Plans for Size & Type of Conduits (H.E. & Sig. Corps - Thmalite Ducts, H.T. - Elec. Steel)

Transite or Steel Coupling (Coupling To Match Type Of Duct)

2° Max. Duct ℄ Deviation

1° Duct ℄ Deviation

10'-0"

10'-0"

20'-0" Transition

Typical See Details "X", "X-X", & "Y"

Bottom of panel for utility lines between transitions shall closely follow the soffit of the deck slab. Short chords may be used in the curved portion with the approval of the Engineer.

Note: Conduit transition & connections at Abut. #2 (Opposite end) similar to Abut. #1 as shown.

Repair galv. - see sect. 44 specs.

½"℄ anchor bolt w/ 2 nuts @ 16" o.c.

7"

4½"

½" x 2" Steel ℄

2'

Galvanize

Weld

⅝" x 4" x 6" ℄ w/ #5 anchor

Hanger strap

½" ℄ hook bolt w/ lock washer & nut. Bend bolt to fit hanger strap

LATERAL BRACE PLAN Scale: 1½"=1'-0"

8"

2'-3"

2-#5 top

1-#8

#3@12 cl. stirr.

1-#8

2-#5 bot.

TYPICAL DIAPHRAGM SECTION E/3 Scale: ¾"=1'-0"

SECTION F/3 AT ABUTS. SCALE: ½"=1'-0"

APPROVED:

ASSISTANT CHIEF ENGINEER B.W.S. — 6/16/66 DATE

DIRECTOR OF DEVELOPMENT (ACTING) HONOLULU GAS CO., Ltd. — 6/15/66 DATE

for SIGNAL OFFICER U.S. ARMY-HAWAII — 15 June 66 DATE

APPROVED:

for HAWAIIAN ELECTRIC CO., Inc. — 6-15-66 DATE

OUTSIDE PLANT ENGINEER, H.T. Co., Ltd. — 6/16/66 DATE

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 718 HAWAII, U.S.A.

SATOSHI DON SHIMAZU REGISTERED PROFESSIONAL ENGINEER No. 710 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARD AVENUE SEPARATION

LUNALILO ℄ Sta 121+70.52

INTERSTATE ROUTE H-1

(LUNALILO FREEWAY)

PELE STREET to VICTORIA STREET

FAI Proj № I-HI-1(81)Unit 1 May 1966

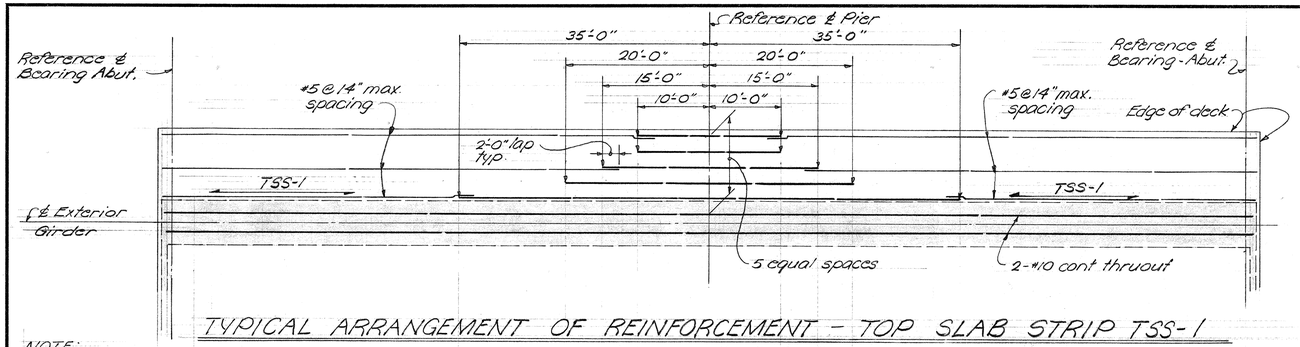
SHEET No. 3 OF 8 SHEETS

151

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

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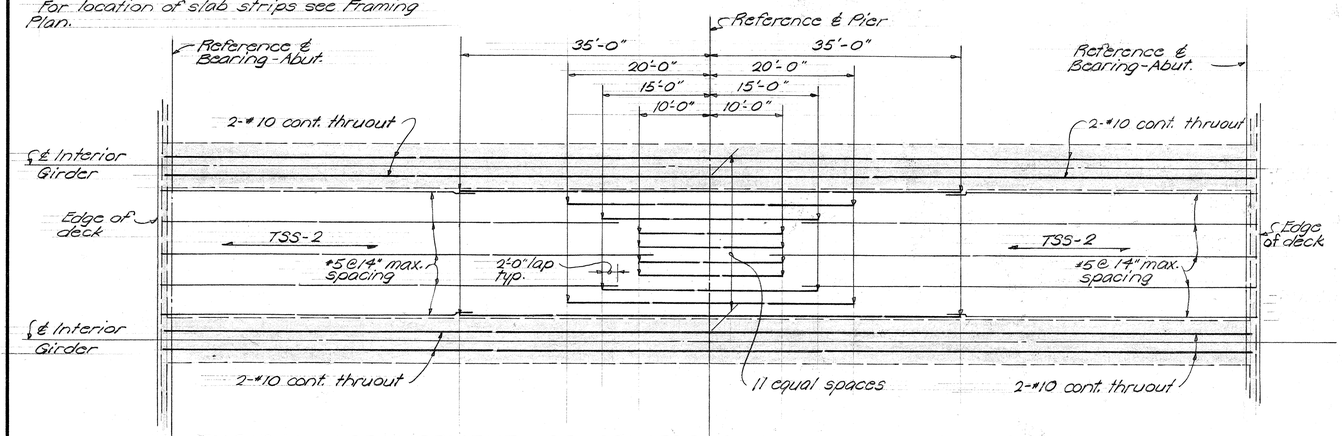
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) LIMIT 1	1967	152	292



TYPICAL ARRANGEMENT OF REINFORCEMENT - TOP SLAB STRIP TSS-1

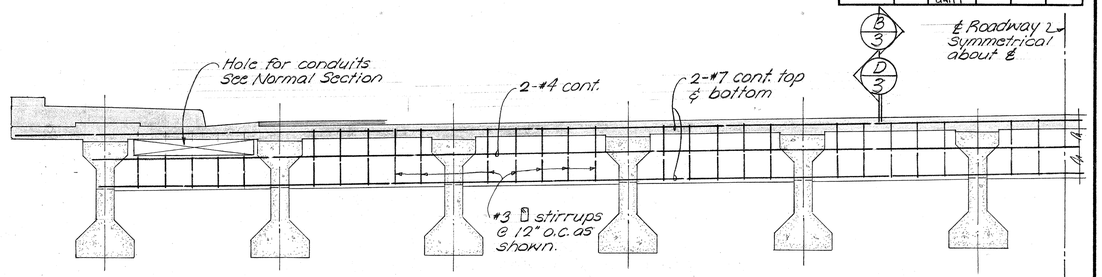
Scale: Horiz. 1"=10'-0"
Vert. 3/8"=1'-0"

NOTE:
Except as otherwise noted all slab strip reinf. to be #10 bars.
For location of slab strips see Framing Plan.



TYPICAL ARRANGEMENT OF REINFORCEMENT - TOP SLAB STRIP TSS-2

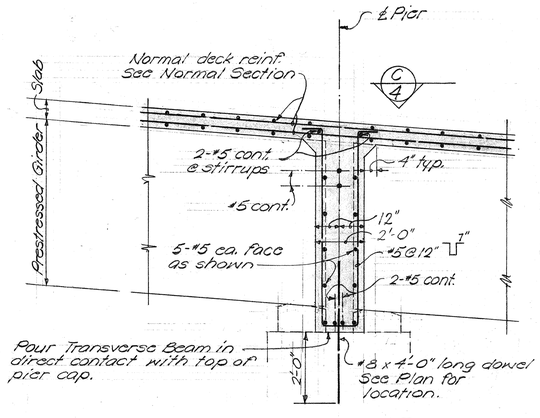
Scale: Horiz. 1"=10'-0"
Vert. 3/8"=1'-0"



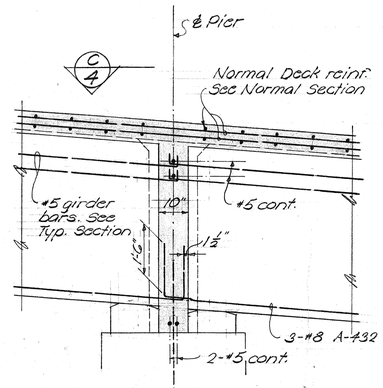
HALF ELEVATION - BEAM "A"

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

NOTE:
Structural steel bearing assemblies shall be incidental to concrete and will not be paid for separately.



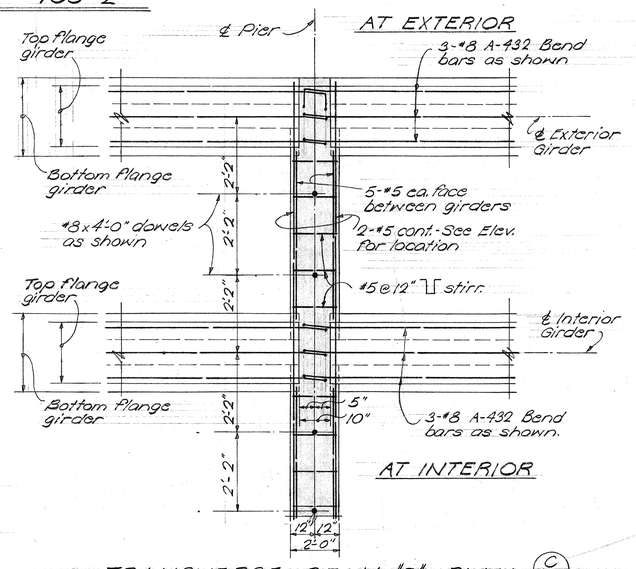
SECTION A/4
BETWEEN GIRDERS



SECTION B/4
AT GIRDERS

TYPICAL SECTION BEAM "D"

Scale: ½"=1'-0"



TRANSVERSE BEAM "D" PLAN C/4
TYPICAL ARRANGEMENT & LOCATION OF TRANSVERSE BEAM REINF. AT GIRDERS

Scale: ½"=1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

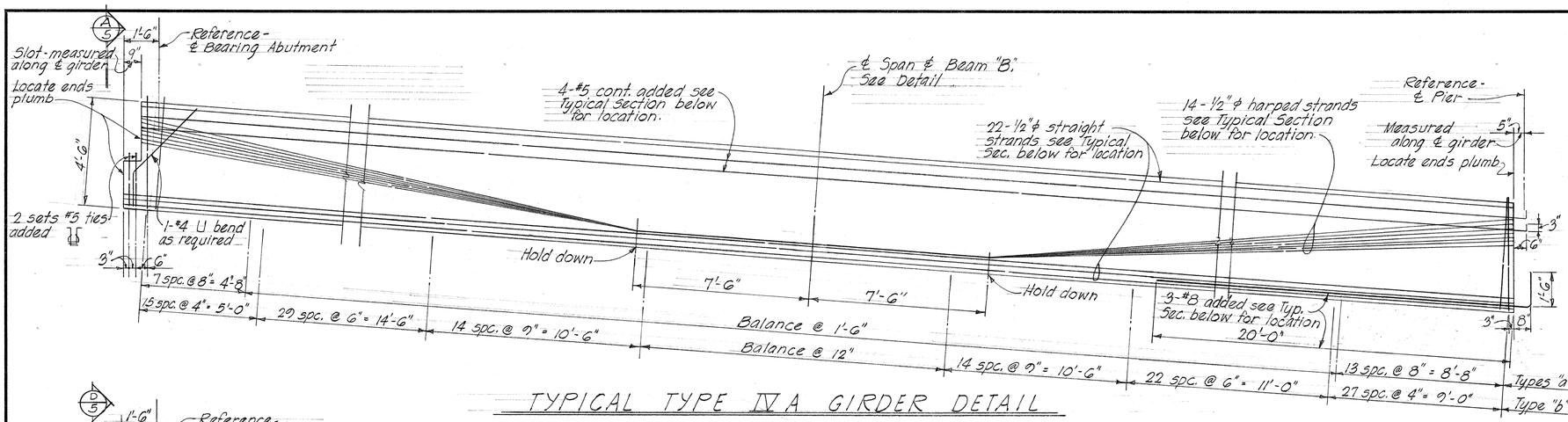
WARD AVENUE SEPARATION
LUNALILO ℄ STA. 101 + 79.52
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1 May 1966

SHEET No. 4 OF 8 SHEETS

152

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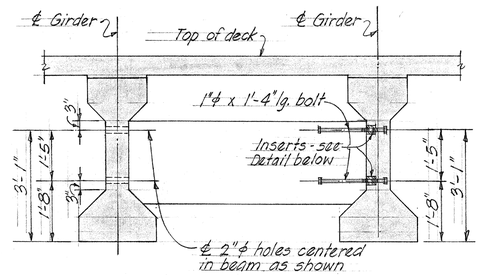
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	153	292



TYPICAL TYPE IV A GIRDER DETAIL

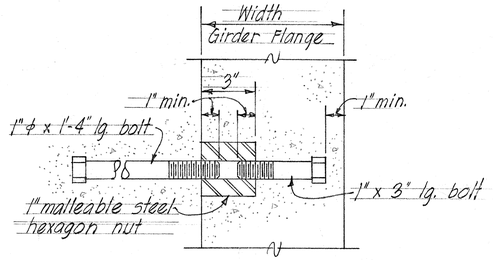
Note: Holes & inserts centered on Beam "B". See Sht. #151
Inserts & holes incidental to prestressed girder.

Beam "B" construction joint location - straight line between drop panels each span.

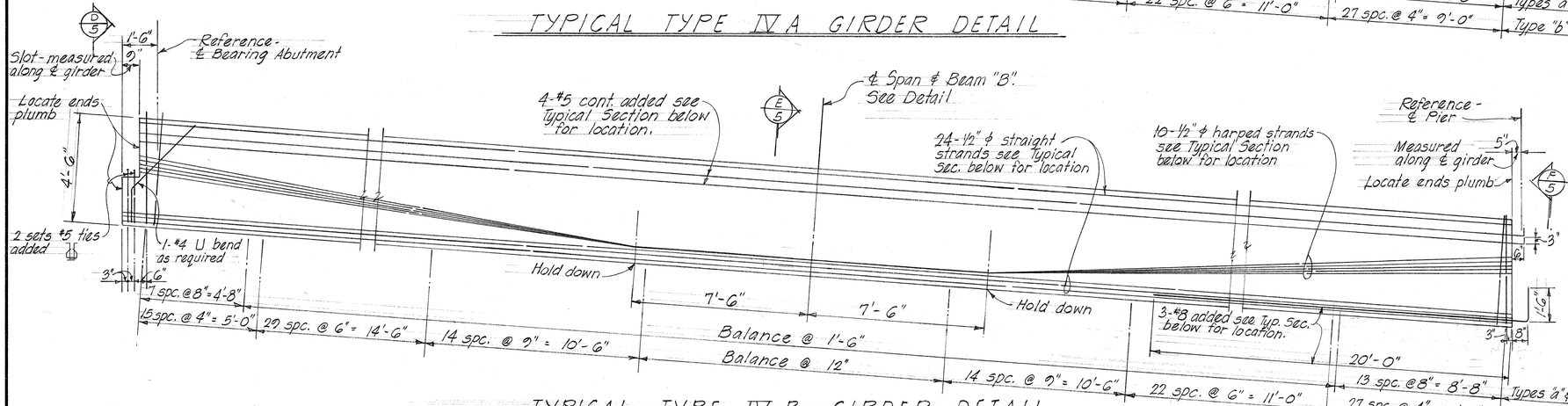


AT G-2 THRU G-4 AT G-1 & G-12

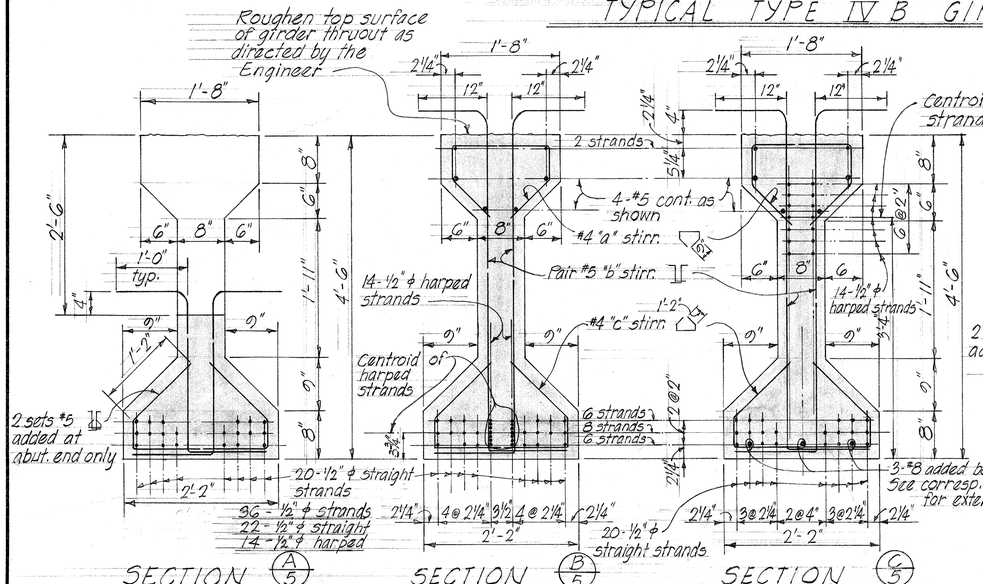
TYPICAL BEAM "B" CONNECTION DETAIL



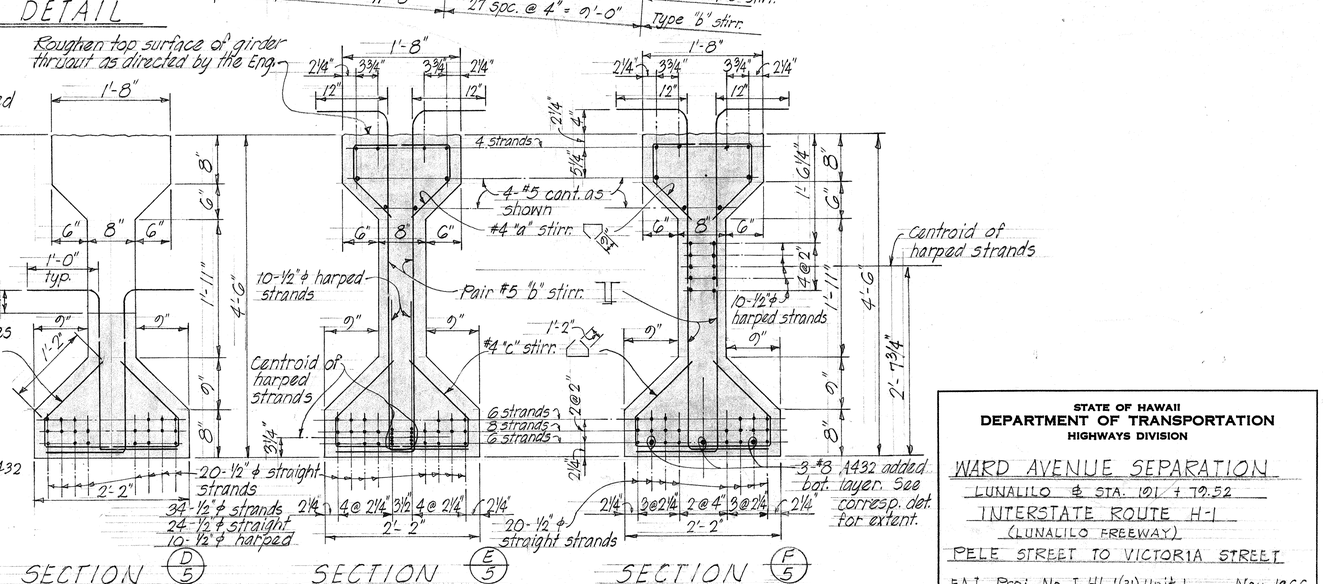
INSERT DETAIL
Scale: 3" = 1'-0"



TYPICAL TYPE IV B GIRDER DETAIL



TYPICAL TYPE IV A GIRDER SECTIONS Scale: 1"=1'-0"



TYPICAL TYPE IV B GIRDER SECTIONS Scale: 1"=1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARD AVENUE SEPARATION
LUNALILO ℄ STA. 101 + 79.52
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1 May 1966

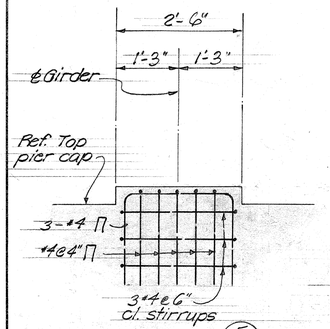
SHEET No. 5 OF 8 SHEETS

153

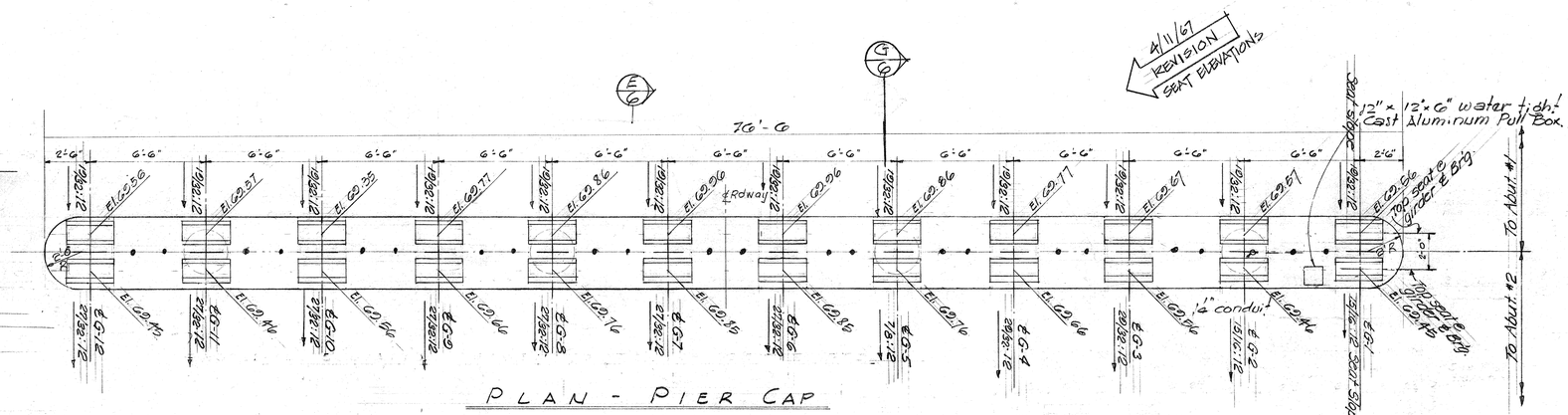
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	154A	292

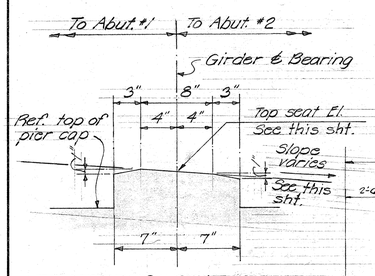
4/11/67
REVISION
SEAT ELEVATIONS



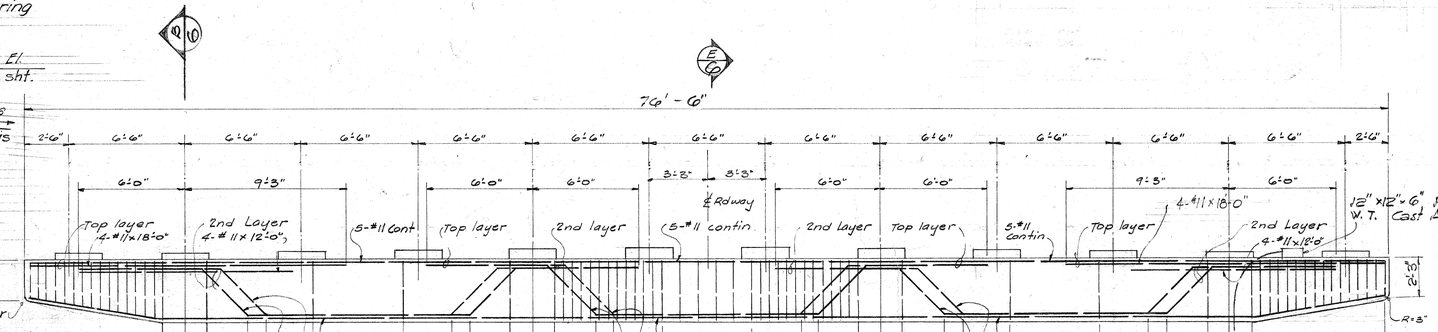
SECTION (F/6)
Scale: 3/4"=1'-0"

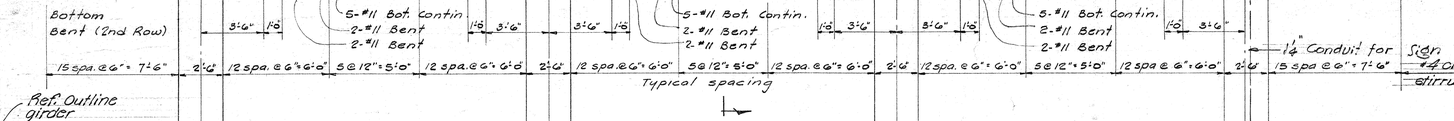


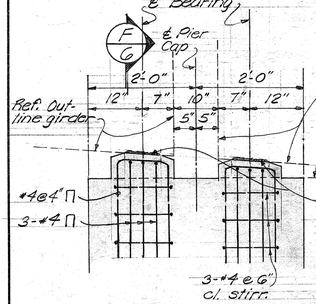
PLAN - PIER CAP
Scale: 1/4"=1'-0"



SHOWING SEAT DETAIL
Scale: 1½"=1'-0"

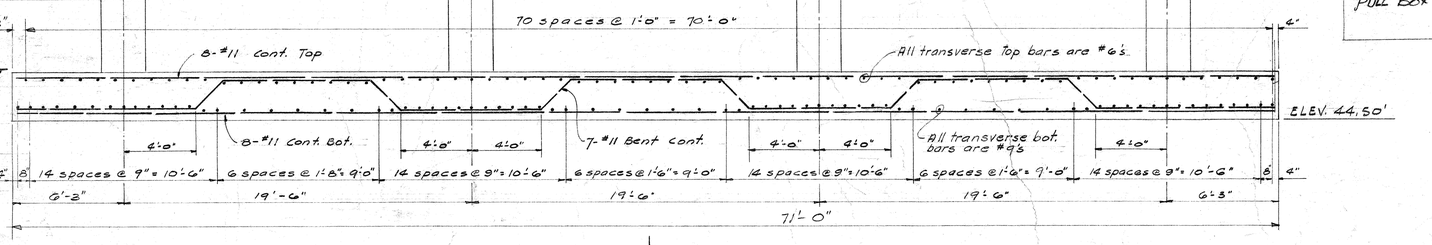




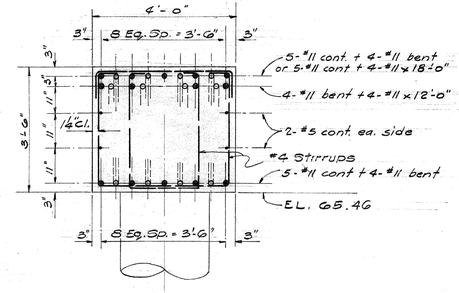


SHOWING SEAT REINFORCEMENT
Scale: 3/4"=1'-0"

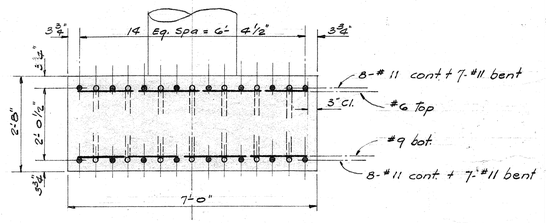
SECTION (G/6)
(TYPICAL PIER SEAT)



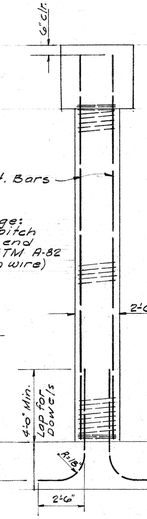
SECTION (A/6) 1/4"=1'-0"



SECTION (E/6) 1/2"=1'-0"

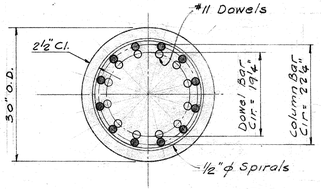


SECTION (D/6) 1/2"=1'-0"



Electrical Notes:
For details of pull boxes see electrical drawing Sht. 226

TYPE "C" PULL BOX



SECTION (C/6) 3/4"=1'-0"

SECTION (B/6) 1/4"=1'-0"
TYPICAL

STATE OF HAWAII
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LUNALILO ℄ Sta 191 + 79.52
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET to VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1 4/11/67

ALFRED A. YEE
REGISTERED STRUCTURAL ENGINEER
No. 718
HAWAII, U.S.A.

SATOSHI DON SHIMAZU
REGISTERED PROFESSIONAL ENGINEER
No. 710
HAWAII, U.S.A.

SHEET No. 6 OF 8 SHEETS

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

THIS SHEET SUPERCEDES SHEET 154

154A

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	155A	292

4/11/67 REVISION SEAT ELEVATIONS

81'-6"
79'-10" (9 counterforts)
6 spaces @ 10'-0" = 60'-0"
9'-11" 9'-11"
8" 8"

Sta. 191+27.46 Sta. 192+08.66

E 7 F 7 F 7

3" 5'-6" corbel opening 3" 5'-6" corbel opening

1'-4"

El. 78.89 El. 78.78 El. 78.33

Creep Block El. 73.64 Creep Block El. 78.73 Creep Block El. 78.73 Creep Block El. 73.64

½" premolded ½" F. Filler

4'-0" 4'-0"

2" 2"

1½" 1½"

Seat Slope 1/32:12 G-1 G-2 G-3 G-4 G-5 G-6 G-7 Seat Slope 1/32:12

12.98 13.04 13.14 13.23 13.33 13.33 13.23 13.14 13.04 12.98

P.T. El. 79.00 TOP OF EDGE OF CURB

Deck Outline Slab Above

R=15'

24'-0" R

P.T. El. 79.16 TOP OF EDGE OF CURB

CURB LINE

78'-6"

PLAN - ABUTMENT No. 1

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

Edge of deck

40'-9"

39'-3"

9'-11" 3 spaces @ 10'-0" = 30'-0" counter fort spacing

℄ symm. except as otherwise noted see Plan

℄ Roadway

El. 78.80 Top of conc.

3'-6" 6'-6" 6'-6" 6'-6" 6'-6" 6'-6" 3'-3"

TYPE "C" DRIP

2" key

2 Layers Comp. Roofing Paper

Longit. Abut. Footing steel shall lap a min. of 32 dia. with retaining wall footing steel.

El. 44.00

ELEVATION - ABUTMENT #1

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

P.T. El. 78.88 TOP OF EDGE OF CURB

3-#11 3-#11

1¾" cl.

3" 5" 6" 3" 1¾" cl.

℄ counter fort

Bars in same plane

#5 cont. @12" oc

#5x5'-0"@18" oc (Centered)

#5 cont. @18" oc

(Centered) #5x6'-0"@12" oc

#4 stirrups @ @12"

#4 @12"

Bars in same plane

#4 @18" oc

1½" cl.

12"

SECTION G/7

3/8" = 1'-0"

½" PREMOLDED JT. FILLER

1" x 3½" NEOPRENE BEARING PAD CONT.

#5 CL. TIE @12" oc

G/7 OPP. HAND.

6-#6 VERT. EA. FACE.

4'-0"

NORTH EAST ABUT. END POST.

SECTION F/7

1/4" = 1'-0"

4/11/67 REVISION ADDED SECTION.

12" 24"

SHELF BELOW

#5 CL. TIES @ 12" oc

2-LAYERS 55# ROOFING FELT

2'-0" 1'-4"

12-#6 VERT.

COUNTERFORT RET. WALL

P.T. Elev. 78.95 Top of edge of curb

SECTION G/7

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

4/11/67 REVISION REVISED SECTIONS

See Sect. B/3 for Jt. Detail

4'-3"

1'-0" 3'-0" 3"

½" ½"

-5%

This section to be poured after deck is in place.

Constr. Jt.

#5 @ 12" o.c. (V) E.F.

#5 @ 18" o.c. (H) E.F.

Elev. 72.60

EXPANSION BEARING DETAIL

Elev. 72.55

1½:12 Slope

1'-4½"

Typical Drip Det.

Varies 5/8" 3'-0" 3'-6" 1'-0" 1'-0"

18'-0"

#5 @ 18" oc

#4 @ 18" (V)

1¾" 1¾"

#4 @12" oc EF

#5 @ 12" oc

#5 cont @18" oc = 6'-0"

#5x6'-0"@18" oc at supports

3-#11 3-#11

#4 stirrups 12" oc

4" ℄ drain-tile @ 10'-0" oc - similar to abut. ℄

5'-0" min. lap outer layer only

12"

SECTION C/7

#5x5'-0"@18" oc at midspan

#5 cont. @18" = 9'-0"

#5 cont @12" = 10'-0"

#5x6'-0"@12" oc at supports 14'-0"

Dowels #6x4'-6" @ 9" oc 5'-0"

Key 5'-0"

#4x18'-6" @ 18" oc

#6 @ 6" oc. #6 @ 12" oc

#10x9'-0" @ 7" oc

21'-6" 2'-6"

#5 @ 6" oc. #5 @ 6" oc

#4x14'-6" @ 14" oc

El. 44.00

20'-0"

SECTION A/7

1/4" = 1'-0"

3/4" 1/2" 6"

TYPICAL DRIP DETAIL

Scale: 3" = 1'-0"

4/11/67 REVISION REV. FRONT FACE NO BATTER

½" PREMOLDED JT. FILLER

BRIDGE DECK SOFFIT

4" 12"

1½"x3½" NEOPRENE BEARING PAD (CONT.) Provide premolded filler on each side of neoprene pad.

G/7

#5 CL. TIE @12" oc.

6-#6 VERT. EA. FACE

4'-0"

NORTH WEST ABUT. END POST

SECTION E/7

1/4" = 1'-0"

4/11/67 REVISION REVISED SECTION.

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 718 HAWAII, U.S.A.

SATOSHI DON SHIMAZU REGISTERED PROFESSIONAL ENGINEER No. 710 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARD AVENUE SEPARATION

LUNALILO ℔ Sta 191+79.52
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET To VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1 4/11/67

SHEET No. 7 OF 8 SHEETS

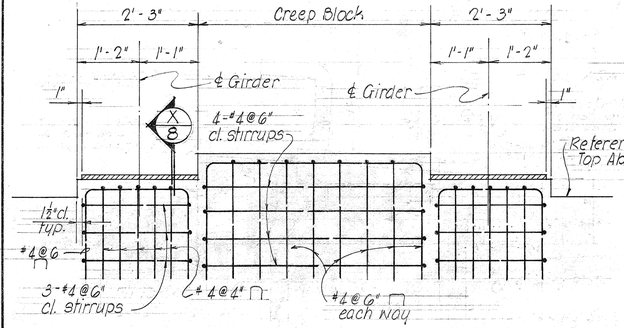
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
	TRACED BY	
NOTE BOOK	QUANTITIES BY	
	CHECKED BY	
No.	CHECKED BY	

THIS SHEET SUPERCEDES SHEET 155

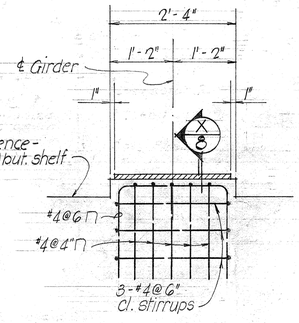
155A

PRINTED ON DIEPO 1000N CLEARPRINT

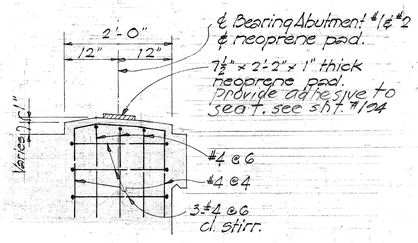
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
Hawaii	H&N	I-HI-1(31) UNIT 1	1967	156A	202



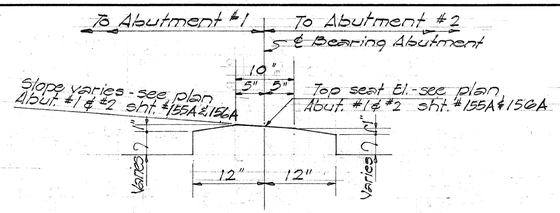
AT CONC. SEAT & CREEP BLK.



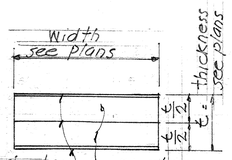
AT CONC. SEAT



SHOWING SEAT REINFORCING



SHOWING SEAT DETAIL



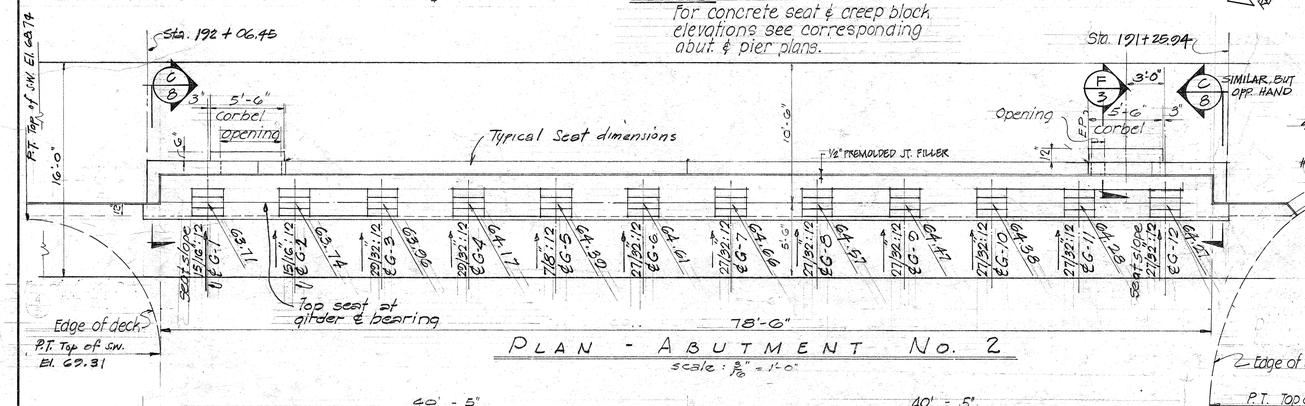
Metal or Fabric sheets bonded to Elastomer. 18" Elastomer coating 12" metal sheets are used

NEOPRENE PAD DETAIL

TYPICAL CONCRETE SEAT DETAILS

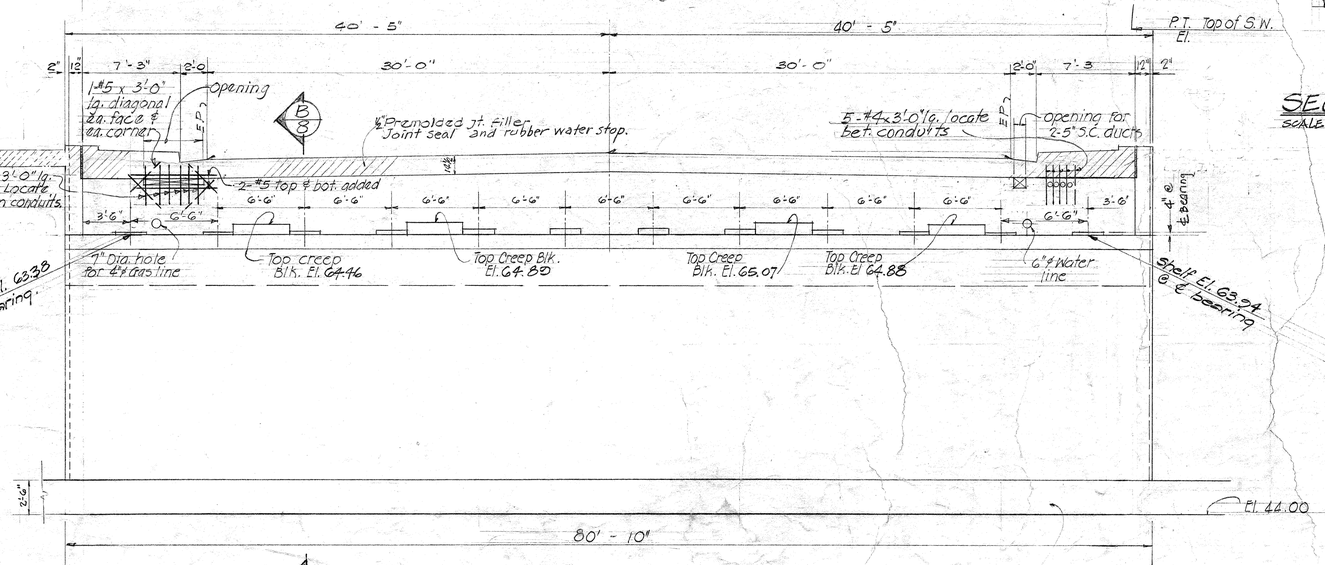
SCALE: ¾" = 1'-0"

NOTE! For concrete seat & creep block elevations see corresponding abut. & pier plans.



PLAN - ABUTMENT No. 2

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



B 8

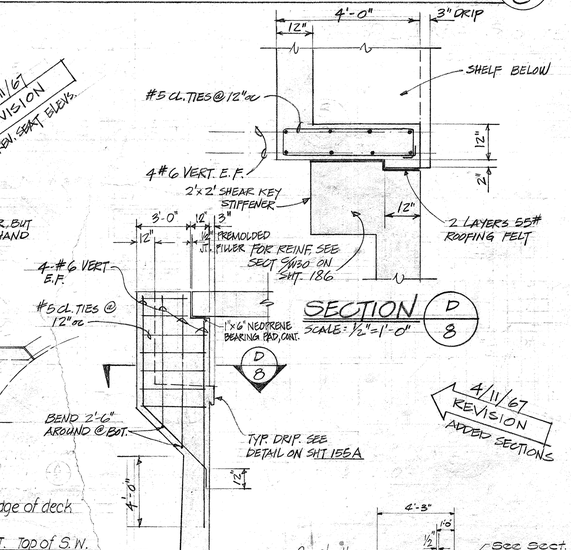
ELEVATION - ABUTMENT No. 2

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

Longit. Footing steel shall lap a min. of 30 dia. with retaining wall footing steel.

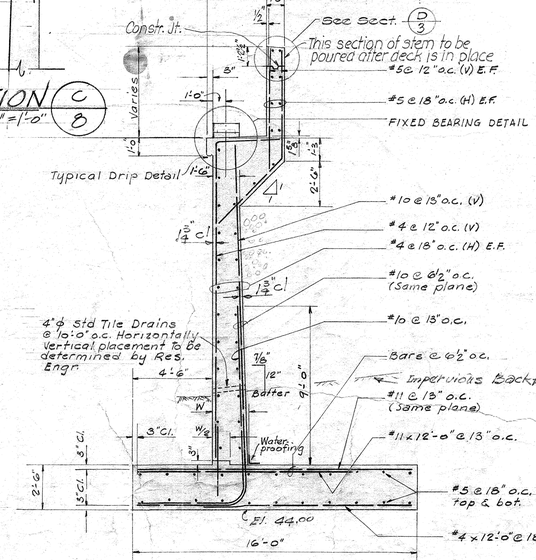
4/11/67 REVISION REM. SEAT ELEV.

TYPICAL ABUTMENT SEAT SECTION X 8



SECTION D 8 SCALE: ½" = 1'-0"

4/11/67 REVISION ADDED SECTIONS



SECTION B 8 ¼" = 1'-0"

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. 718 — HAWAII, U.S.A.

SATOSHI DON SHIMAZU — REGISTERED PROFESSIONAL ENGINEER — No. 710 — HAWAII, U.S.A.

4-16

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARD AVENUE SEPARATION

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INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
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F.A.I. Proj. No. I-HI-1(31) Unit 1 4/11/67

SHEET No. 8 OF 8 SHEETS

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

THIS SHEET SUPERCEDES SHEET 156

156A

PRINTED ON DIEPO 1000H CLEARPRINT

REV. 1 March 1968
REDESIGNED WALLS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT#1	1967	157	292

TYPE "Q" WALL (SHT.#168) — TYPE "R" WALL (SHT.#169) — TYPE "W" WALL (SHT.#172) & TYPE "X" WALL (SHT.#173)

OBSERVATION PLATFORM #1 SEE SHEET #175

BEGIN OBSERVATION PLATFORM @ ℄ STA. 171 + 90.00

END OBSERVATION PLATFORM @ ℄ STA. 172 + 40.00

TOP OF WALL EL. = 106.00'

BEGIN RETAINING WALL @ ℄ STA. 170 + 25.00

BEGIN DOUBLE RETAINING WALL @ ℄ STA. 171 + 30.00

TOP OF WALL EL. = 98.00'

TOP OF WALL EL. = 93.00'

TOP OF WALL EL. = 88.00'

DRIP LINE-TYPE "C"

SIMILAR OPP. HAND

FOR CONC. FINISH ON THIS PAGE OF WALL, SEE (J W-20)

PLATFORM EL. = 91.50

CONSTRUCTION JT.

EXPANSION JT.

R-1-F

DRIP LINE - TYPE "Q"

Q-10-F | Q-10-F | Q-10-F | Q-11-F

R-1 | R-2

REFERENCE - LEFT TOP OF CURB WESTBOUND LUNALILO FREEWAY & GRADE CONTROL LINE.

EL. = 77.83' | EL. = 77.50' | EL. = 77.00' | EL. = 76.50'

1.0'(TYPICAL)

EL. = 75.75' | EL. = 75.00' | EL. = 74.50' | EL. = 74.00' | EL. = 73.50' | EL. = 72.75' | EL. = 72.00'

APPROXIMATE PROFILE OF ROCK LINE

WALL SCORING LINES & DRAINS @ 10'-0" ℄ (TYPICAL) FOR DETAIL, SEE (J W-22)

℄ SIGN POST E-5 @ STA. 173+55

FOR DETAIL OF THICKENED R-WALL SECTION @ SIGN SUPPORT, SEE (S W-22)

4" ϕ DRAIN PIPE FOR LOCATION & DETAIL SEE SHT #165

12/13/67 CHANGE ORDER

SEE SHT. C.O. 157-S FOR REVISION TO RETAINING WALL FROM STA. 174+00 TO 175+50.

BEGIN OBSERVATION PLATFORM @ ℄ STA. 174 + 75.00

OBSERVATION PLATFORM #2 SEE SHEET #176

END OBSERVATION PLATFORM @ ℄ STA. 175 + 25.00

TOP OF WALL EL. = 96.00'

TOP OF WALL EL. = 94.00'

TOP OF WALL EL. = 83.00'

TOP OF WALL EL. = 81.50'

Q-16 (SIM.) SEE (D W-23)

TOP OF 9" WALL EL. = 88.00'

4" WALL BEHIND (SEE PLAN)

W-18-F | W-18-F | W-18-F | W-18-F | W-16-F

W-16-F | W-14-F | W-14-F

PLATFORM EL. = 86.00'

FOR CONC. FINISH ON THIS PAGE OF WALL, SEE SHT. (S W-23)

BOT. OF 9" WALL EL. = 83.00'

(A W-22)

X-1 | X-2 | X-2 | X-2 | X-3 | X-3

EL. = 77.75' | EL. = 78.50' | EL. = 79.50' | EL. = 80.00' | EL. = 80.50'

EL. = 91.17' | EL. = 77.25' | EL. = 76.58' | EL. = 76.08'

EL. = 71.50' | EL. = 70.50' | EL. = 69.50' | EL. = 68.50' | EL. = 67.50' | EL. = 66.50' | EL. = 65.50'

STA. 173 + 98.83

2.0'

24" SEE G.M.P. INVERT EL. 70.55'± ADD. REINF. AROUND DTING. SEE (U W-22)

℄ C.B. #68 STA. 174 + 50.00 INV. 69.75'

STA. 174 + 00.00

MATCH LINE @ ℄ STATION 176 + 00.00

FOR DRAINAGE SYSTEM FOR RET. WALL N-II (STA. 176+20 TO STA. 183 + 06.84 SEE SHT. #165)

REVISION NO. 1

ELEVATION ~ RETAINING WALL NO. N-II

SCALE : HORIZ. 1" = 20'
VERT. 1" = 5'

CONCRETE WALL

3/4" x 6" FLUTED COIL GALV. LOOP, SET IN CONC. WALL 4'-0" ABOVE PLANTING @ 50'-0" ℄

3/4" GALV. EYEBOLTS

TYPICAL MAINTENANCE SAFETY HOOK DETAIL (B W-1)

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

WALL NICHE OCCURS @ :
STA. 174 + 00.00
STA. 177 + 00.00
VINE. STA. 169 + 60.00
VINE. STA. 170 + 80.00
STA. 193 + 71.08

"Y" = $(\frac{X}{30})^2 \times 2.0$

TYP. (A W-1)

HORIZONTAL CONTROL LINE

0.22' | 0.89' | 2.00'

10'-0" | 10'-0" | 10'-0"

WALL SETBACK

WALL FACE ON SMOOTH CURVE

TYPICAL LAYOUT of WALL SETBACK @ NICHE

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

FACE OF RETAINING WALL

BATTER

HORIZONTAL CONTROL LINE

SLOPE 1/2:12

A.C. PAV'T.

4" CONC. SLAB

TYPE "DG" GUTTER & CURB

TYPICAL SECTION (A W-1)

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

REVISED SECTION OF RETAINING WALL N-II REFER TO SHT. #CO 158 A

BEGIN RETAINING WALL @ ℄ STA. 170 + 25.00

BEGIN DOUBLE RETAINING WALL @ ℄ STA. 171 + 30.00

50.0' OBSERVATION PLATFORM #1 SEE SHEET #175

BEGIN OBSERVATION PLATFORM @ ℄ STA. 171 + 90.00

END OBSERVATION PLATFORM @ ℄ STA. 172 + 40.00

FRONTAGE ROAD CURB LINE

3.0' ℄ OF FIRST COUNTERFORT

TYPICAL LADDER, SEE "MANHOLE RUNG" DETAIL ON SHEET #108

FOR DETAIL OF 9" WALL, SEE SECTION (A W-22)

TYPICAL COUNTERFORT SPACING THROUGHT

5.0' | 10.0' | 10.0' | 5.0'

50.0' OBSERVATION PLATFORM #2 SEE SHEET #176

BEGIN OBSERVATION PLATFORM @ ℄ STA. 174 + 75.00

END OBSERVATION PLATFORM @ ℄ STA. 175 + 25.00

TYPICAL LADDER

MAINTENANCE SAFETY HOOKS 4'-0" ABOVE PLANTING LEVEL @ 50'-0"± (TYPICAL) SEE DETAIL (B W-1)

PAVED SHOULDER

HORIZONTAL CONTROL LINE

TYPE "DG" CURB & GUTTER

TYP. LADDER

STA. 173 + 98.83

12/13/67 CHANGE ORDER

SEE SHT C.O. 157-S FOR REVISION TO RETAINING WALL FROM STA. 174+00 TO STA. 175+50.

Az 343° 08' 30"

10.0' | 42.0'

170 | 171 | ℄ LUNALILO FREEWAY | 172 | 173 | 174 | 175

WESTBOUND - LUNALILO FREEWAY

℄ C.B. #68 STA. 174 + 50.00 INV. 69.75'

℄ OF SIGN POST E-5 @ STA. 173+55

MATCH LINE @ ℄ STA. 176 + 00.00

REVISION NO. 1

PLAN ~ RETAINING WALL NO. N-II

SCALE : 1" = 20'

NOTE: OBSERVATION PLATFORMS #1, #2 AND #3 SHALL BE CONSIDERED AS PARTS OF RETAINING WALL NO. N-II AND WILL BE PAID FOR UNDER APPLICABLE CONTRACT ITEMS FOR RETAINING WALLS.

ORIGINAL PLAN | NOTE BOOK No.

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

ALFRED A. YEE REGISTERED PROFESSIONAL ENGINEER HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Harvey Y. D. Leung
Signature
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-II
℄ STA. 170+25 TO ℄ STA. 176+00

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº I-HI-1(31) UNIT 1

SHEET No. W-1 OF 31 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

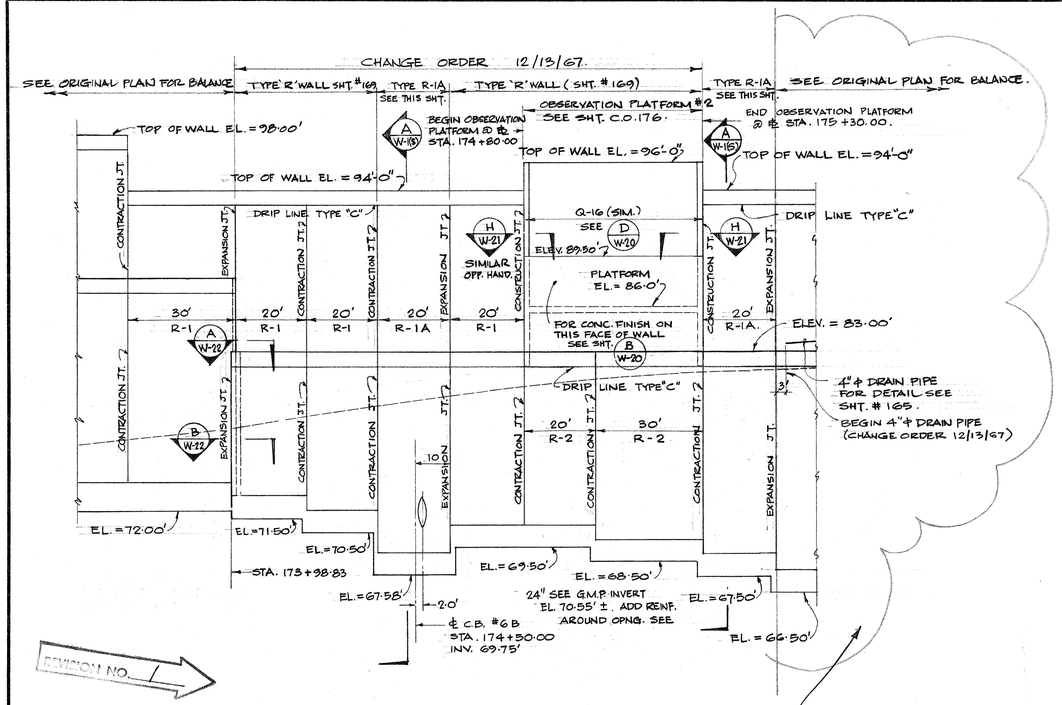
THIS SHEET SUPERCEDES SHEET 157

CO 157

A.A. Yee job no 66-87-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

REV. 1 March 1968
REDESIGNED WALLS

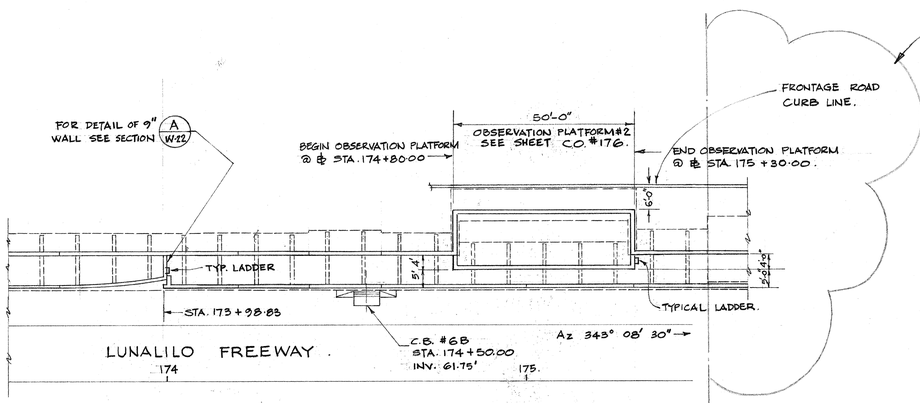


REVISION NO. 1

ELEVATION ~ RETAINING WALL.

SCALE : HORIZ. 1" = 20'-0"
VERT. 1" = 5'-0"

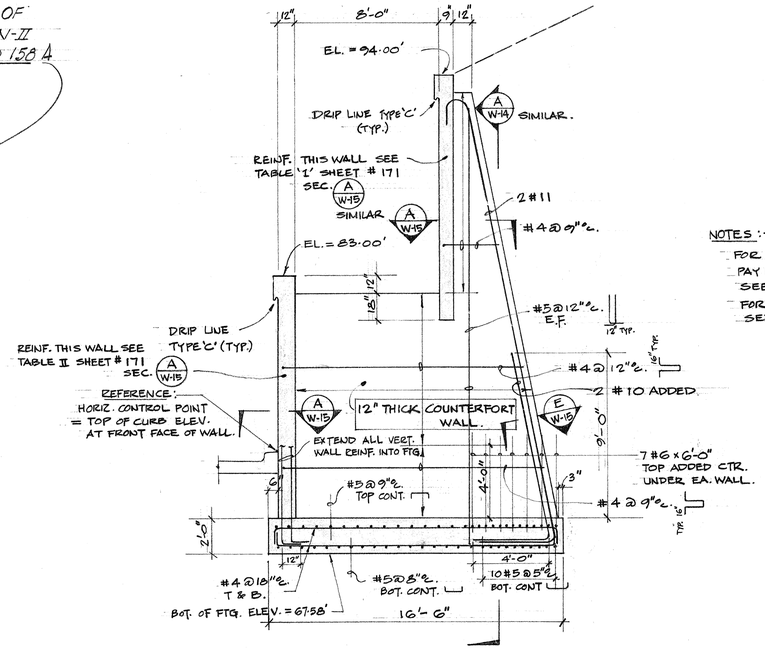
REVISED SECTION OF RETAINING WALL N-II REFER TO SHT. # CO 158 4



REVISION NO. 1

PLAN ~ RETAINING WALL

SCALE : HORIZ. 1" = 20'-0"
VERT. 1" = 5'-0"



NOTES :-
- FOR STRUCTURAL EXCAVATION PAY LINE & BACKFILL DETAILS SEE TYPE R. WALL. SHT. #169.
- FOR CONT. JT. WATERPROOFING SEE STANDARD SPECS.

COUNTERFORT WALL TYPE R-1A

TYPICAL SECTION A W-1(S)

SCALE 1/4" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REVISION TO R.C. RETAINING WALL Nº N-II. FROM STA. 174+00 TO 175+50 (ONLY)

INTERSTATE ROUTE H-1.
(LUNALILO FREEWAY)
PALE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-HI-1 (31) UNIT 1

SHEET No. W-16 OF SHEETS

CO 157 S

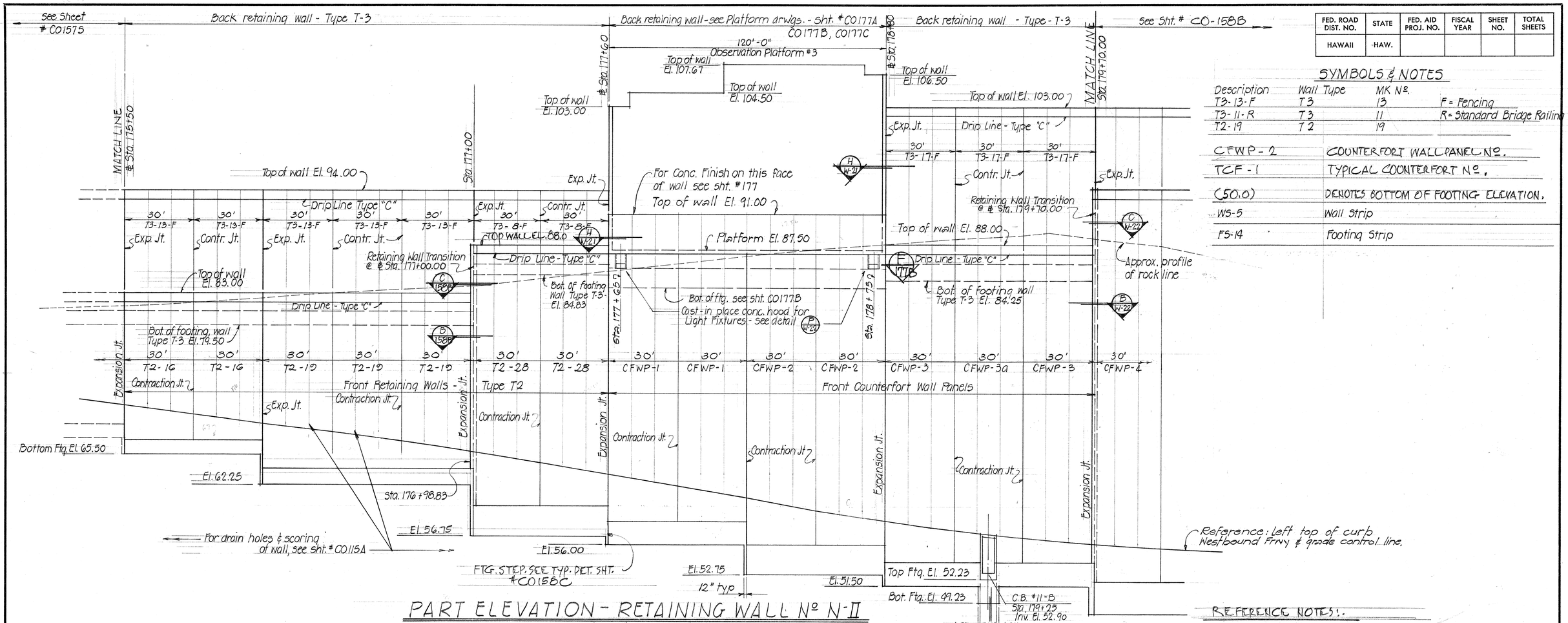
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

SYMBOLS & NOTES

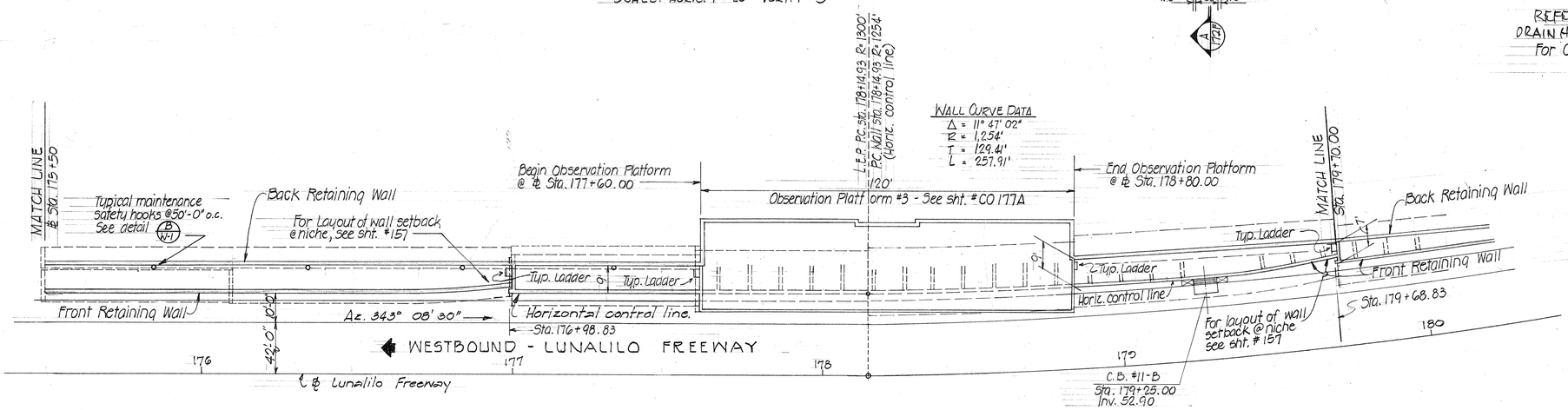
Description	Wall Type	MK Nº.	
T3-13-F	T3	13	F = Fencing
T3-11-R	T3	11	R = Standard Bridge Railing
T2-19	T2	19	

CFWP-2	COUNTERFORT WALL PANEL Nº.
TCF-1	TYPICAL COUNTERFORT Nº.
(50.0)	DENOTES BOTTOM OF FOOTING ELEVATION.
WS-5	Wall Strip
FS-14	Footing Strip



PART ELEVATION - RETAINING WALL Nº N-II

SCALE: HORIZ. 1" = 20' - VERT. 1" = 5'



PART PLAN - RETAINING WALL Nº N-II

Scale: 1" = 20'

REFERENCE NOTES:

REFER TO SHEET Nº C0165 FOR WALL SCORING & DRAIN HOLE LAYOUT

For Counterfort Wall Panel Detail refer to sheet # C0172C

ORIGINAL PLAN

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-II
℄ Sta 175+50 to WALL Sta. 179+70.
PART LAYOUT PLAN & ELEVATION

INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
FA: Proj. No. I-HI-1(31) UNIT I
MARCH 1968

SHEET No. OF SHEETS

PRINTED ON NO. 1000H CLEARPRINT

THIS SHEET SUPERSEDES SHT 158

C0158

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

Fencing — Metal Bridge Railing - Measured horizontally along inside edge of railing — 1'-4"

Back Retaining Wall Type T-3 — Retaining Wall Nº N-III

Ret. Wall transition @ ℄ Sta. 179+86.00

MATCH LINE Sta 179+70.00

Top of wall El. 103.00

El. 103.00 — Sta. 180+20.00 — C.G. Sta. 180+30.00 — Sta. 180+42.00

Exp. Jt. — Cont. Jt. — 20' V.C. — B.V.C. El. 103.00 — E.V.C. El. 102.44

Exp. Jt. — Cont. Jt. — -5.5866% — B.V.C. El. 96.50 Sta. 181+50.00 — 60' V.C. — E.V.C. Sta. 181+60.00

El. 93.97 — Sta. 182+10.00 — -2.1666% — El. 93.32 Sta. 182+40 — El. 92.61 Sta. 182+70 — El. 92.54 Sta. 182+75.84 — 30.00' V.C. — E.V.C. — El. 92.50

30' — 30' — 30' — 30' — 30' — 40' — 30' — 30' — 30' — 35.84'

T3-11-F — T3-11-R — T3-11-R — T3-11-R — T3-11-R — T3-8-R

Top of wall El. 94.00

Drip Line-Type "C"

Bot of ftg. Wall Type T3 El. 90.50

C.G. Sta. 181+80.00 El. 94.62

Drip Line Type "C"

C.G. Sta. 182+90.84 El. 92.20

Match Line ℄ Wall Sta. 183+05.84 Vineyard Sta. 163+91.84

Expansion Jt. — Contraction Jt. — Expansion Jt. — Contraction Jt. — Expansion Jt. — Contraction Jt. — Expansion Jt. — Contraction Jt.

Bott. ftg El. 74.0

Cast in drilled hole conc. pile.

Approx. profile of rock line

30' — 30' — 30' — 30' — 30' — 40' — 20' — 30' — 30' — 30' — 35.84'

CFWP-4 31.17' — CFWP-4 — CFWP-4 — CFWP-4 — CFWP-4 — PRW-1 — CFWP-5A — CFWP-5 — CFWP-6 — CFWP-7 — CFWP-8

Front Counterfort Wall Panels — See sht. #CO-172L — See sht. #CO-172D(6) — Front Counterfort Wall Panel

Reference - Left top of curb, West Bound Freeway & Grade Control Line

Finish grade line along front face of wall

Bot. Ftg. El. 54.25

El. 52.75

NEAT LINE EXCAVATION

El. 50.50

Ftg step see typ. det. sht. # CO 158c

1'-0" typ.

Bott. curtain wall El. 50.00

Exist. 20" water & conc. jacket.

Exist. 18" water & conc. jacket.

Pile tip El. See sht. #CO 172L

Bot. Ftg. El. 48.50

El. 48.50

For drain holes & scoring along wall, see sht. #CO165A

PART ELEVATION - RETAINING WALL Nº N-II

SCALE: HORZ. 1" = 20' - VERT. 1" = 5'

ELEVATION

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

Back Ret. Wall — Top Ret. Wall & Top Cut-off Wall — Top Ret. Wall ftg & Bot Cut-off Wall — Front Ret. Wall

Expansion Jt. See Wall Elev. — 9" — Cutoff Wall — Varies

Wall below — #4@12" ea. way & ea. face — 2-#9 cont. from ftg — 2'-0"

#4@12" cont — #4@18 3'-0" — Parallel with Front Face — 12" — 1'-2" — 12" Typ. — Front Face of Wall

SECTION

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

℄ Counterfort — Wall above — 9" — Cutoff Wall — Expansion Jt. See Wall Elev. — Varies

2-#9 cont. from ftg — 2'-0" — #4@12 cont — #4@18 3'-0" — Parallel with Front Face — 2-#4 cont — 12" — 1'-2" — 12" Typ. — Front Face of Wall

SECTION

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

PART PLAN - RETAINING WALL Nº N-II

SCALE: 1" = 20'

MATCH LINE Sta. 179+70.00 — 25'-0" — 25'-0" — Typ. Ladder — For layout of wall setback & niche, See Sht #157 & #158B — Back Wall - smooth curve — Horizontal control line — 10' — 42' — 180

Sta. 179+68.83 — WESTBOUND LANES

P.O.C. Wall Sta. 180+55.04 — A.C. Wall Sta. 180+92.54 R=1254' — L=289.32' — Curve Data: Δ = 20°48'28" R = 289.32' T = 53.12' L = 105.07'

End double ret. wall Sta. 181+60.00 — Wall Sta. 181+89.36 — Wall Ctr. Line Sta. 181+94.72 — Wall Sta. 182+35.05

See sht. #116 for detail of connection of bridge abutment to retaining wall

Frontage Rd. "J" curb line — 55.14' — See det. D W22 — Front Ret. Wall — 42' 310°35'00" — B.V.C. Sta. 163+19.11 — Horiz. control line — Lunalilo Fwy. Westbound Curb

℄ Bearing - Abut. #2 Bridge ℄

MATCH LINE @ Wall Sta. 183+05.84 Vineyard Sta. 163+91.84

REVISED ESTIMATED QUANTITIES Sta. 175+50 to Sta. 183+05.84

Item / Description	Class A-1 Concrete	Reinforcing Steel	Structural Excavation	Filter Material	Cast in Drilled Hole Conc. Piles	
Revised Quantities	5,722 c.y.	857,359 lbs.	7,659 c.y.	901 c.y.	713 L.F.	
less Orig. Quantities	2,604 c.y.	313,919 lbs.	4,118 c.y.	317 c.y.	—	
Differences	3,118 c.y.	543,440 lbs.	3,541 c.y.	584 c.y.	713 Lf	

REFERENCE NOTES

1. Refer to sheet #CO165 for wall scoring & drain hole layout.
2. For Counterfort Wall Panel detail refer to sheet CO172C.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No. N-II
WALL STA. 179+70 TO STA. 183+05.84
PART LAYOUT PLAN & ELEVATION
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
FA! Proj No. I-HI-1(31) UNIT 1
MARCH 1968

SHEET No. OF SHEETS

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

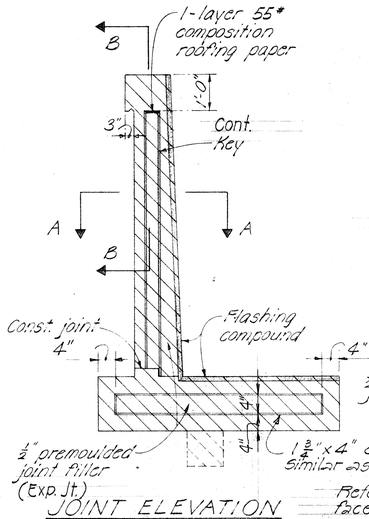
PRINTED ON NO. 1000H CLEARPRINT

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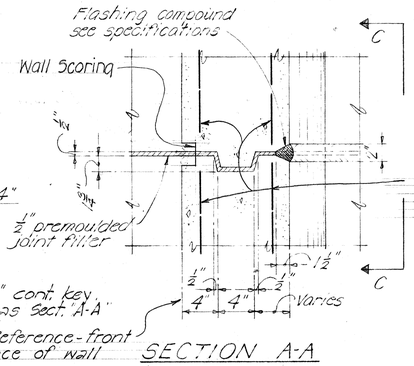
CO 158 B

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

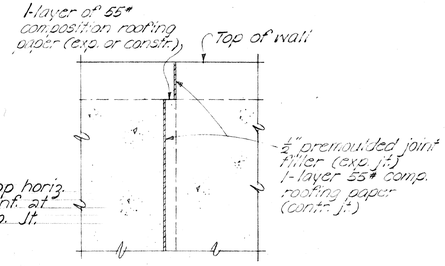
NOTE
Spacing of joints
Exp. = 90'-0" max.
Contr. = 30'-0" max.



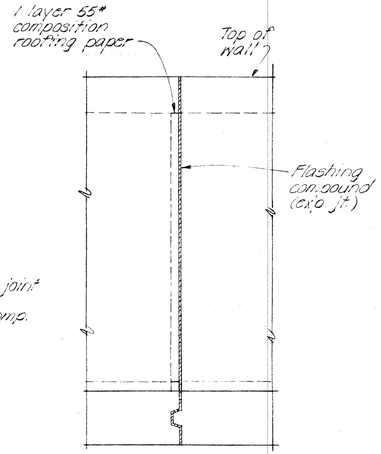
JOINT ELEVATION



SECTION A-A



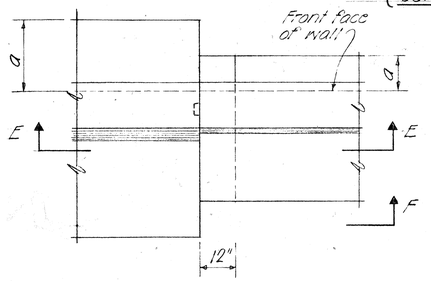
SECTION B-B



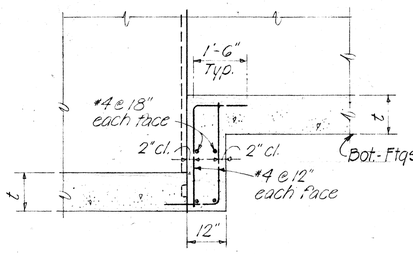
SECTION C-C

TYPICAL EXPANSION JOINT DETAILS No Scale

(CONTRACTION JOINT SIMILAR - EXCEPT AS OTHERWISE NOTED)

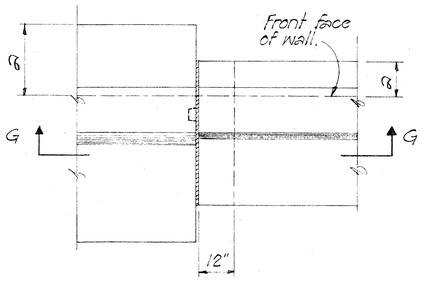


PLAN

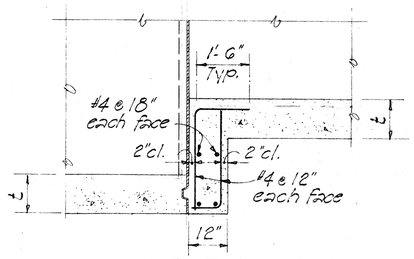


SECTION E-E

AT CONTRACTION JOINT



PLAN



SECTION G-G

AT EXPANSION JOINT

TYPICAL FOOTING STEP-UP DETAILS No Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No N-II
@ Sta 175+50 to Sta 183+05.84
TYPICAL RETAINING WALL and
COUNTERFORT WALL JOINT DETAILS
INTERSTATE ROUTE H-1 LUNALILO FRWY
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1
MARCH 1968

SHEET No. OF SHEETS

C015SC

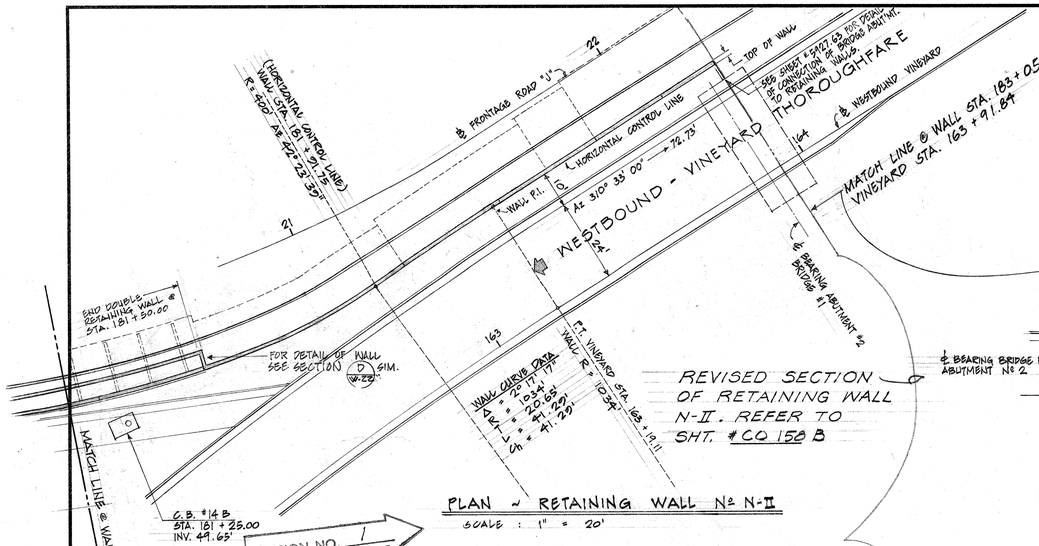
Typical Retaining wall & Counterfort wall joint details

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 (31) UNIT 1	1967	159	292

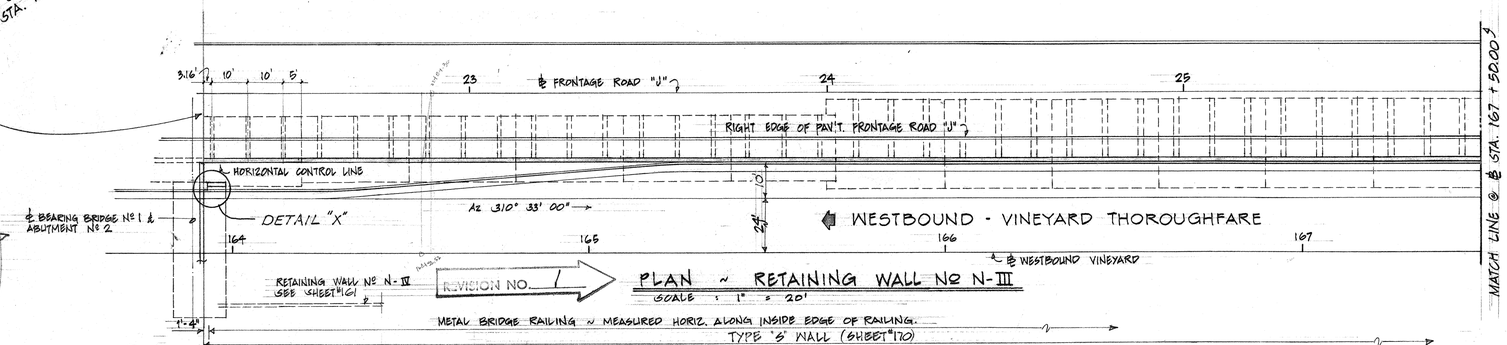
REV. 1 March 1968
REDESIGNED WALLS

NOTES:
1. ALL RAILING LENGTHS GIVEN ARE HORIZONTAL MEASUREMENTS.



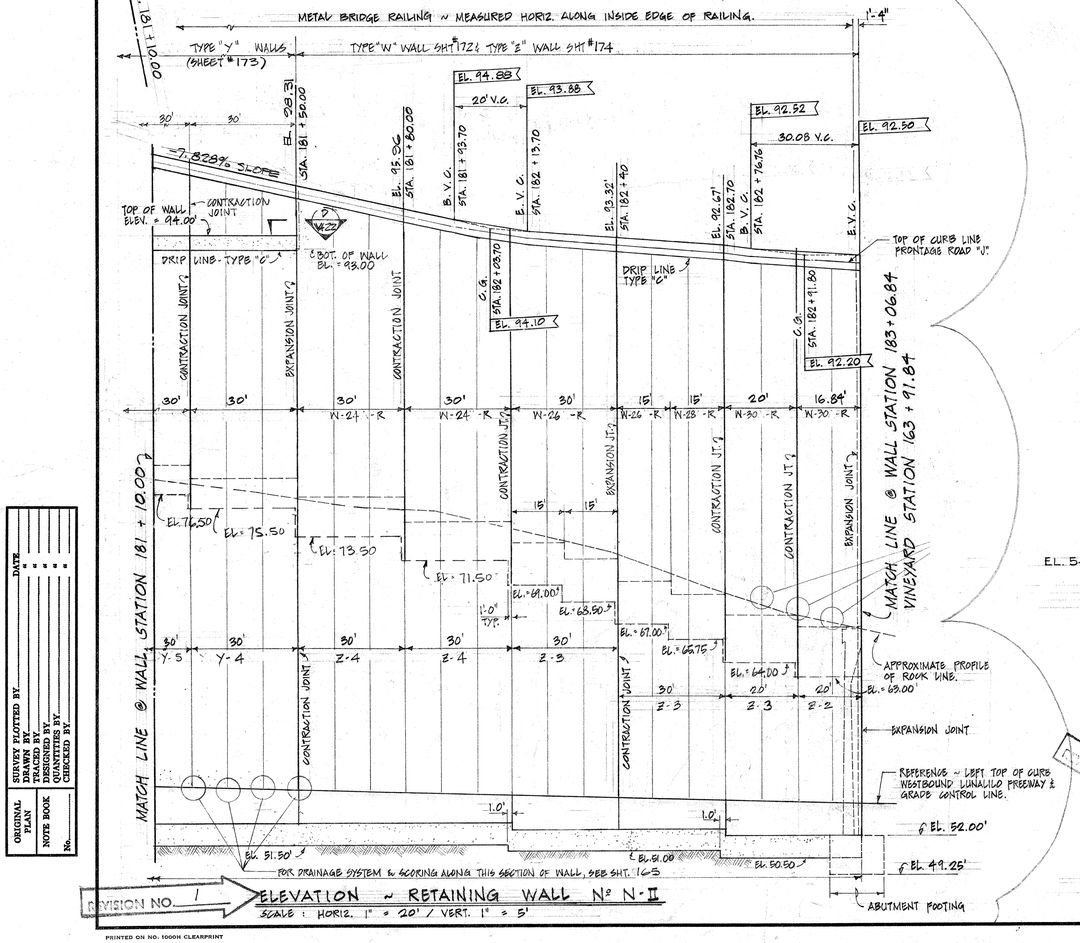
PLAN ~ RETAINING WALL Nº N-II
SCALE : 1" = 20'

REVISION NO. 1



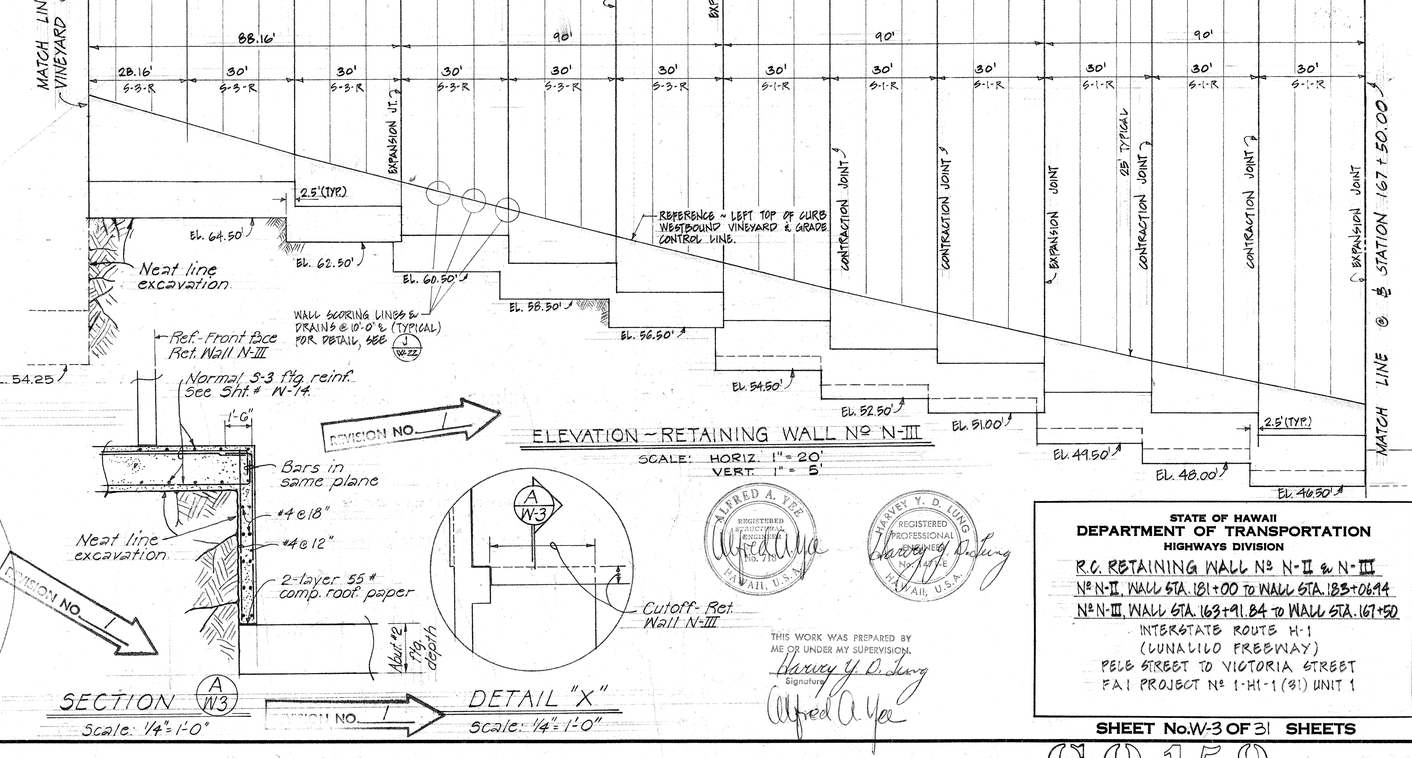
REVISION NO. 1

PLAN ~ RETAINING WALL Nº N-III
SCALE : 1" = 20'



REVISION NO. 1

ELEVATION ~ RETAINING WALL Nº N-II
SCALE : HORIZ. 1" = 20' / VERT. 1" = 5'



ELEVATION ~ RETAINING WALL Nº N-III
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

ALFRED A. YEE REGISTERED PROFESSIONAL ENGINEER NO. 710 HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER NO. 4476-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: Harvey Y. D. Lung
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-II & N-III
Nº N-II, WALL STA. 181+00 TO WALL STA. 183+06.84
Nº N-III, WALL STA. 163+91.84 TO WALL STA. 167+50
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-H1-1 (31) UNIT 1

SHEET No. W-3 OF 31 SHEETS

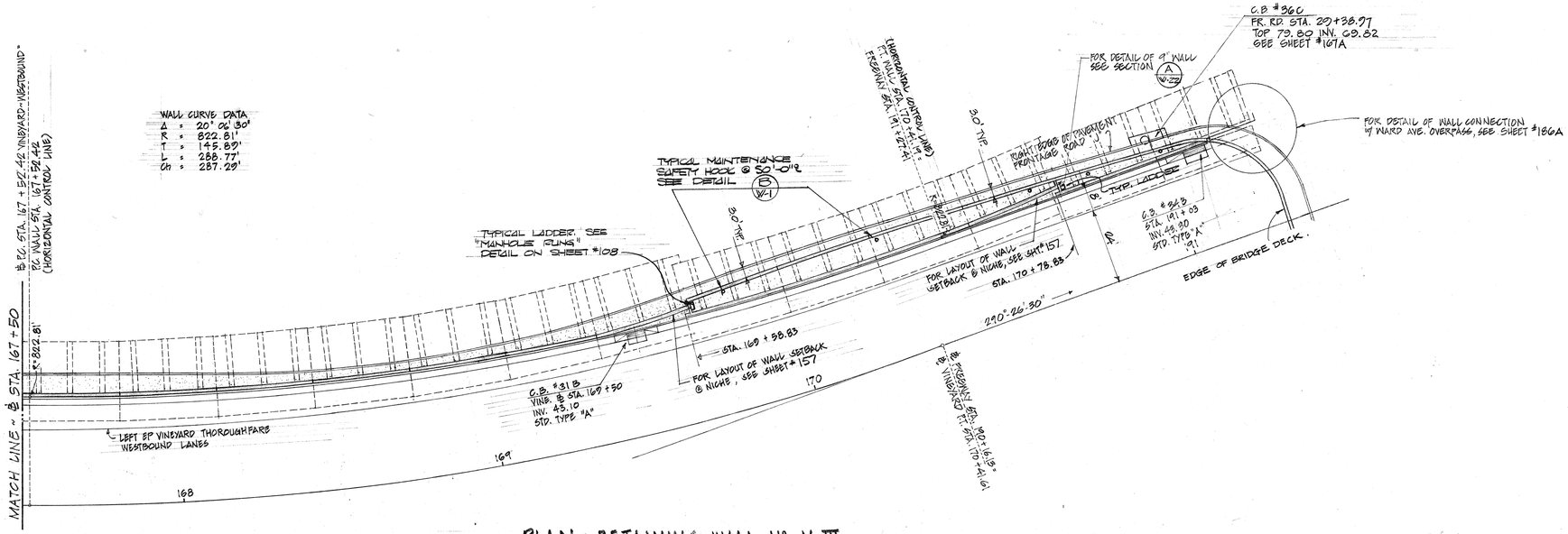
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

PRINTED ON NO. 1000H CLEARPRINT

CO 159

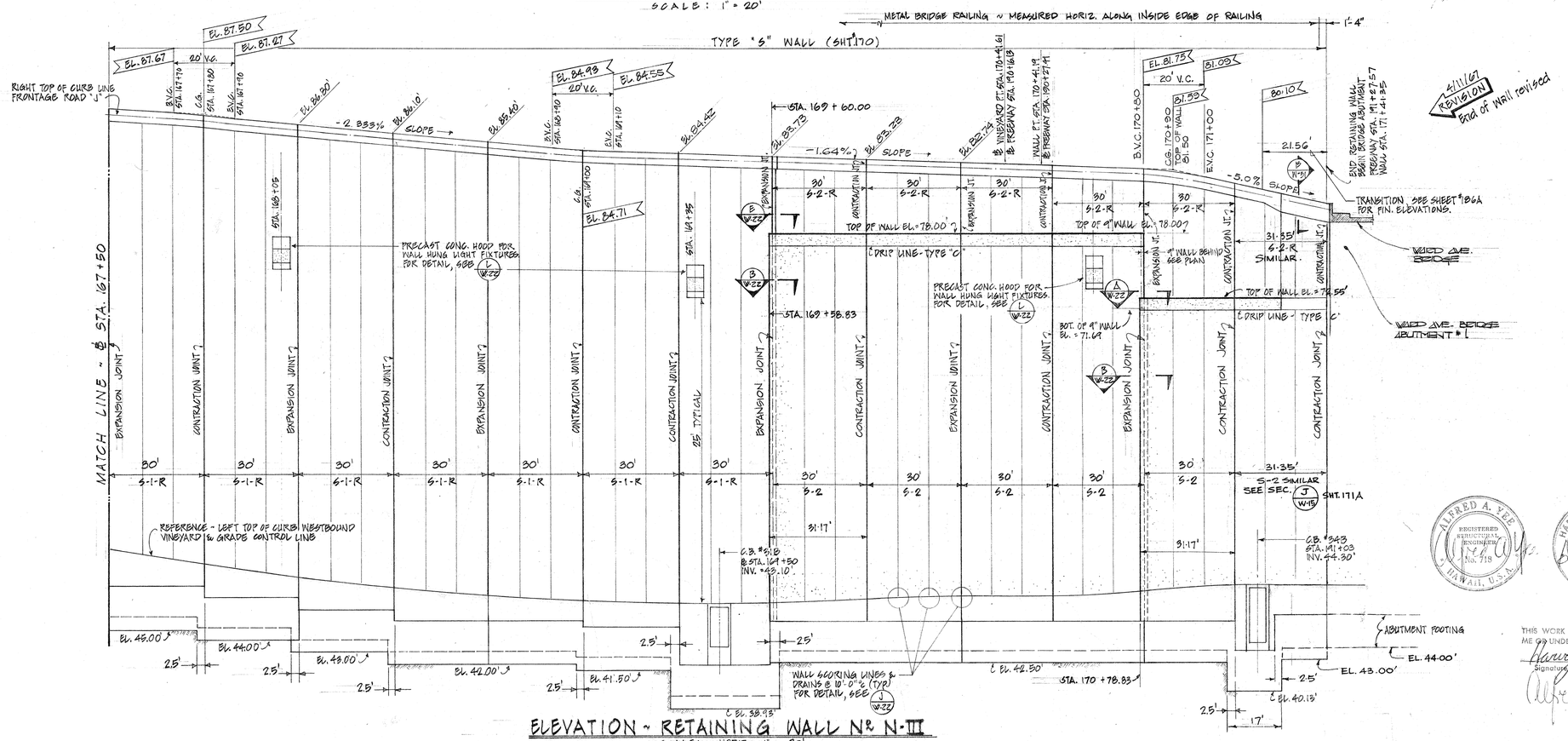
A.A. Yee job no. 66-87-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT# 1	1967	160A	292



PLAN - RETAINING WALL Nº N-III

SCALE: 1" = 20'



ELEVATION - RETAINING WALL Nº N-III

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

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

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 718 HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER No. 4197 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature Harvey Y. D. Lung
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-III
℄ STA. 167+50 TO ℄ STA. 171+53.70
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-HI-1(31) UNIT 1

4/11/67

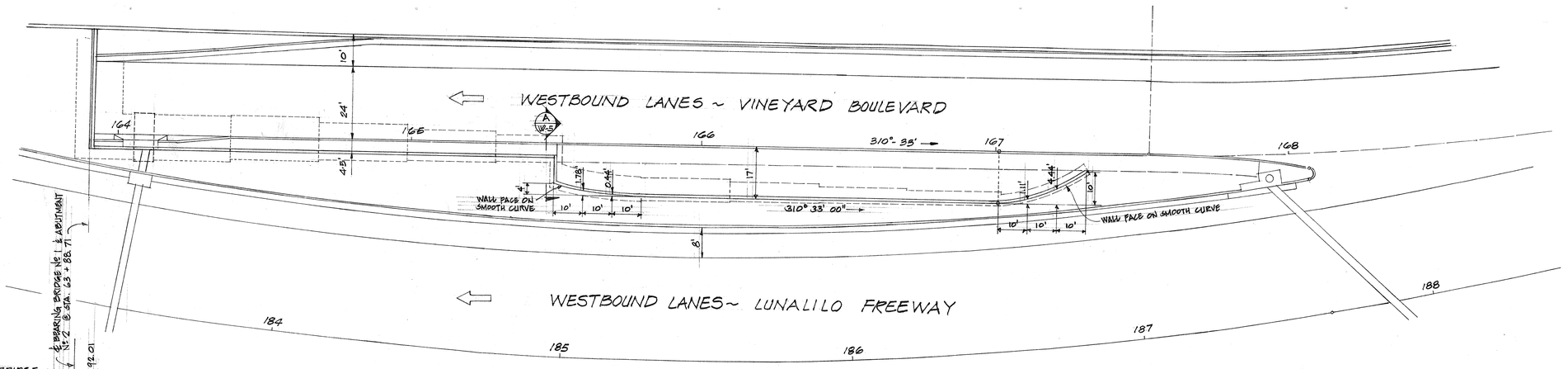
SHEET No. W-4 OF 31 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

THIS SHEET SUPERCEDES SHEET 160

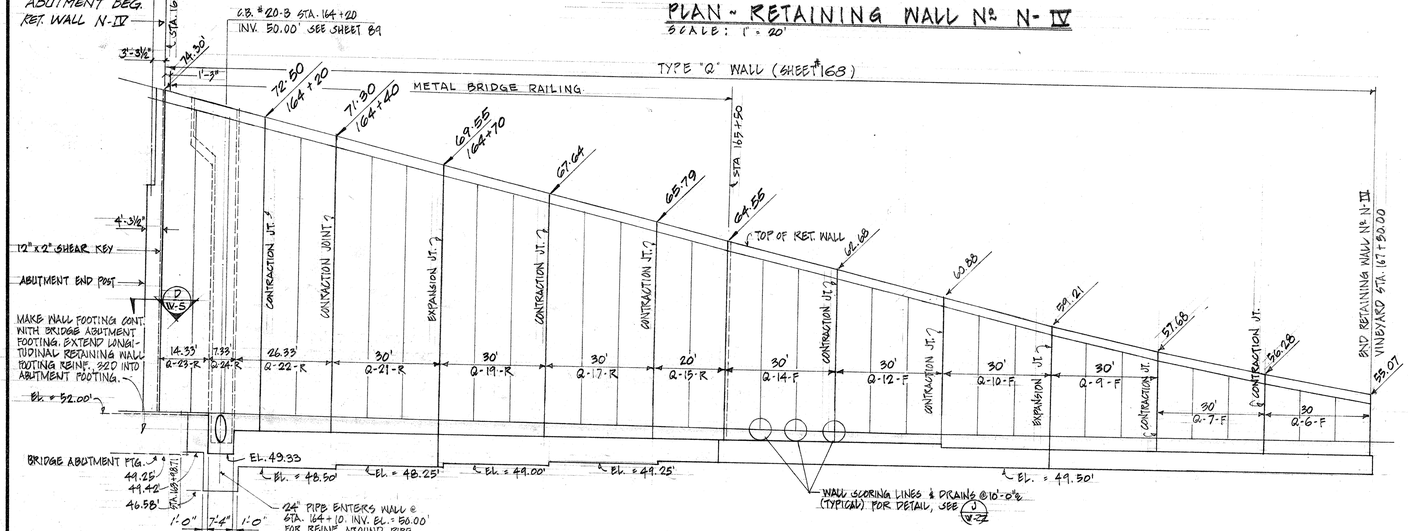
160A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	161	292



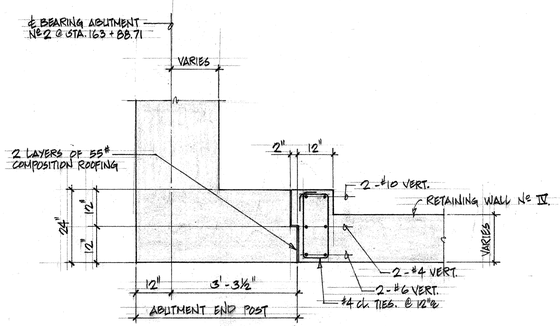
PLAN - RETAINING WALL Nº N-IV

SCALE: 1" = 20'



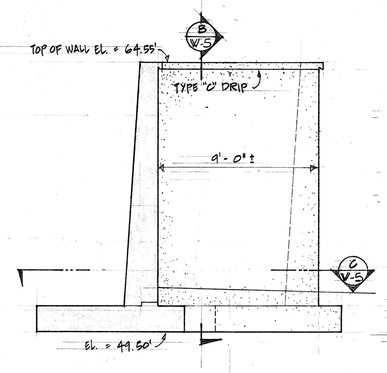
ELEVATION ~ RETAINING WALL Nº N-IV

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



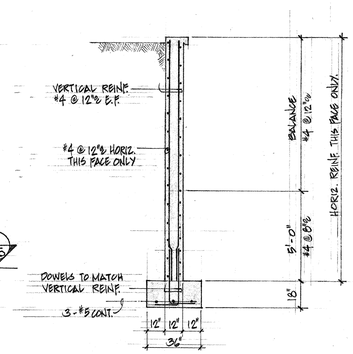
SECTION (D / W-5)

SCALE: ½" = 1'-0"



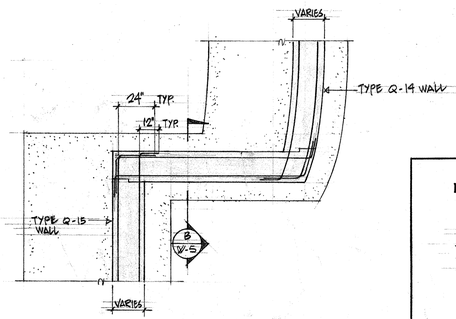
SECTION (A / W-5)

SCALE: ¼" = 1'-0"



SECTION (B / W-5)

SCALE: ¼" = 1'-0"



PLAN SECTION (C / W-5)

SCALE: ¼" = 1'-0"

ALFRED A. YEE — REGISTERED STRUCTURAL ENGINEER — No. S-1515 — HAWAII, U.S.A.

HARVEY Y. D. LUNG — REGISTERED PROFESSIONAL ENGINEER — No. 7499 — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Signature: Harvey Y. D. Lung

Alfred A. Yee

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-IV
℄ STA. 163+91.84 TO ℄ STA. 167+80.00

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº I-HI-1(31) UNIT 1

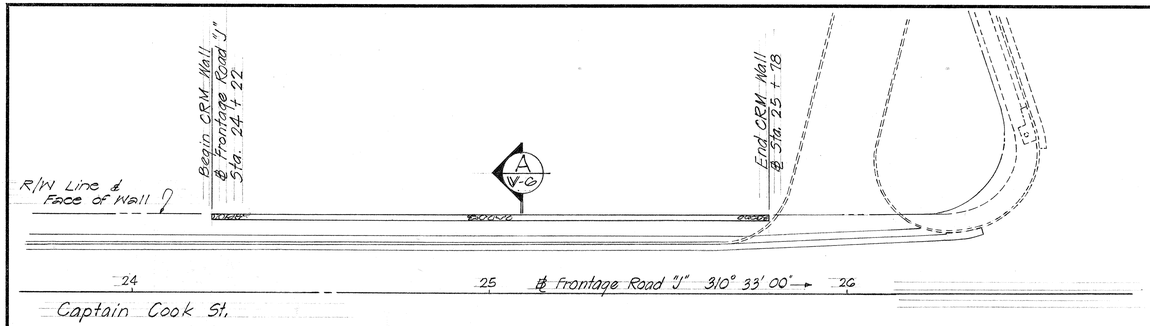
SHEET No. W-5 OF 31 SHEETS

161

PRINTED ON NO. 1000H CLEARPRINT

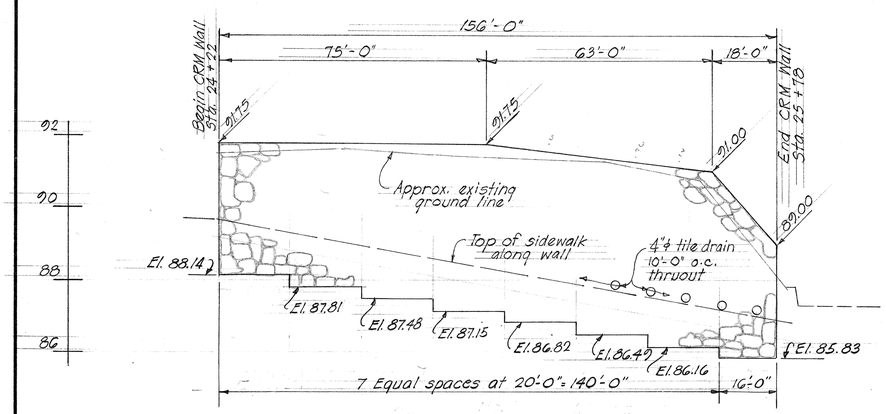
A.A. Yee 3rd rev. 4-67

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	162	272



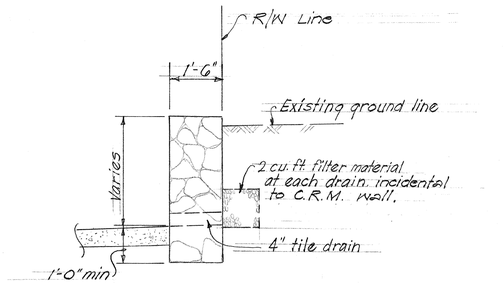
PLAN - CRM WALL # N-V

Scale: 1" = 20'



ELEVATION - CRM WALL Nº N-V

Scale: Horiz. 1" = 20'-0"
Vert. 1" = 2'-0"



TYPICAL CRM WALL SECTION

A V-G

Scale: 1" = 2'

NOTES

Reference: Refer to Sheet No. 103 for additional wall details.

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
TRACED BY "
DRAWN BY "
DESIGNED BY "
QUANTITIES BY "
CHECKED BY July 1966

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 116 HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER No. 1776 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Harvey Y. D. Lung
Signature
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

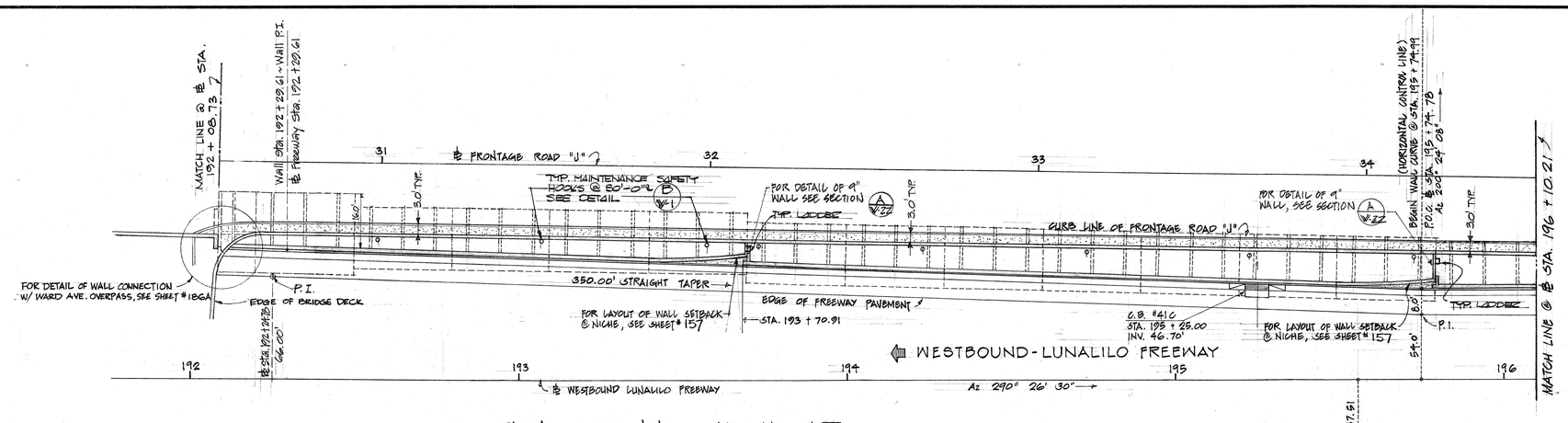
CRM RETAINING WALL
Nº N-V
Frontage Road "J" Sta. 24 + 22 to Sta. 25 + 78
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. Nº I-HI-1(31) Unit 1 May 1966

SHEET No. V-G OF 31 SHEETS

162

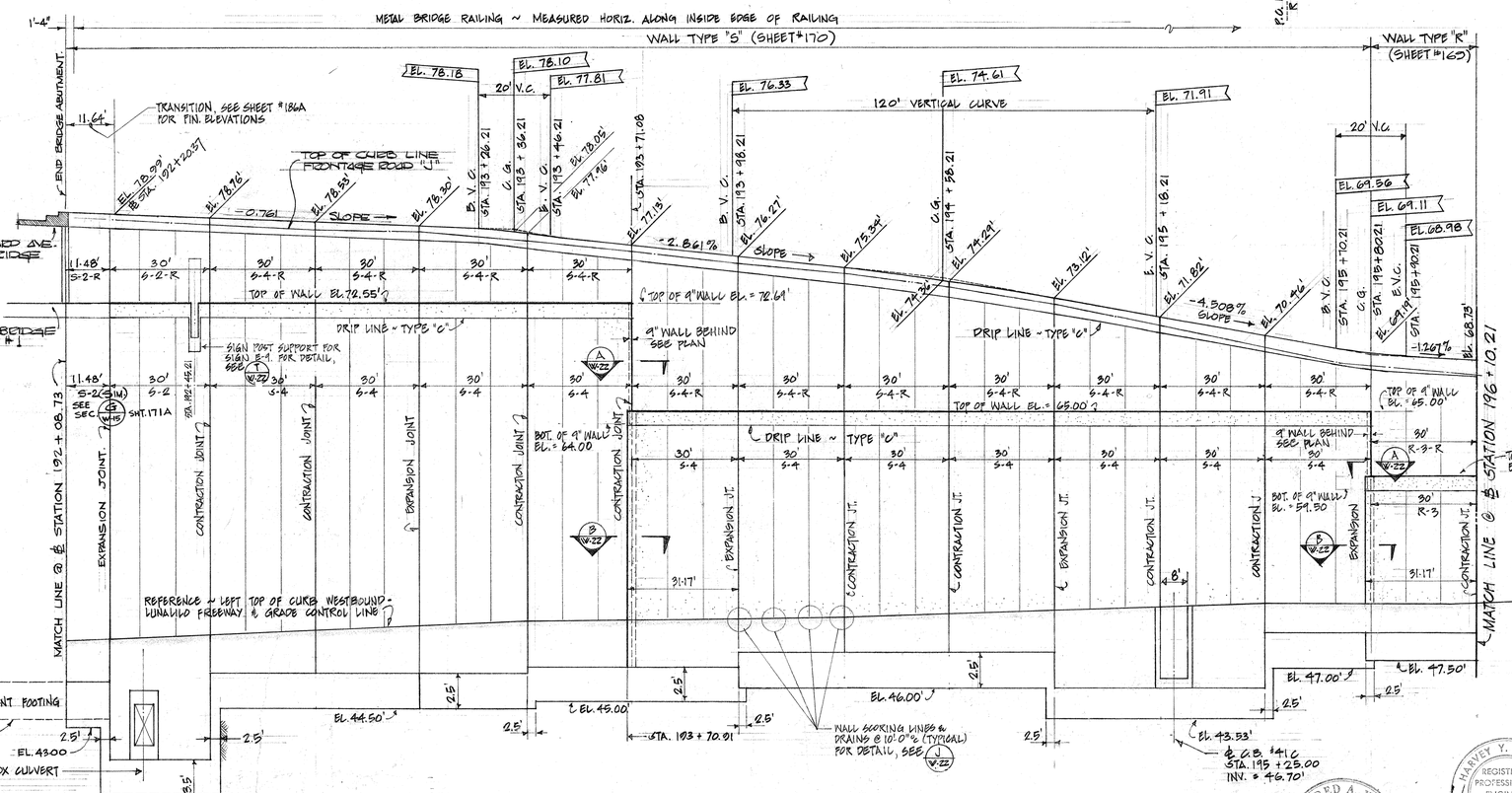
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT#1	1967	163A	292



PLAN ~ RETAINING WALL NO N-VI

SCALE : 1" = 20'



ELEVATION ~ RETAINING WALL NO N-VI

SCALE : HORIZ. 1" = 20'
VERT. 1" = 5'

4/11/67
REVISION
BEG. OF WALL REVISED

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Harvey Y. D. Lung
(Signature)
Alfred A. Yee

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER No. 4431-E HAWAII, U.S.A.

ALFRED A. YEE REGISTERED INSTRUMENT MAN No. 719 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-VI
℄ STA. 192+21.08 TO ℄ STA. 196+10.21
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PALE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-HI-1(31) UNIT 1
4/11/67

SHEET No. W-7 OF 31 SHEETS

THIS SHEET SUPERCEDES SHEET 163

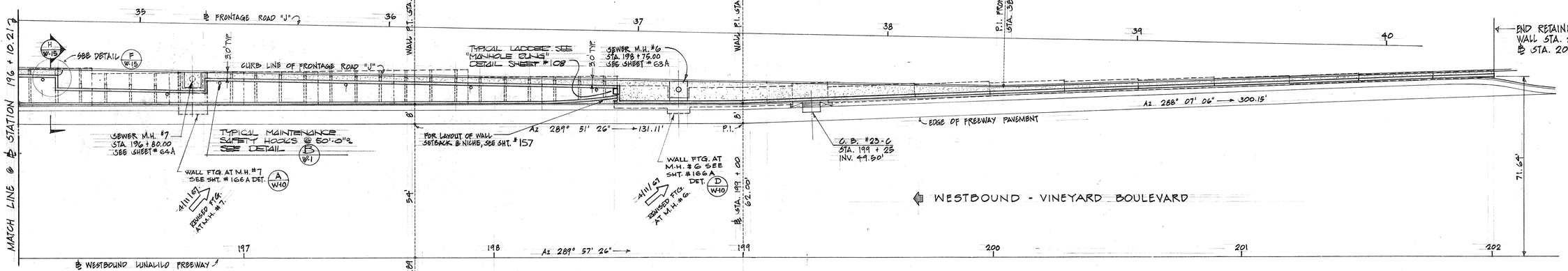
163A

A.A. Yee job no. 66-87-2

PRINTED ON NO. 1000H CLEARPRINT

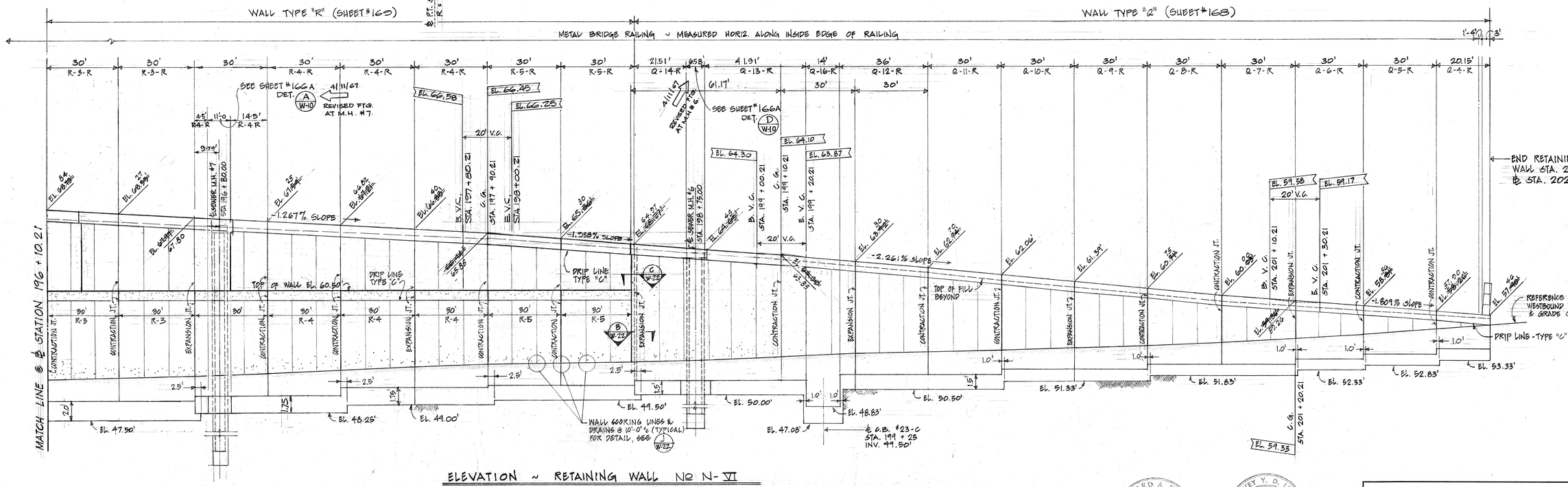
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT#1	1967	164A	292

WALL CURVE DATA
Δ = 0° 26' 08"
R = 24,938.00'
Lc = 194.11'



PLAN ~ RETAINING WALL NO N-VI

SCALE : 1" = 20'



ELEVATION ~ RETAINING WALL NO N-VI

SCALE : HORIZ. 1" = 20'
VERT. 1" = 5'

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

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 118 HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER No. 4778-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Harvey Y. Dung
Signature
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL NO N-VI
℄ STA. 196+10.21 TO ℄ STA. 202+00

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT NO 1-HI-1(91) UNIT 1

4/11/67.

SHEET No. W-30 OF 31 SHEETS

THIS SHEET SUPERCEDES SHEET 164.

164A

A. A. Yee job no. 66-67-2

PRINTED ON NO. 1000H CLEARPRINT

REV. 1 March 1968
REDESIGNED WALLS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT #1	1967	165	292

NOTES:

1. ALL EXCAVATION FOR DRAIN PIPE TROUGHS, FILTER MATERIAL, PERFORATED PIPES, AND FITTINGS, SHOWN ON THIS SHEET SHALL BE INCIDENTAL TO CLASS A-1 CONCRETE & WILL NOT BE PAID FOR SEPARATELY.
2. ALL PERFORATED ASBESTOS CEMENT DRAIN PIPES TO HAVE ½" ϕ HOLES 3" ϕ 4 ROWS ALONG ENTIRE LENGTH OF PIPE. LONGITUDINAL PIPES SHALL BE PLACED WITH THE HOLES AT THE BOTTOM. VERTICAL PIPES SHALL BE PLACED WITH THE HOLES ON THE BACKFACE. PIPES SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR "PERFORATED ASBESTOS CEMENT PIPE FOR UNDERDRAINAGE", AASHO DESIG. M189.



REVISED SECTION OF RETAINING WALL N-II. REFER TO SHT # CO 165A

BEGIN SPECIAL WALL DRAINAGE SYSTEM - WALL STA. 175 + 20

STA. 175+50

4"ϕ DRAIN PIPE CONT. TO STA. 175+80

4"ϕ CONT. DRAIN PIPE FOR LOCATION, SEE DETAIL (E W-9)

WALL SCORING LINES @ 10'-0" ℄ TYPICAL

4"ϕ CONT. DRAIN PIPE FOR LOCATION SEE DETAIL (E W-9)

WALL SCORING LINE & WEEP HOLES @ 10'-0" SEE SECTION (A W-9)

REFERENCE ϕ - TOP OF VERTICAL DRAIN

5'-0" (TYPICAL)

VERTICAL 6"ϕ PERFORATED CEMENT ASBESTOS DRAIN PIPES AT 20'-0" ℄

(C W-9) TYP.

(B W-9) TYP.

7'-0"

INTERMEDIATE CONT. LONGITUDINAL 6"ϕ PERFORATED CEMENT ASBESTOS DRAIN PIPE

10'-0" MAX.

(D W-9) TYP.

(C W-9) TYP.

(B W-9) TYP.

MATCH LINE @ WALL STATION 181 + 10.00

BOTTOM OF FOOTING

WALL STA. 176 +00

BOT. CONT. 6"ϕ PERFORATED CEMENT ASBESTOS DRAIN PIPE

MATCH LINE @ WALL STA. 181 + 10.00

REVISED SECTION OF RETAINING WALL N-II. REFER TO SHT # ____

INTERMEDIATE CONT. LONGIT. 6"ϕ PERFORATED CEMENT ASBESTOS DRAIN PIPES

(B W-9) TYP.

(C W-9) TYP.

CONT. VERTICAL 6"ϕ CEMENT DRAIN PIPES @ 20'-0"℄

10'-0" MAX

7'-0" MAX

5'-0" ± TYPICAL

BOT. OF FOOTING

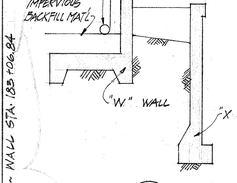
END SPECIAL WALL DRAINAGE SYSTEM - WALL STA. 183 + 06.84

WALL SCORING LINES & WEEP HOLES @ 10'-0" ℄ TYPICAL FOR DETAIL SEE SECT. (A W-9)

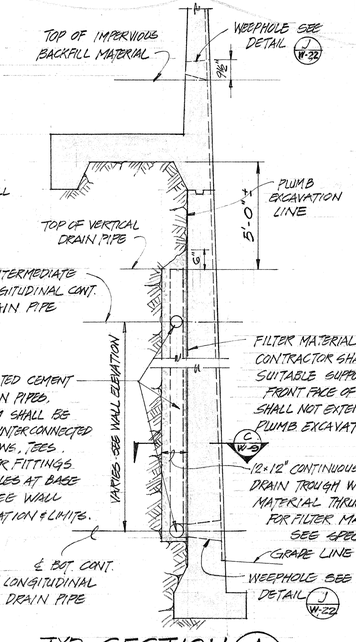
ELEVATION - RETAINING WALL NO. N-II
SPECIAL WALL DRAINAGE SYSTEM

SCALE: HORIZ. 1" = 20'-0"
VERT. 1" = 5'-0"

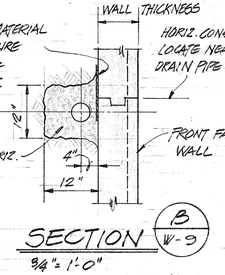
REVISION NO. 1



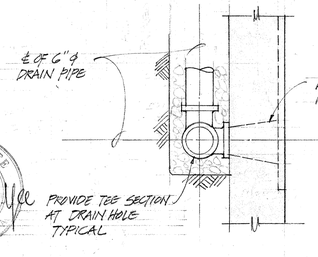
DETAIL (E W-9)
NO SCALE



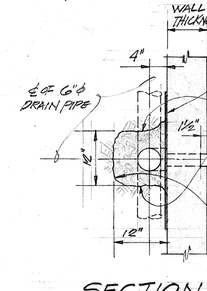
TYP. SECTION (A W-9)
NO SCALE



SECTION (B W-9)
3/4" = 1'-0"



DETAIL (D W-9)
NO SCALE



SECTION (C W-9)
3/4" = 1'-0"

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 1 HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER No. 4176 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature Harvey Y. D. Lung
Signature Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL NO. N-II
(STA. 175+20 TO STA. 183+06.84)
DRAINAGE SYSTEM & DETAIL
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PALE STREET TO VICTORIA STREET
F.A.I PROJECT NO. I-HI-1(31) UNIT 1

SHEET No. W-9 OF 31 SHEETS

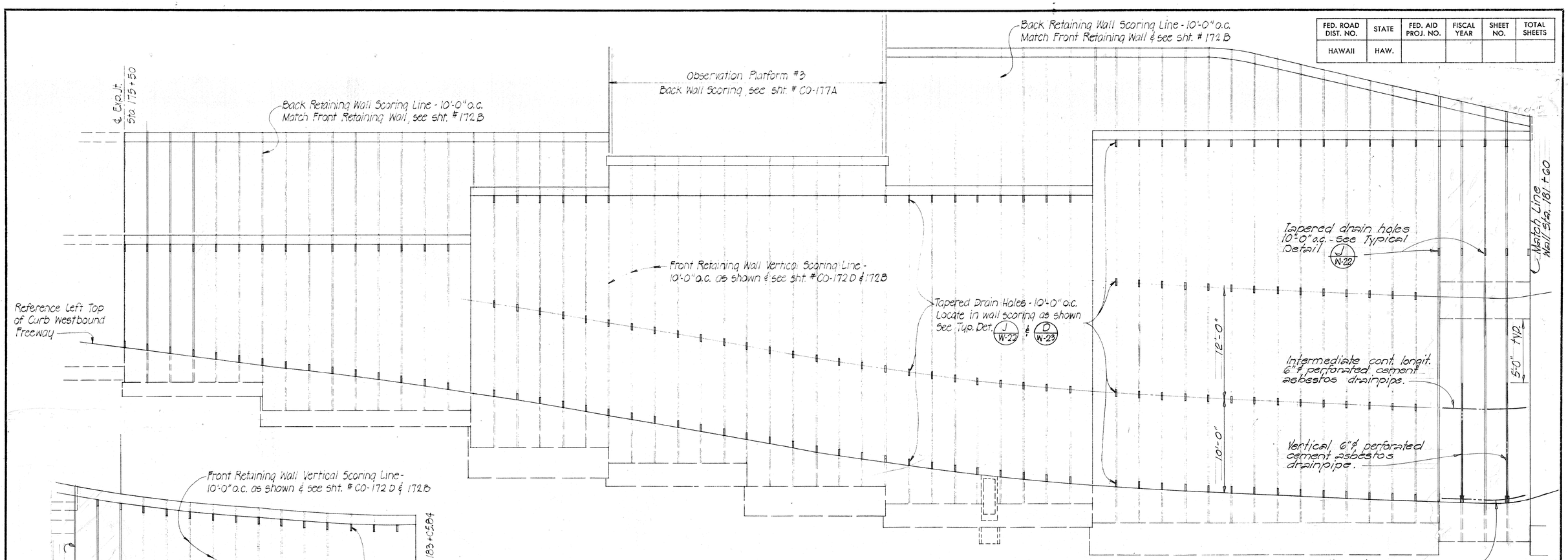
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	" " "
	TRACED BY	" " "
NOTE BOOK	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

PRINTED ON NO. 1000H CLEARPRINT

CO 165

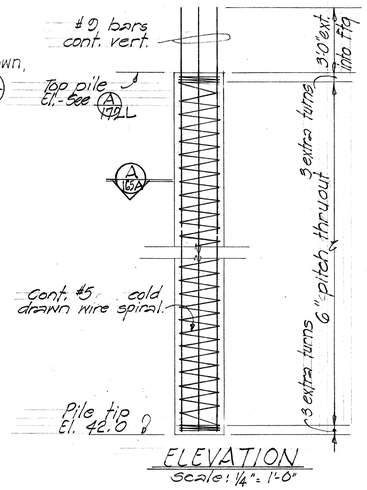
a. a. yee Job no. 66-87

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

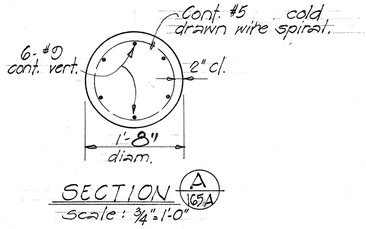


EAST FRONT ELEVATION - RETAINING WALL Nº N-II

WALL SCORING & DRAIN HOLE LOCATIONS



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



SECTION A 165 A
Scale: 3/4" = 1'-0"

TYPICAL CAST IN DRILLED HOLE CONCRETE PILE DETAIL

NOTE: Refer to Typical Scoring Line Details, shts. # CO-172 B, CO-172 D.
Refer to sht. # N-9 for typical perforated cement asbestos drainpipe detail & connection.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-II
℄ Sta. 175+50 to Wall Sta. 183+05.84

WALL SCORING & DRAIN HOLE LAYOUT

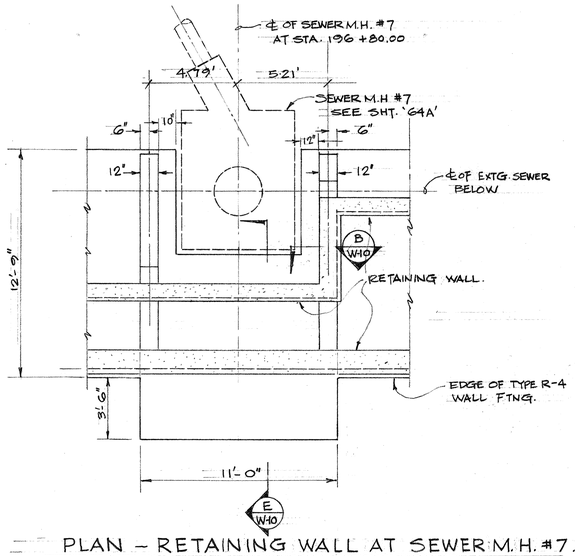
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1
MARCH 1968

SHEET No. OF SHEETS

CO 165 A

PRINTED ON NO. 1000H CLEARPRINT

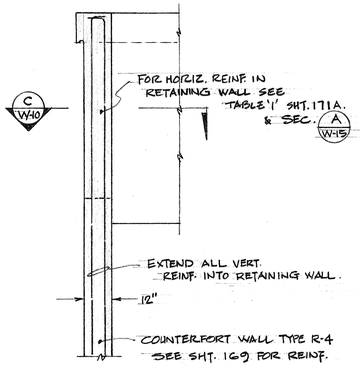
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-I(31) UNIT # 1	1967	166A	292



PLAN - RETAINING WALL AT SEWER M.H. #7.

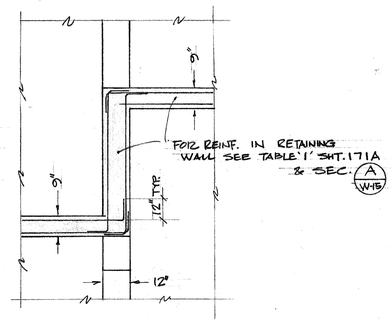
1/4" = 1'-0"

DETAIL A W-10



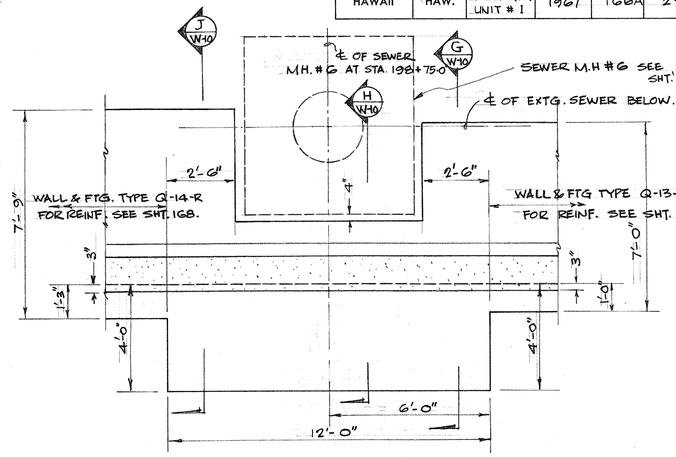
SECTION B W-10

3/8" = 1'-0"



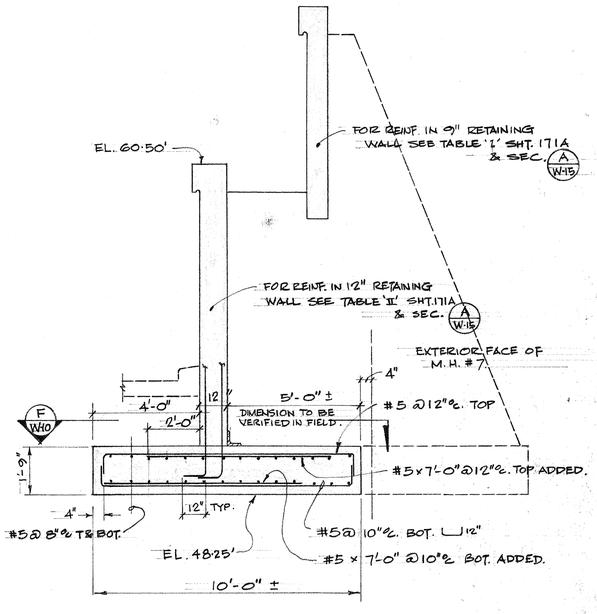
SECTION C W-10

3/8" = 1'-0"



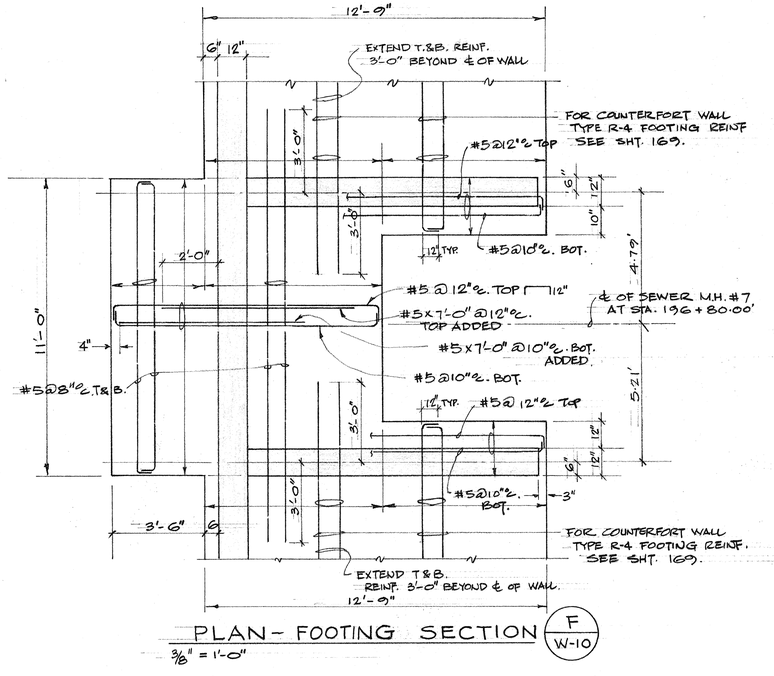
PLAN - RETAINING WALL & FOOTING AT SEWER MANHOLE #6 DETAIL D W-10

3/8" = 1'-0"



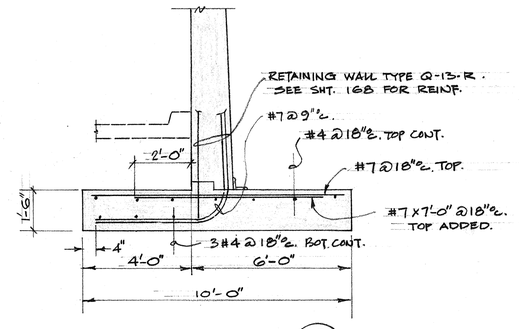
SECTION E W-10

3/8" = 1'-0"



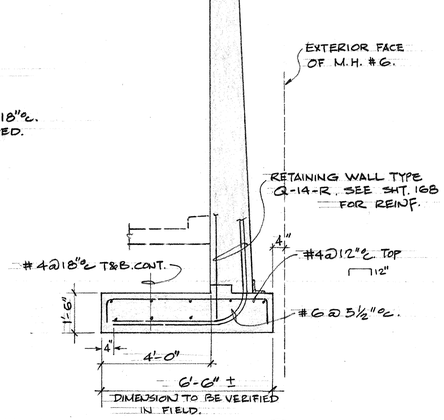
PLAN - FOOTING SECTION F W-10

3/8" = 1'-0"



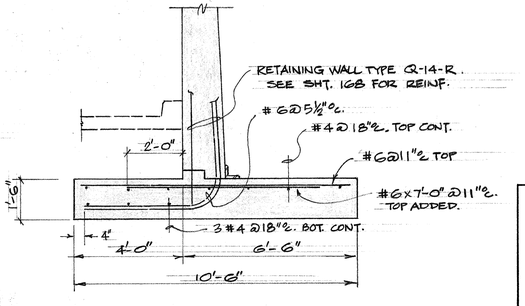
SECTION G W-10

3/8" = 1'-0"



SECTION H W-10

3/8" = 1'-0"



SECTION J W-10

3/8" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL FOOTINGS AT MANHOLE #6 & #7.

INTERSTATE ROUTE H-1 (LUNALILO FREEWAY)

PELE STREET TO VICTORIA STREET
F.A.I. PROJECT NO. 1-HI-1(31) UNIT 1.

4/11/67.

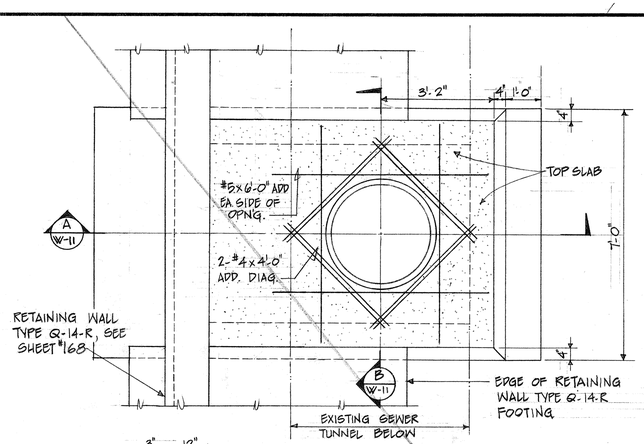
SHEET No. W-10 OF 31 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

THIS SHEET SUPERCEDES SHEET 166

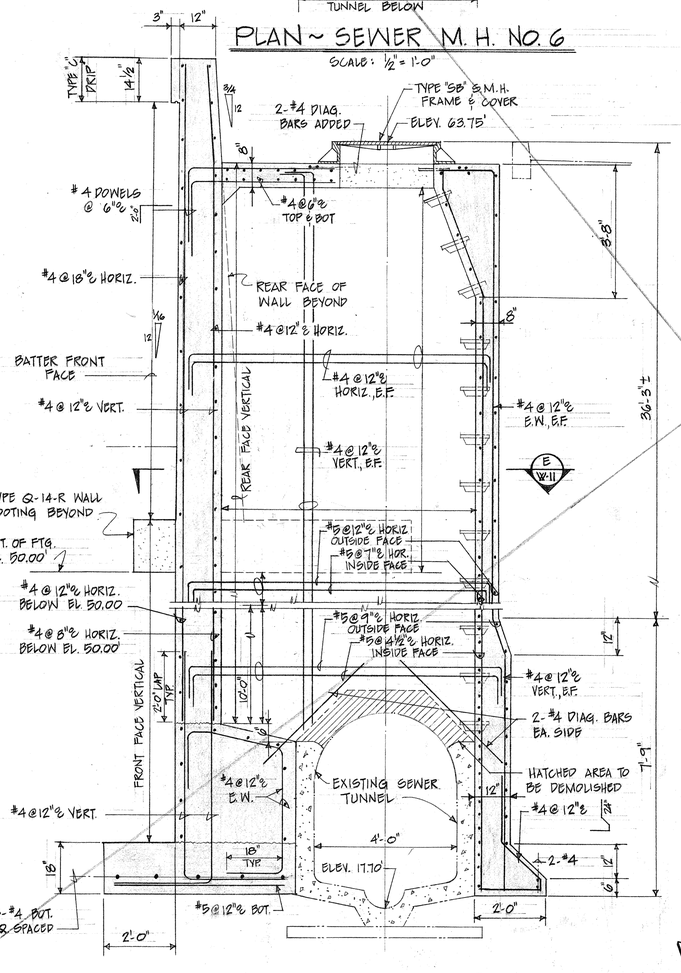
166A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT #1	1967	167A	232



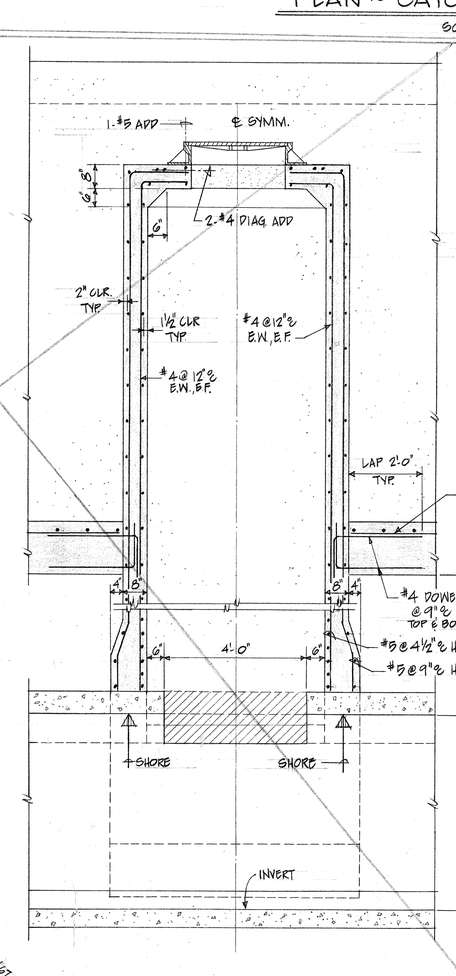
PLAN ~ SEWER M.H. NO. 6

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



SECTION A W-11

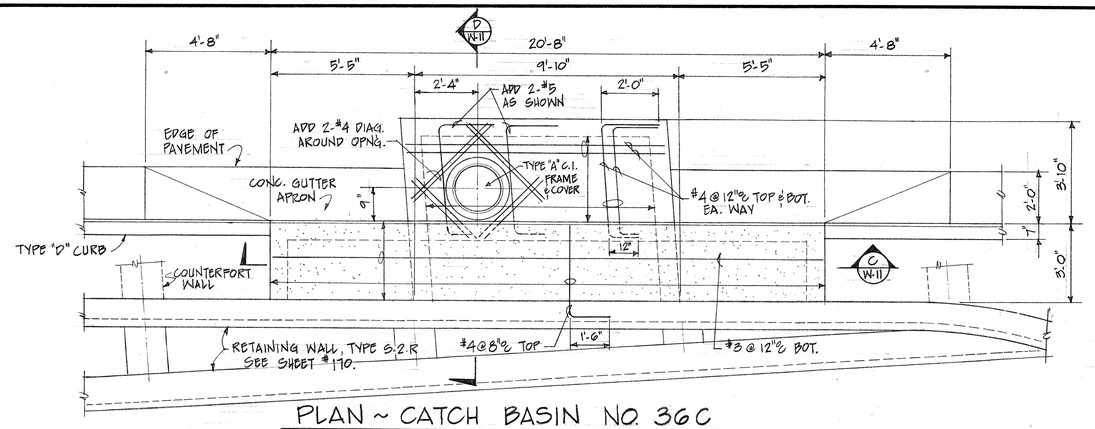
SCALE: 1/2" = 1'-0"



SECTION B W-11

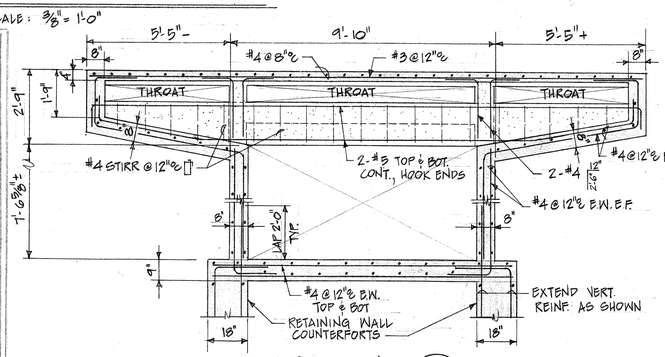
SCALE: 1/2" = 1'-0"

4/11/67 REVISION M.H. #6 Revised, see Sht. 167A



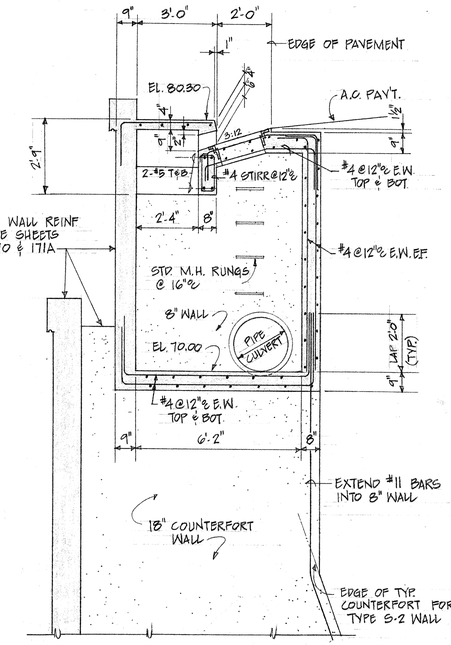
PLAN ~ CATCH BASIN NO. 36C

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



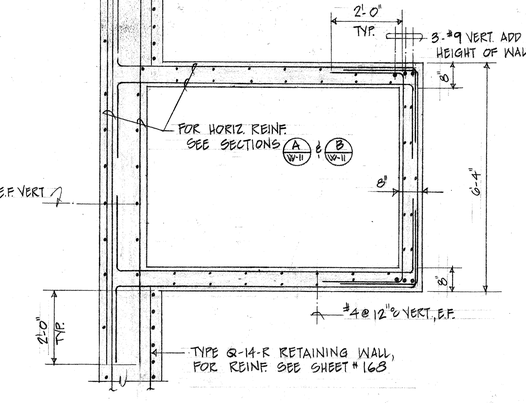
SECTION C W-11

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



SECTION D W-11

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



SECTION E W-11

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

APPROVED: NOT REQ'D.

SEWER SYSTEM DIRECTOR — DIV. OF SEWERS — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DIVISION OF SEWERS
CITY & COUNTY OF HONOLULU

SPECIAL DETAILS

CATCH BASIN NO. 36 C.

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
F.A.I. PROJECT NO. I-H1-1(31) UNIT 1

4/11/67.

SHEET No. W-11 OF 31 SHEETS

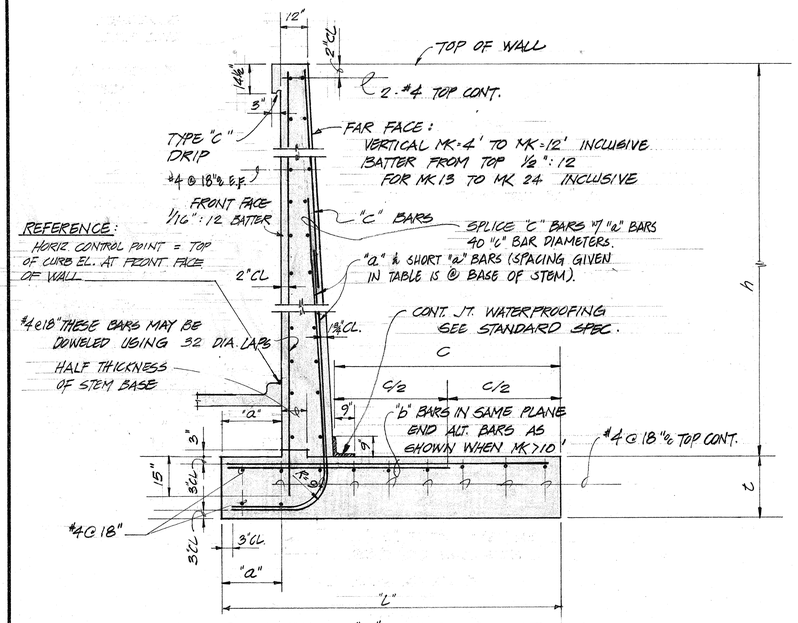
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
No.	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

PRINTED ON NO. 5000H CLEARPRINT

THIS SHEET SUPERCEDES SHEET 167

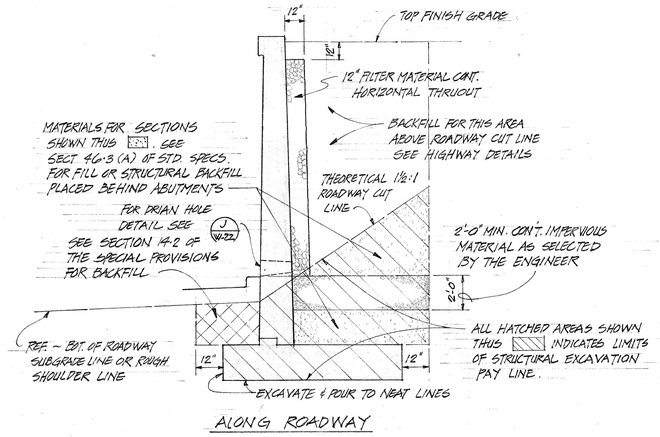
167A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	168	252

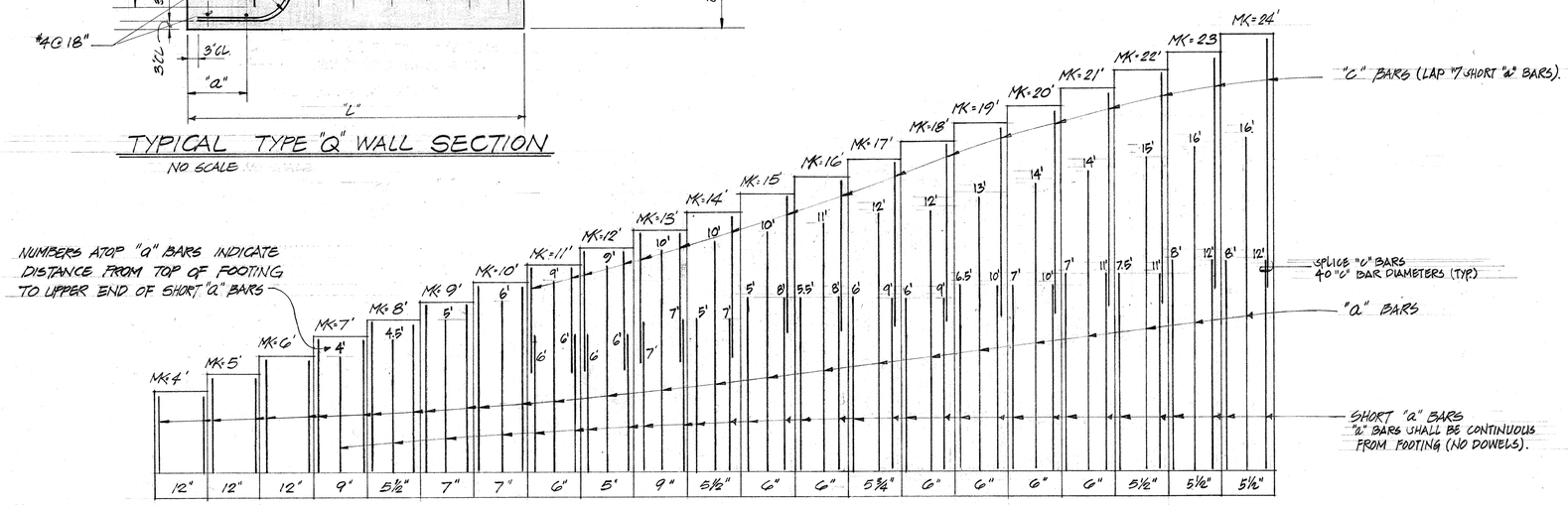


TYPICAL TYPE "Q" WALL SECTION

NO SCALE



ALONG ROADWAY



VERTICAL REINFORCING STEEL ARRANGEMENT

NO SCALE

SCHEDULE OF DIMENSIONS AND REINF. STEEL

MAXIMUM "MK"	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
a	6"	6"	6"	12"	12"	12"	12"	12"	12"	12"	15"	18"	21"	24"	24"	24"	27"	30"	33"	36"	39"
t	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	18"	18"	21"	21"	24"	24"	24"	27"	30"	31"	33"
L	2.5'	3.0'	3.5'	4.0'	4.5'	5.0'	5.5'	6.0'	6.5'	7.0'	7.75'	8.25'	9.0'	9.75'	10.5'	11.5'	12.5'	13.5'	14.5'	15.25'	16.0'
"a" bars	#3@12"	#3@12"	#4@12"	#4@9"	#4@5½"	#5@7"	#6@7"	#6@6"	#6@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#8@5¾"	#9@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@5½"	#10@5"
"b" bars	#3@12"	#3@12"	#3@12"	#3@9"	#4@11"	#4@7"	#5@7"	#5@6"	#5@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#7@5¾"	#8@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@5½"	#10@5"
"C" bars	—	—	—	—	—	—	—	#4	#4	#4	#4	#4	#5	#5	#5	#6	#6	#6	#7	#7	#7

SYMBOL & NOTES

DESIGNATION	WALL TYPE	MARK NO.	
Q-7-F	Q	7	F = FENCING
Q-9-R	Q	9	R = STANDARD BRIDGE RAILING

ALFRED A. YEE REGISTERED STRUCTURAL ENGINEER No. 1615 HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER No. 4472 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature Harvey Y. D. Lung
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL TYPE "Q"
R.C. RETAINING WALL DETAILS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT No. I-HI-1 (31) UNIT 1

DSG. , 1966

SHEET No. W-12 OF 31 SHEETS

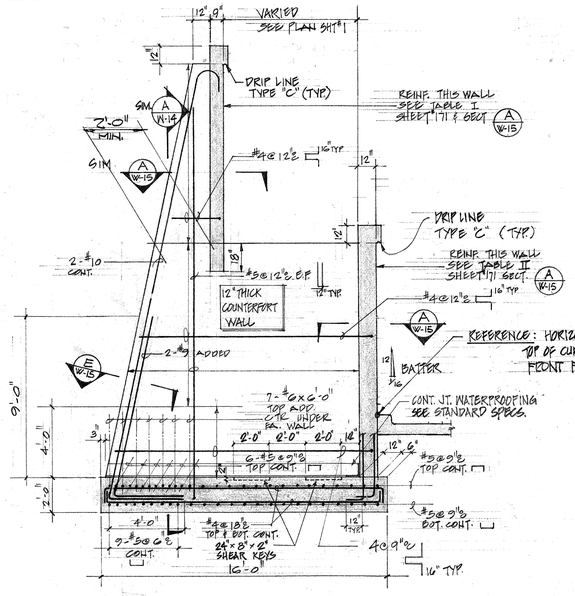
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	DESIGNED BY	
No.	QUANTITIES BY	
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168

A.A. Yee Job no. 66-8

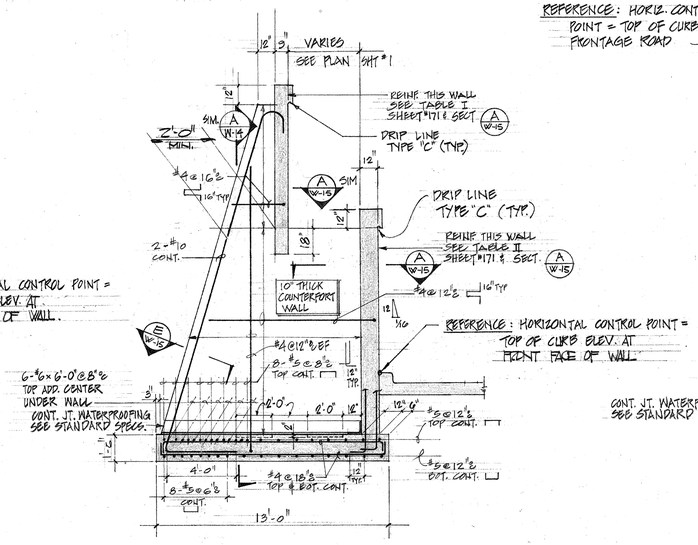
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1 (31) UNIT #1	1967	160	202



COUNTERFORT WALL TYPE R-1

TYPICAL SECTION

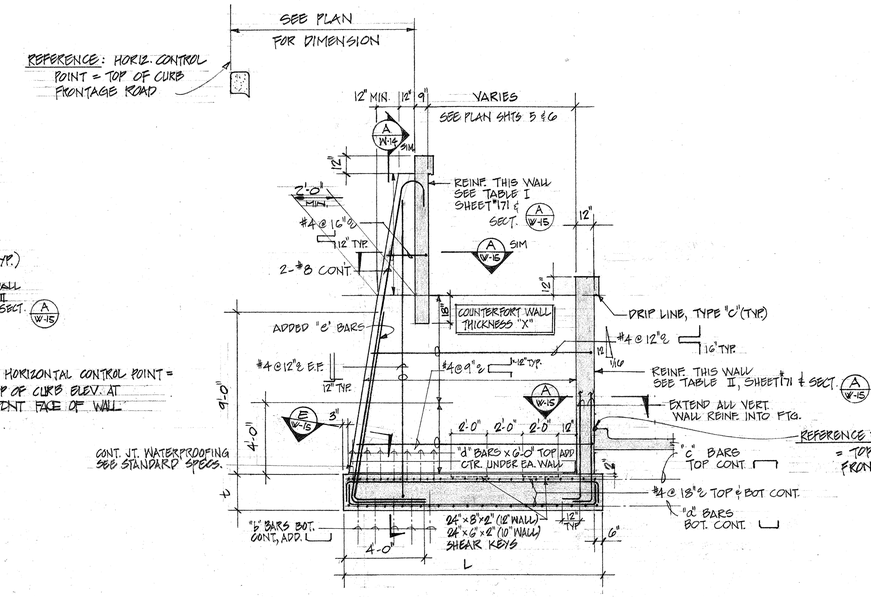
SCALE 1/4" = 1'-0"



COUNTERFORT WALL TYPE R-2

TYPICAL SECTION

SCALE 1/4" = 1'-0"



COUNTERFORT WALL TYPES R-3, R-4, & R-5

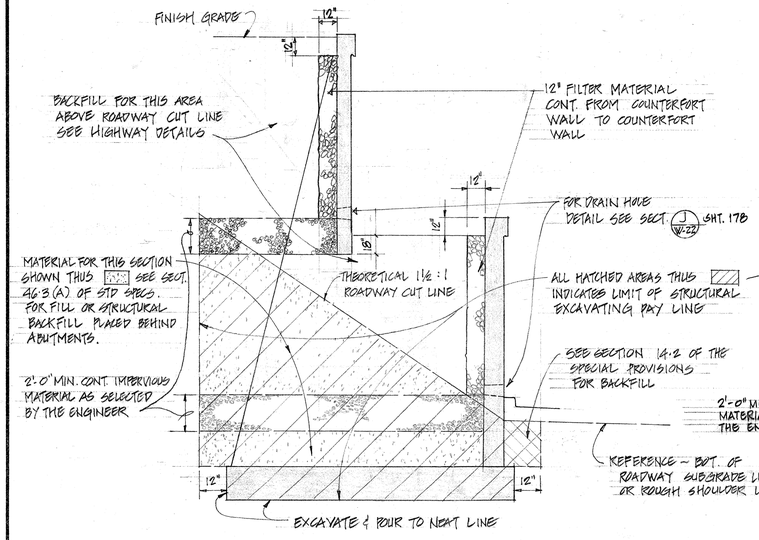
TYPICAL SECTION

SCALE 1/4" = 1'-0"

NOTE:
SEE SCHEDULE BELOW FOR DIMENSIONS & REINFORCING

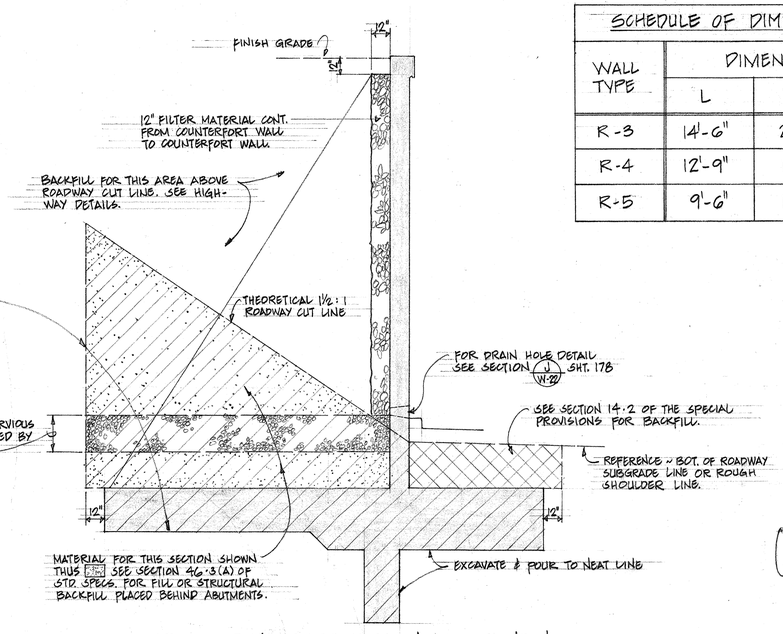
SCHEDULE OF DIMENSIONS & REINFORCING STEEL FOR R-3, R-4 & R-5

WALL TYPE	DIMENSIONS			REINFORCING				
	L	t	X	"a" BARS	"b" BARS	"c" BARS	"d" BARS	"e" BARS
R-3	14'-6"	2'-0"	12"	#5@12"℄	6-#5@12"℄	#5@12"℄	7-#5@12"℄	2-#9
R-4	12'-9"	1'-9"	12"	#5@12"℄	5-#5@12"℄	#5@10"℄	7-#5@10"℄	2-#9
R-5	9'-6"	1'-6"	10"	#5@10"℄	6-#5@10"℄	#5@8"℄	7-#5@8"℄	2-#7



STRUCTURAL EXCAVATION PAY LINE & BACKFILL DETAILS - TYPE R, S-2, & S-4 WALLS

NO SCALE



STRUCTURAL EXCAVATION PAY LINE & BACKFILL DETAILS - TYPE S-1 & S-3 WALLS

NO SCALE

NOTE: FOR BOT. OF FTG ELEVATIONS AND TOP WALL ELEVATIONS SEE WALL ELEVATION.

ALFRED A. YEE REGISTERED PROFESSIONAL ENGINEER HAWAII, U.S.A.

HARVEY Y. D. YUNG REGISTERED PROFESSIONAL ENGINEER HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Harvey Y. D. Yung
Signature

Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL TYPE "R"
R.C. RETAINING WALL DETAILS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT No. 1-HI-1 (31) UNIT 1

DEC. , 1966

SHEET No. W-13 OF 31 SHEETS

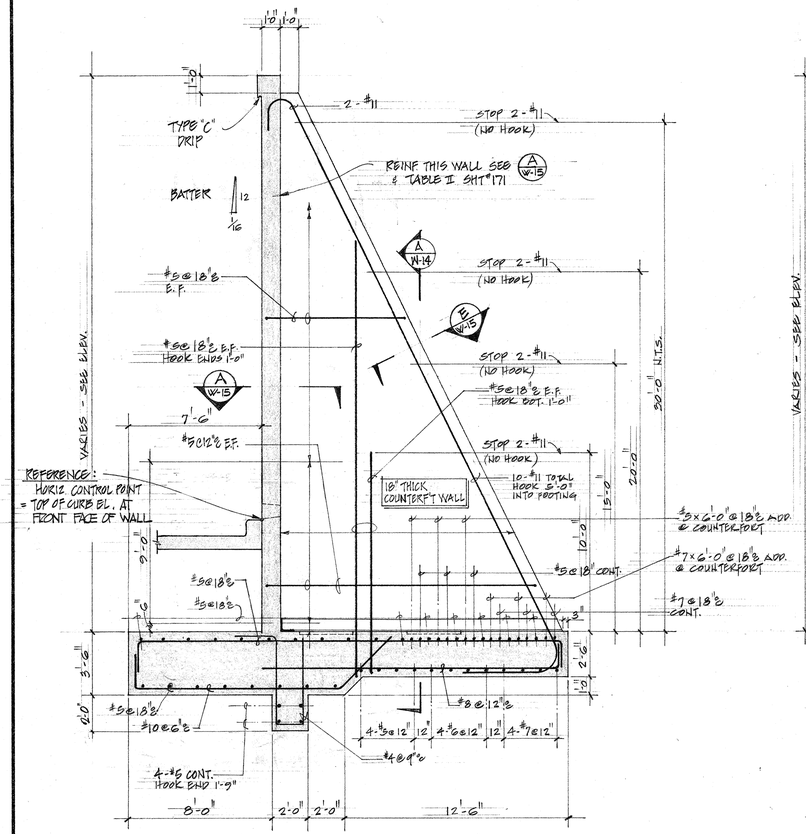
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGN BY	"
No.	QUANTITIES BY	"
	CHECKED BY	"

PRINTED ON NO. 1000H CLEARPRINT

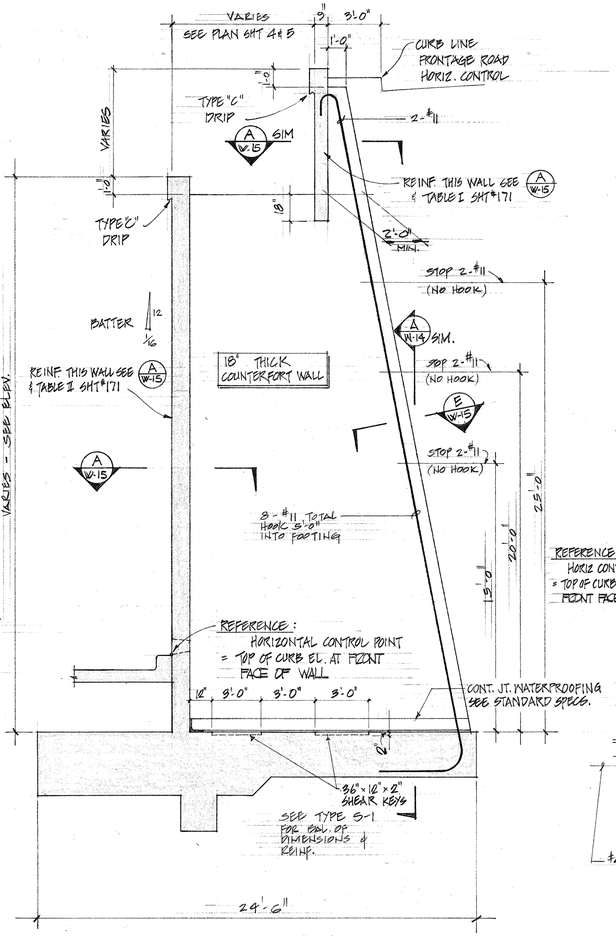
160

A. A. Yee Job No. 66-87-2

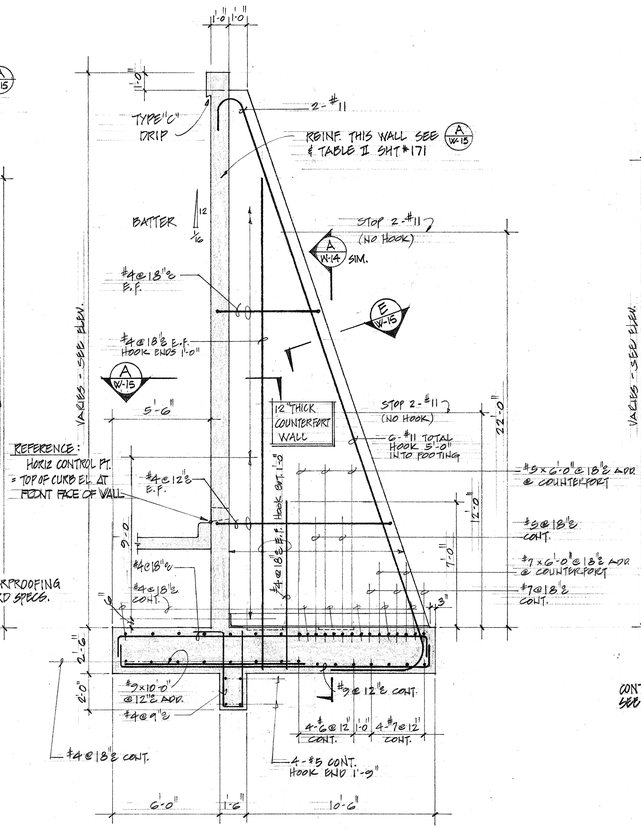
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1 (31) UNIT #1	1967	170	252



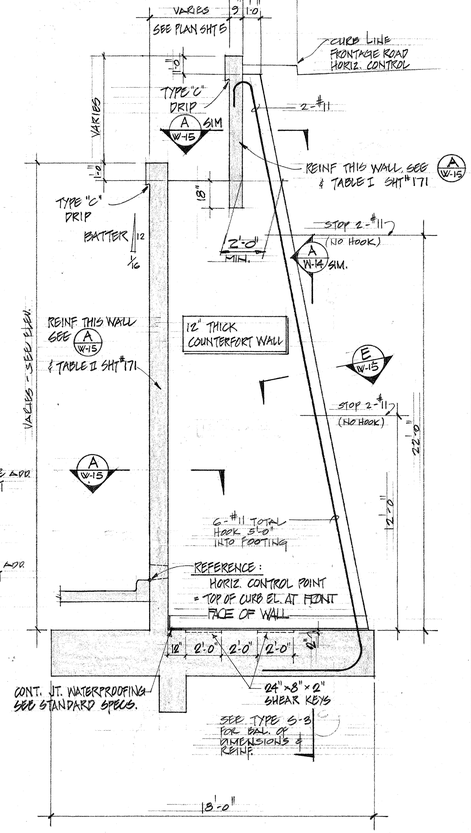
COUNTERFORT WALL TYPE S-1
TYPICAL SECTION
SCALE 1/4"=1'-0"



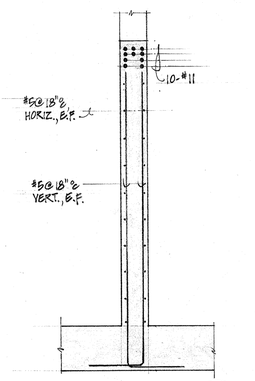
COUNTERFORT WALL TYPE S-2
TYPICAL SECTION
SCALE 1/4"=1'-0"



COUNTERFORT WALL TYPE S-3
TYPICAL SECTION
SCALE 1/4"=1'-0"



COUNTERFORT WALL TYPE S-4
TYPICAL SECTION
SCALE 1/4"=1'-0"



SECTION A W-14
SCALE: 1/4"=1'-0"

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

ALFRED A. YEE REGISTERED PROFESSIONAL ENGINEER No. 713 HAWAII, U.S.A.

HARVEY Y. D. LUNG REGISTERED PROFESSIONAL ENGINEER No. 7174 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature Harvey Y. D. Lung
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL TYPE "S"
R.C. RETAINING WALL DETAILS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-HI-1 (31) UNIT 1

DEC. 1966

SHEET No. W-14 OF 31 SHEETS

170

PRINTED ON NO. 1000H CLEARPRINT

a.a. Yee Job no. 66-

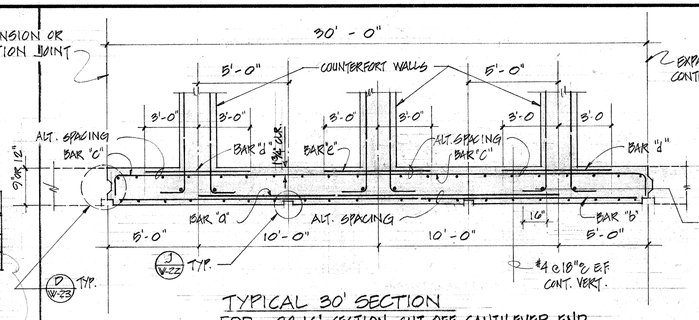
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT#1	1967	17/A	282

TABLE I (WALL THICKNESS = 9")

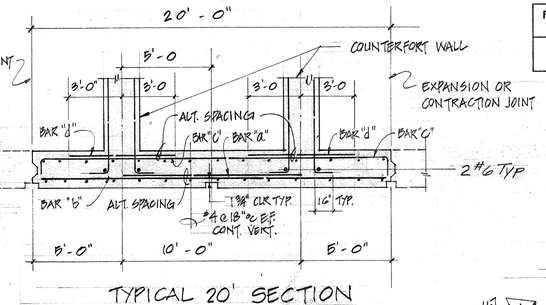
HORIZ. REINF. OF COUNTERFORT RETAINING WALL

DISTANCE MEASURED FROM TOP OF RETAINING WALL; SEE (D W-15) & (G W-15) FOR REF. ELEV. OF WALL	BAR "a"	BAR "b"	BAR "c"	BAR "d"	BAR "e"
0' TO 5'	———	#4@10"℄	#4@20"℄	#5@20"℄	#4@20"℄
5' TO 12'	#4@12"℄	#4@12"℄	#4@12"℄	#5@12"℄	#4@12"℄
12' TO 15'	#4@12"℄	#4@12"℄	#5@10"℄	#5@10"℄	#4@10"℄

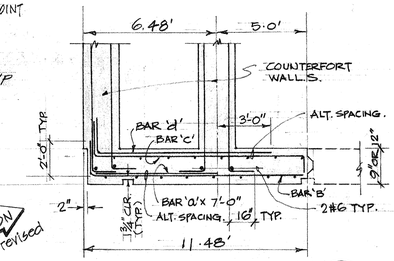
12/13/67 CHANGE ORDER
ADDED EXTRA DEPTH TO TABLE.



TYPICAL 30' SECTION
FOR 28.16' SECTION CUT OFF CANTILEVER END
ACCORDINGLY ~ FOR 31.17' SECTION EXTEND CANTILEVER END)



TYPICAL 20' SECTION
FOR 9" UPPER REAR WALL ~ SEE TABLE I THIS SHEET
FOR 12" LOWER FRONT WALL ~ SEE TABLE II THIS SHEET



4/11/67 REVISION
Detail revised

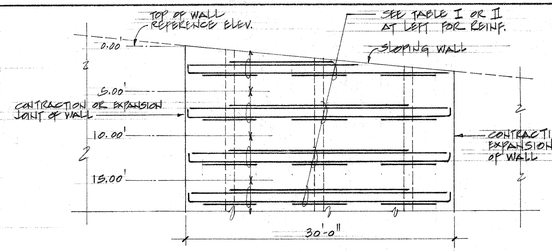
TYPICAL 12.48' SECTION (G W-15)
NO SCALE.

PLAN - SECTION (A W-15)
NO SCALE

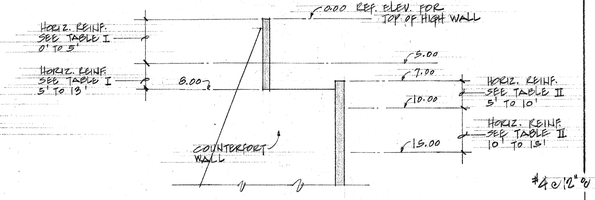
TABLE II (WALL THICKNESS = 12")

HORIZ. REINF. OF COUNTERFORT RETAINING WALL

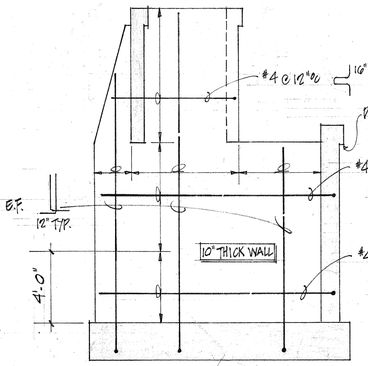
DISTANCE MEASURED FROM TOP OF RETAINING WALL; SEE (B W-15) & (C W-15) FOR REF. ELEV. OF WALL	BAR "a"	BAR "b"	BAR "c"	BAR "d"	BAR "e"
0' TO 5'	———	#4@16"℄	#4@12"℄	———	———
5' TO 10'	———	#4@10"℄	#4@18"℄	#5@18"℄	#4@18"℄
10 TO 15'	#4@14"℄	#4@14"℄	#4@13"℄	#5@13"℄	#4@13"℄
15' TO 20'	#4@11"℄	#4@11"℄	#5@15"℄	#6@15"℄	#5@15"℄
20' TO 25'	#4@9"℄	#4@9"℄	#5@12"℄	#6@12"℄	#5@12"℄
25' TO 30'	#5@12"℄	#5@12"℄	#5@10"℄	#6@10"℄	#5@10"℄
30' TO 35'	#5@10"℄	#5@10"℄	#5@9"℄	#6@9"℄	#5@9"℄
35 TO 42'	#5@8"℄	#5@8"℄	#5@8"℄	#6@8"℄	#5@8"℄



SLOPING WALL ELEVATION
DETAIL (B W-15)
SCALE 1/8" = 1'-0"

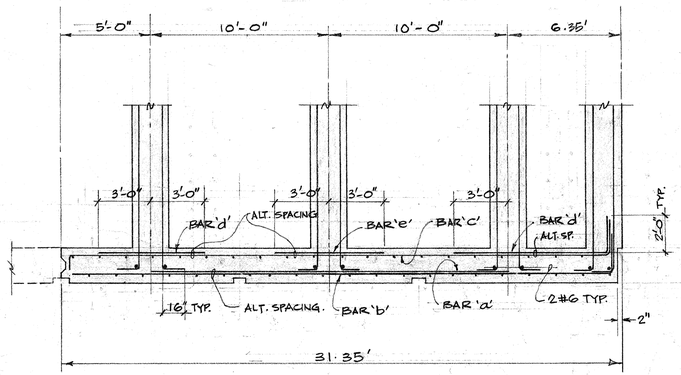


SECTION SHOWING REF. ELEVATION
FOR DOUBLE WALL
DETAIL (C W-15)
SCALE 1/8" = 1'-0"



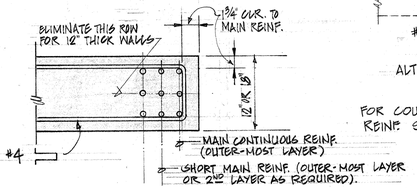
SECTION (H W-15)
SCALE: 1/4" = 1'-0"

TYPICAL DETAILS FOR
USE OF TABLES I & II

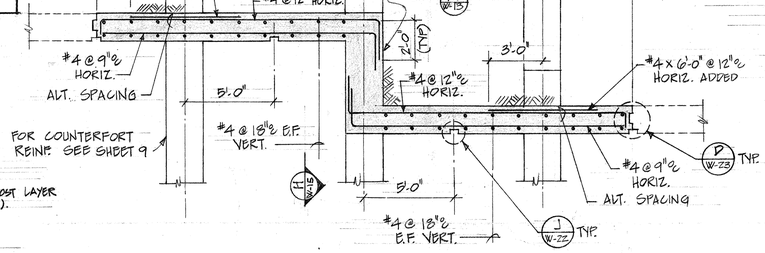


TYPICAL 31.35' SECTION (J W-15)
NO SCALE.

4/11/67 REVISION
Detail added



TYPICAL SECTION (E W-15)
SCALE: 1" = 1'-0"



PLAN DETAIL (F W-15)
No SCALE

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

ALFRED A. YEE
REGISTERED PROFESSIONAL ENGINEER
No. 1918
HAWAII, U.S.A.

HARVEY Y. D. LUNG
REGISTERED PROFESSIONAL ENGINEER
No. 3918
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature
Harvey Y. D. Lung
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL COUNTERFORT RETAINING WALL DETAILS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT No 1-HI-1 (31) UNIT 1

APRIL 11, 1967

SHEET No W-15 OF SHEETS

THIS SHEET SUPERCEDES SHEET 171A

C 017 1A

A.A. Yee Job No. 66-8

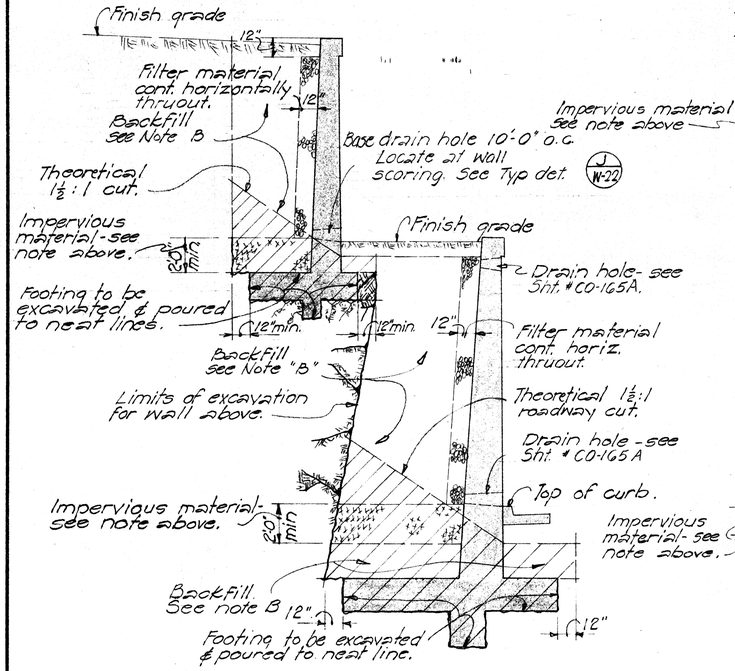
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

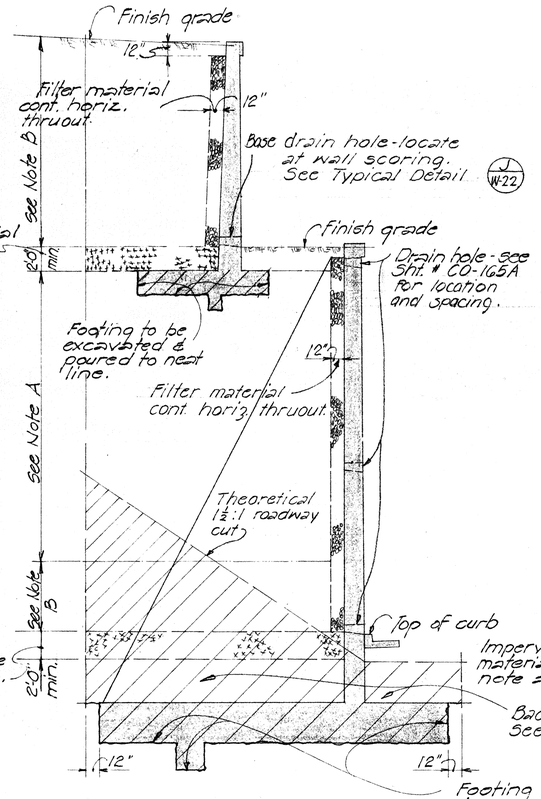
Note !!!

1. Hatched areas thus: ////// denotes limits of structural excavation pay line. All other excavation shall be roadway excavation except as otherwise noted.

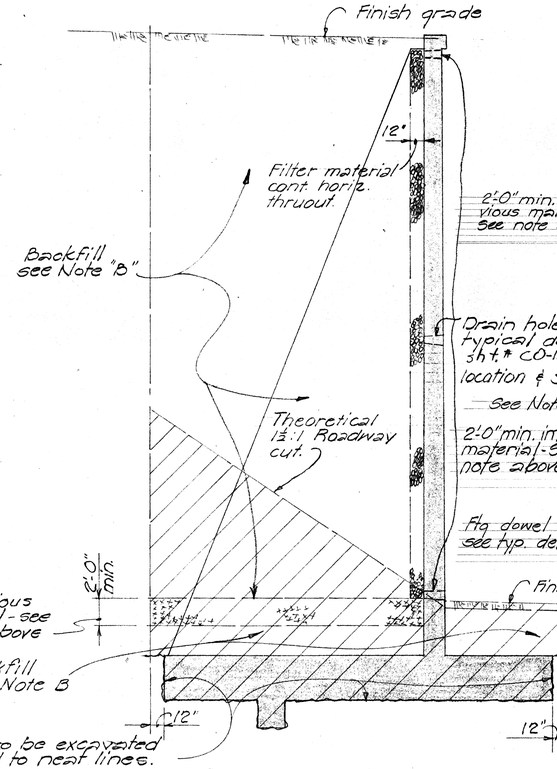
2. Impervious material as selected by the Engineer shall be incidental to structural excavation and will not be paid for separately.



BETWEEN STA. 175 + 50 to STA. 177 + 00 Inclusive



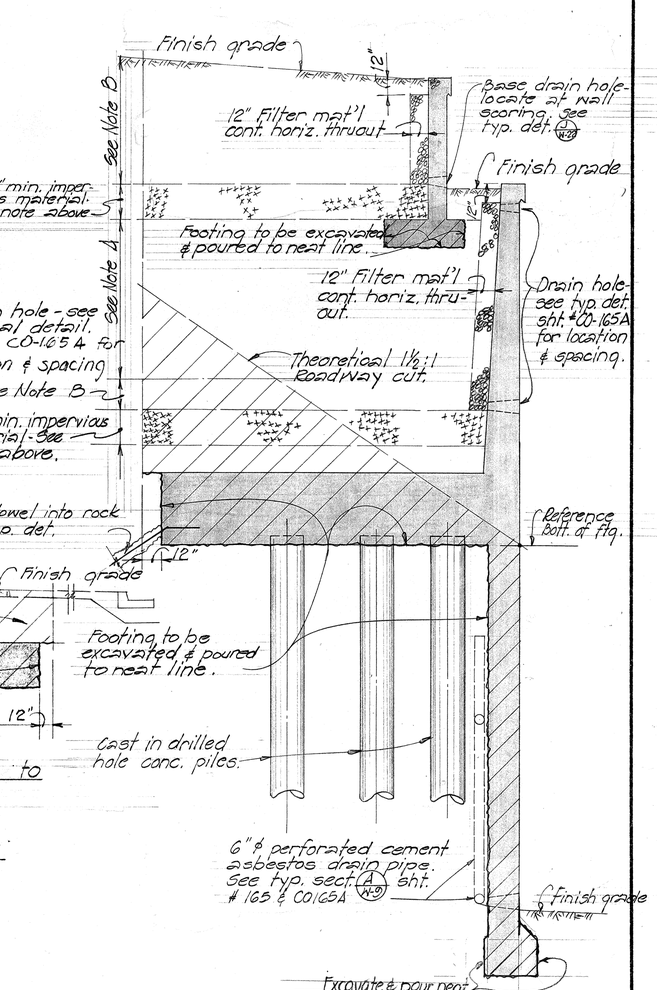
BETWEEN WALL STA. 177 + 00 to STA. 177 + 60 Inclusive
BETWEEN WALL STA. 178 + 80 to STA. 181 + 20 Inclusive



BETWEEN WALL STA. 181 + 60 to STA. 183 + 05.84 Inclusive

TYPICAL RETAINING WALL STRUCTURAL EXCAVATION AND BACKFILL

No Scale



BETWEEN WALL STA. 181 + 20 to STA. 181 + 60 Inclusive

Note A

Where the upper wall rests on fill, the material to a depth equal to twice the width of the footing below the footing shall meet the requirements of select borrow compacted to 95% of maximum density. Cinder shall not be used.

Note B

All other backfilling shall be performed with selected material from excavation and compacted to 95 % of maximum density. The maximum size shall not be greater than six inches.

Reference:

For excavation and backfill limits at observation platform - refer to sht # CO-177C.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No N-II
@ Sta 175 + 50 to Wall Sta. 183 + 05.84
TYPICAL WALL STRUCTURAL EXCAVATION & BACKFILL
(INTERSTATE ROUTE H-1 LUNALILO FREEWAY) PELE STREET TO VICTORIA STREET.
FAI Proj. No. I-HI-1(31) UNIT 1
MARCH 1968

SHEET No. OF SHEETS

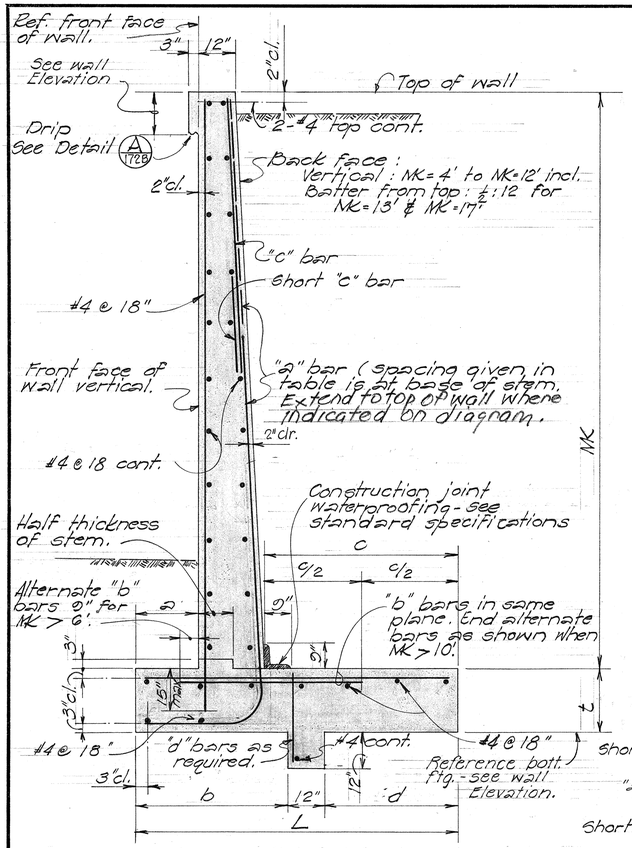
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | No.

PRINTED ON NO. 1000H CLEARPRINT

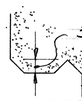
THIS SHEET SUPERSEDES SHEET Nos. 172, 173, & 174.

CO 175 A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



WALL SECTION



DETAIL A 172B

SCHEDULE OF DIMENSION & REINFORCING STEEL

Maximum "MK"	8'	11'	13'	17'		
b	1.75'	2.5'	3.0'	5.75'		
d	1.75'	2.5'	3.0'	3.0'		
a	12"	12"	12"	24"		
t	14"	18"	18"	21"		
L	4.5'	6.0'	7.0'	9.75'		
"a" bars	#4 @ 5½"	#6 @ 6"	#7 @ 9"	#8 @ 5¾"		
"b" bars	#4 @ 11"	#5 @ 6"	#7 @ 9"	#7 @ 5¾"		
"c" bars	——	#4	#4	#5		
"d" bars	#4 @ 18"	#4 @ 12"	#4 @ 9"	#5 @ 9"		
MAX. soil pressure	3200 PSF	3900 PSF	3900 PSF	3000 PSF		

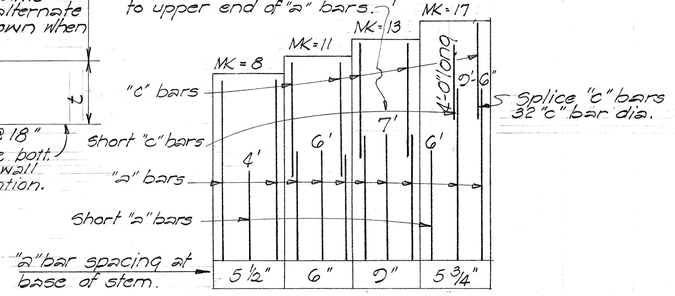
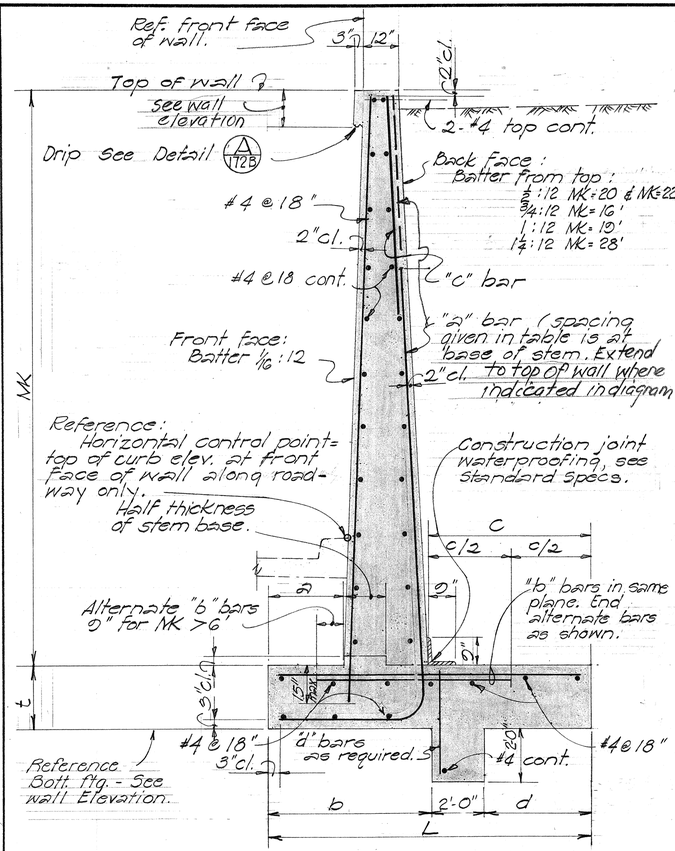


DIAGRAM-VERTICAL REINFORCING STEEL ARRANGEMENT

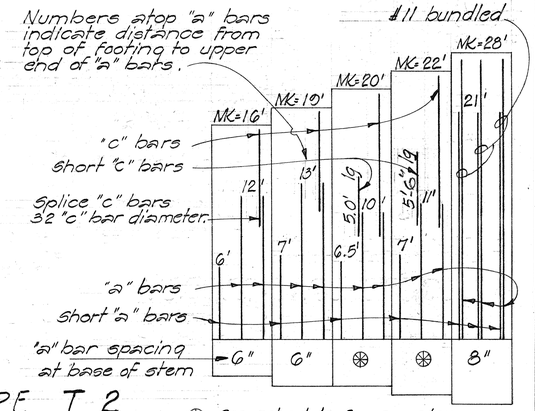
RETAINING WALL TYPE T3



WALL SECTION
No Scale

SCHEDULE OF DIMENSION & REINFORCING STEEL

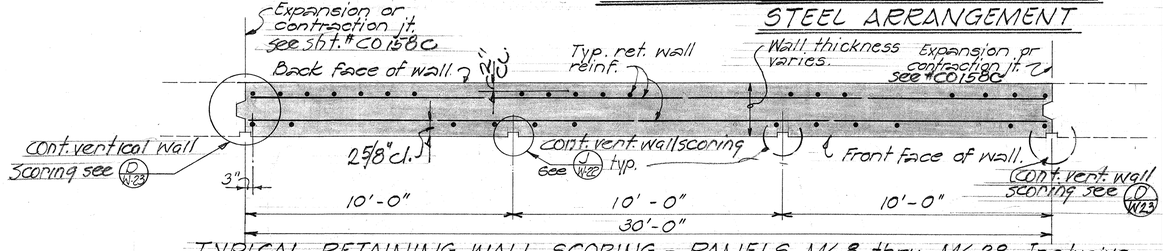
Maximum "MK"	16'	15'	20'	22'	28'
b	5.75'	6.0'	8.0'	11.0'	13.0'
d	2.75'	4.0'	3.0'	3.0'	4.5'
a	2.75'	3.0"	1.5'	1.5'	4.0'
t	1.5'	1.75'	2.0'	2.75'	3.25'
L	10.5'	12.0'	13.0'	16.0'	19.5'
"a" bars	#10 @ 6"	#11 @ 6"	#9 @ 6"	#10 @ 5½"	#11 @ 8" bundled in two's ea. spa. / #11 @ 5" bundled in two's ea. spa.
"b" bars	#9 @ 6"	#10 @ 6"	#10 @ 5½"	#11 @ 5"	
"c" bars	#6	#6	#6	#7	——
"d" bars	#5 @ 6"	#5 @ 6"	#5 @ 6"	#5 @ 6"	#5 @ 5"
Soil Pressure (Max.)	5,000 psf	6,100 psf	4,600 psf	5,000 psf	7,500 psf



RETAINING WALL TYPE T2

⊛ See schedule for spacing.

DIAGRAM - VERTICAL REINFORCING STEEL ARRANGEMENT



TYPICAL RETAINING WALL SCORING - PANELS MK-8 thru MK-28 Inclusive

REFERENCE NOTE:

Refer to Sht. CO 172A for Typical Retaining Wall excavation and backfill.

Refer to Typical Details for Metal Bridge Railing and Fence Post connection at top of wall where required.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No N-II
℄ Sta 175+50 to WALL Sta. 181+50

TYPICAL WALL TYPE T2 & T3

INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1
MARCH 1968

SHEET No. OF SHEETS

CO 172 B

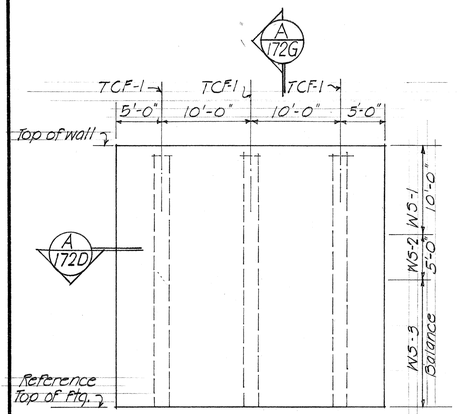
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	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGN BY	"
	QUANTITIES BY	"
No.	CHECKED BY	"

PRINTED ON NO. 1000H CLEARPRINT

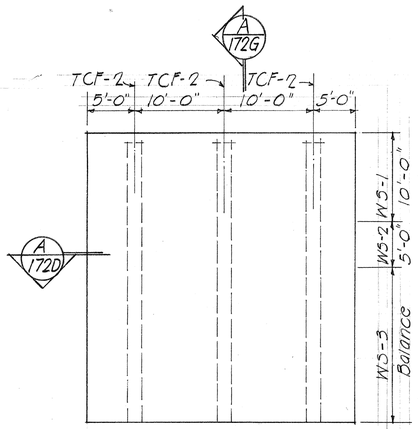
This sheet supersedes sheet no's. 172, 173, & 174

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

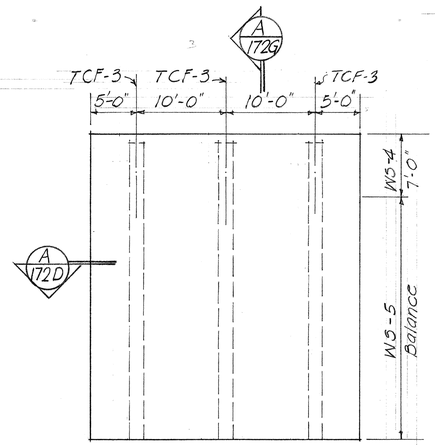
NOTE: Except as otherwise detailed on Section A/172F all other reinf. and details of CFWP-3A same as shown for CFWP-3.



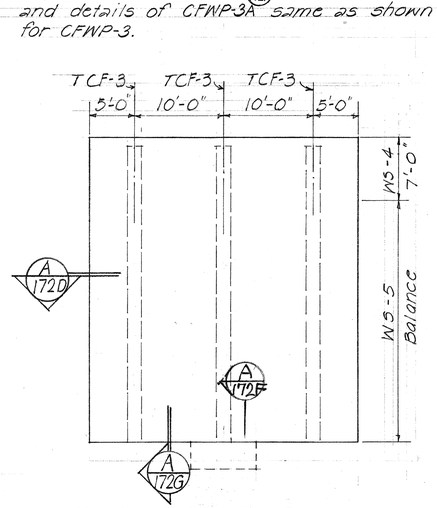
CFWP-1

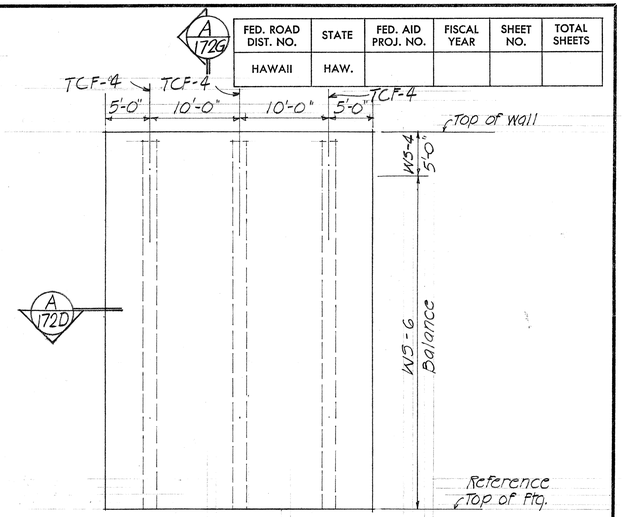


CFWP-2

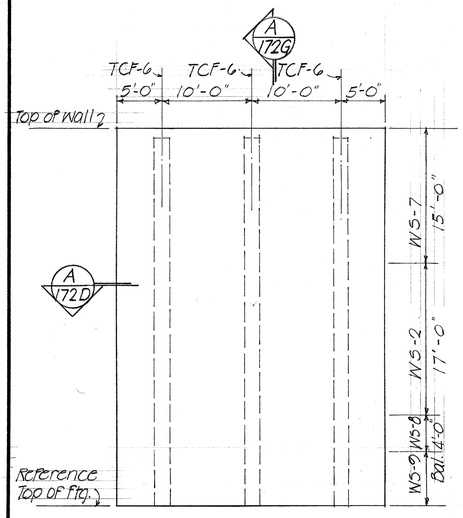


CFWP-3

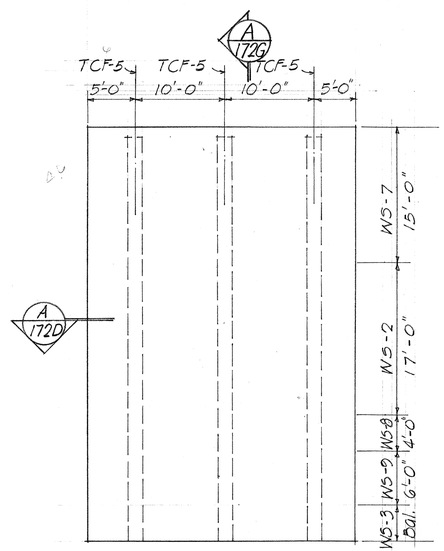




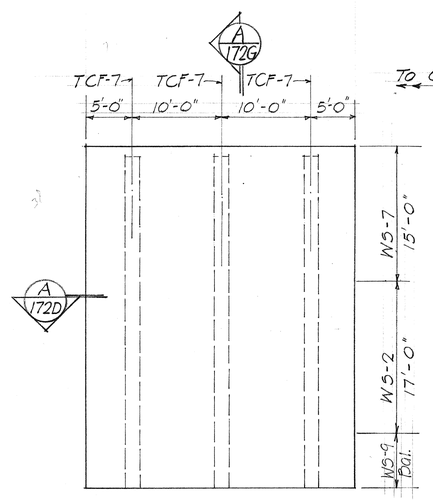
CFWP-4



CFWP-6

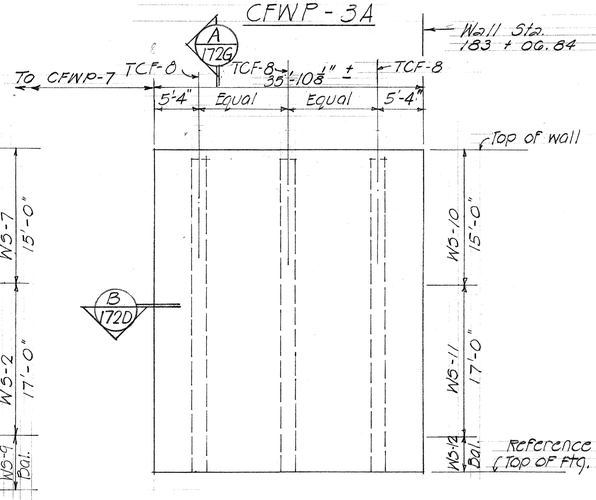


CFWP-5



CFWP-7

CFWP-3A



CFWP-8

NOTES:

① Top of wall to follow slope lines as indicated on Sht. CO 158 B.

DIAGRAM - TYPICAL COUNTERFORT WALL PANEL DETAIL

Scale: ⅛"-1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-II

@ Sta. 177+60 to Wall Sta. 183 + 05.84

TYPICAL COUNTERFORT WALL PANEL DETAIL

INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE ST. TO VICTORIA ST. F.A.I. Proj. No. I-HI-1(31) U-1
MARCH 1968

SHEET No. OF SHEETS

PRINTED ON NO. 1000H CLEARPRINT

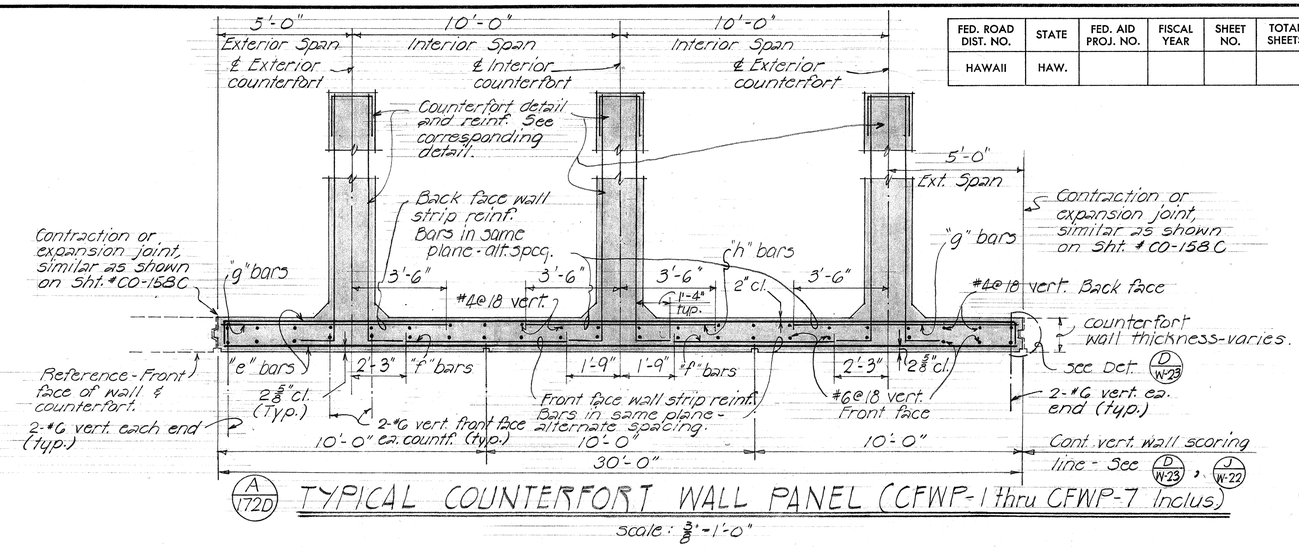
THIS SHEET SUPERSEDES SHT. Nº 172, 173, & 174

CO 172 C

COUNTERFORT WALL PANEL WALL STRIP REINFORCING

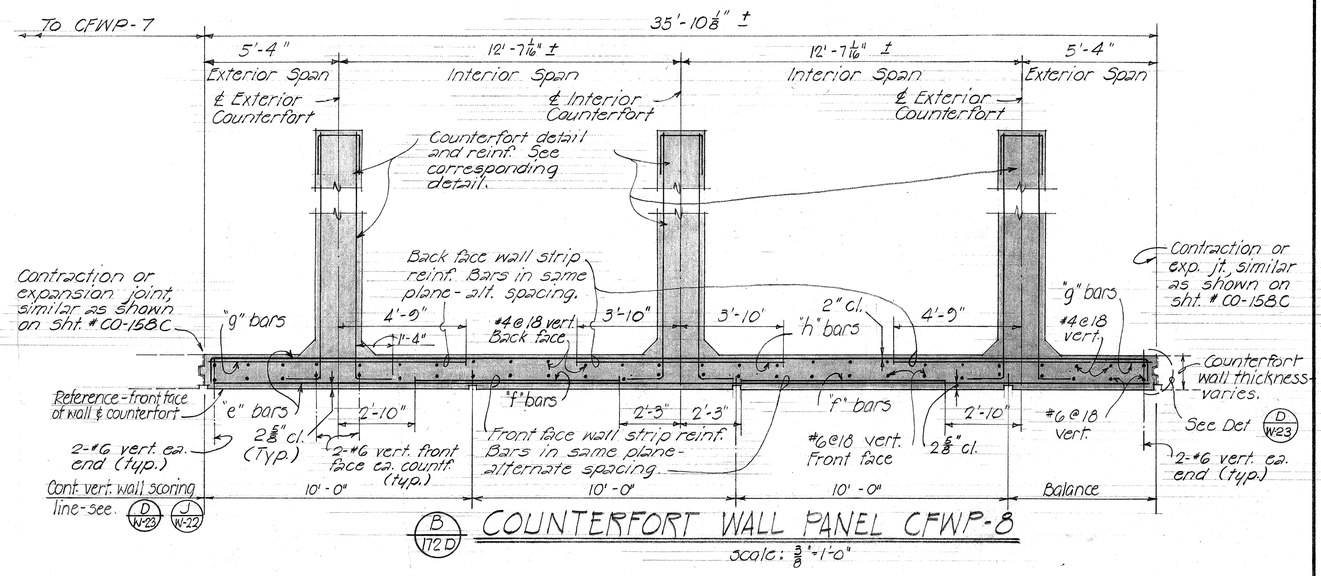
WALL STRIP TYPE \ REINFORCEMENT	"e" BARS	"f" Bars	"g" Bars	"h" BARS	REMARKS
WS - 1	#5 @ 18	#5 @ 18	#8 @ 18	#5 @ 18	
WS - 2	#6 @ 18	#6 @ 18	#9 @ 18	#6 @ 18	
WS - 3	#6 @ 12	#6 @ 12	#9 @ 12	#6 @ 12	
WS - 4	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	
WS - 5	#8 @ 14	#8 @ 14	#11 @ 14	#8 @ 14	
WS - 6	#7 @ 14	#7 @ 14	#10 @ 12	#7 @ 14	
WS - 7	#4 @ 18	#4 @ 18	#6 @ 12	#4 @ 18	
WS - 8	#6 @ 16	#6 @ 16	#9 @ 16	#6 @ 16	
WS - 9	#6 @ 14	#6 @ 14	#9 @ 14	#6 @ 14	
WS - 10	#5 @ 12	#5 @ 12	#4 @ 12	#5 @ 12	
WS - 11	#8 @ 16	#8 @ 16	#6 @ 16	#8 @ 16	
WS - 12	#8 @ 12	#8 @ 12	#5 @ 12	#8 @ 12	

NOTE: See Diagram, Sht. #CO 172C for location and limits of Wall Strips.



(A 172D) TYPICAL COUNTERFORT WALL PANEL (CFWP-1 thru CFWP-7 Inclus.)

Scale: ⅜"-1'-0"



(B 172D) COUNTERFORT WALL PANEL CFWP-8

Scale: ⅜"-1'-0"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº N-II
℄ Sta. 177 + 60 to Wall Sta. 183 + 05.84
COUNTERFORT WALL PANEL
REINFORCEMENT & SCHEDULES
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE ST. TO VICTORIA ST. F.A.I. Proj. No. I-HI-1(31)Unit 1
MARCH 1968

SHEET No. OF SHEETS

(CO 172D)

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

PRINTED ON NO. 1000N CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

COUNTERFORT WALL PANEL WALL STRIP REINFORCING

REINFORCEMENT WALL STRIP TYPE	"c" bars	"f" bars	"g" bars	Remarks
W5-2	#6@18	#6@18	#9@18	
W5-3	#6@12	#6@12	#9@12	
W5-7	#4@18	#4@18	#6@12	
W5-8	#6@16	#6@16	#9@16	
W5-9	#6@14	#6@14	#9@14	

NOTE: See adjacent Diagram for location and limits of Wall Strips.

COUNTERFORT WALL FOOTING STRIP SCHEDULE

ITEMS / LOCATION		FOOTING DEPTH	WIDTH FOOTING STRIP	TOP MAIN REINFORCEMENT		BOTT. MAIN REINFORCEMENT		REMARKS
				CONTINUOUS	ADDED OVER EACH COUNTERFORT	CONTINUOUS	ADDED INTERIOR SPAN	
CFWP-5A	FS-9	3'-3"	6'-0"	#7@12	#7@12	#5@12	#5@12	Added bars 6" alt. spcg. with cont. bars
	FS-12	↕	14'-0"	#7@12	——	#5@12		
	FS-13	↕	Balance	#5@18	——	#5@18		

NOTE: Refer to corresponding Typical Counterfort Detail (TCF-5) Sht. #C0172J for location & limits of the various footing strips (FS-)

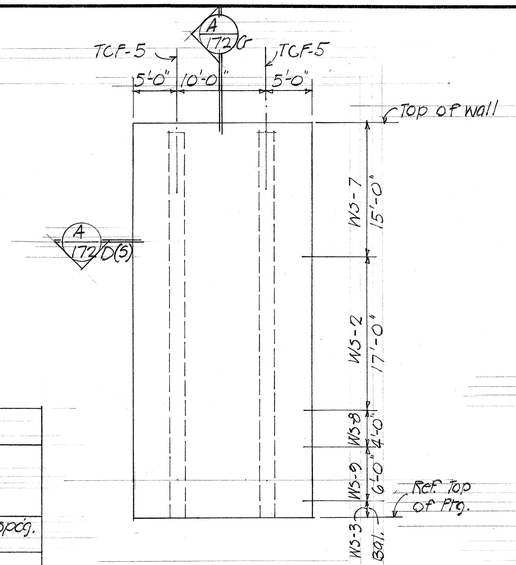
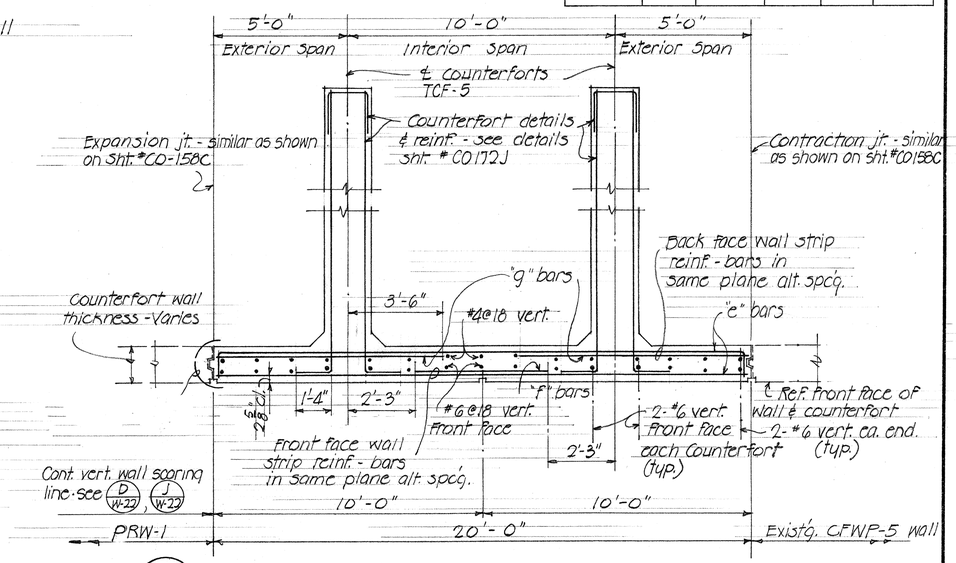
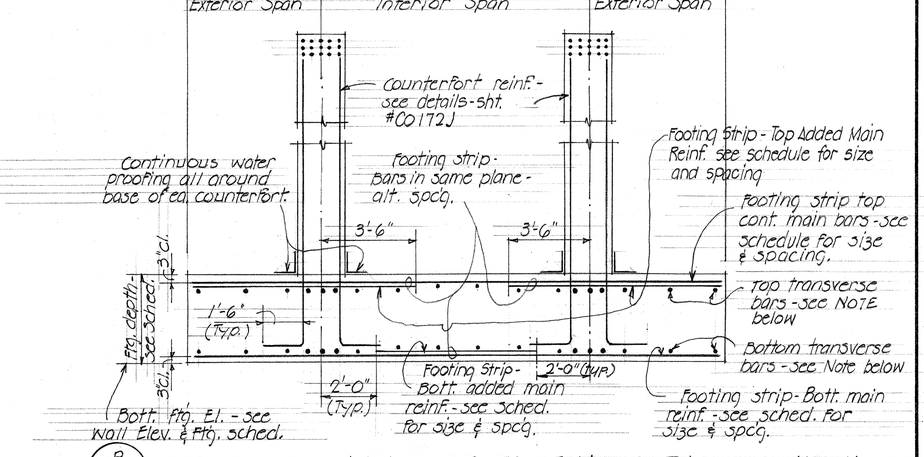


DIAGRAM - TYPICAL COUNTERFORT WALL PANEL DETAIL CFWP-5A

No Scale



A 172D(6) TYPICAL COUNTERFORT WALL PANEL CFWP-5A



B 172D(6) TYPICAL COUNTERFORT FOOTING DETAIL CFWP-5A

NOTE!
For top & bott. Transverse footing reinf. refer to corresponding counterfort detail (TCF-5) for size, spcg. & extent.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No N-II
℄ Sta. 181+60 to Sta. 181+80
COUNTERFORT WALL PANEL CFWP-5A
REINFORCEMENT & SCHEDULE
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. Proj No. I-HI-1(31) Unit 1
APRIL 1966

SHEET No. OF SHEETS

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

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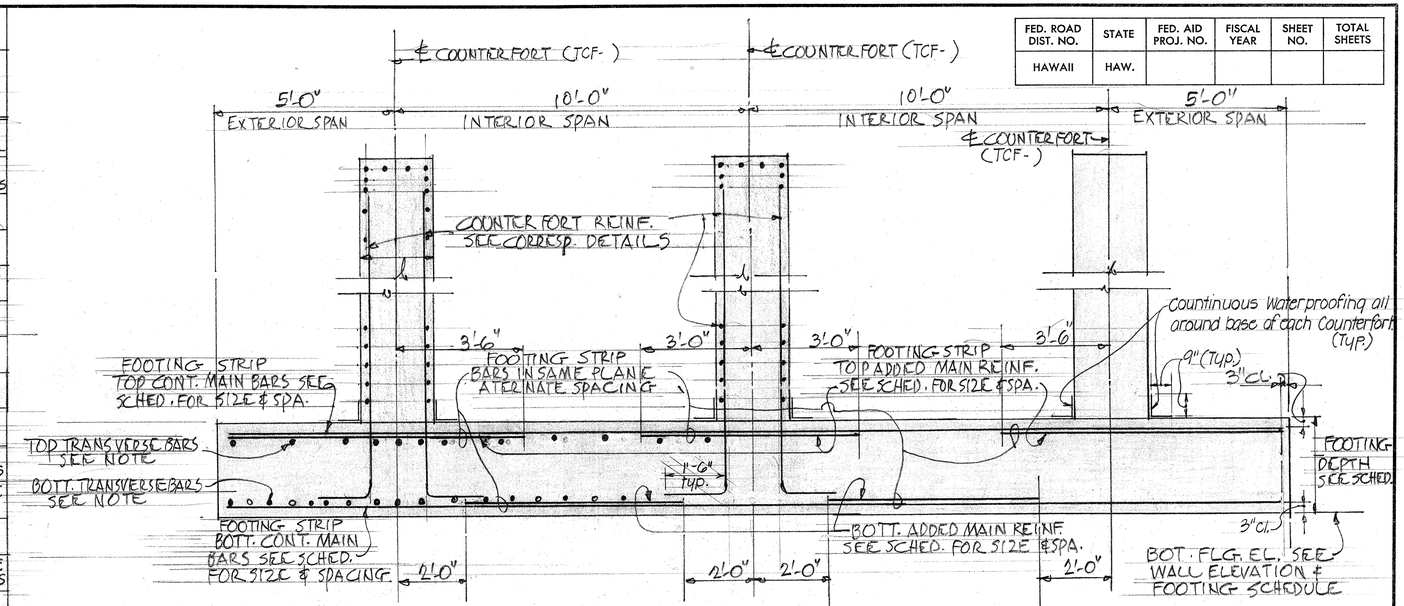
THIS DRAWING SUPPLEMENTS DRAWING SHT. # C0172D

C0172D(S)

COUNTERFORT WALL FOOTING STRIP SCHEDULE

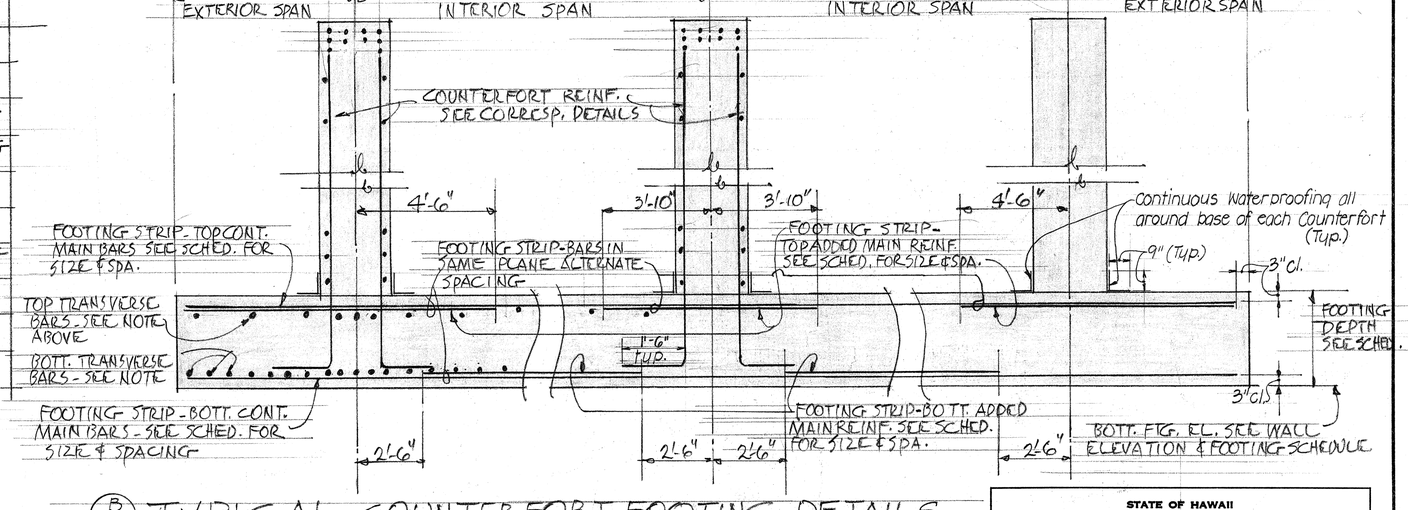
LOCATION	ITEMS	FOOTING DEPTH	WIDTH FOOTING STRIP	TOP MAIN REINFORCEMENT: CONTINUOUS	TOP MAIN REINFORCEMENT: ADDED OVER EACH COUNTERFORT	BOTTOM MAIN REINF.: CONTINUOUS	BOTTOM MAIN REINF.: ADDED INTERIOR SPAN	REMARKS
CFWP.1	FS-1	2'-6"	6'-0"	#7@12	#7@12	#6@12	#6@12	ADDED BARS 6" ALTERNATE SPACING WITH CONT. BARS
	FS-2	↓	3'-0"	#7@18	#7@18	#6@18	#6@18	ADDED BARS 9" ALTERNATE SPACING WITH CONTINUOUS BARS
	FS-3	↓	3'-0"	#7@12	—	#6@12	—	
	FS-4	↓	BALANCE	#5@18	—	#5@18	—	
CFWP.2	FS-1	3'-3"	6'-0"	#7@12	#7@12	#6@12	#6@12	ADDED BARS 6" ALTERNATE SPACING WITH CONT. BARS
	FS-2	↓	3'-0"	#7@18	#7@18	#6@18	#6@18	DO.
	FS-5	↓	4'-0"	#7@12	—	#6@12	—	
	FS-4	↓	BALANCE	#5@18	—	#5@18	—	
CFWP.3 CFWP.3a	FS-6	3'-0"	6'-0"	#9@12	#9@12	#6@12	#6@12	ADDED BARS 6" ALTERNATE SPACING WITH CONT. BARS
	FS-7	↓	12'-0"	#9@18	#9@18	#6@18	#6@18	ADDED BARS 9" ALTERNATE SPACING WITH CONTINUOUS BARS
	FS-8	↓	BALANCE	#5@18	—	#5@18	—	SEE CFWP.3a WALL DIAGRAM SHT. # FOR REINFORCING @ M.H.
CFWP.4	FS-9	3'-6"	6'-0"	#7@12	#7@12	#5@12	#5@12	ADDED BARS 6" ALTERNATE SPACING WITH CONT. BARS
	FS-10	↓	12'-0"	#7@18	#7@18	#5@16	#5@16	ADDED BARS 9" OR 8" ALTERNATE SPACING WITH CONTINUOUS BARS
	FS-11	↓	BALANCE	#5@18	—	#5@18	—	
CFWP.5	FS-9	3'-3"	6'-0"	#7@12	#7@12	#5@12	#5@12	ADDED BARS 6" ALT. SPACING WITH CONT. BARS
	FS-12	↓	14'-0"	#7@12	—	#5@12	—	
	FS-13	↓	BALANCE	#5@18	—	#5@18	—	
CFWP.6	FS-14	3'-0"	6'-0"	#6@12	#6@12	#5@12	#5@12	ADDED BARS 6" ALT. SPACING WITH CONT. BARS.
	FS-15	↓	5'-3"	#6@18	#6@18	#5@18	#5@18	ADDED BARS 9" ALT. SPACING WITH CONT. BARS.
	FS-16	↓	7'-0"	#6@12	—	#5@12	—	
	FS-17	↓	BALANCE	#5@18	—	#5@18	—	
CFWP.7	FS-14	2'-9"	6'-0"	#6@12	#6@12	#5@12	#5@12	ADDED BARS 6" ALT. SPACING WITH CONT. BARS.
	FS-15	↓	5'-3"	#6@18	#6@18	#5@18	#5@18	ADDED BARS 9" ALT. SPACING WITH CONT. BARS.
	FS-16	↓	6'-0"	#6@12	—	#5@12	—	
	FS-18	↓	BALANCE	#5@18	—	#5@18	—	
CFWP.8	FS-19	2'-9"	6'-0"	#7@12	#7@12	#6@12	#6@12	ADDED BARS 6" ALT. SPACING WITH CONT. BARS.
	FS-20	↓	5'-3"	#7@18	#7@18	#6@18	#6@18	ADDED BARS 9" ALT. SPA. WITH CONT. BARS.
	FS-21	↓	4'-0"	#7@12	—	#6@12	—	
	FS-22	↓	BALANCE	#5@18	—	#5@18	—	

NOTE: Refer to corresponding Typical Counterfort Detail (TCF-) for location & limits of the various Footing Strips (FS-)



NOTE: FOR TOP & BOTTOM TRANSVERSE FOOTING REINFORCEMENT, REFER TO CORRESPONDING COUNTERFORT DETAIL (TCF-) FOR SIZE, SPACING & EXTENT.

(A 172E) TYPICAL COUNTERFORT FOOTING DETAILS - (CFWP.1 THRU CFWP.7 INCL.)



(B 172E) TYPICAL COUNTERFORT FOOTING DETAILS (PANEL CFWP-8 ONLY)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No. N-II
℄ Sta. 177+60 to Wall Sta. 183+05.84
COUNTERFORT WALL PANEL FOUNDATION DETAIL and SCHEDULE
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA ST.
F.A.I. Proj. No. I-HI-1(31) Unit 1
MARCH 1968

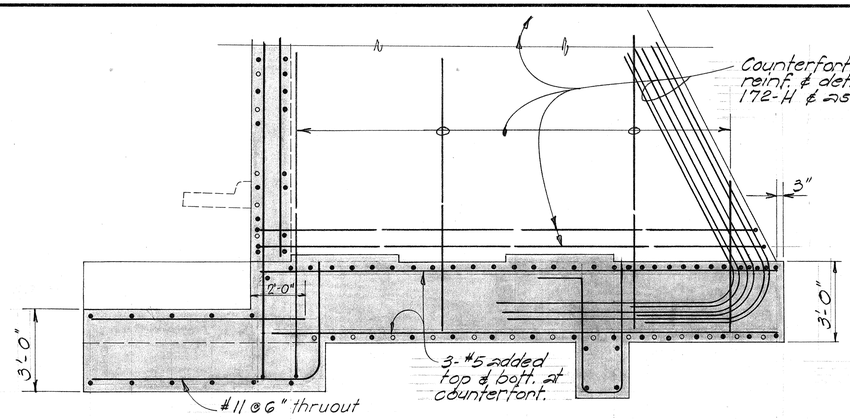
SHEET No. OF SHEETS

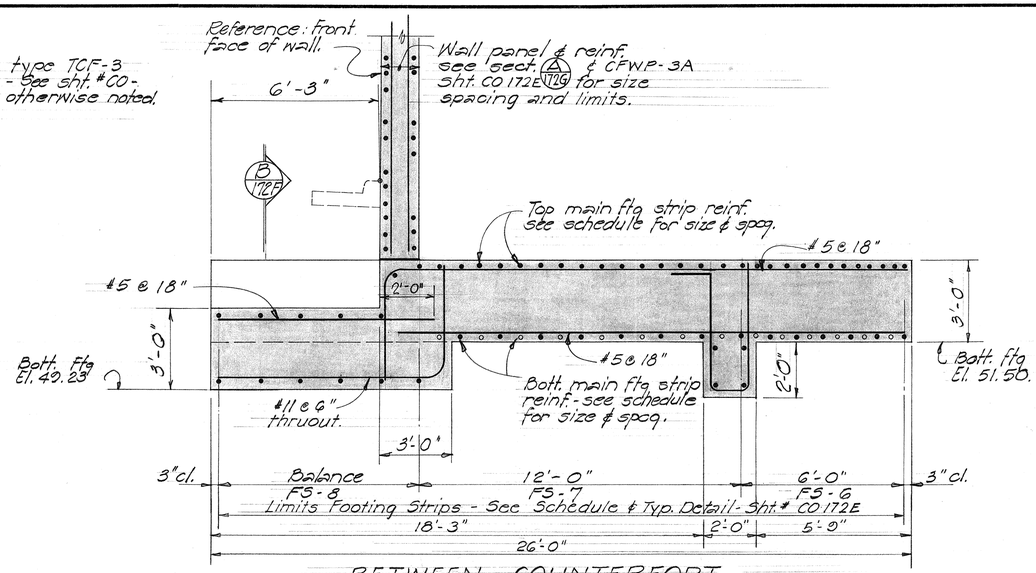
C0172E

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

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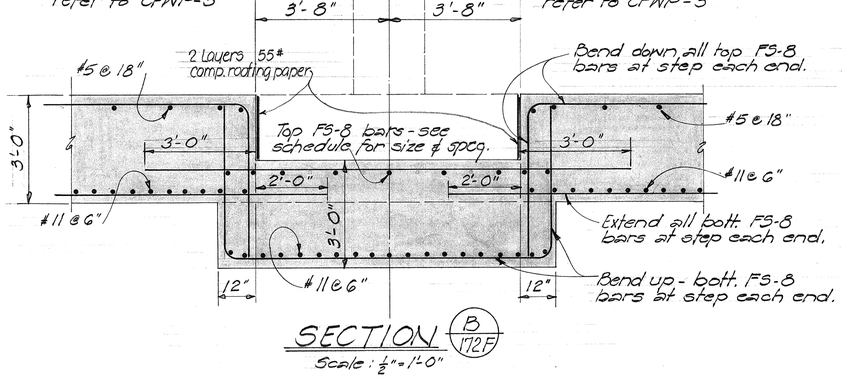
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				





AT COUNTERFORT TYPICAL SECTION Δ 172E

BETWEEN COUNTERFORT (STEP FOOTING AT CB #11-B) scale: 3/8"=1'-0"



SECTION B 172F

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

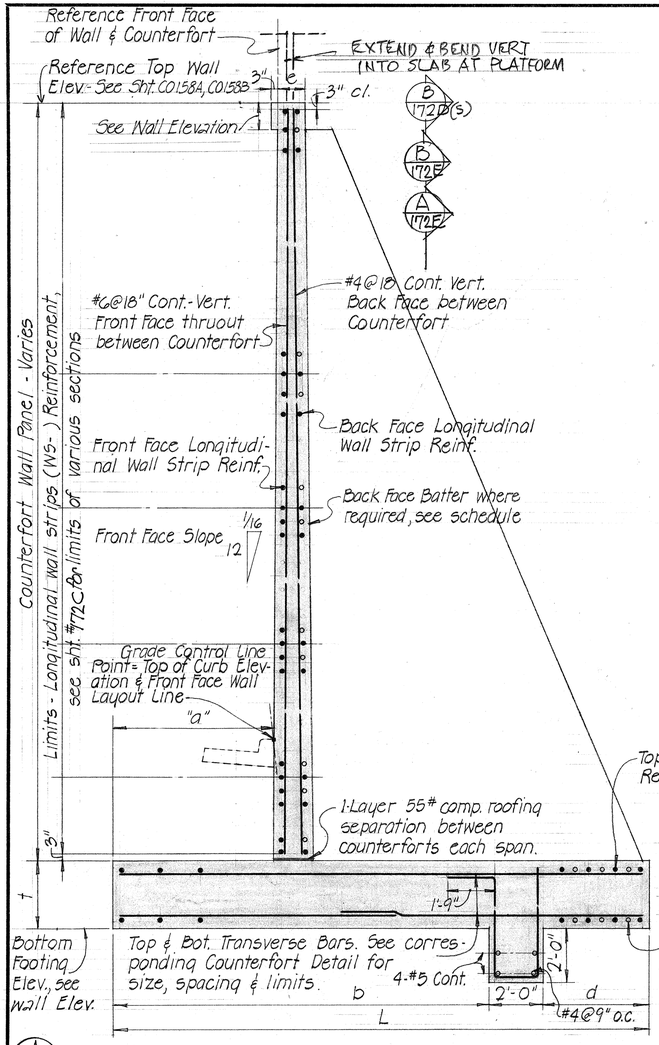
R.C. RETAINING WALL No N-II
℄ Sta. 177+60 to WALL Sta. 183+05.84
COUNTERFORT WALL PANEL FOUNDATION DETAIL
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1

SHEET No. OF SHEETS

CO 172 F

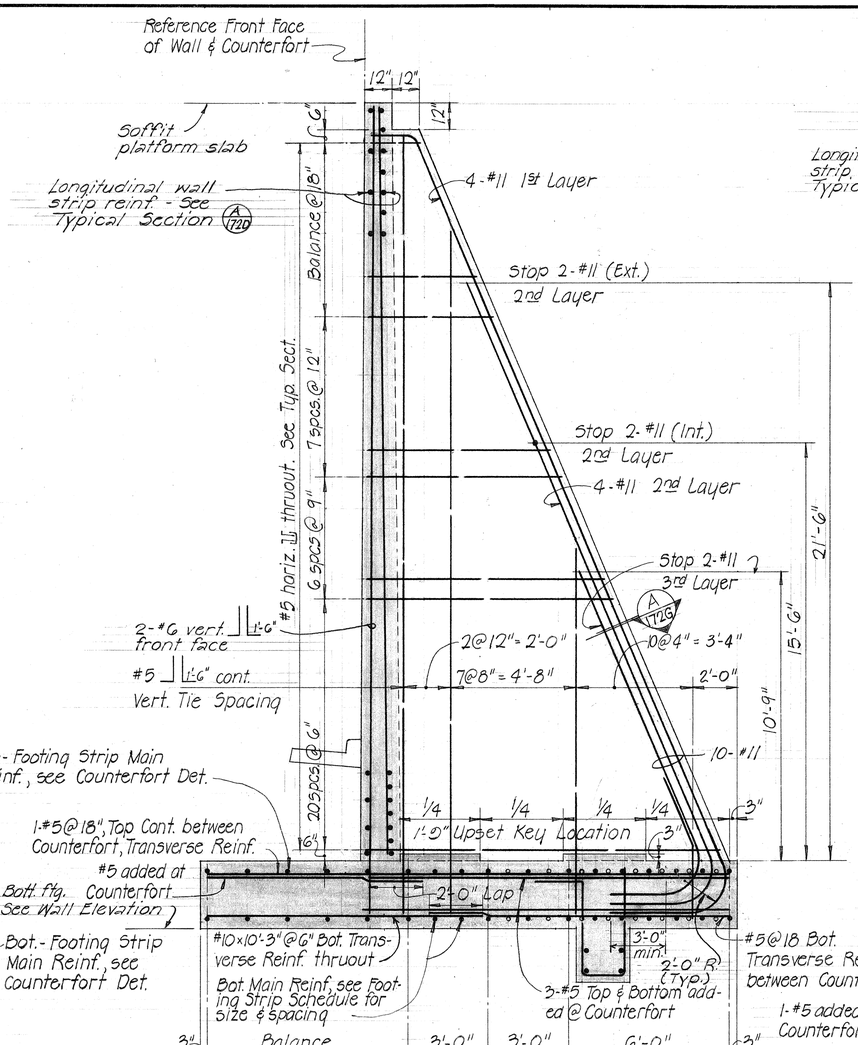
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HAWAII	HAW.				



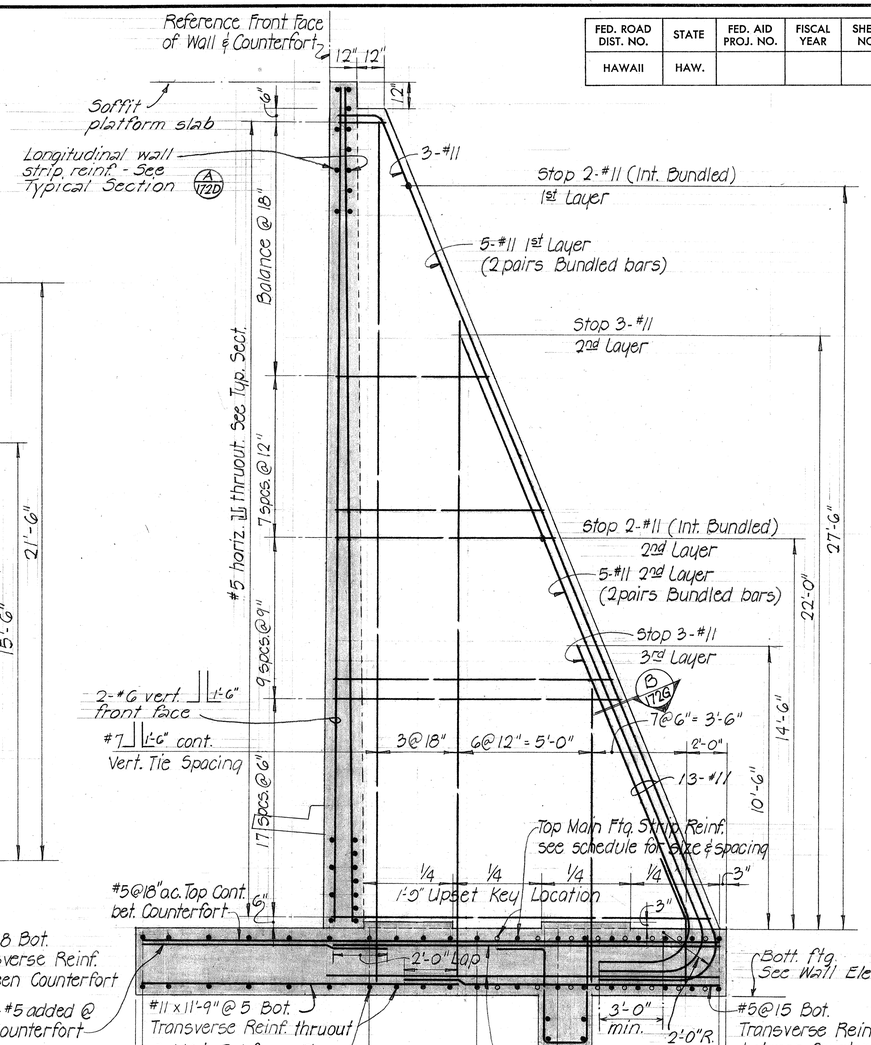
A 172G TYPICAL SECTION THRU COUNTERFORT WALL PANELS CFWP-1 THRU CFWP-8, INCLUSIVE

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



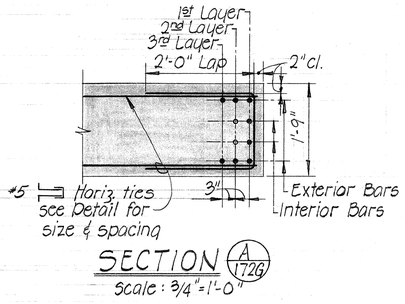
TYPICAL COUNTERFORT DETAIL - TYPE TCF-1

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



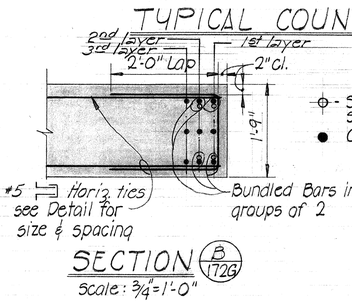
TYPICAL COUNTERFORT DETAIL - TYPE TCF-2

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



SECTION A 172G

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



SECTION B 172G

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

SYMBOLS

- ⊖ - Stop bars @ lower level (Int.) - See counterfort elevation.
- ● Continuous bars.

COUNTERFORT WALL PANEL DIMENSION SCHEDULE

ITEM		TYPE CFWP-1	CFWP-2	CFWP-3 CFWP-3a	CFWP-4	CFWP-5A	CFWP-5	CFWP-6	CFWP-7	CFWP-8
WALL STEM-BATTER BACK FACE		1/8:12	1/8:12	vertical	vertical	vertical	vertical	vertical	vertical	vertical
WALL DIMENSION	e	12"	12"	15"	15"	12"	12"	12"	12"	12"
	L	20'-0"	22'-0"	26'-0"	28'-0"	29'-0"	29'-0"	26'-0"	24'-0"	21'-0"
	t	2'-6"	3'-3"	3'-0"	3'-6"	3'-3"	3'-3"	3'-0"	2'-9"	2'-9"
	a	6'-0"	7'-0"	6'-3"	7'-0"	8'-0"	8'-0"	6'-6"	6'-0"	4'-6"
	b	14'-0"	15'-0"	18'-3"	19'-0"	20'-0"	20'-0"	18'-6"	18'-0"	16'-6"
	d	4'-0"	5'-0"	5'-9"	7'-0"	7'-0"	7'-0"	5'-6"	4'-0"	2'-6"
MAXIMUM SOIL PRESSURE P.S.F.		6,200	6,000	8,000	8,000	6,200	6,200	6,300	6,000	6,300

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No. N-II

TYPICAL COUNTERFORT TCF-1 & TCF-2 DETAILS & REINFORCEMENTS

INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. PROJ. No. I-HI-1(31) UNIT 1.
APRIL 1968

SHEET No. OF SHEETS

C01172G

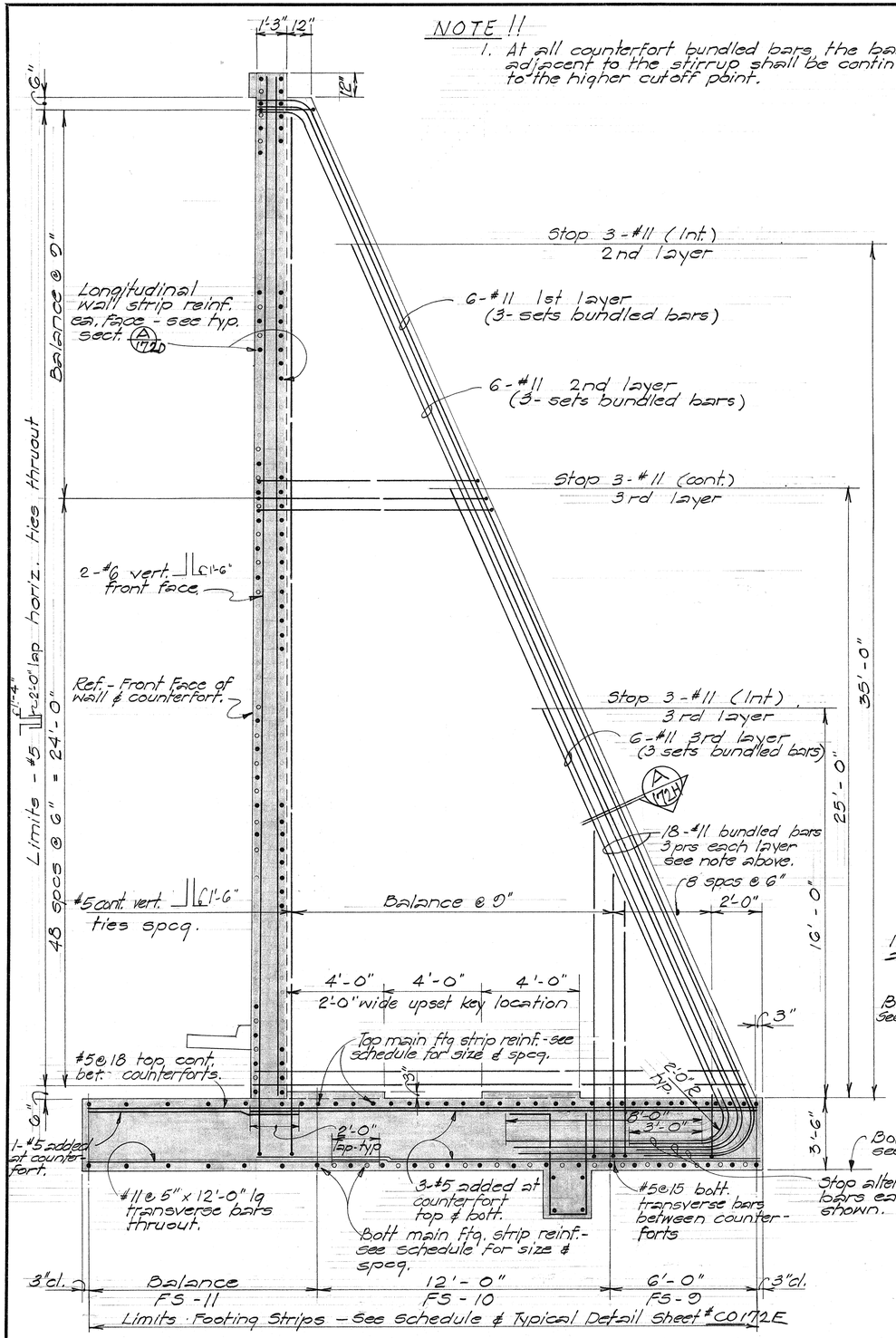
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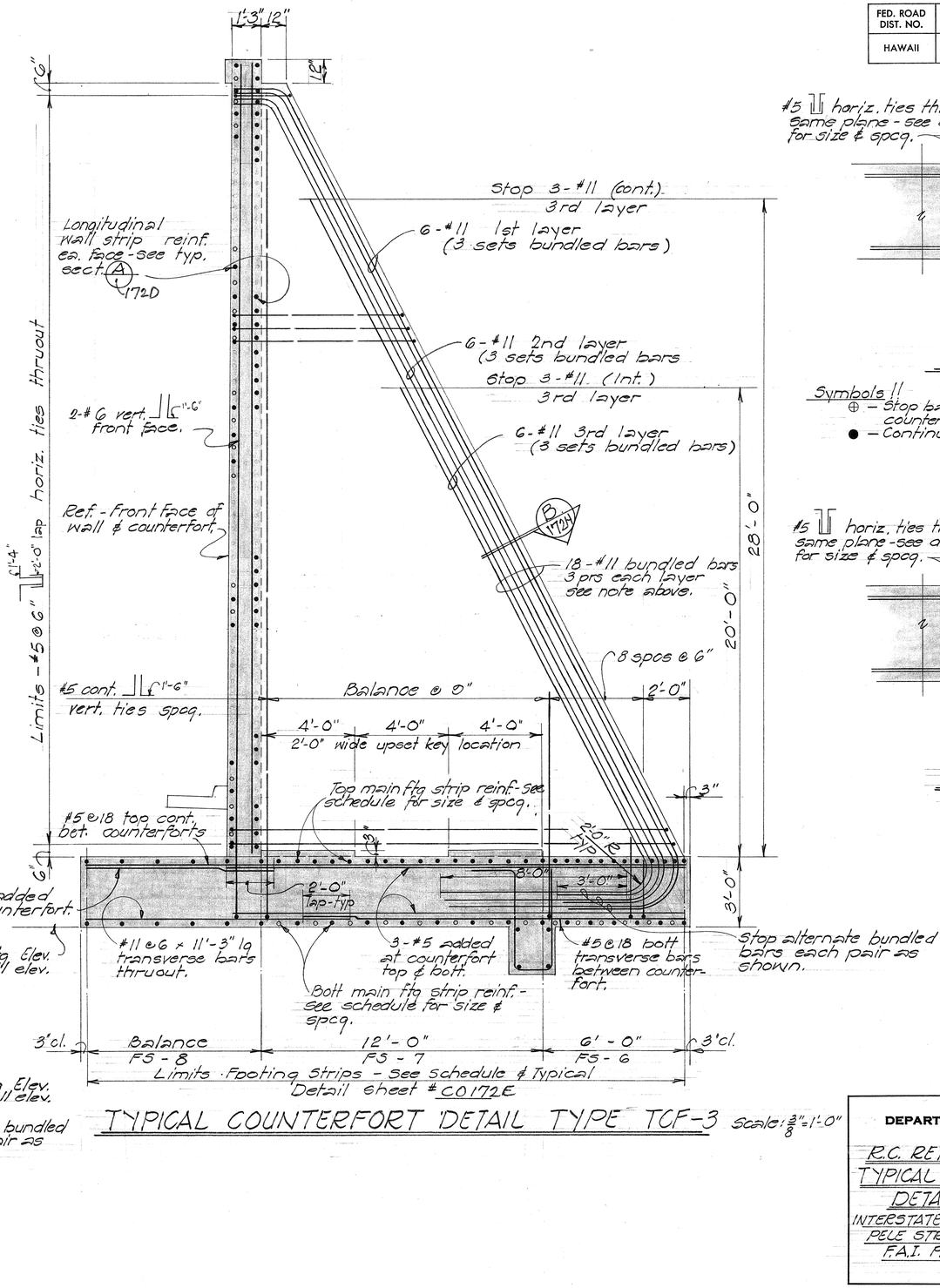
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HAWAII	HAW.				

NOTE !!

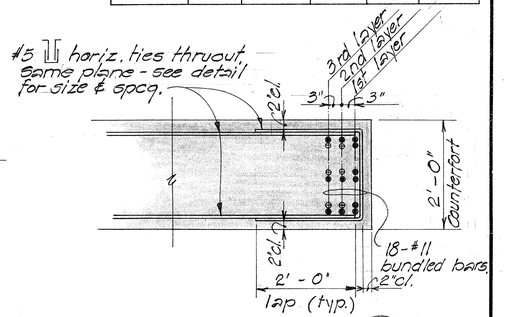
1. At all counterfort bundled bars, the bar adjacent to the stirrup shall be continuous to the higher cutoff point.



TYPICAL COUNTERFORT DETAIL TYPE TCF-4 Scale: 3/8"=1'-0"

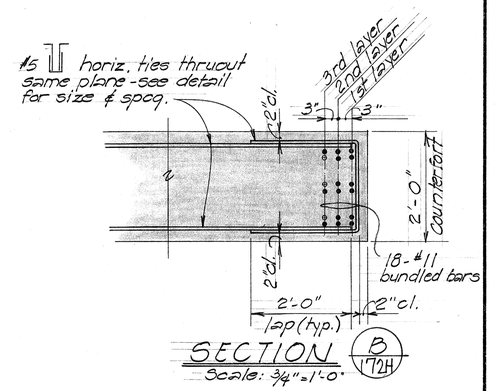


TYPICAL COUNTERFORT DETAIL TYPE TCF-3 Scale: 3/8"=1'-0"



SECTION A 172H
Scale: 3/4"=1'-0"

Symbols !!
⊕ - Stop bars at lower level (Int.) - see counterfort elevation.
● - Continuous bars.



SECTION B 172H
Scale: 3/4"=1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL No N-II

TYPICAL COUNTERFORT TCF-3 & TCF-4

DETAILS & REINFORCEMENTS

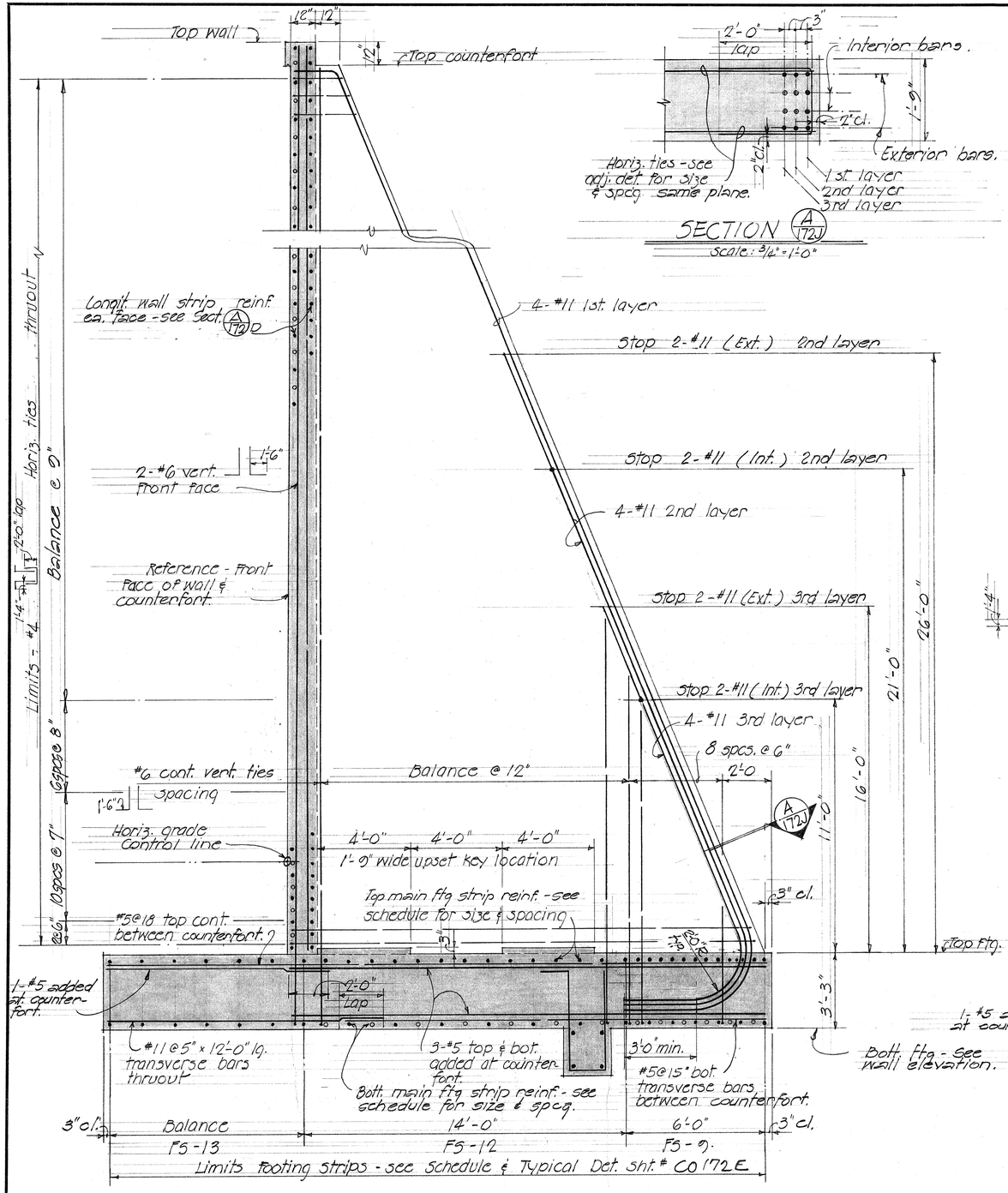
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1

SHEET No. OF SHEETS

C0172H

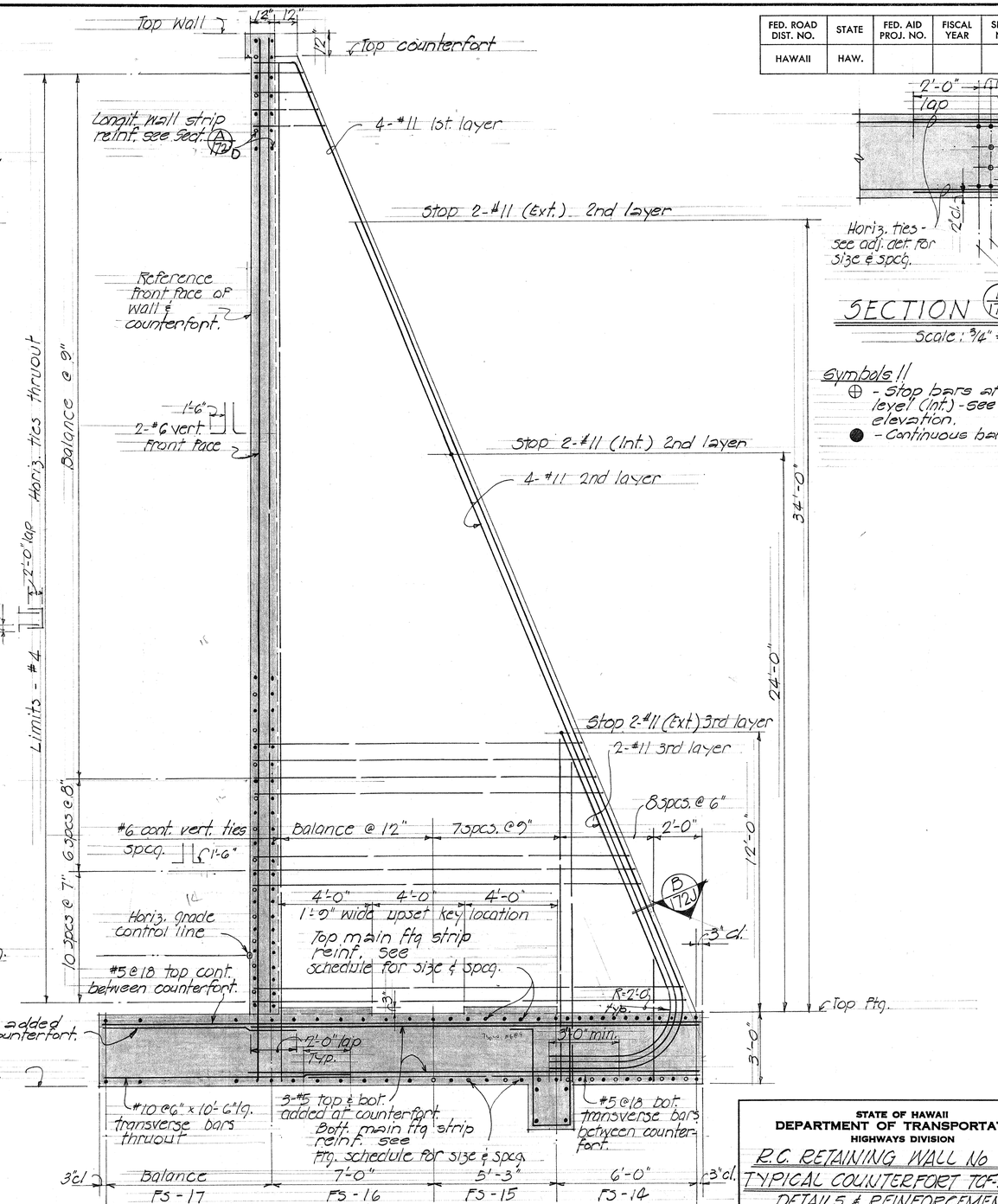
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HAWAII	HAW.				



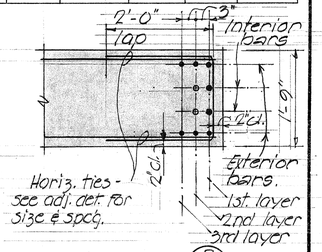
TYPICAL COUNTERFORT DETAIL TYPE TCF-5

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



TYPICAL COUNTERFORT DETAIL TYPE TCF-6

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



SECTION A/172J

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

SECTION B/172J

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

Symbols !!
⊕ - Stop bars at lower level (Int.) - see counterfort elevation.
● - Continuous bars.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

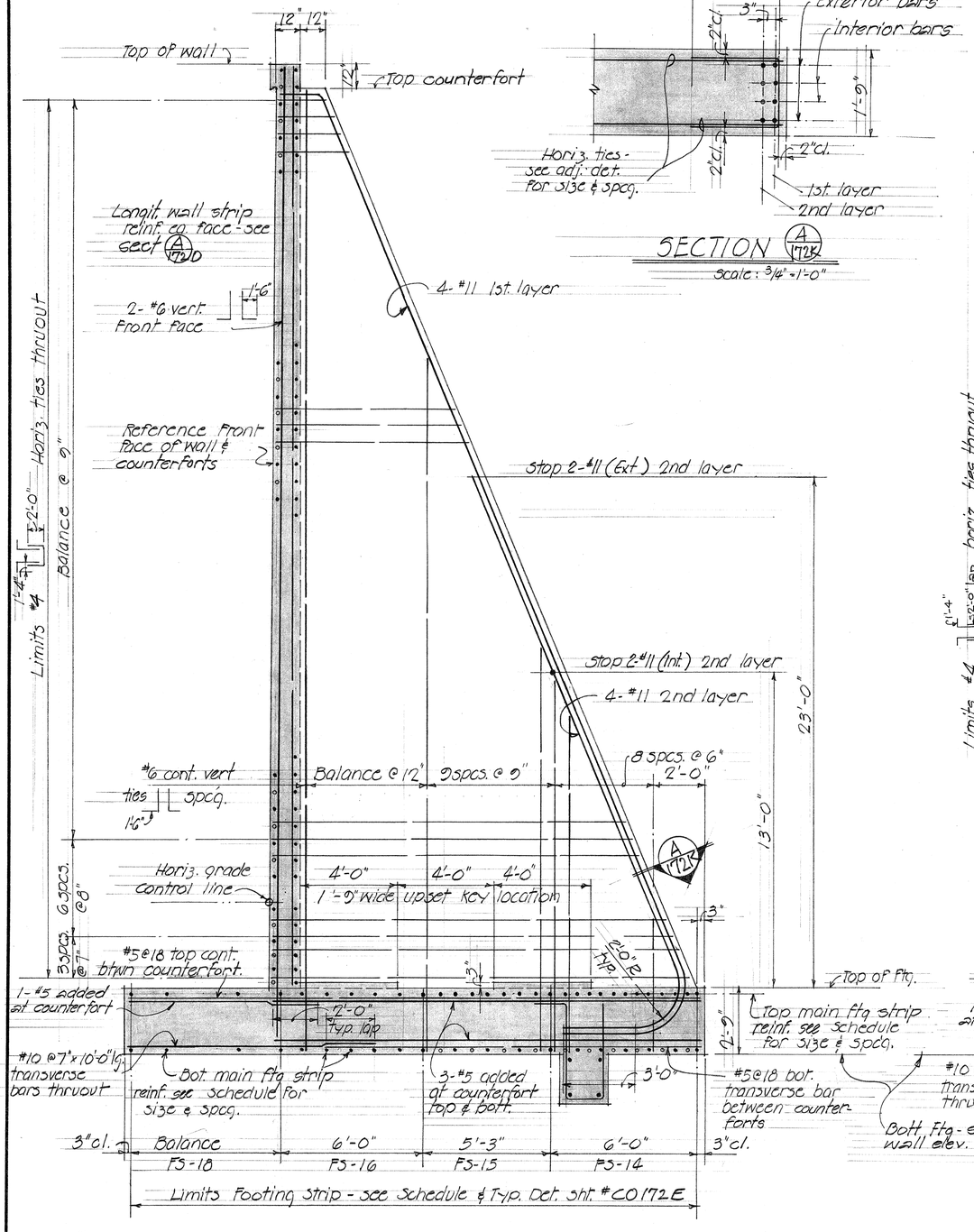
R.C. RETAINING WALL No N-II
TYPICAL COUNTERFORT TCF-5 & TCF-6
DETAILS & REINFORCEMENTS
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET To VICTORIA STREET
F.A.I. Proj. No. I-HI-1(31) Unit 1

SHEET No. OF SHEETS

C0172J

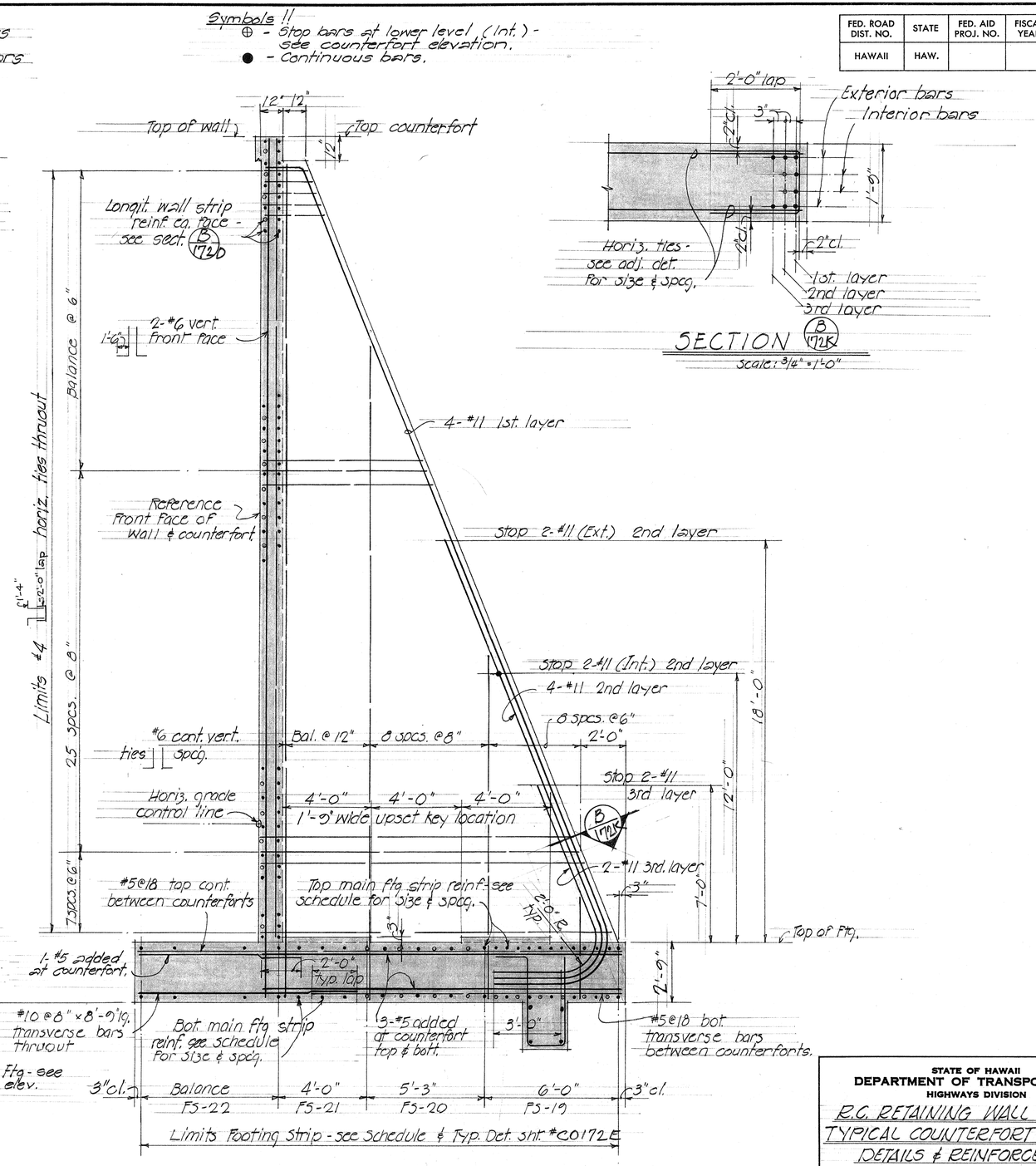
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



TYPICAL COUNTERFORT DETAIL TYPE TCF-7

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



TYPICAL COUNTERFORT DETAIL TYPE TCF-8

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

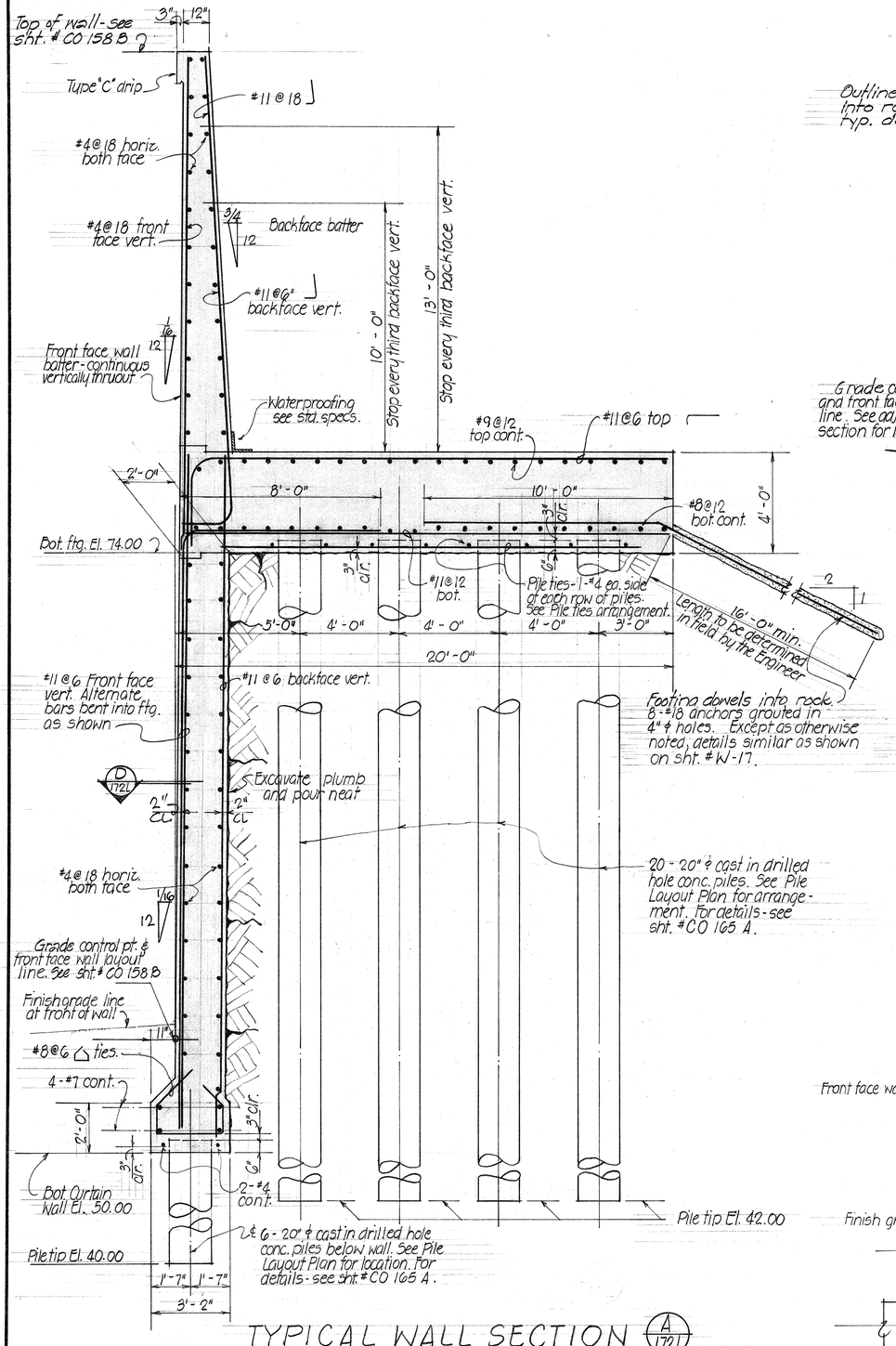
R.C. RETAINING WALL No N-II
TYPICAL COUNTERFORT TCF-7 & TCF-8
DETAILS & REINFORCEMENTS
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. Proj. No. I-H1-1(31) Unit 1

SHEET No. OF SHEETS

C0172K

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

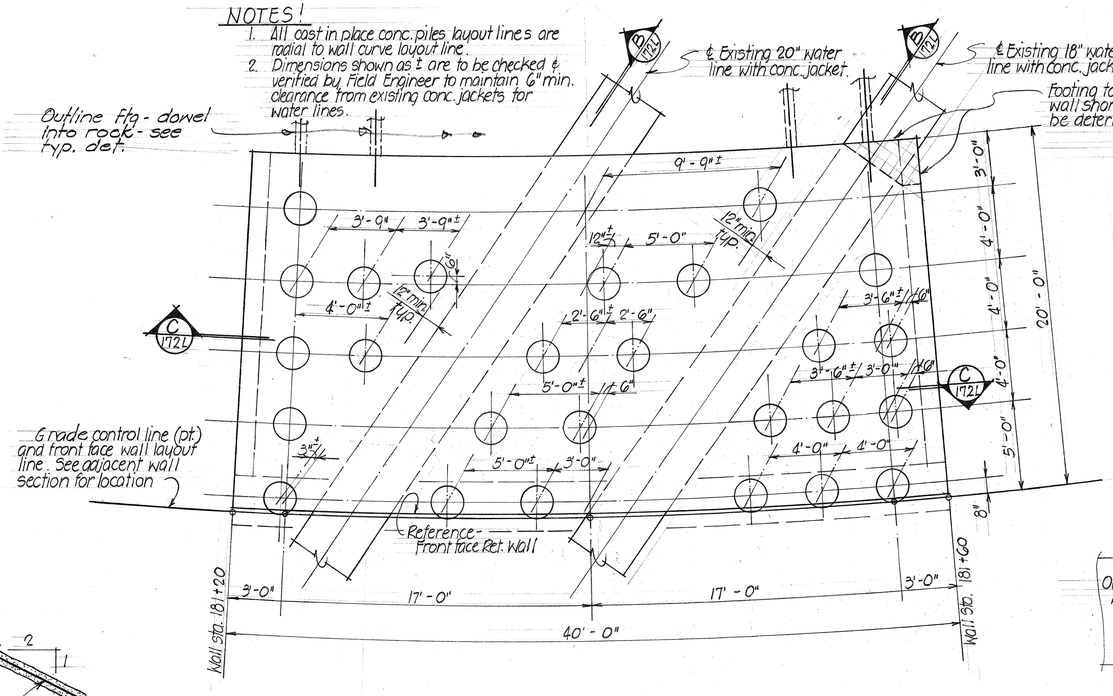


TYPICAL WALL SECTION (A 172L)

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

NOTES!

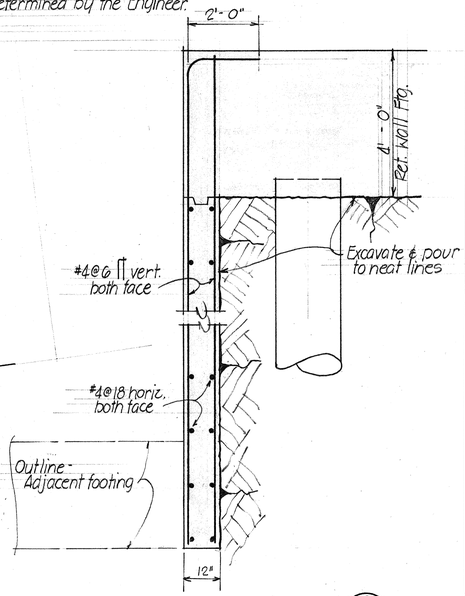
1. All cast in place conc. piles layout lines are radial to wall curve layout line.
2. Dimensions shown as ± are to be checked & verified by Field Engineer to maintain 6" min. clearance from existing conc. jackets for water lines.



PILE FOOTING LAYOUT PLAN (E 172L)

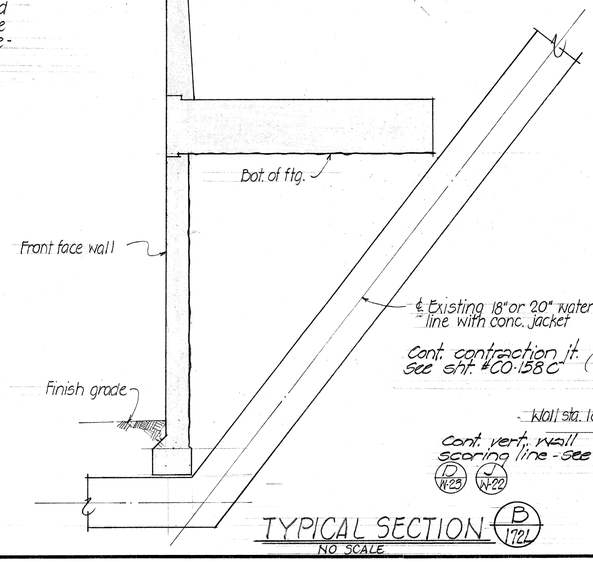
SCALE: 1/4" = 1'-0"

NOTE: Verify exact location of pipe & jacket before commencing drilling of piles.
Pile capacity 62 Tons.



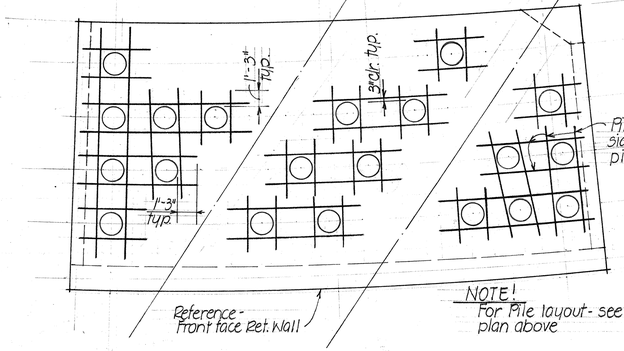
TYPICAL SECTION (C 172L)

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



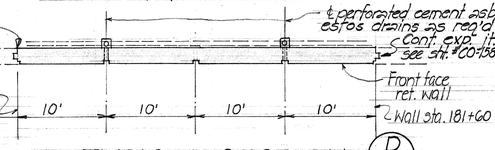
TYPICAL SECTION (B 172L)

NO SCALE



PLAN - PILE TIES ARRANGEMENT

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



TYPICAL SECTION (D 172L) SHOWING HORIZONTAL LOCATION OF DRAINS

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

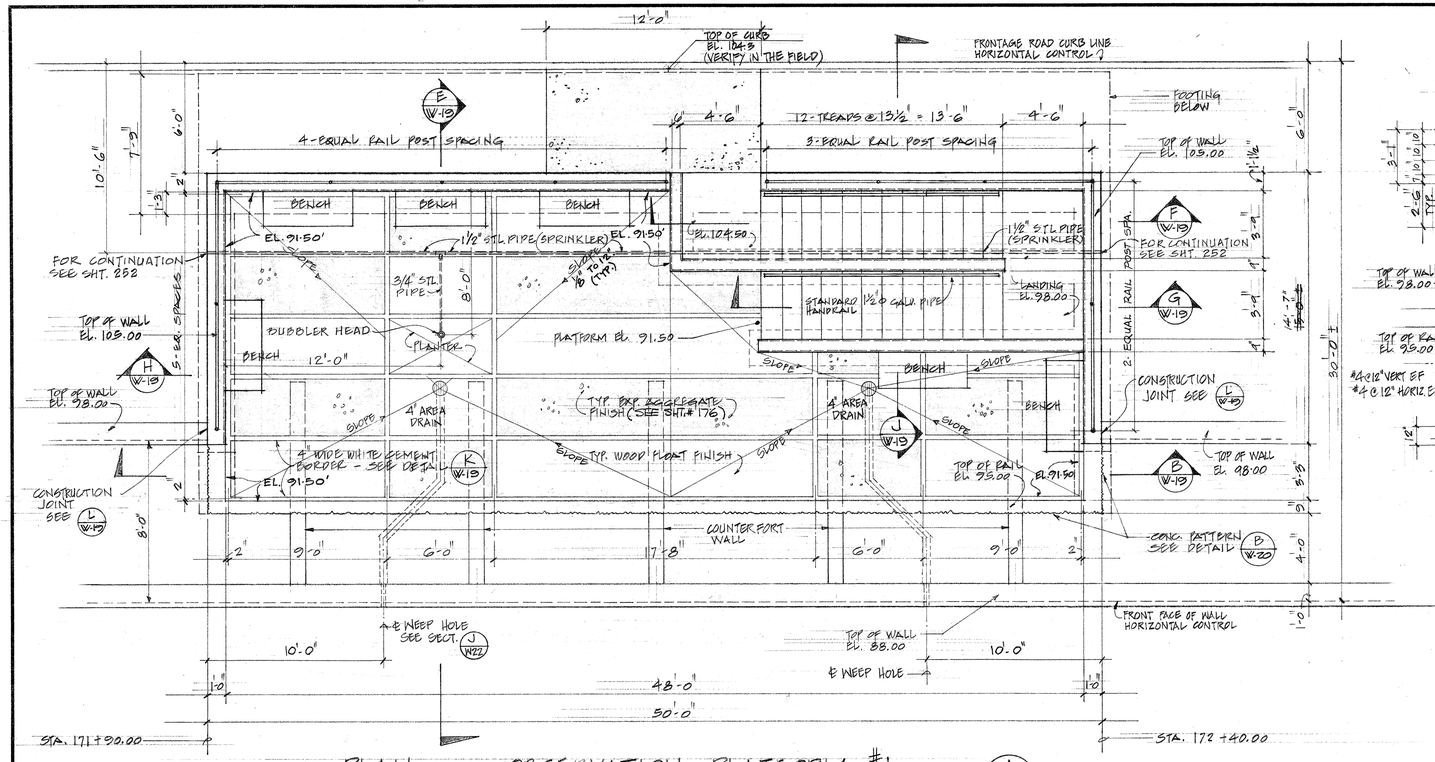
RETAINING WALL Nº II
WALL Sta. 181 + 20 to Sta. 181 + 60
PILE RETAINING WALL TYPE PRN-1
Interstate Route H-1 Lunalilo Freeway
PELE ST. to VICTORIA ST. FAI Proj. Nº I-HI-1(8)U 1
MARCH 1968

SHEET No. OF SHEETS

CO 172L

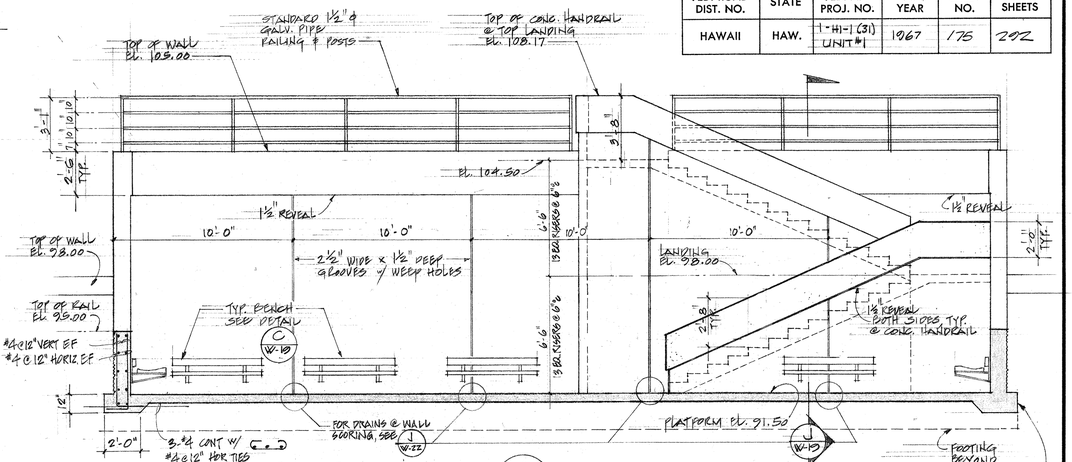
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1 (31) UNIT #1	1967	175	202



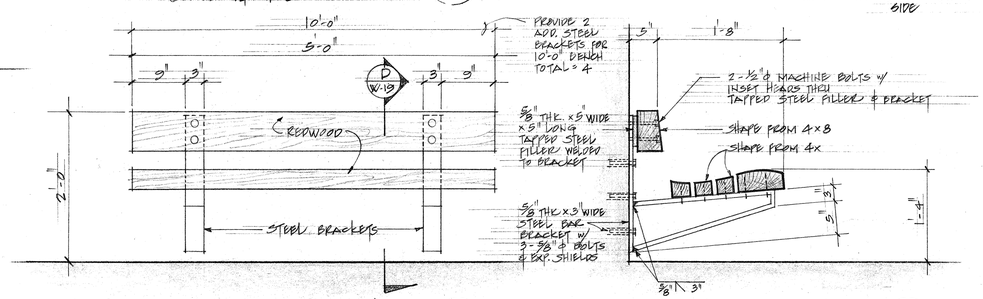
PLAN ~ OBSERVATION PLATFORM #1

SCALE 1/4" = 1'-0"



SECTION B

SCALE 1/4" = 1'-0"



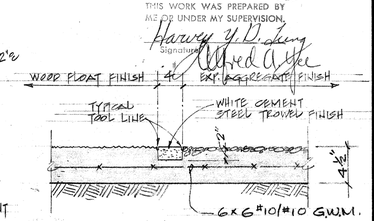
BENCH ELEVATION

SCALE 1" = 1'-0"

BENCH SECTION

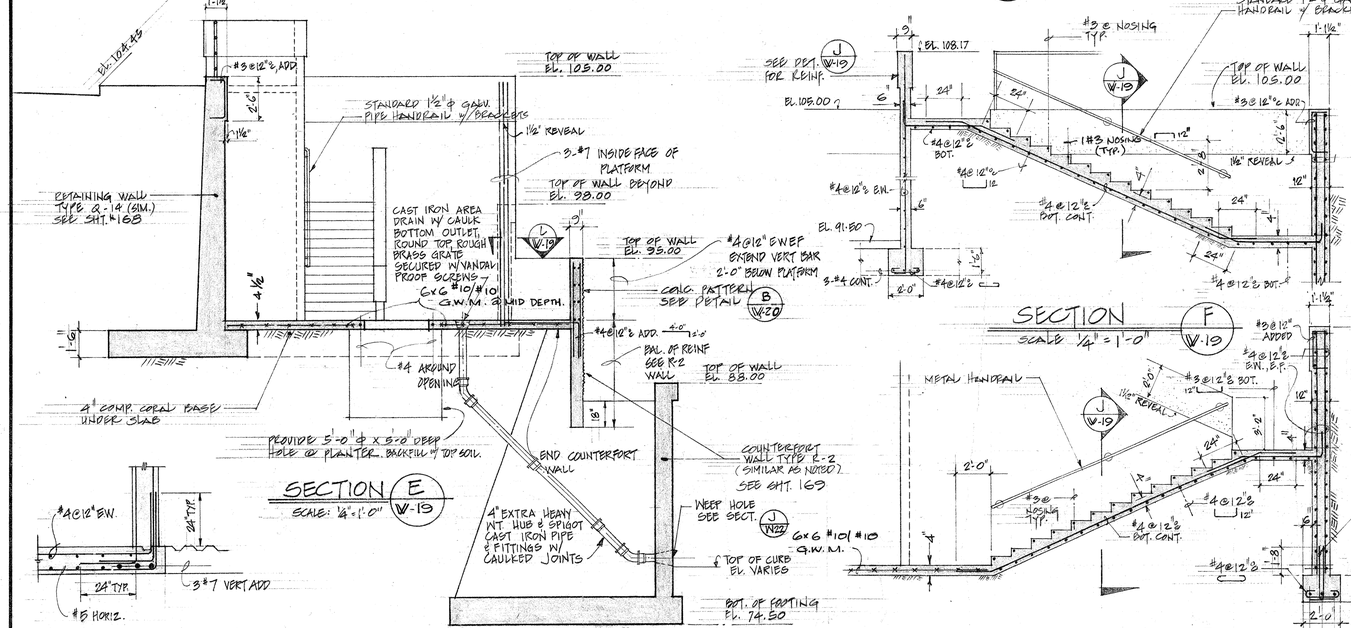
SCALE 1" = 1'-0"

NOTE: BENCHES AND HANDRAILS SHALL BE INCIDENTAL TO CLASS A-1 CONCRETE AND WILL NOT BE PAID FOR SEPARATELY.



BORDER DETAIL

SCALE 1" = 1'-0"



SECTION E

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

SECTION L

NO SCALE

NOTE: ALL EXCAVATION, DRAINS & PIPE SHALL BE INCIDENTAL TO CLASS A-1 CONCRETE AND WILL NOT BE PAID FOR SEPARATELY.

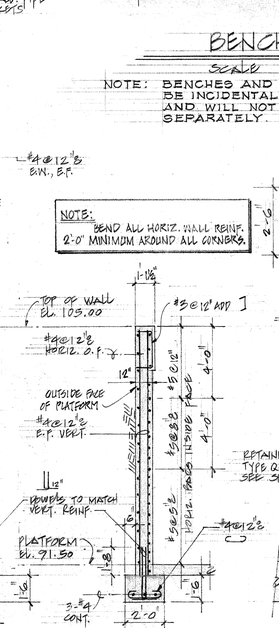
SECTION F

SCALE 1/4" = 1'-0"

SECTION G

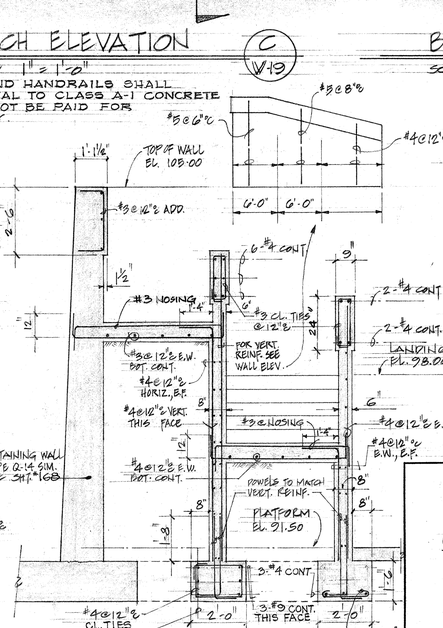
SCALE 1/4" = 1'-0"

NOTE: BEND ALL HORIZ. WALL REINF. 2'-0" MINIMUM AROUND ALL CORNERS.



SECTION H

SCALE 1/4" = 1'-0"



SECTION J

SCALE 3/8" = 1'-0"

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: Harvey Y. D. Lung

Signature: Alfred A. Yee

ALFRED A. YEE — REGISTERED PROFESSIONAL ENGINEER — No. 1477 — HAWAII, U.S.A.

HARVEY Y. D. LUNG — REGISTERED PROFESSIONAL ENGINEER — No. 1477 — HAWAII, U.S.A.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OBSERVATION PLATFORM No. 1
PLAN & SECTIONS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT No. 1-H1-1 (31) UNIT 1

DEC. 1966

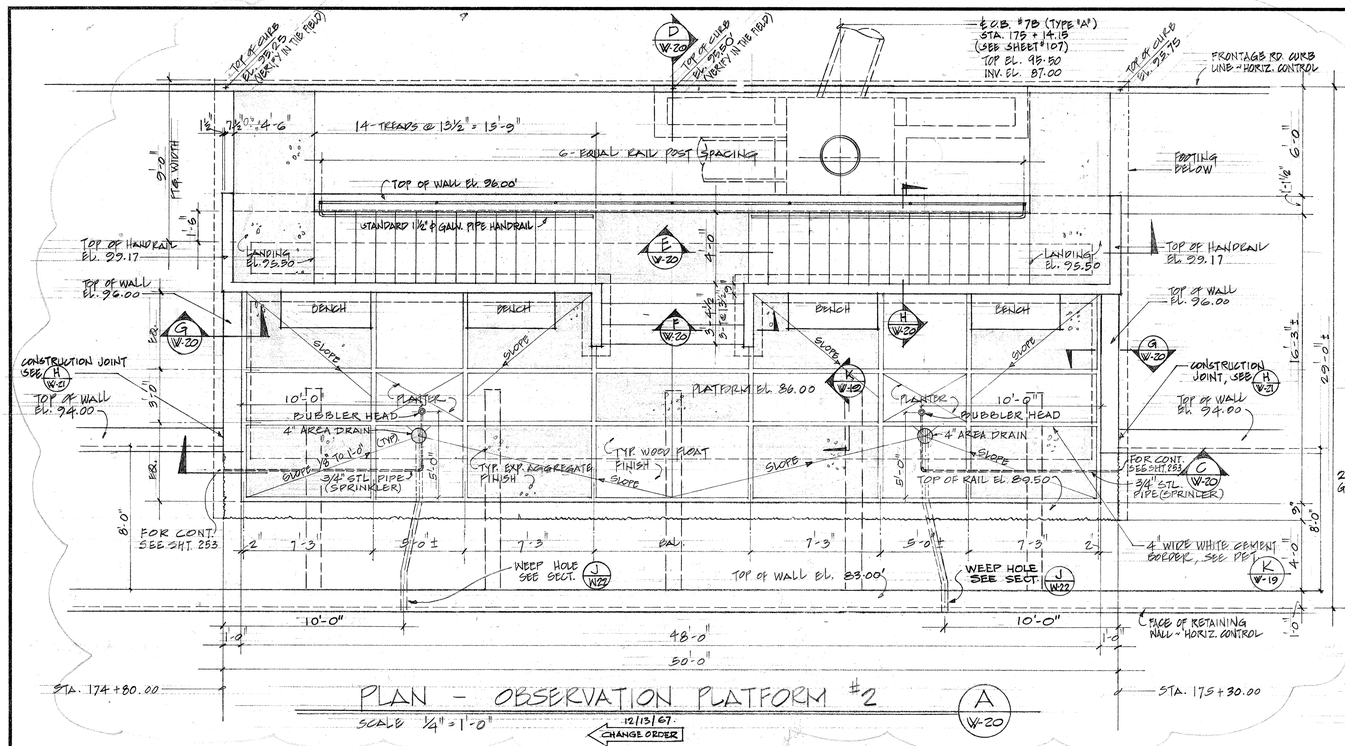
SHEET No. W-19 OF 31 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

175

a. a. yee Job no. 66-87-2

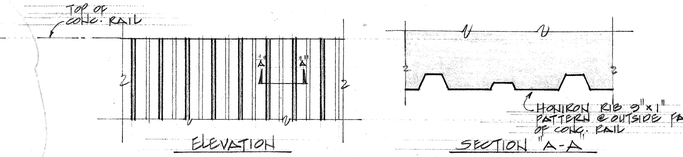
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(31) UNIT# 1	1967	176	292



PLAN - OBSERVATION PLATFORM #2

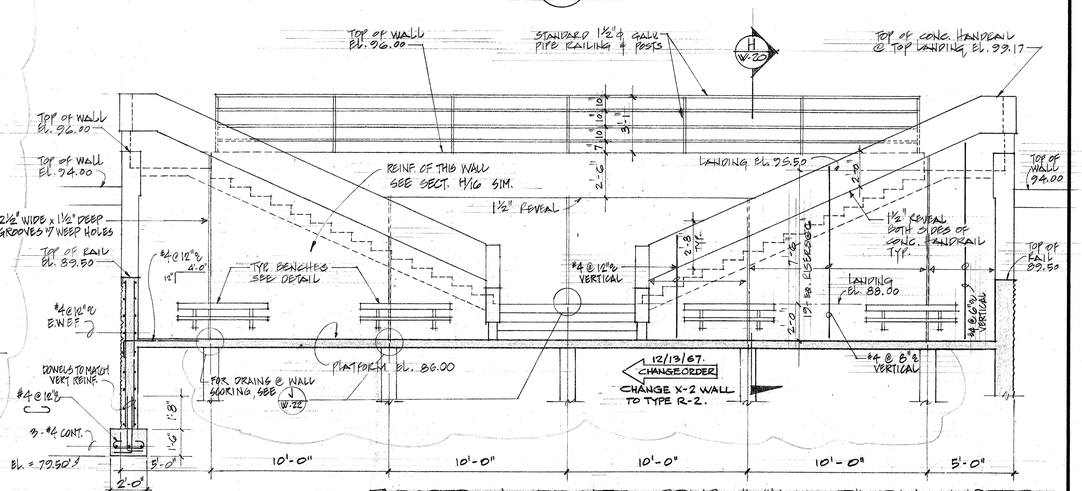
SCALE ¼" = 1'-0" — A W-20

12/13/67 CHANGE ORDER
CHANGE X-2 WALL TO TYPE R-2 RELOCATE. IRON PIPES & WEEP HOLES.



CONCRETE PATTERN DETAIL — B W-20

NO SCALE



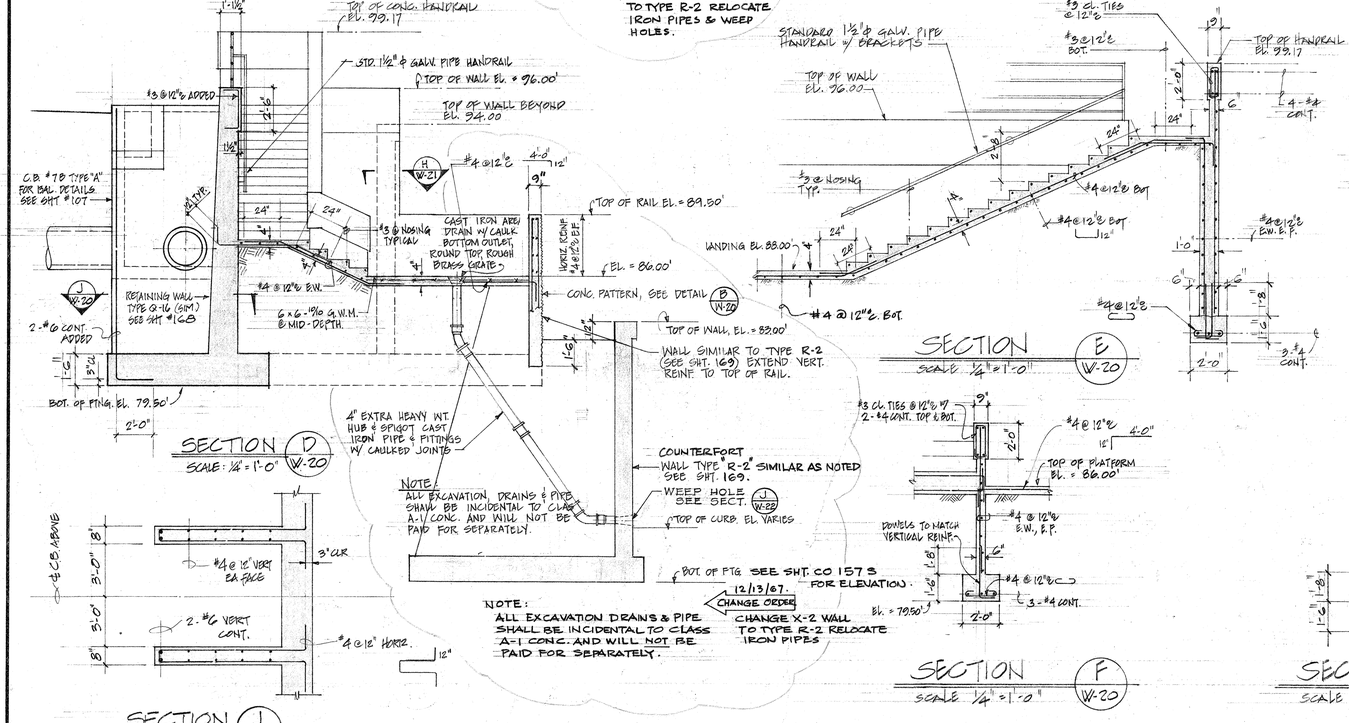
SECTION — C W-20

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

NOTE: BEND ALL HORIZONTAL WALL REINF. 2'-0" MINIMUM AROUND ALL CORNERS & INTERSECTIONS.

EXPOSED AGGREGATE CONC. WALK FINISH NOTES:

- CONCRETE WALLS TO HAVE A FINE EXPOSED AGGREGATE SURFACE INSTALLED AS FOLLOWS:
- CONCRETE MIX SHALL BE STANDARD #467 - AGGREGATE SHALL BE WELL GRADED CRUSHED RUN GRAVEL WITH MAXIMUM SIZE 3/4". PLACE CONC. IN NORMAL MANNER, AFTER SCREEDING, "SEED" INTO TOP OF WET CONC. #3 FINE WHITE MARBLE CHIPS AT THE RATE OF 1 CU. FT. PER 100 SQ. FT. & THEN WOOD FLOAT CAREFULLY & EVENLY, & ALLOW TO PARTIALLY SET. THE CONC. SHOULD BE HARD ENOUGH TO SUPPORT A MAN WITHOUT CAUSING IMPRINT.
- WHEN CONC. IS SUFFICIENTLY SET BRUSH SURFACE WITH SOFT BROOM OR STIFF WIRE BRUSH #, AT THE SAME TIME, WASH WITH HOSE STREAM OF SUFFICIENT FORCE TO REMOVE SCUM & ANY LOOSE MATERIAL, SO AS TO EXPOSE THE AGGREGATE. CARE SHOULD BE TAKEN NOT TO SCRUB TO DEEPLY, THEREBY LOOSENING THE TOP AGGREGATE. THE BRUSHING & WASHING SHOULD CONTINUE UNTIL A UNIFORM TEXTURE OF EXPOSED AGGREGATE IS ESTABLISHED OVER THE ENTIRE SURFACE. THE CONTRACTOR SHALL SUBMIT SAMPLES FOR ARCHITECT'S APPROVAL BEFORE BEGINNING POUR.



SECTION — D W-20

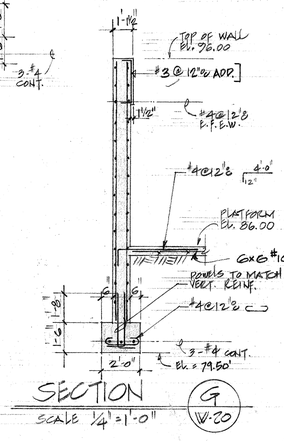
SCALE: ½" = 1'-0"

SECTION — E W-20

SCALE: ¼" = 1'-0"

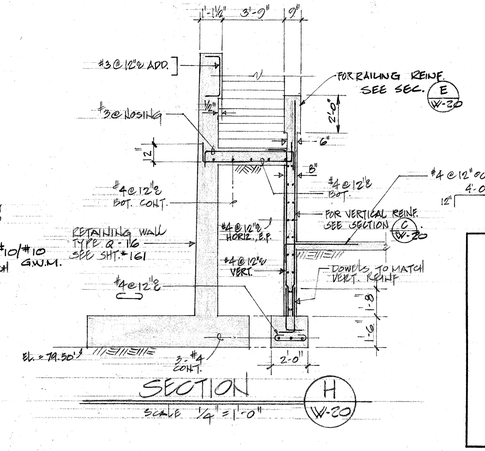
SECTION — F W-20

SCALE: ¼" = 1'-0"



SECTION — G W-20

SCALE: ¼" = 1'-0"



SECTION — H W-20

SCALE: ¼" = 1'-0"

ALFRED A. YEE — REGISTERED PROFESSIONAL ENGINEER — No. 3324 — HAWAII, U.S.A.

HARVEY Y. D. LUNG — REGISTERED PROFESSIONAL ENGINEER — No. 4324 — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Harvey Y. D. Lung
Signature
Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OBSERVATION PLATFORM Nº 2
PLAN & SECTIONS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-HI-1 (31) UNIT 1

DEC. 1966

SHEET No. W-20 OF 31 SHEETS

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

PRINTED ON NO. 1000H CLEARPRINT

THIS SHEET SUPERCEDES SHEET 176.

C 0 176

A. A. Yee Job no. 66-87-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT#1	1967	177	202

PLAN ~ OBSERVATION PLATFORM #3

SCALE 1/8" = 1'-0"

SECTION B

SCALE 1/4" = 1'-0"

SECTION C

SCALE 1/4" = 1'-0"

TYPICAL SECTION

SCALE 3/8" = 1'-0"

SECTION D

SCALE 1/8" = 1'-0"

TYP. ELEVATION

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

SECTION E

SCALE 1/4" = 1'-0"

SECTION F

SCALE 1/4" = 1'-0"

SECTION G

3/8" = 1'-0"

SECTION H

3/8" = 1'-0"

TYPICAL CONSTRUCTION JOINT

NOTE: ALL EXCAVATION, DRAINS & PIPE SHALL BE INCIDENTAL TO CLASS A-1 CONC. AND WILL NOT BE PAID FOR SEPARATELY.

NOTE! SCORING AND DRAINS OCCUR @ 10'-0"℄ & RETAINING WALL & STAIR WALL UNLESS SHOWN OTHERWISE, SEE SHT. # CO-177C

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OBSERVATION PLATFORM Nº 3
PLAN & SECTIONS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-HI-1 (31) UNIT 1

DEC. 1966

SHEET No. W-21 OF 31 SHEETS

THIS SHEET SUPERSEDES SHT. Nº 177

CO 177A

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

(82.75)

(83.50)

BACK WALL R.W. TYPE T2-20 — 49'-7 1/2"

BACK WALL R.W. TYPE T2-22 — BALANCE — 20'-9"

12" 9'-0" 12" 12" 12" 9'-0" 12"

WALL STA. 178+80 — AZ. 253°08'30"

(84.00) (84.25)

2'-3" 2' 1'-3"

BACK WALL R.W. T1-8 (84.83)

BACK WALL R.W. T1-17

FRONT WALL T2-28

(56.75) (56.00) (52.75) (51.50)

STA. 177+60

60'-0" FRONT WALL CFWP-1

60'-0" FRONT WALL TYPE CFWP-2

FRONT WALL TYPE CFWP-3

WALL STA. 178+80

(F 177B) PART FOUNDATION PLAN - OBSERVATION PLATFORM.

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

#11@18L N.F. VERT. #4@18 F.F. VERT. #4@18 E.F. VERT.

5'-0" 12" SEE SECT. (C W21)

CONC. HANDRAIL

TOP WALL EL. 103.0

#7@18 CONT. HORIZ. N.F.

#4@12 FAR FACE HORIZ. THRUOUT

#7@9 E.F. HORIZ. STOP ALT. BARS.

#7@6 E.N.F. HORIZ. STOP ALT. BARS AS SHOWN

BALANCE 6'-0" 5'-0" 3'-0"

3'-6" (TYP.) 4'-6" (TYP.)

BOT. WALL EL. 83.5

2'-6" 12" MIN. (4-#7 ADDED N.F. 3-#4 ADDED @ 12" F.F.)

8'-3"

LIMITS - EXCAVATION LINE

END WALL ELEVATION (A 177B) SCALE: 1/4" = 1'-0"

#10x14'-0" L.C. @ 12" TOP

#4x10'-0" L.C. @ 18" BOT.

FOOTING R.W. TYPE T2-20

#4@18 @ TOP (D 177C)

4-#4 BOT. FTG BARS.

2'-6" 10'-0"

(B 177B) FOOTING PLAN SCALE: 1/4" = 1'-0"

#11x14'-0" L.C. @ 10" TOP

#4x10'-0" L.C. @ 18" BOT.

FOOTING R.W. TYPE T2-22

#4@18 @ TOP (D1 177C)

4-#4 BOT. FTG BAR

2'-6" 10'-0"

(D 177B) FOOTING PLAN SCALE: 1/4" = 1'-0"

E.A. FACE VERT. #4@18 Z

#11@18 J N.F. VERT. #4@18 F.F. VERT.

SEE SECT. (C W21) 12" 5'-0"

TOP WALL EL. 106.5

#6@12" N.F. CONT. HORIZ.

#6@12" N.F. CONT. HORIZ.

#8@9" N.F. HORIZ. STOP ALT. BARS

#8@6" N.F. HORIZ. STOP ALT. BARS

4'-0" BAL. 4'-6" 6'-0" 3'-0"

#4@12 FAR FACE HORIZ. THRUOUT

4'-0" (TYP.) 3'-0" (TYP.)

BOT. WALL EL. 82.75

12" MIN. 4'-0"

5-#8 ADDED @ 6 N.F. 3-#4 ADDED @ 12 F.F.

LIMITS - EXCAVATION LINE

END WALL ELEVATION (C 177B) SCALE: 1/4" = 1'-0"

4'-0"

STEM R.W. TYPE T2-20

#11@18 Bot. Layer

NEAR FACE VERT. SEE ELEV. (A 177B) FOR SIZE & SPA.

#4@12 VERT. FAR FACE

#4@12 B.F. HORIZ.

VARIES

12" STAIR SUPPORT WALL

FRONT FACE VERT. WALL REINF. SEE SECT. (D W21) FOR SIZE & SPA.

3'-0" (TYP.)

OUTLINE R.W. STEM T1-8

3" OFFSET & MATCH DRIPLINE

#4@18 E.F. VERT.

#4@12 FAR FACE HORIZ. REINF. THROUOT

NEAR FACE HORIZ. REINF. SEE ELEV. (A 177B) FOR SIZE & SPA.

12" END WALL

SECTION (C 177B) SCALE: 1/4" = 1'-0"

4'-0"

STEM R.W. TYPE T2-22

#11@18 Bot layer

VARIES

#4@12 VERT. FAR FACE

12" STAIR SUPPORT WALL

#4@12 B.F. HORIZ.

FRONT FACE VERT. WALL REINF. SEE SECT. (D W21) FOR SIZE & SPA.

(D1 177C) 12" (TYP.)

NEAR FACE VERT SEE ELEV (C 177B) FOR SIZE & SPA.

NEAR FACE HORIZ. SEE ELEV. (C 177B) FOR SIZE & SPA.

#4@12 E.F. FAR FACE HORIZ. THRUOUT #4@18 VERT. FAR FACE

OUTLINE RET. WALL STEM T1-17

12" END WALL

3" OFFSET & MATCH DRIPLINE ABOVE

SECTION (E 177B) SCALE: 1/4" = 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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

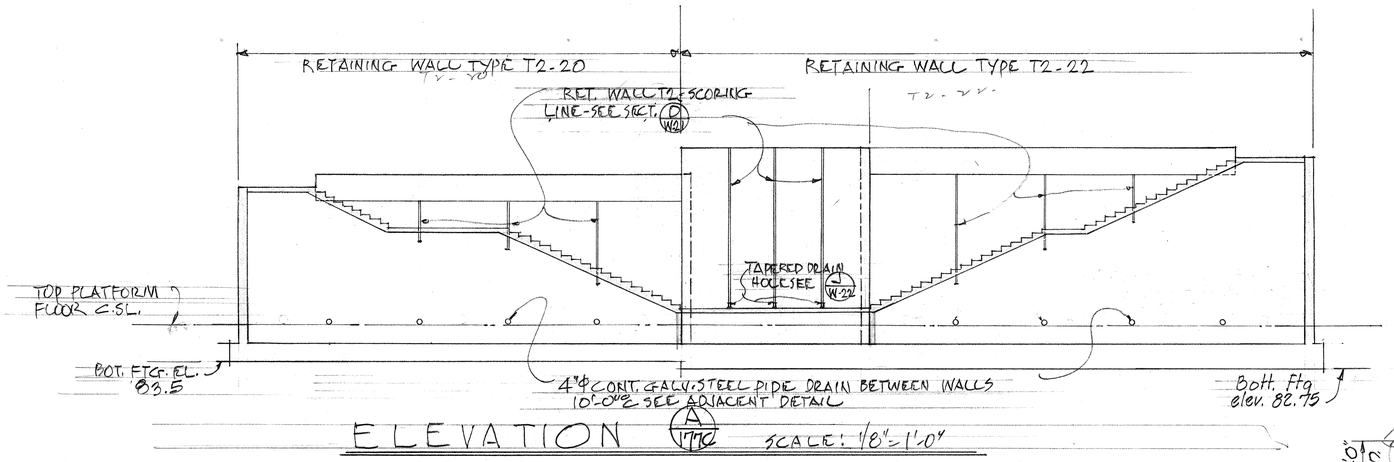
OBSERVATION PLATFORM No. 3
SECTIONS AND DETAILS

INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
FAI PROJ. No. I-HI-1(31) UNIT 1

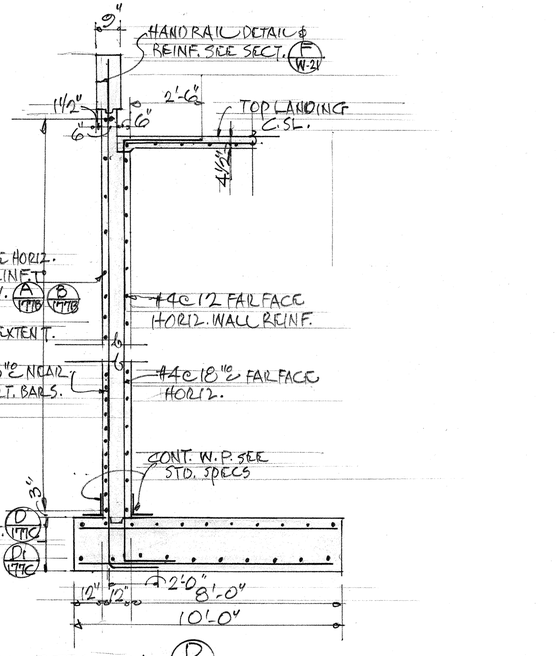
SHEET No. OF SHEETS

C 01 77 13

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

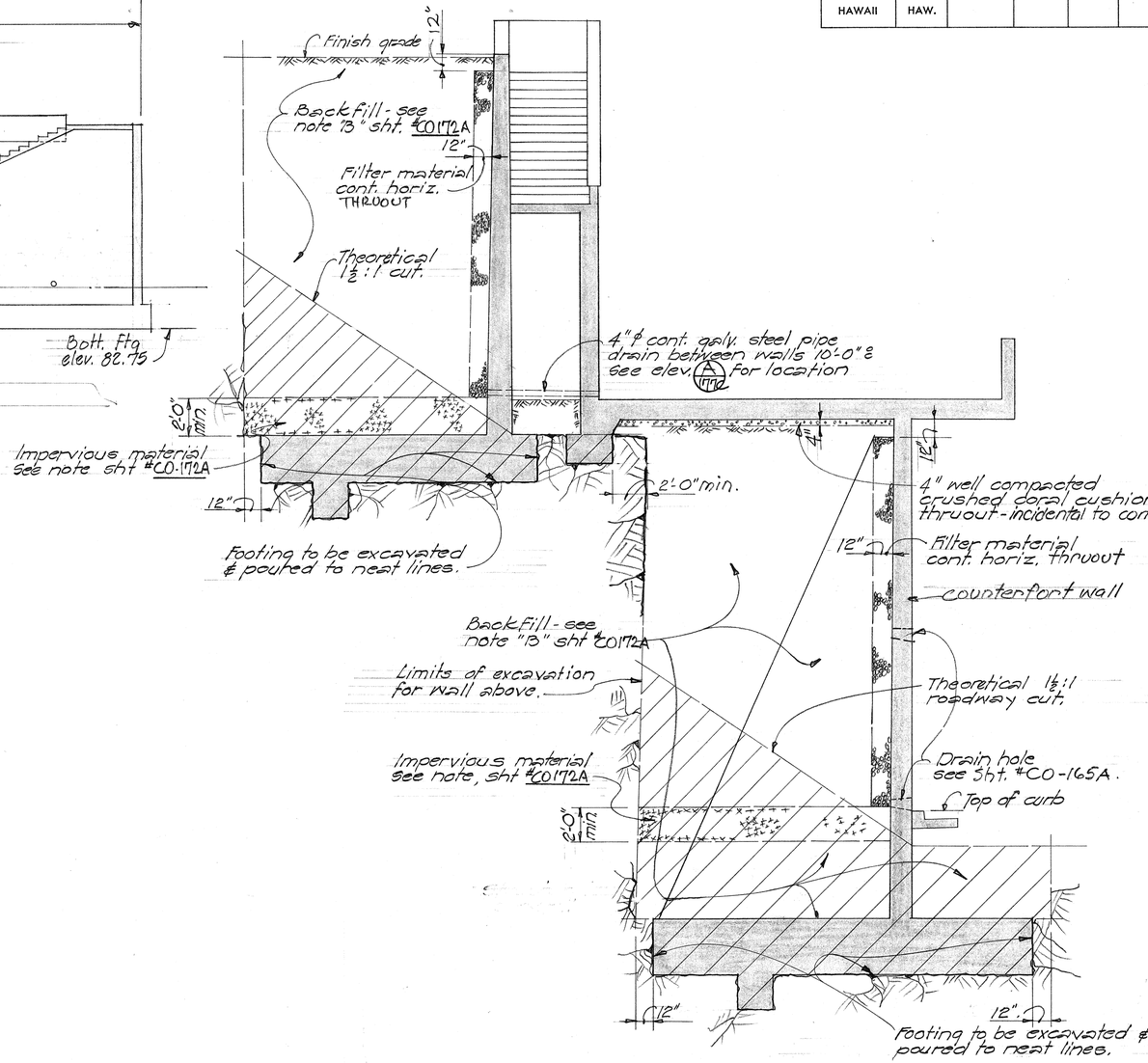


ELEVATION (A 1770) SCALE: 1/8"=1'-0"



SECTION (D 1770) AS SHOWN - SCALE: 3/8"=1'-0"

(SECT. (D1 1770) SIMILAR EXCEPT AS OTHERWISE NOTED)



BET. WALL STA. 177 + 60 to STA. 178 + 80

TYPICAL STRUCTURAL EXCAVATION AND BACKFILL AT PLATFORM scale: ¼"=1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OBSERVATION PLATFORM Nº 3 SECTIONS AND DETAILS

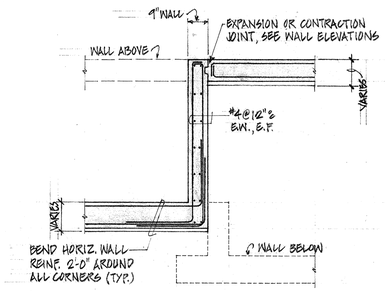
INTERSTATE ROUTE H-1 LUNALILO FREEWAY
PELE STREET TO VICTORIA STREET
F.A.I. PROJ. Nº I-HI-1(31) UNIT 1
MARCH 1968

SHEET No. OF SHEETS

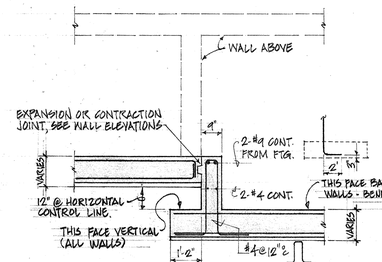
CO172C

PRINTED ON NO. 1000H CLEARPRINT

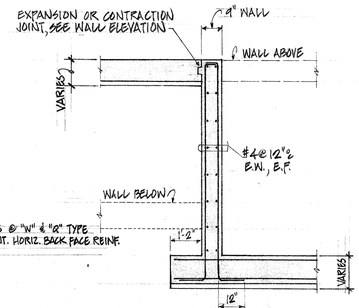
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	178	292



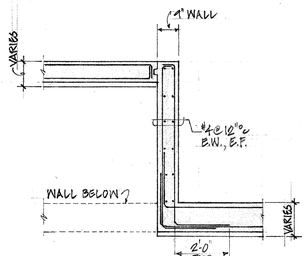
SECTION A
SCALE: 3/8" = 1'-0" W-22



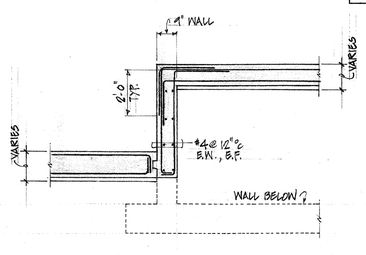
SECTION B
SCALE: 3/8" = 1'-0" W-22



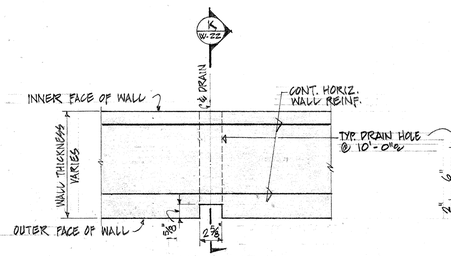
SECTION C
SCALE: 3/8" = 1'-0" W-22



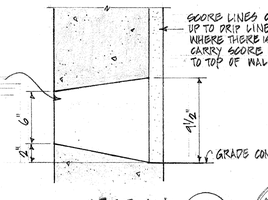
SECTION D
SCALE: 3/8" = 1'-0" W-22



SECTION E
SCALE: 3/8" = 1'-0" W-22

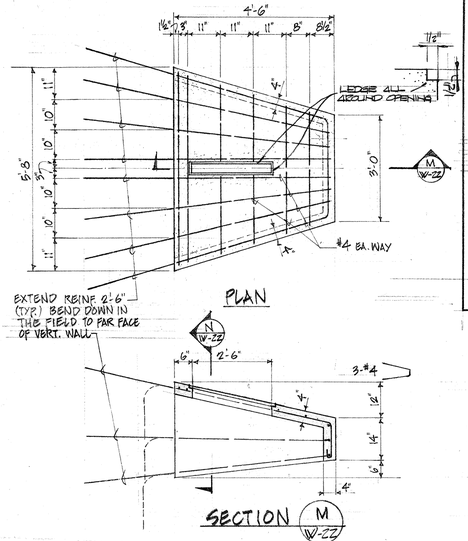


PLAN - SECTION



SECTION K W-22

TYPICAL DETAIL OF WALL SCORING & DRAINS J W-22
SCALE: 1½" = 1'-0"

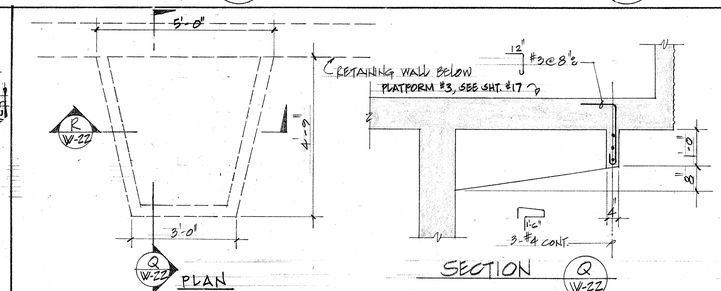


PLAN

SECTION M W-22

SECTION N W-22

DETAIL - PRECAST CONC. HOOD FOR WALL HUNG LIGHT FIXTURES L W-22
SCALE: 1½" = 1'-0"

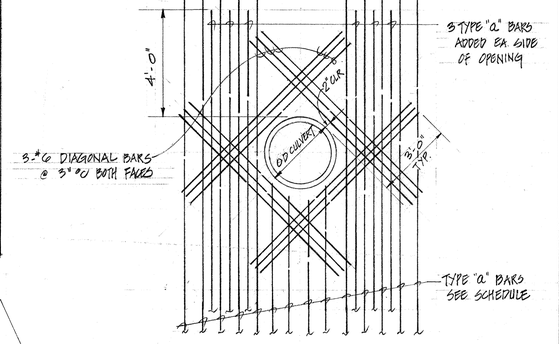


PLAN

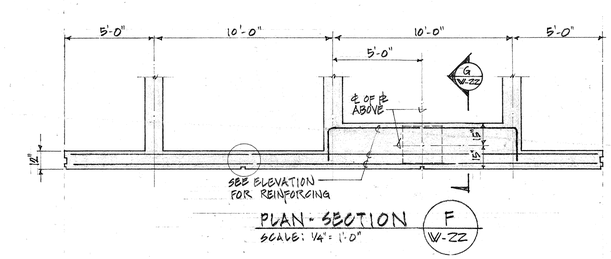
SECTION Q W-22

SECTION R W-22

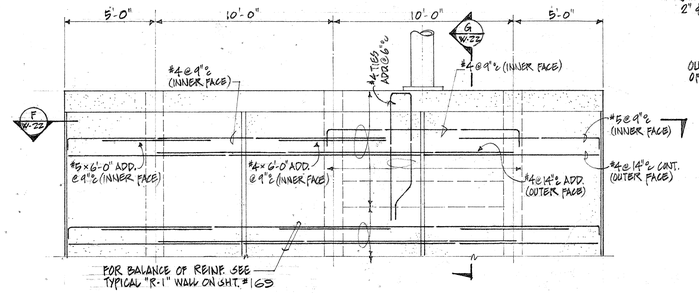
DETAIL - CAST-IN-PLACE CONC. HOOD FOR LIGHT FIXTURES @ OBS. PLATFORM #3 P W-22
SCALE ½" = 1'-0"



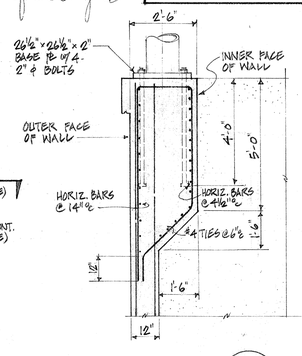
DETAIL - TYPICAL ADDED REINF. AROUND PIPE OPENING U W-22
NO SCALE



PLAN - SECTION F W-22
SCALE: 1/4" = 1'-0"

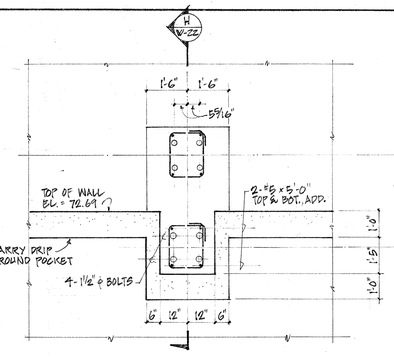


ELEVATION
SCALE: 1/4" = 1'-0"

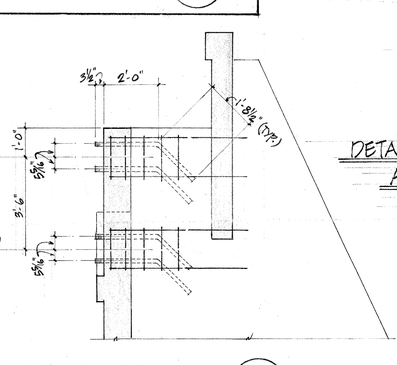


SECTION G W-22
SCALE: 3/8" = 1'-0"

DETAIL - THICKENED "R-1" WALL FOR SUPPORT OF SIGN E-5 S W-22
SCALE: 3/8" = 1'-0"



ELEVATION



SECTION H W-22

DETAIL - SUPPORT FOR SIGN E-9 T W-22
SCALE: 3/8" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISC. TYPICAL WALL DETAILS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT Nº 1-HI-1(31) UNIT 1

DEC. 1966

SHEET NO W-22 OF 31 SHEETS

HARVEY Y. D. LUNG
REGISTERED PROFESSIONAL ENGINEER
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Harvey Y. D. Lung
Signature

ALFRED A. YEE
REGISTERED PROFESSIONAL ENGINEER
HAWAII, U.S.A.

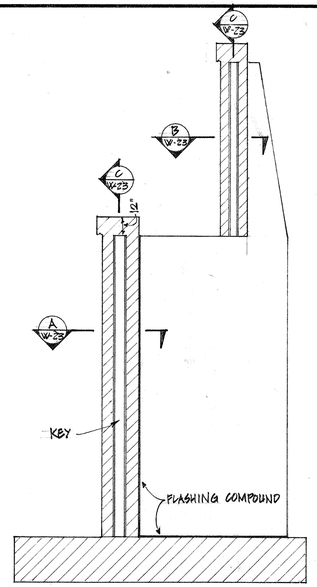
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	" " "
	TRACED BY	" " "
NOTE BOOK	DESIGNED BY	" " "
No.	QUANTITIES BY	" " "
	CHECKED BY	" " "

PRINTED ON NO. 1000H CLEARPRINT

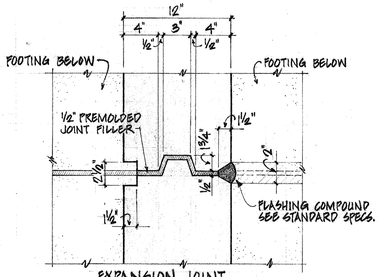
178

a.a. yee Job no. 66

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	179	292



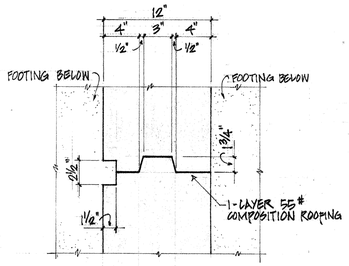
ELEVATION @ TYPICAL JOINT



EXPANSION JOINT

SECTION A W-23

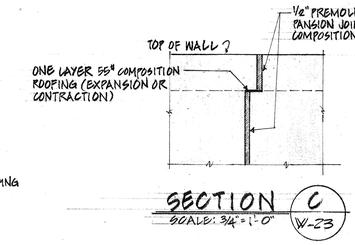
SCALE: 1½" = 1'-0"



CONTRACTION JOINT

SECTION A W-23

SCALE: 1½" = 1'-0"

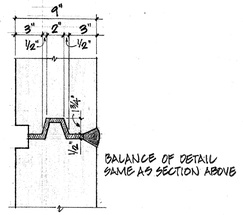


SECTION C W-23

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

NOTE:

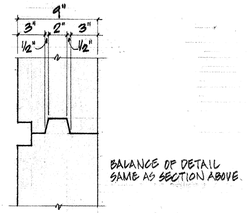
1. CONTRACTION JOINT IS SIMILAR TO EXPANSION JOINT EXCEPT THAT 1-LAYER OF 55# COMPOSITION ROOFING SHALL BE USED IN PLACE OF PREMOLDED JOINT FILLER, SEE DETAIL. THE JOINT SHALL EXTEND THRU THE STEM ONLY. IN LIEU OF COMPOSITION ROOFING FOR CONTRACTION JOINTS, THE SURFACE MAY BE CLEANED SMOOTH & COATED W/ A BOND BREAKING MATERIAL.
2. SPACING OF JOINTS: EXPANSION = 90'-0" MAX. } SEE PLAN
   CONTRACTION = 30'-0" MAX. }



EXPANSION JOINT

SECTION B W-23

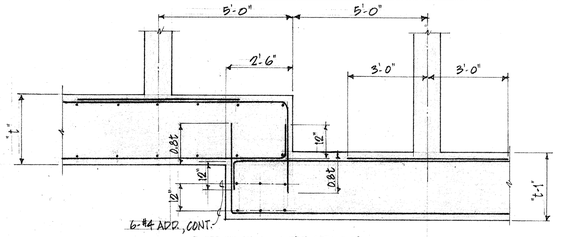
SCALE: 1½" = 1'-0"



CONTRACTION JOINT

SECTION B W-23

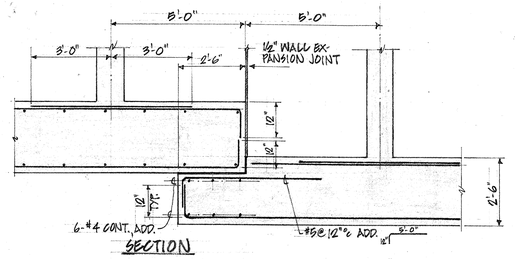
SCALE: 1½" = 1'-0"



SECTION

TYP. STEPPED FOOTING @ CONTRACTION JOINT

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

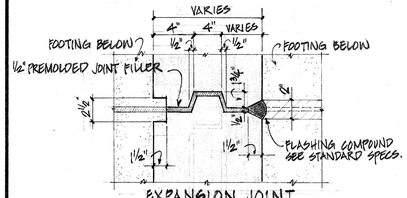


SECTION

TYP STEPPED FOOTING @ EXPANSION JOINT

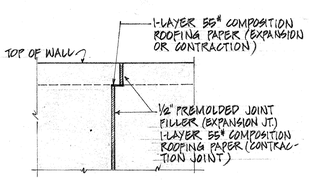
SCALE: 3/8" = 1'-0"

TYPICAL EXPANSION & CONTRACTION JOINT DETAILS FOR TYPE "R" & "S" WALLS

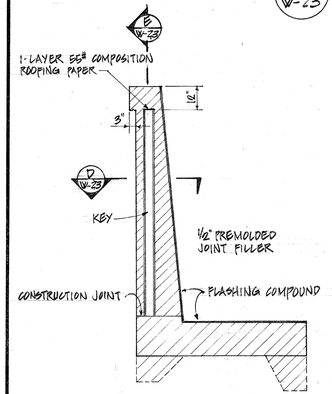


EXPANSION JOINT

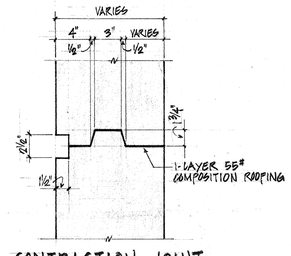
SECTION D W-23



SECTION E W-23

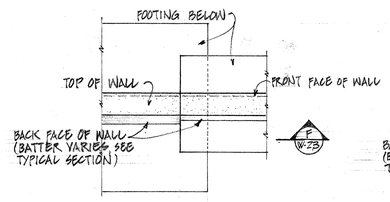


TYPICAL SECTION

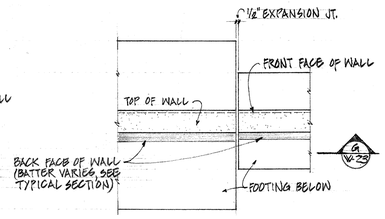


CONTRACTION JOINT

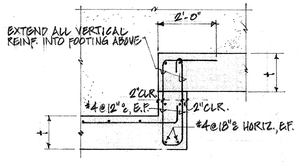
SECTION D W-23



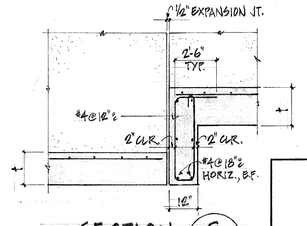
PLAN @ CONTRACTION OR CONTROL JOINT



PLAN @ EXPANSION JOINT



SECTION F W-23



SECTION G W-23

TYPICAL CONTINUOUS STEPPED FOOTING DETAIL





THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature

Harvey Y. D. Lung

Alfred A. Yee

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL EXPANSION & CONTRACTION JOINT DETAILS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJECT No. 1-HI-1(31) UNIT 1

DEC. 1966

SHEET No. W-23 OF 31 SHEETS

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

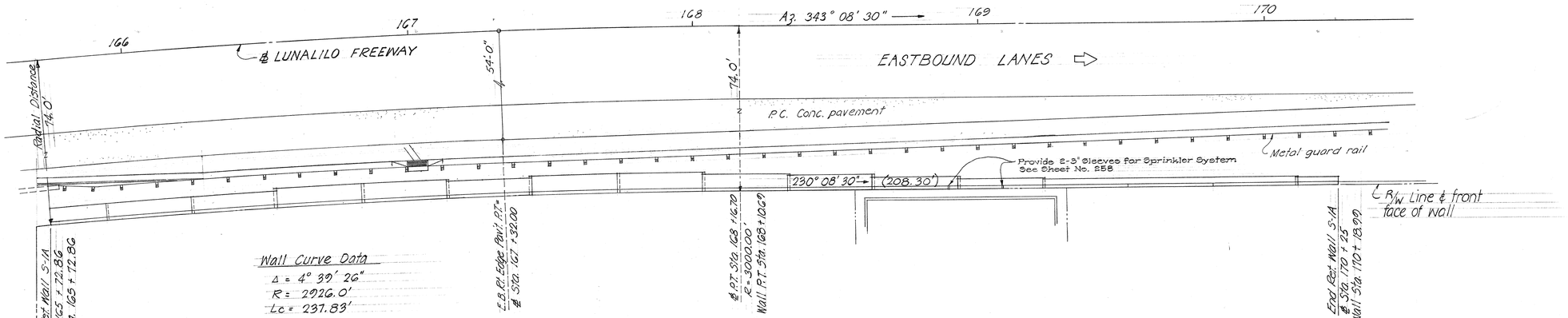
TYPICAL EXPANSION & CONTRACTION JOINT DETAILS FOR TYPE "Q" "W" & "X" WALLS

PRINTED ON NO. 1000H CLEARPRINT

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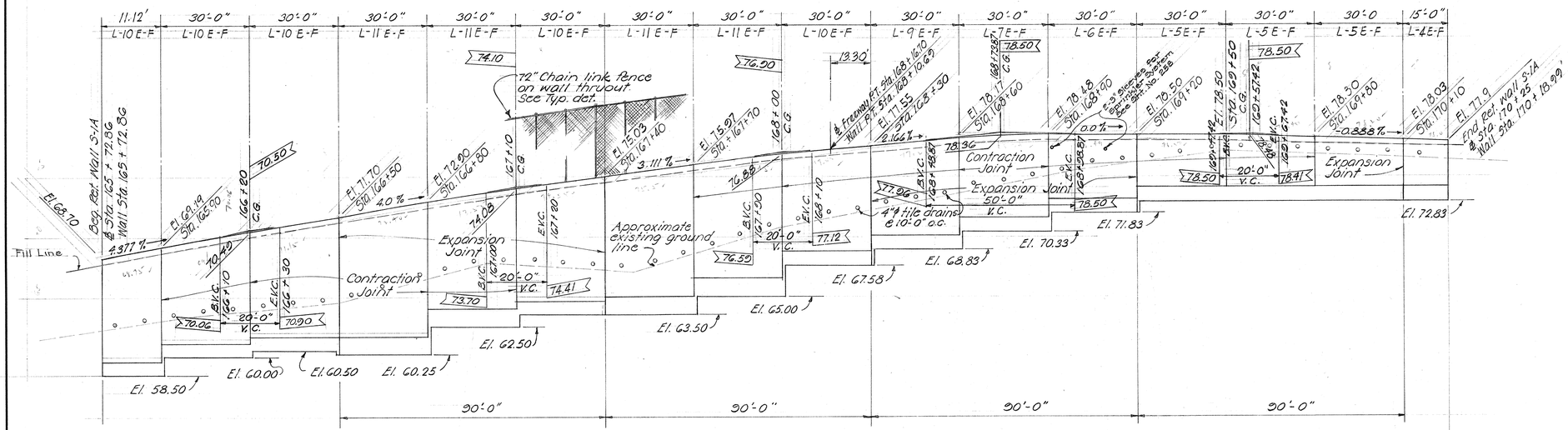
A. A. Yee Job no. 66-87

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT #1	1967	180	292



PLAN - RETAINING WALL Nº. S-1A

Scale: 1" = 20'-0"



ELEVATION - RETAINING WALL Nº. S-1A

Scale: Horiz. 1" = 20'-0"
Vert. 1" = 5'-0"

NOTES

Reference: Refer to typical drawings 188, 191, & 193 for additional wall details & reinforcing.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº. S-1A

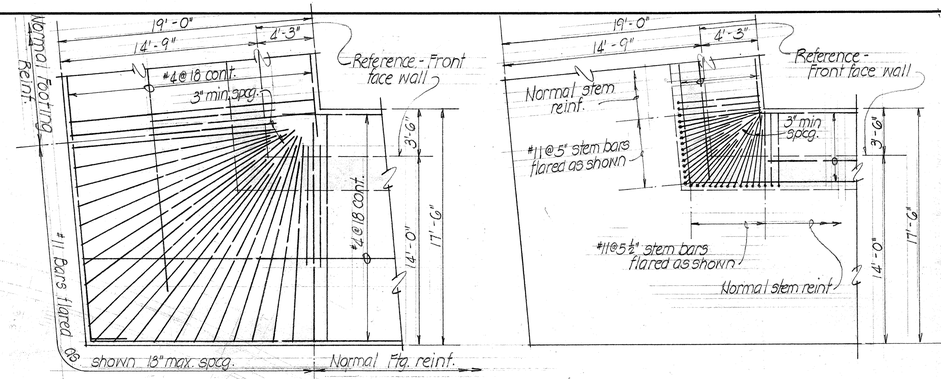
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. Nº I-HI-1(31)Unit 1 MAY 1966

SHEET No. W-24 OF 31 SHEETS

180

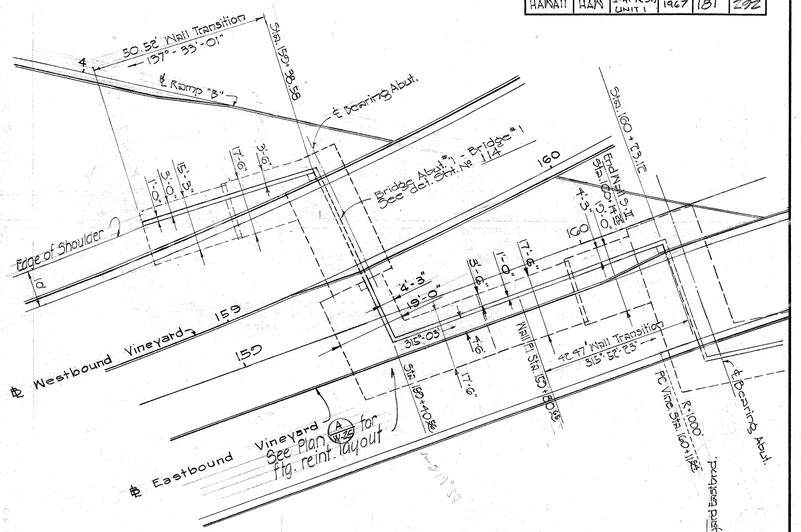
PRINTED ON CLEARPRINT 1000-H

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWN	I-HI-1(38) UNIT 1	1967	181	292



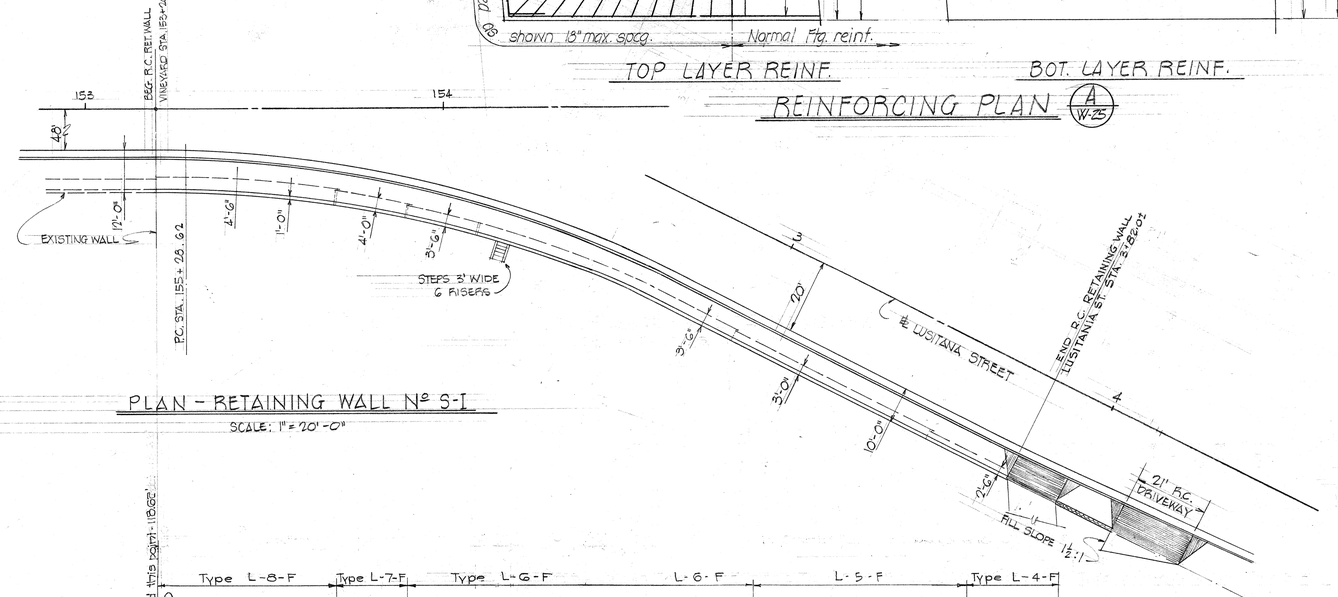
TOP LAYER REINF. BOT. LAYER REINF.

REINFORCING PLAN (A W-25)



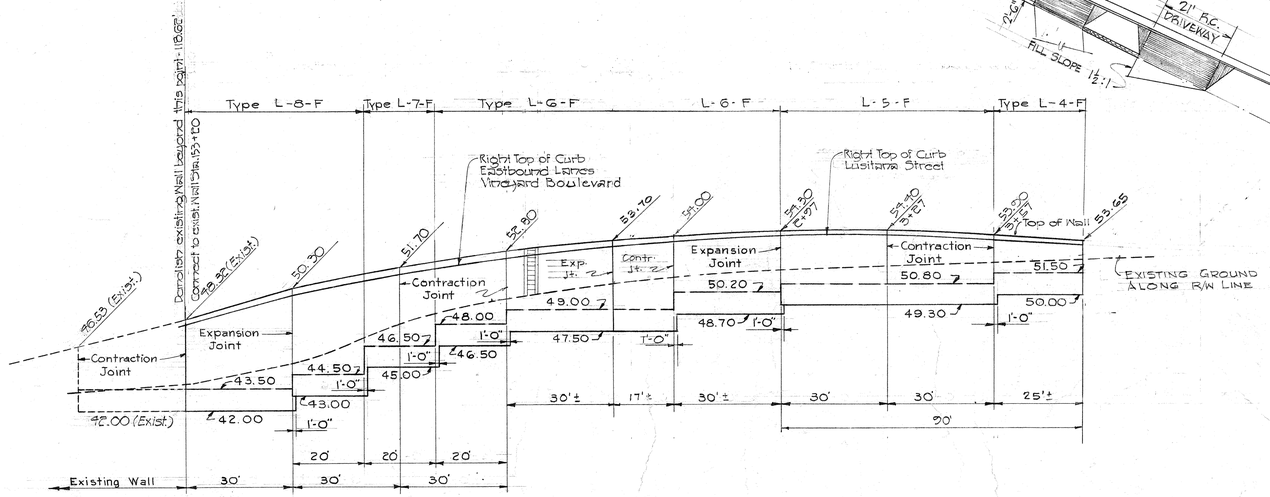
PLAN - RETAINING WALL Nº S-II

Scale: 1"=20'



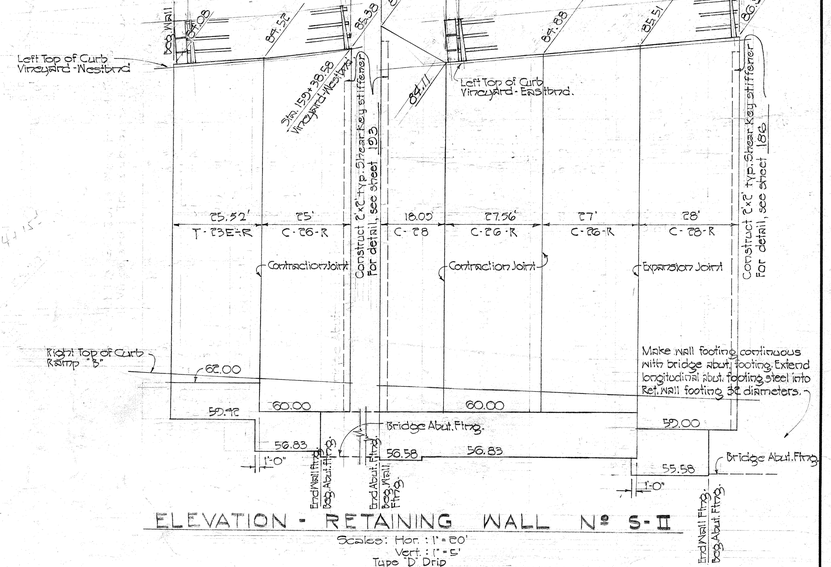
PLAN - RETAINING WALL Nº S-I

SCALE: 1"=20'-0"



ELEVATION - RETAINING WALL Nº S-I

Scales: Hor.: 1"=20'
Vert.: 1"=5'



ELEVATION - RETAINING WALL Nº S-II

Scales: Hor.: 1"=20'
Vert.: 1"=5'
Type 'D' Drip

NOTES

Reference: Refer to typical drawings 189, 182, 191, 192, 193 for additional wall detail & reinforcements.
Refer to standard drawing sheet 196 for Metal Bridge Railing details.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RC RETAINING WALL Nºs S-I & S-II

INTERSTATE ROUTE H-1
(CUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. Nº I-HI-1(31) UNIT1 MAY 1966

SHEET No W-25 OF 31 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY JF	
	DRAWN BY	
	TRACED BY	
NOTE BOOK No.	CHECKED BY JF	11/8
	QUANTITIES CHECKED BY	
	CHECKED BY	

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWN	I-HI-1(31) UNIT I	1967	182	292

Wall Curve Data
Δ = 14°-25'-10"
R = 804.50'
T = 113.16'
Lc = 223.12'
D = 7°-07.52"

Wall R 804.50' P.C. Sta. 164+23.50

320°-33'-35" — 50.00'

End Ret. Wall No S III Wall Sta. 162+50.38

Wall P.I. Sta. 163+00.38

End Ret. Wall No S III Wall Sta. 166+18.88

398.24' @ Vertical Face

LEP Eastbound Vineyard Boulevard

Reference front face of retaining wall ℄

Reference base line ℄ 5'-0"

321°-05' — 185.12'

163 164 165 166

VINEYARD BOULEVARD EASTBOUND ⇨

PLAN — RETAINING WALL Nº S-III

Scale: 1" = 50'

End Bridge Abut. Beg. Wall Sta. 162+50.38

(374.77') Metal Bridge Railing - Measured horiz. along inside edge of railing.

Metal Railing length See Standard detail sheet #196

84.33

C-26R-R C-20R-R T-25R-R T-22R-R T-21R-R T-19R-R T-18R-R T-16R-R T-14R-R T-12R-R

83.43 82.16 81.80 80.65 78.98 77.28 75.10 73.66 71.76 69.80

-4.316% 31 -5.493% 31 -6.555% 31

CG 163+19 81.77 CG 164+30 78.50 CG 165+20 67.83

Left Top of Curb Vineyard Boulevard

Const. 2'x2' typ. Shear Key See det. Sht. No. 186

20.0' 1.6

BVC 163+05 EVC 163+25

BVC 163+55

Contraction Joint

Expansion Joint

Expansion Joint

150' Vertical Curve

Construction Joint

Expansion Joint

Contraction Joint

BVC 165+05 EVC 165+25

EVC 165+80

60' vertical curve

Exp. jt.

Contr. Joint

Contr. Joint

3.25 End post

T-11R-R T-10R-R T-8R-R

566.33

64.83

62.90

End Wall Sta. 166+50 Wall Sta. 166+18.88

Left Top of Curb Vineyard Boulevard

Right Top of Curb Lunalilo Freeway

Right Top of Curb Lunalilo Frwy.-Eastbnd.

4" ϕ tile drains @ 10'-0" o.c.

Bridge Nº E-Abut. Nº E See Det. Sht. Nº 143

58.00

Abutment Ftng. 55.50

Bott. ftg. elev. 55.83 57.0 57.25 56.50 56.75 56.50 55.75 56.08

54.88 1'-0" 1'-0" 1'-0" 1'-0" 1'-0" 1'-0" 1'-0"

Make Wall footing continuous with bridge abut. footing. Extend longitudinal abut. footing steel into Retaining Wall footing 36 diameters.

6.88' 22.74' 30' 30' 30' 30' 30' 30' 30' 30' 30' 30' 30' 38.62'

55.62' 90' 90' 90'

End Abutment Ftng. Beg. Wall Ftng.

ELEVATION — RETAINING WALL Nº 5-III

Scales: Hor. : 1" = 50'
Vert. : 1" = 5'
Type "D" Drip

Type "T" (footing on rock) see schedule

Note!
As built change:
Metal Br. rail: 3 rail type with sidewalk to one rail on parapet - See Sht.

NOTES

Reference: Refer to typical drawings 188, 189, 191, 192, 193 for additional wall details & reinf.
Refer to standard drawing sheet 196 for Metal Bridge Railing details.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	SURVEY CHKD BY	
	DRAWN BY BJB	
	TRACED BY	
NOTE BOOK	QUANTITIES BY JE	
No.	QUANTITIES CHECKED BY WJB	
	CHECKED BY	

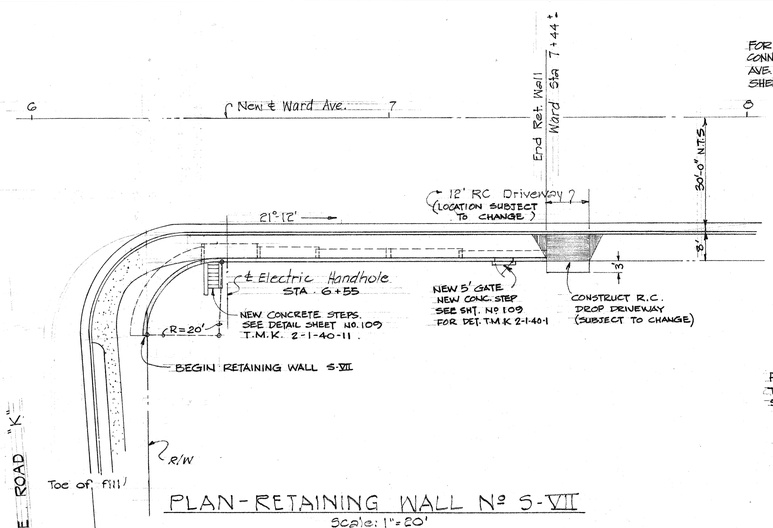
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
RC RETAINING WALL Nº S III
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. Nº I-HI-1(31) UNIT I May 1966

SHEET No. W-26 OF 31 SHEETS

182

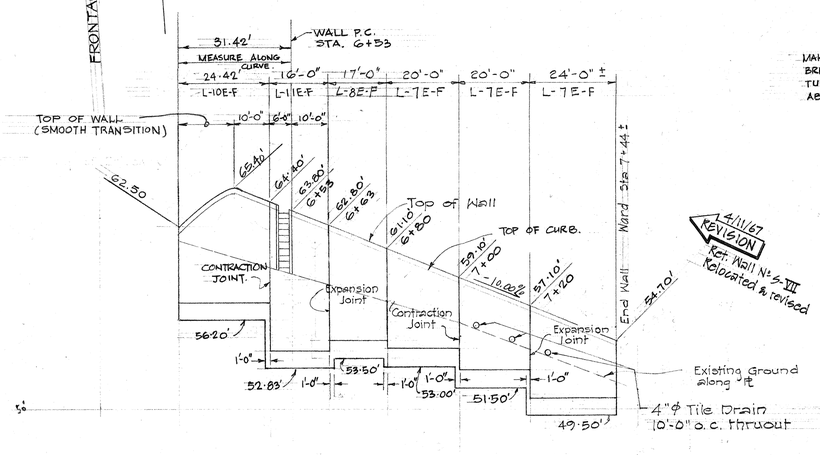
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) UNIT 1	1967	183A	292



PLAN - RETAINING WALL Nº S-VII

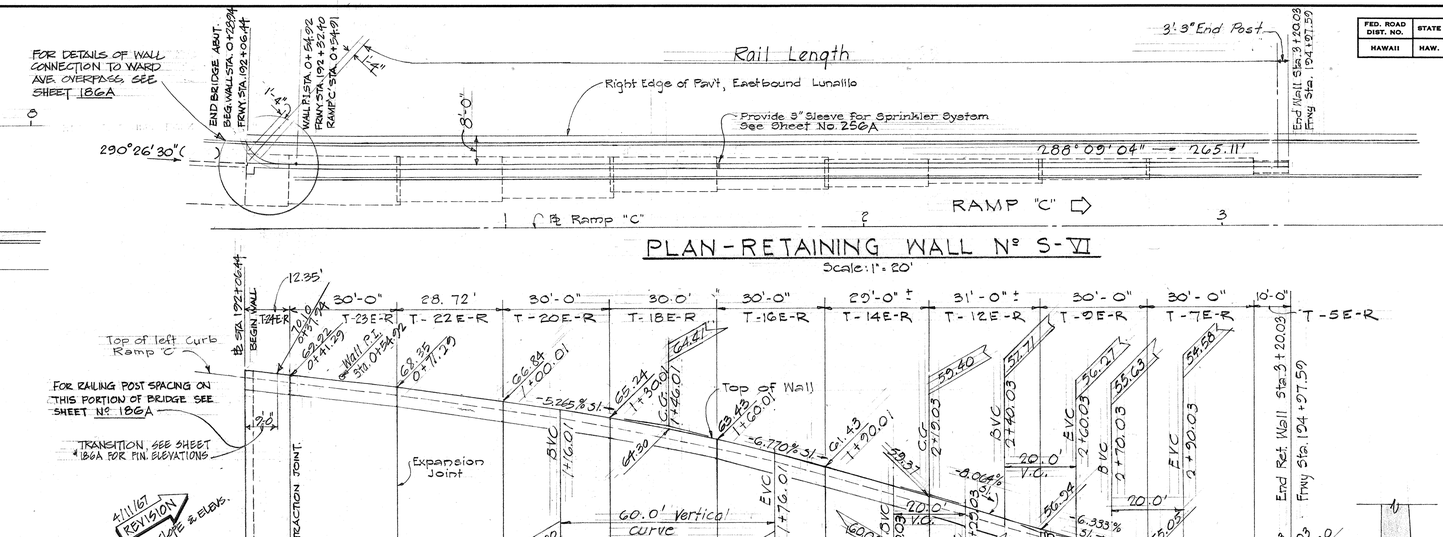
Scale: 1" = 20'



4/11/67 REVISION
Ret. Wall Nº S-VII Relocated & revised

ELEVATION - RETAINING WALL Nº S-VII

Scales: Hor: 1" = 20'
Vert: 1" = 5'

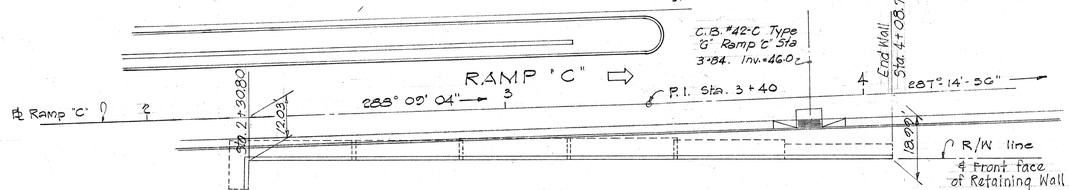


ELEVATION - RETAINING WALL Nº S-VI

Scale: Hor: 1" = 20'
Vert: 1" = 5'
Type "C" Drip

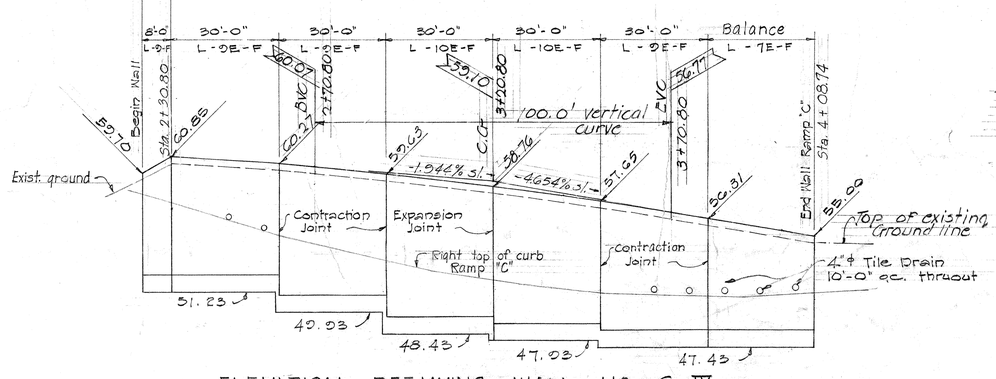
SECTION A (W-27)

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



PLAN - RETAINING WALL Nº S-IX

Scale: 1" = 20'



ELEVATION - RETAINING WALL Nº S-IX

Scales: Hor: 1" = 20'
Vert: 1" = 5'

NOTES

Reference: Refer to typical drawings "183, 190, 192, 193, for additional wall details & reinforcements.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº's S-VI, S-VII & S-IX

INTERSTATE ROUTE H-1 (LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. Nº I-HI-1(31) UNIT 1 4/11/67

SHEET No. W-27 OF 31 SHEETS

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

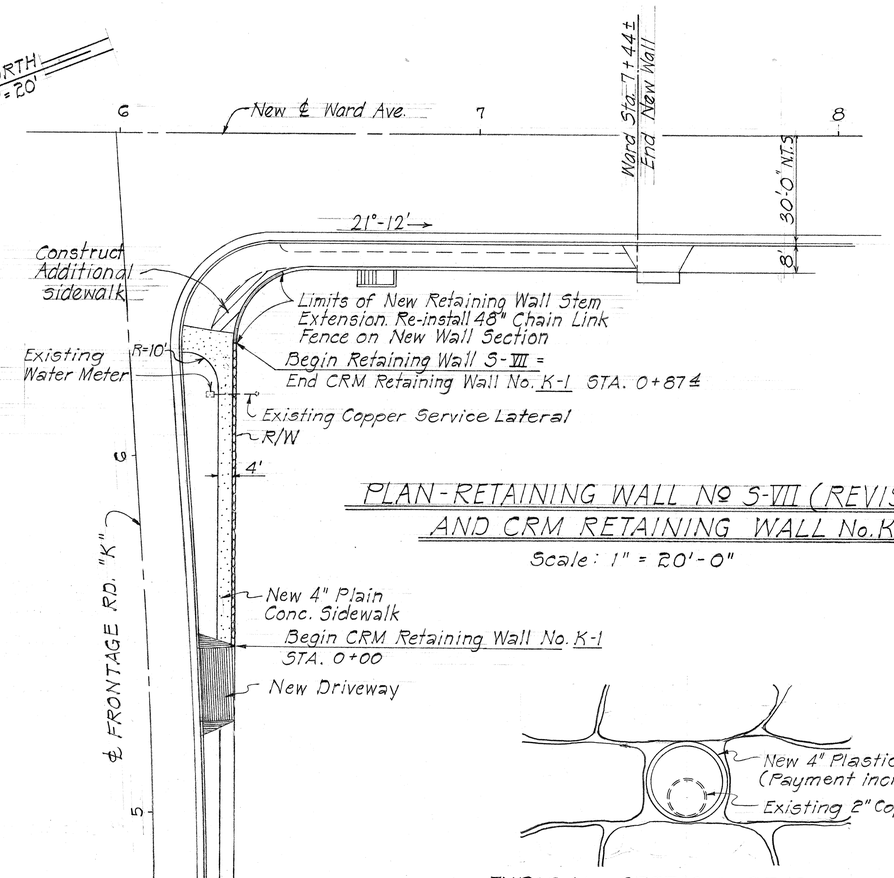
THIS SHEET SUPERCEDES SHEET 183

183A

PRINTED ON CLEARPRINT 1000-H

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) Unit 1	1968	C018331	292

TRUE NORTH
Scale: 1" = 20'



PLAN - RETAINING WALL Nº S-VII (REVISED) AND CRM RETAINING WALL No. K-1

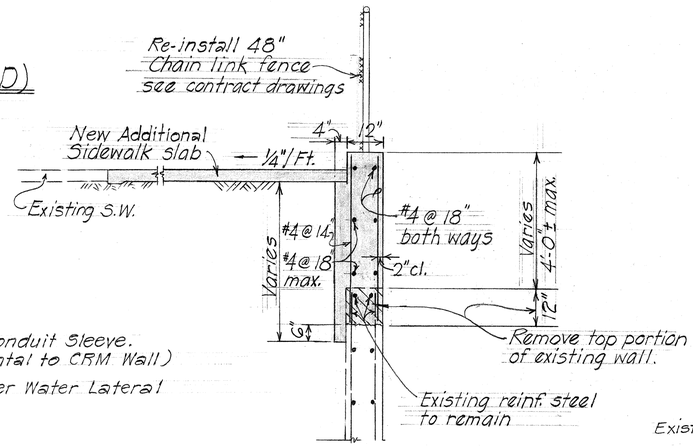
Scale: 1" = 20'-0"

ESTIMATED QUANTITIES

ITEM NOS.	DESCRIPTION	UNIT	QUANT.
14.01	Struc. Excavation other than at Bridges	C.Y.	20
46.151	Class A-1 Concrete in Retaining Walls	C.Y.	2.5
48.41	Reinforcing Steel in Retaining Walls	Lb.	110
62.01	Cement Rubble Masonry	C.Y.	24
76.01	Plain Concrete Sidewalk	S.F.	105
88.24	4 - Foot Ch. Link Fence on Cement Rubble Masonry	L.F.	85
52.01	Filter Material	C.Y.	13

TYPICAL SECTION OF SLEEVE THROUGH CRM WALL

Scale: 3" = 1'-0"

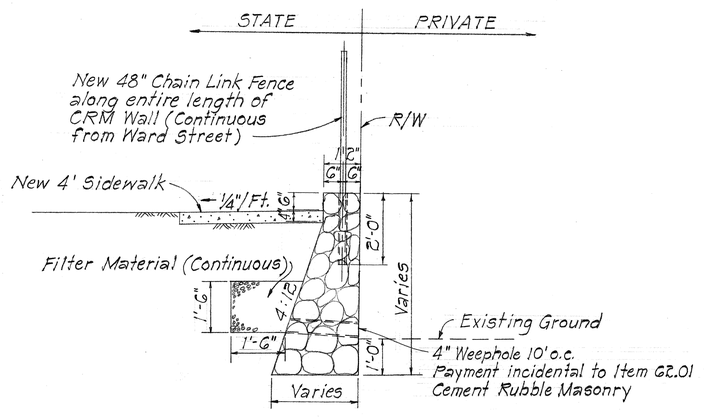


SECTION (A)

Scale: ½" = 1'-0"

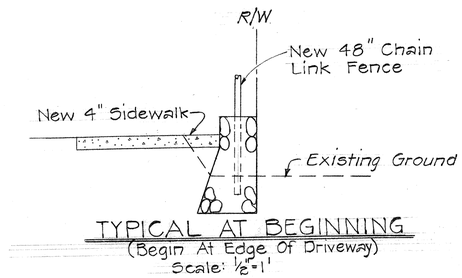
ELEVATION - RETAINING WALL Nº S VII (REVISED) AND CRM RETAINING WALL No. K-1

Scale: Horiz. 1" = 20'
Vert. 1" = 5'



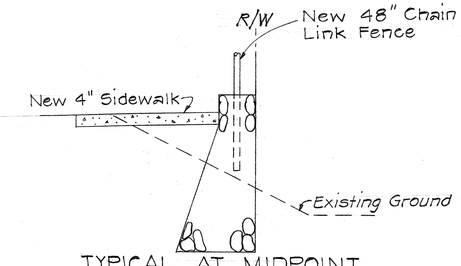
TYPICAL CRM RETAINING WALL SECTION ALONG FRONTAGE ROAD K

Scale: ½" = 1'-0"



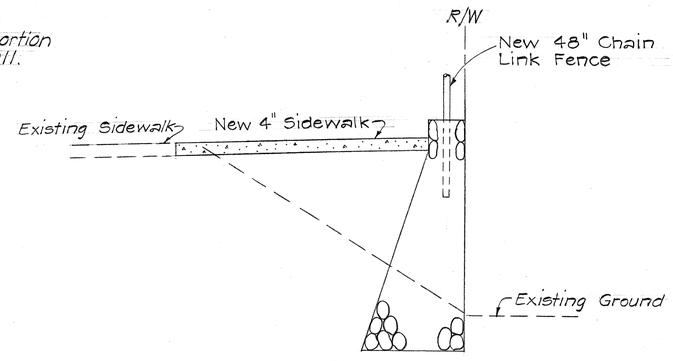
TYPICAL AT BEGINNING

(Begin At Edge Of Driveway)
Scale: ½"=1'



TYPICAL AT MIDPOINT

Scale: ½"=1'



TYPICAL AT END

(C.R.M. Wall To Abut Revised Conc. Ret. Wall)
Scale: ½"=1'

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

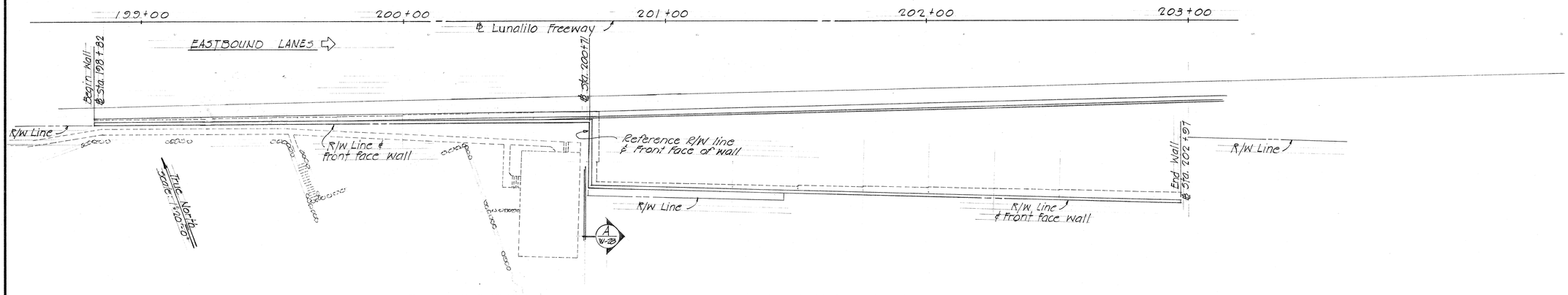
DETAILS FOR RETAINING WALL No. S-VII (REVISED) AND CRM WALL No. K-1
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. NO. I-HI-1(31) UNIT 1 12/10/68

SHEET No. OF SHEETS

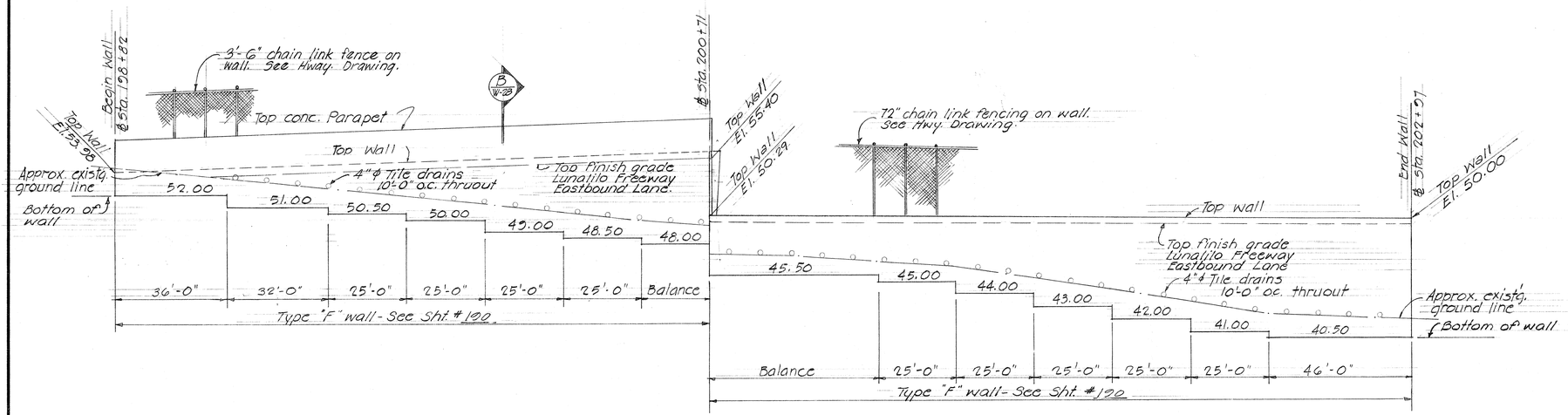
C0 18331

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(31) UNIT 1	1967	184	242

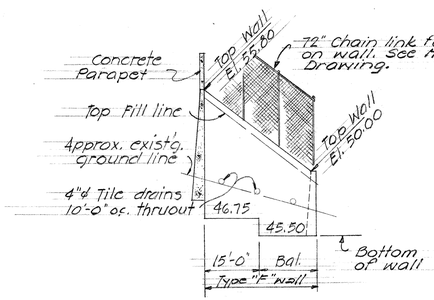


PLAN - RETAINING WALL Nº 5 XI



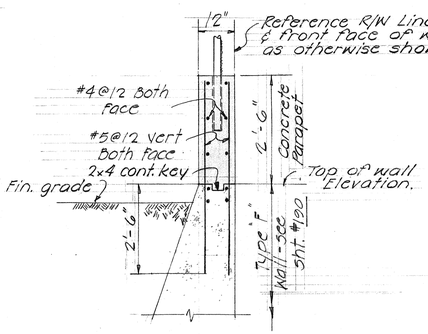
ELEVATION - RETAINING WALL Nº 5 XI

scale: Vert. 1"=5'-0"
Horiz. 1"=20'-0"



SECTION (A W-28)

scale: Vert. 1"=5'-0"
Horiz. 1"=20'-0"



SECTION (B W-28)

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

NOTES

Reference: Refer to typical drawings #188, 190, 193, for additional wall details & reinforcements.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONCRETE GRAVITY RETAINING WALL Nº 5-XI

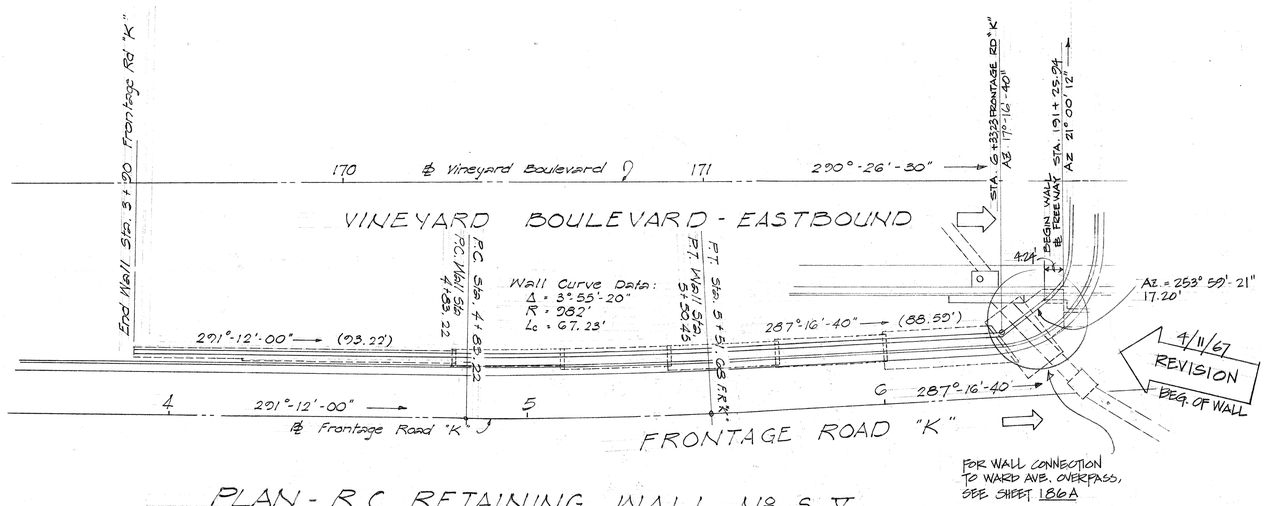
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. Nº I-HI-1(31) UNIT 1 May 1966

SHEET No. W-28 OF 31 SHEETS

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

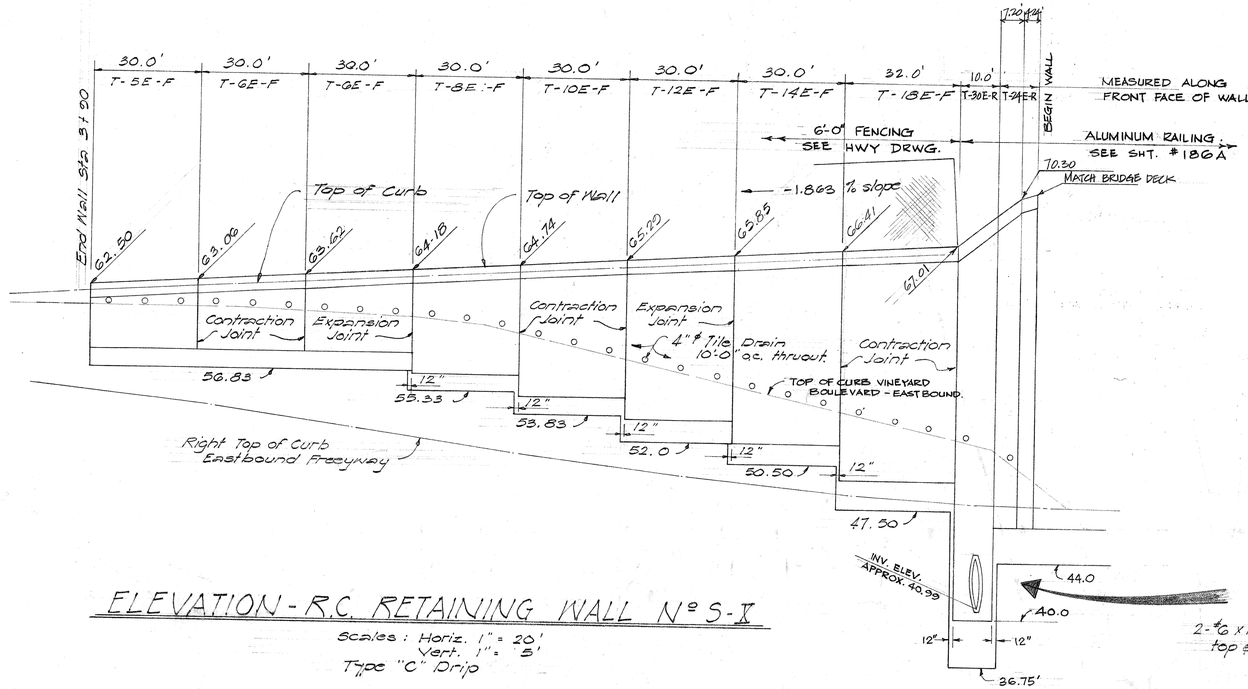
PRINTED ON NO. 1000M CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(39) Unit 1	1967	185A	292



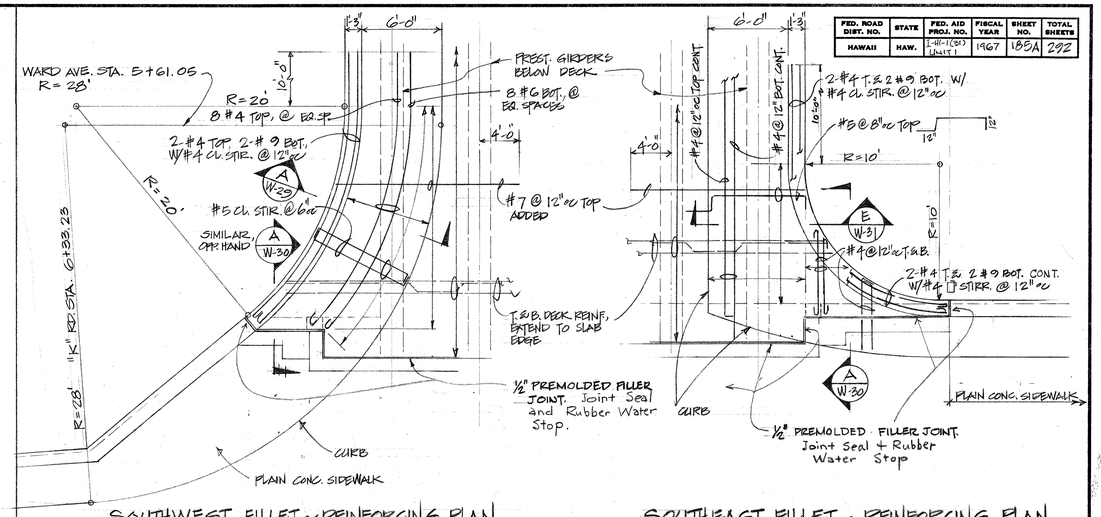
PLAN - R.C. RETAINING WALL Nº S-X

Scale: 1" = 20'



ELEVATION - R.C. RETAINING WALL Nº S-X

Scales: Horiz. 1" = 20'
Vert. 1" = 5'
Type "C" Drip

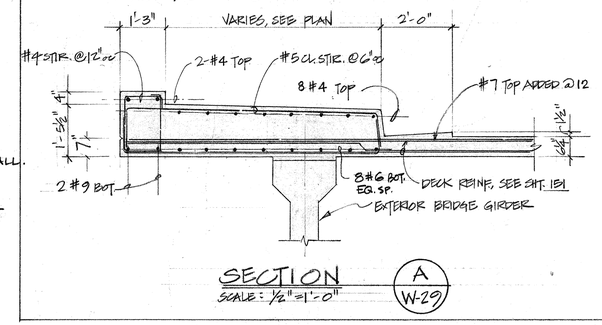


SOUTHWEST FILLET ~ REINFORCING PLAN

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

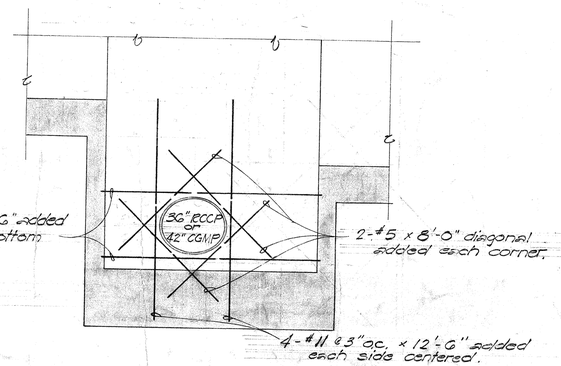
SOUTHEAST FILLET ~ REINFORCING PLAN

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



SECTION A (W-29)
SCALE: ½" = 1'-0"

4/11/67
REVISION
ADDED FILLET DETAILS



NOTES

Reference: Refer to typical drawings 188, 102 103, for additional wall details & reinforcements.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

R.C. RETAINING WALL Nº S-X
MISCELLANEOUS DETAILS
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FA! PROJ. Nº I-HI-1(31) UNIT 1 4/11/67

SHEET No. W-29 OF 31 SHEETS

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

PRINTED ON NO. 1000H CLEARPRINT

THIS SHEET SUPERCEDES SHEET 185

185A

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWN	I-H-H-(31) Unit 1	1967	186A	292

WALL TYPE S-2, SEE SHEET 170 & 171A
31.52'
℄ FRONTAGE RD. "J"
END RET. WALL № N-III STA. 191 + 27.57
6.52'
C.B. # 366 FR. RD. STA. 29+38.7 M.H. COV. TOP = 79.80 INV. = 69.82 SEE DETAIL SHT. 167A
STA. 29+48.81 RT. FRONTAGE ROAD
STA. 29+52.03 "J" ROAD
26.18'
22.48'
2.0'
5.0'
4.0'
BRIDGE DRIP & WALL DRIP TRANSITION
16'-16"
1.0'
2.0'
6"
3" DRIP
1½"
79.10
℄ BRIDGE RAILING POST
1'-5"
TOP OF WALL EL. = 72.55'
TRANSITION FROM CONSTANT DOUBLE TO SINGLE WALL SEE D/W31
TYPE S-2 WALL
TYPE S-2 WALL SIMILAR
NOTE: 79.00 INDICATES TOP OF INSIDE EDGE OF CURB OF WALL.
EDGE OF BRIDGE DATA.
Δ = 51° 42' 34"
R = 24'
T = 23.06'
L = 36.74'
CHORD = 33.26'
R = 24'-0"
R = 28'-0"
R = 28'-0"
CURB
CURB LINE
SIDEWALK
℄ BRIDGE RAILING POST
℄ WARD AVE.
R = 28'-0" (WARD AVE. STA. 4+49.38)
R = 24'-0" (WARD AVE. STA. 4+49.20)
79.25
1'-5"
6'-0"

WALL TYPE S-2 SIMILAR, SEE SHEET 170 & 171A
12.65'
7.65'
5.0'
5.0'
TYPE S-2
10.0'
FRONTAGE ROAD "J"
BEGIN RET. WALL № N-VI STA. 192 + 08.73
ABUTMENT COUNTERFORT
LIMIT OF SIDEWALK
CURB LINE
WARD AVE. STA. 4 + 22.16
ABUTMENT STEM
RETAINING WALL COUNTERFORTS
½ PREMOLDED JOINT FILLER
78.99
12"
3'-0"
9'-0" TO ℄ FRONTAGE RD "J"
3'-0"
3" STRIP
1½"
79.10
9'-0"
BRIDGE DRIP & WALL DRIP TRANSITION
3'-3"
℄ BRIDGE RAILING POST
TOP OF WALL EL. = 72.55' CONSTANT
3" STRIP
1½"
R = 15'-0"
78.80
WARD AVE. STA. 4 + 30.87
END POST
3'-0"
1'-4"
EDGE OF BRIDGE DECK
R = 50'-0"
6'-0"
1'-3"
WARD AVE STA. 4 + 67.87
R = 50'-0" J ROAD STA. 30+46.91
R = 15'-0"
E = 50'-0"
J ROAD STA. 30+45.16

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

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

NOTE: FOR REINFORCING DETAILS IN NORTHEAST & NORTHWEST FILLETS, SEE SHT. № 187A

2'x 2' Shear Key Stiffener
2'-0" 12" 3"
SEE SECT. C/8 (SHT. 156A) FOR ABUT. # 2 END POST DETAIL & REINF.
¼" PREMOLDED JT. FILLER
½ x 3½ NEOPRENE BEARING PAD (CONT.)
4-#4
#4 @ 12"
C W30
NOTE: All bars shown are added bars

SECTION B W30
SCALE : ¼" = 1'-0"

TYPICAL DETAIL OF 2'x2' SHEAR KEY STIFFENER AT SOUTHEAST FILLET
(SOUTHWEST FILLET SIMILAR BUT OPPOSITE HAND)

varies
Bridge Abutment Wall
2'x 2' Shear Key Stiffener
2'-0"
12"
2" x 12" Shear Key
¼ @ 12"
2'-0"
4-#4
2 LAYERS #55 ROOFING FELT
Use same size bar and spacing as required of bars in wall stem.
Wall Stem Varies
Normal Ret. Wall Reinf.

SECTION C W30
Scale: ½" = 1'-0"

12"
SHELF BELOW EL. = 72.69'
COUNTERFORT - WARD AVE. BRIDGE ABUT. № 1.
FOR REINF. SEE E/7 (SHT. 155A)
1'-4"
1'-6"
2 KEY
12"
2 LAYERS 55# FELT ROOFING
COUNTERFORT - RET. WALL S-2
2'-3"
1'-9"

SECTION E W30
SCALE : ½" = 1'-0"

COUNTERFORT - WARD AVE. BRIDGE ABUT. № 1
12"
2 KEY
2 LAYERS 55# FELT ROOFING
12"
COUNTERFORT RET. WALL S-2

SECTION F W30
SCALE : ½" = 1'-0"

BRIDGE DECK
E W30
SECT. B W-31 SIM.
COUNTERFORT - WARD AVE. BRIDGE ABUT. № 1
3'-0"
F W30
COUNTERFORT RET. WALL S-2
RETAINING WALL S-2

SECTION D W30
SCALE : 3/16" = 1'-0"

DET. SIM. SECT. A W-30
#5 @ 12" TOP & BOT.
H W30
4 #6 VERT. E.F. (BEND INTO APRON SLAB 2'-6")
3'-0"
J W30
COUNTERFORT - WARD AVE. BRIDGE ABUTMENT № 1.
RETAIN. WALL S-2
RETAINING WALL S-2
COUNTERFORT RETAINING WALL S-2

SECTION G W30
SCALE : 3/16" = 1'-0"

12"
SHELF BELOW EL. = 72.69'
FOR REINF. SEE E/7 (SHT. 155A)
2'-3"
2 LAYERS 55# FELT ROOFING
2 KEY
10"
#5 @ 12" c.c.
1'-4"
1'-6"
10 #6 VERT.
2'-6"
9"
COUNTERFORT RET. WALL S-2

SECTION H W30
SCALE : ½" = 1'-0"

4/11/67 REVISION
ALL FILLETS & SECTS.

R = 28'-0" WARD AVE. STA. 5+61.05
℄ Ward Ave. Sta. 5+60.56 R = 20'
EDGE OF BRIDGE DATA
Δ = 52°47'-21"
R = 20.00'
T = 9.93'
L = 18.43'
CH. = 17.78'
Edge of deck
End Post
3'-0"
EL. 71.85
1'-3"
6'-0"
SIMILAR OPP. HAND A W30
4.24'
1'-2"
EL. 70.25 (Top of Slab)
SIDE WALK
℄ STA. 191+25.94
CURB LINE
½" Premolded Jt. Filler
Abut. stem
SIMILAR OPP. HAND B W30
2 Layers 55# Roofing felt
2'x 2' Shear Key Stiffener See Detail this sht
EL. 70.30
R = 28'-0" 'K' RD. STA. 6+33.23
EL. 67.01
BRIDGE DRIP & WALL DRIP TRANSITION & BRACING POST
K W30
METAL BRIDGE RAILING
3" DRIP
3'-0"
4'-0"
3'-0"
1'-4"
3"
END POST

SOUTHWEST FILLET
SCALE : ¼" = 1'-0"

R = 50'-0" WARD AVE. STA. 5+28.10
6'-0"
1'-3"
EL. el. 71.55
℄ Ward Ave. Sta. 5+63.34
R = 10'
Edge of Deck
A W30
EL. = 70.10
9'-0"
BRIDGE DRIP & WALL DRIP TRANSITION
½ BRIDGE RAILING POST
3" DRIP
EL. 70.50
½" PREMOLDED JT. FILLER
K W30
R = 10' RAMP 1" PER FT.
METAL BRIDGE RAILING MEASURED ALONG INSIDE FACE OF RAILING
2'x 2' Shear Key Stiffener, see Detail this sheet
2 Layers 55# Roofing felt
BEGIN WALL № S-VI ℄ STA. 192 + 06.44
B W30
EDGE OF BRIDGE DATA:
Δ = 90° 45' 30"
R = 10.00'
T = 10.13'
L = 13.84'
CH = 14.24'
R = 50'-0" RAMP 1" PER FT.
01+38.09
RET. WALL № S-VI
2'
3'-0"

SOUTHEAST FILLET
SCALE : ¼" = 1'-0"

1'-3"
12" Varies
12"
½" PREMOLDED JT. FILLER
#4 @ 12" c.c. TOP & BOT., CONT.
#4 @ 12" c.c. E.W., B.F.
2-#5 TOP, CONT.
#5 @ 12" c.c. TOP & BOT.
1'CL
1'-3½"
Varies
½ x 3½ NEOPRENE BEARING PAD, CONT.
TYP. VERT. WALL REINF.

TYPICAL SECT. A W30
SCALE : ½" = 1'-0"

½" PREMOLDED JT. FILLER
BRIDGE DECK SLAB
CANTILEVERED SLAB OR RETAINING WALL
5"
½"

SECTION K W30
SCALE: ¾" = 1'-0"

DETAIL OF WALL CONNECTIONS WITH WARD AVE. OVERPASS
SCALES AS SHOWN

NOTE: FOR REINFORCING DETAILS IN SOUTHEAST & SOUTHWEST FILLETS, SEE SHT. № 185A

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
RETAINING WALL DETAILS
MISCELLANEOUS DETAILS
AT WARD AVE. OVERPASS
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. № I-H1-1(31) UNIT 1 4/11/67

SHEET No. W30 OF 31 SHEETS

THIS SHEET SUPERCEDES SHEET 186

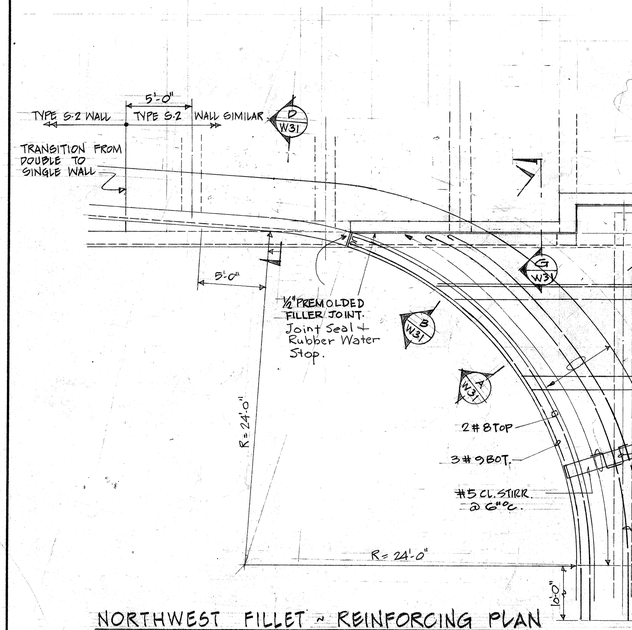
186A

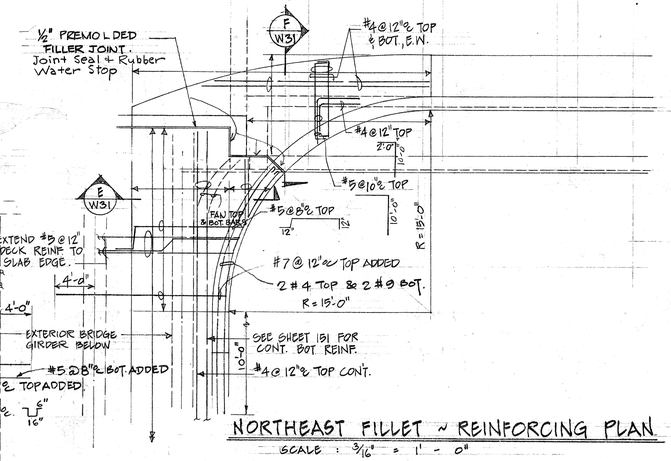
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-III-1(33) UNIT 1	1967	187A	322

NORTHWEST FILLET ~ REINFORCING PLAN

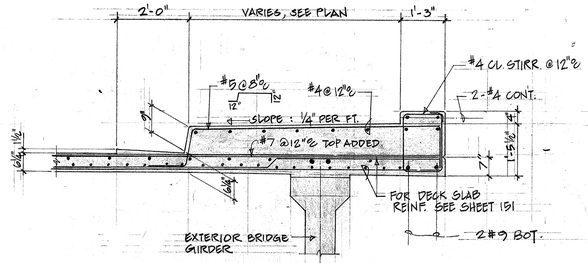
SCALE : 3/16" = 1' - 0"





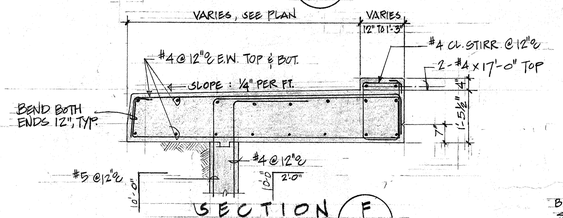
NORTHEAST FILLET ~ REINFORCING PLAN

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



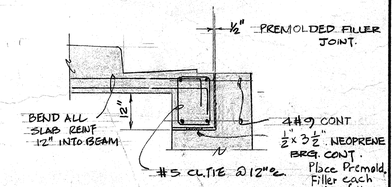
SECTION E (W31)

SCALE : ½" = 1'-0"



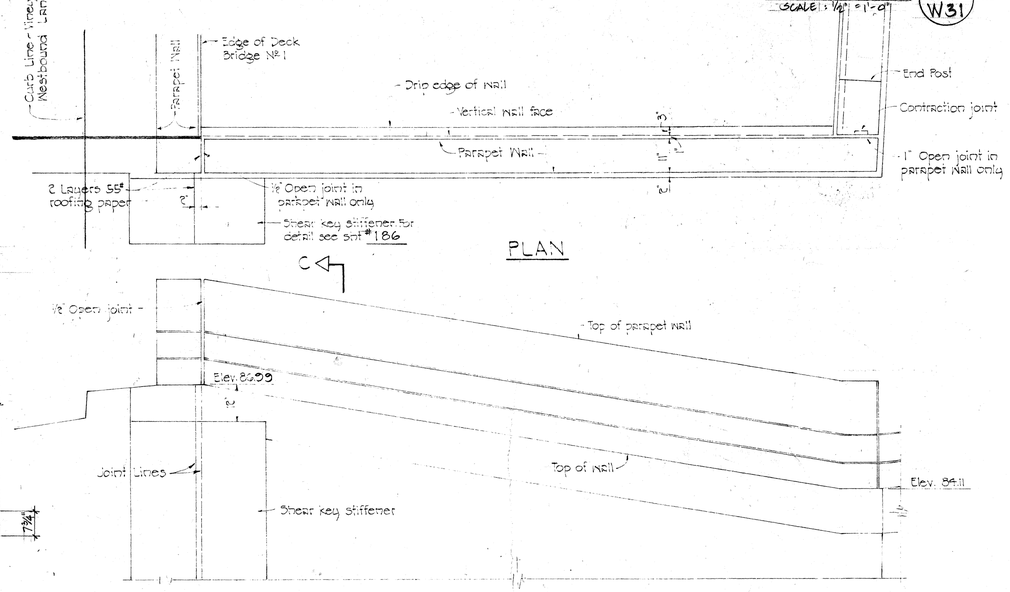
SECTION F (W31)

SCALE : ½" = 1'-0"



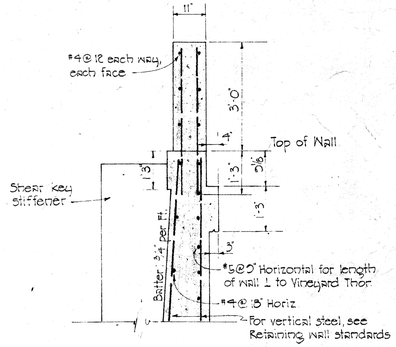
SECTION G (W31)

½" = 1'-0"

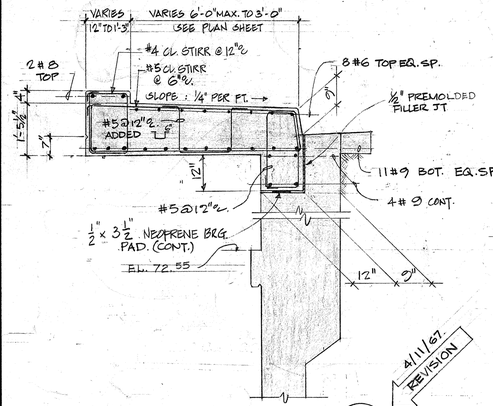


DETAIL OF SPECIAL CONCRETE PARAPET WALL RETAINING WALL № 5-II

Scale: ½" = 1'-0"



SECTION C-C

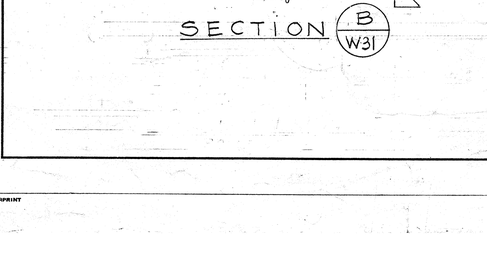


SECTION A (W31)

SCALE : ½" = 1'-0"

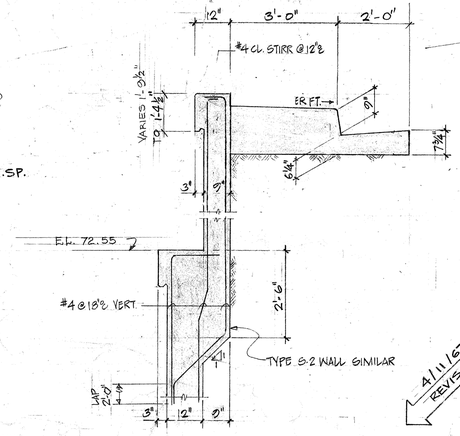
4/11/67 REVISION

NW & NE FILLET DETAILS & SECTIONS



SECTION B (W31)

4/11/67 REVISION



SECTION D (W31)

SCALE : ½" = 1'-0"

4/11/67 REVISION

4/11/67 REVISION ADDED SECTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL DETAILS
MISCELLANEOUS DETAILS

INTERSTATE ROUTE H-1
LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj № I-HI-1(31)UNIT 1 4/11/67

SHEET No. W31 OF 31 SHEETS

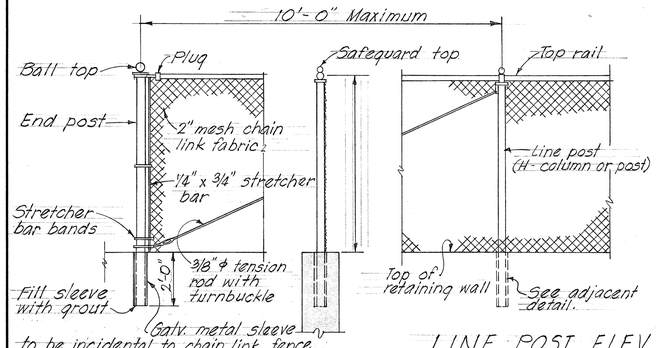
ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY	DESIGNED BY	TRACED BY	QUANTITIES BY	CHECKED BY	DATE
			VE				

THIS SHEET SUPERCEDES SHEET 187

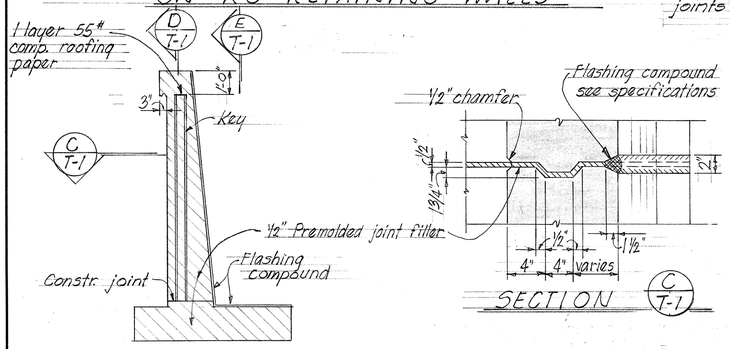
187A

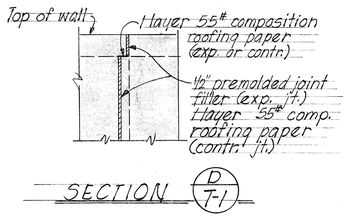
PRINTED ON DIEPO 100GH CLEARPRINT

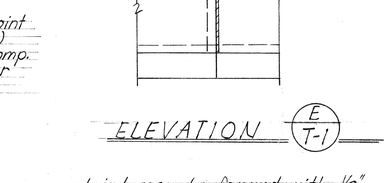
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) LIMIT 1	1967	188	292

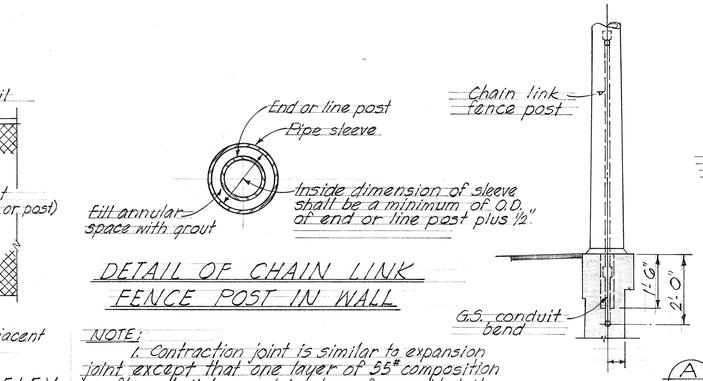


DETAILS OF CHAIN LINK FENCE ON RC RETAINING WALLS

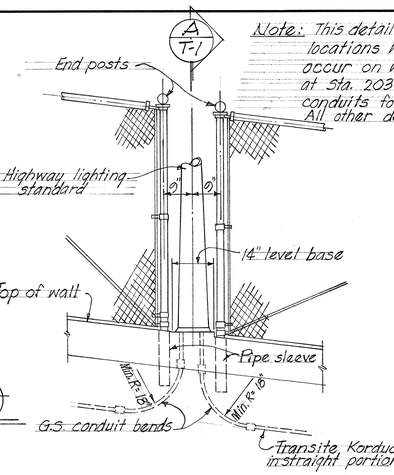








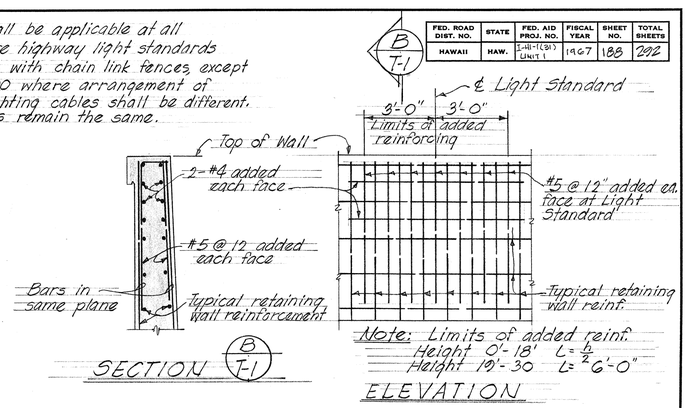
NOTE:
1. Contraction joint is similar to expansion joint except that one layer of 55# composition roofing shall be used in place of premolded jt. filler and the joint shall extend thru the stem only. In lieu of composition roofing for contraction joints, the surface may be cleaned smooth and coated with a bond breaking material.
2. For retaining walls with bridge railing, location of the railing joints shall be determined so as to coincide with the contraction or expansion joints of the wall.



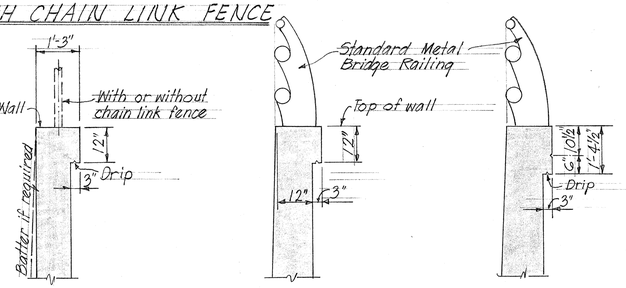
Note: This detail shall be applicable at all locations where highway light standards occur on walls with chain link fences, except at Sta. 203 + 00 where arrangement of conduits for lighting cables shall be different. All other details remain the same.

TYPICAL DETAIL OF LIGHT STANDARD ON WALL WITH CHAIN LINK FENCE

Scale: ½" = 1'-0"



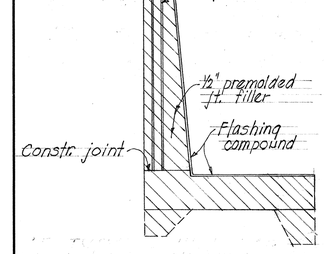
TYPICAL ADDED REINFORCEMENT AT LIGHT STANDARD BASE

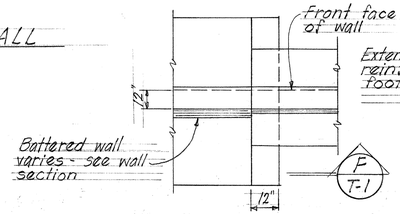


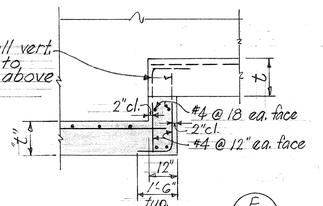
DRIP EDGE DETAILS

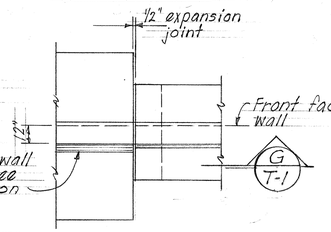
Scale: ½" = 1'-0"

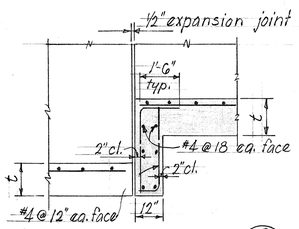
RETAINING WALL	Y	X
S-II (South Edge - Bridge No. 1)	9⅛"	
S-II (North Edge - Bridge No. 1)	1'-1⅝"	
S-II (At Bridge No. 2)	9 9/16"	
S-III	10⅝"	
S-IV	1'-0"	
N-II	1'-0⅛"	







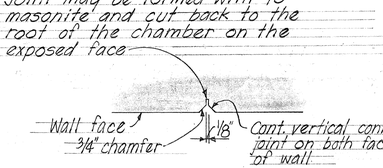


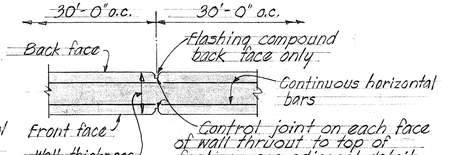


TYPICAL EXPANSION JOINT DETAILS

TYPICAL STEPPED CONTINUOUS FOOTING DETAILS

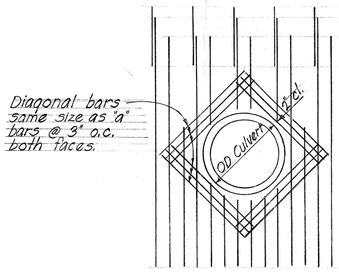
Joint may be formed with ⅛" masonite and cut back to the root of the chamber on the exposed face





NOTE: Spacing of contraction joint = 30'-0" max.

CONTROL JOINT & ALTERNATE CONTRACTION JOINT DETAILS



TYPICAL REINFORCING IN WALL AT PIPE 24" DIAMETER OR LESS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

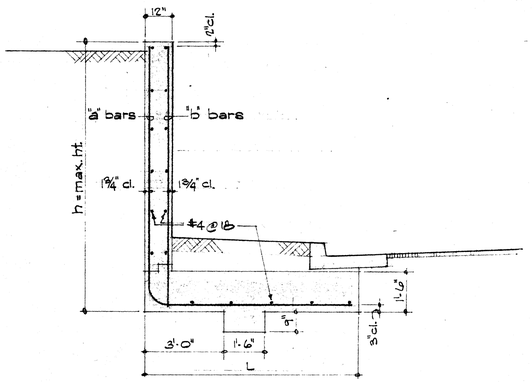
RETAINING WALL DETAILS
TYPICAL DETAILS
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. NO. I-HI-1(31) UNIT 1 May 1966

SHEET No. 7-/ OF 6 SHEETS

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

PRINTED ON CLEARPRINT 1000-H

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-III-1(31) UNIT 1	1967	189	202



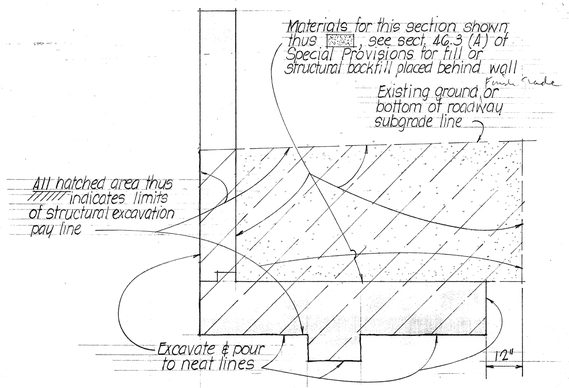
SECTION

TYPE "A" WALL

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

TYPE "A" WALL SCHEDULE

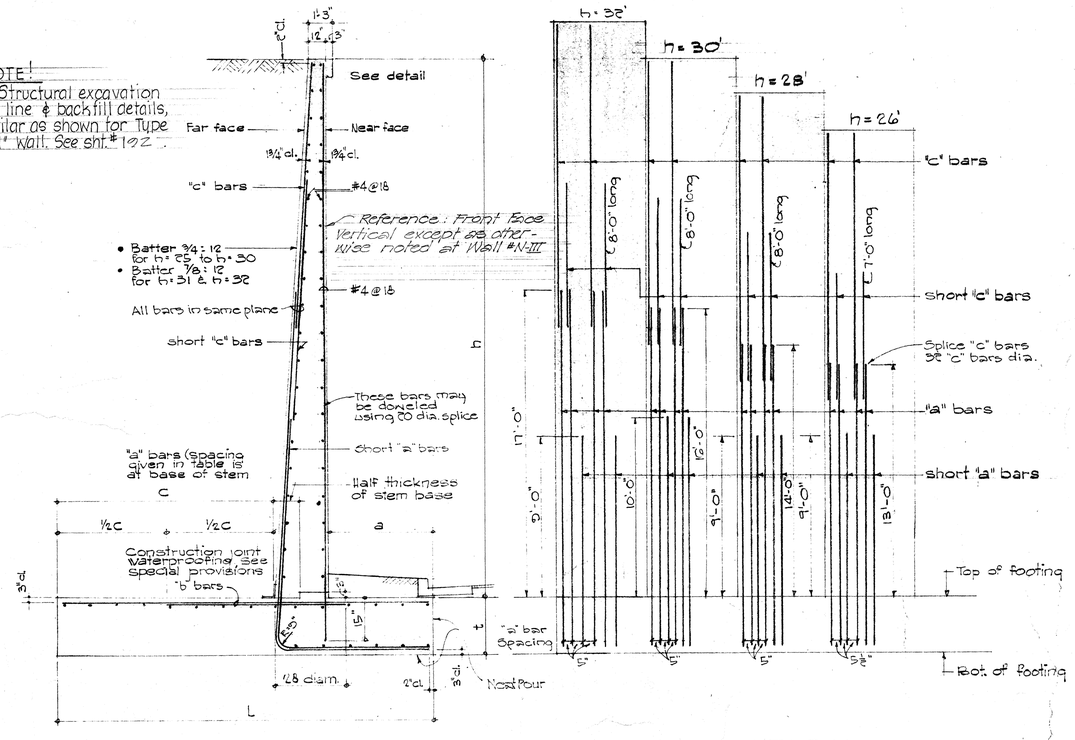
TYPE	A5	A6	A7	A8	A9	A10
Max. ht.	5'	6'	7'	8'	9'	10'
L	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"
"a" bars	#3@12	#3@12	#4@12	#4@12	#4@8	#5@8
"b" bars	#4@18	#4@18	#4@18	#4@18	#4@18	#4@18
Key	None	None	None	None	Yes	Yes



STRUCTURAL EXCAVATION PAY LINE & BACKFILL DETAIL - TYPE "A" WALL

SCALE: ½" = 1'-0"

NOTE!
Structural excavation pay line & backfill details, similar as shown for Type "T-1" wall. See sht. #102.



SECTION ELEVATION

TYPE "C" WALL

SCALE: ¼" = 1'-0"

TYPE "C" WALL SCHEDULE

TYPE	C-26	C-28	C-30	C-32
h	26'	28'	30'	32'
a	3'-6"	4'-3"	5'-0"	6'-0"
L	17'-6"	19'-0"	20'-6"	22'-0"
t	3'-2"	3'-5"	4'-0"	4'-4"
"a" bars	#10@5½	#10@5	#11@5	#11@5
"b" bars	#11@5½	#11@5	#11@5	#11@5
"c" bars	#7	#7	#7	#7

Symbols & Notes:

Wall Type — Wall Height
D - 30 - R = Railing
F = Fencing

Type "D" wall, 30' high with metal bridge railing.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

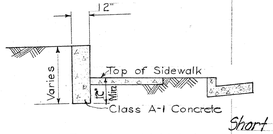
RETAINING WALL DETAILS
TYPICAL DETAILS
WALL TYPES "A" & "C"
INTERSTATE ROUTE H-1
PELE STREET to VICTORIA STREET
FAI Proj. No. I-H1-1(31)Unit 1 May 1966

SHEET No. T-2 OF 6 SHEETS

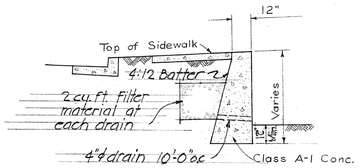
189

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(31) UNIT 1	1967	100	202



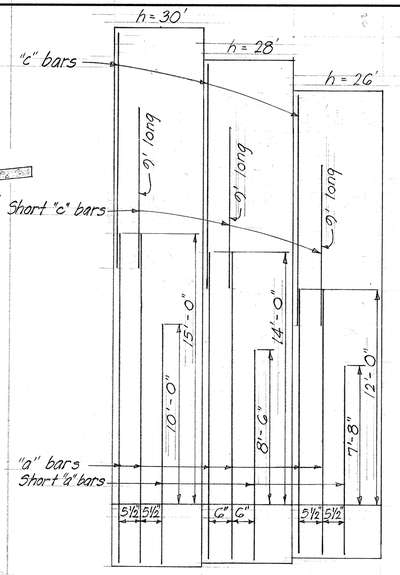
TYPE E WALL



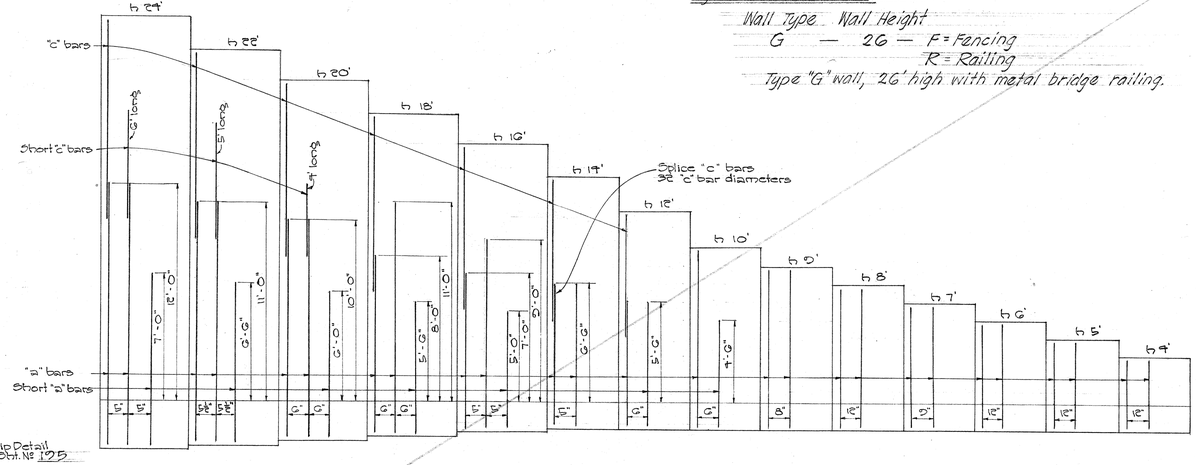
TYPE F WALL

GRAVITY WALL

Scale: ¼" = 1'-0"



ELEVATION OF TYPE "G" WALL



ELEVATION OF TYPE "G" WALL

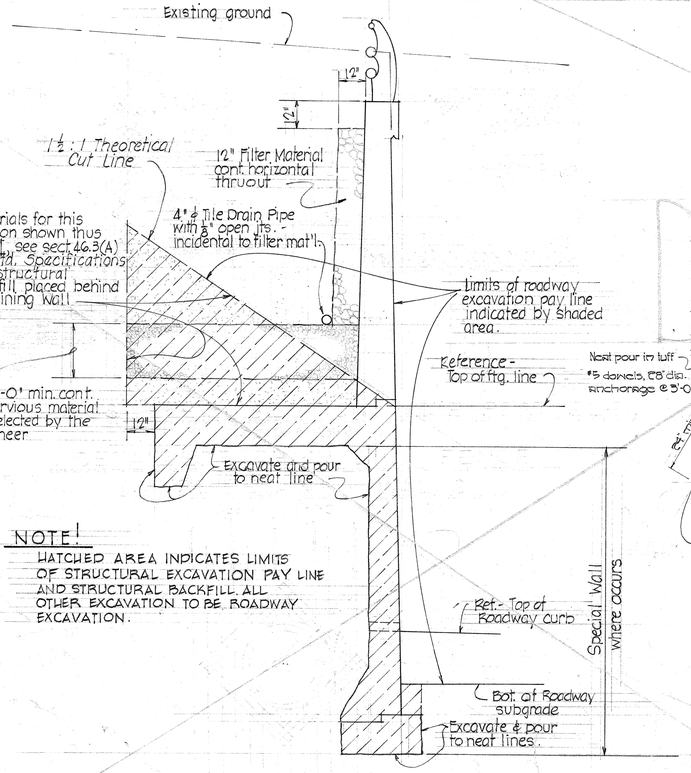
Symbols & Notes:

Wall Type Wall Height
G — 26 — F = Fencing
R = Railing

Type "G" wall, 26' high with metal bridge railing.

TABLE OF DIMENSIONS AND REINFORCING STEEL

h	4'	5'	6'	7'	8'	9'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'
L	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	6'-6"	8'-0"	9.0	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	16'-0"	18'-0"	20'-0"
t	18"	18"	18"	18"	18"	18"	18"	18"	18"	20"	24"	27"	30"	33"	36"	39"	42"
"a" bars	#3@12	#3@12	#3@12	#3@9	#4@12	#4@8	#4@6	#5@6	#5@5	#6@5	#7@6	#8@6	#9@6	#9@5½	#10@5	#10@5½	
"b" bars	#3@12	#3@12	#3@12	#4@9	#5@12	#5@8	#5@6	#7@6	#8@5	#9@5	#10@6	#11@6	#11@5½	#11@5	#11@5	#11@5	
"c" bars								#4	#4	#5	#5	#6	#6	#6	#7	#7	#7

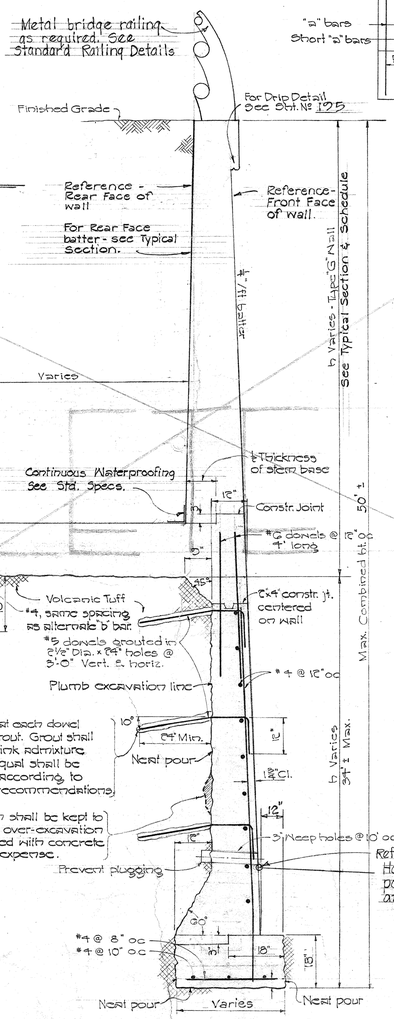


NOTE!

HATCHED AREA INDICATES LIMITS OF STRUCTURAL EXCAVATION PAY LINE AND STRUCTURAL BACKFILL. ALL OTHER EXCAVATION TO BE ROADWAY EXCAVATION.

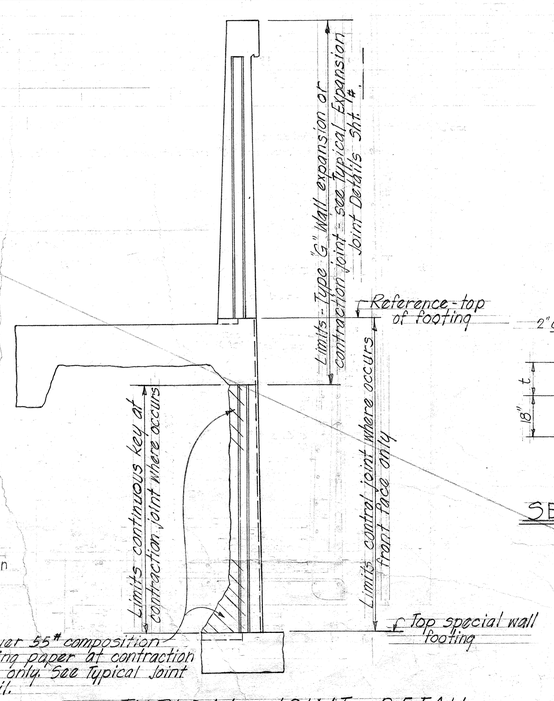
TYPICAL EXCAVATION PAY LINE & BACKFILL DETAIL - TYPE "G" WALL

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

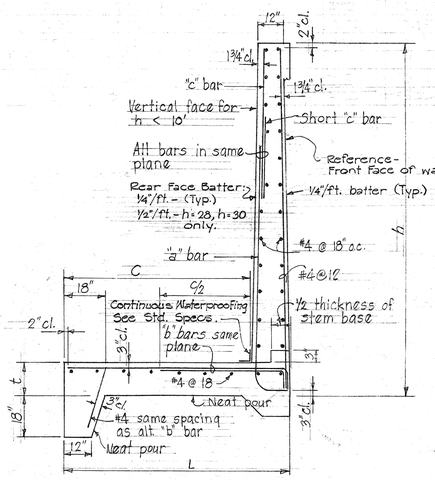


TYPICAL SECTION OF SPECIAL WALL DETAIL

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



TYPICAL JOINT DETAIL AT SPECIAL WALL



SECTION OF TYPE "G" WALL

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL DETAILS

TYPICAL DETAILS

WALL TYPES "E", "F"

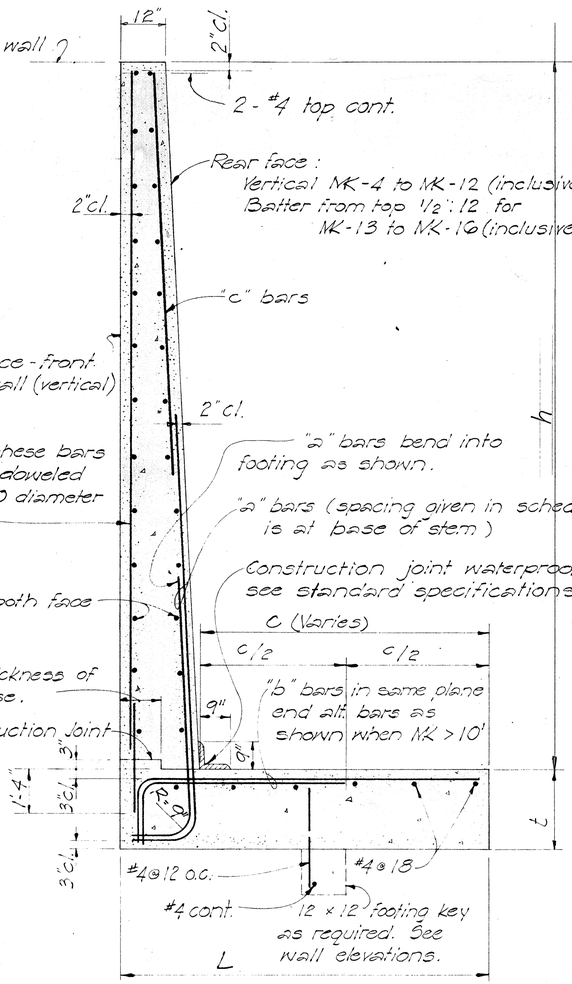
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. No. I-HI-1(31) UNIT 1 May 1966

SHEET No. 73 OF 6 SHEETS

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

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-III-1(30) UNIT 1	1967	191	292

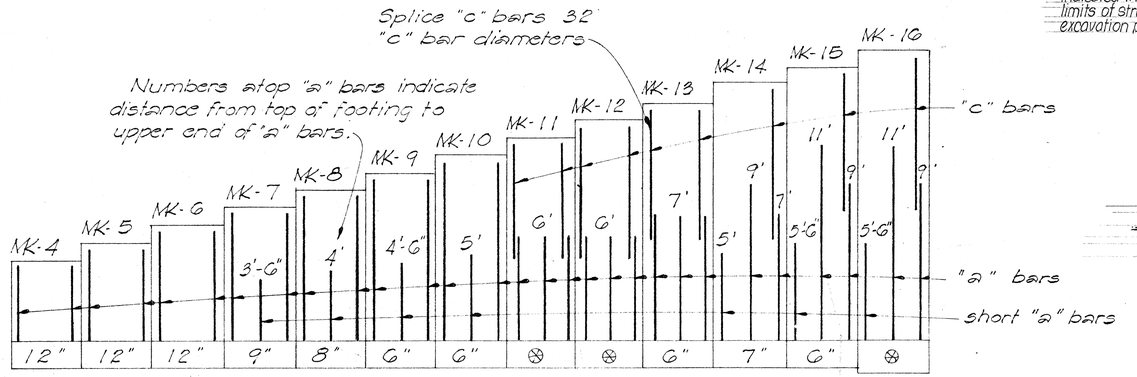


TYPICAL SECTION

TYPE "L" WALL SCHEDULE OF DIMENSIONS AND REINFORCING STEEL

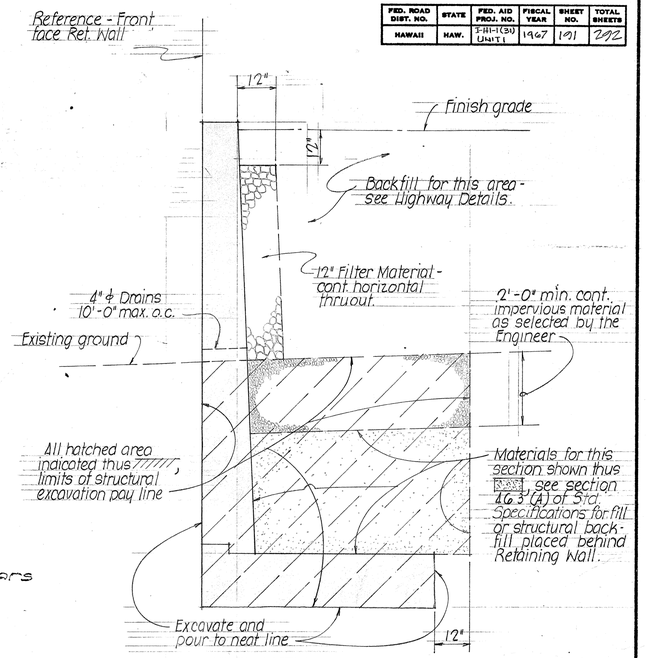
Maximum "MK"	4 E	5 E	6 E	7 E	8 E	9 E	10 E	11 E	12 E	13 E	14 E	15 E	16 E
L	3.0'	3.25'	3.5'	4.25'	4.75'	5.5'	6.0'	6.75'	7.5'	8.5'	9.25'	10.5'	12.0'
t	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	21"	24"	27"
"a"	#3@12"	#3@12"	#4@12"	#4@9"	#5@8"	#5@6"	#6@6"	#6@6"	#7@6"	#6@6"	#7@7"	#7@6"	#8@5½"
"b"	#3@12"	#3@12"	#4@12"	#4@9"	#5@8"	#5@6"	#6@6"	#6@6"	#7@6"	#8@6"	#9@7"	#9@6	#10@5½"
"c"	—	—	—	—	—	—	—	#4	#4	#4	#4	#4	#5

Maximum "MK"	4 R	5 R	6 R	7 R	8 R	9 R	10 R	11 R	12 R	13 R	14 R	15 R	16 R
L	2.5'	3.0'	3.5'	4.0'	4.5'	5.0'	5.5'	6.0'	6.5'	7.0'	7.5'	8.0'	8.5'
t	14"	14"	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	18"
"a"	#3@12"	#3@12"	#4@12"	#4@9"	#5@8"	#5@6"	#6@6"	#7@7"	#8@7"	#6@6"	#7@7"	#7@6"	#8@6"
"b"	#3@12"	#3@12"	#4@12"	#4@9"	#5@8"	#5@6"	#6@6"	#7@7"	#8@7"	#7@6"	#8@7"	#8@6"	#9@6"
"c"								#4	#4	#4	#4	#4	#5



⊗ = See schedule for spacing.

VERTICAL REINFORCING STEEL ARRANGEMENT



STRUCTURAL EXCAVATION PAY LINE AND BACKFILL DETAIL - TYPE "L-1" WALL

SCALE: ½" = 1'-0"

Symbols & Notes:

Wall Type Wall Height
L — 6E — F = Fencing
R = Railing

Type "L" wall, 6' high with Fencing.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

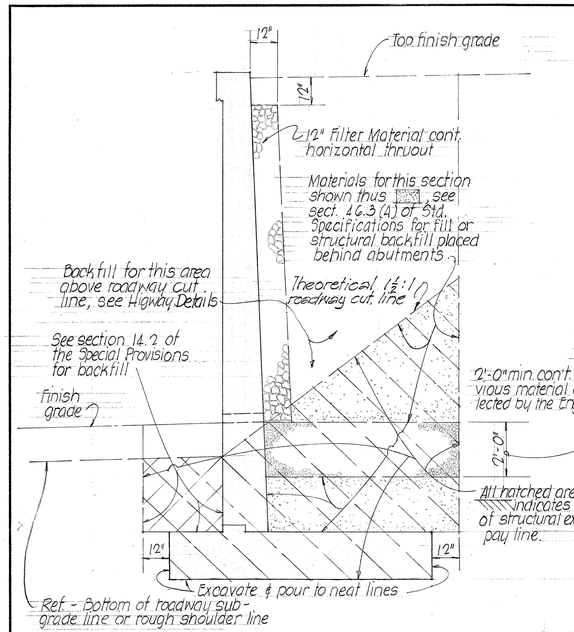
RETAINING WALL DETAILS
TYPICAL DETAILS
WALL TYPE "L"
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. No. I-HI-1(31) UNIT 1 May 1966

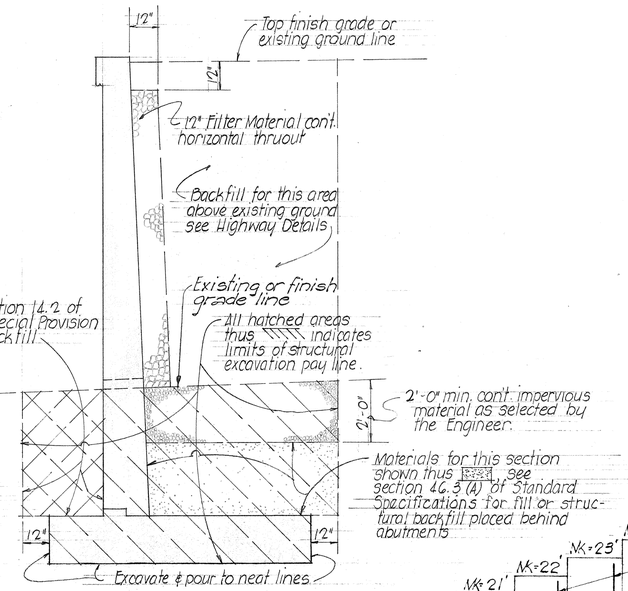
SHEET No. T-4 OF 6 SHEETS

191

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(31) UNIT 1	1967	102	292

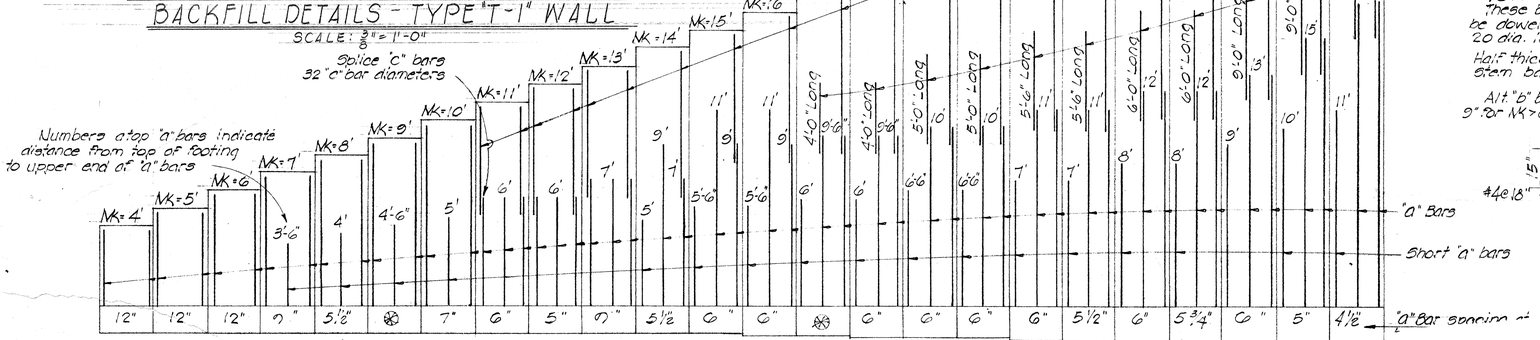




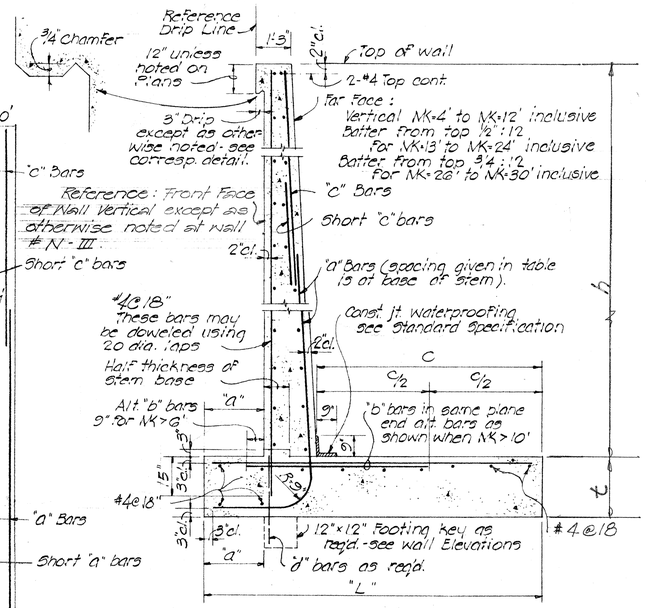
ALONG ROADWAY NO ROADWAY

STRUCTURAL EXCAVATION PAY LINE & BACKFILL DETAILS - TYPE "T-1" WALL

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



⊗ See Schedule for Spacing.



VERTICAL REINFORCING STEEL ARRANGEMENT

SCHEDULE OF DIMENSIONS AND REINFORCING STEEL

Maximum "NK"	4E	5E	6E	7E	8E	9E	10E	11E	12E	13E	14E	15E	16E	17E	18E	19E	20E	21E	22E	23E	24E	26E	28E	30E
a	6"	6"	6"	12"	12"	12"	12"	12"	12"	12"	15"	18"	21"	24"	24"	24"	27"	30"	33"	36"	39"	54"	60"	72"
t	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	18"	18"	21"	21"	24"	24"	24"	27"	30"	31"	33"	36"	39"	42"
L	2.5'	3.0'	3.5'	4.0'	4.5'	5.0'	5.5'	6.0'	6.5'	7.0'	7.75'	8.25'	9.0'	9.75'	10.5'	11.5'	12.5'	13.5'	14.5'	15.25'	16.0'	18.0'	20.0'	21.0'
"a" bars	#3@12"	#3@12"	#4@12"	#4@9"	#4@5½"	#5@7"	#6@7"	#6@6"	#6@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#8@5¾"	#9@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#11@6"	#11@5"	#11@4½
"b" bars	#3@12"	#3@12"	#3@12"	#3@9"	#4@11"	#4@7"	#5@7"	#5@6"	#5@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#8@5¾"	#8@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#11@6"	#11@5"	#11@4½
"c" bars	—	—	—	—	—	—	—	#4	#4	#4	#4	#4	#5	#5	#5	#6	#6	#6	#7	#7	#7	#7	#7	#7
"d" bars	#3@12"	#3@12"	#3@12"	#3@12"	#4@18"	#4@15"	#4@15"	#4@12"	#4@11"	#4@9"	#5@12"	#5@12"	#5@10"	#5@9"	#5@9"	#5@8"	#6@10"	#6@9"	#7@12"	#7@11"	#7@10"	#7@	#7@	#7@6"

Maximum "NK"	4R	5R	6R	7R	8R	9R	10R	11R	12R	13R	14R	15R	16R	17R	18R	19R	20R	21R	22R	23R	24R	26R	28R	30R
a	6"	6"	6"	12"	12"	12"	12"	12"	12"	12"	15"	18"	21"	21"	21"	21"	24"	24"	27"	30"	33"	37"	39"	51"
t	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	18"	18"	18"	18"	18"	21"	21"	21"	21"	24"	24"	27"	30"	36"
L	2.5'	3.0'	3.5'	4.0'	4.5'	5.0'	5.5'	6.0'	6.5'	6.75'	7.25'	7.75'	8.25'	8.75'	9.25'	9.75'	10.25'	10.5'	11.0'	11.5'	12.0'	13.0'	14.0'	15.0'
"a" bars	#3@12"	#3@12"	#4@12"	#4@9"	#4@5½"	#5@6"	#6@7"	#6@6"	#6@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#8@6"	#9@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#11@6"	#11@5"	#11@4½
"b" bars	#3@12"	#3@12"	#3@12"	#3@9"	#4@11"	#4@6"	#5@7"	#5@6"	#5@5"	#7@9"	#6@5½"	#7@6"	#7@6"	#8@6"	#9@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#10@6"	#10@5"	#9@4½
"c" bars	—	—	—	—	—	—	—	#4	#4	#4	#4	#4	#5	#5	#5	#6	#6	#6	#7	#7	#7	#7	#7	#7
"d" bars	#3@12"	#3@12"	#5@12"	#3@12"	#4@18"	#4@15"	#4@15"	#4@12"	#4@11"	#4@9"	#5@12"	#5@12"	#5@10"	#5@9"	#5@9"	#5@8"	#6@10"	#6@9"	#7@12"	#7@11"	#7@10"	#7@	#7@	#7@6"

Symbols & Notes:
Wall Type Wall Height
T — 28 E — F = Fencing
R = Railing
Type "T" wall, 28' high with Fencing

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL DETAILS
TYPICAL DETAILS
WALL TYPE "T"
INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI PROJ. No. I-HI-1(31) UNIT 1 May 1966

SHEET No. 7-5 OF 6 SHEETS

Nov. 1965

192

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

PRINTED ON CLEARPRINT 1000-H

RETAINING WALLS - ESTIMATED QUANTITIES

	CLASS A-1 CONCRETE	REINFORCING STEEL	STRUCTURAL EXCAVATION	FILTER MATERIAL	CONCRETE RUBBLE MASONRY	METAL BRIDGE RAILING
RETAINING WALL "S-I	82.0 c.y.	4,300.0#	95.0 c.y.	19.0 c.y.	———	———
RETAINING WALL "S-IA	249.0 c.y.	21,000.0#	450.0 c.y.	66.0 c.y.	———	———
RETAINING WALL "S-II	550.0 c.y.	63,500.0#	1,100.0 c.y.	115.0 c.y.	———	128.0 Lin. Ft.
RETAINING WALL "S-III	627.0 c.y.	74,800.0#	932.0 c.y.	189.0 c.y.	———	395.0 Lin. Ft.
RETAINING WALL "S-VI	374.0 c.y.	41,550.0#	508.0 c.y.	111.0 c.y.	———	274.0 Lin. Ft.
RETAINING WALL "S-VII	32.0 c.y.	1,750.0#	50.0 c.y.	6.0 c.y.	———	———
RETAINING WALL "S IX	104.0 c.y.	2,100.0#	122.0 c.y.	34.0 c.y.	———	———
RETAINING WALL "S X	212.0 c.y.	27,400.0#	825.0 c.y.	50.0 c.y.	———	———
RETAINING WALL "S-XI	221.0 c.y.	2,950.0#	116.0 c.y.	4.0 c.y.	———	———
RETAINING WALL "N-II	3,852.0 c.y.	432,887.0#	6,555.0 c.y.	567.0 c.y.	———	304.0 Lin. Ft.
RETAINING WALL "N-III	4423.0 c.y.	573,389.0#	5,516.0 c.y.	870.0 c.y.	———	760.0 Lin. Ft.
RETAINING WALL "N-IV	427.0 c.y.	47,247.0#	404.0 c.y.	152.0 c.y.	———	155.0 Lin. Ft.
RETAINING WALL "N-V	———	———	———	———	30.0 c.y.	———
RETAINING WALL "N-VII	2,113.0 c.y.	247,403.0#	3,337.0 c.y.	463.0 c.y.	———	000.0 Lin Ft.
GRAND TOTAL	13,266.0 cy	1,547,226.0#	20,100.0 c.y.	2,655.0 c.y.	30.0 c.y.	3,036.0 Lin Ft.

GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(31) Limit	1967	193	202

Reference : Typical details shown on sheets "188" thru "193" inclusive refer to all Retaining walls except for modifications or may be required for special conditions. For such modifications, see corresponding detailed drawing.

For additional details and general notes not covered by the drawings, refer to Standard Bridge Drawing Sht. Nos. 194 & 196

Symbols & Notes :

Wall type Wall height F.S. Fencing / Railing

"D - 30' - R", Type "D" wall, 30' high with metal bridge railing.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL DETAILS
TYPICAL DETAILS
& GENERAL NOTES

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
PELE STREET TO VICTORIA STREET
FAI Proj. No. I-HI-1(31)Unit 1 MAY 1966

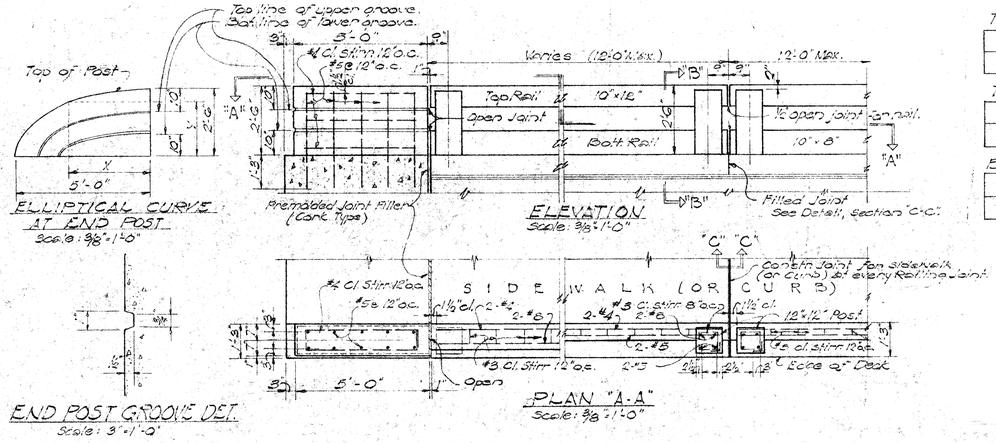
SHEET No. T-6 OF 6 SHEETS

193

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHH-(31) UNIT 1	1967	129	202

Revised
June '64
April '65
March '66
July '66
Sept. '66
Feb. '67



Top of Post

X	0.	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	4'-0"	4'-6"	4'-0"	4'-6"	5'-0"
Y	2'-6"	2'-5 3/8"	2'-4 5/8"	2'-3 1/2"	2'-2"	2'-0"	1'-0 7/16"	1'-6"	1'-3 13/16"	1'-1 7/16"	0'-11 3/8"	0'-6 11/16"	0"	

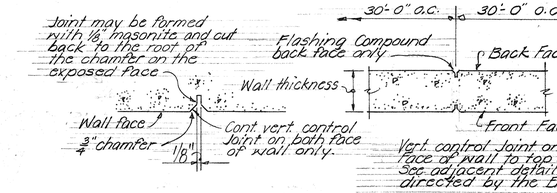
Top Line of Upper Groove

X	0	6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-3"	3'-6"	3'-9"	4'-0"	4'-1"	4'-2"
Y	1'-3"	1'-7 3/8"	1'-7 7/16"	1'-6 11/16"	1'-5 9/16"	1'-4"	1'-1 7/8"	1'-0 1/2"	10 3/8"	8 11/16"	5 5/8"	4"	0"

Bottom Line of Lower Groove

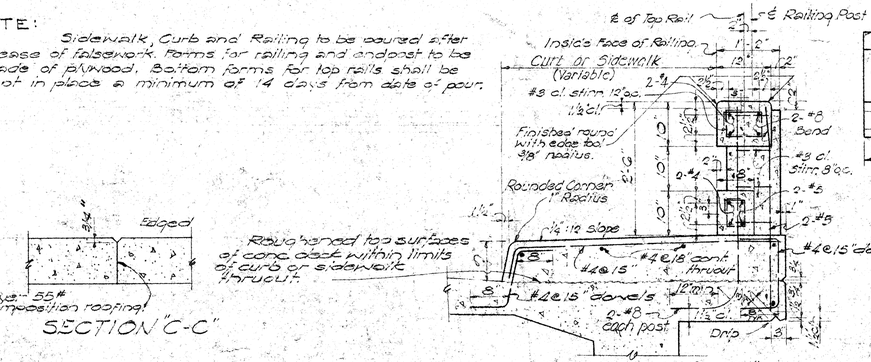
X	0	6"	1'-0"	1'-6"	2'-0"	2'-6"	2'-9"	3'-0"	3'-2"	3'-3"	3'-4"		
Y	10"	9 3/8"	9 7/16"	8 15/16"	8"	6 5/8"	5 5/8"	4 3/8"	3 1/8"	2 1/4"	0"		

ELLIPSE COORDINATES



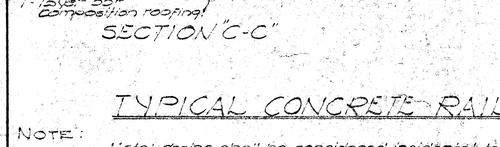
ALTERNATE CONTRACTION JOINT AND CONTROL JOINT DETAIL

NOTE:
Sidewalk, Curb and Railing to be poured after release of falsework. Forms for railing and endpost to be made of plywood. Bottom forms for top rails shall be kept in place a minimum of 14 days from date of pour.



TYPICAL CONCRETE RAILING DETAILS Scale: As Noted

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

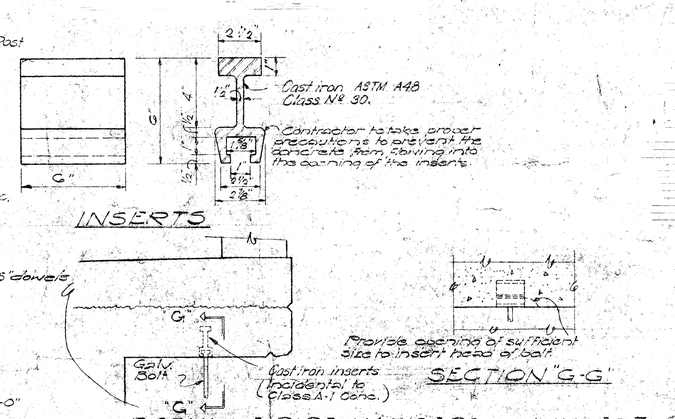


Waterstop to have 5 or more pairs of raised ribs to provide 0.1 sq. in. min. rib cross-section area on each half of the waterstop. Height of ribs to be 3/32" min.

Holes will be permitted in the outer 1" 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.

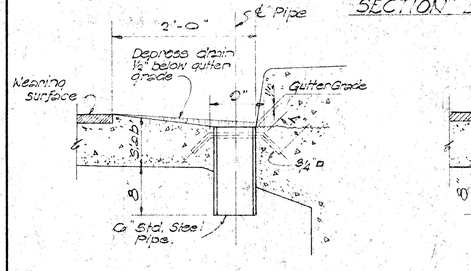
Nailing Strip:
Nail or staple to form or premolded joint filler.

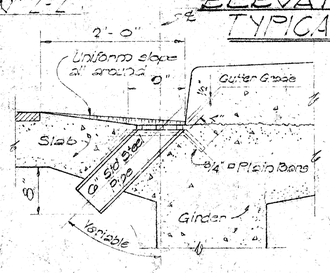
TYPICAL BRIDGE DECK EXPANSION JOINT DETAIL



GENERAL NOTES

1.- Neoprene & Preformed Fabric Pads: These pads shall be secured against displacement by adhesives on both sides of the pads. The adhesives shall be approved by the Engineer.
2- Neoprene and preformed fabric pads where required are incidental to concrete and will not be paid for separately.
3- The submittal of preliminary plans and engineering calculations at least ten (10) working days prior to bid opening for an alternate prestress strand arrangement, as called for in subarticle 4G.P1 of the Special Provisions, shall be waived for the prestress girders for Ward Avenue Separation.
4.- All concrete shall be Class A-1 unless otherwise noted.
5.- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
a - 1 1/2" for stirrups of beams & pier caps.
b - 2" for ties of columns.
c - 2" for formed walls.
d - 3" for footings.
6.- 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.
7.- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
8.- 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.
9.- Splices of reinforcing - See Special Provisions.
10.- Minimum spacing between parallel bars shall be 0 1/2 times the diameter of bars, but in no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate.
11.- All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
12.- Concrete finish - See Special Provisions.
13.- All welders and welding procedures for reinforcing steel shall be qualified according to the requirements of the Special Provisions.
14.- Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
15.- Except as otherwise noted on drawings all exterior corners & re-entrant angles in concrete work shall be chamfered 3/4" x 3/4". See Standard Specifications.
16.- 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.





TYPICAL DRAINAGE DETAILS Scale: 1"=1'-0"

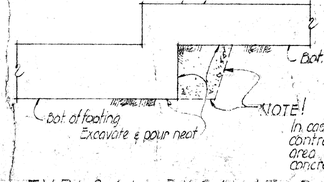
Depressed "V" Letters 3/8" deep.

NAME DATE

Use correct name of bridge. Date of year built.

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST

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.



TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP
NO SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD BRIDGE DETAILS

SHEET No. 5/ OF 3 SHEETS

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

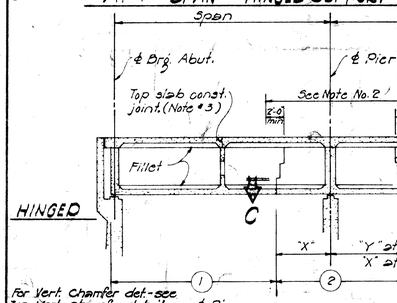
PRINTED ON CLEARPRINT 1000-H

1941

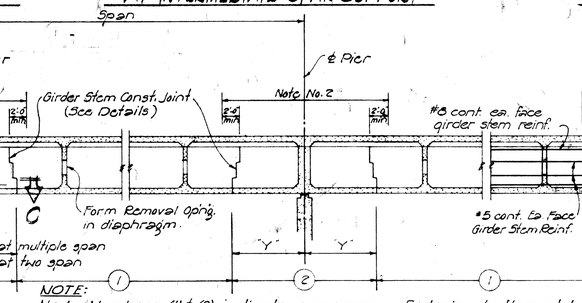
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	S-011-(31) Unit 1	1967	195	292

May '59
OCT '60
MAY '62
NOV '62
MAY '65
DEC. '65
MAY '66

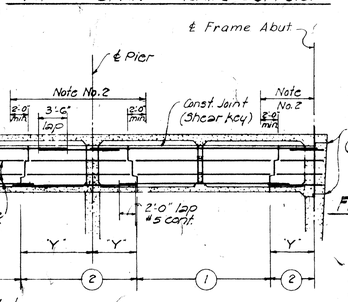
AT 1ST SPAN ~ HINGED SUPPORT



AT INTERMEDIATE SPAN SUPPORT

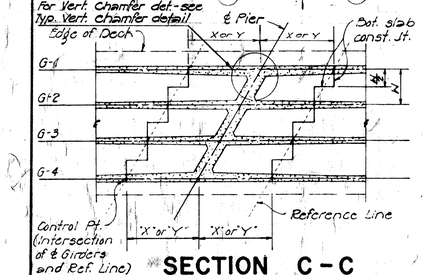


AT 1ST SPAN ~ FRAME SUPPORT



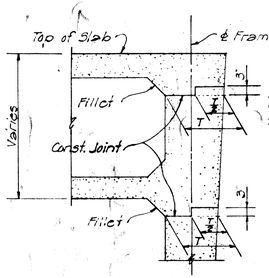
NOTE:
No.1 - Numbers (1) & (2) indicate sequence of placing bottom slab & girder stem concrete. (2) may be placed simultaneously with (1) when approved by the Engr., and provided that the (1) sections are placed in adjoining spans. For any deviation from the above the contractor shall submit a diagram to the Engineer for approval.
No. 2 - No top slab construction joint or form removal opening shall be located in the region over the piers as noted.
No. 3 - When top slab forms are not removed, const. joint in top slab shall be located over an intermediate diaphragm.
No. 4 - Dimension "X" = ¼ span "Y" = ⅓ span
No. 5 - No lapping of main girder bars shall be permitted at construction joints.

PLACING DIAGRAM FOR SUPERSTRUCTURE CONCRETE



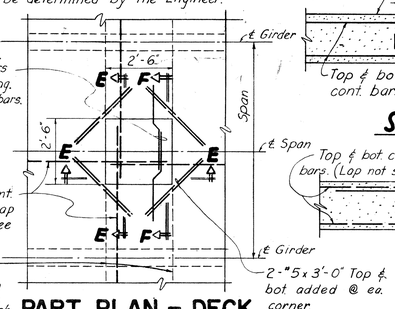
SECTION C - C

SHOWING TREATMENT OF CONST. JOINT FOR BRIDGES ON SKEW



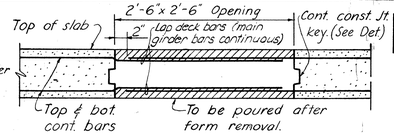
DETAIL - A

Note: Final location of opening shall be determined by the Engineer.



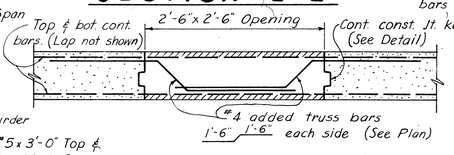
PART PLAN - DECK

SHOWING FORM REMOVAL OPENING

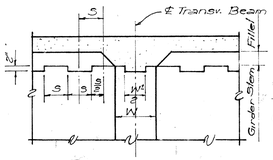


SECTION E-E

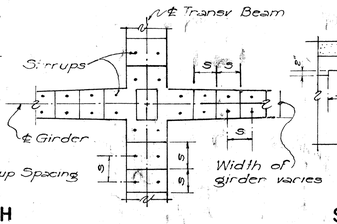
Note: Form removal opening at top slab shall not be located where main girder bars occur.



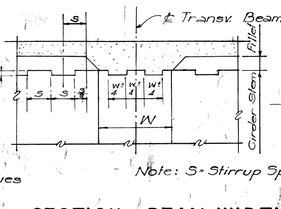
SECTION F-F



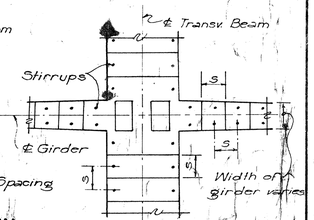
SECTION - BEAM WIDTH LESS THAN 2'-0"



PLAN



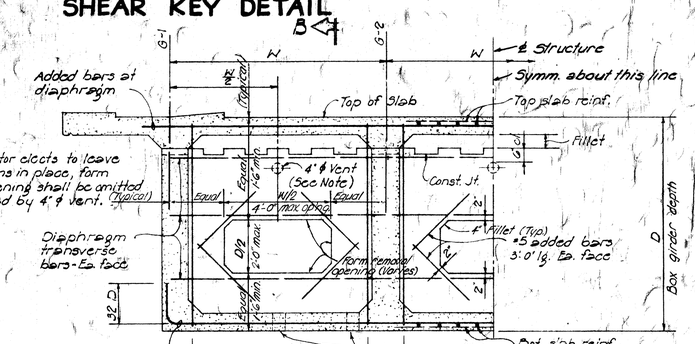
SECTION - BEAM WIDTH MORE THAN 2'-0"



PLAN

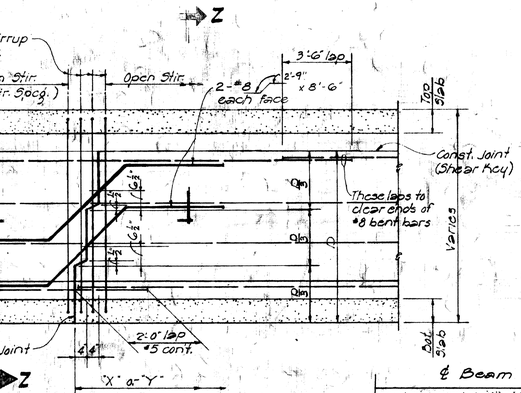
Note: Shear keys for box girders may be eliminated if the entire surface of the joint is thoroughly cleaned of surface laitance, curing compound and other materials foreign to the concrete, and clean aggregate is exposed by abrasive blast cleaning after the curing period or immediately before placing concrete at the joint.

SHEAR KEY DETAIL



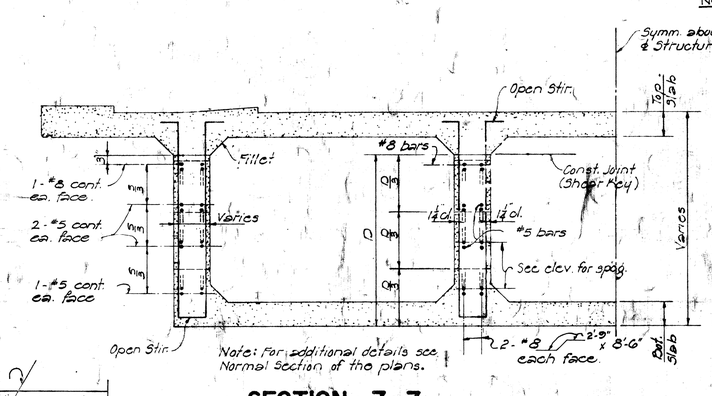
NOTE: If Contractor elects to leave top slab forms in place, form removal opening shall be omitted and replaced by 4" ℄ Vent. (Typical)

FORM REMOVAL OPENING DETAIL IN DIAPHRAGM

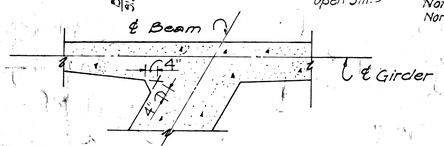


NOTE:
D = Depth of girder stem to bottom of slab.
S = Spacing of #5 cont. girder stem long. bars.

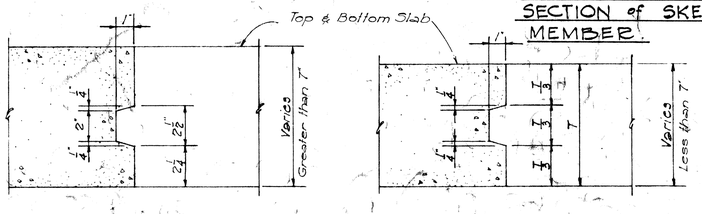
GIRDER STEM CONST. JOINT



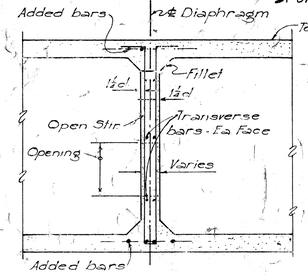
SECTION Z-Z



TYPICAL DETAIL of VERTICAL CHAMFER AT ACUTE INTERSECTION of SKEWED CONCRETE MEMBER.



TOP AND BOTTOM SLAB CONST. JOINT



SECTION B-B

GENERAL NOTE

Except where detailed otherwise in the plans, all details on this sheet govern.

APPROVED: DATE: Aug. 26, 1959

STATE HIGHWAY ENGINEER

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

STANDARD DETAILS

BOX GIRDER

SCALES AS NOTED

SHEET No. S2 OF 3 SHEETS

195

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

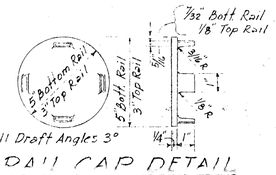
PRINTED ON DIEPO 1000H CLEARPRINT

9/p

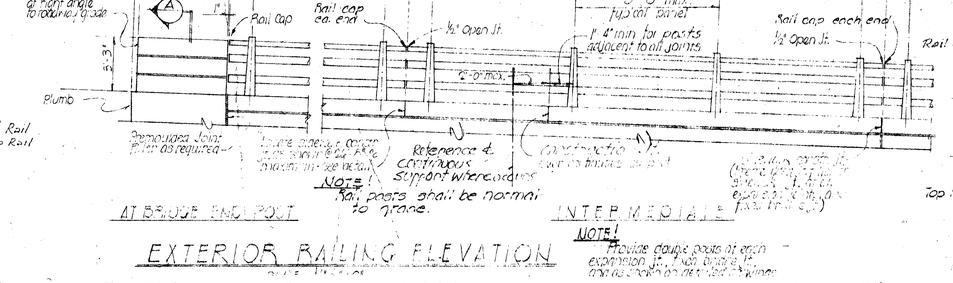
* * NOTE:
The contractor shall layout the railing to provide 3 continuous panels wherever possible. 4 or 5 continuous panels will be permitted to complete the layout. When 3 panels or 5 panels cannot be made, single panels will not be permitted.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-NT-1(31) UNIT 1	1967	106	222

1-8-65
4-23-65
5-10-65
8-10-65
1-3-66
5-11-66



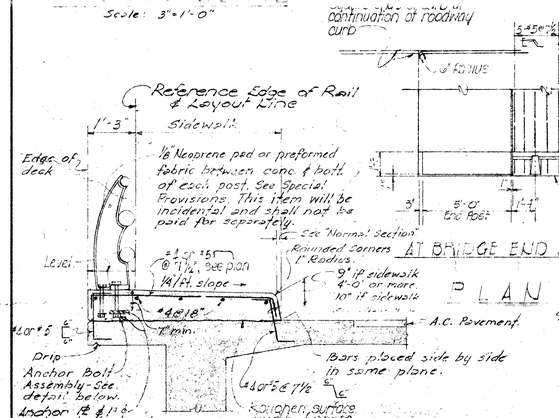
All Draft Angles 3°
RAIL CAP DETAIL
Scale: 3"=1'-0"



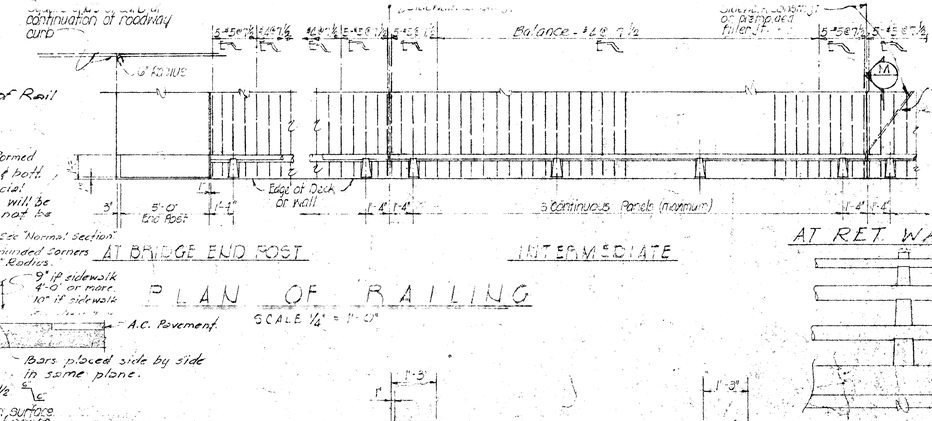
EXTERIOR RAILING ELEVATION
Scale: 3/8"=1'-0"

NOTE!
Rail posts shall be normal to grade.

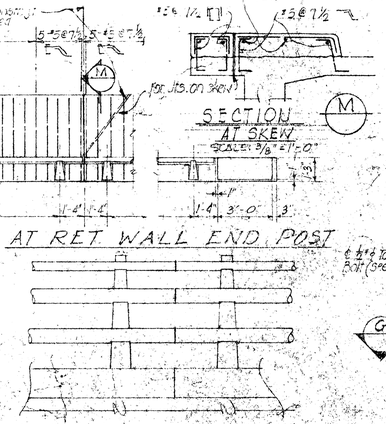
NOTE!
Provide gauge posts at each expansion Jt. Rail to be in one piece between posts at each gauge post.

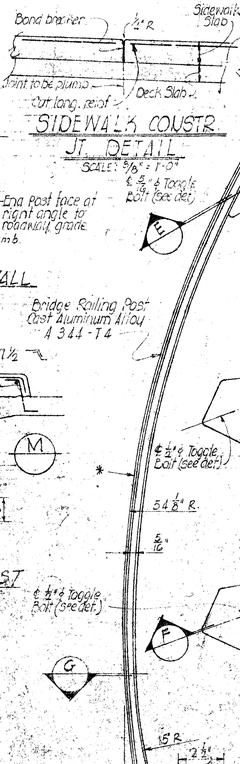


TYPICAL SECTION
Scale: ½"=1'-0"

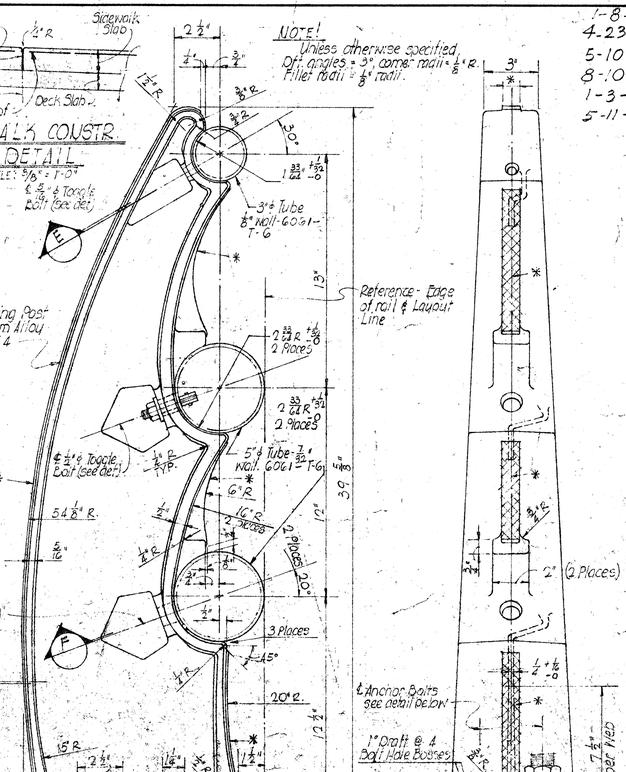


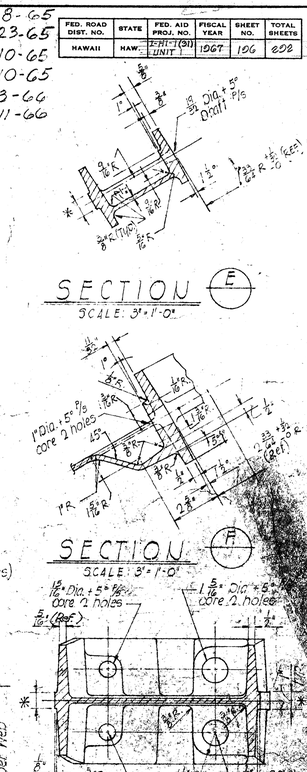
PLAN OF RAILING
SCALE ¼" = 1'-0"

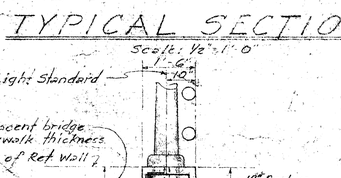




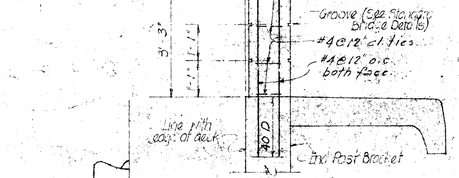
Bridge Railing Post Cast Aluminum Alloy - A 344 - T4



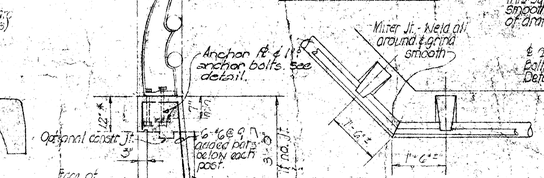




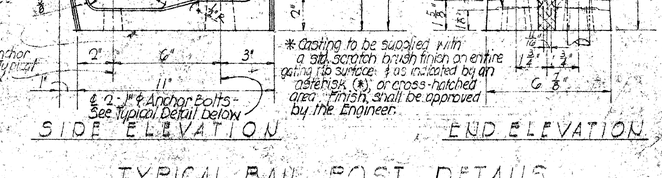
SECTION C AT RET WALL
Scale: ½"=1'-0"

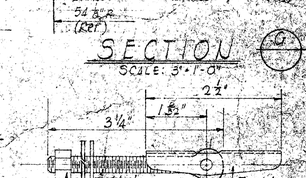


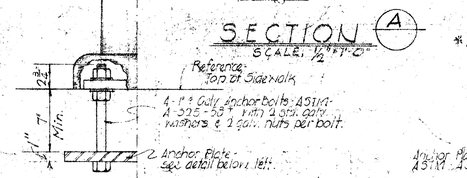
SECTION A
SCALE: ½"=1'-0"



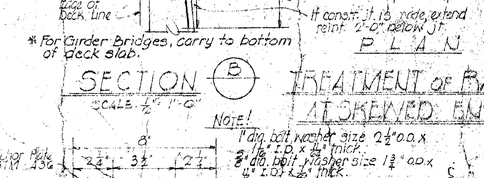
* For Girder Bridges, carry to bottom of deck slab.
SECTION B
SCALE: ½"=1'-0"
PLAN





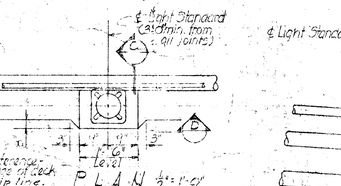


ANCHOR BOLT DETAIL AT LIGHT STANDARD
SCALE: 1½"=1'-0"

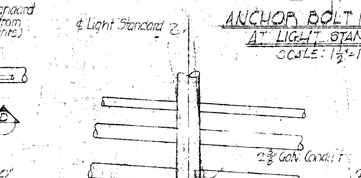


TREATMENT OF RAILING AT SKEWED ENDS

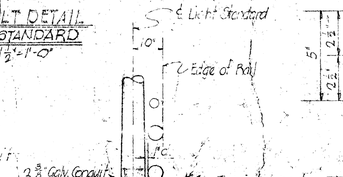
NOTE!
1" dia. bolt washer size 2½" O.D. x 1⅛" I.D. x ¼" thick.
¾" dia. bolt washer size 1¾" O.D. x 13/16" I.D. x ⅛" thick.



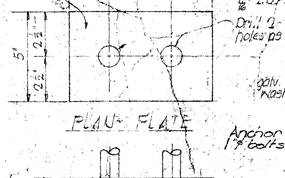
PLAN
Scale: ½"=1'-0"



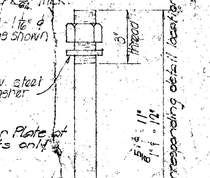
SECTION D on bridge



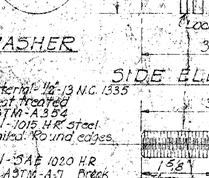
SECTION C AT BRIDGE
Scale: ½"=1'-0"



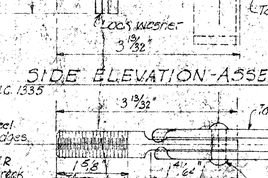
ANCHOR PLATE DETAIL
Scale: 1"=1'-0"

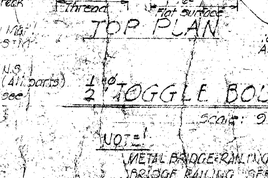


TYPICAL ANCHOR BOLT DETAIL



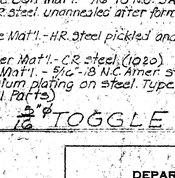
NOTE!!
Toggle Bolt Material - ½"-13 N.C. 1335 C.R. Steel heat treated R.C. 32-38 ASTM-A 354
Toggle Material - 1015 H.R. steel pickled and oiled. Round edges. ASTM-A 303
Washer Material - SAE 1020 H.R. steel. Plates ASTM-A 7. Break sharp edges
Nut - ½"-13 Amer. Std. hex. nut. Heavy Mat'l. 1035 C.R. St.. Heat treated ASTM-A 194
Cadmium plating on steel. Type N.S. .0005 thick - ASTM-A 165 (all parts)
For cast post specifications, see special provisions.



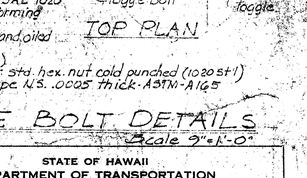


½" ø TOGGLE BOLT DETAILS
Scale: 9"=1'-0"

NOTE!
METAL BRIDGE RAILING SHOWN IS FOR ALUMINUM BRIDGE RAILING. SEE SPECIAL PROVISIONS FOR ALTERNATE IN STEEL.



NOTE!!
Toggle Bolt Mat'l. - 9/16"-18 N.C. SAE 1020 C.R. steel. Unannealed after forming
Toggle Mat'l. - H.R. steel pickled and oiled
Washer Mat'l. - C.R. steel. (1020)
Nut. Mat'l. - 5/16"-18 N.C. Amer. Std. hex. nut cold punched (1020 st'l)
Cadmium plating on steel. Type N.S. .0005 thick - ASTM-A 165 (All Parts)



⅜" ø TOGGLE BOLT DETAILS
Scale: 9"=1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL BRIDGE RAILING
THREE RAIL - COMBINATION TYPE

Scale: As Noted

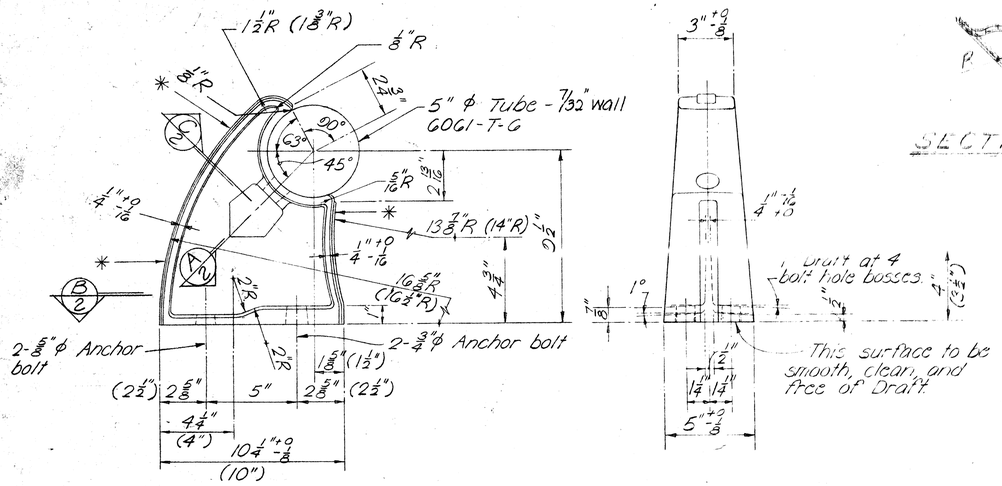
SHEET No. 5-3 OF 3 SHEETS

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

PRINTED ON CLEARPRINT 1000-H

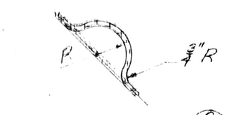
196

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



SIDE ELEVATION

END ELEVATION



SECTION (C/2)

NOTE:

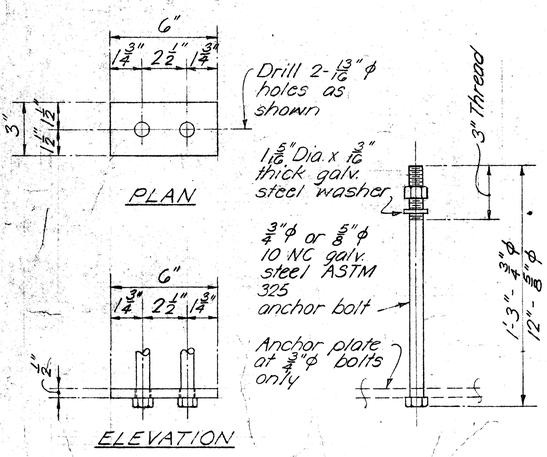
✱ Casting to be supplied with a standard scratch brush finish on entire gating rib surface and as indicated by an asterisk (✱). Finish shall be approved by the Engineer.

Casting to be neatly trimmed and any protruding flash to be broken off. Unless otherwise specified, draft angles to be 3° corner radii to be 3/32"R, fillet radii to be ⅛"R, casting tol. to be ±1/16", wall thickness to be ±7/32".

Dimensions may be as shown or as shown in parenthesis ( ).

TYPICAL RAIL POST DETAILS

Scale: 3"=1'-0"



PLAN

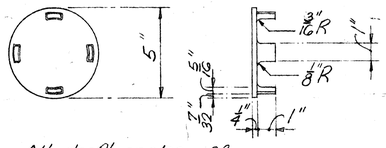
ELEVATION

ANCHOR ℄ DETAIL ANCHOR BOLT

TYPICAL RAIL POST

STEEL ANCHOR BOLT ASSEMBLY

Scale: 3"=1'-0"



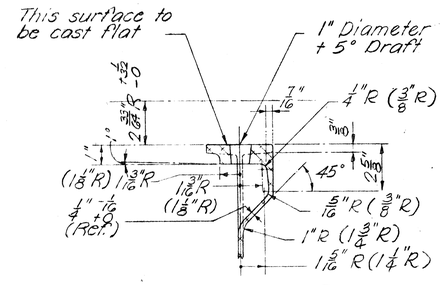
All draft angles = 3°

RAIL CAP DETAIL

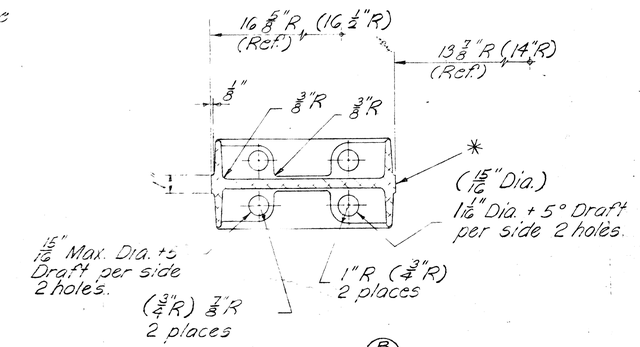
Scale: 3"=1'-0"

GENERAL NOTES:

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



SECTION (A/2)

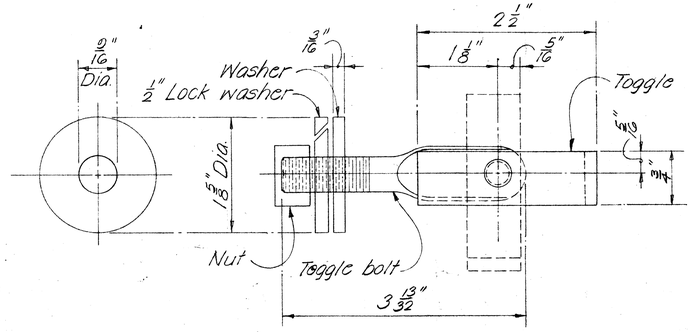


SECTION (B/2)

NOTE:

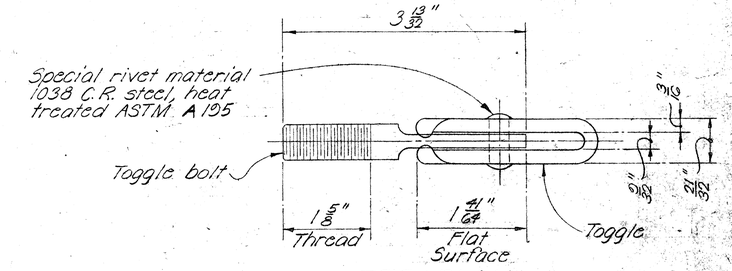
TOGGLE BOLT

Cadmium plating on steel - Type NS 0.0005" thick ASTM - A165. (all parts).



WASHER

SIDE ELEVATION ASSEMBLAGE



TOP PLAN

½" ϕ STEEL TOGGLE BOLT DETAILS

Full Scale

DESIGN ENGINEER

APPRO

CHIEF ENGINEERING

DA

REVISION	APPROVED BY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL BRIDGE RAILINGS
ONE RAIL COMBINATION TYPE
ON PARAPET

Scale as noted Date:

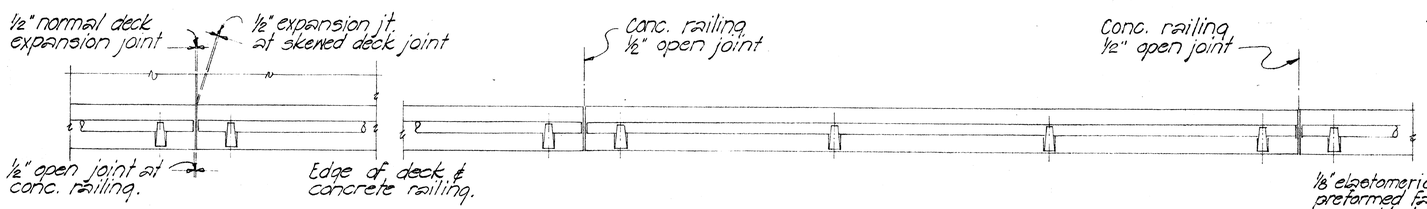
SHEET No. 2 OF 2 SHEETS DB-200-2

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

PRINTED ON NO. 1000H CLEARPRINT

C0196

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



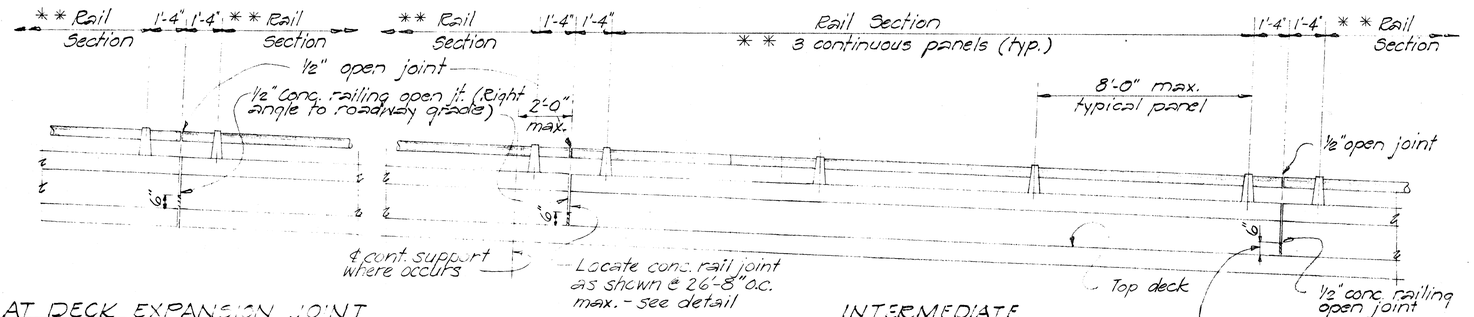
AT DECK EXPANSION JOINT

INTERMEDIATE

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

** Note !!

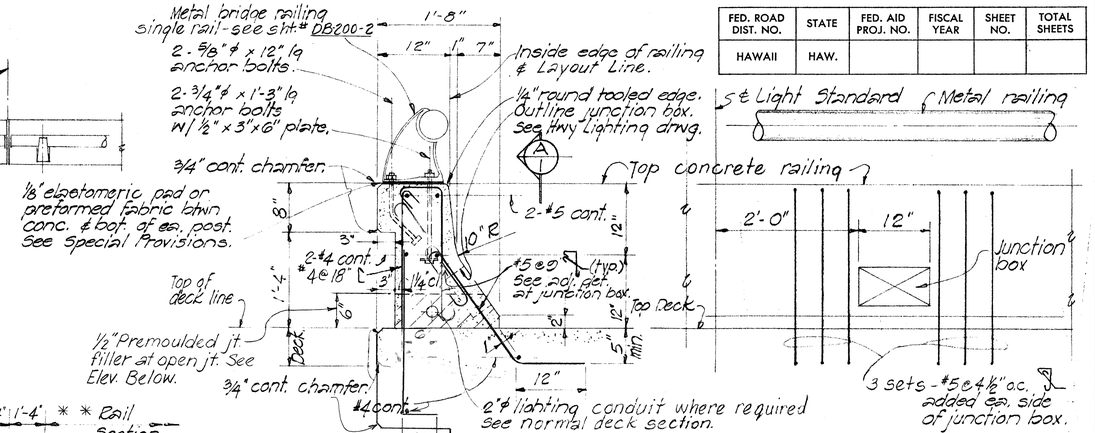
1. The contractor shall layout the railing to provide 3 cont. panels whenever possible. 2 or 4 cont. panels will be permitted to complete the layout when 3 cont. panels cannot be made. Single panels will not be permitted.
2. Rail Posts shall be normal to grade.
3. Provide double posts at each expansion jt., fixed bridge jt., continuous support, and as shown on detailed drawing.



AT DECK EXPANSION JOINT

INTERMEDIATE

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

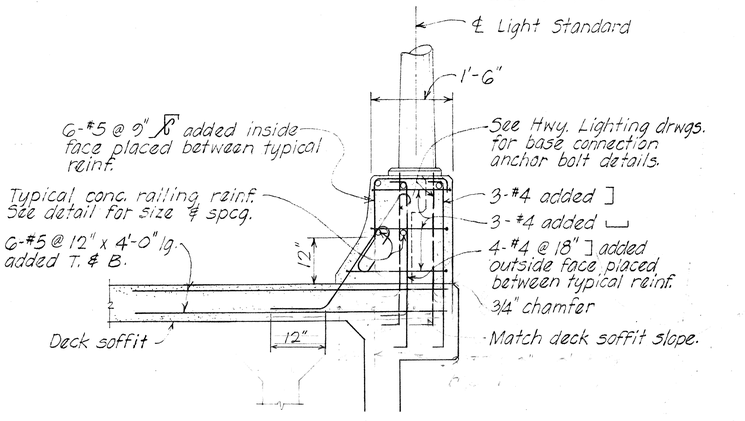


TYPICAL CONCRETE RAILING SECTION

SCALE : 1" = 1'-0"

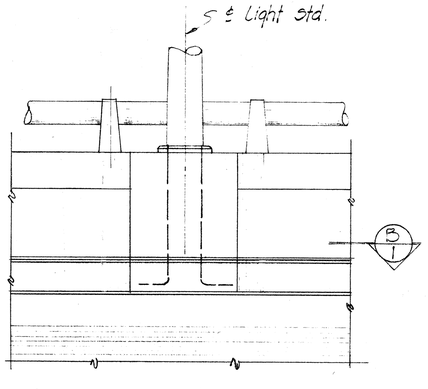
ELEVATION (A/1) SHOWING SPECIAL REINFORCEMENT AT JUNCTION BOX

SCALE : 1" = 1'-0"



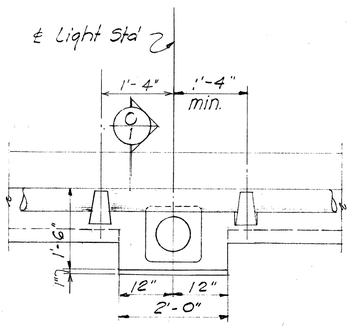
SECTION (C/1)

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



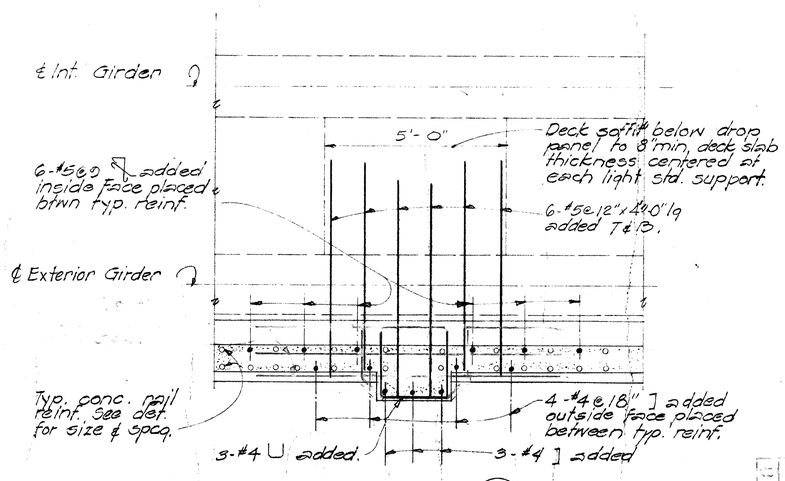
PART ELEVATION

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



PART PLAN

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



SECTION (B/1)

SCALE : ½" = 1'-0"

DETAILS OF RAILING AT LIGHT STANDARD

SCALE AS NOTED

APPROVED _____ 1-23-70
BRIDGE DESIGN ENGINEER DATE

APPROVED _____ 1-28-70
ASSISTANT ENGINEER DATE

NO.	REVISION	APPROVED	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

METAL BRIDGE RAILING ONE RAIL COMBINATION TYPE ON PARAPET

Date: October 1969

SHEET No. 1 OF 2 SHEETS DB-200-1

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

PRINTED ON NO. 1000H CLEARPRINT

C 0 19 6 13

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-I(31) UNIT 1	1967	197	202

Relocate to ℄ Sta. 151+00 ±

SPEED ZONE AHEAD 25 M.P.H.

Remove

DETOUR AHEAD

Relocate to ℄ Sta. 129+50

SPEED LIMIT 25

Relocate to ℄ 154+00

LEFT LANE CLOSED 1000 FT.

SCHOOL STREET

RAMP "B"

Westbound Lanes

130

135

140

Eastbound Lanes

MATCH LINE ℄ Sta. 142+00

Waiakamilo Stream

TRUE NORTH Scale: 1"=50'

Relocated from ℄ Sta. 127+00 ±

SPEED ZONE AHEAD 25 M.P.H.

MERGING TRAFFIC W4-1-I

Remove

SCHOOL STREET

IOLANI AVE.

RAMP "G"

RAMP "E"

Relocate exist. Class I Barricades & signs to ℄ Sta. 179+30

Relocate 12 ea. exist. Class II Barricades to Sta. 172+00 to 178+00

MATCH LINE ℄ Sta. 150+00

MATCH LINE ℄ Sta. 142+00

BEG. OF PROJ. No. I-HI-I(31) UNIT 1 Baseline Sta. 144+72

145

150

Exist. overhead sign support & footings

Exist. Type IV footing

RAMP "H"

RAMP "D"

RAMP "B"

"B" Line

10

Exist. Type III footing

"B" Line

15

RAMP "B-1"

Kinau St. EXIT ½ MI

Sign E-1

USE RIGHT LANE

Relocate to ℄ Sta. 156+25

EAST Lunalilo Frwy.	Lusitana Street	Punchbowl Street

Sign E-2

LEFT LANE CLOSED 1000 FT.

Relocated from ℄ Sta. 141+50

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNS

INTERSTATE ROUTE H-1
(LUNALILO FREEWAY)
Pele St. to Victoria St.
F.A.I. Proj. No. I-HI-I(31), Unit 1

Scale: 1" = 50' April 1966

SHEET No. 1 OF 26 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

197

103 File No 1