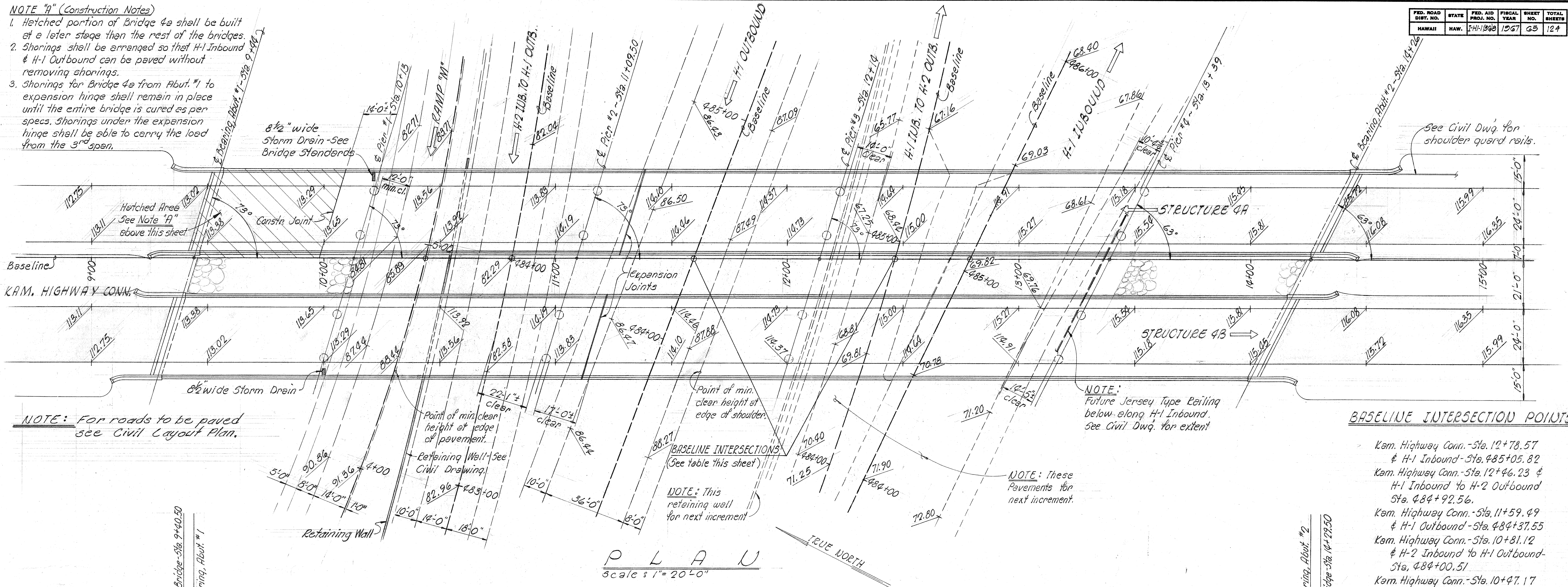


NOTE "A" (Construction Notes)

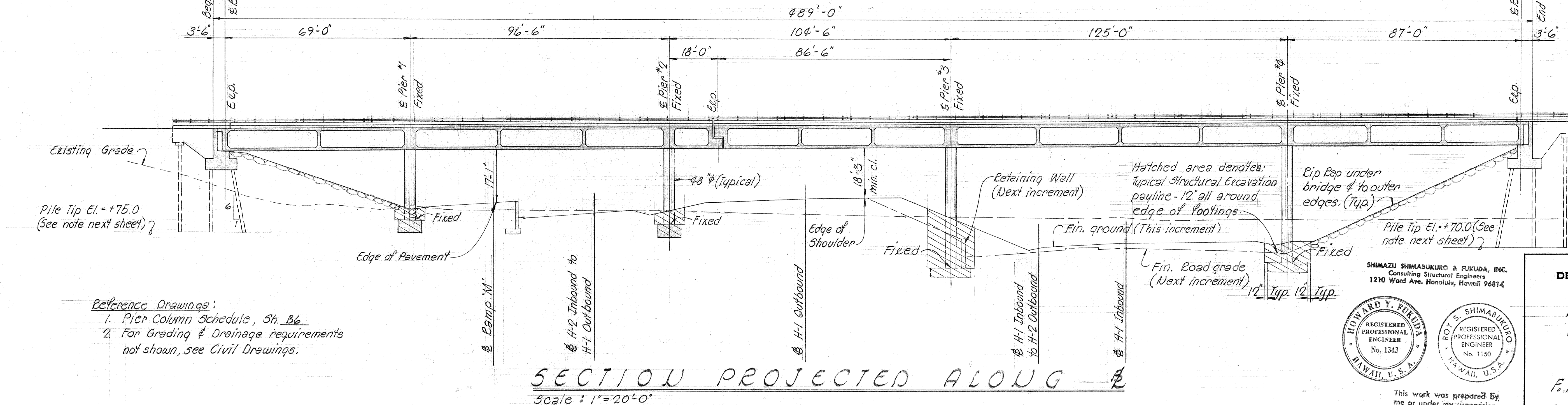
1. Hatched portion of Bridge 4a shall be built at a later stage than the rest of the bridges.
2. Shorings shall be arranged so that H-1 Inbound & H-1 Outbound can be paved without removing shorings.
3. Shorings for Bridge 4a from Abut. #1 to expansion hinge shall remain in place until the entire bridge is cured as per specs. Shorings under the expansion hinge shall be able to carry the load from the 3rd span.



BASELINE INTERSECTION POINTS

- Kam. Highway Conn. - Sta. 12+78.57 & H-1 Inbound - Sta. 485+05.82
- Kam. Highway Conn. - Sta. 12+46.23 & H-1 Inbound to H-2 Outbound Sta. 484+92.56.
- Kam. Highway Conn. - Sta. 11+59.49 & H-1 Outbound - Sta. 484+37.55
- Kam. Highway Conn. - Sta. 10+81.12 & H-2 Inbound to H-1 Outbound - Sta. 484+00.51
- Kam. Highway Conn. - Sta. 10+47.17 & Ramp "M" - Sta. 4+93.22

BRIDGE QUANTITY ESTIMATES			
Item No.	Item	Unit	Quantity
14.60	Structural Excavation for Bridges	C.Y.	2,080
46.061	Concrete in Structure 4a & 4b	L.S.	4,180 C.Y.
48.61	Reinforcing Steel in Structure 4a & 4b	L.S.	921,860 lbs.
51.60	Prestressed Concrete Piles	L.F.	2,500
55.10	Metal Bridge Railing	L.F.	2,100
55.50	Conc. Bridge Parapet (Include End Post)	L.F.	2,096
64.01	Hand laid Rip Rap	C.Y.	524



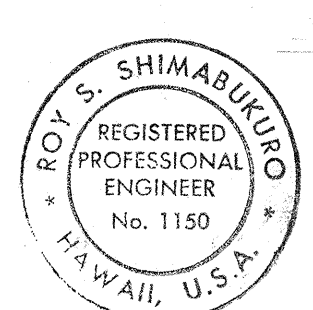
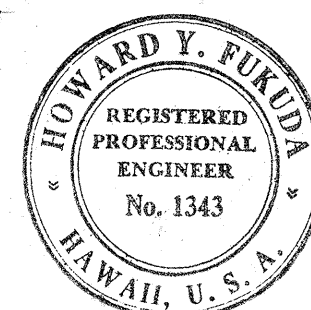
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

WAIANA INTERCHANGE STRUCTURE No. 4A & 4B

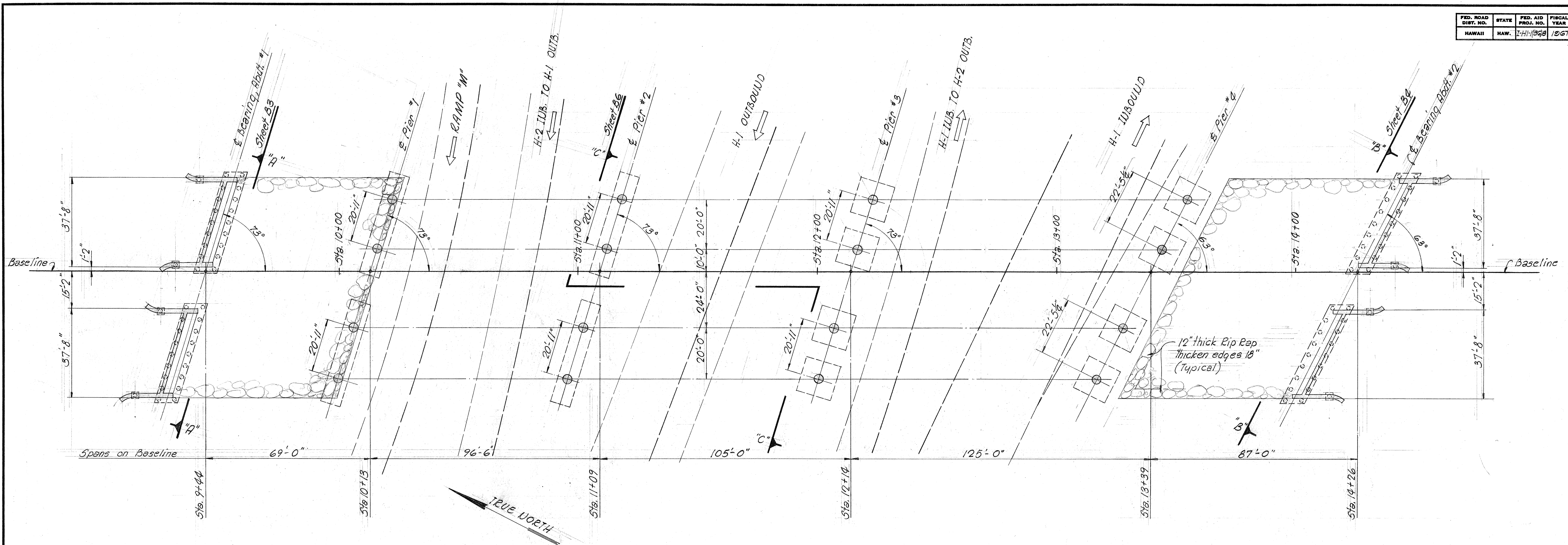
F.A.I. PROJ. No. 141-1 (36)B

Scale: As Shown Date:

SHEET No. 31 OF 25 SHEETS



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FOUNDATION LAYOUT PLAN

Scale: 1" = 20'-0"

NOTES:

- For General Notes, See Sh. 310.
- In general, bridge superstructure shall be constructed to follow the finished roadway.
- Construction methods:
 - Sides of footing shall be excavated to neat lines when called for on plans. Over excavation below elevations indicated on the plans for bottom of footings shall be backfilled with a minimum of class D concrete as directed by the Engineer at the Contractor's expense.
 - Backfill behind abutments of structures 4a & 4b shall be complete in place before pouring of superstructure.
 - Obtain camber by forming and shoring concrete surface above profile grade by amount shown on camber diagram.
 - Backfill against wingwall shall be carried out in such a manner that the differential of soil on each side of the wall shall not exceed 2'-0" at any time.
- See also Civil and Electrical Sheets for items not shown.

REFERENCE DRAWINGS

- Abutment #1 Foundation, Sh. B3
- Abutment #2 Foundation, Sh. B4
- Pier Column Foundation, Sh. B5

DESIGN CRITERIA

Loading = H 20 - S16

Allowable Foundation Pressure

Pier #1	=	5,000 p.s.f.	(Group I)
Pier #2	=	5,000	"
Pier #3	=	5,000	"
Pier #4	=	5,000	"

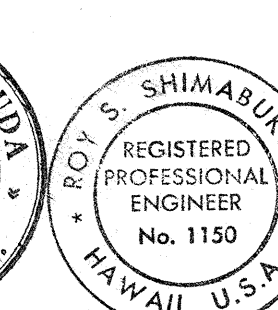
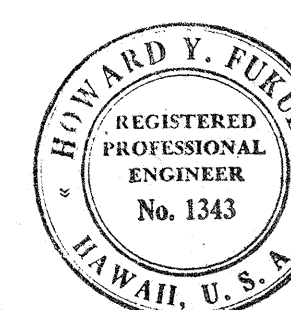
Pile Capacity = 32 Tons

Pile Size = 16" Octagonal

SEQUENCE OF CONSTRUCTION FOR PILE DRIVING

- Construct abutment embankments to 60% of Pile Cap.
- Pre-drill through embankment down to existing grade. (Hole shall be 6" larger than diameter of pile)
- Drive piles down to the following minimum depths:
 - Abutment #1 = El. +75.0
 - Abutment #2 = El. +70.0
- Fill void around piles with loose dry sand meeting the grading requirements of 47.2 (d) FINE AGGREGATE. (See amendments to Specs.)

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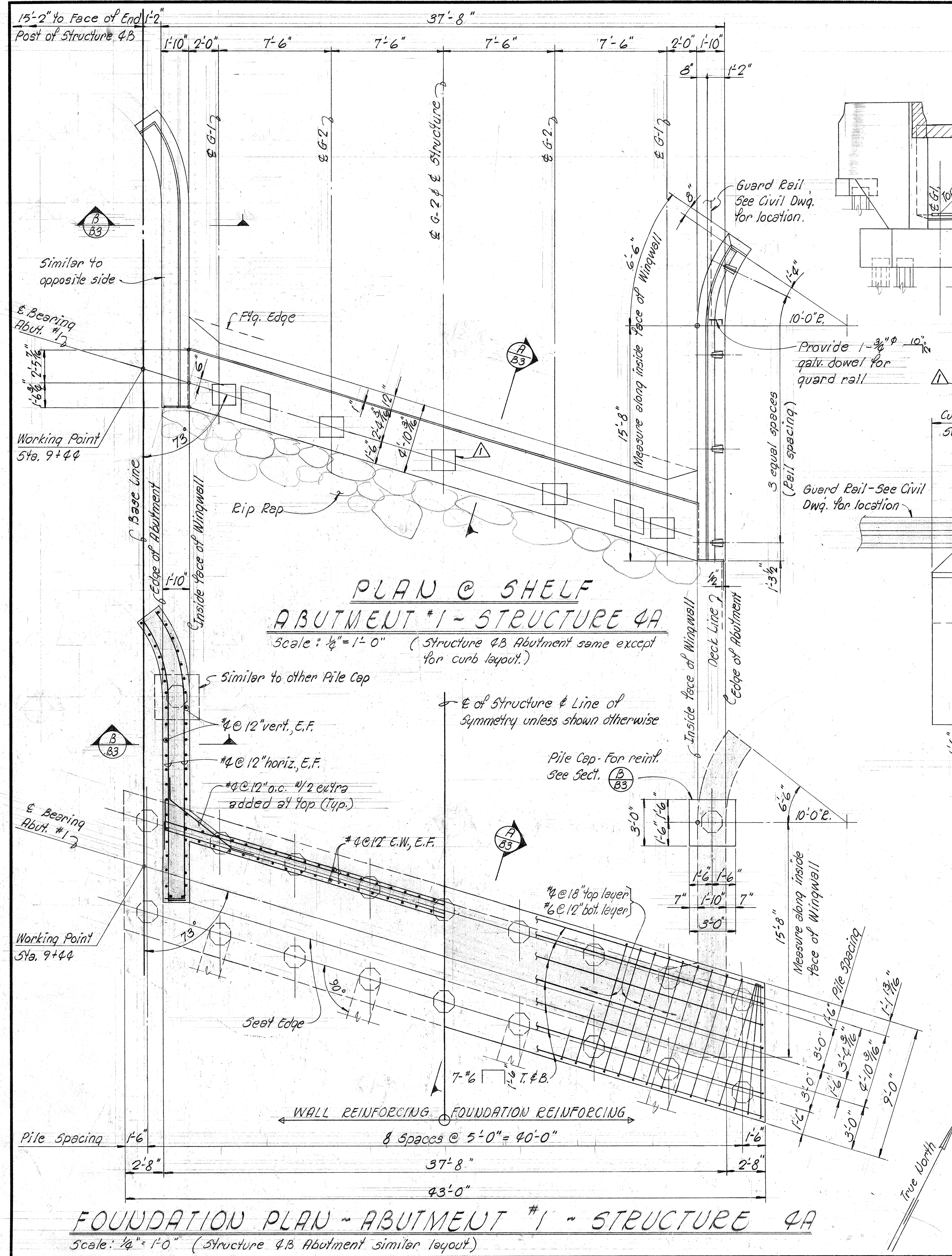
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIANA INTERCHANGE
STRUCTURE No. 4A & 4B

F.A.I. PROJ. No. I-H-1 (36) B

Scale: As Shown Date:

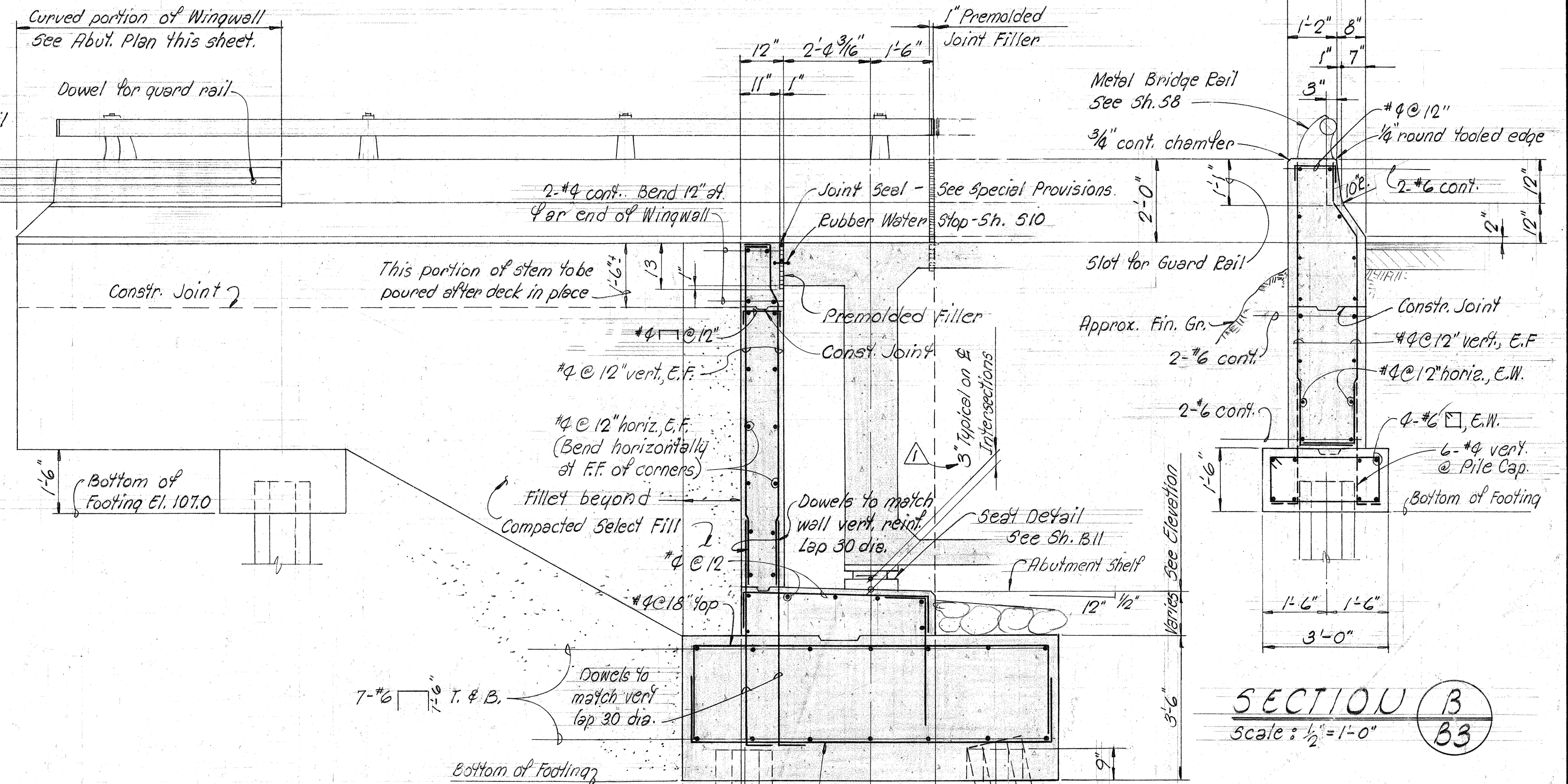
SHEET No. 62 OF 25 SHEETS



STRUCTURE 4B

ABUTMENT #1 - ELEVATION "A-A"
 Scale: $\frac{3}{16}'' = 1'-0''$ (For Concrete Seat & Creep Block details, see Sh. B11)

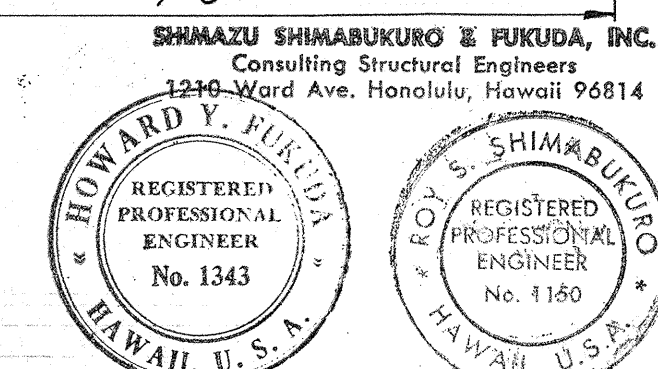
STRUCTURE 4A



NOTE:

1. All dimensions are at right angles.

Revision #1 = Lowered Abutment Shelf & revised Elastomeric Pad



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 HIGHWAYS DIVISION

WAIANA INTERCHANGE
 STRUCTURE No. 4A & 4B

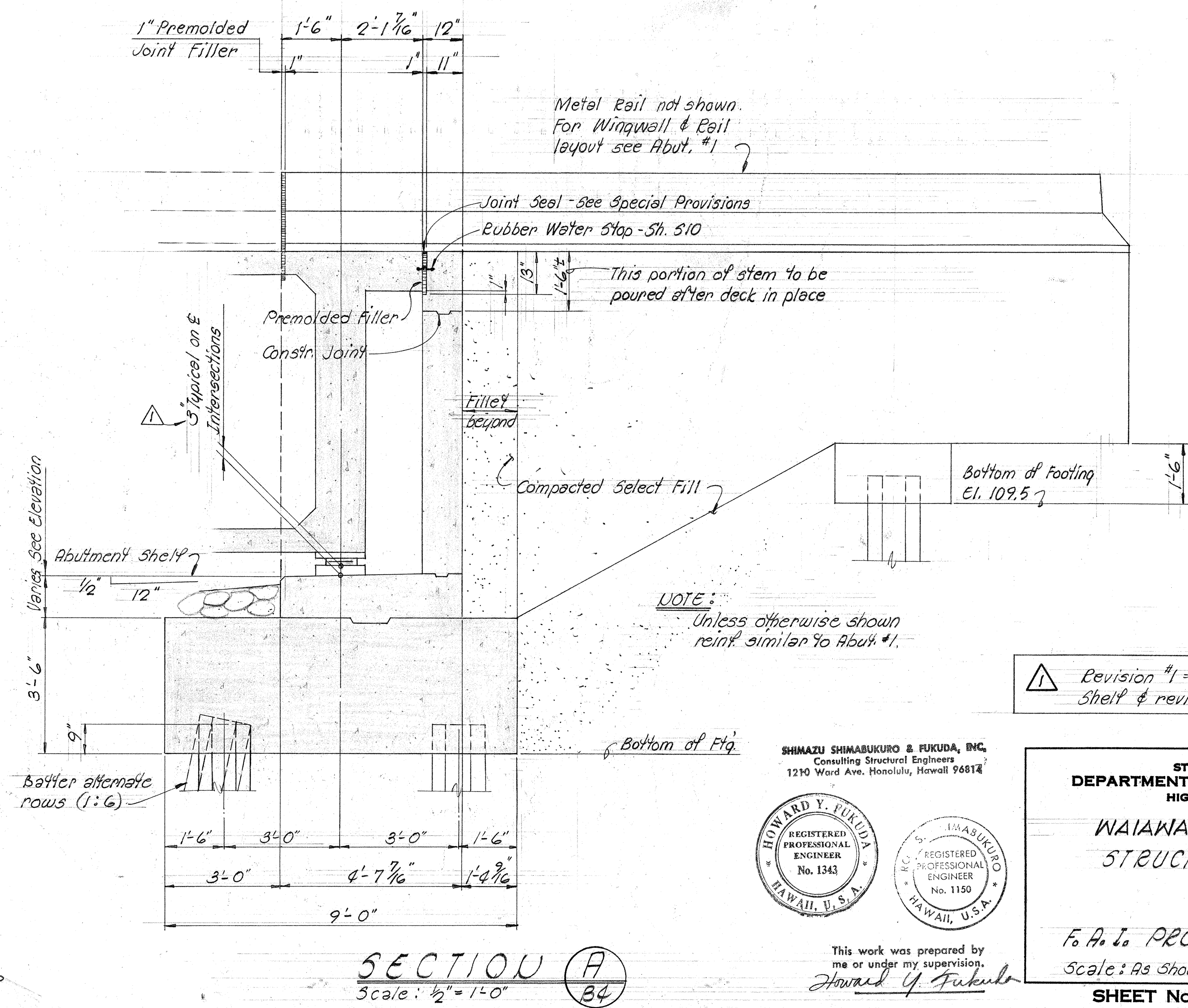
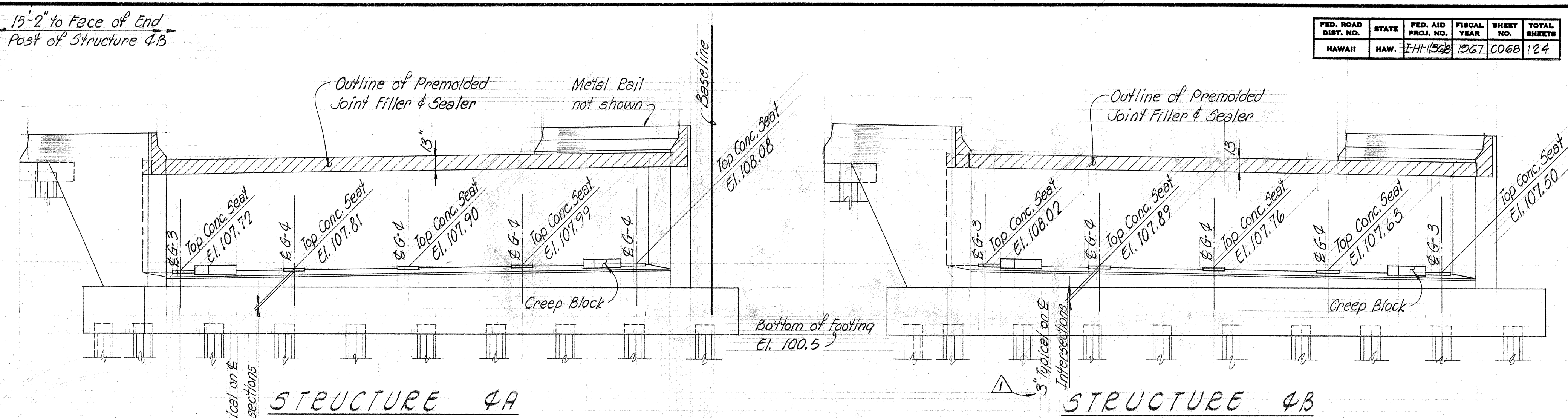
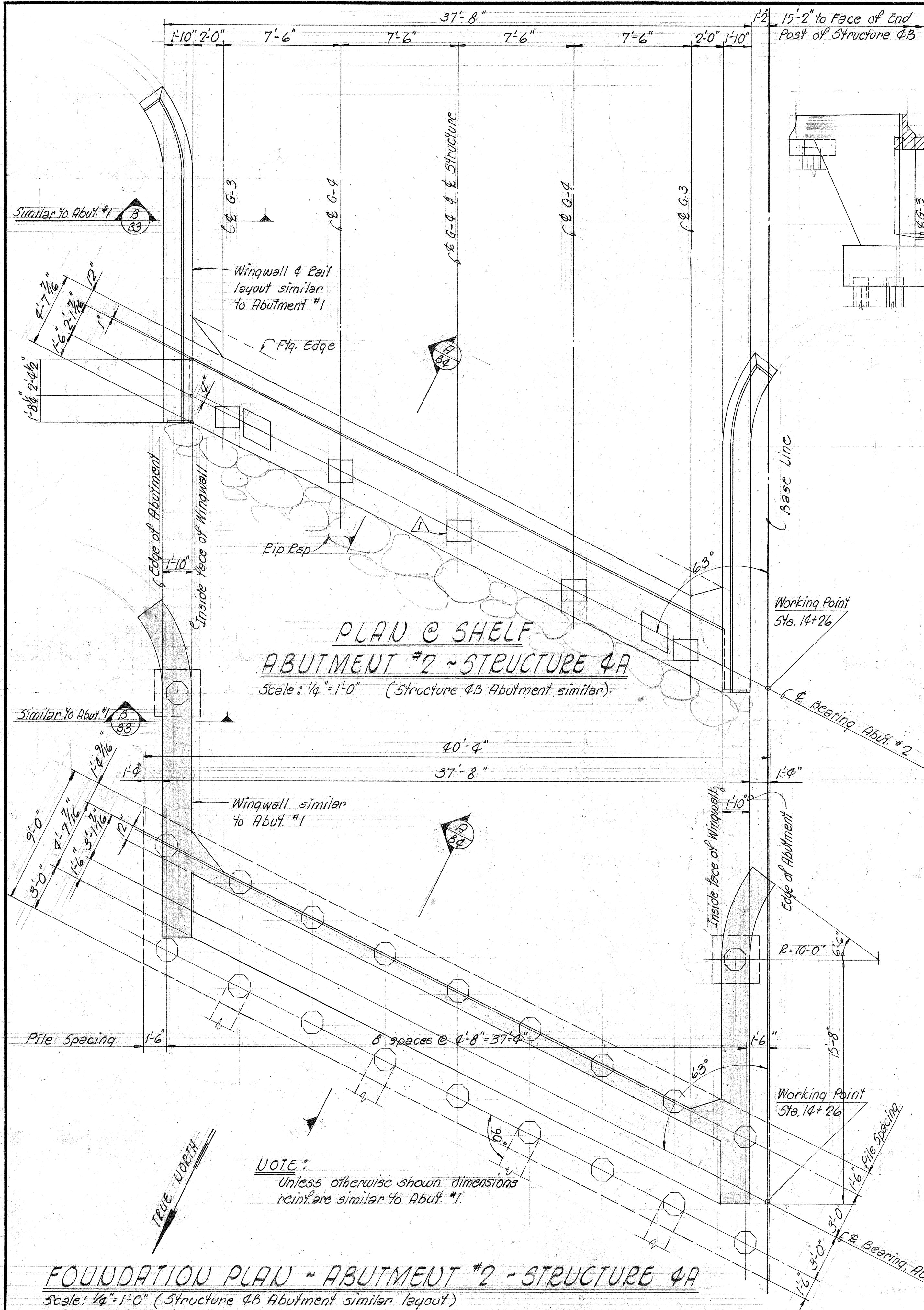
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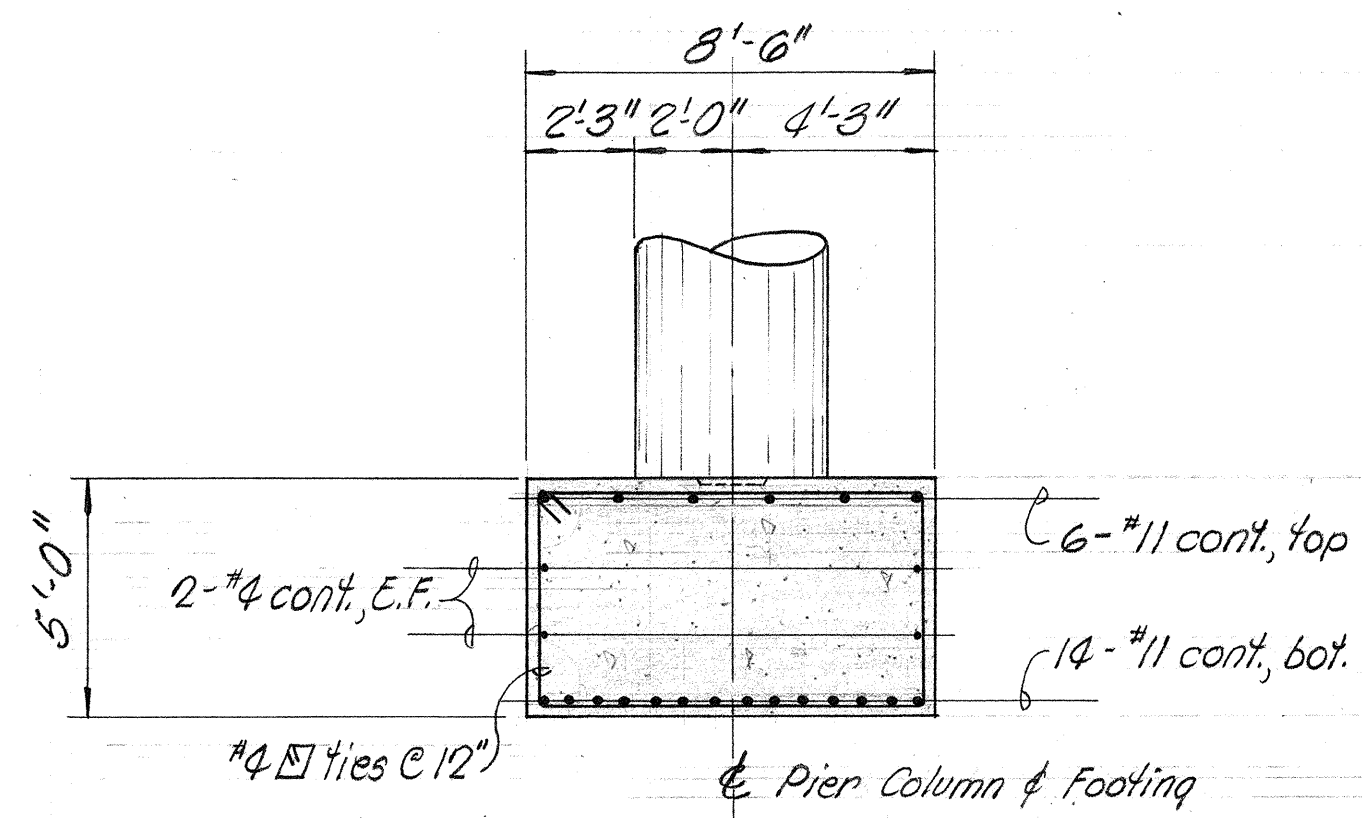
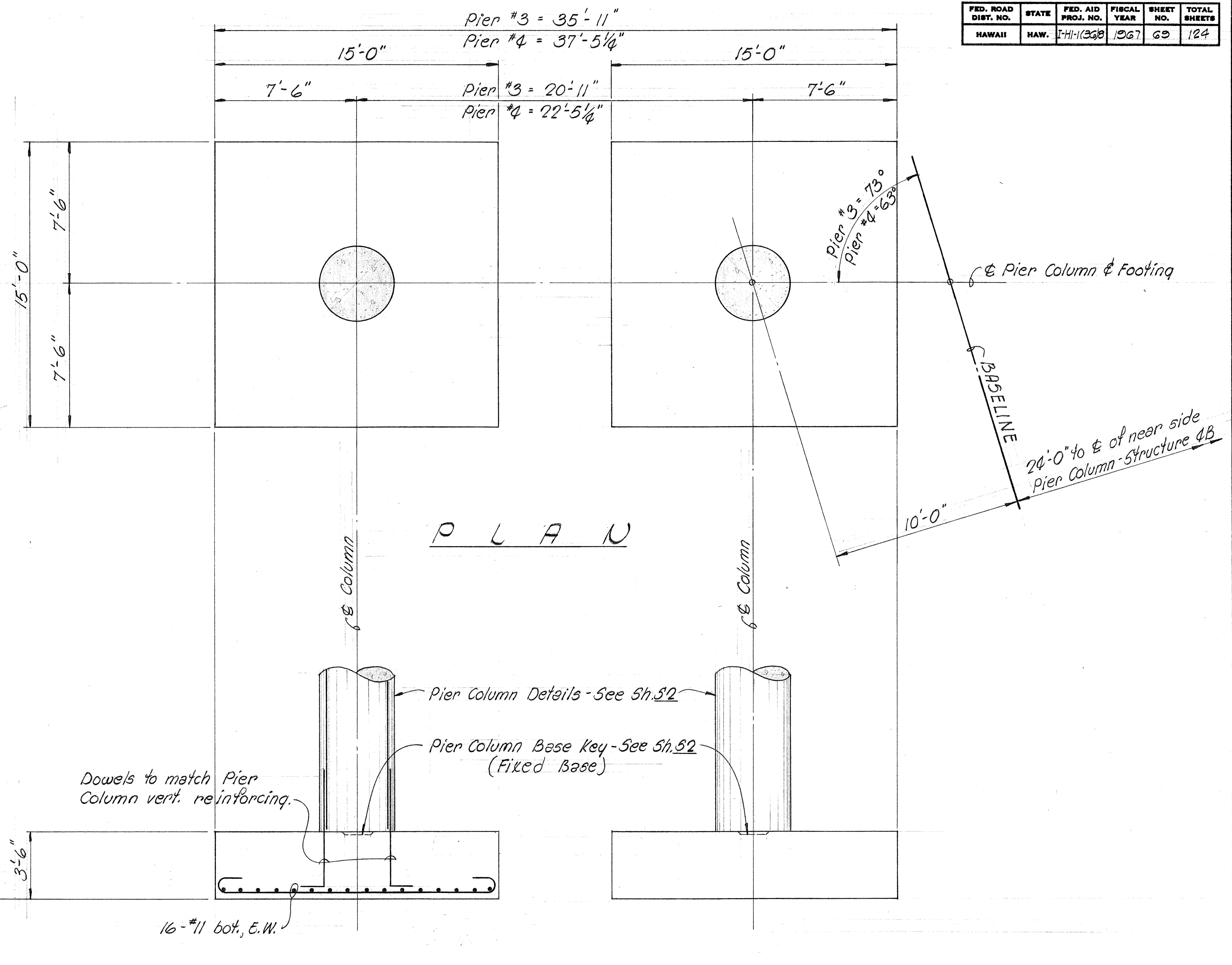
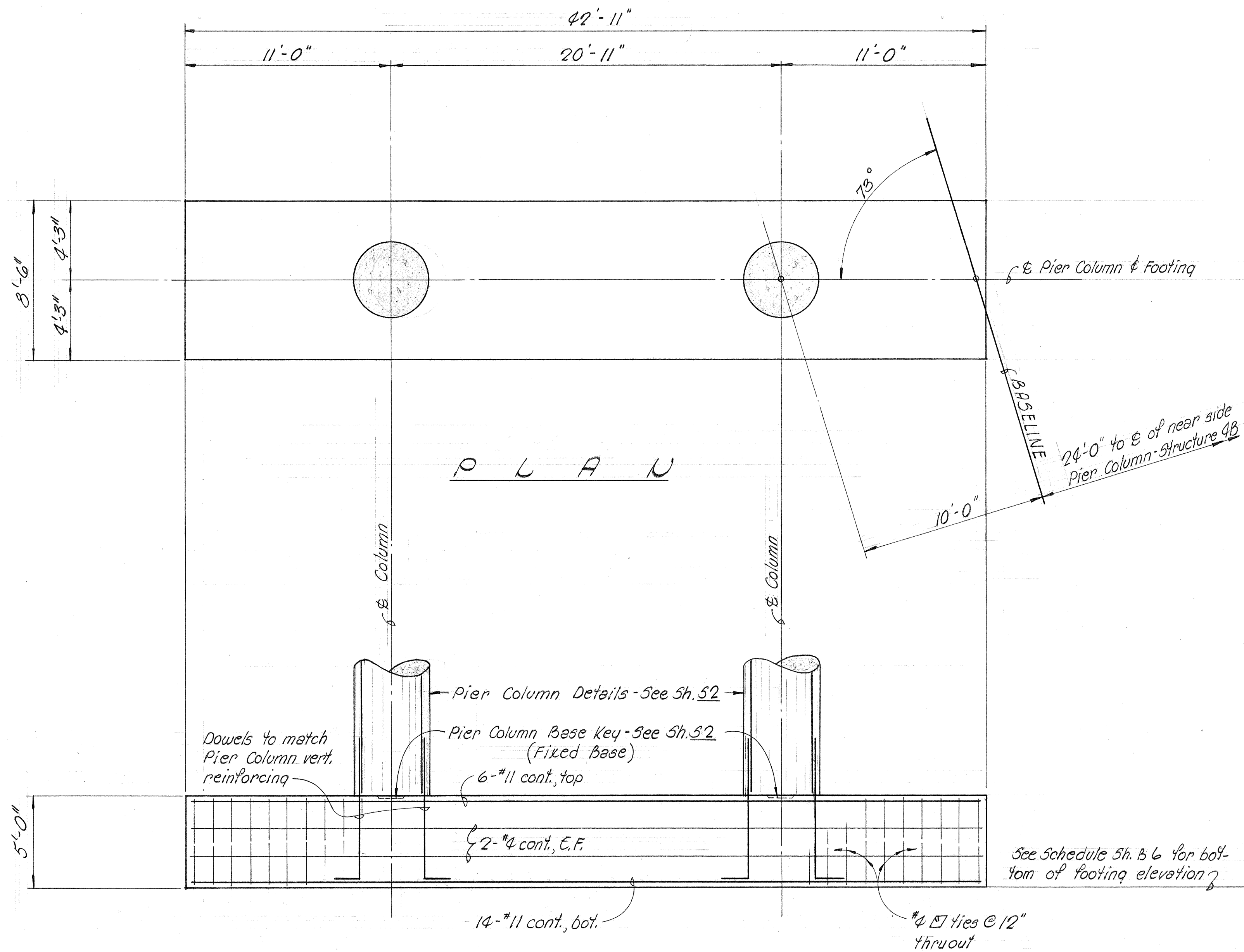
SHEET No. 63 OF 25 SHEETS

C 0067

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-11368	1967	0068	124



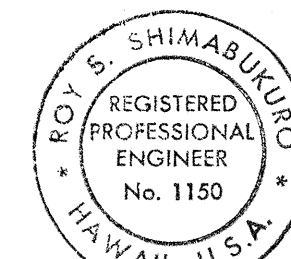
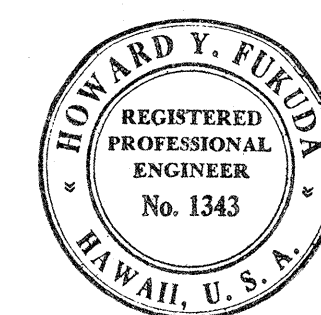
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(36)8	1967	65	124



STRUCTURE 4A PIERS #1 & #2 FOOTING DETAILS
Scale: 1/4" = 1'-0" (Piers 1 & 2 footing details for Structure 4B similar.)

STRUCTURE 4A PIERS #3 & #4 FOOTING DETAILS
Scale: 1/4" = 1'-0" (Piers 3 & 4 footing details for Structure 4B similar.)

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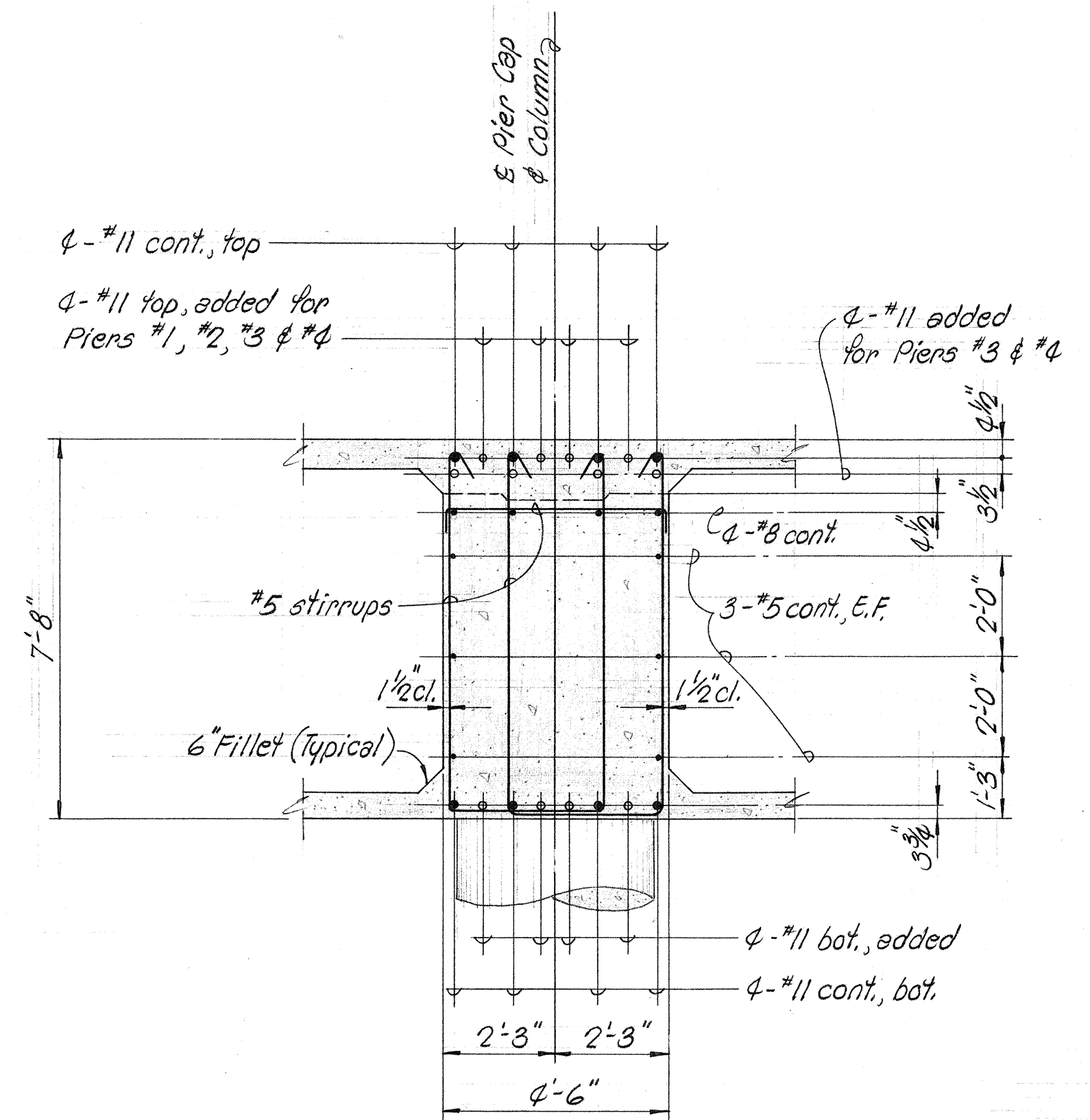
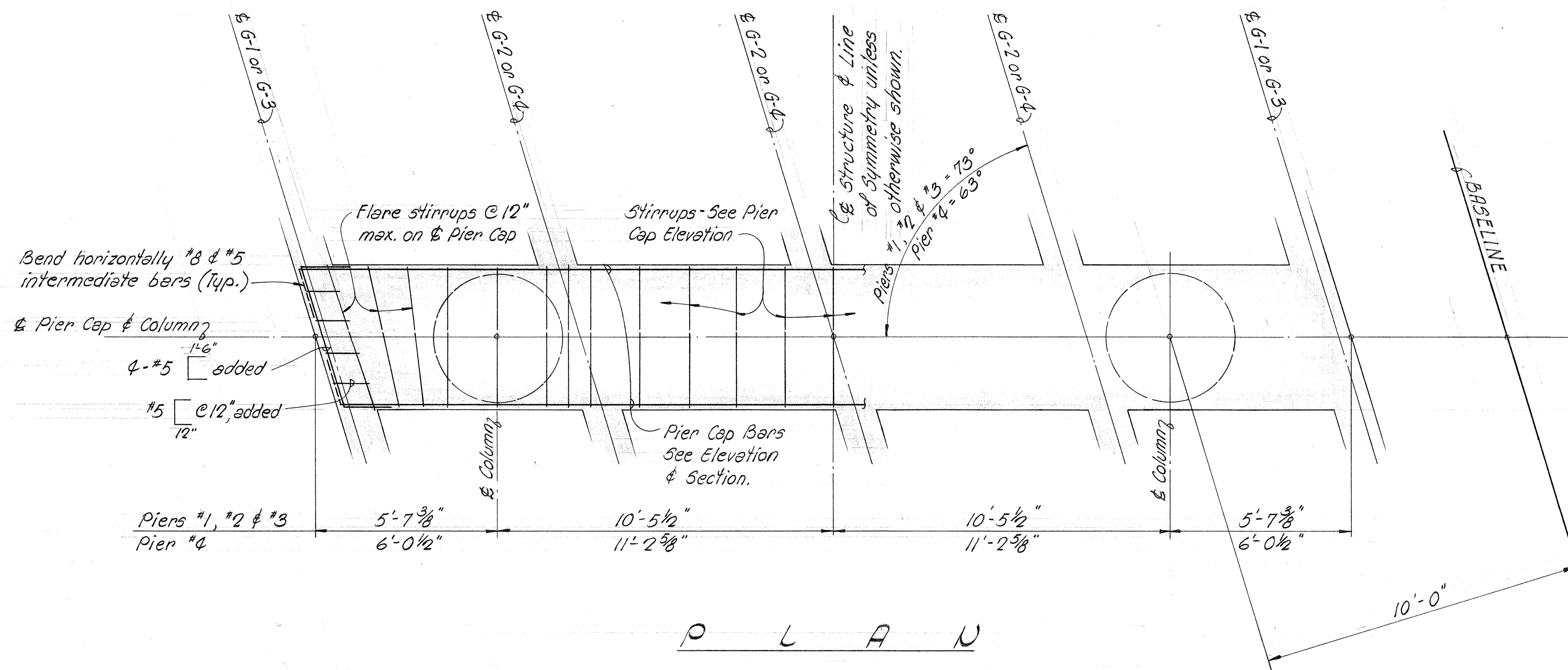
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIANA INTERCHANGE
STRUCTURE No. 4A & 4B

F.A.I. PROJ. No. I-HI-1 (36)8

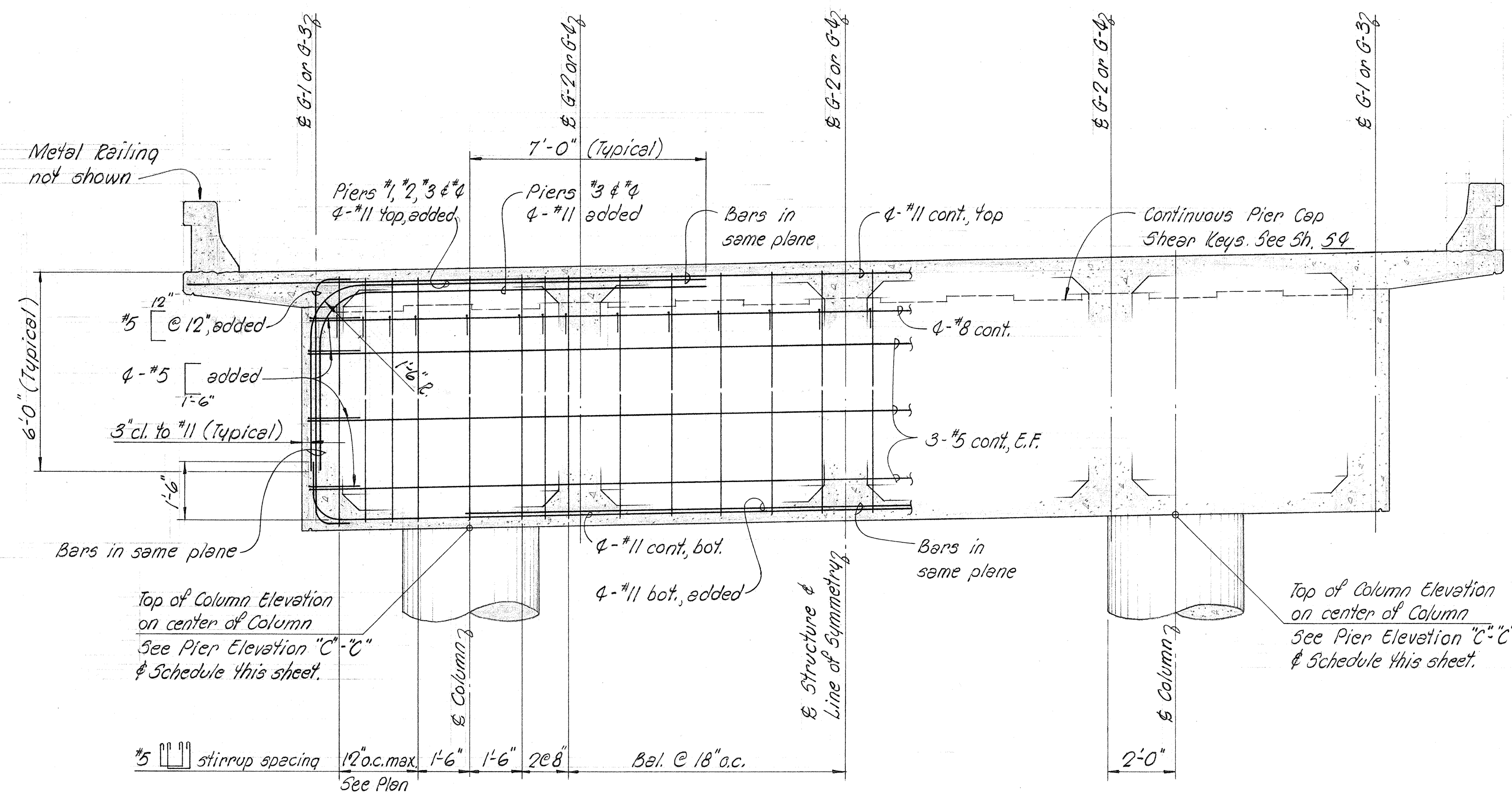
Scale: As Shown Date:

SHEET No. 65 OF 25 SHEETS



NOTE:
For slab & girder bars not shown, see other sheets.

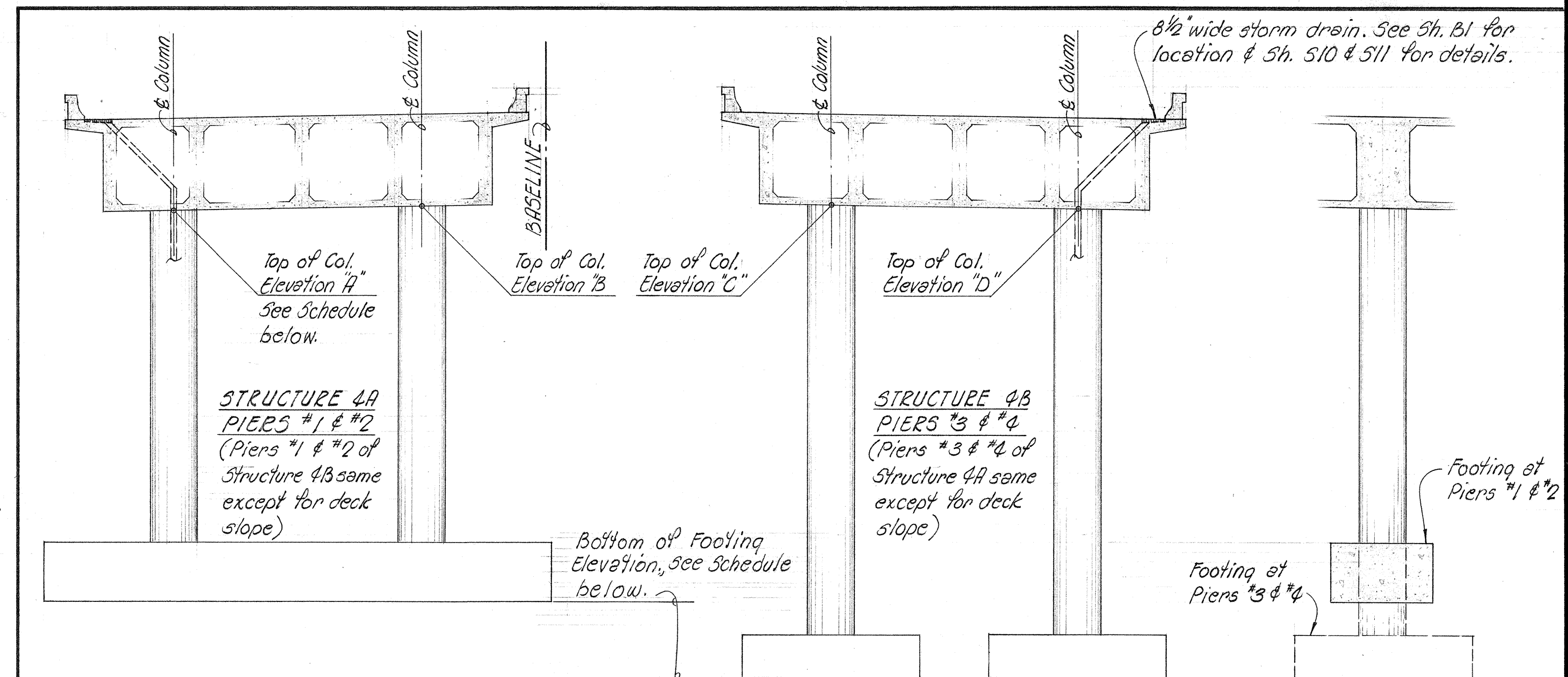
TYPICAL SECTION



ELEVATION

STRUCTURE 4A PIER CAP DETAILS

Scale: 3/8" = 1'-0" (Pier Cap for Structure 4b similar)



PIER ELEVATION "C-C"

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

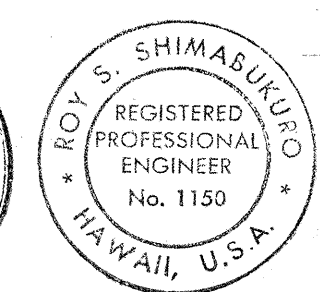
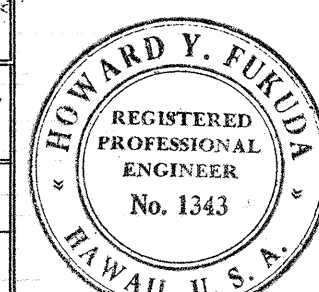
PIER CROSS SECTION

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

NOTE: Top of Column Elevations on center of Column.

TOP OF COLUMN & BOTTOM OF FOOTING ELEVATIONS								
Bridge No.	Pier No.	Top of Col. Elevation "A"	Top of Col. Elevation "B"	Bot. of Ftg. Elevation	Bridge No.	Pier No.	Top of Col. Elevation "C"	Top of Col. Elevation "D"
4A	1	105.76	106.01	75.0	4B	1	105.96	105.63
	2	106.28	106.54	72.0		2	106.48	106.16
	3	106.85	107.10	58.0		3	107.05	106.72
	4	107.55	107.79	58.0		4	107.69	107.35

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKAWA INTERCHANGE
STRUCTURE No. 4A & 4B

F.A.I. PROJ. No. I-41-1 (36)8

Scale: As Shown Date:

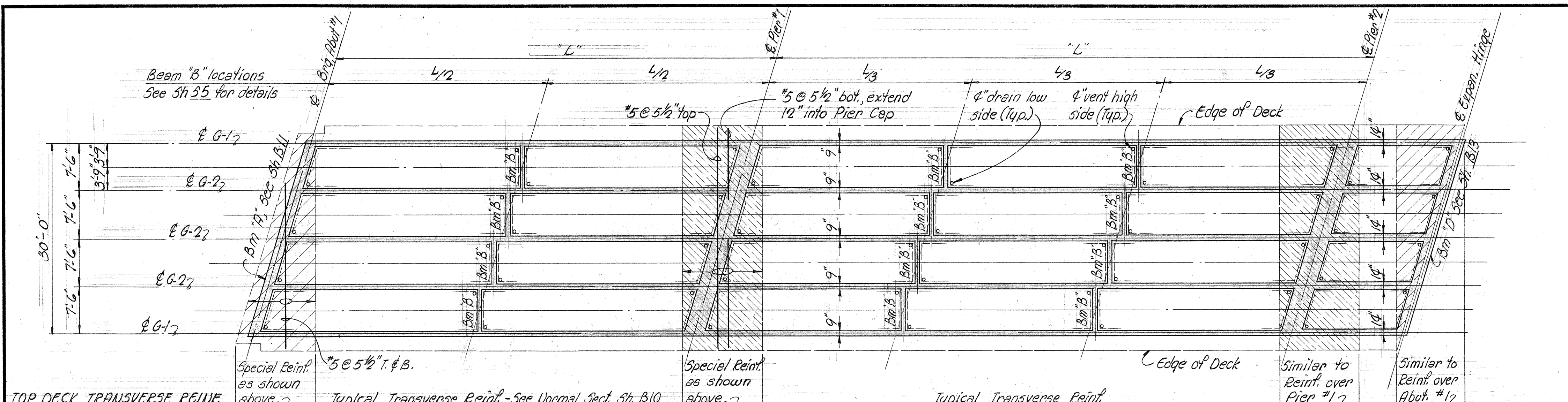
SHEET No. 66 OF 25 SHEETS

REFER TO C.C.O. #6
3/22/68

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	144-1368	1967	71	124

Key Plan

Labels: Girders, Baseline, Structure 1A, Structure 1B, Left Side, Right Side, True North

[illegible]

FRAMING PLAN - RIGHT SIDE

Scale: $\frac{3}{32} = 1'-0"$

Structure #3

E Structure & Line of Symmetry for stirrups except as otherwise shown.

G-3 & G-4 #5 @ Stirrup Spacing
G-3 North side, Structure #A

3" 7@6", 2@15", 3@18", 2@24" Bal. @ 30" o.c.
2@24", 2@18", 3@15", 11@12", 3@10" 3"
2@24", 2@18", 3@15", 7@12", 21@10"

20@8", 4@10", 5@12", 3@15", 3@18", 2@24"

15'-0" 15'-0"

Add stirrups as required to make 12" max. each side of Bm "B" (Typical)

Slab Flange Slab Flange

Reference Drawings:

Beam "A" Sh. B11
Beam "B" Sh. B5
Beam "D" Sh. B13

RIGHT SIDE ELEVATION SHOWING TYPICAL GIRDER STIRRUP SPACING
Scale: $3/32" = 1'-0"$

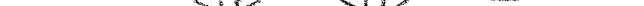
SHIMAZU SHIMABUKURO & FUKUDA, INC.
Consulting Structural Engineers
1210 Ward Ave. Honolulu, Hawaii 96814

REGISTERED
PROFESSIONAL
ENGINEER
No. 1343

REGISTERED
PROFESSIONAL
ENGINEER
No. 1150

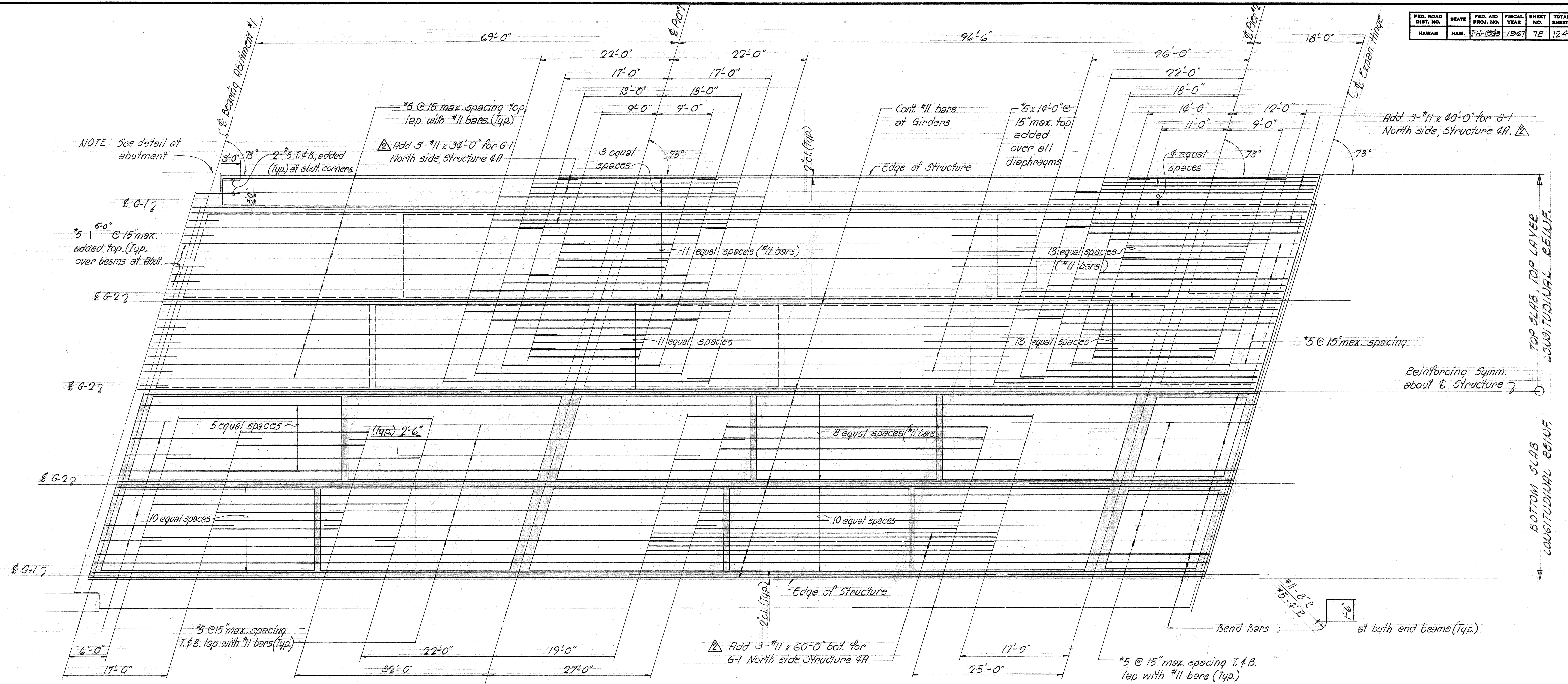

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Howard G. Fisk



CO 71 R

CO 71 R

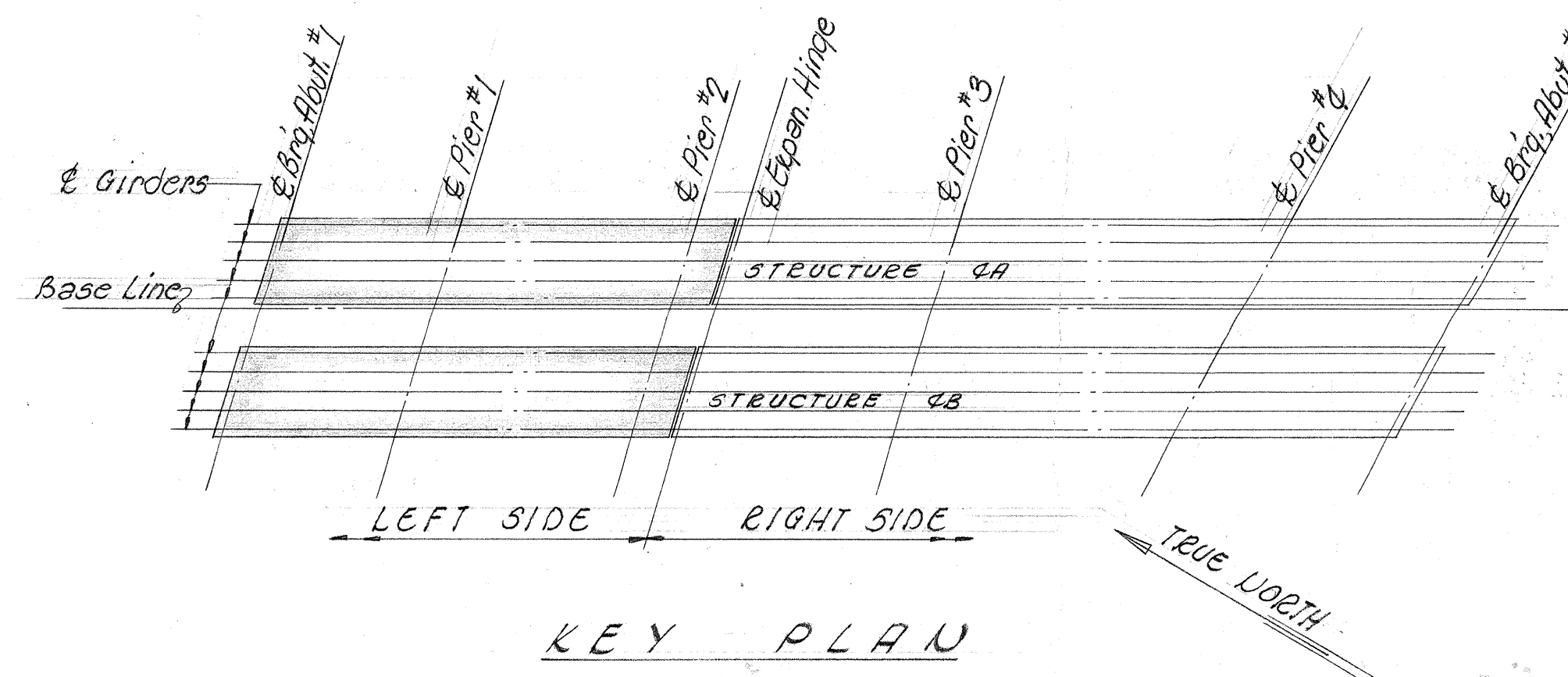


LEFT SIDE PLAN - TYPICAL ARRANGEMENT OF TOP SLAB, TOP LAYER & BOTTOM SLAB LONGITUDINAL DECK REINFORCEMENT

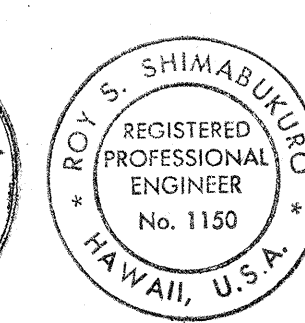
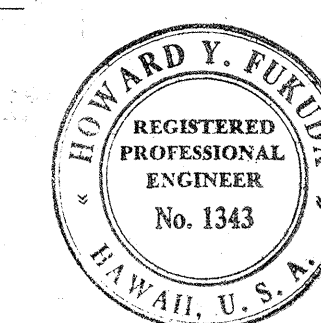
Scale: Horiz. = $\frac{1}{8}" = 1'-0"$, Vert. = $\frac{1}{4}" = 1'-0"$

NOTES

1. Except as otherwise noted all slab bars to be #11 bars.
2. All #5 bars at 15" maximum spacing shall be extended and lapped a minimum of 2'-6" with adjacent #11 bars as shown.
3. Longitudinal deck reinforcement to follow curvature of girder & deck slab where curvatures occur.
4. For special deck reinforcement details and arrangement, see Sh. B7.
5. All vertical dimensions are measured plumb.
6. Transverse bars not shown, see normal section Sh. B10.



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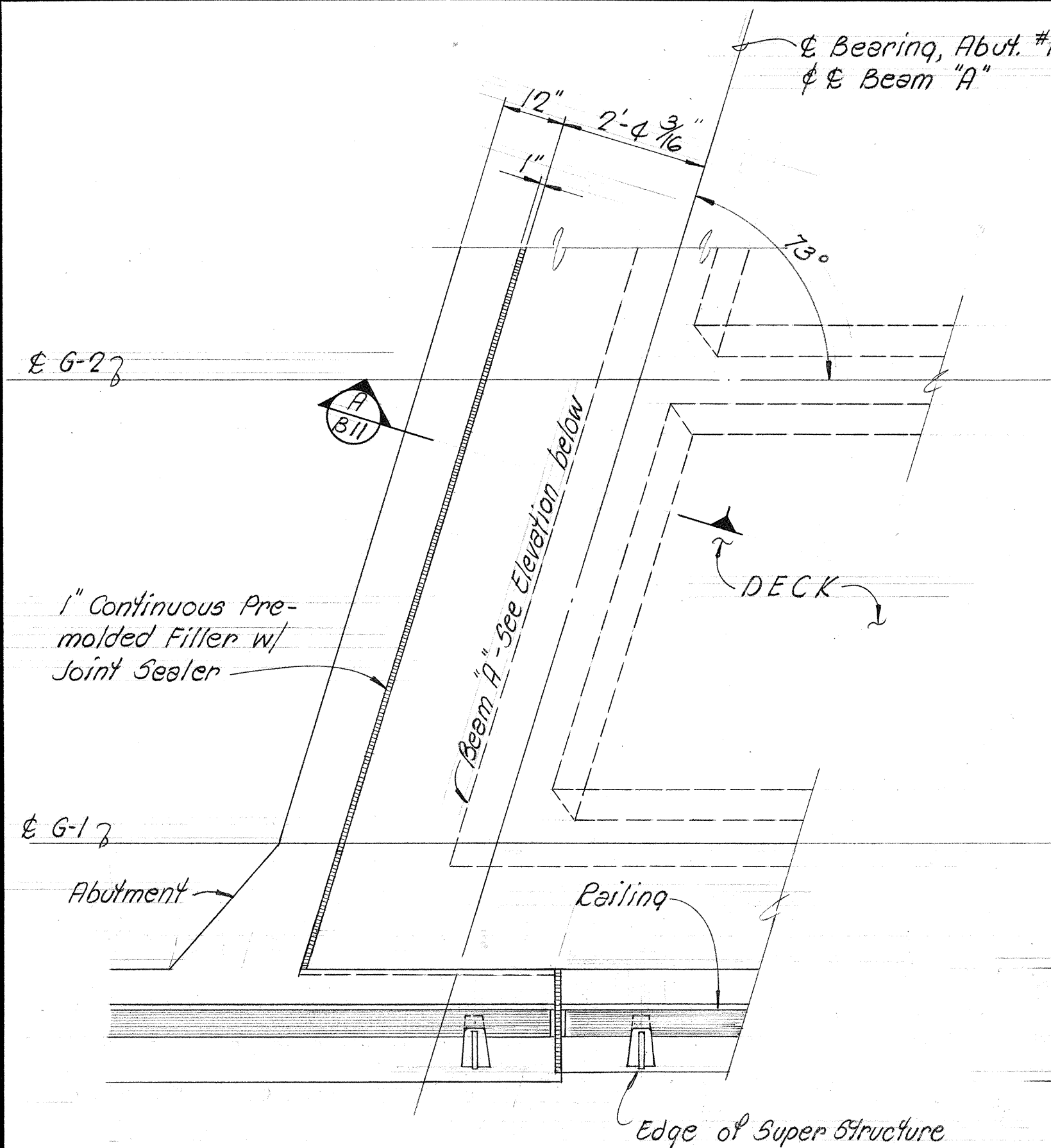
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIAWA INTERCHANGE
STRUCTURE No. 4A & 4B

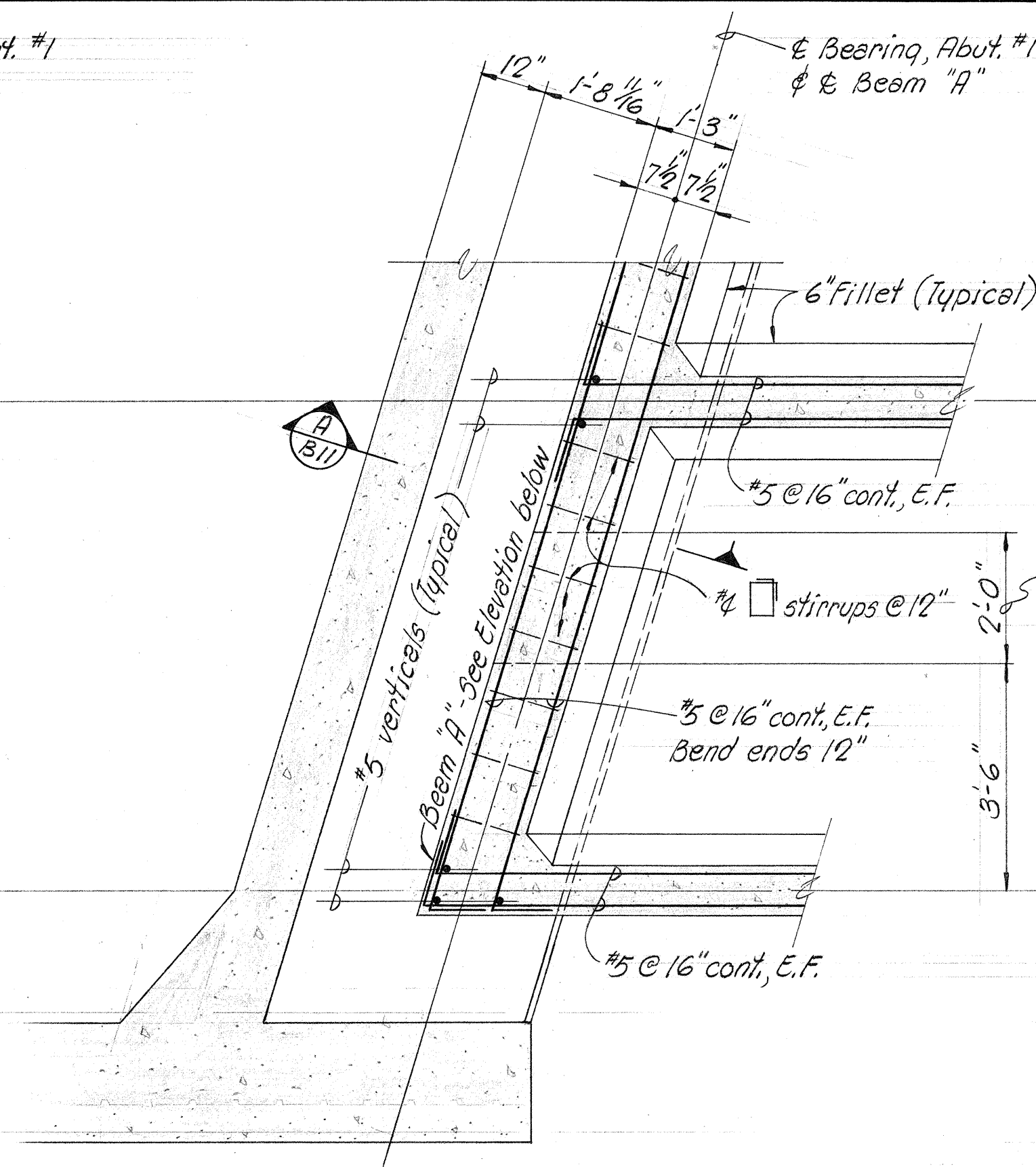
F.A.I. PROJ. No. I-HI-1 (36)8

Scale : As Shown Date :

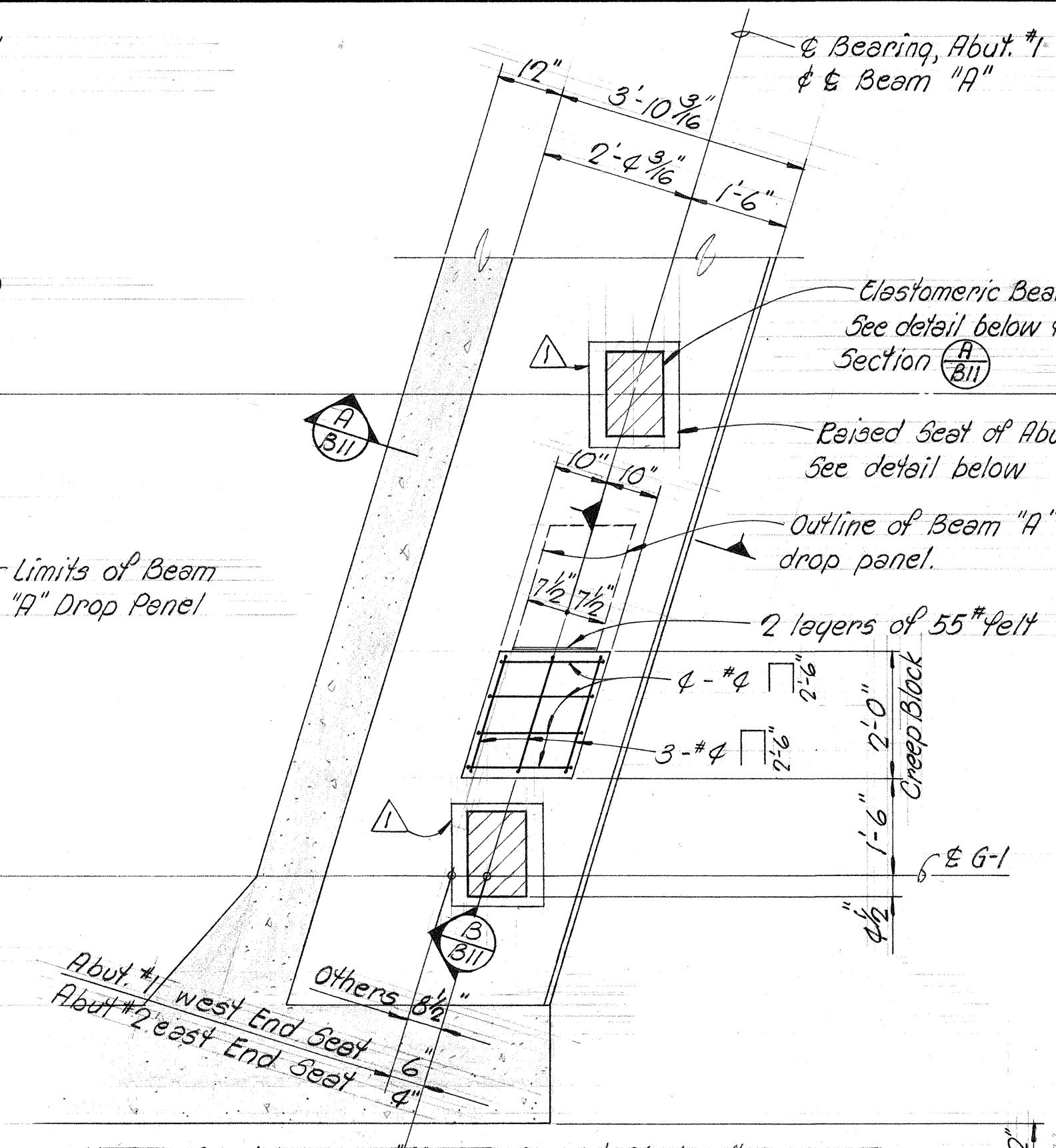
SHEET No. 88 OF 25 SHEETS



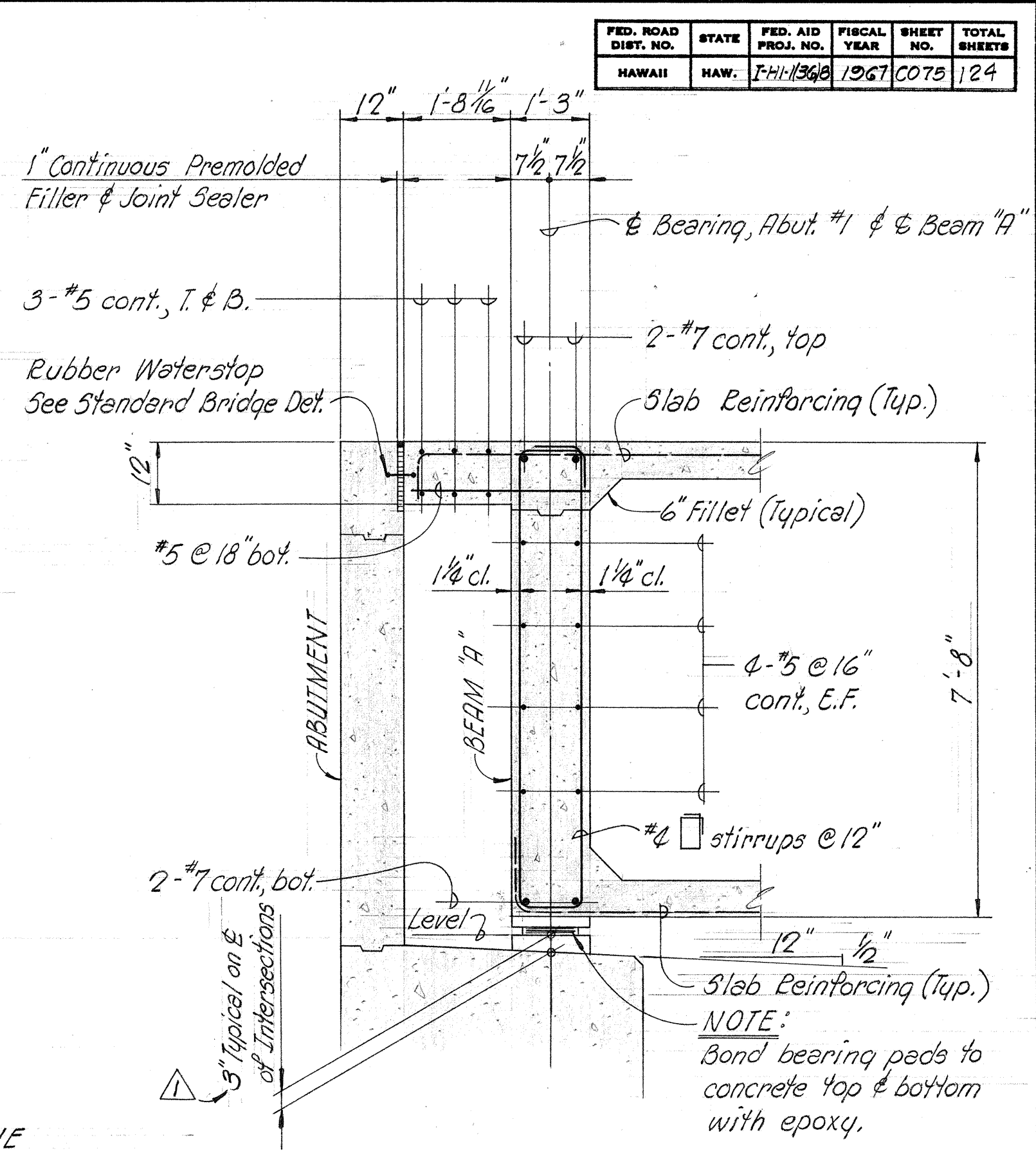
DECK PLAN - ABUTMENT #1
Scale: 1/2" = 1'-0"



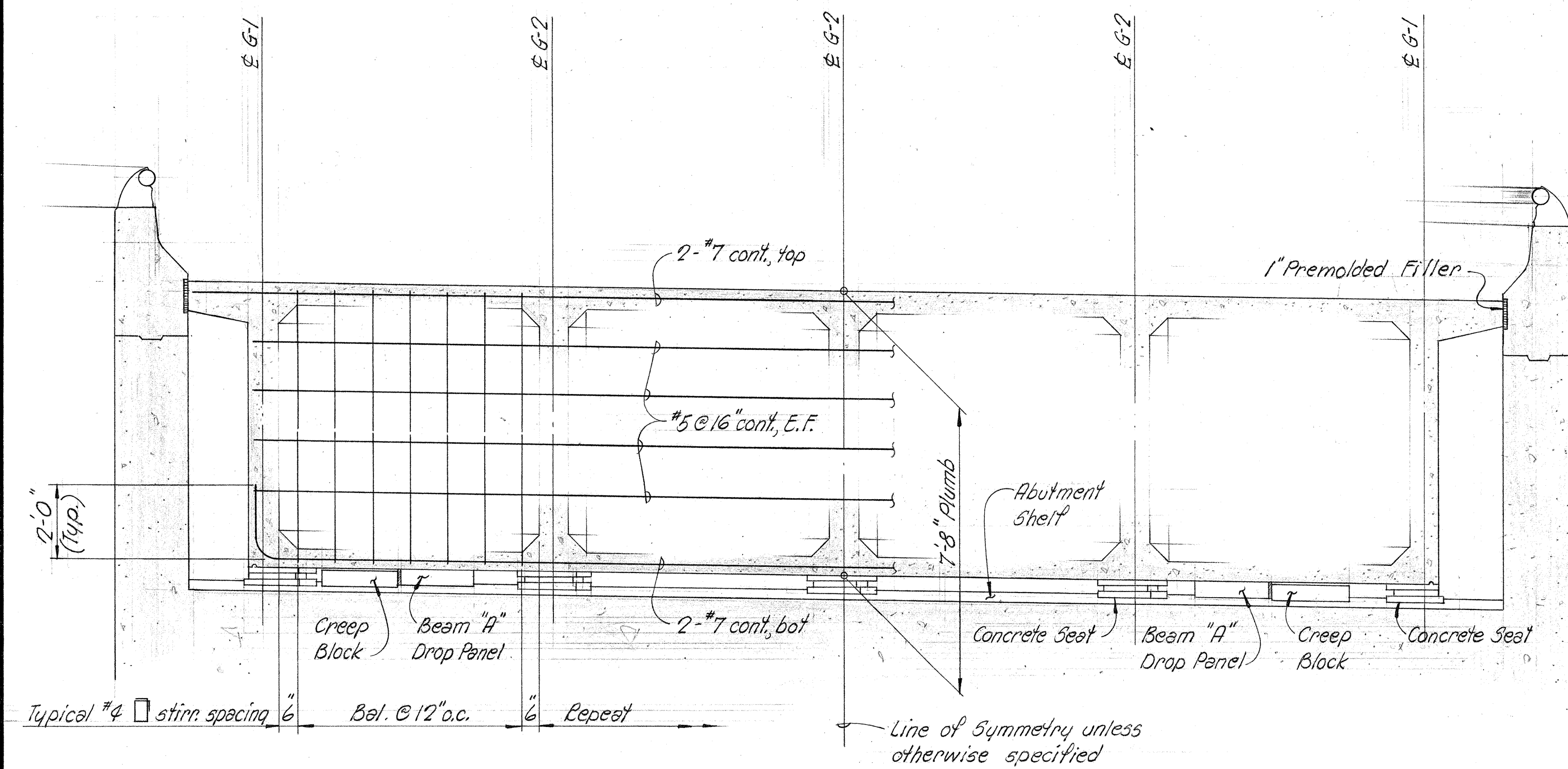
MID-DEPTH PLAN SECTION OF DECK - ABUTMENT #1
Scale: 1/2" = 1'-0"



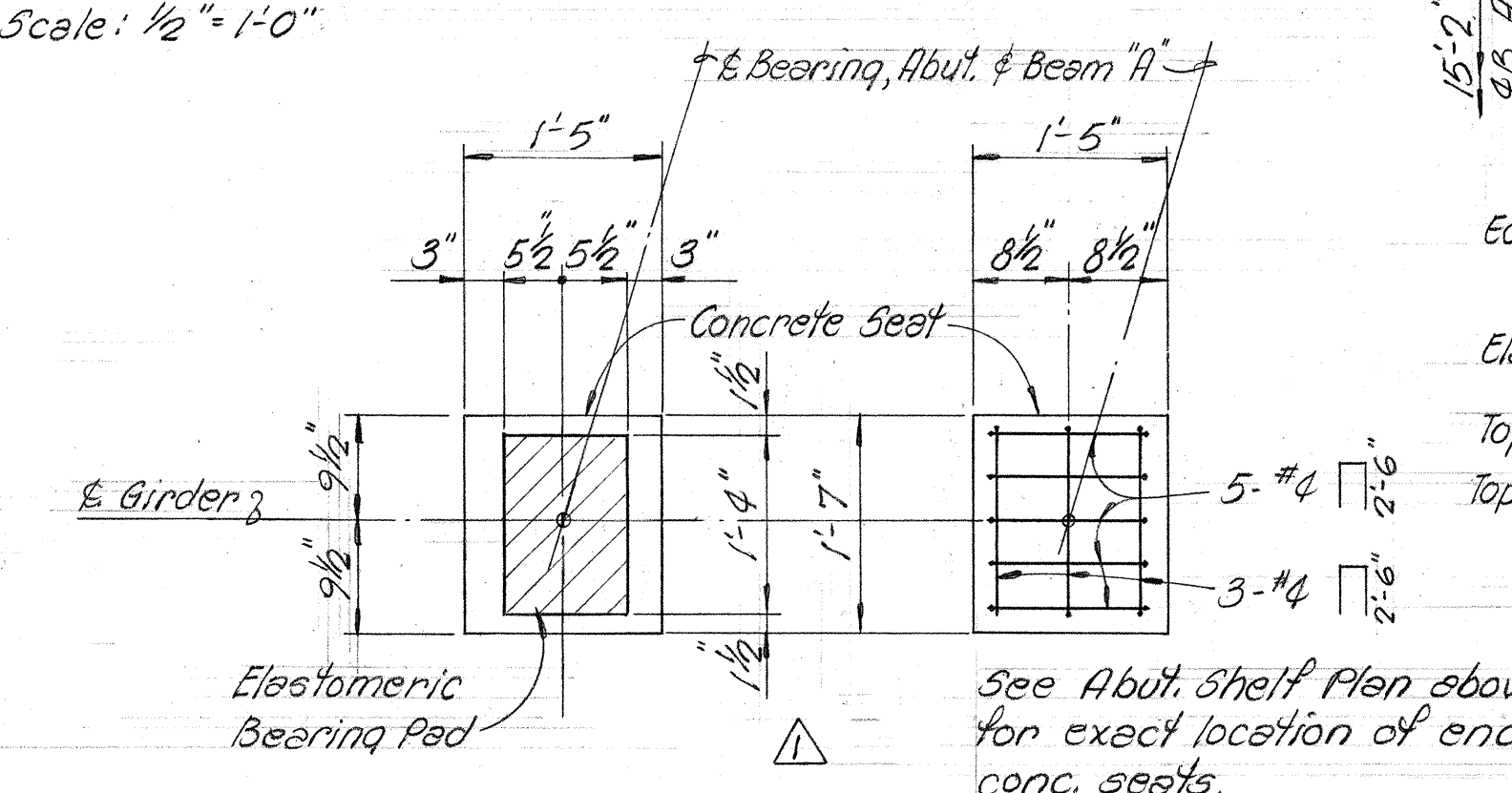
PLAN - ABUTMENT #1 SHELF SHOWING BEARING DETAILS
Scale: 1/2" = 1'-0"



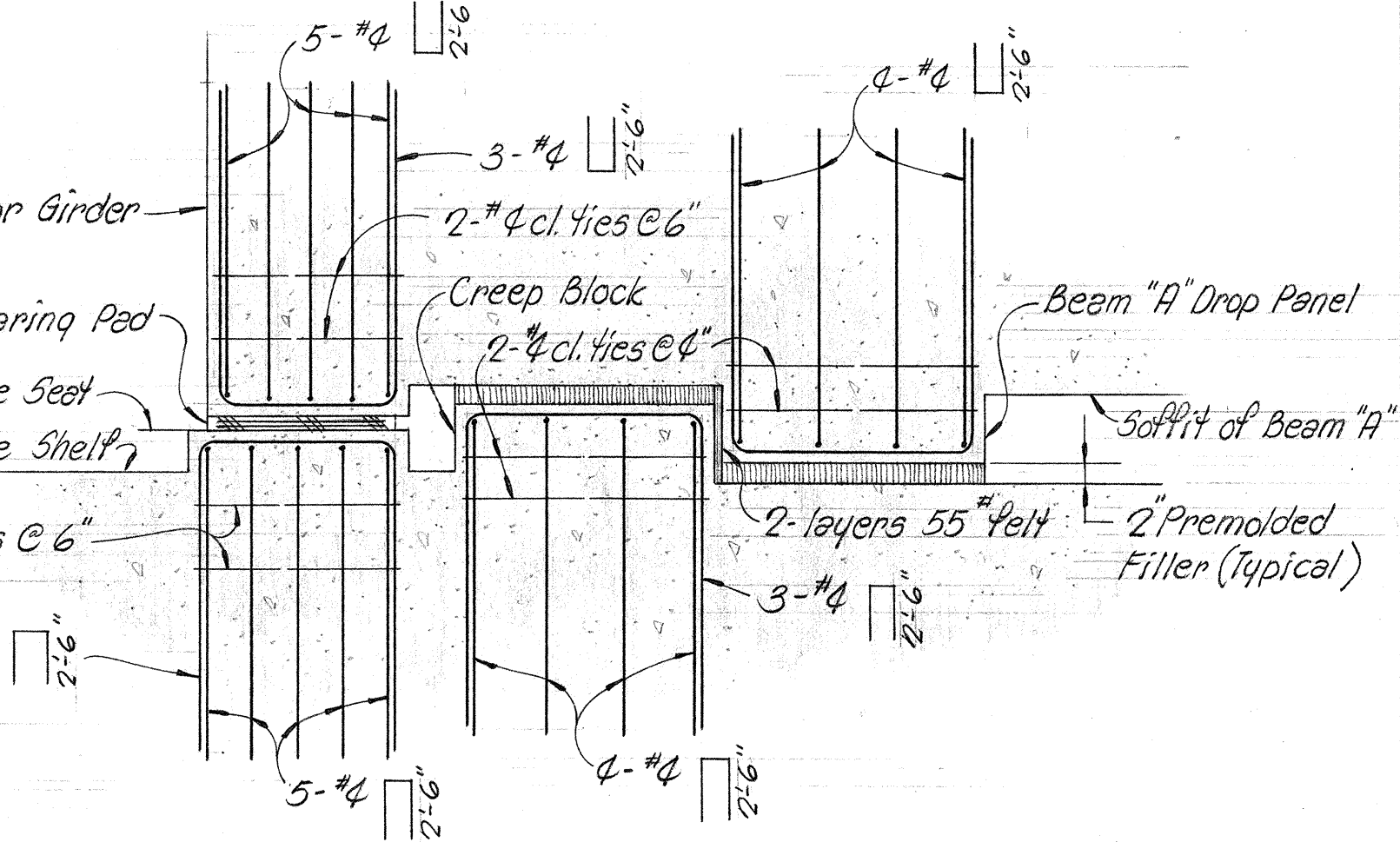
SECTION A
Scale: 1/2" = 1'-0"



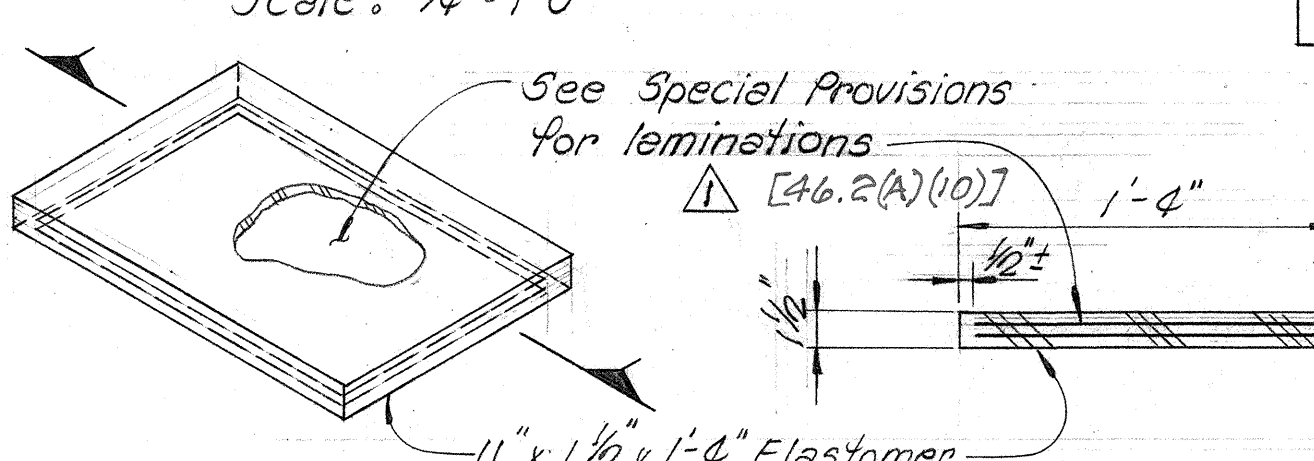
BEAM "A" ELEVATION - ABUTMENT #1
Scale: 3/8" = 1'-0"



DIMENSIONS REINFORCING PLANS
TYPICAL CONCRETE SEAT DETAILS
ABUTMENTS #1 & #2
Scale: 3/4" = 1'-0"



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



ISOMETRIC ELASTOMERIC BEARING PAD DETAIL
Scale: 1 1/2" = 1'-0"

Revision #1 = Lowered Abutment Shelf & revised Elastomeric Pad.
DRAWINGS SHOWN ARE FOR STRUCTURE 4A. STRUCTURE 4B SIMILAR.

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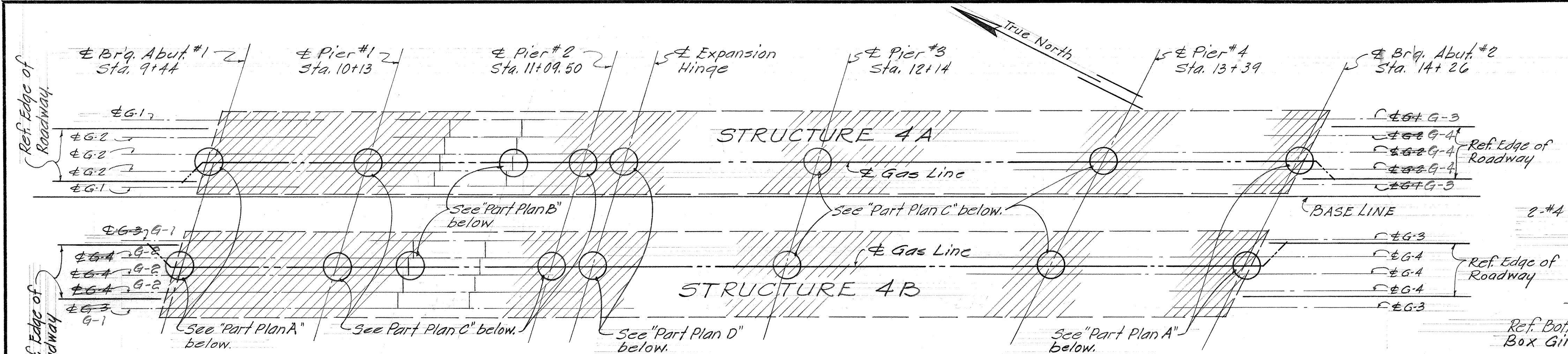
HOWARD Y. FUKUDA
REGISTERED PROFESSIONAL ENGINEER
No. 1343
HAWAII, U.S.A.

ROD S. SHIMABUKURO
REGISTERED PROFESSIONAL ENGINEER
No. 1150
HAWAII, U.S.A.

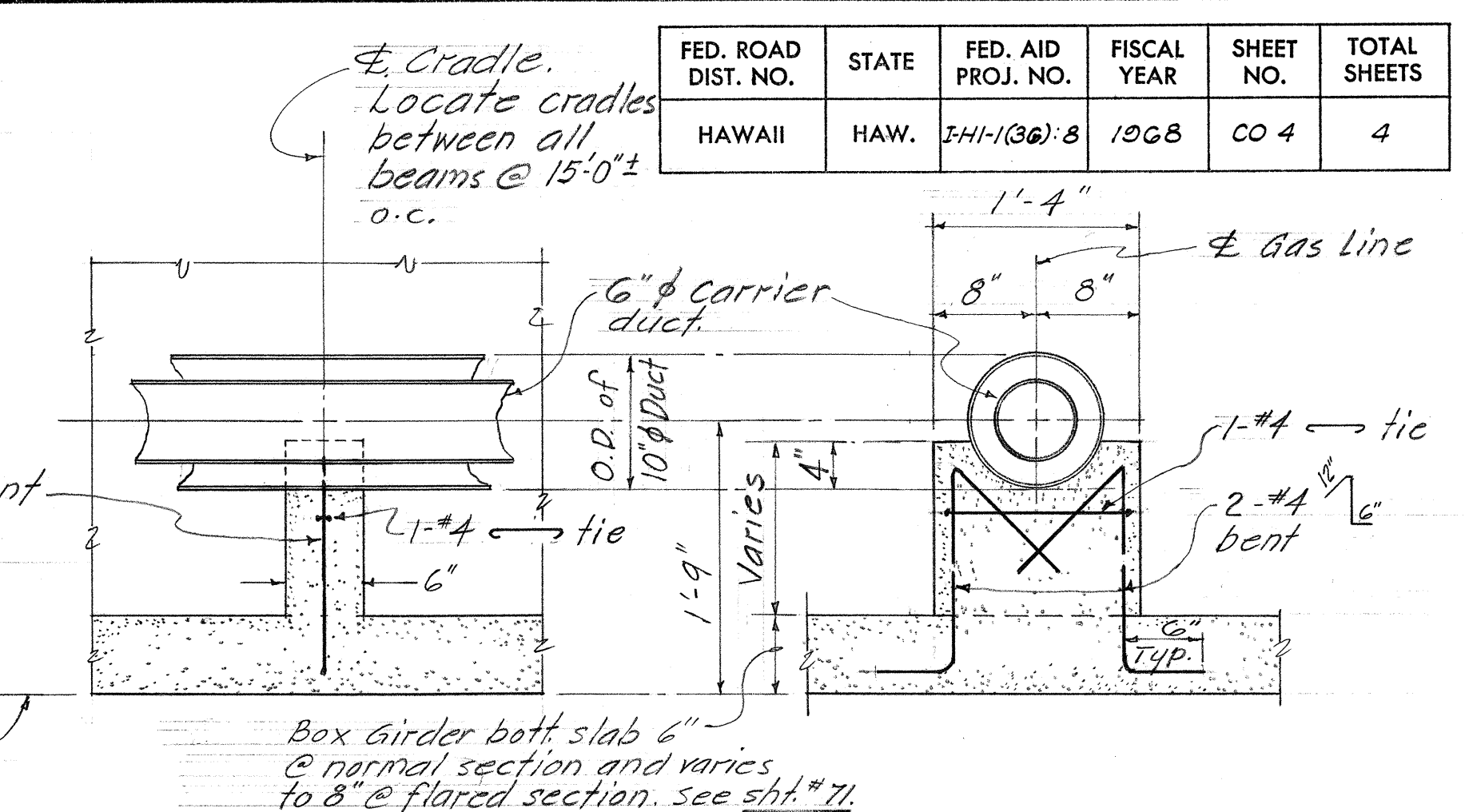
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HIGHWAYS DIVISION
WAIKANA INTERCHANGE
STRUCTURE No. 4A & 4B
F.A.I. PROJ. No. I-41-1(36)B
Scale: As Shown Date: _____
SHEET No. 811 OF 25 SHEETS

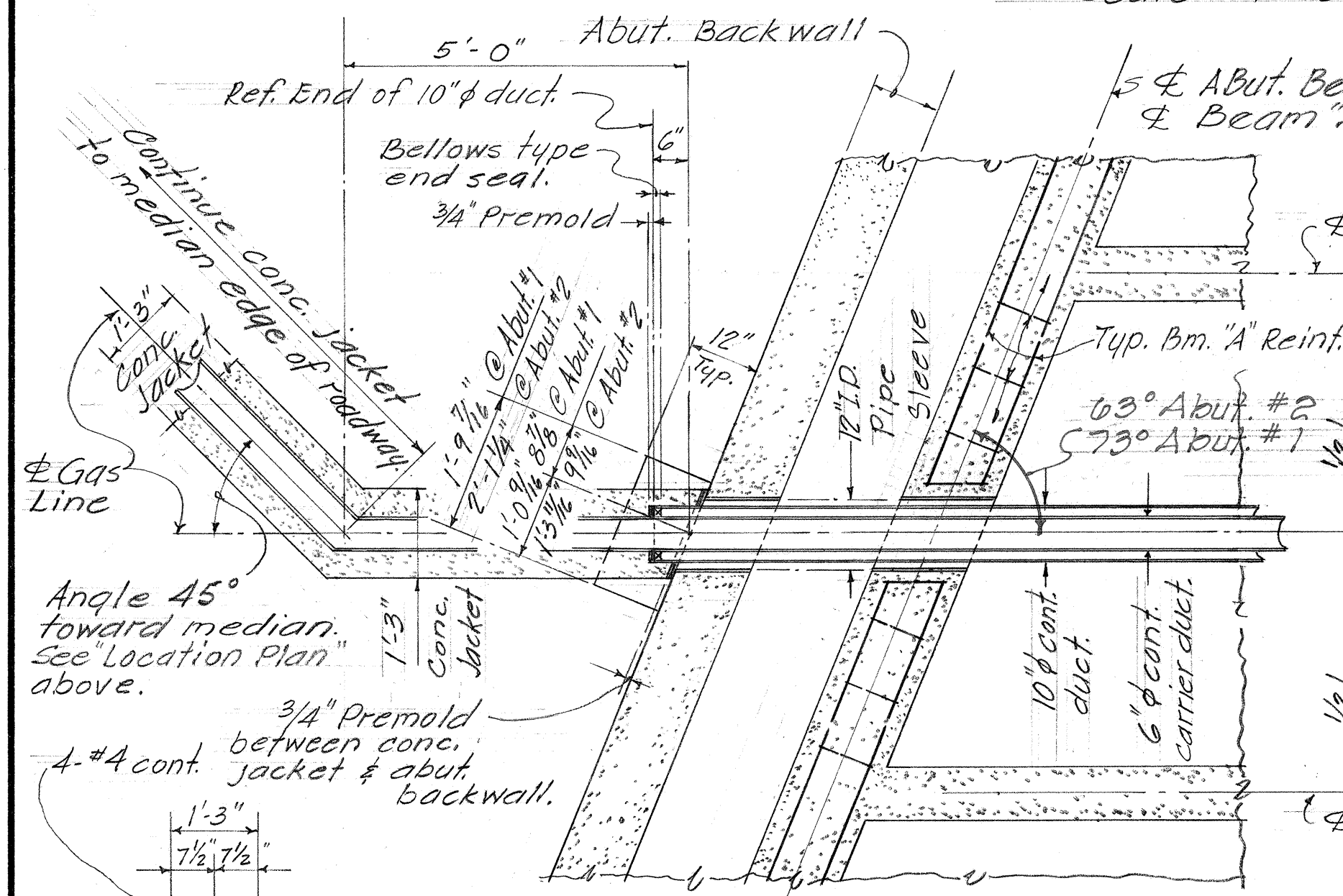
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(36) 8	1968	CO 4	4



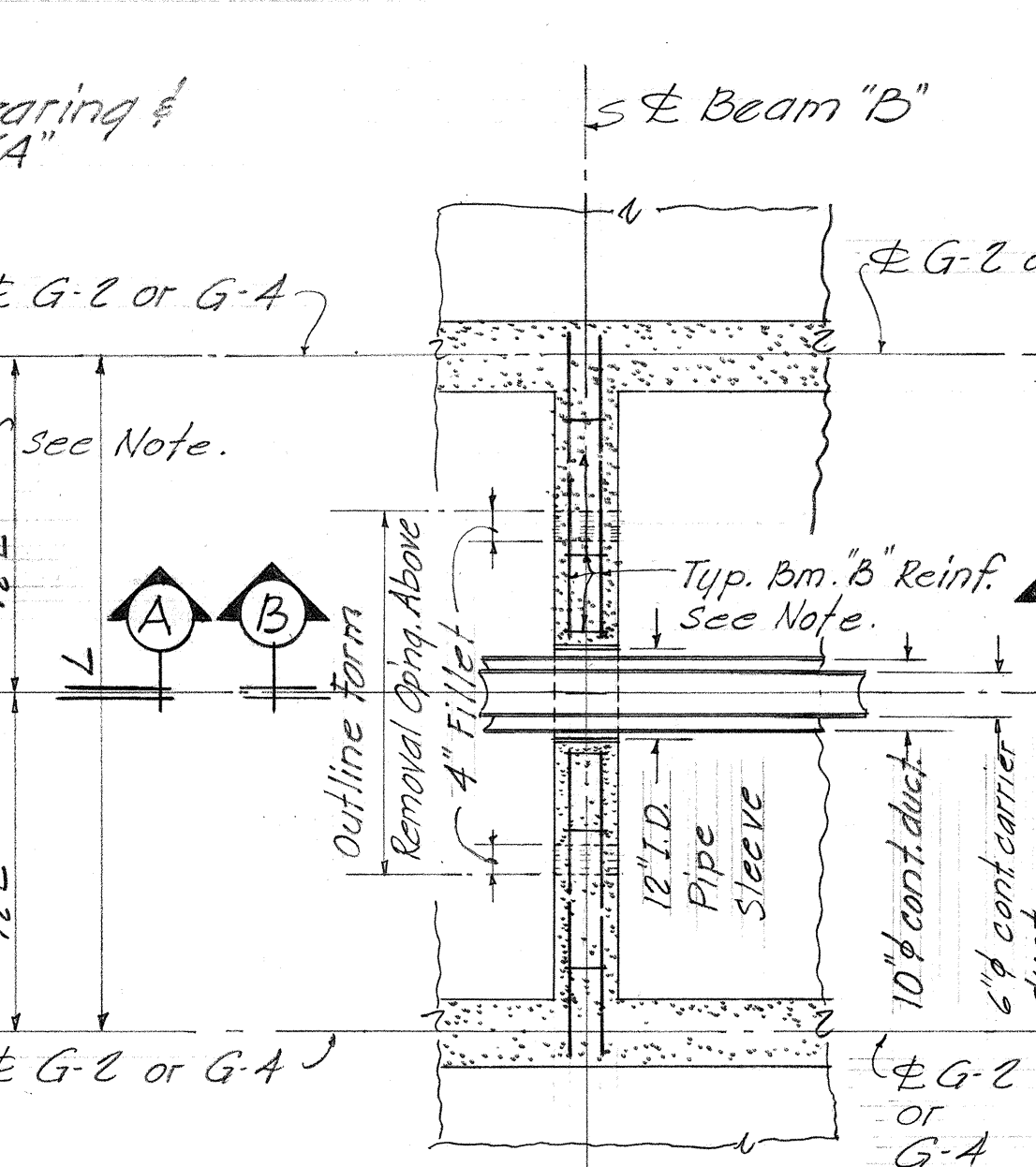
LOCATION PLAN
Scale: 1" = 30'



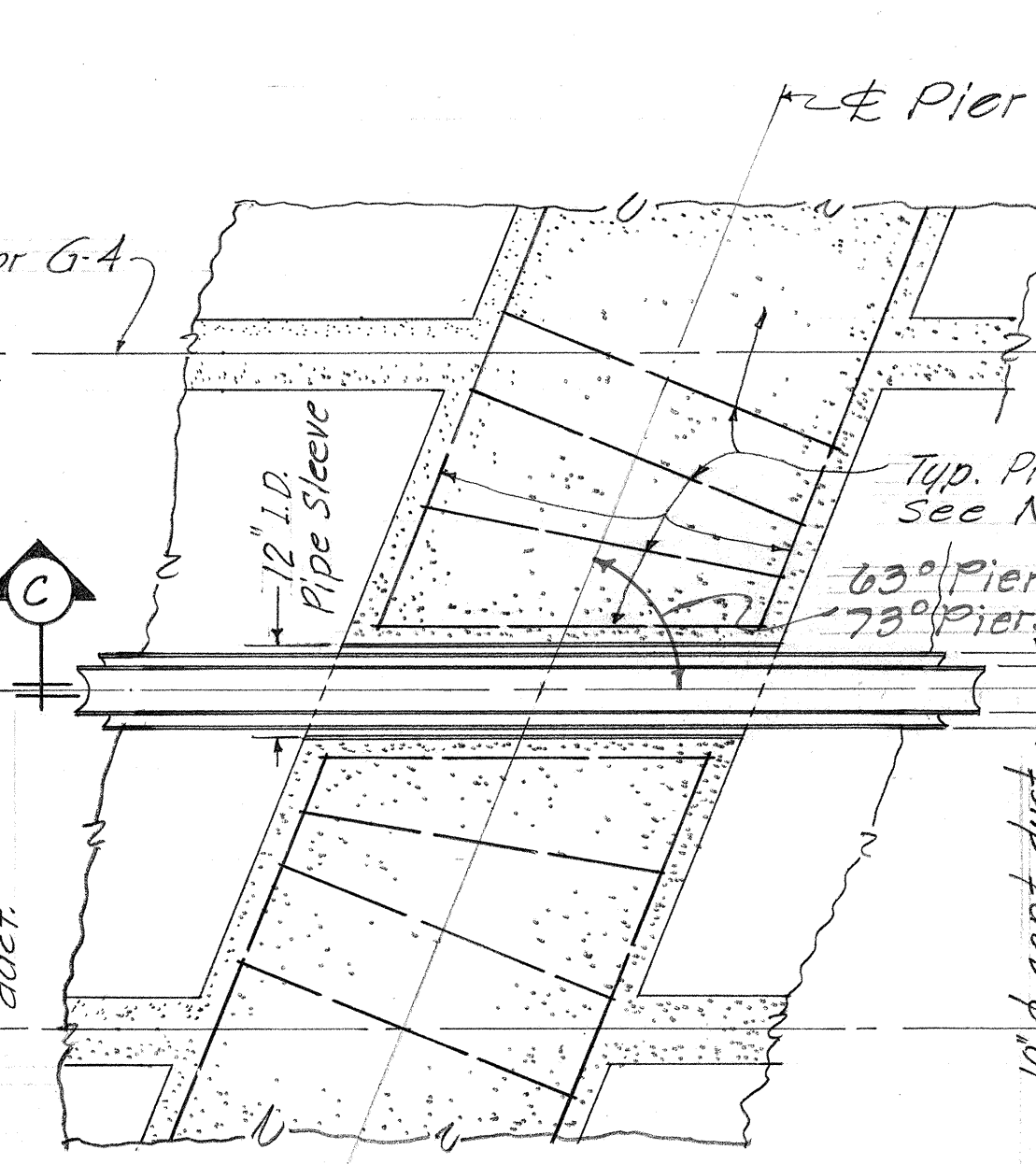
TYP. CRADLE DETAILS
Scale: 1" = 1'-0"



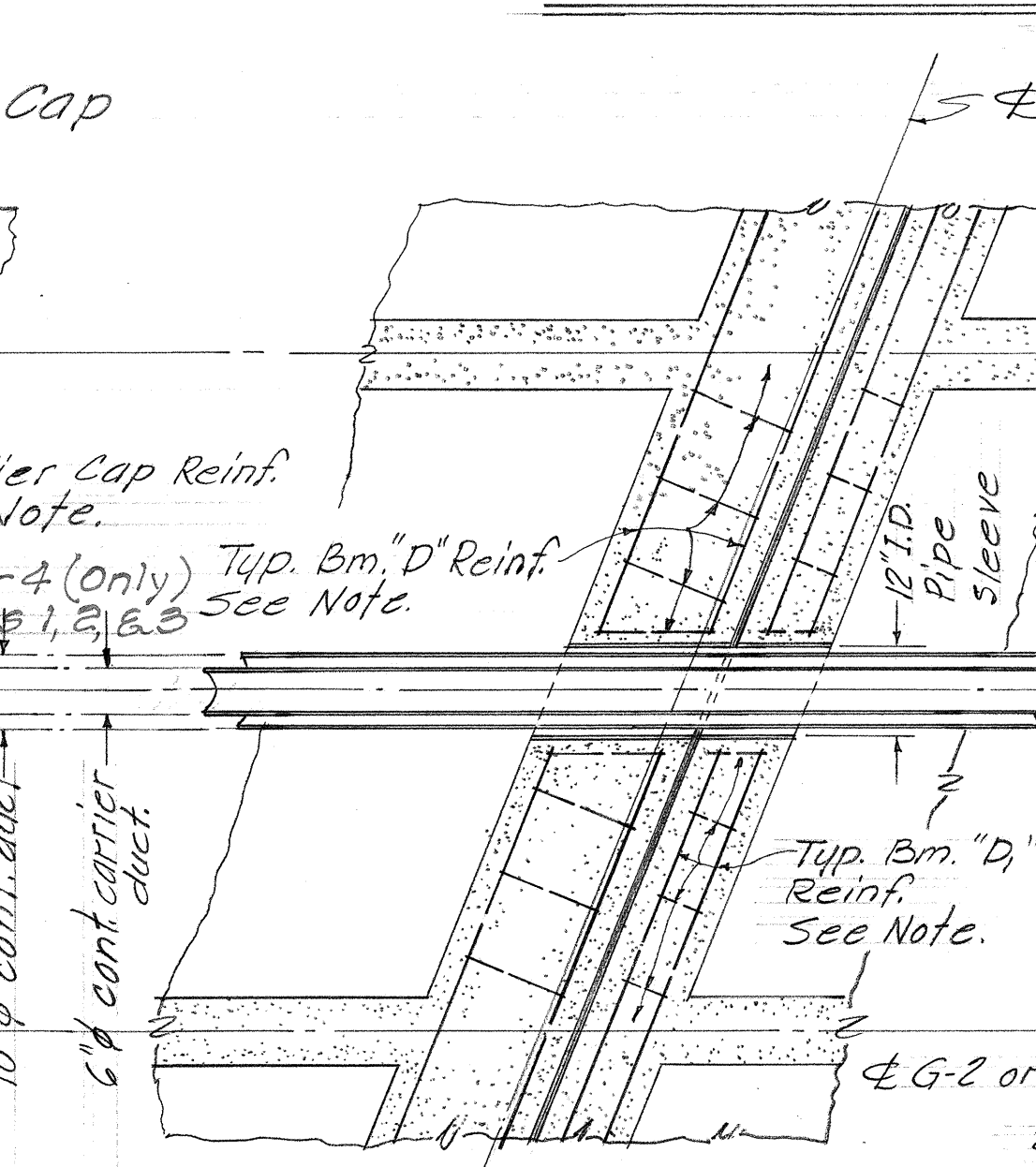
PART PLAN 'A'
Scale: 1/2" = 1'-0"



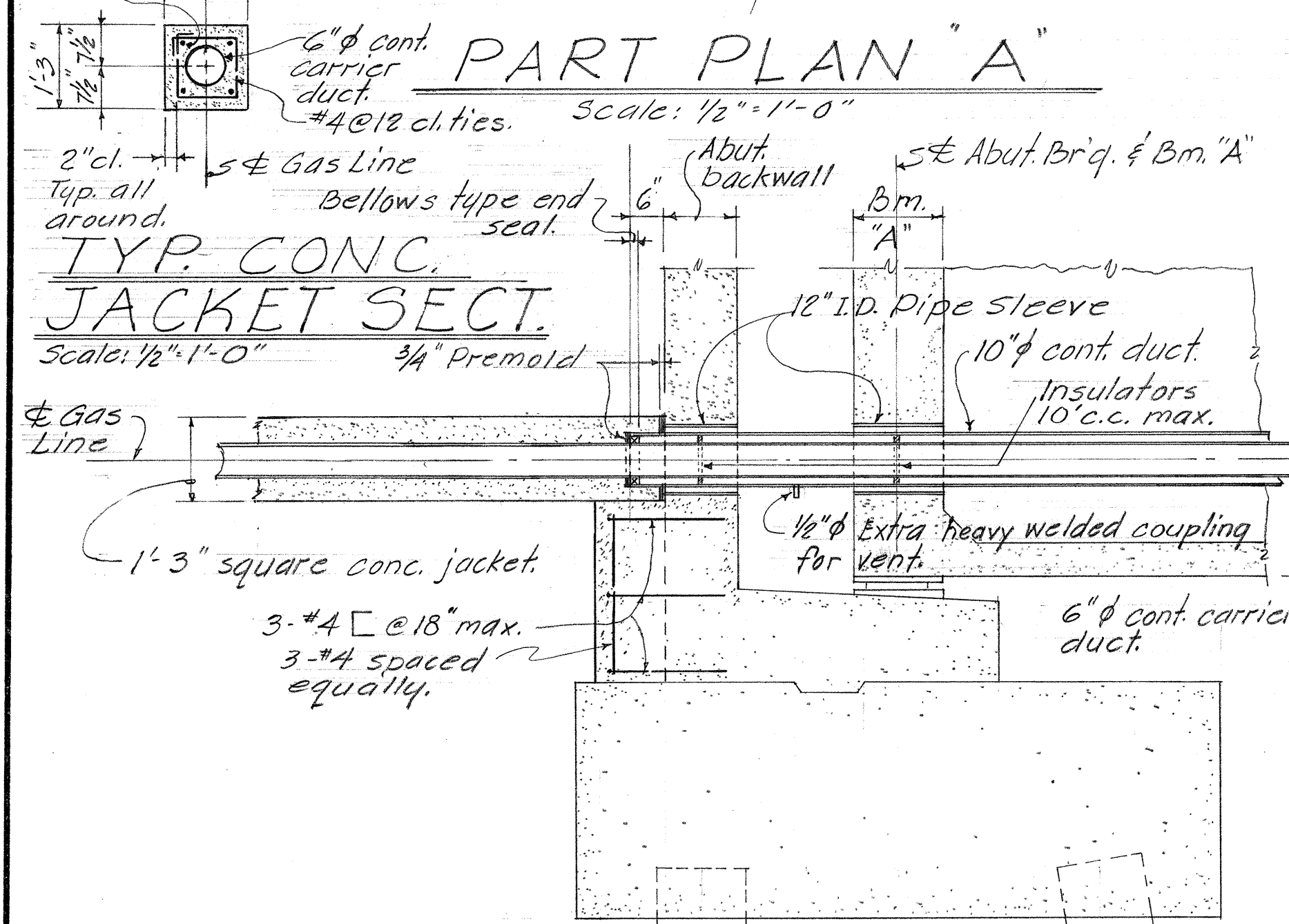
PART PLAN 'B'
Scale: 1/2" = 1'-0"



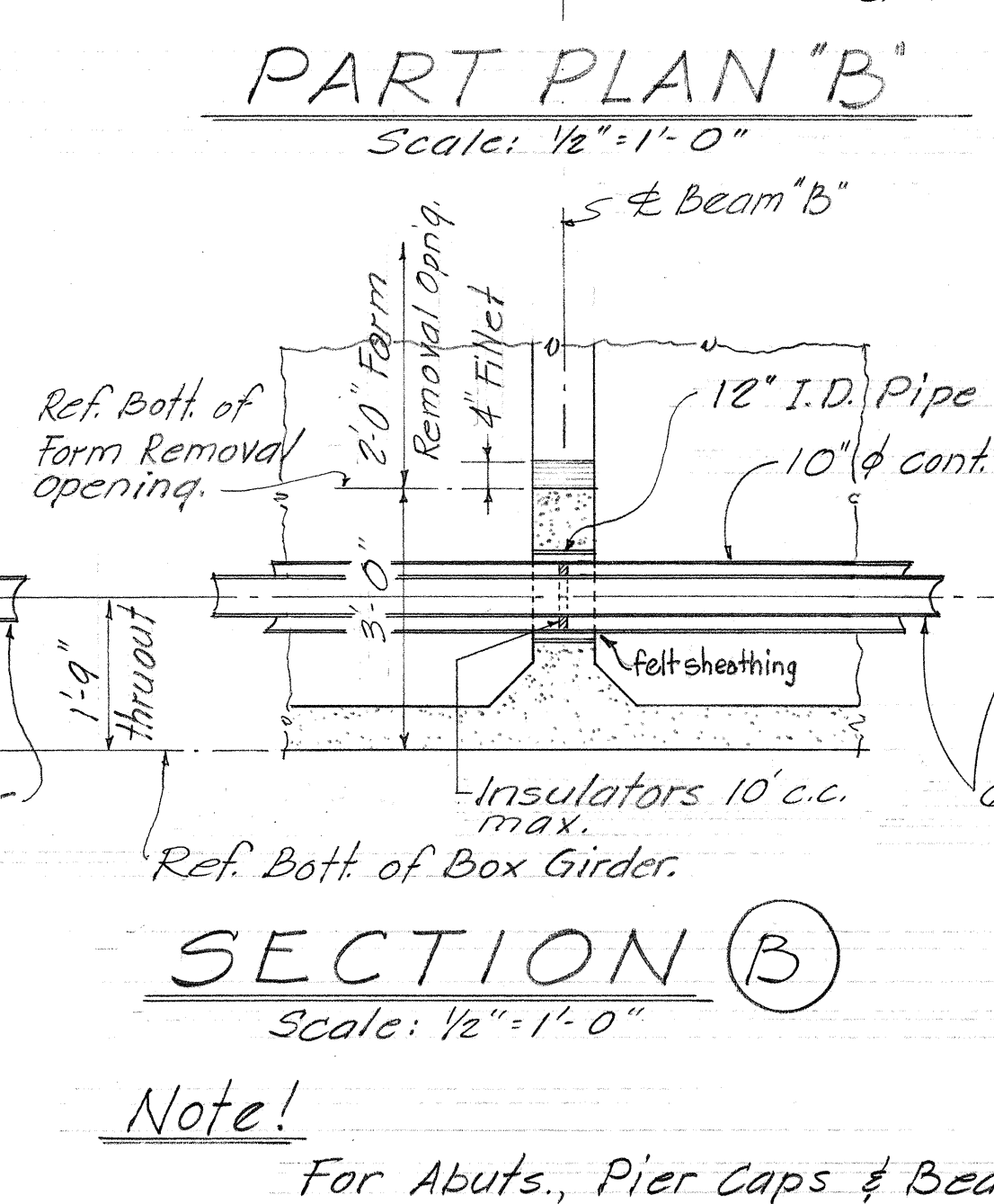
PART PLAN 'C'
Scale: 1/2" = 1'-0"



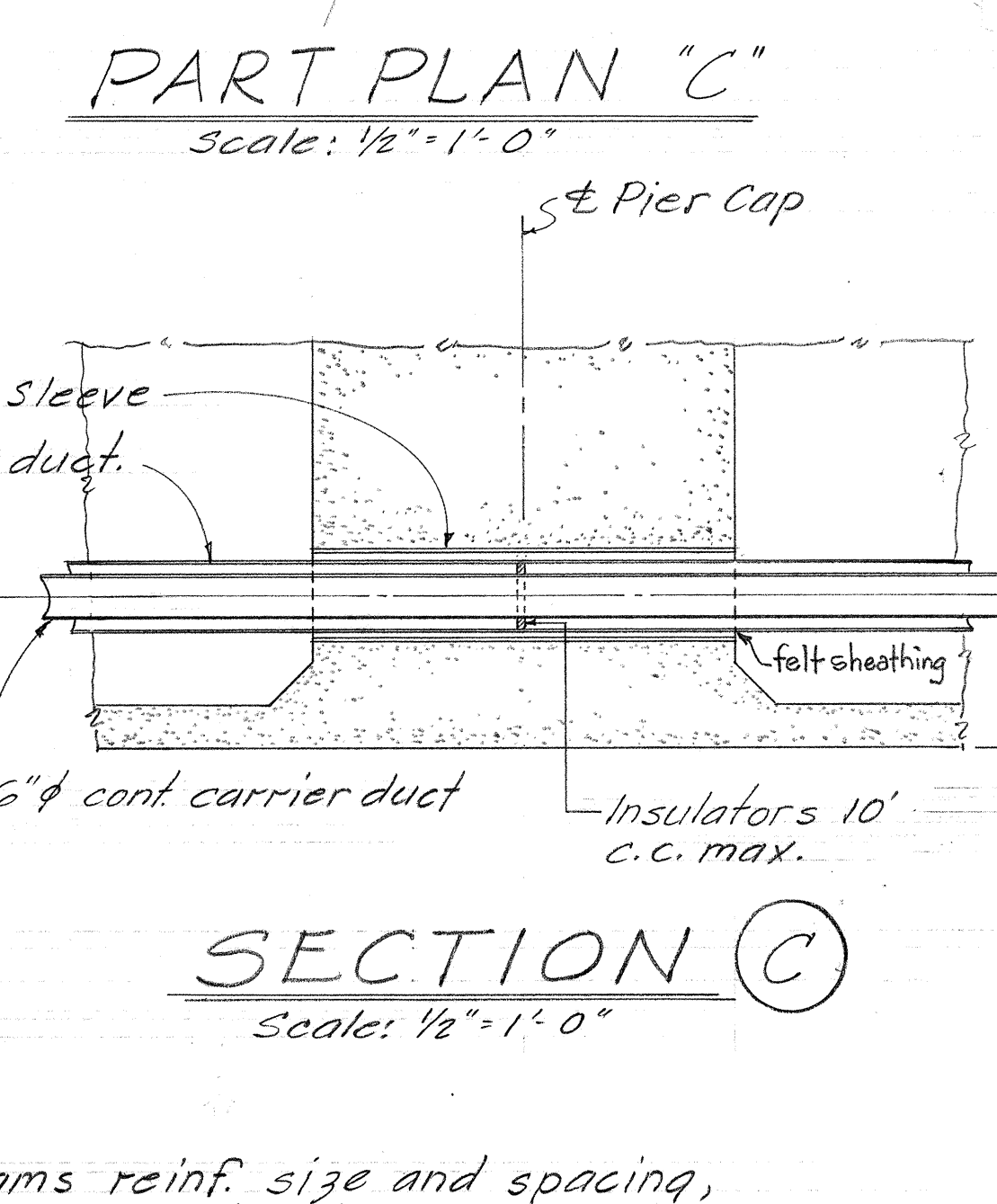
PART PLAN 'D'
Scale: 1/2" = 1'-0"



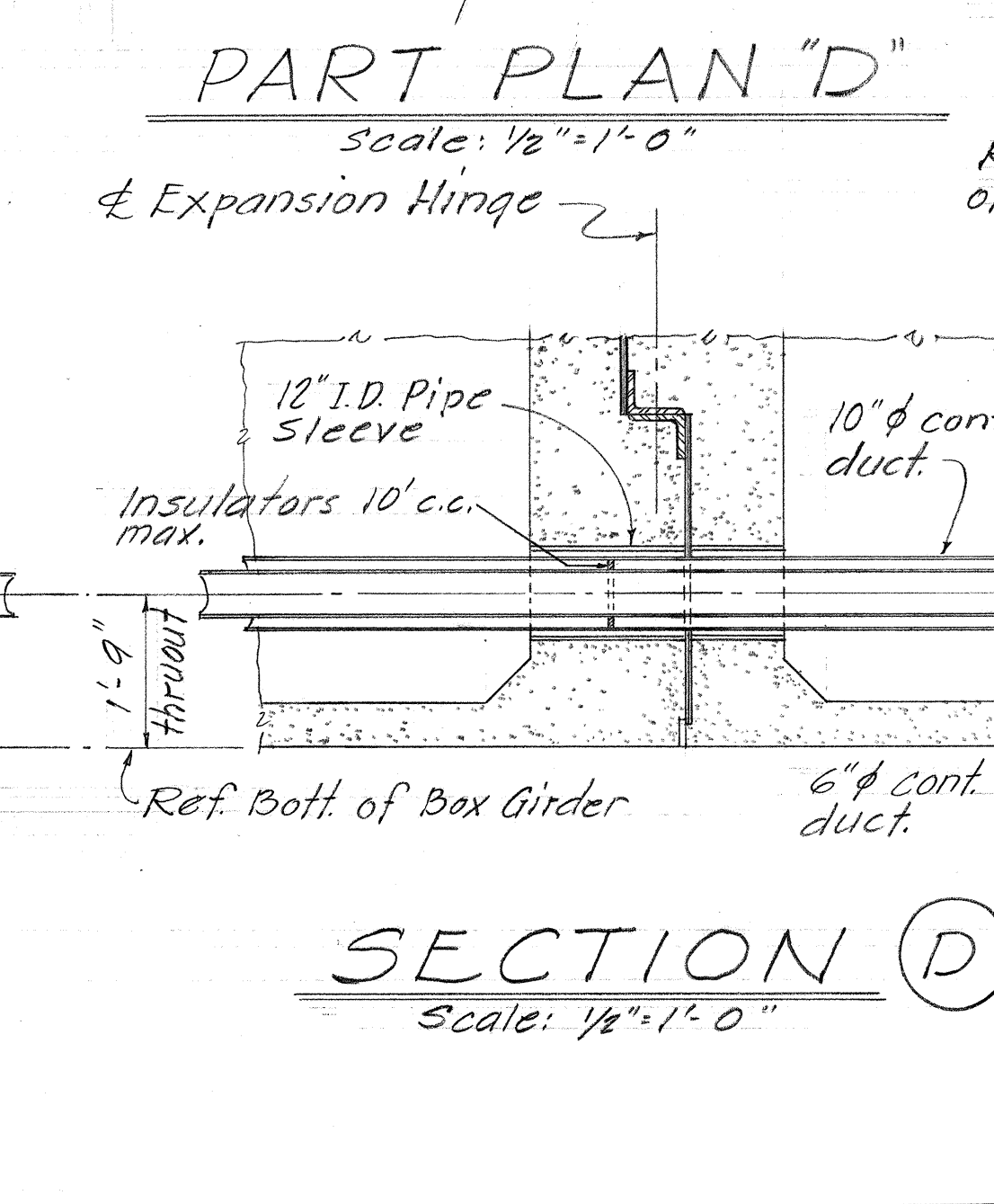
SECTION (A)
Scale: 1/2" = 1'-0"



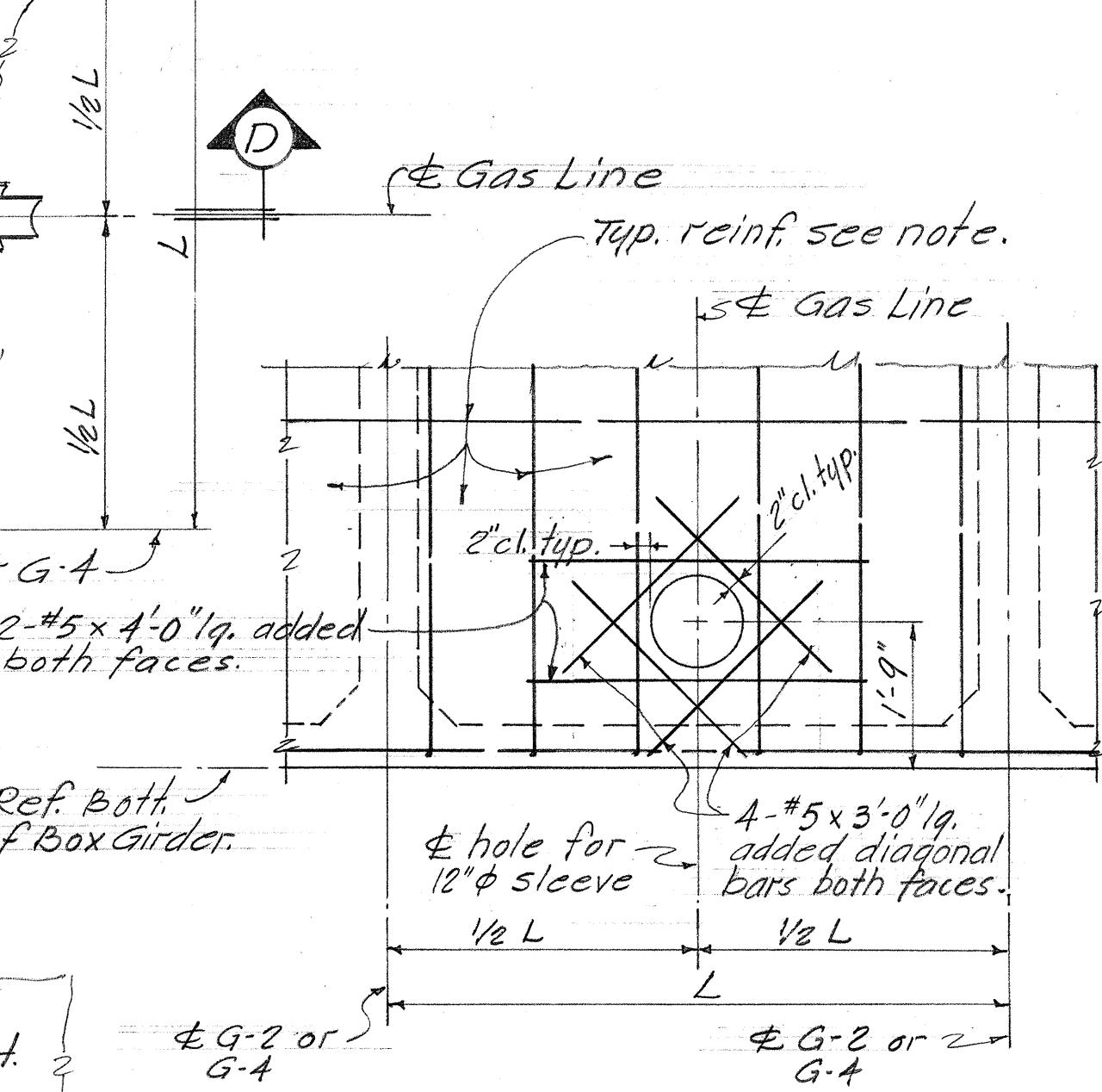
SECTION (B)
Scale: 1/2" = 1'-0"



SECTION (C)
Scale: 1/2" = 1'-0"



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



TYP. ADDED REINF. AT UTILITY LINE OPENING IN ABUTS. & BEAMS
Scale: 1/2" = 1'-0"

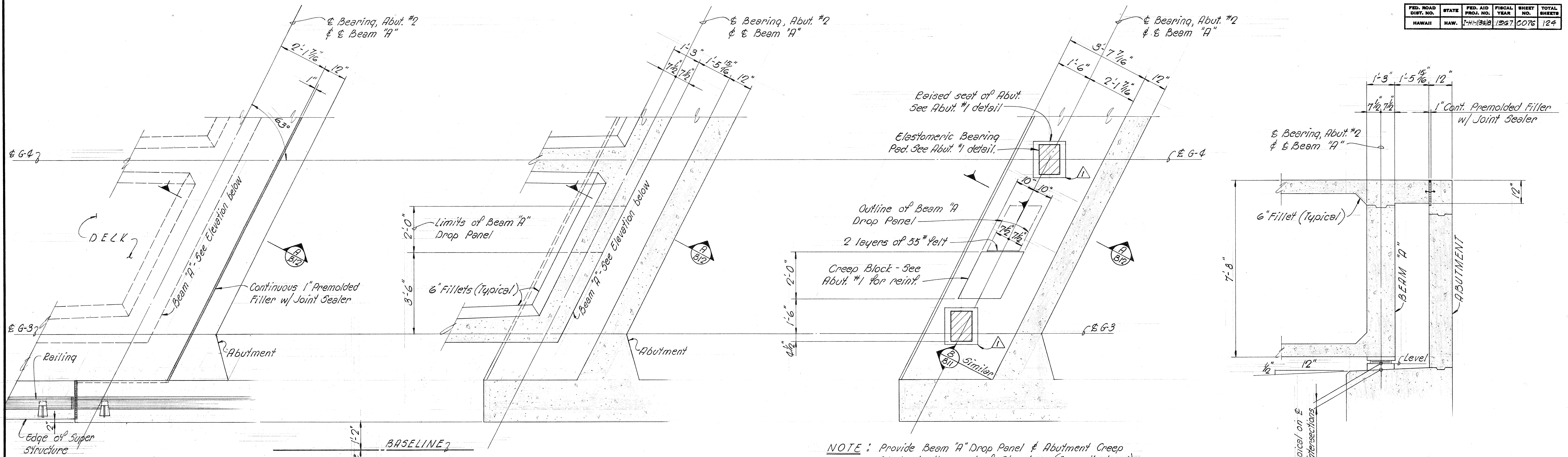
Note!
For Abuts, Pier Caps & Beams reinf. size and spacing, see corresponding details in contract plan. Flare stirrups at opening in Bm. 'A', Pier Caps and Bm. 'D' & 'D', as shown in details above. Cut cont. horizontal reinf. 2" clear from opening where required.

APPROVED:
Paul J. [Signature]
HONOLULU GAS CO., LTD. DATE 3/14/68

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**WAIAWA INTERCHANGE
STRUCTURE 4A & 4B
LOCATION OF HONOLULU
GAS CO., LTD. DUCT**
F.A.I. PROJ. N° I-HI-1 (36) 8
Scale as shown Date: Feb. 1968
SHEET No. 4 OF 4 SHEETS

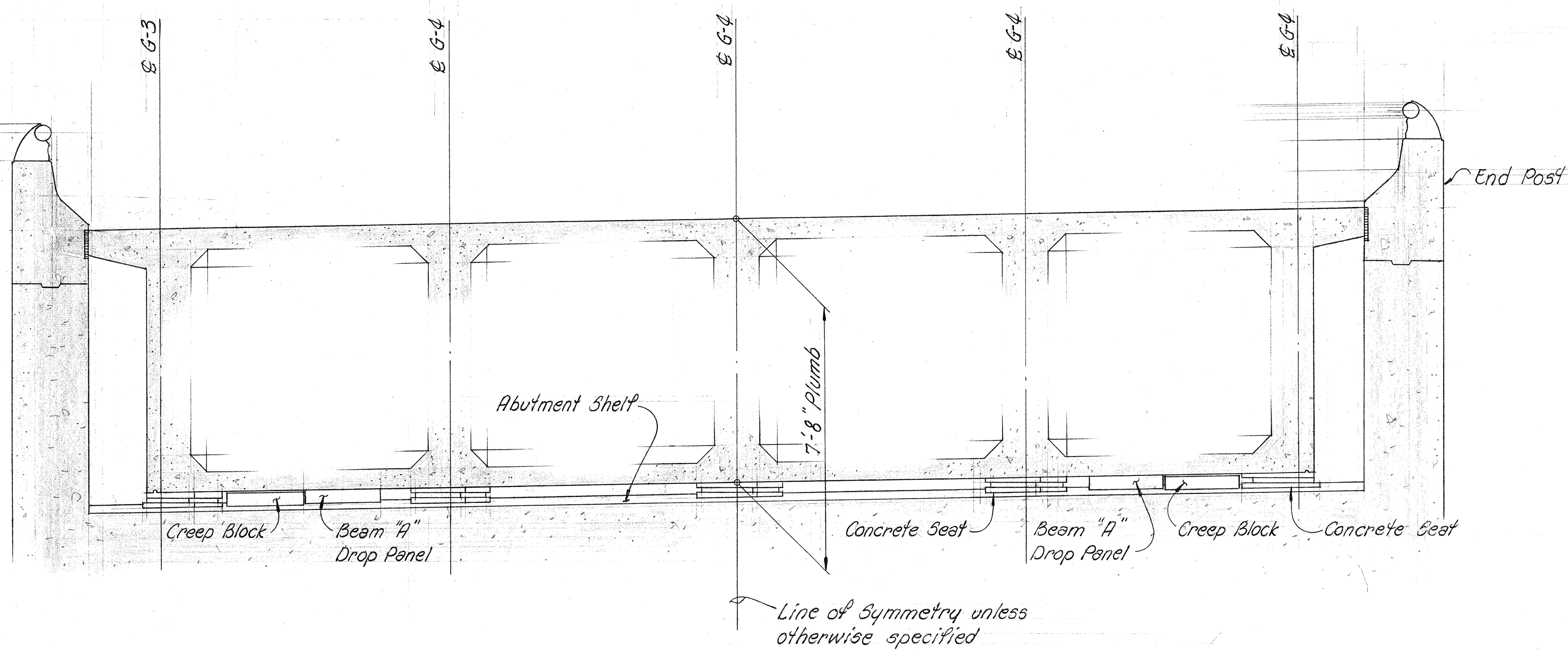
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-41-1(36)B	1967	2076	124



NOTE: Provide Beam "A" Drop Panel & Abutment Creep Block at other end of Structure. (Opposite hand)

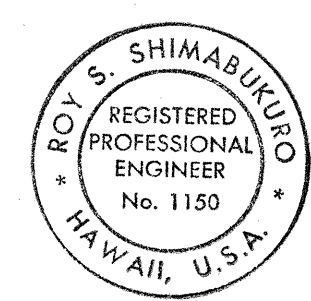
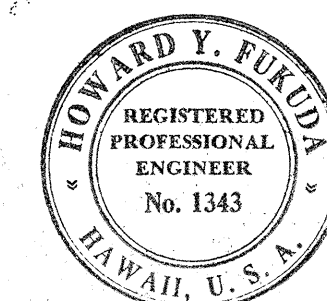
NOTE: Unless otherwise shown, Beam "A" & Abutment Shelf bearing details same as Abutment #1.



Revision #1 = Lowered Abutment Shelf & revised Elastomeric Pad

DRAWINGS SHOWN ARE FOR STRUCTURE 4A. STRUCTURE 4B SIMILAR.

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Consulting Structural Engineers
1210 Ward Ave. Honolulu, Hawaii 96814



STATE OF HAWAII
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WAIKAWA INTERCHANGE
STRUCTURE No. 4A & 4B

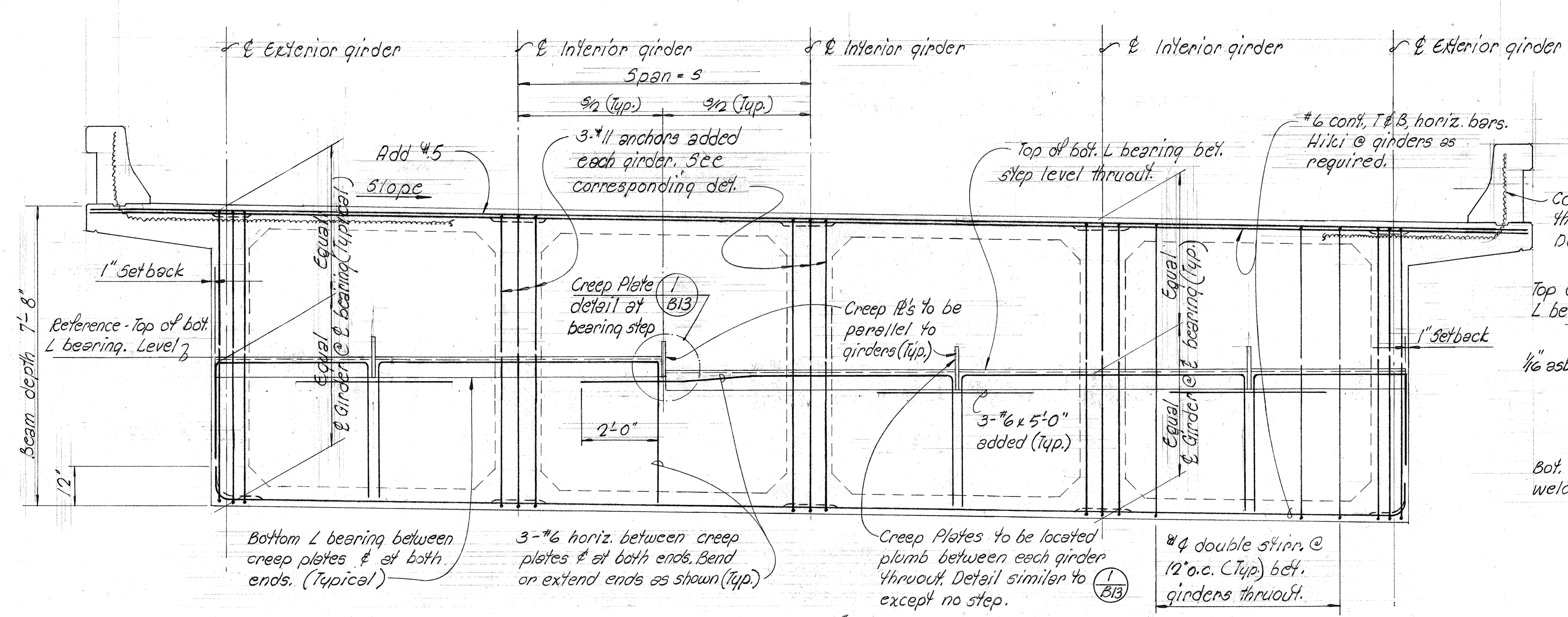
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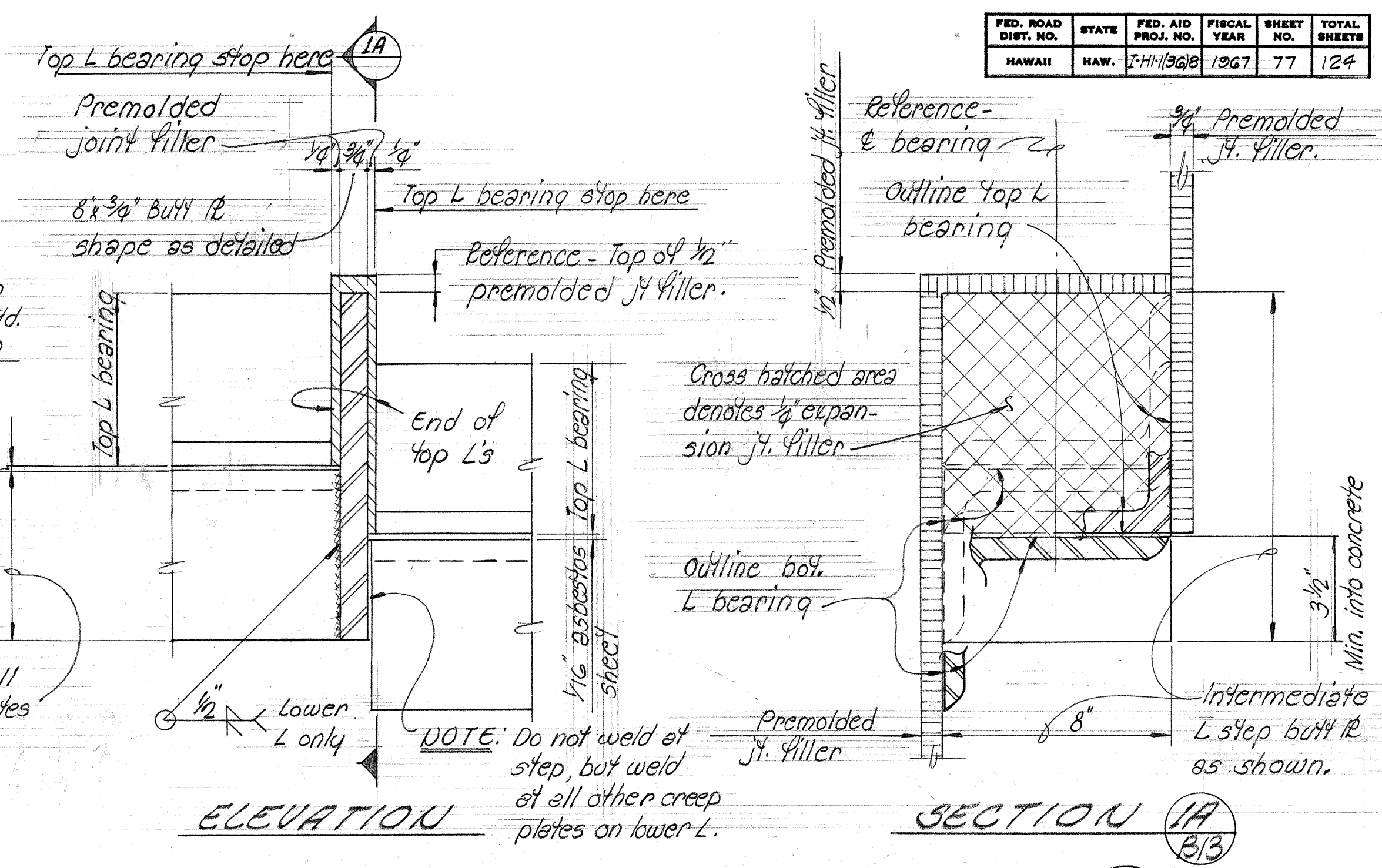
SHEET No. 312 OF 25 SHEETS

0076

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-41-1(36)B	1967	77	124

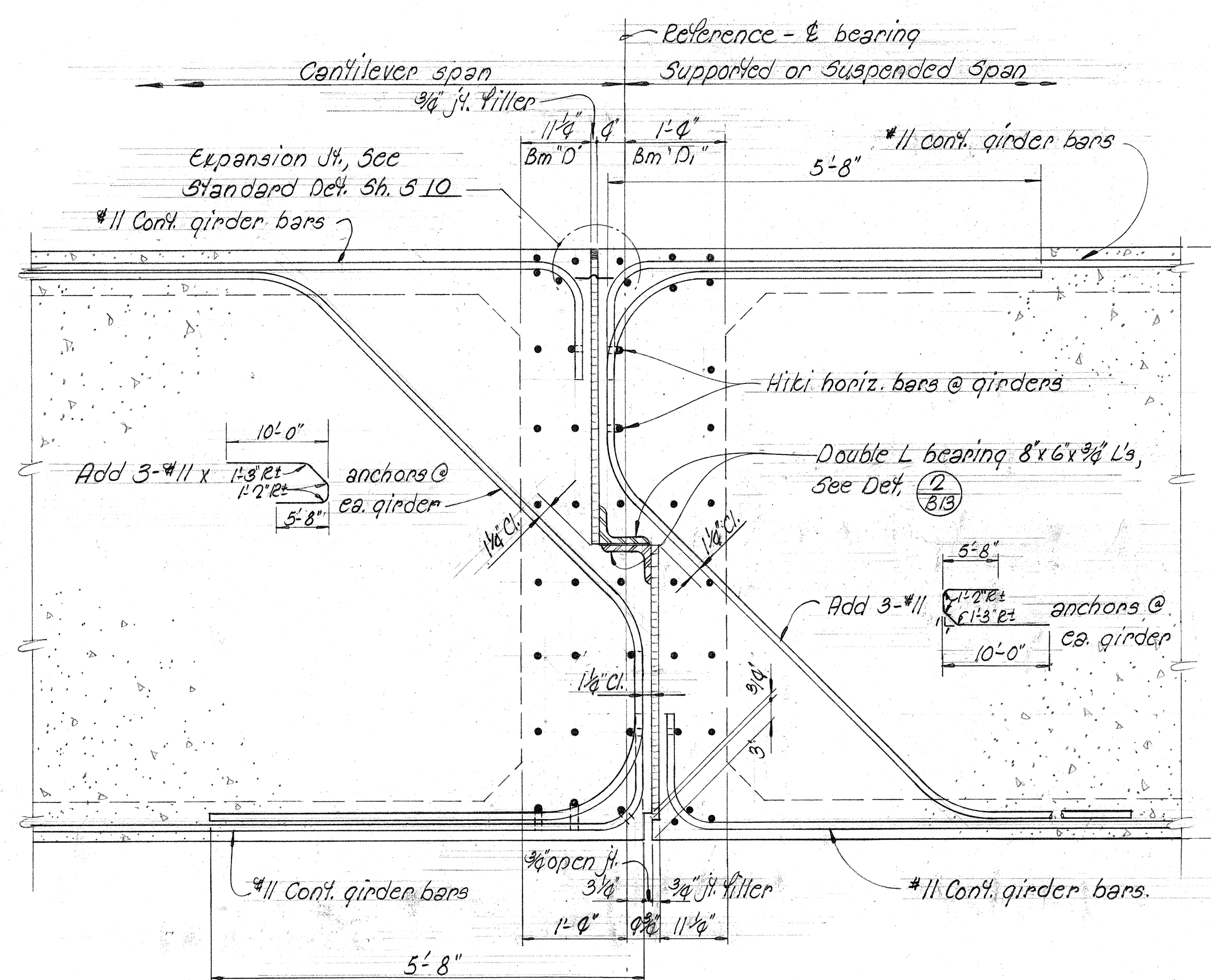


ELEVATION - TYPICAL BEAM "D" (CANTILEVER SUPPORT AS SHOWN)
BEAM "D" (SUSPENDED END) SIMILAR EXCEPT REVERSED BEARING
 1/2" = 1'-0"

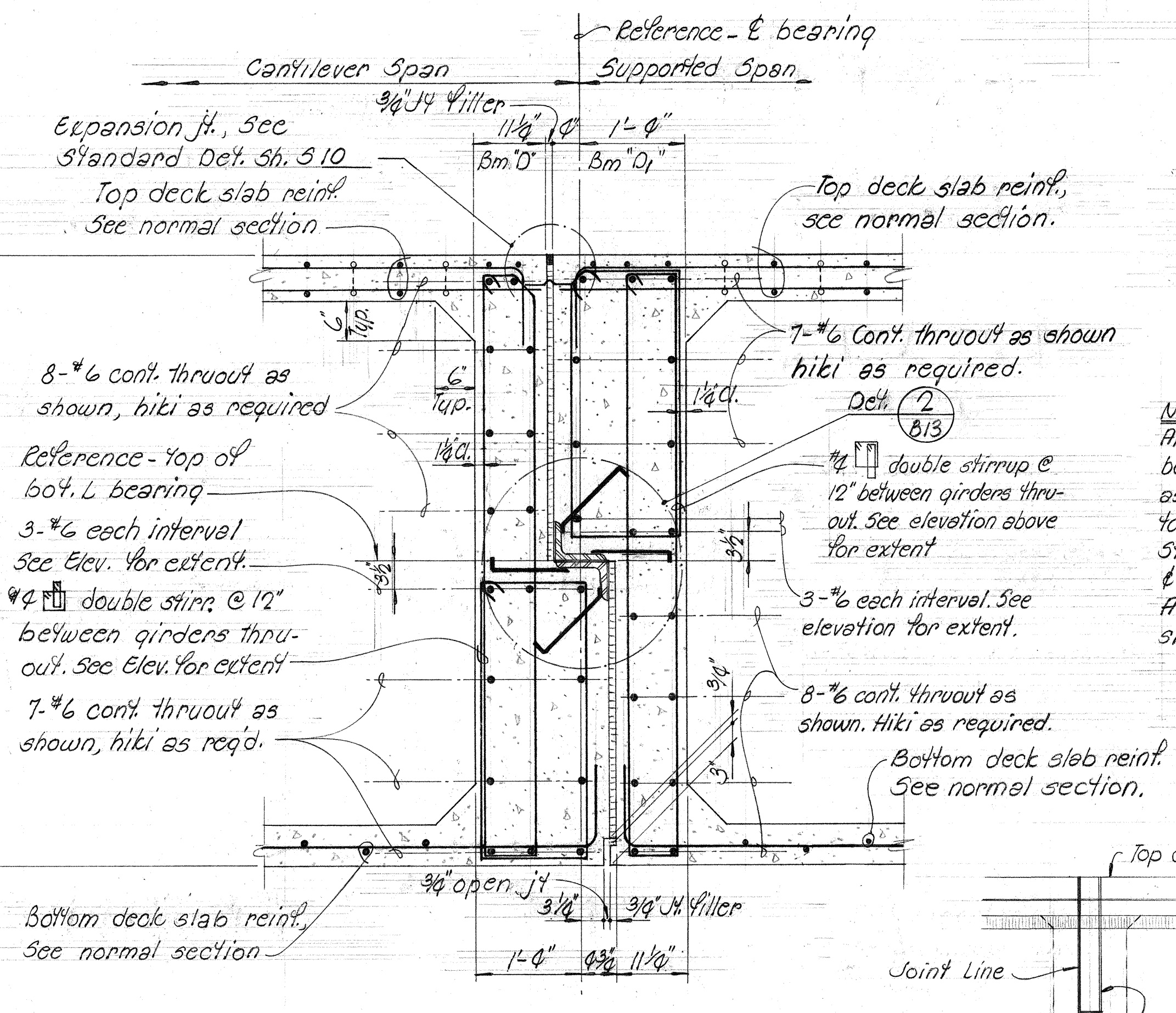


TYPICAL BEARING STEP DETAIL 1
 3/4" = 1'-0"

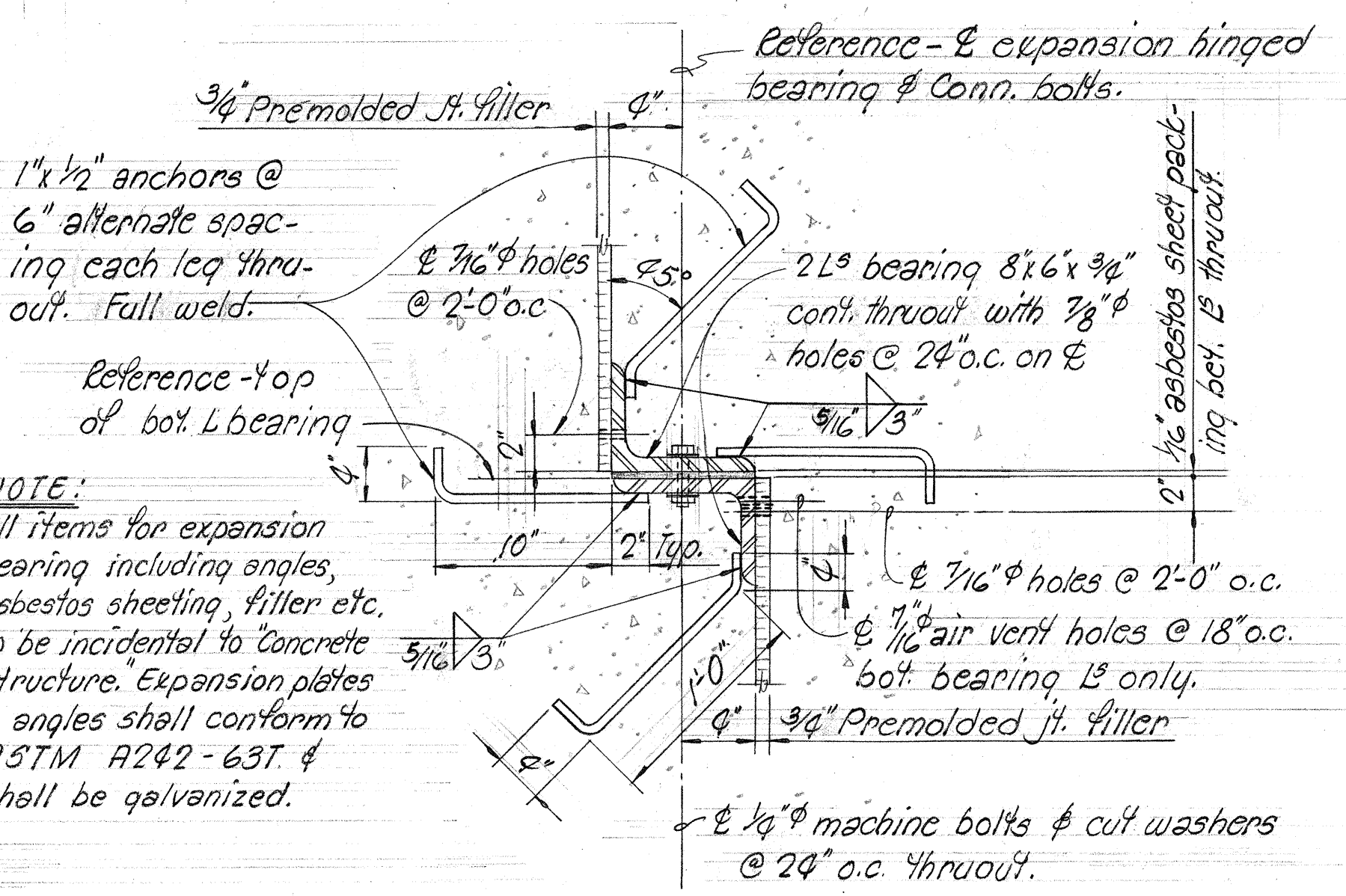
- NOTES: 1. Bearing L stepping shall be limited to one or two ϕ in any case shall be located in interior girder intervals.
 2. Bearing L assembly & connectors are incidental to concrete & shall not be paid for separately.
 3. All L bearings to be hot dip galvanized after assembly. (See Specs.)



TYP. @ EACH GIRDER



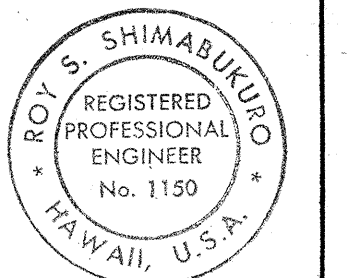
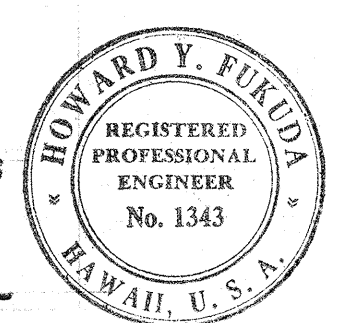
TYP. BETWEEN GIRDERS



BEARING DETAIL 2
 1/2" = 1'-0"

EXTERIOR ELEVATION AT EXPANSION JOINT SHOWING ESTHETIC TREATMENT

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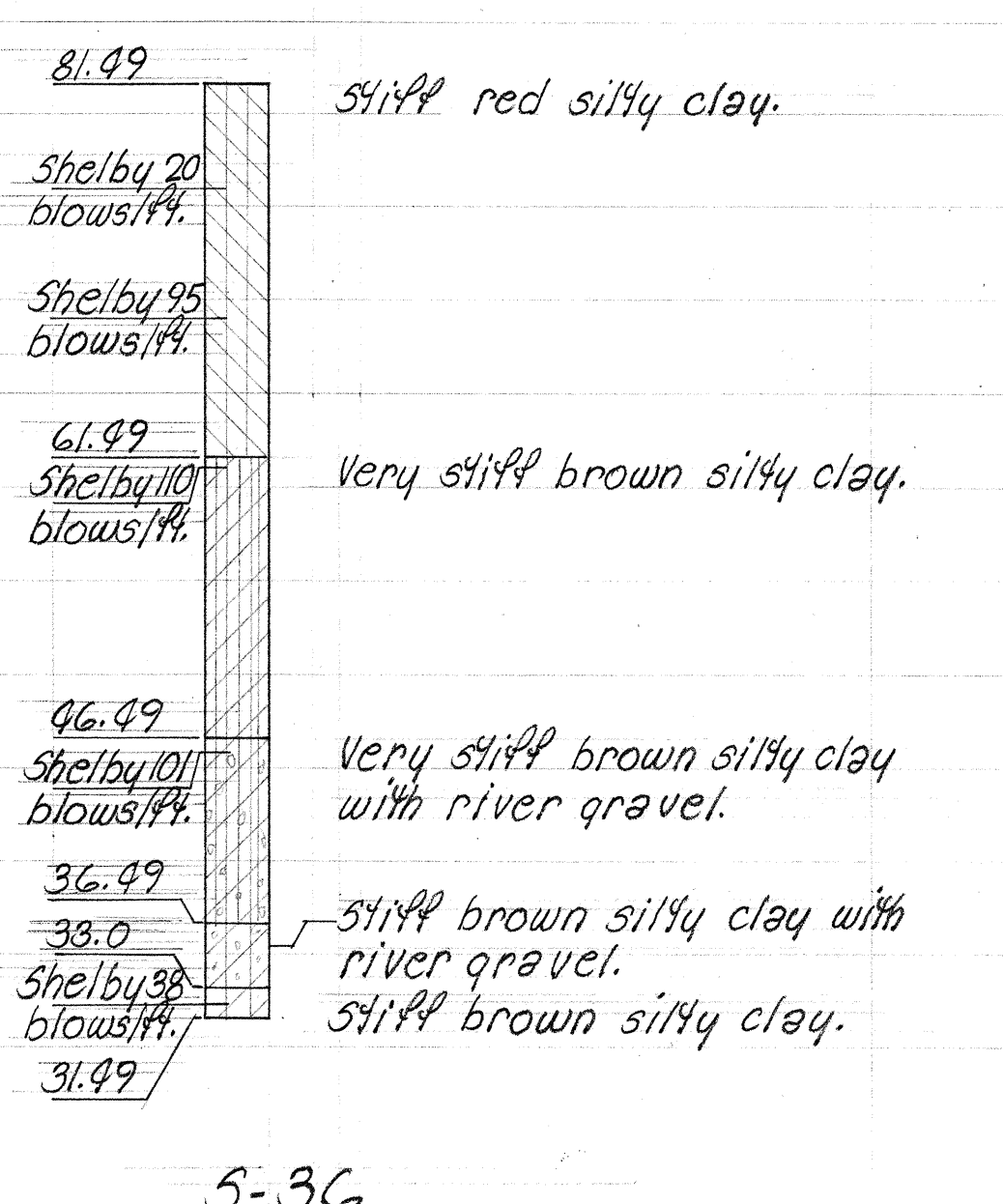
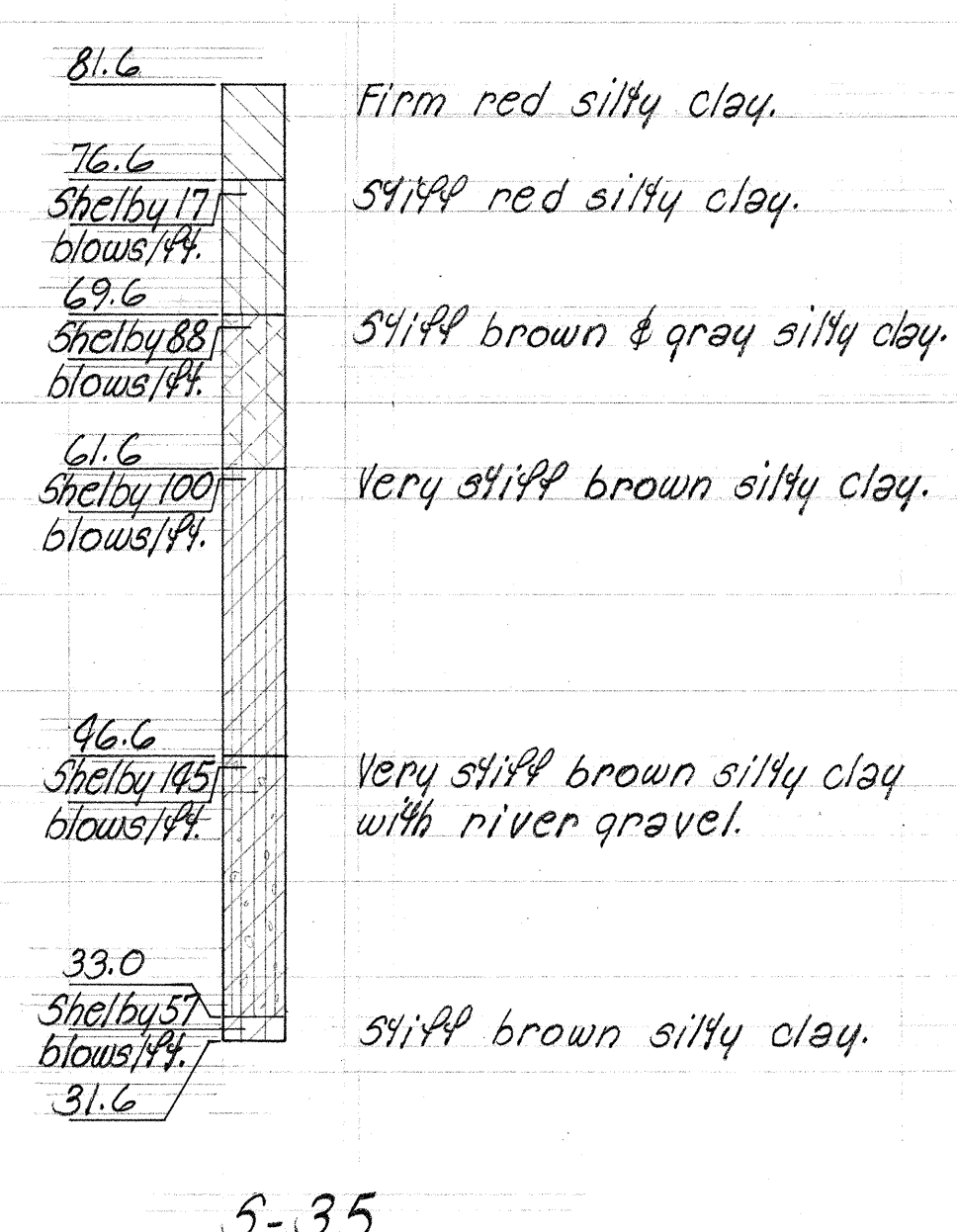
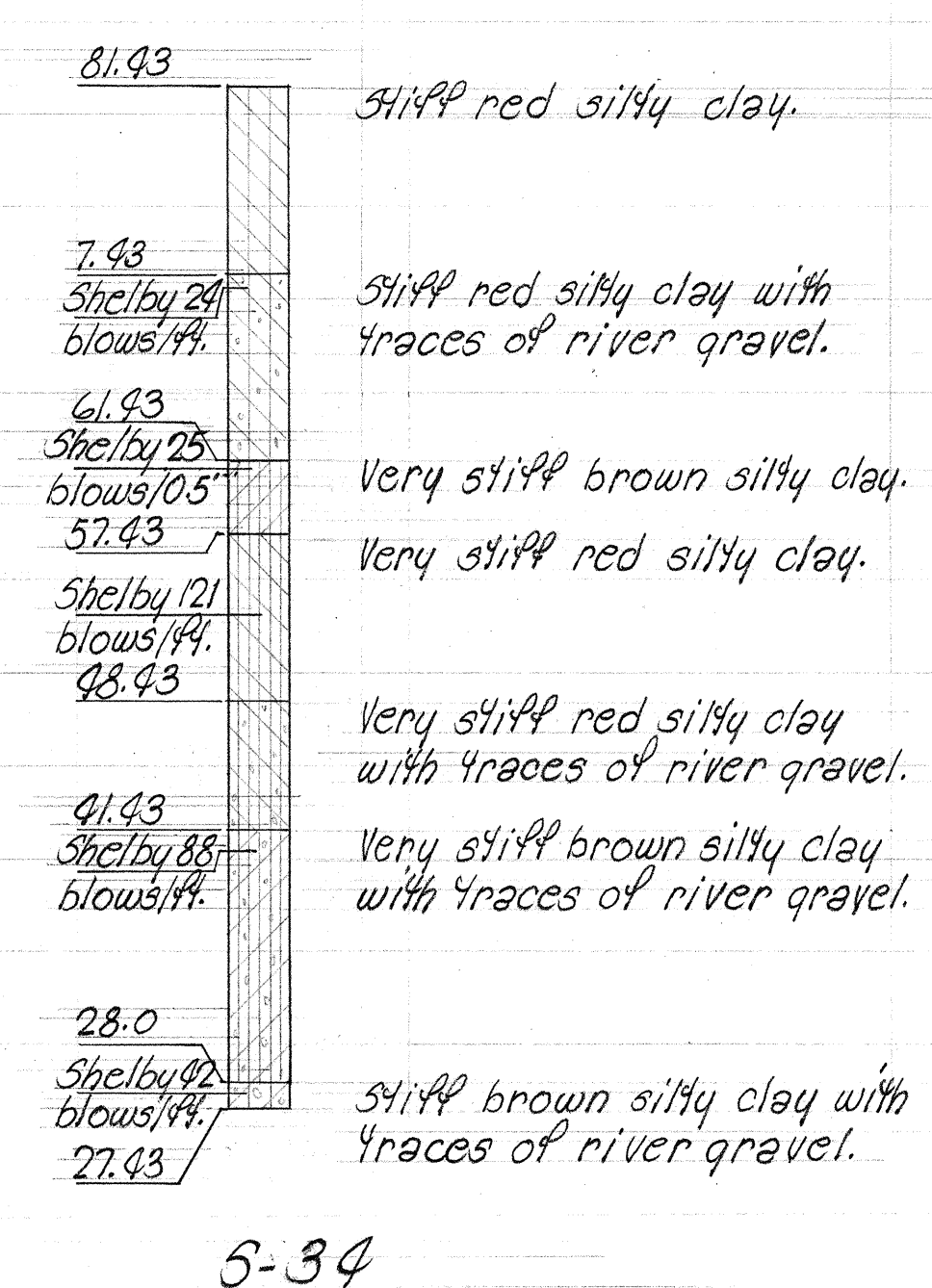
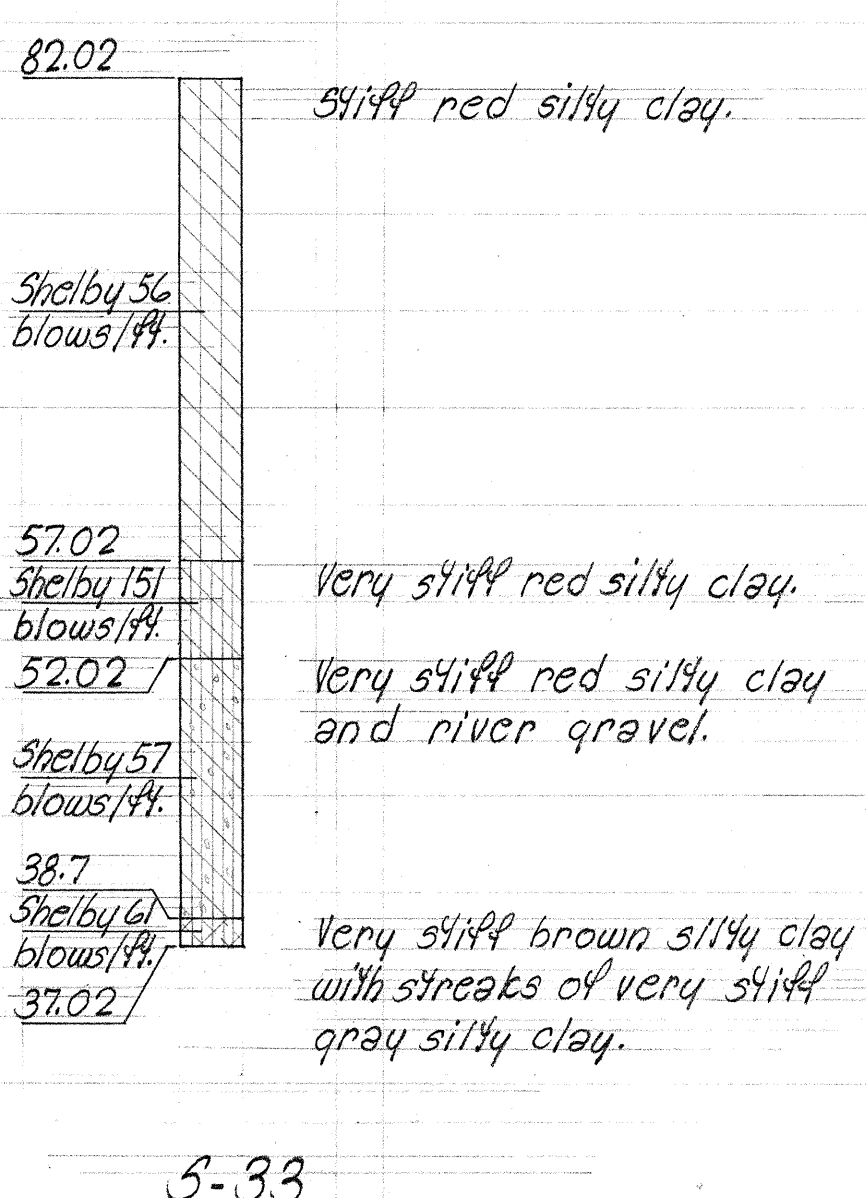
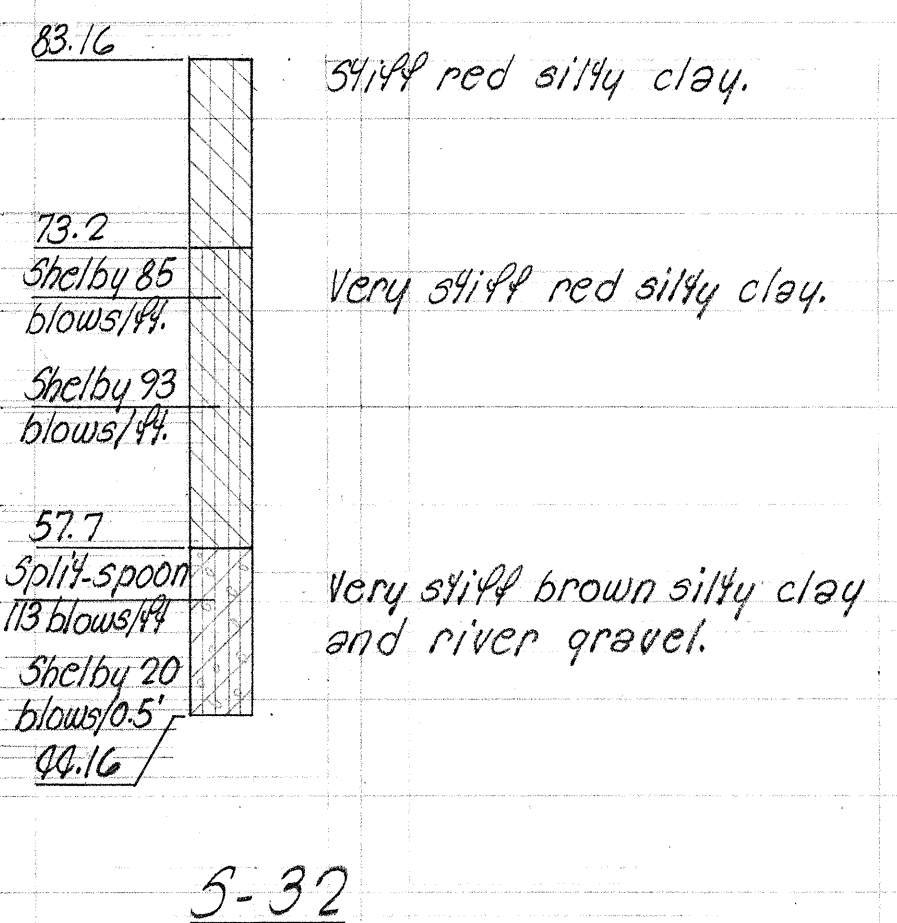
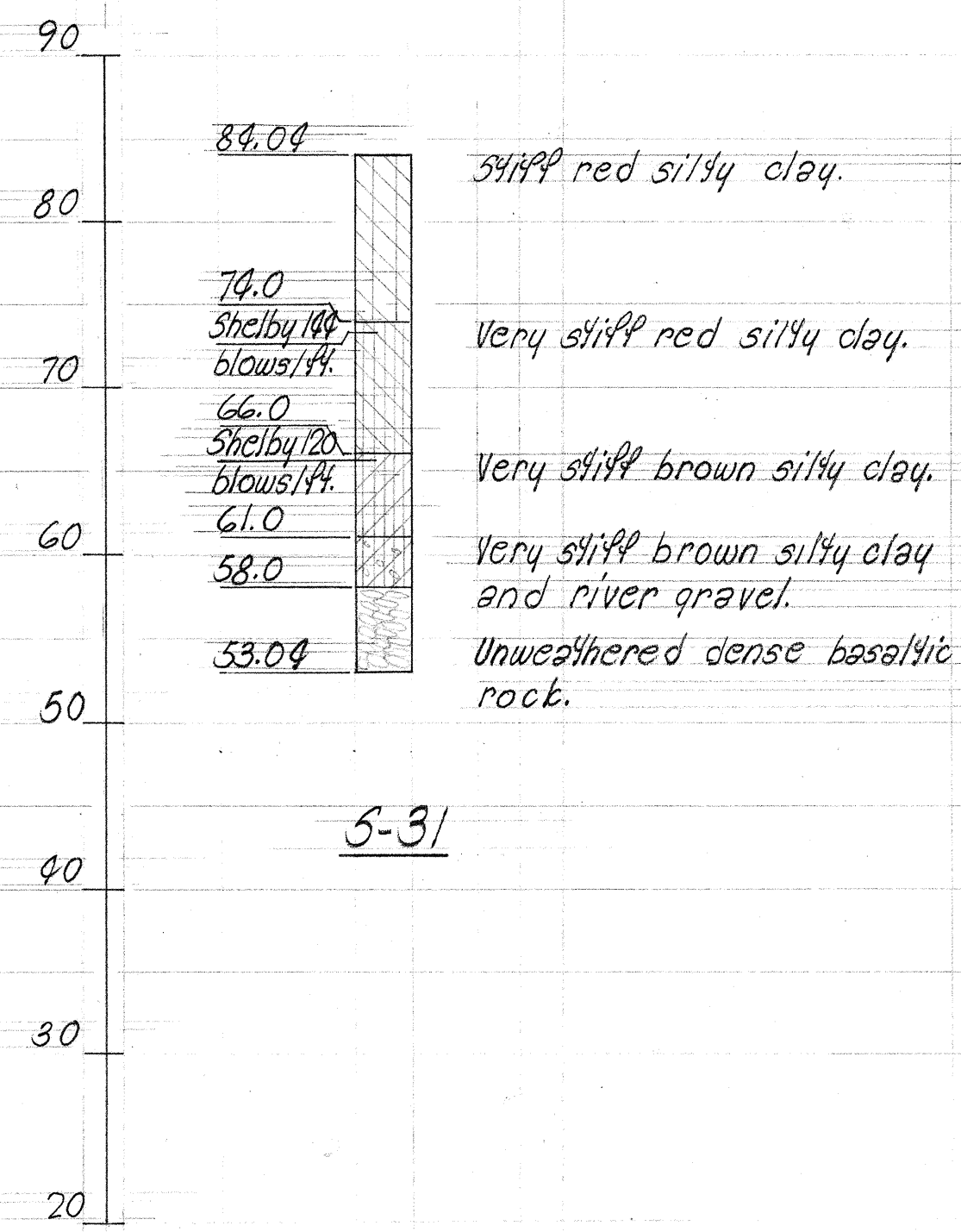
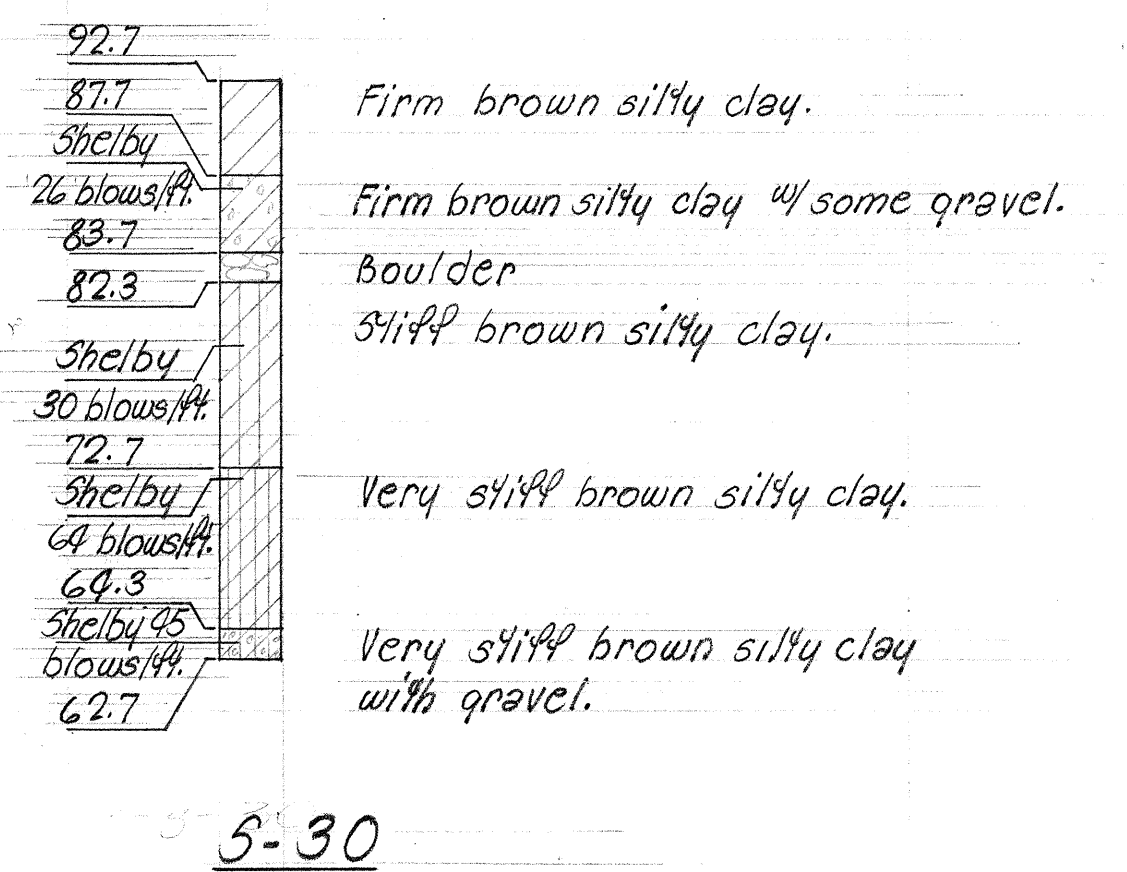
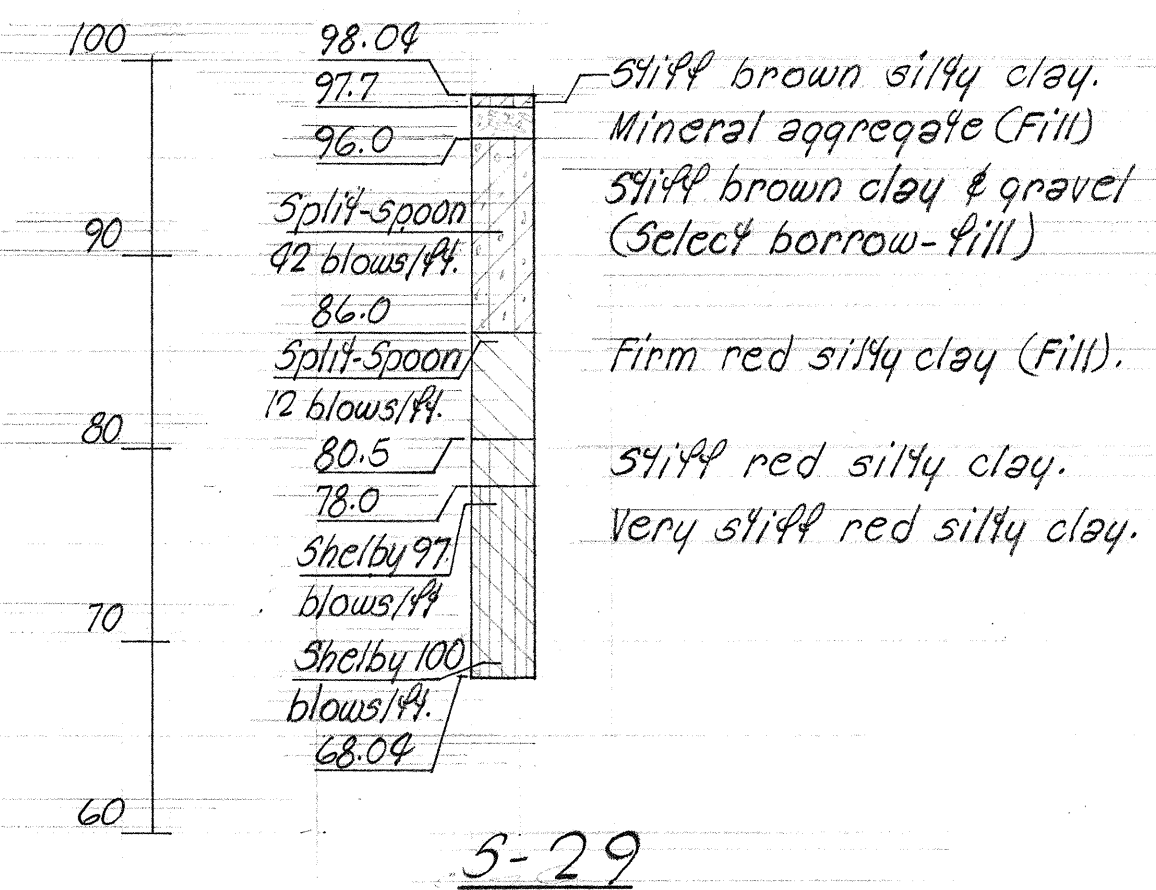
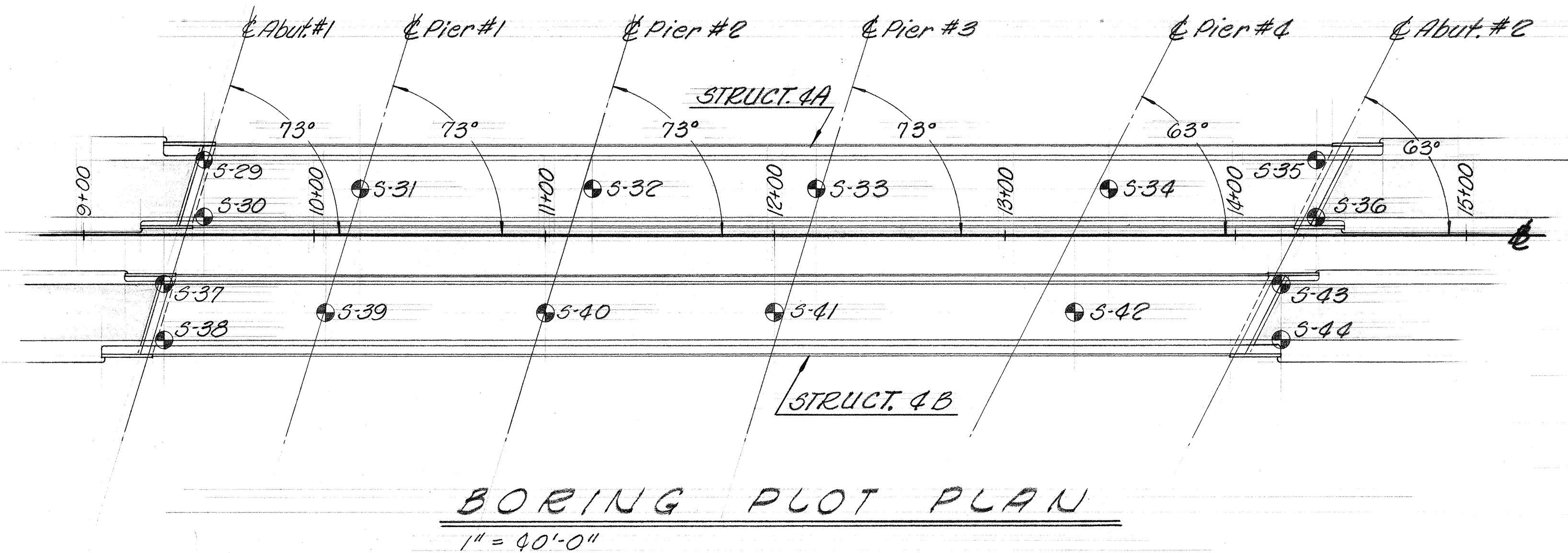


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WAIANA INTERCHANGE
 STRUCTURE No. 4A & 4B

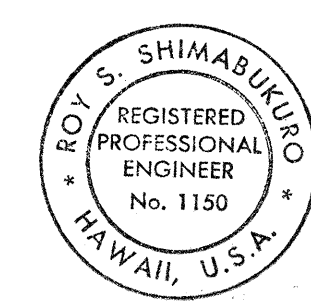
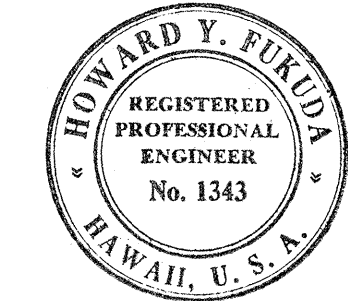
F.A.I. PROJ. No. I-41-1 (36)B
 Scale: As Shown Date: _____

SHEET No. 813 OF 25 SHEETS



BORING LOGS FOR STRUCTURE 4A

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Howard Y. Fukuda

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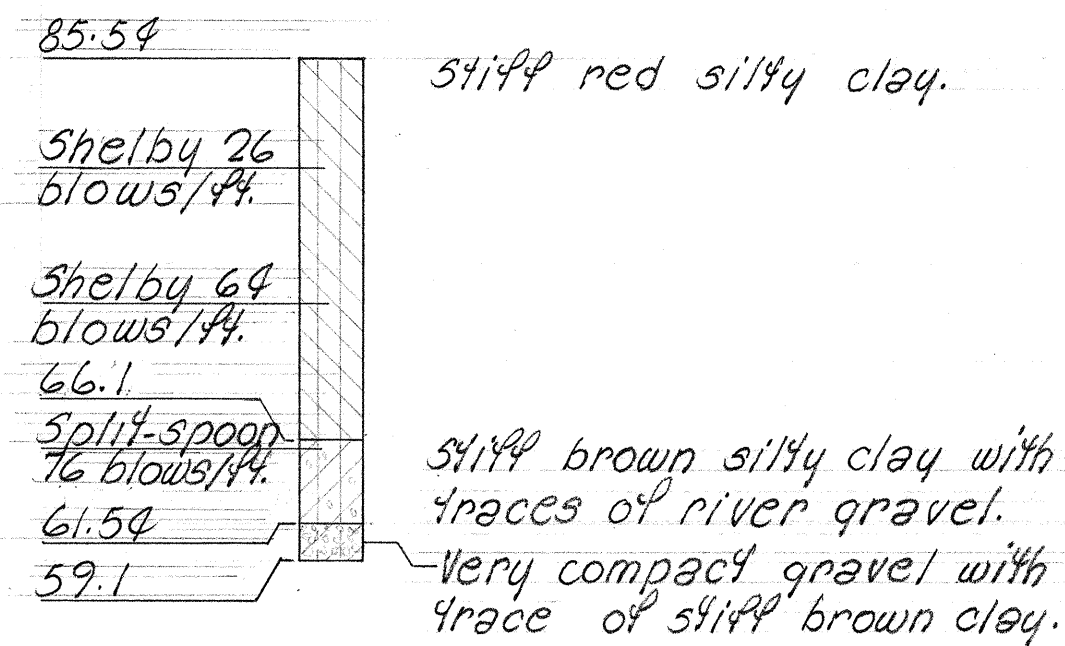
WAIANA INTERCHANGE
STRUCTURE No. 4A & 4B

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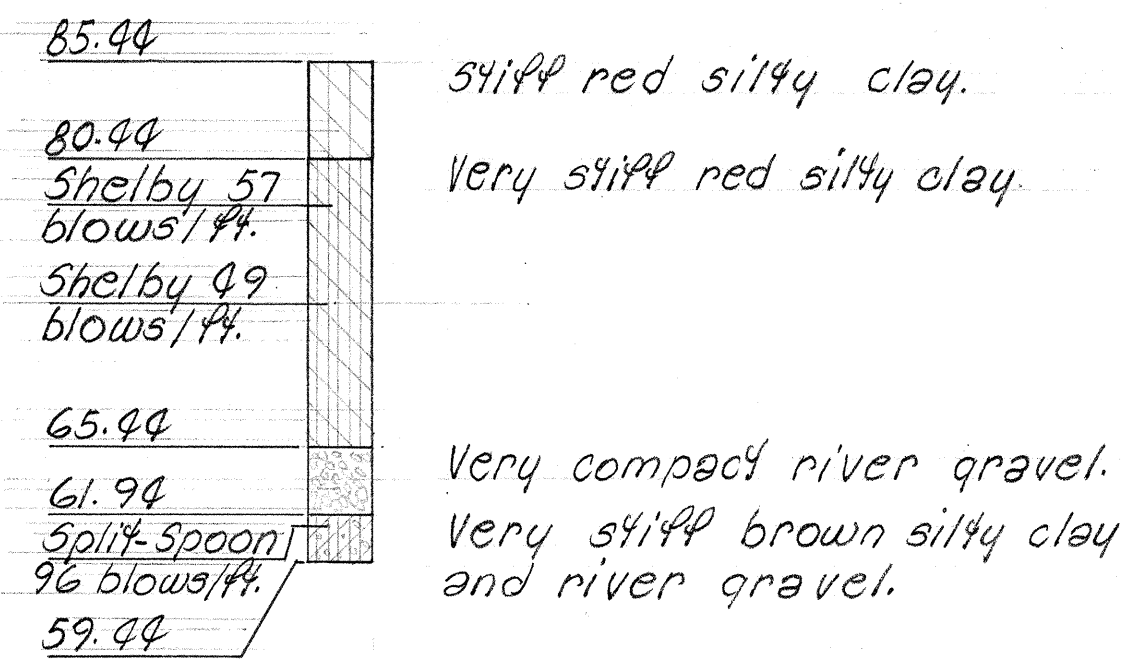
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SHEET No. 814 OF 25 SHEETS

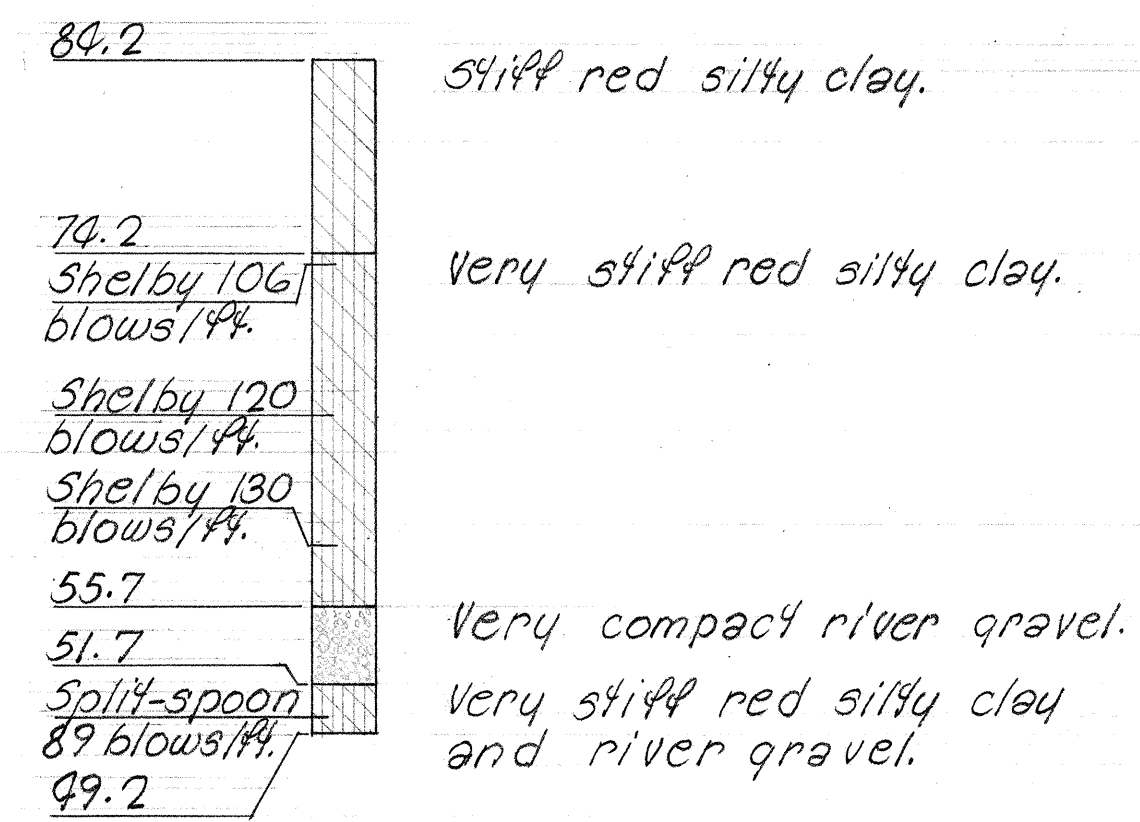
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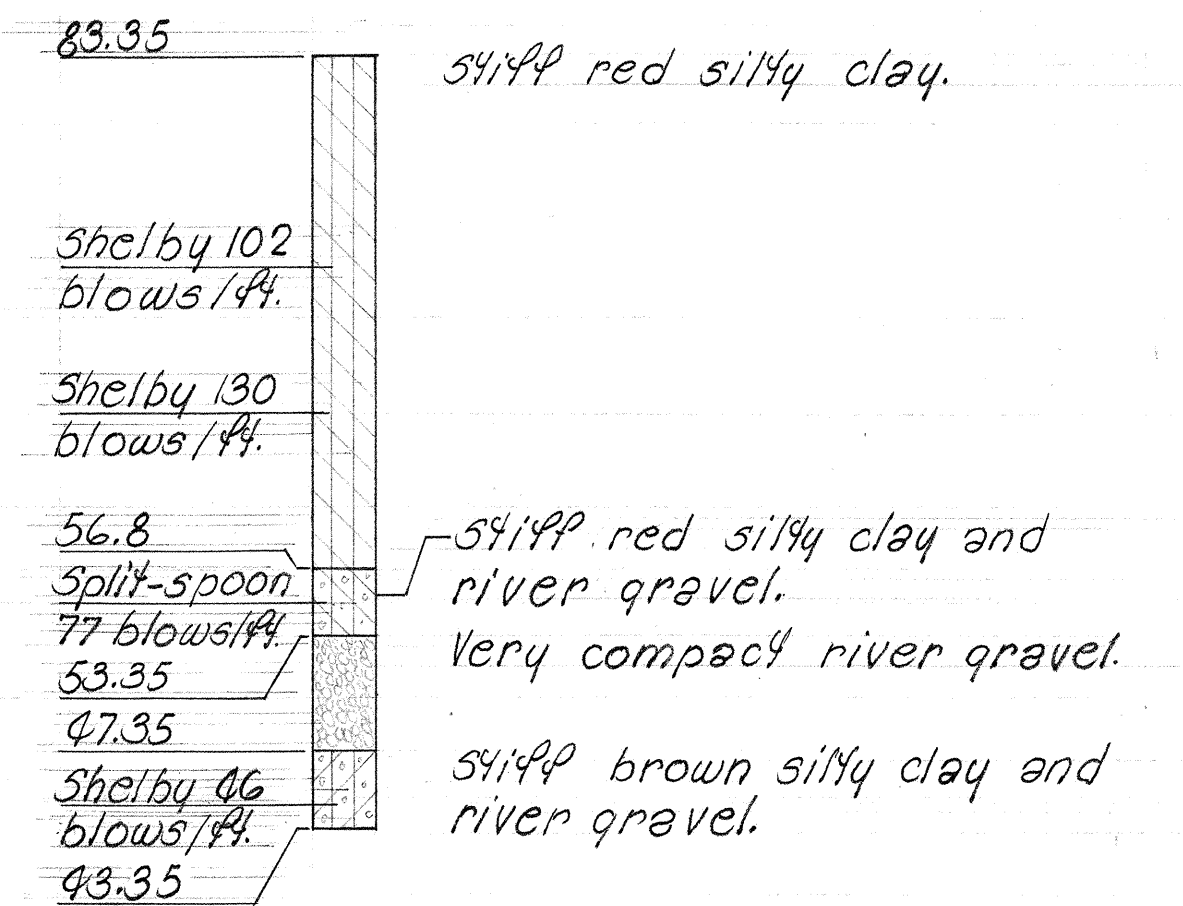
S-37



S-38

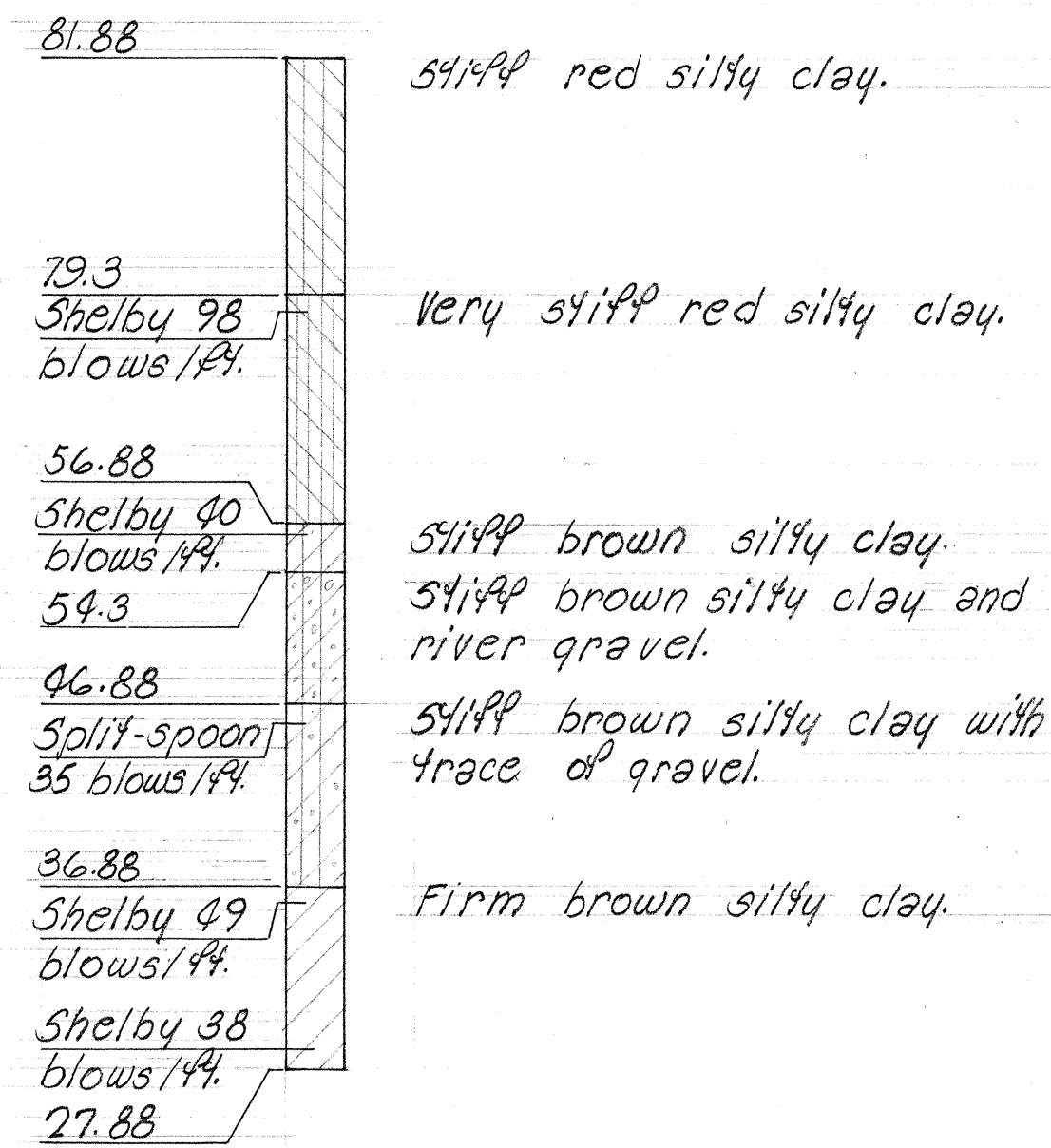


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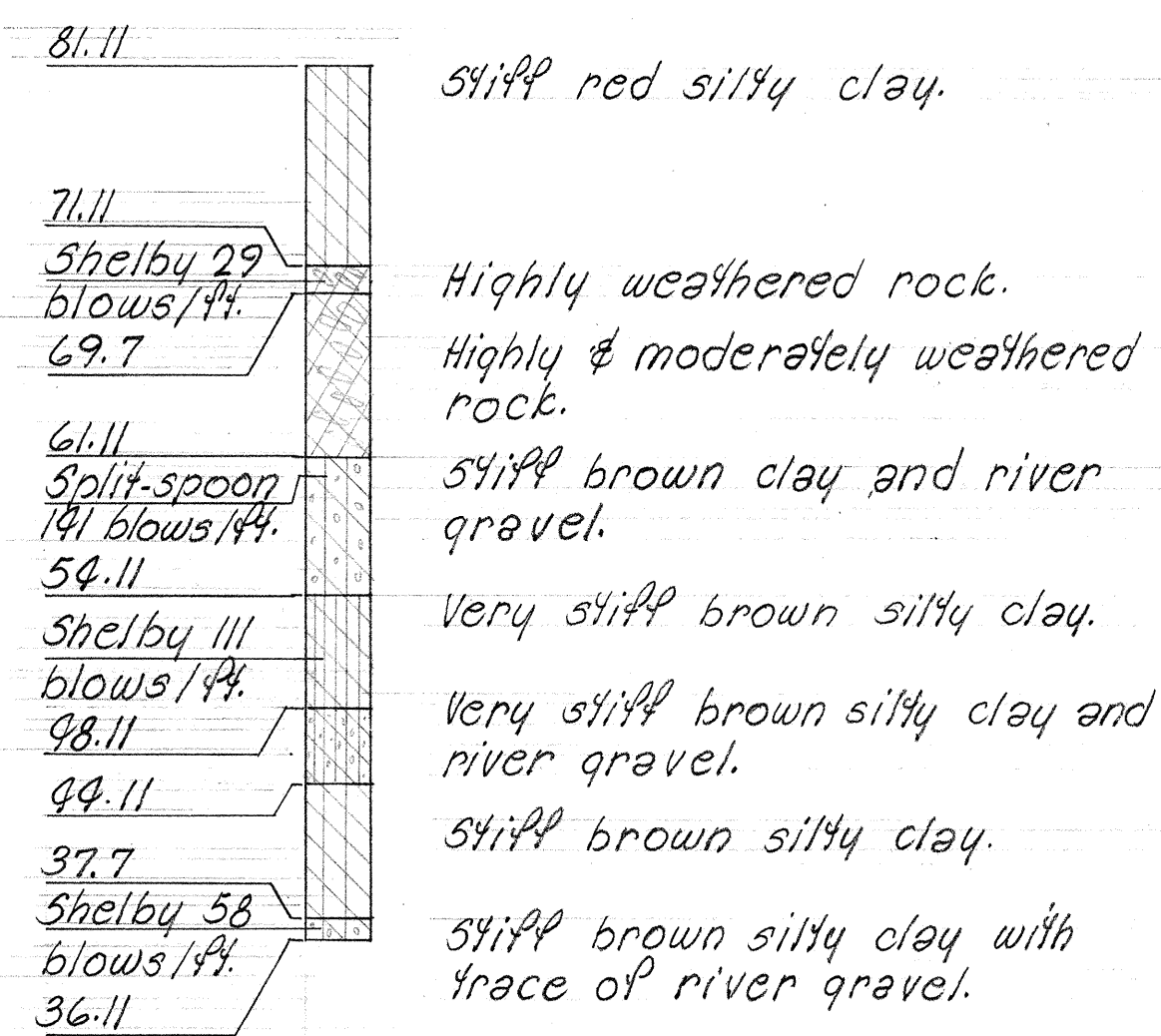


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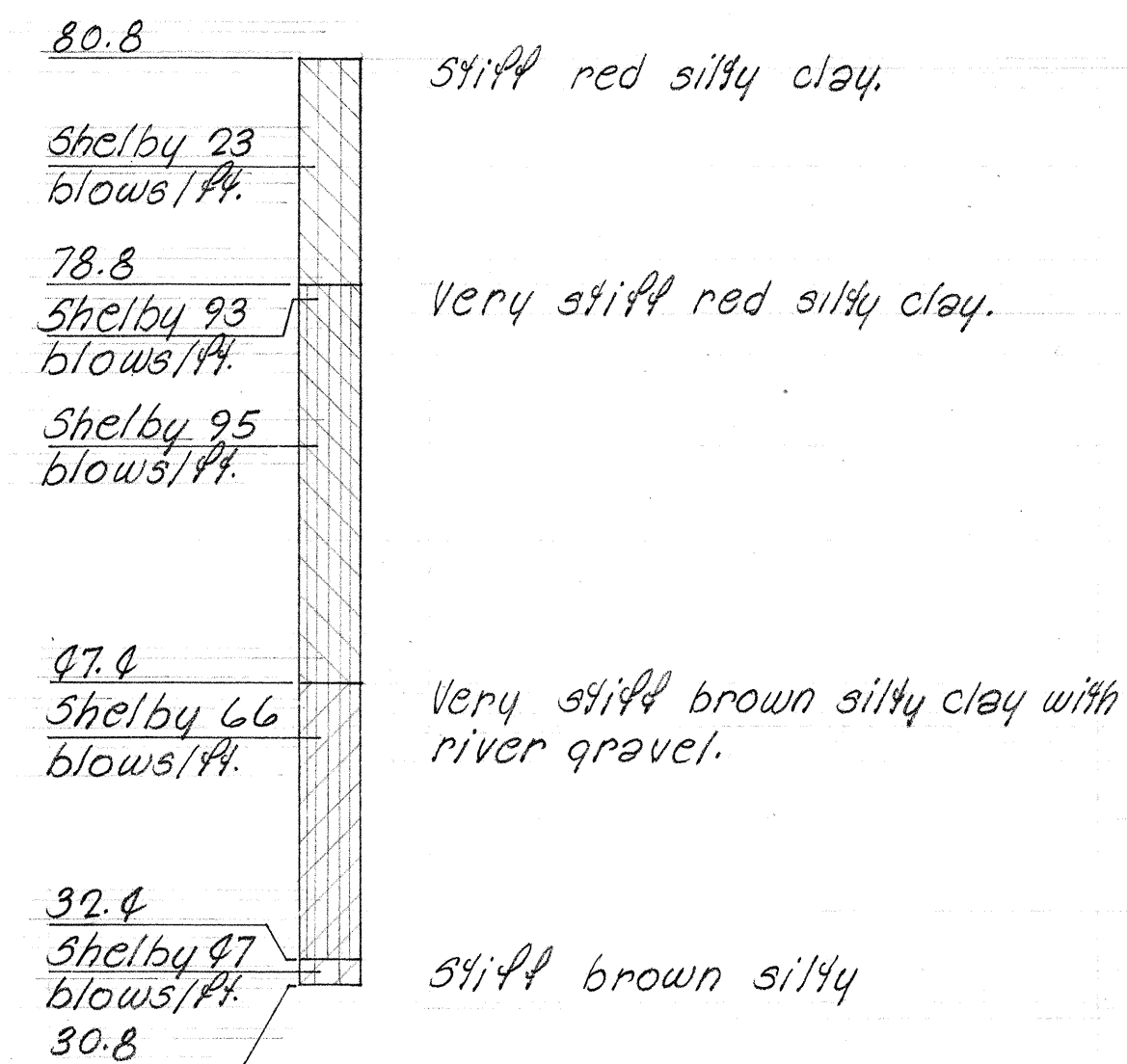
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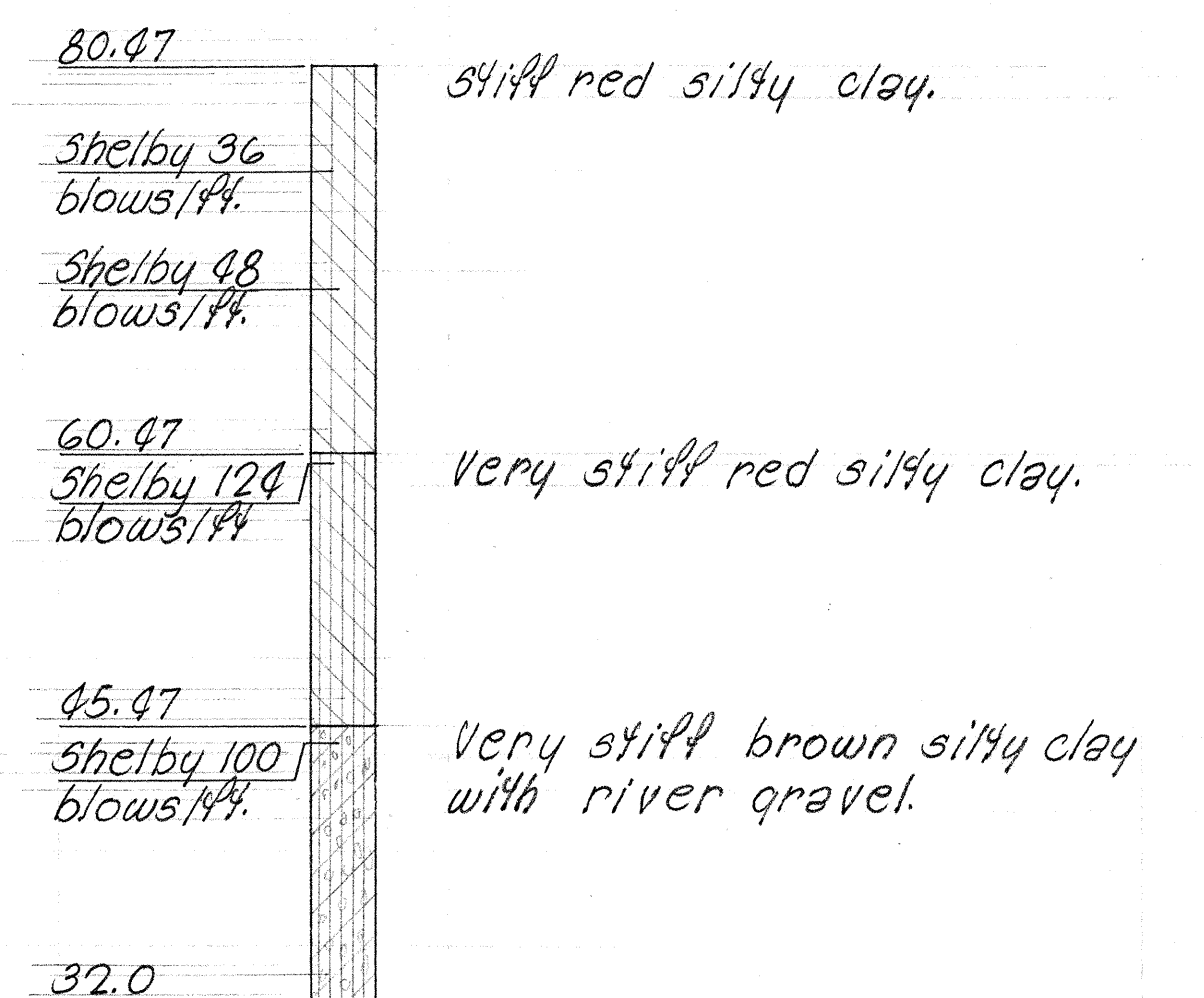
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S-42

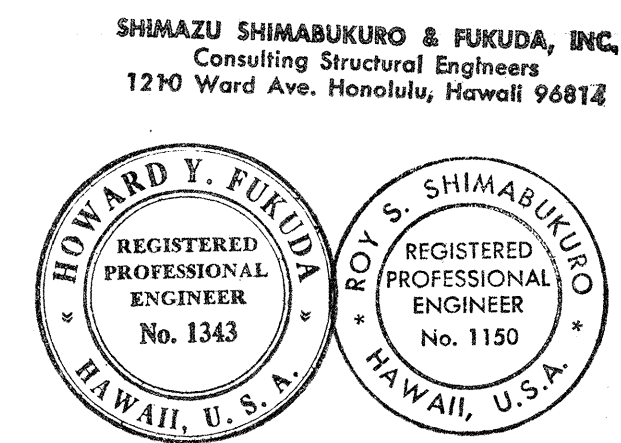


S-43



S-44

BORING LOGS FOR STRUCTURE 4B



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WAIAWA INTERCHANGE
STRUCTURE No. 4a & 4b

F.A.I. PROJ. No. I-H-1(36)B
Scale: As Shown Date:

SHEET No. 815 OF 25 SHEETS