

Not to scale

(For detail of lettering, see std. Bridge Details sht. #1)



STRUCTURE 10b

NOTE: For fin. grd. profiles, see sht. #2.

LAYOUT PLAN - STRUCTURE NO. 10a & 10b

Scale : $1'' = 10'-0''$

- ### LEGEND

- ### 9. Concrete Design stresses :

ESTIMATED QUANTITIES

Structural Excavation	799 c.y.
Concrete, except for footings (Lump Sum)	582 c.y.
Prestressed Girders, Type IV (Lump Sum)	1,625 l.f.
Reinforcing Steel (Lump Sum)	172,830 lbs.
Prestressed Piles, Type I	
Furnishing piles	2,173 l.f.
Driving piles	1,958 l.f.
Pile buildup or extension	Force account
Filter Materials	24 c.y.
Metal Bridge Railing (Single Rail Type)	788 l.f.
Concrete Railing & End Post	855 l.f.
Concrete for footings (Lump Sum)	151 c.y.

THIS WORK WAS PREPARED BY
ME ~~OR~~ UNDER MY SUPERVISION.

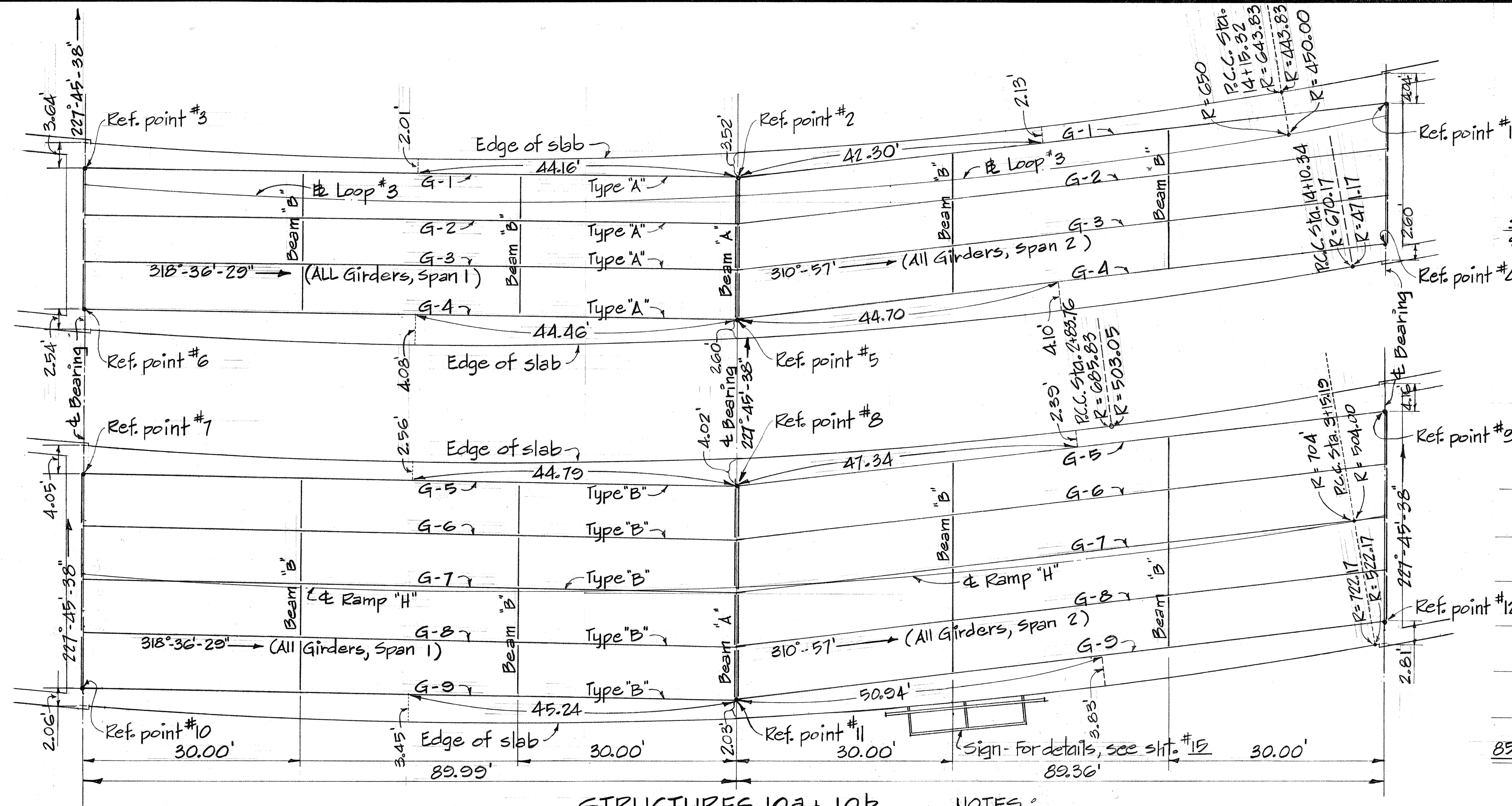
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIAWA INTERCHANGE
UNIT II

STRUCTURES 10a & 10b
LAYOUT PLAN

F.A.I. Proj. No. I - H1 - 1(47): 9

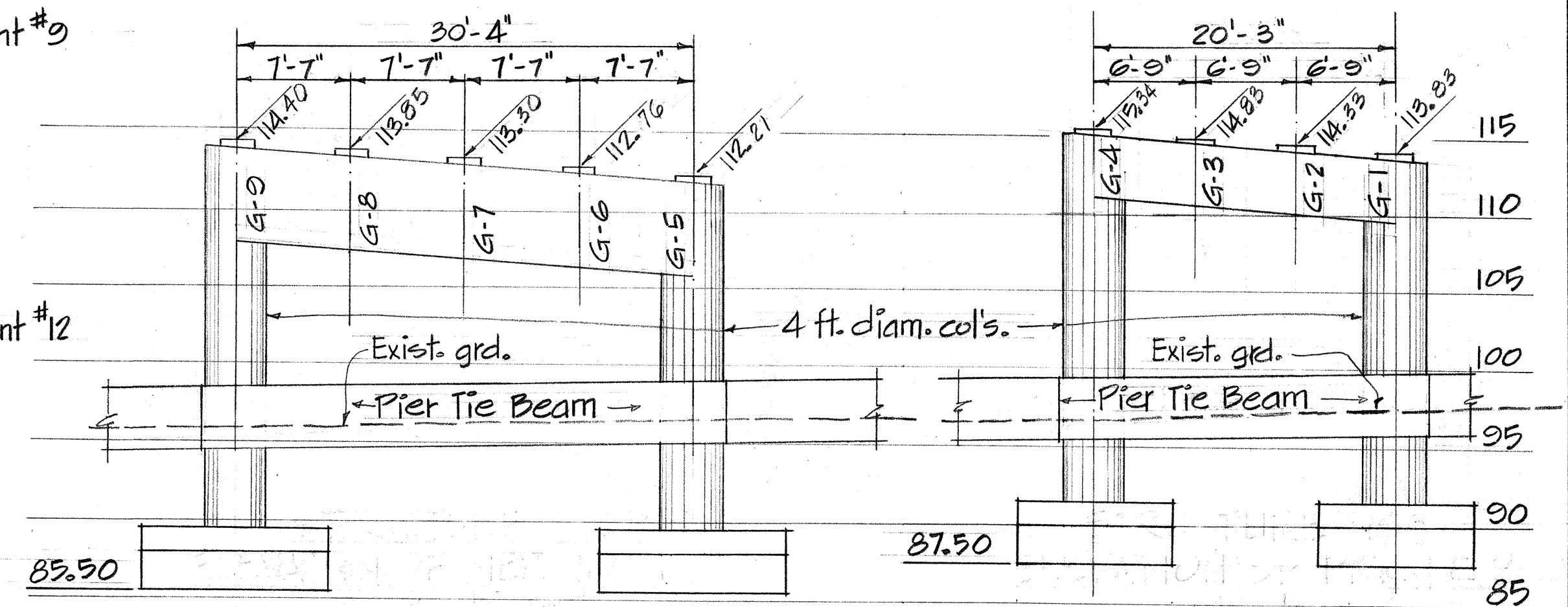
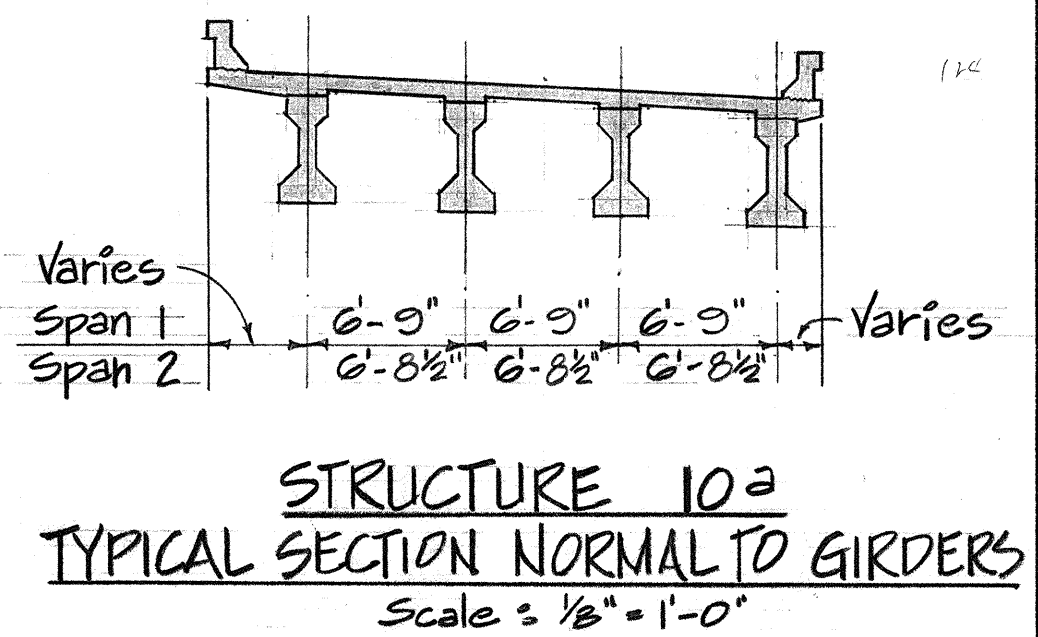
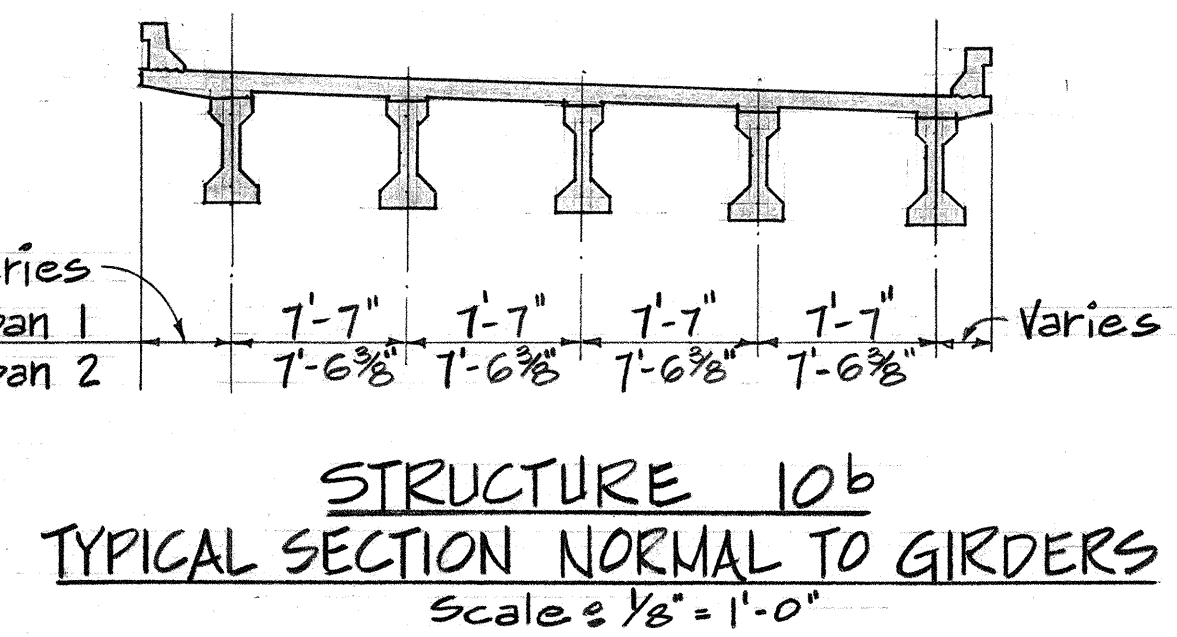
Scale: As shown Date: Aug. 1968

SHEET No. 1 OF 6 SHEETS



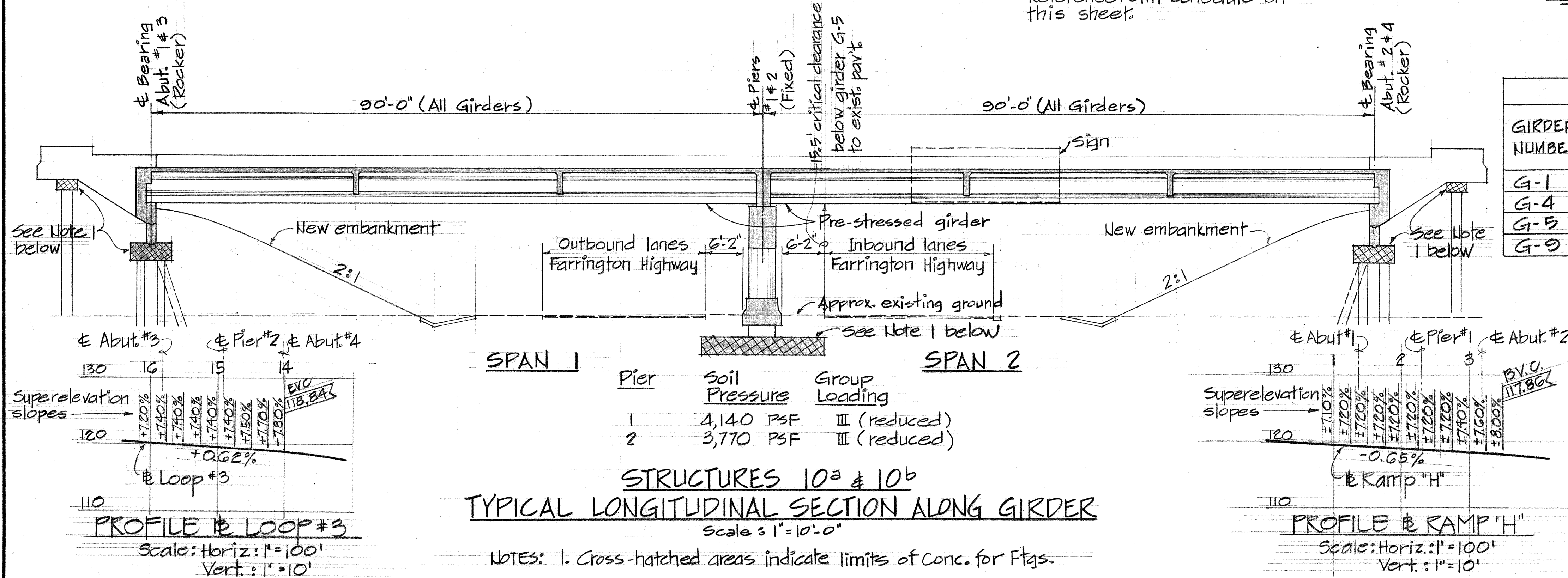
**STRUCTURES 10a & 10b
DECK FRAMING PLAN**
Scale: 1" = 10'-0"

NOTES:
1. For location of reference points, see sheets G, 9, 10, 11, & 12 and Reference Point Schedule on this sheet.



**STRUCTURE 10b
ELEVATION OF PIER NO. 1**
Scale: 1/8" = 1'-0"

**STRUCTURE 10a
ELEVATION OF PIER NO. 2**
Scale: 1/8" = 1'-0"



**STRUCTURES 10a & 10b
TYPICAL LONGITUDINAL SECTION ALONG GIRDER**
Scale: 1" = 10'-0"

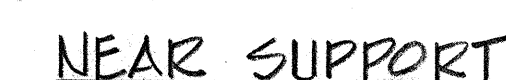
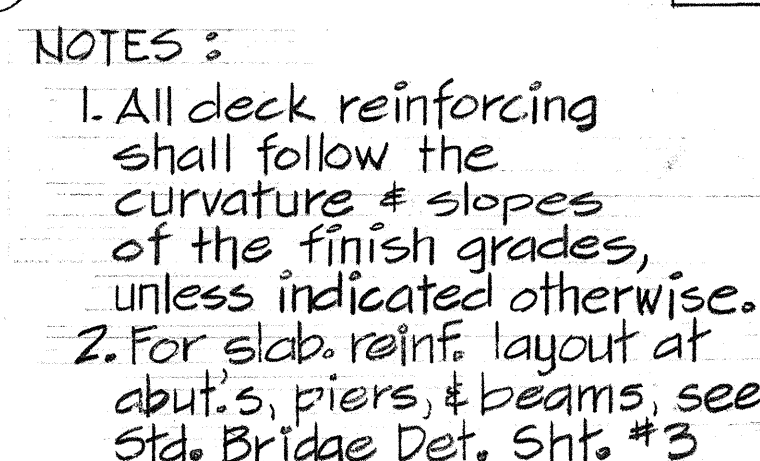
NOTES: 1. Cross-hatched areas indicate limits of Conc. for Ftgs.

GIRDER NUMBER	ABUTMENT			PIER			ABUTMENT		
	Ref. point number	station	Offset from baseline	Ref. point number	station	Offset from baseline	Ref. point number	station	Offset from baseline
G-1	3	15+82.38	R 2.54'	2	14+91.94	R 2.66'	1	14+01.51	R 2.21'
G-4	6	15+80.00	L 17.63'	5	14+93.00	L 17.57'	4	14+05.42	L 17.64'
G-5	7	1+37.97	L 14.13'	8	2+29.88	L 14.15'	9	3+21.86	L 14.44'
G-9	10	1+40.35	R 16.10'	11	2+28.40	R 16.14'	12	3+16.46	R 15.40'

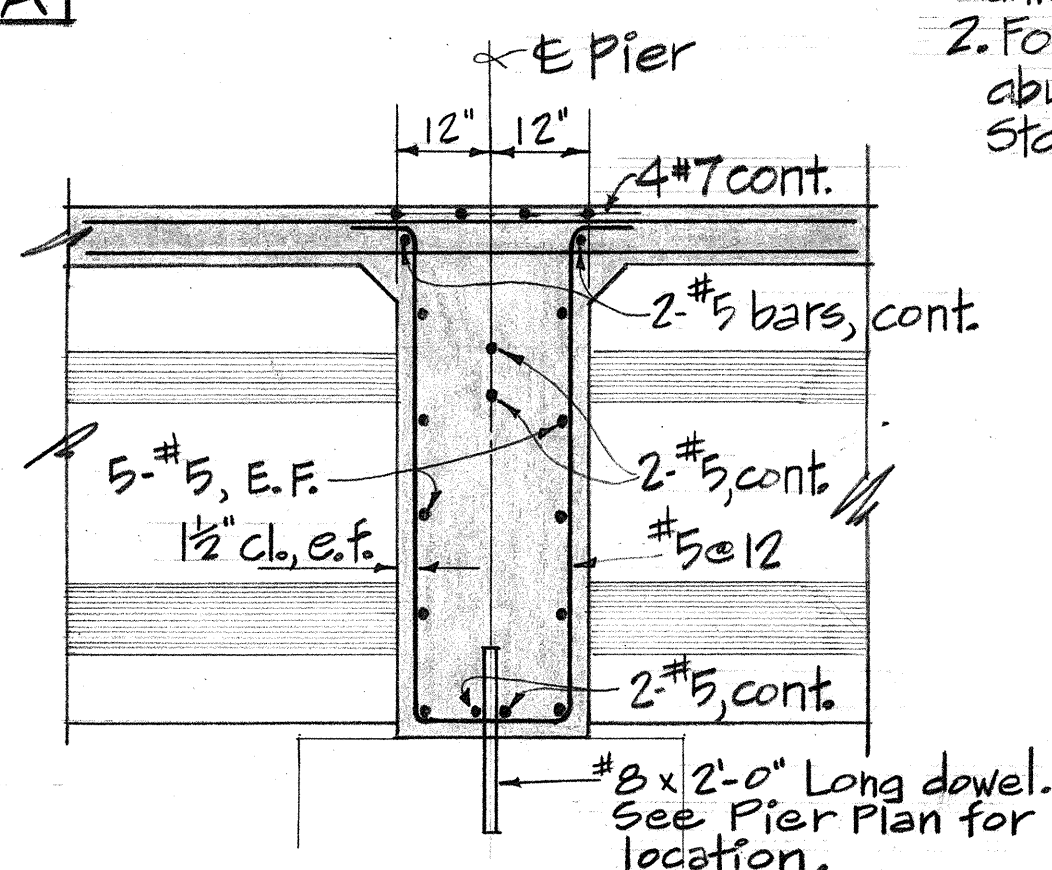


THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Paul J. Smith

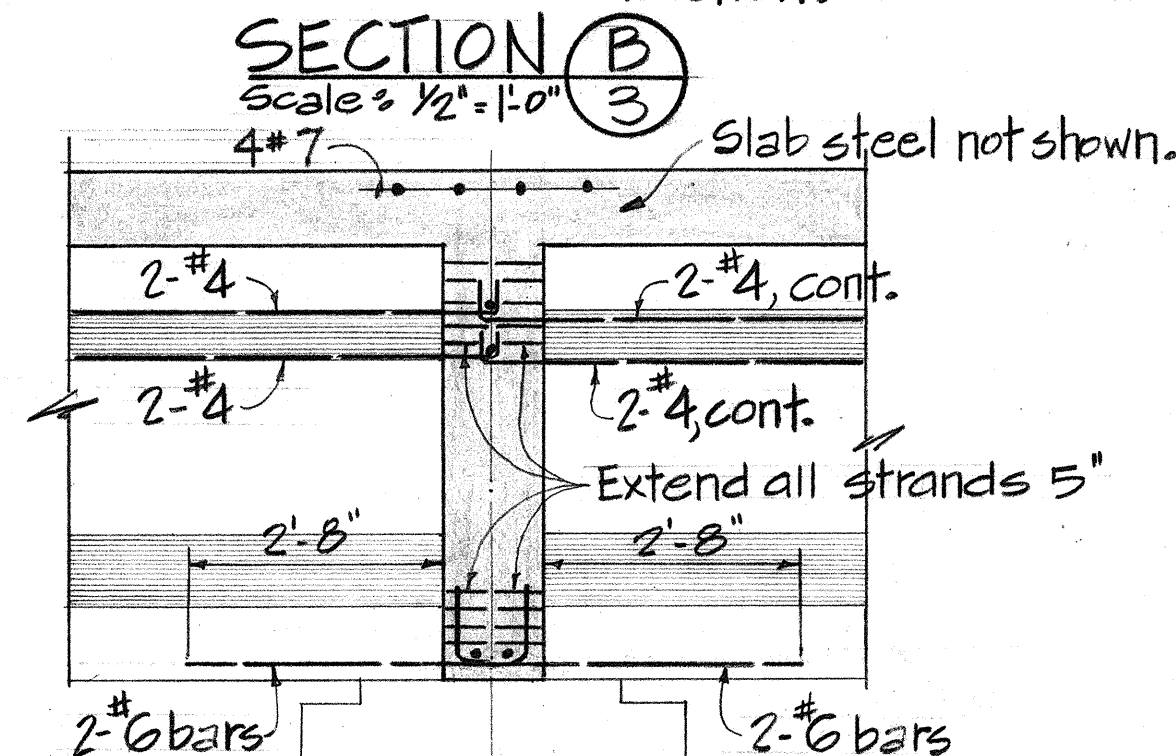
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIKAWA INTERCHANGE
UNIT II
STRUCTURES 10a & 10b
FRAMING PLAN, SECTIONS,
& DETAILS
F.A.I. Proj. No. 1-H-1(47)-9
Scale: As Shown Date: Aug. 1968
SHEET No. 2 OF 16 SHEETS



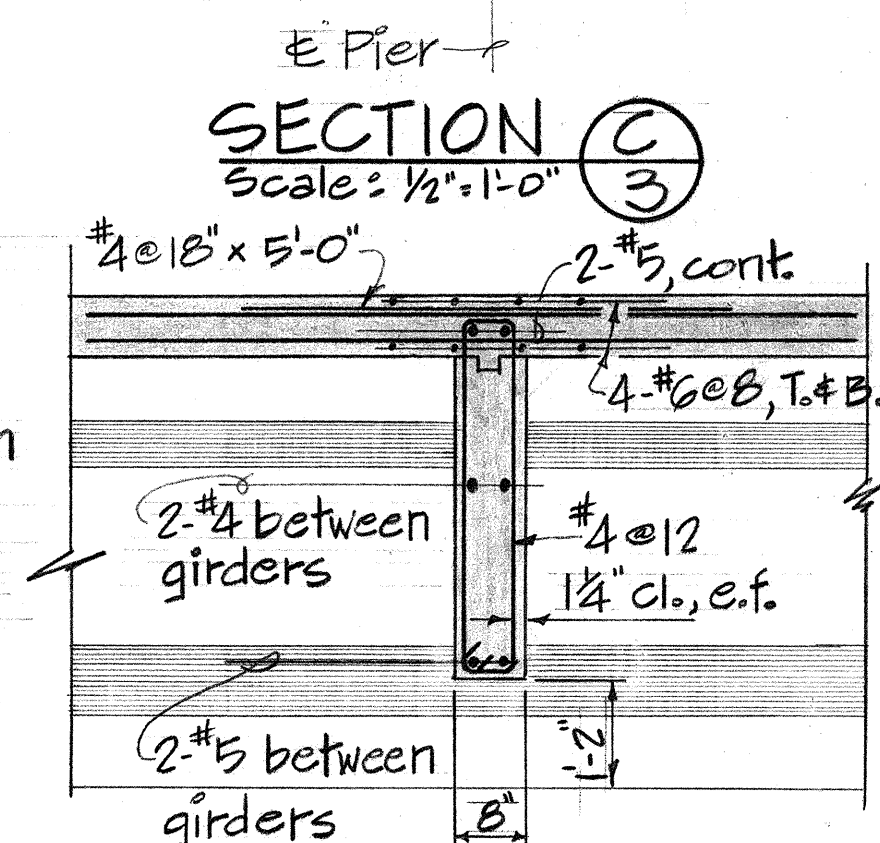
STRUCTURE 10a
TYPICAL SECTION NORMAL TO ROADWAY



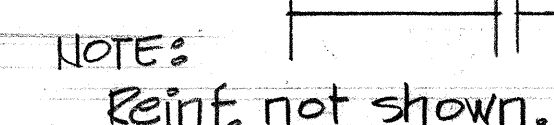
SECTION (B)
Scale: $\frac{1}{2}'' = 1'-0''$



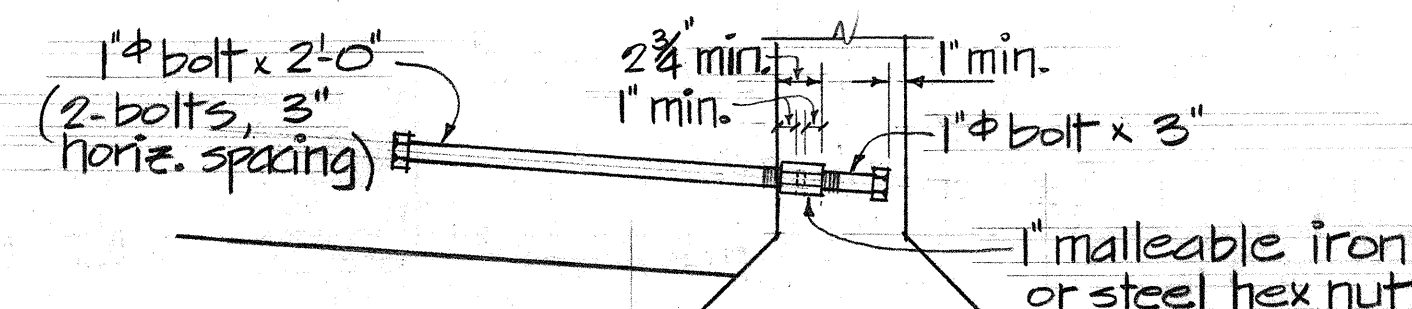
SECTION A
Scale: 1/2" = 1'-0"



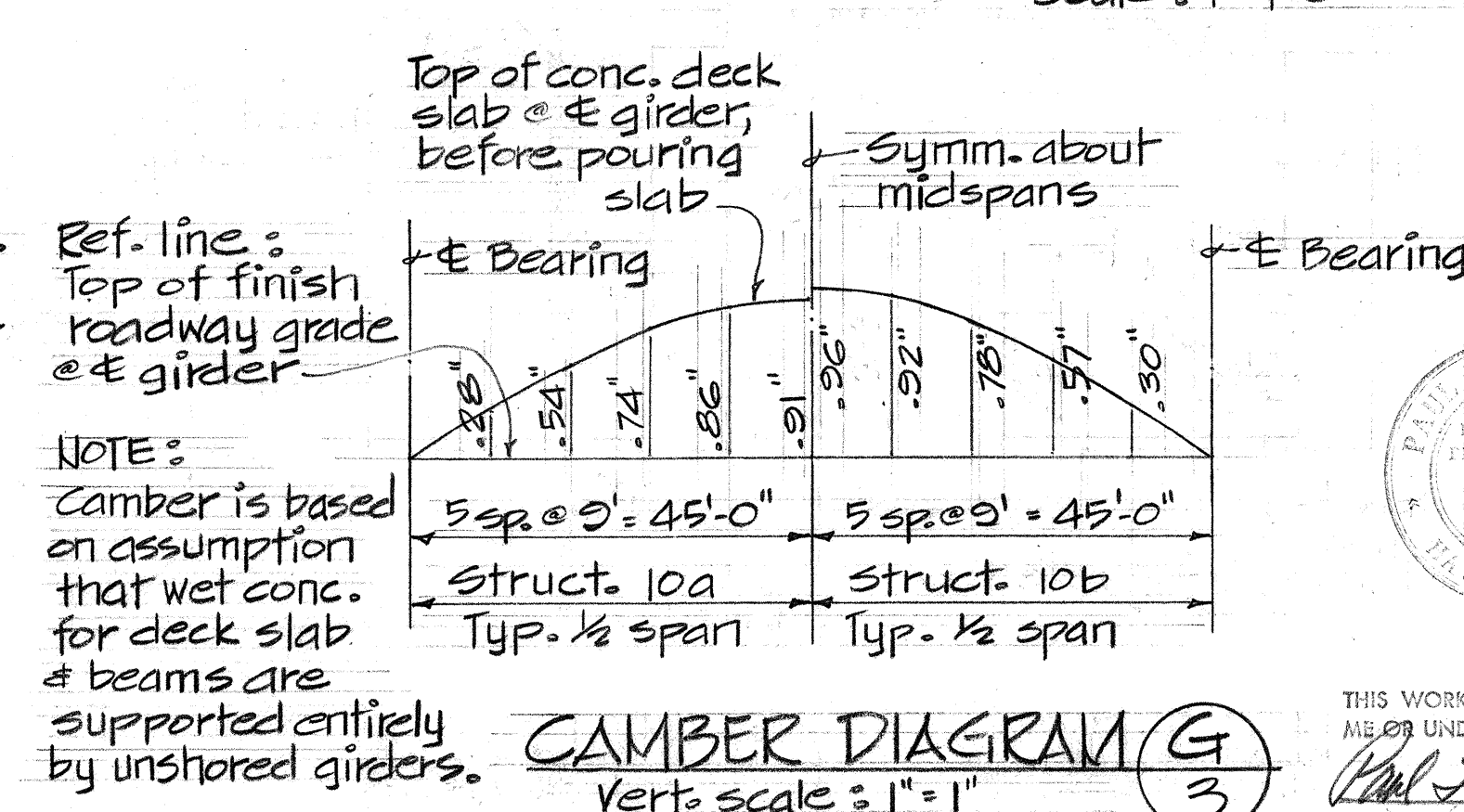
ELEVATION OF BEAM "B"
Scale: $\frac{1}{2}" = 1'-0"$



DETAIL OF CONT. SLAB OVER PIER (E)
Scale: $\frac{1}{2}" = 1'-0"$ 3



INSERT ASSEMBLY DETAIL (F)
Scale: 1" = 1'-0" 3

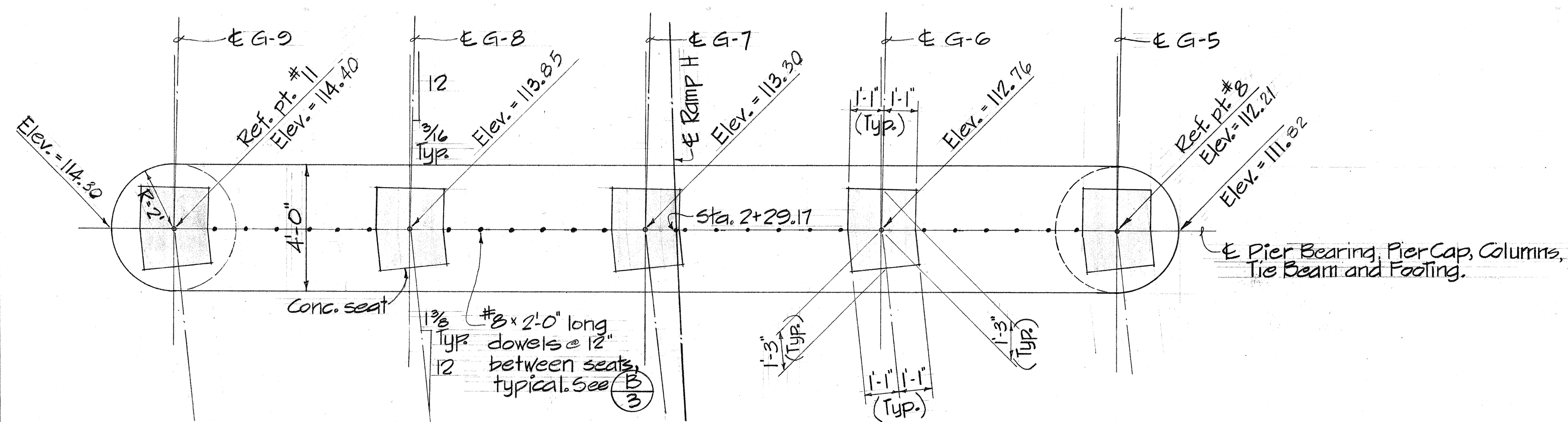


CAMBER DIAGRAM (G)
Vert. scale: 1" = 1"

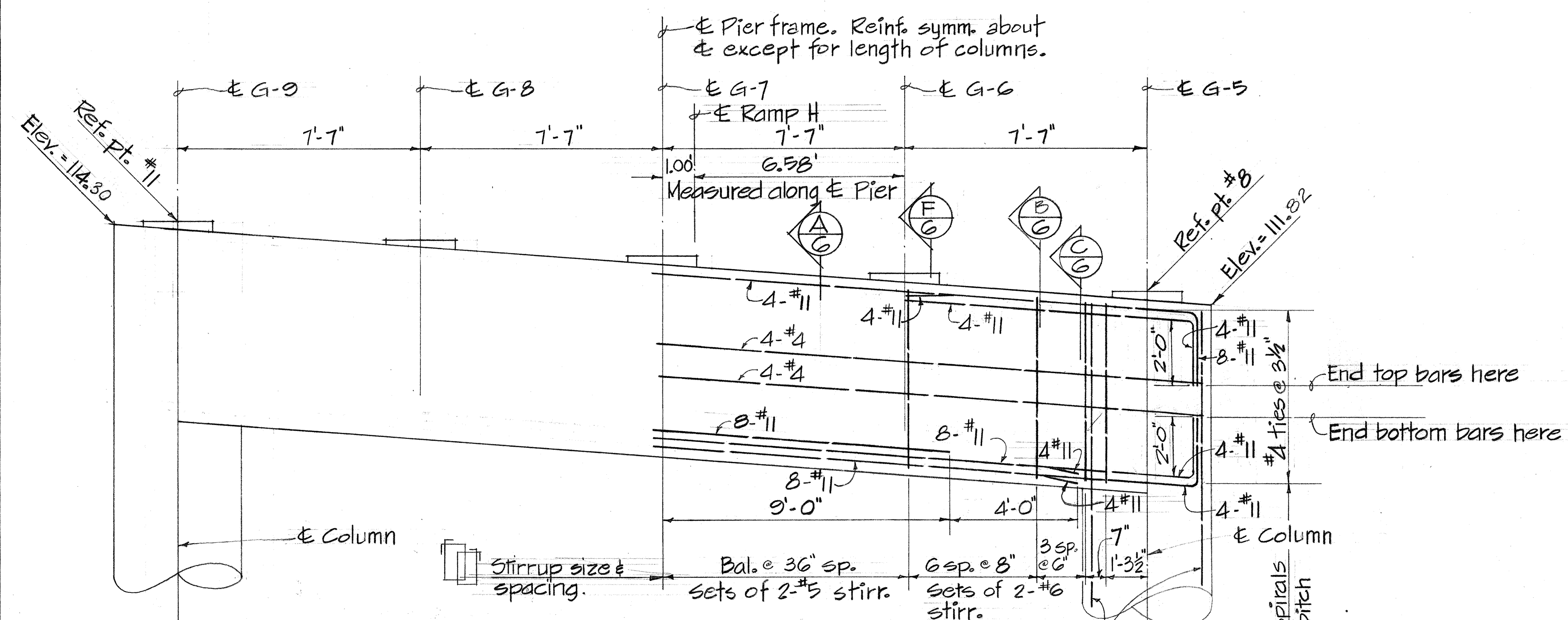
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Scale : As shown Date : Aug. 1968

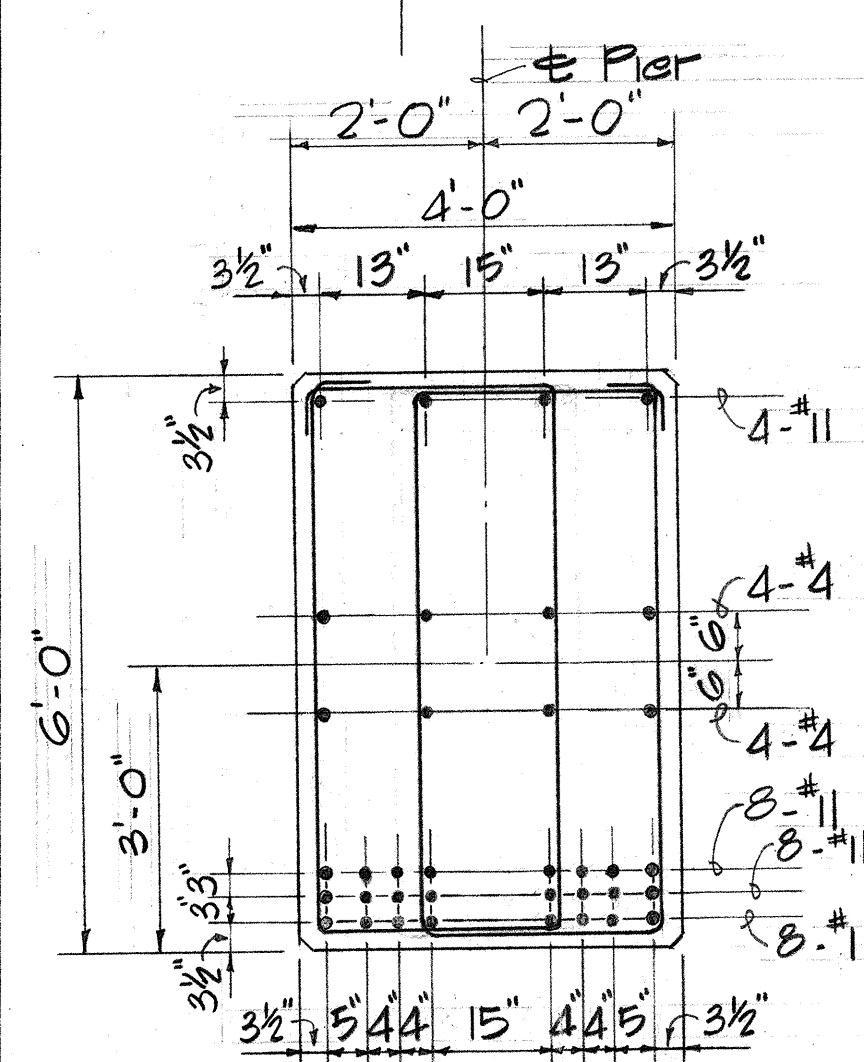
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-111-1(47)9	1968	92	238



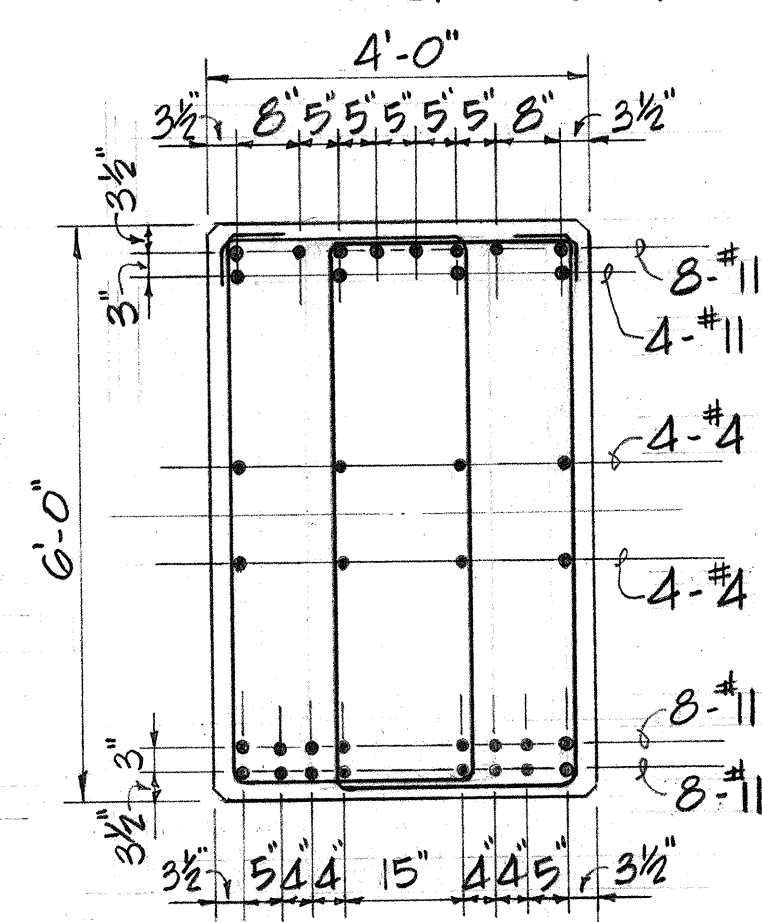
PLAN OF PIER NO. 1
Scale: $\frac{3}{8}'' = 1'-0''$



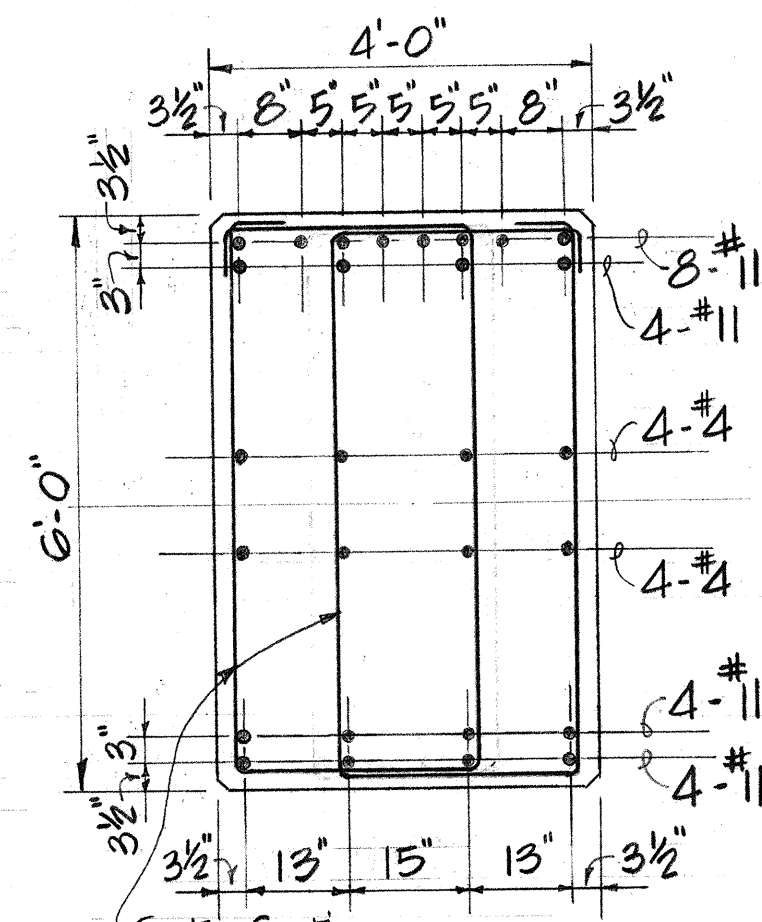
ELEVATION OF PIER CAP NO. 1
Scale: $\frac{3}{8}'' = 1'-0''$



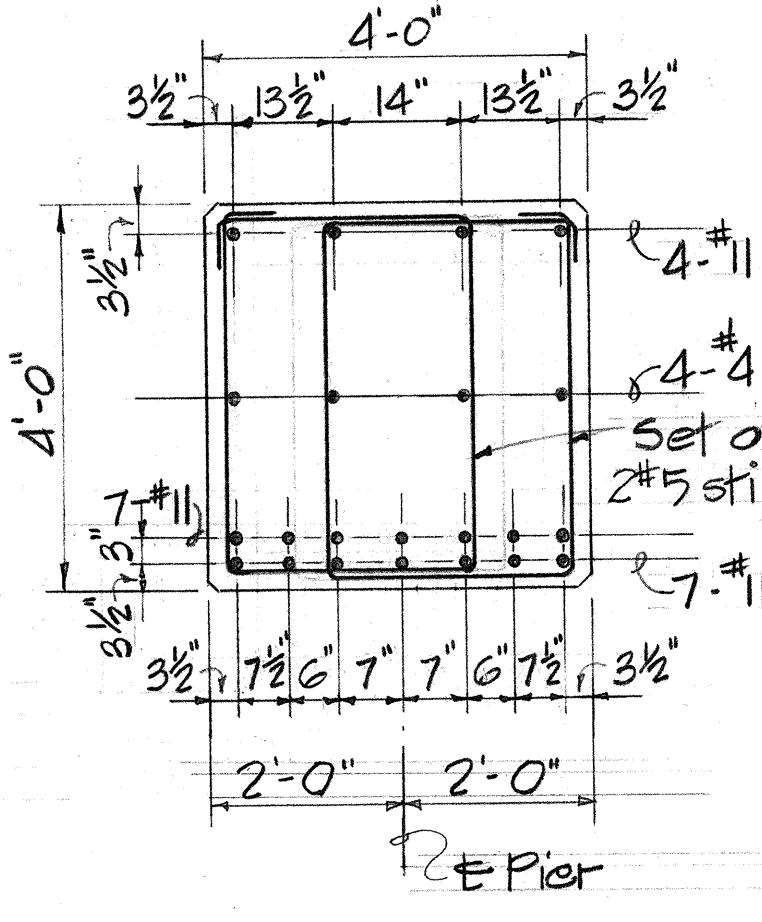
SECTION A
Scale: $\frac{1}{2}'' = 1'-0''$



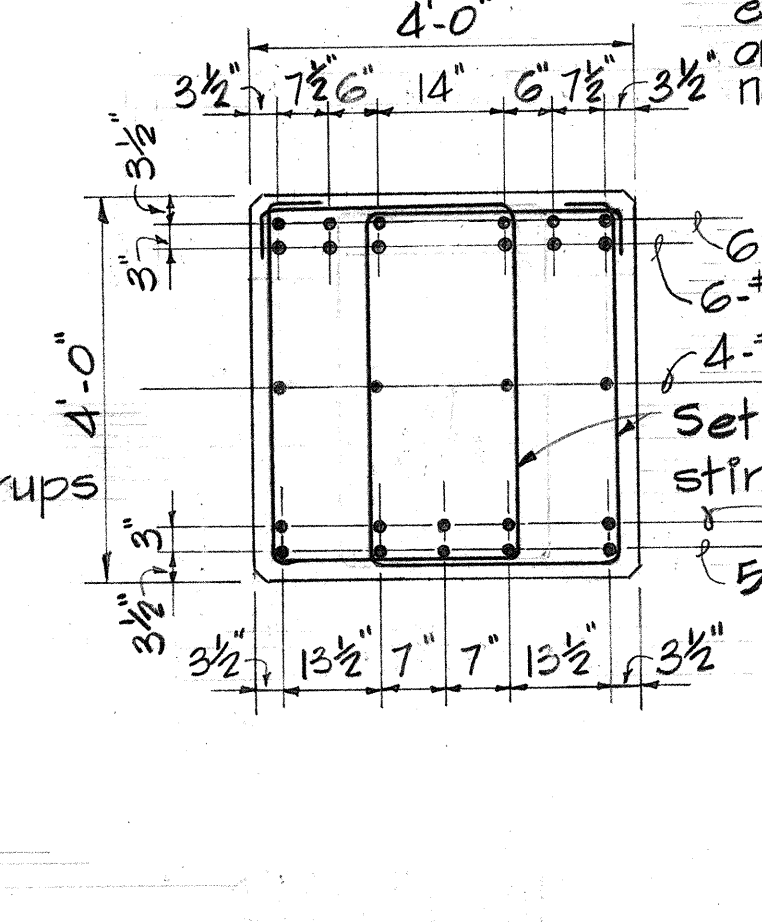
SECTION B
Scale: $\frac{1}{2}'' = 1'-0''$



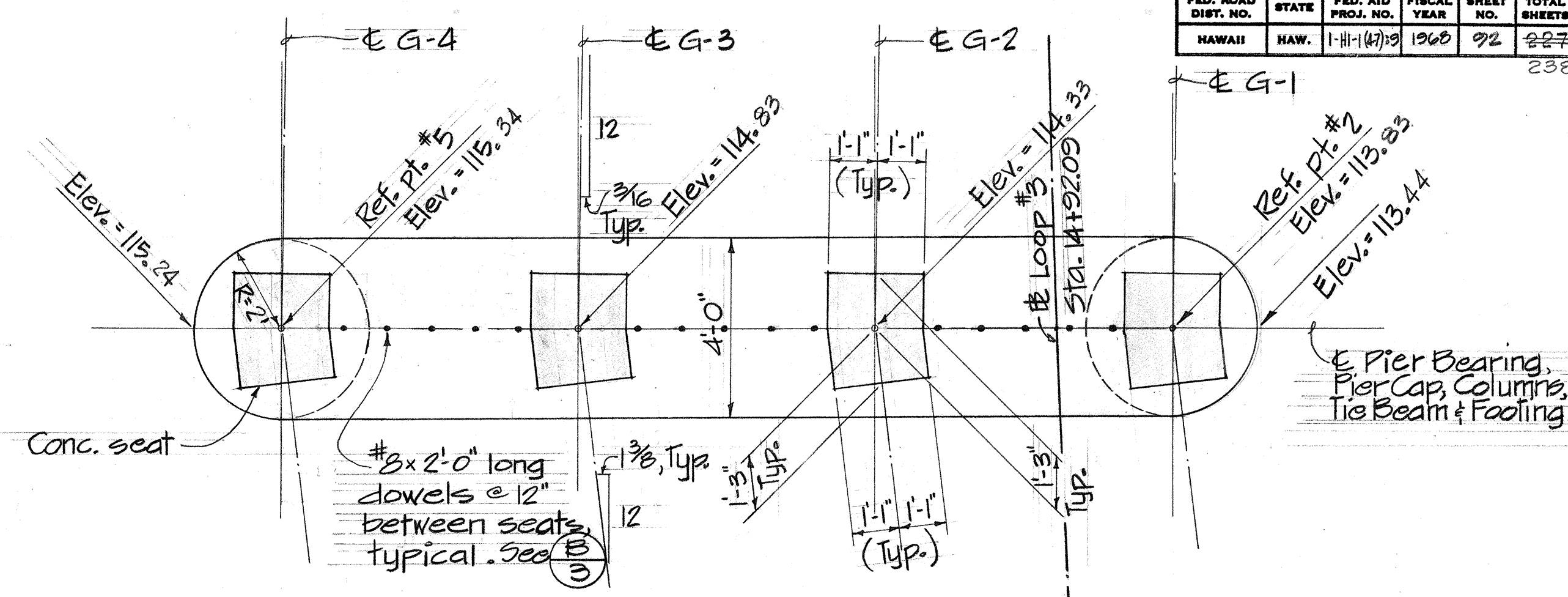
SECTION C
Scale: $\frac{1}{2}'' = 1'-0''$



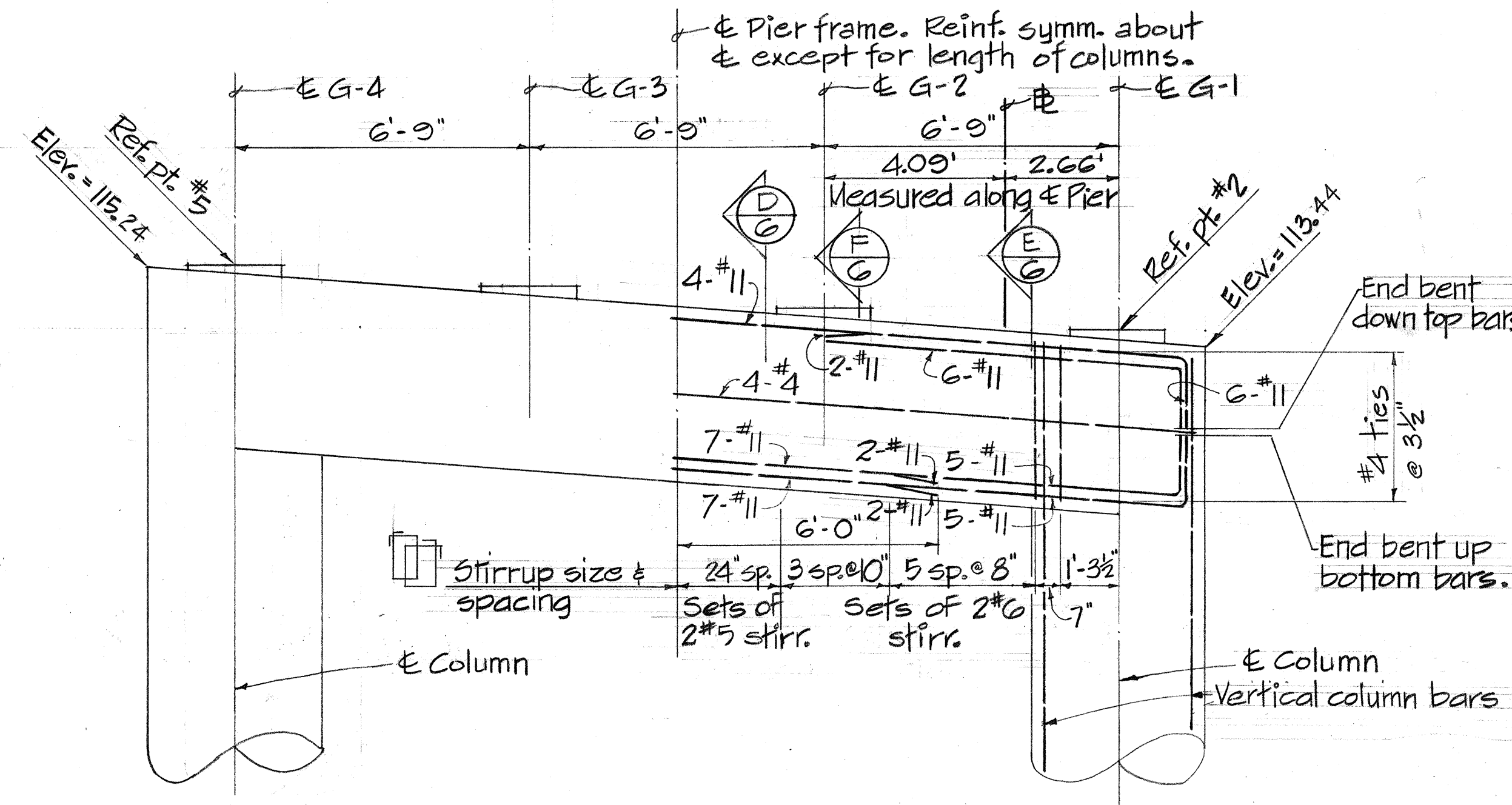
SECTION D
Scale: $\frac{1}{2}'' = 1'-0''$



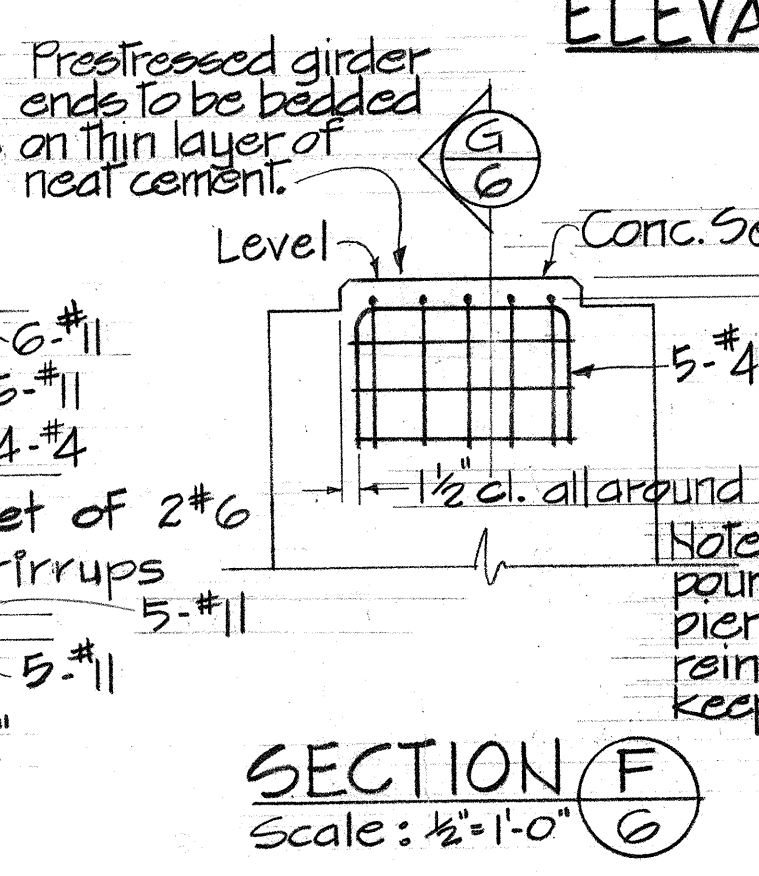
SECTION E
Scale: $\frac{1}{2}'' = 1'-0''$



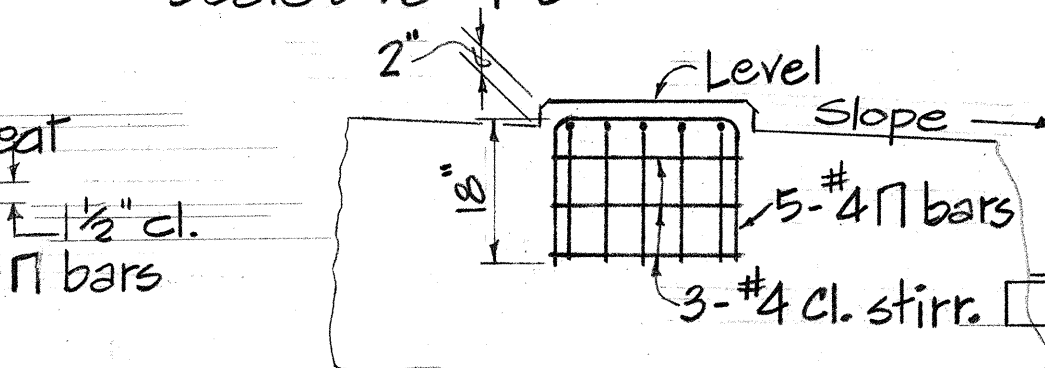
PLAN OF PIER NO. 2
Scale: $\frac{3}{8}'' = 1'-0''$



ELEVATION OF PIER CAP NO. 2
Scale: $\frac{3}{8}'' = 1'-0''$



SECTION F
Scale: $\frac{1}{2}'' = 1'-0''$



SECTION G
Scale: $\frac{1}{2}'' = 1'-0''$



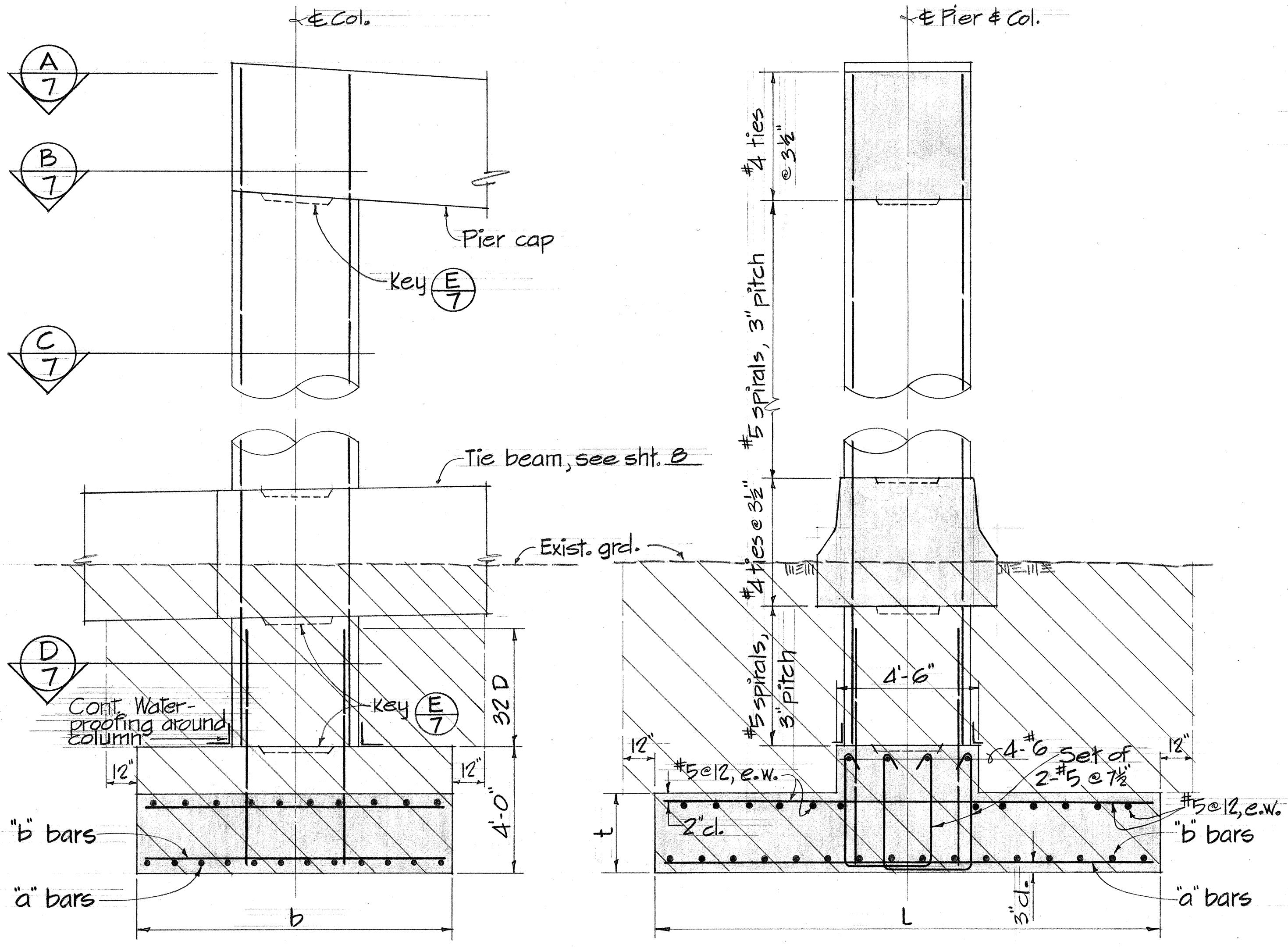
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIKAWA INTERCHANGE
UNIT II
STRUCTURES 10a & 10b
PIER DETAILS
F.A.I. Proj. No. I-111-1(47)-9
Scale: As shown Date: Aug. 1968
SHEET No. 6 OF 16 SHEETS

STRUCTURE 10a

STRUCTURE 10b

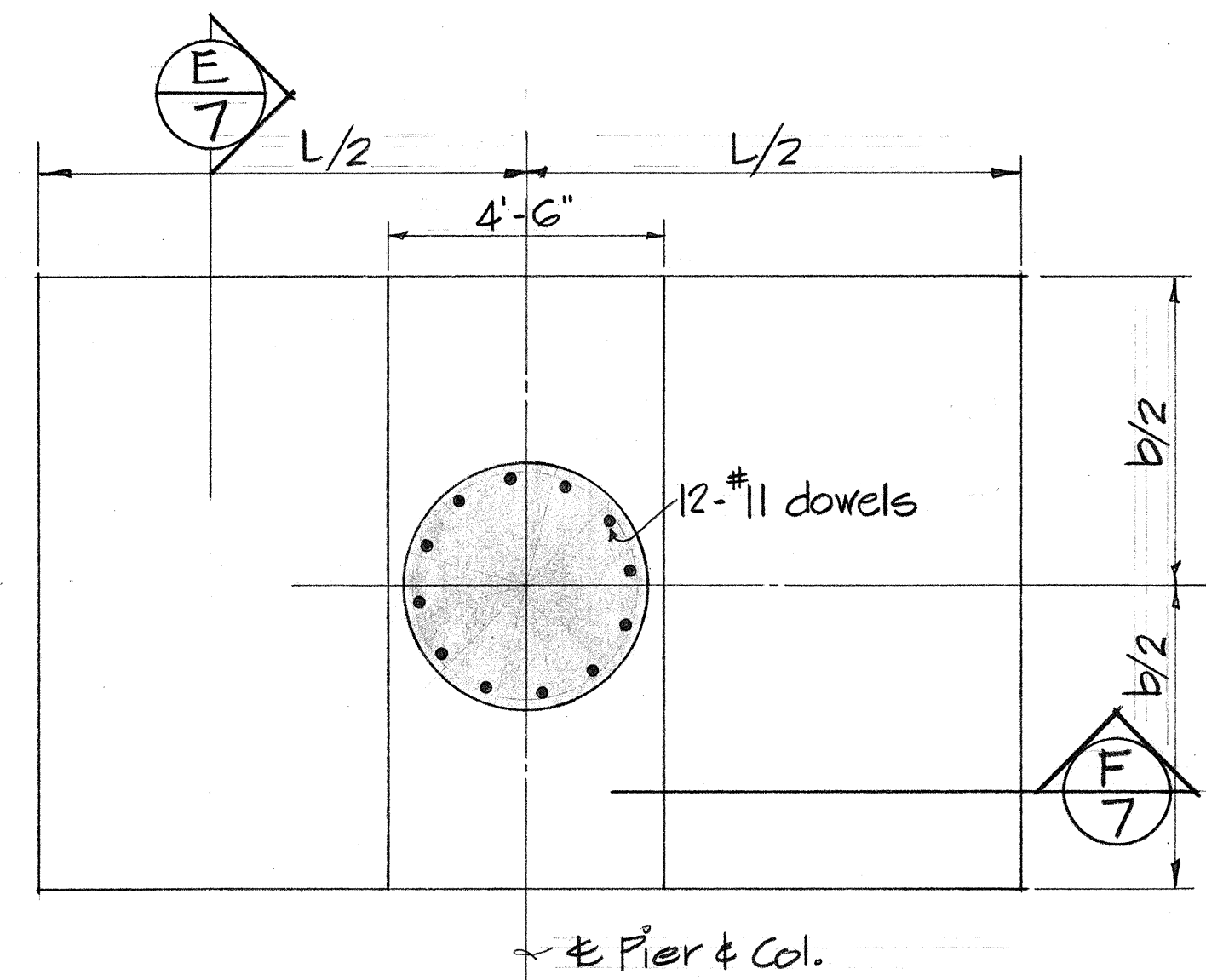
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAU.	1-11-107-3	1968	93	238

- NOTES:
- Concrete for pier columns shall be Class E-1.
 - Column vertical bars & vertical dowels from footing shall be high strength, ASTM A-432.



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

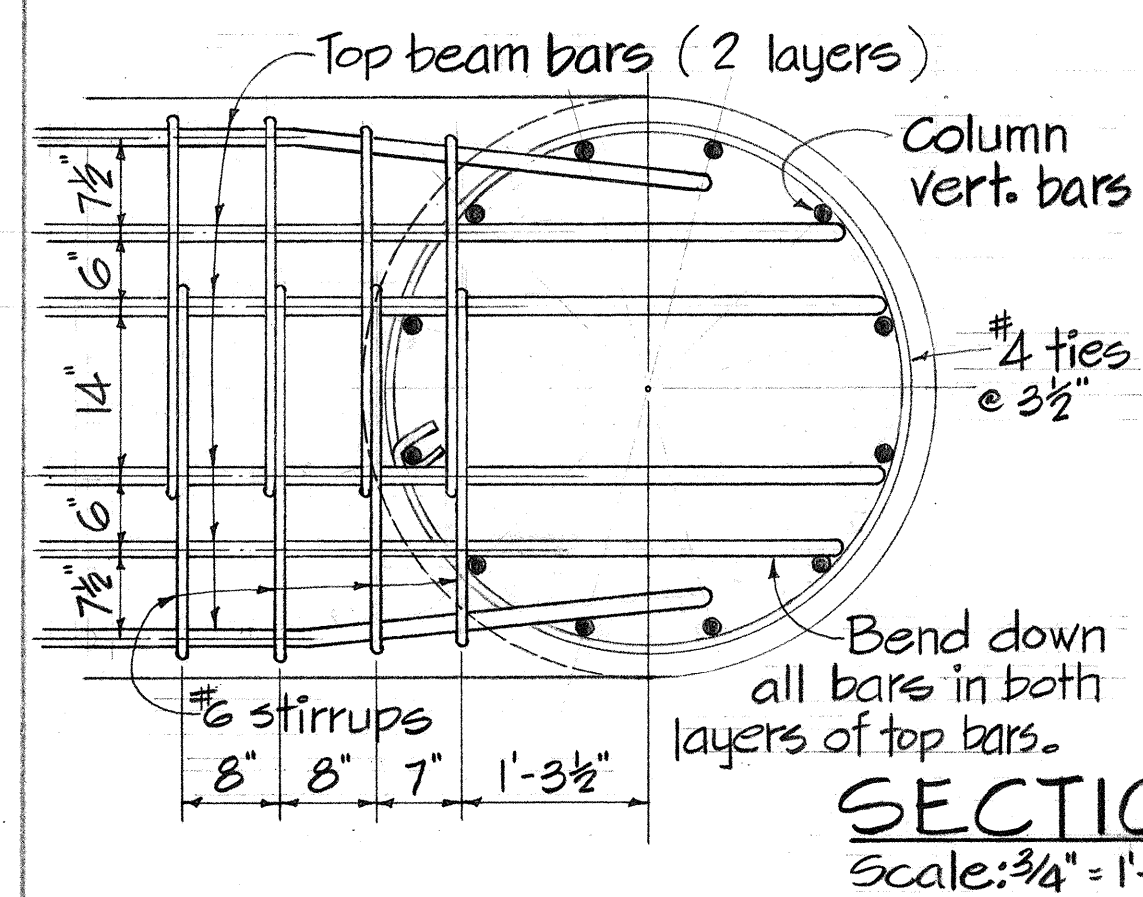
SECTION F
Scale: 3/8" = 1'-0"



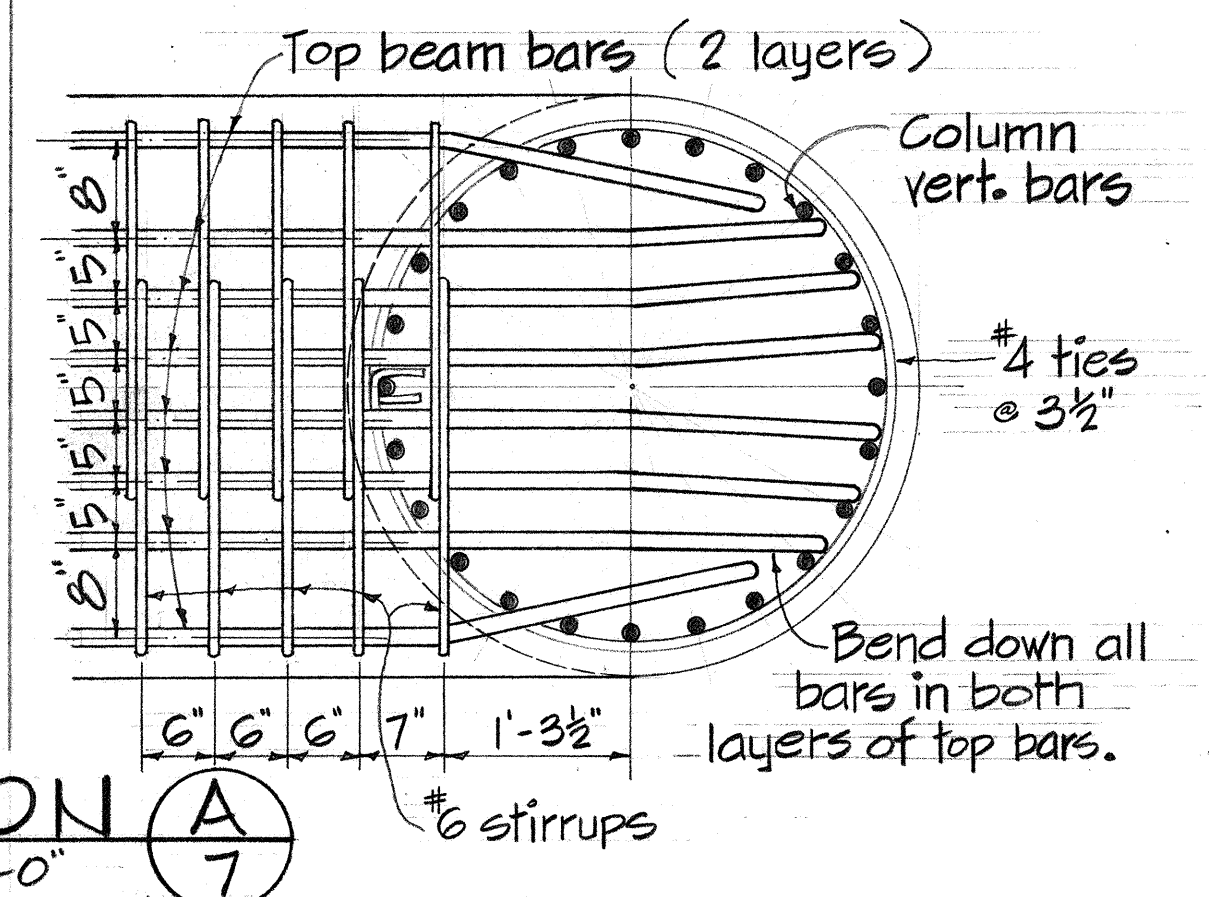
PIER FOOTING PLAN
Scale: 3/8" = 1'-0"

PIER FOOTING SCHEDULE					
	b	L	t	"a" bars	"b" bars
PIER #2 STRUCT. 10a	12'-0"	16'-0"	2'-6"	#11 @ 10"	#8 @ 12"
PIER #1 STRUCT. 10b	12'-0"	18'-0"	2'-8"	#11 @ 8 1/2"	#8 @ 12"

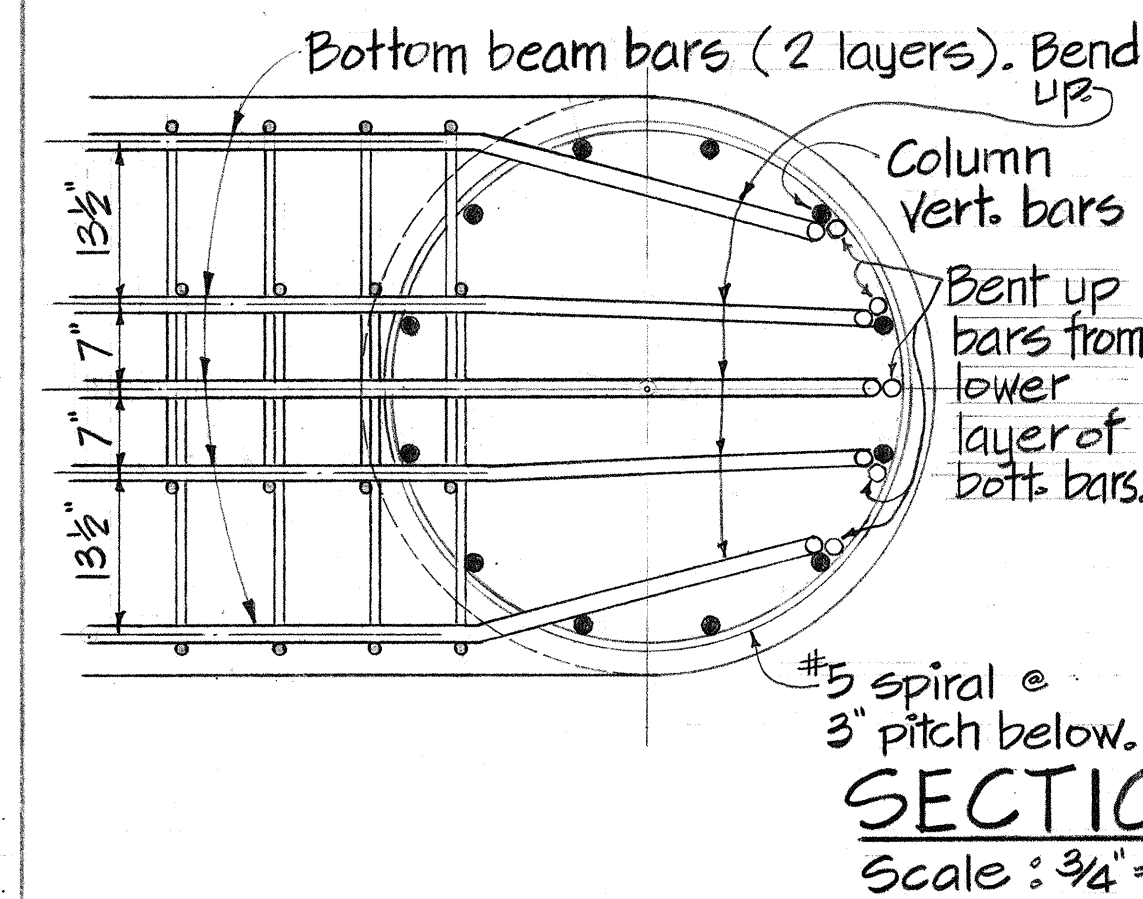
See sht. #2 for bottom of footing elevation.



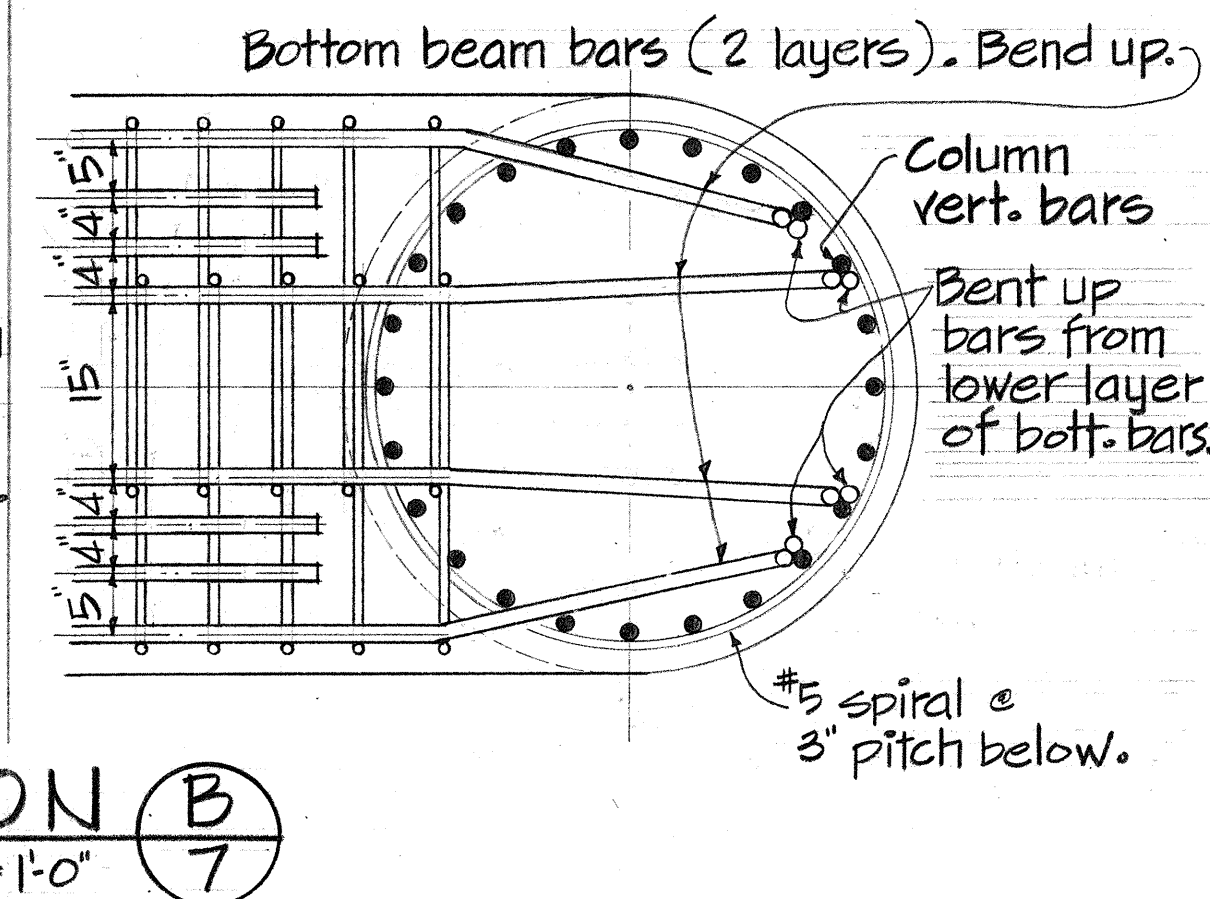
SECTION A
Scale: 3/4" = 1'-0"



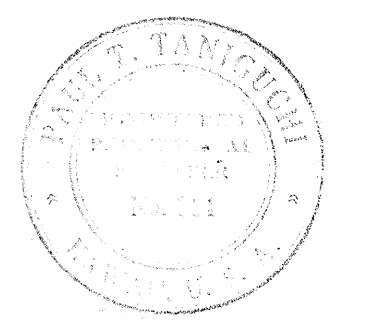
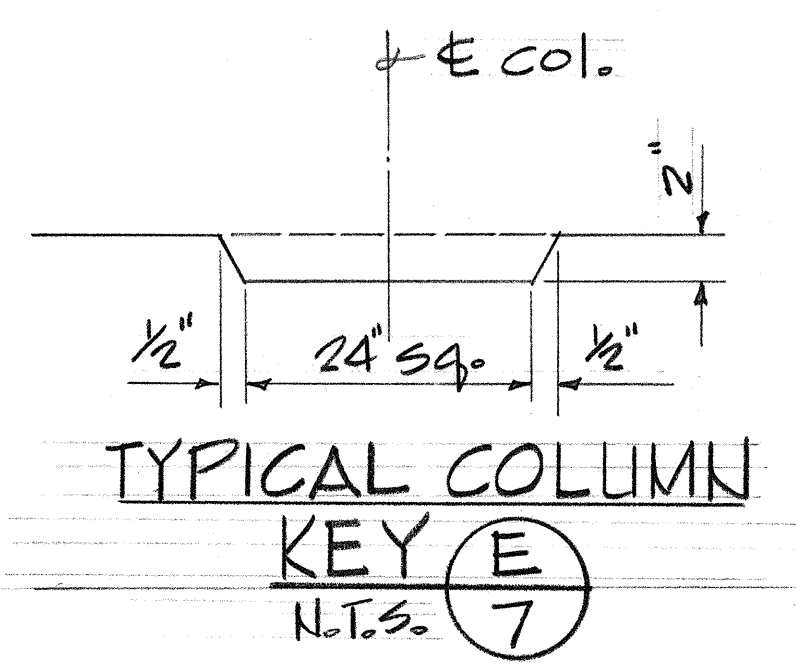
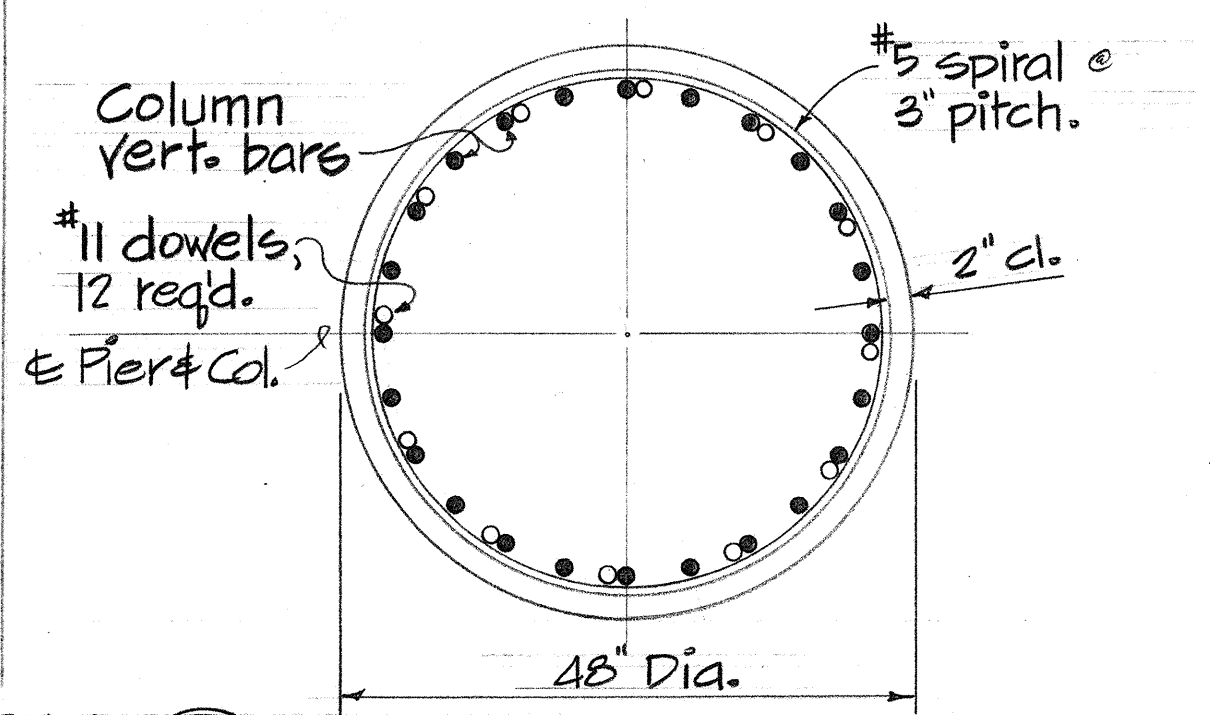
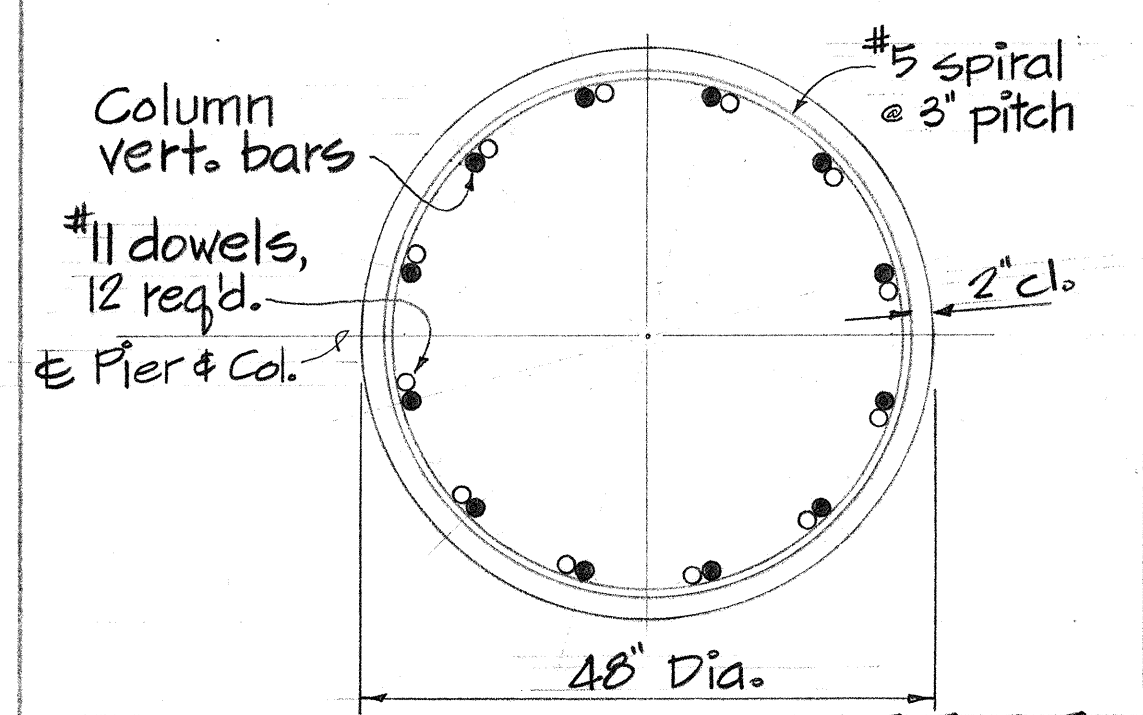
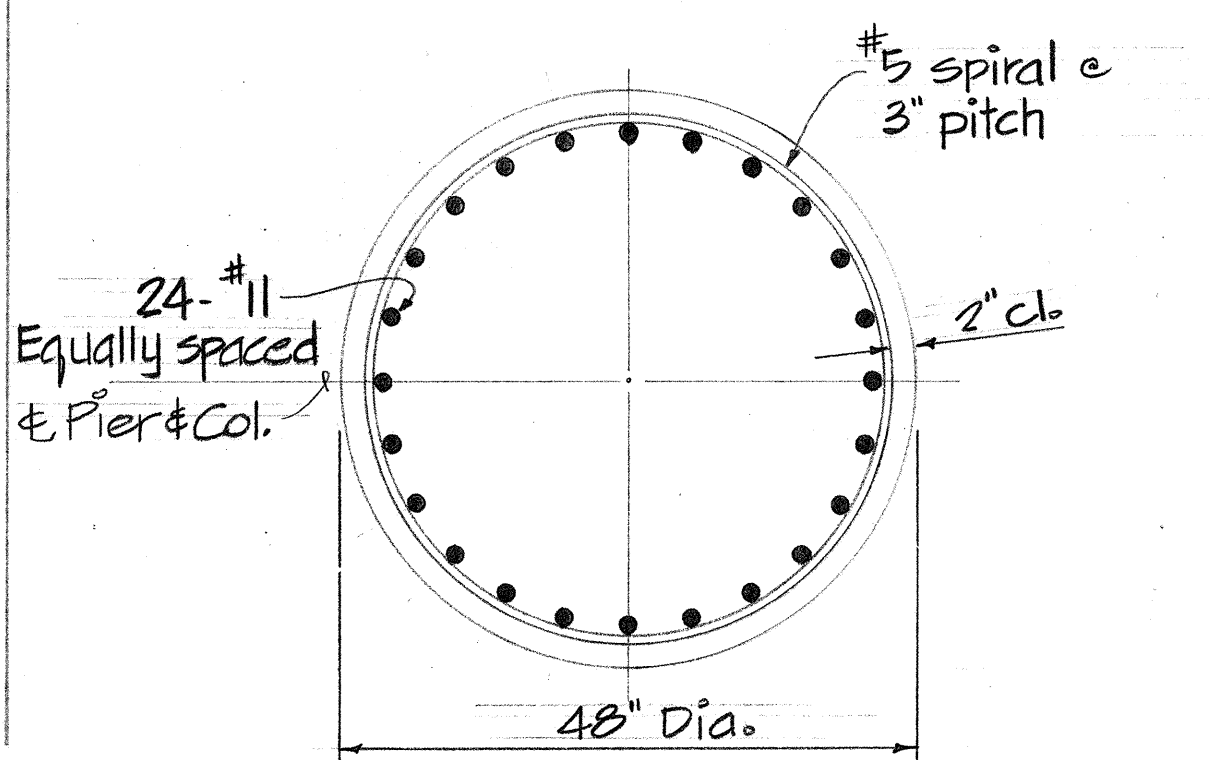
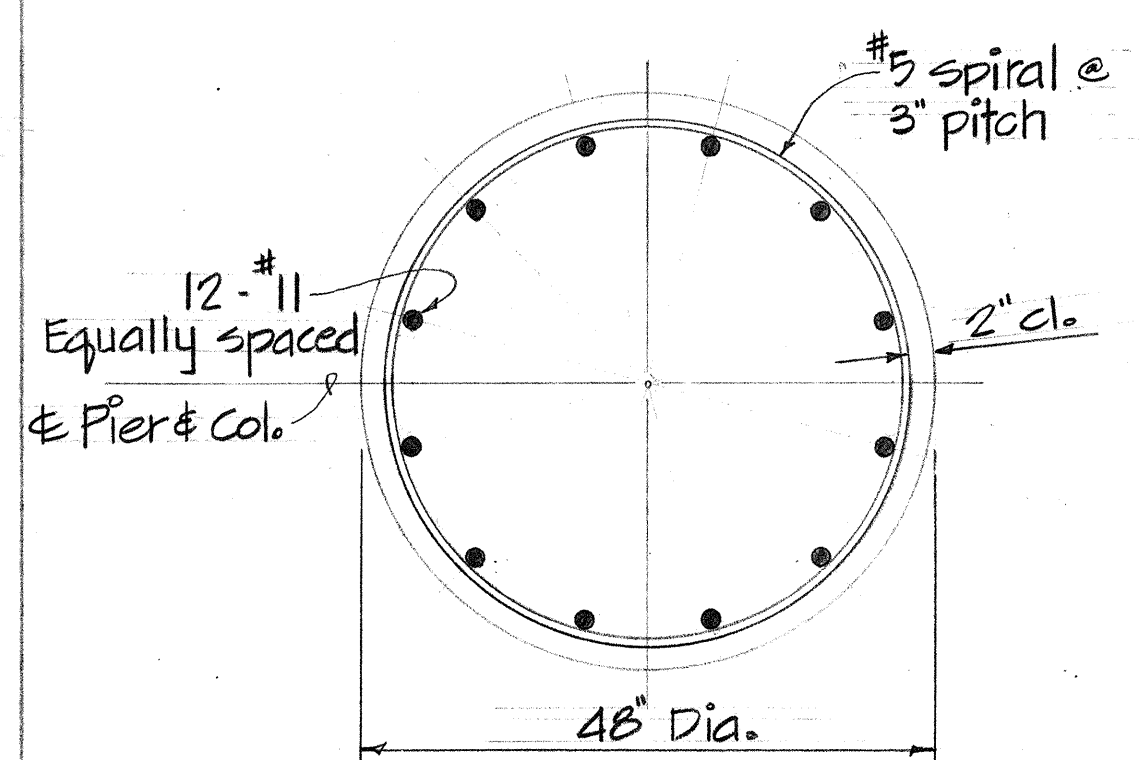
SECTION B
Scale: 3/4" = 1'-0"



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



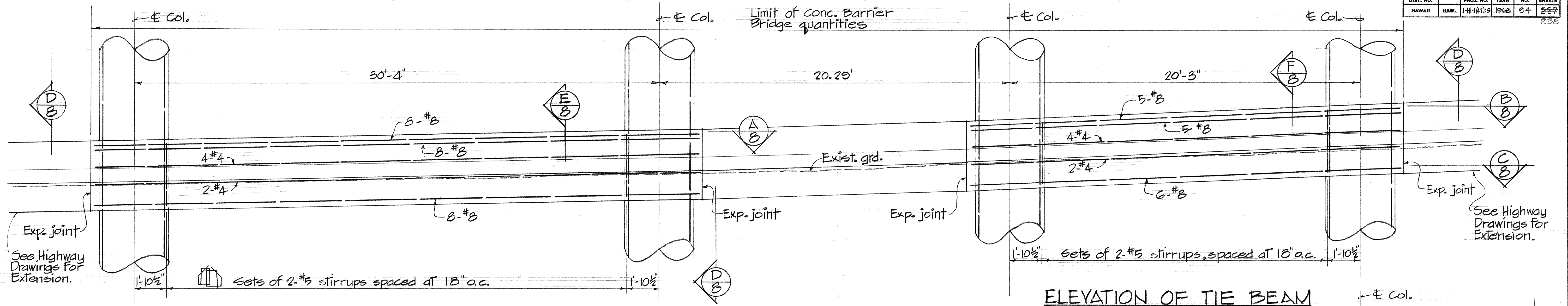
SECTION D
Scale: 3/4" = 1'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Paul J. Hargrave

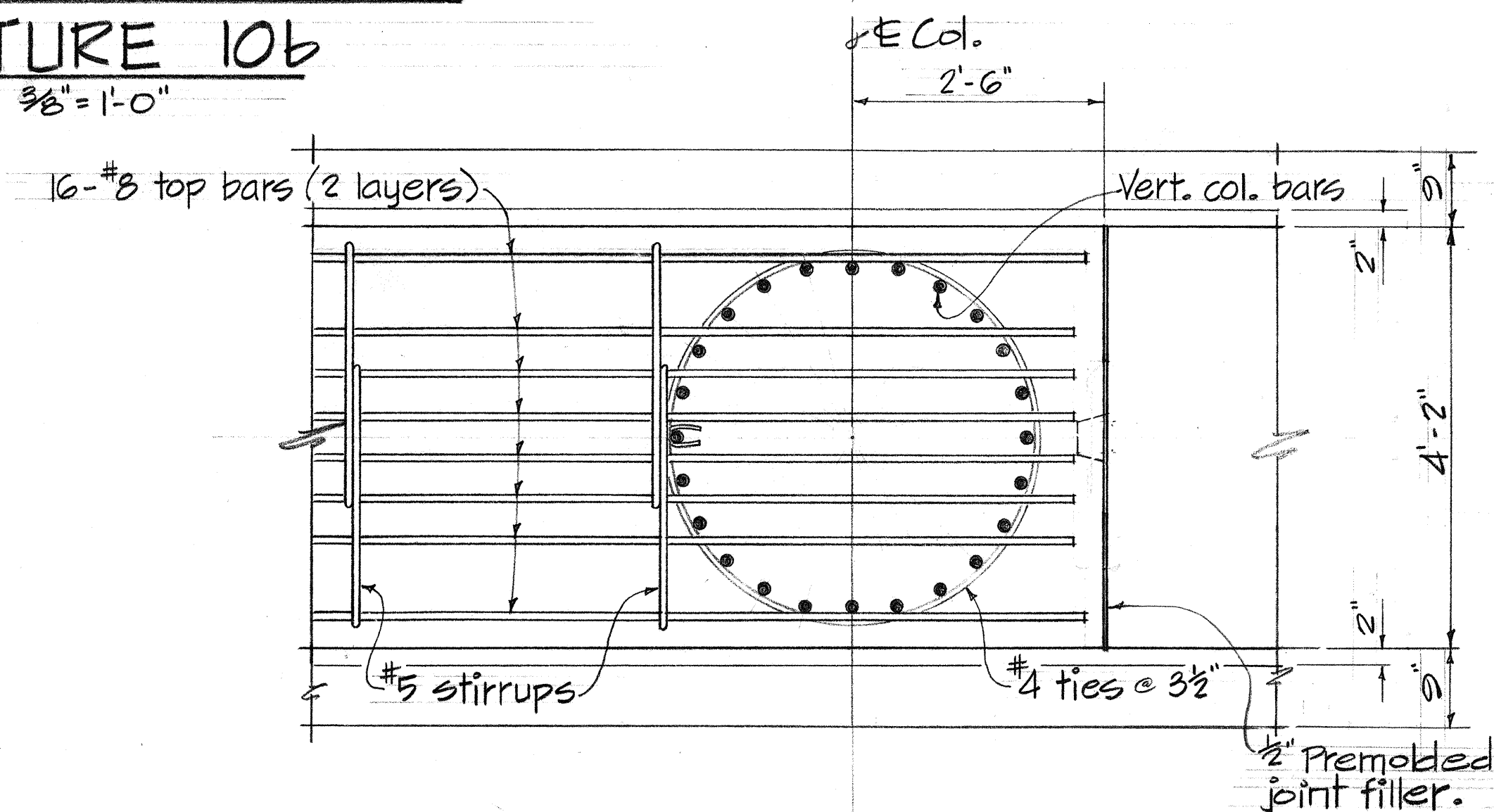
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIKAWA INTERCHANGE
UNIT II
STRUCTURES 10a & 10b
PIER DETAILS
F.A.I. Proj. No. I-11-1(47): 9
Scale: As shown Date: Aug. 1968
SHEET No. 7 OF 16 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-147-9	1968	24	227
					233



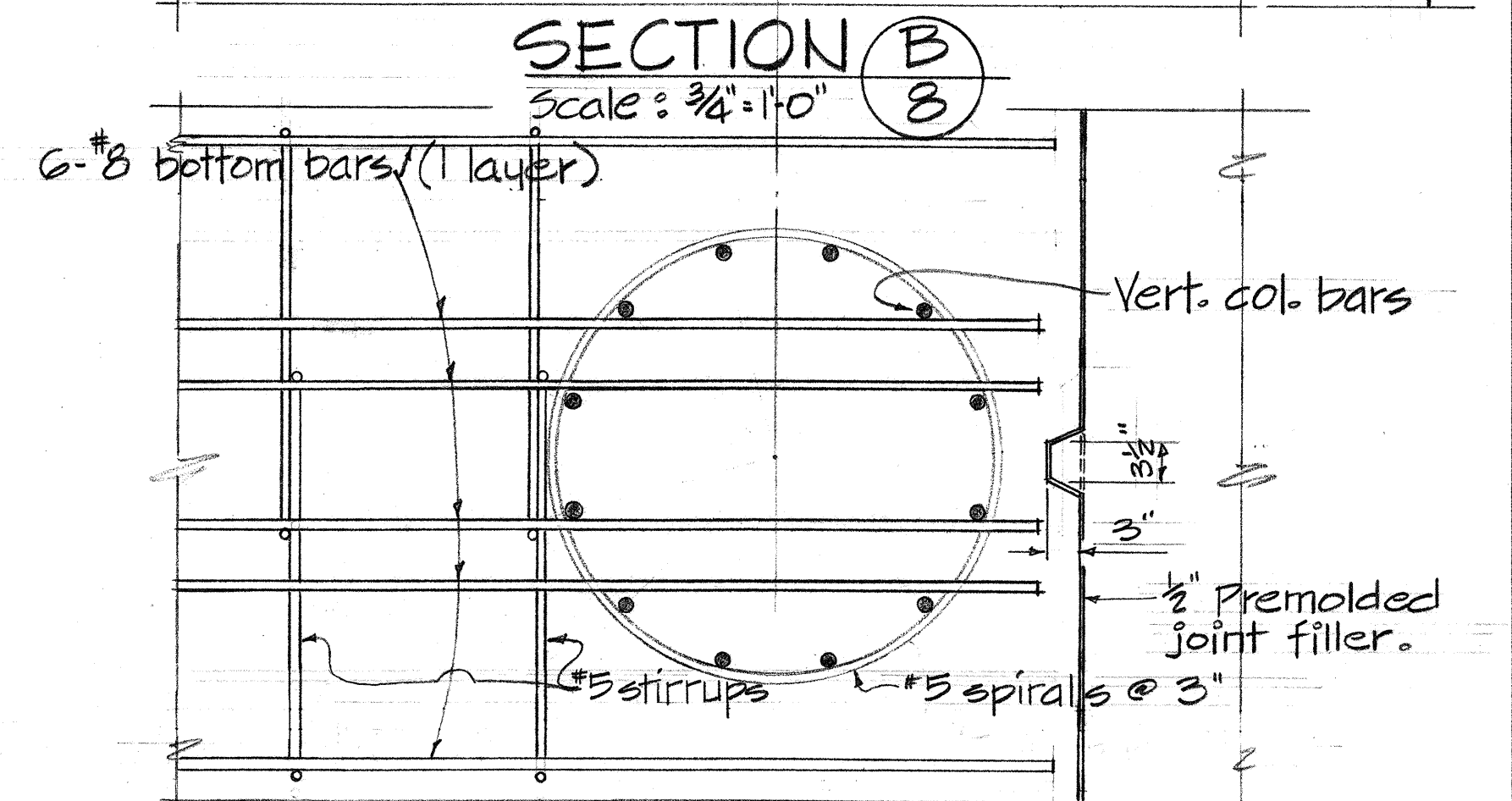
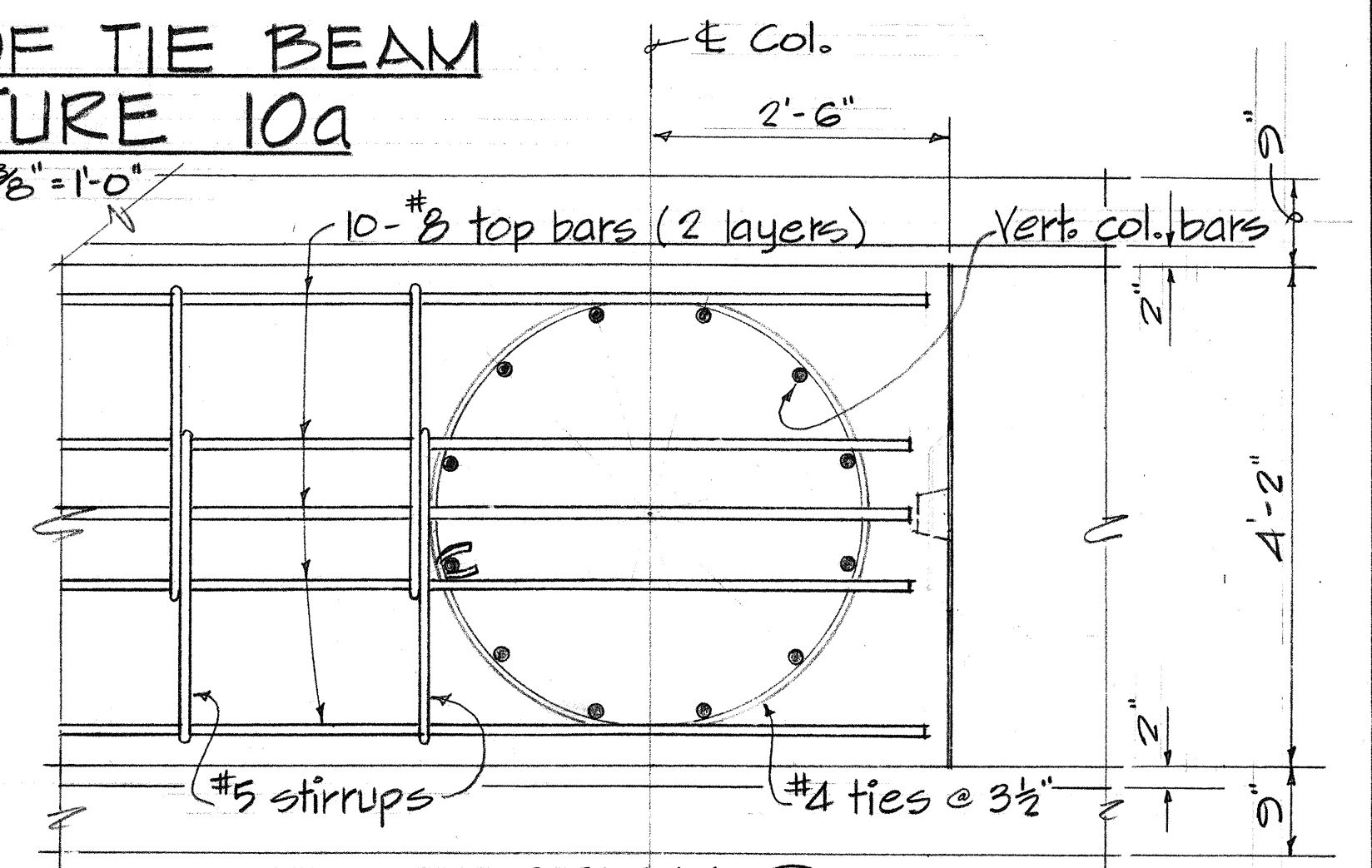
ELEVATION OF TIE BEAM
STRUCTURE 10b

Scale: $\frac{3}{8}'' = 1'-0''$

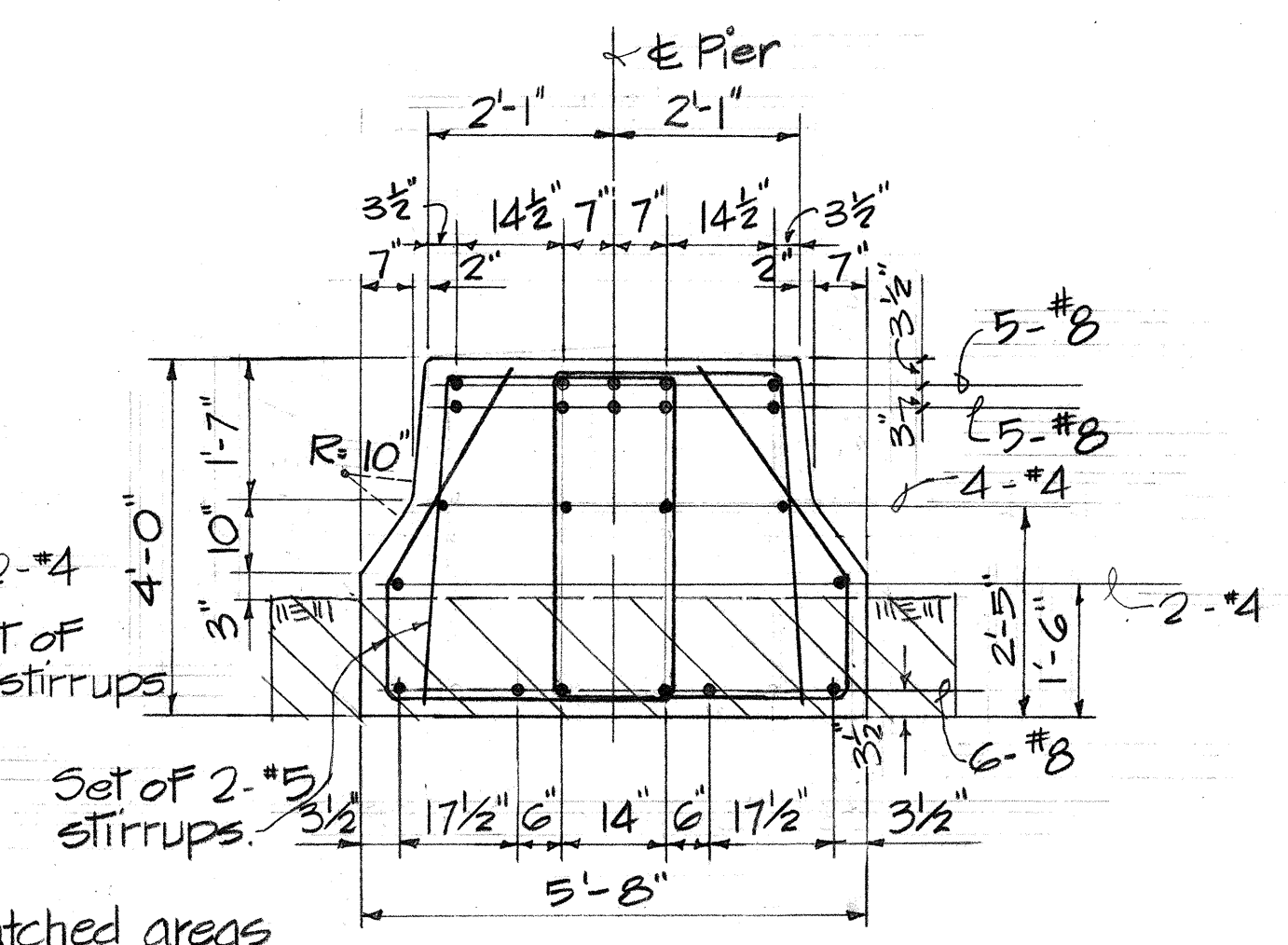
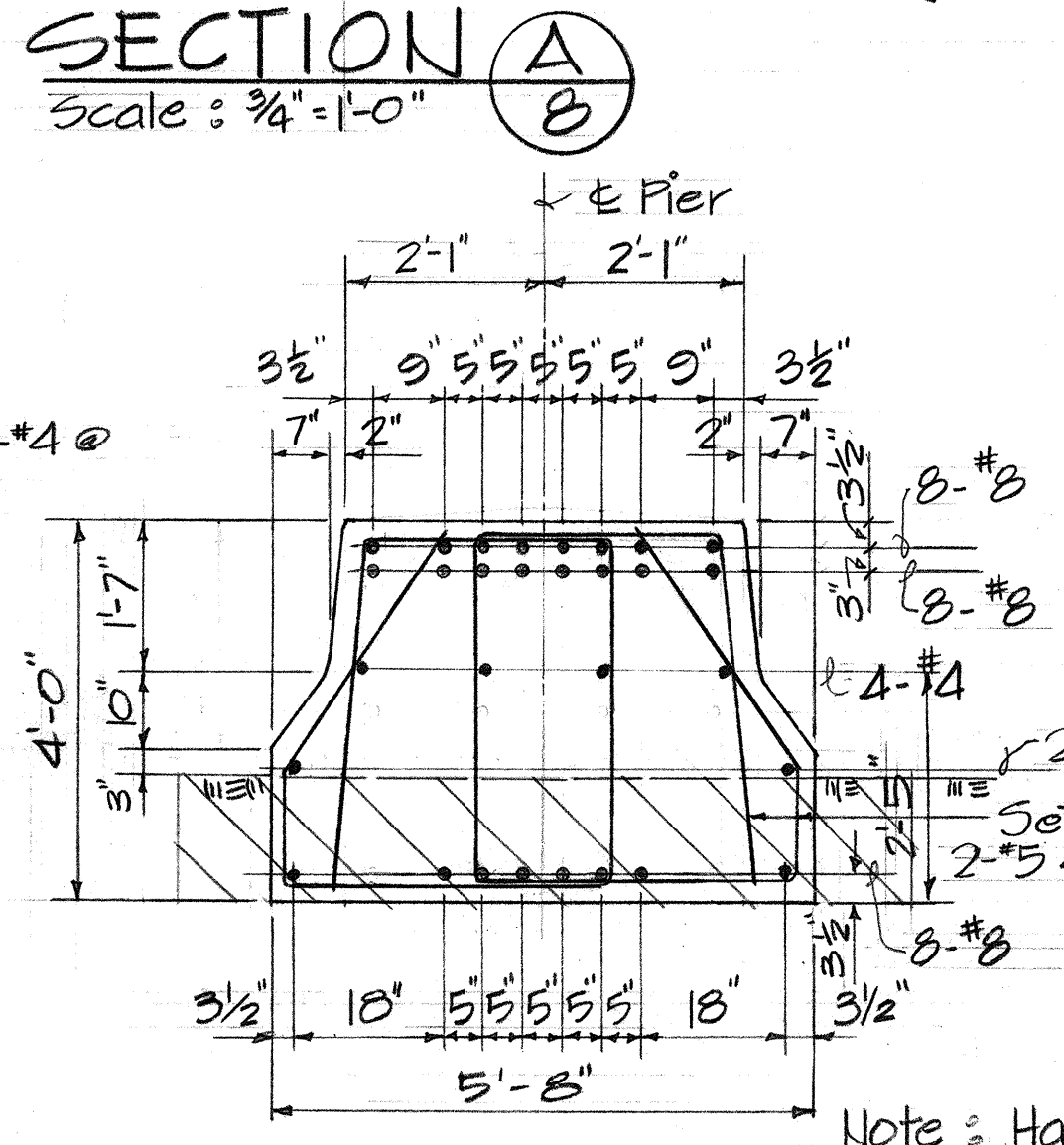
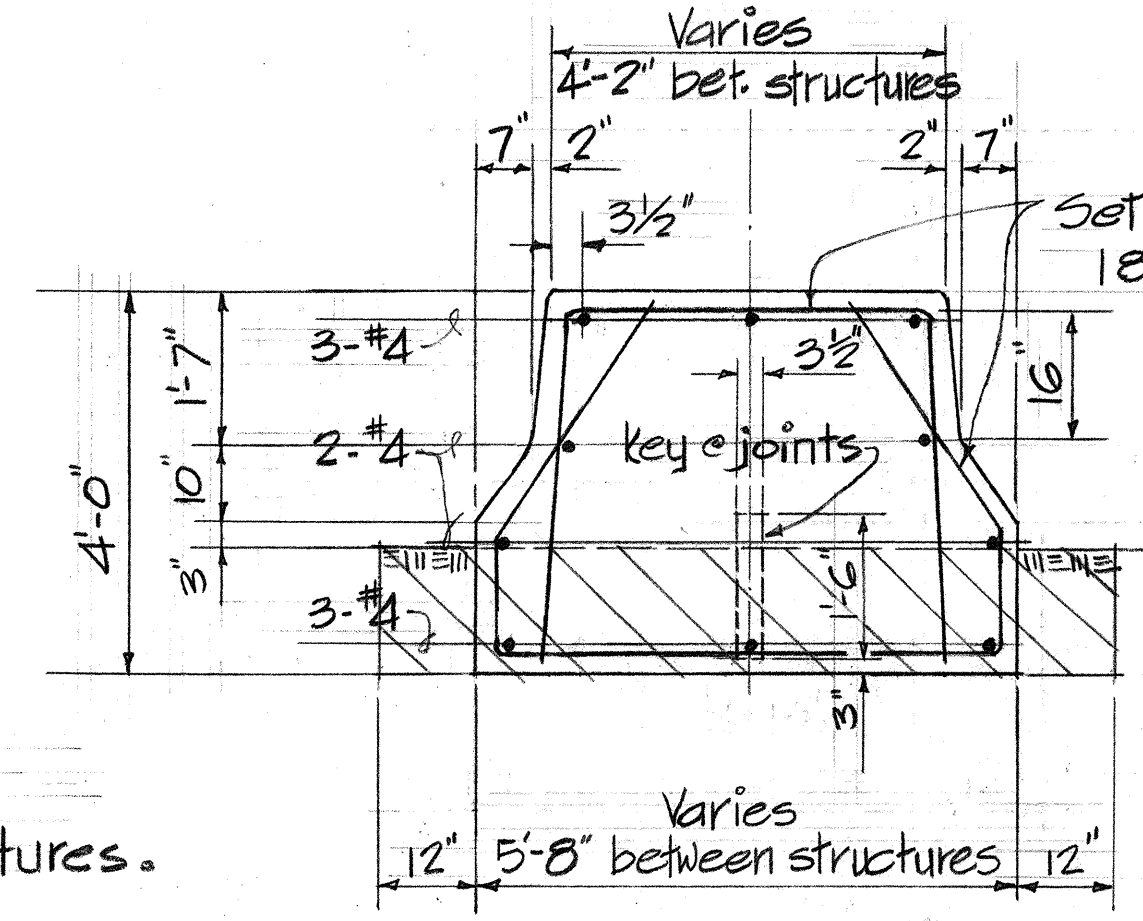


ELEVATION OF TIE BEAM
STRUCTURE 10a

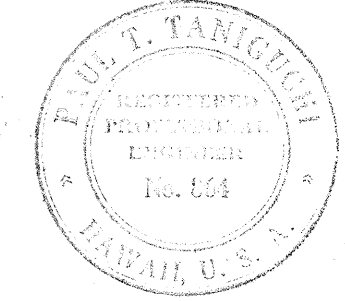
Scale: $\frac{3}{8}'' = 1'-0''$



NOTE:
See Highway dwgs.
for detail of barrier
located beyond structures.

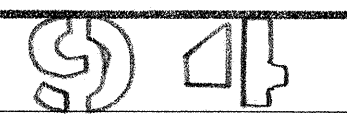


Note: Hatched areas
denote limits of
struct. exc. payment.



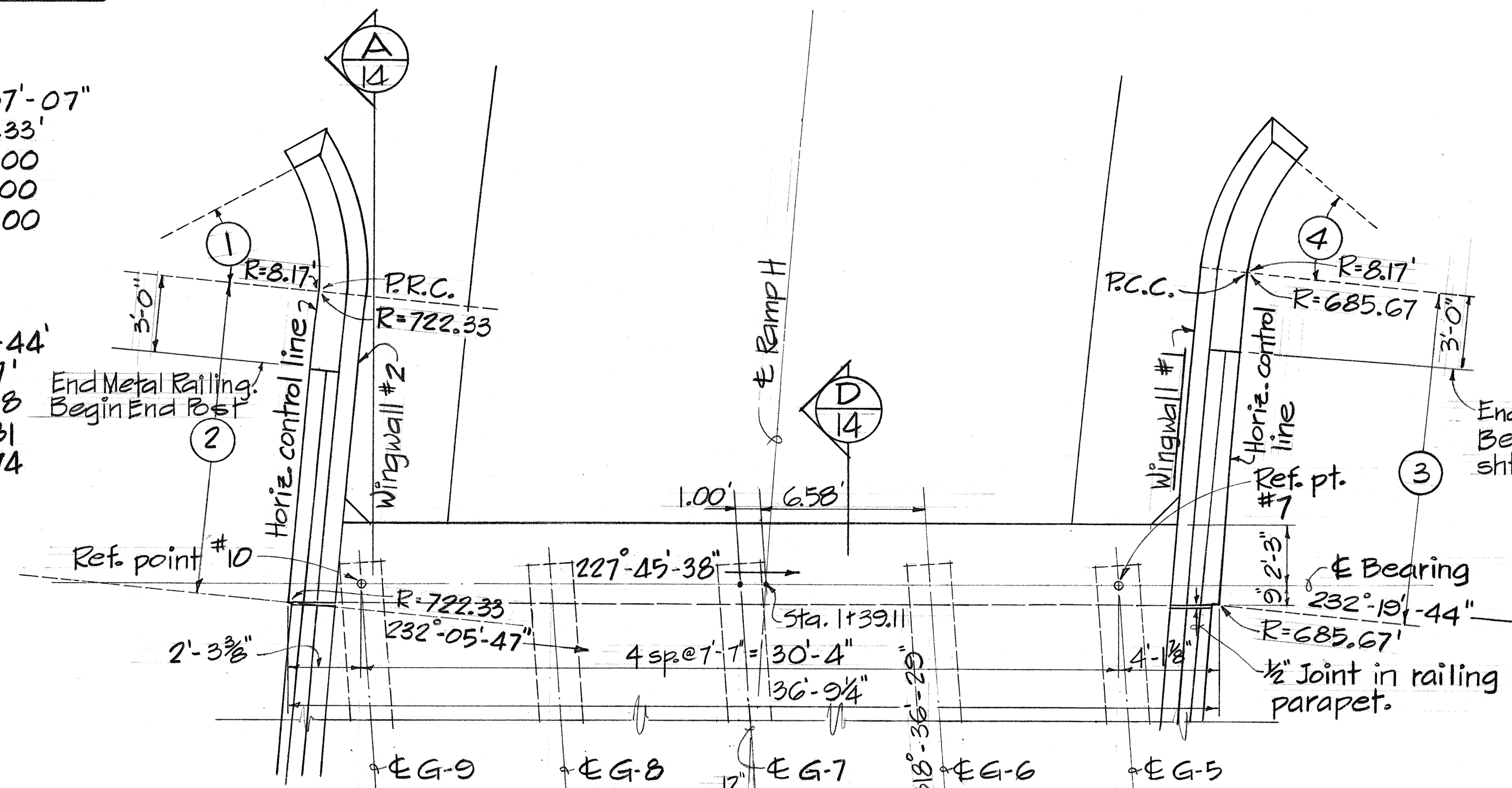
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Paul J. Taniguchi

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIANA INTERCHANGE
UNIT II
STRUCTURES 10a & 10b
TIE BEAM DETAILS
F.A.I. Proj. No. I-HI-147-9
Scale: As shown Date: Aug. 1968
SHEET No. 8 OF 16 SHEETS



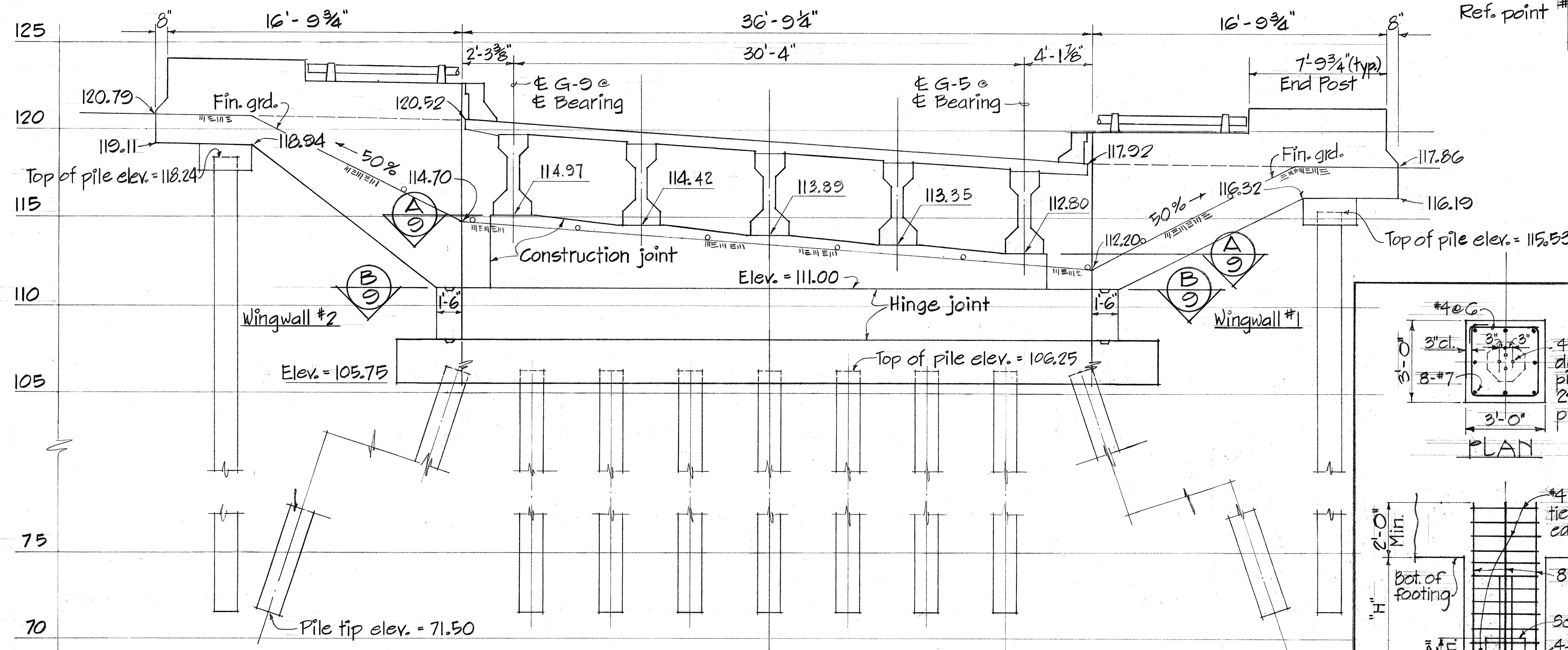
WING WALL CURVE DATA

①	②
$\Delta = 33^{\circ}-44'$	$\Delta = 0^{\circ}-57'-07''$
$R = 8.17'$	$R = 722.33'$
$T = 2.48$	$T = 6.00$
$L_c = 4.81$	$L_c = 12.00$
$Ch = 4.74$	$Ch = 12.00$
③	④
$\Delta = 1^{\circ}-00'-10''$	$\Delta = 33^{\circ}-44'$
$R = 685.67'$	$R = 8.17'$
$T = 6.00$	$T = 2.48$
$L_c = 12.00$	$L_c = 4.81$
$Ch = 12.00$	$Ch = 4.74$



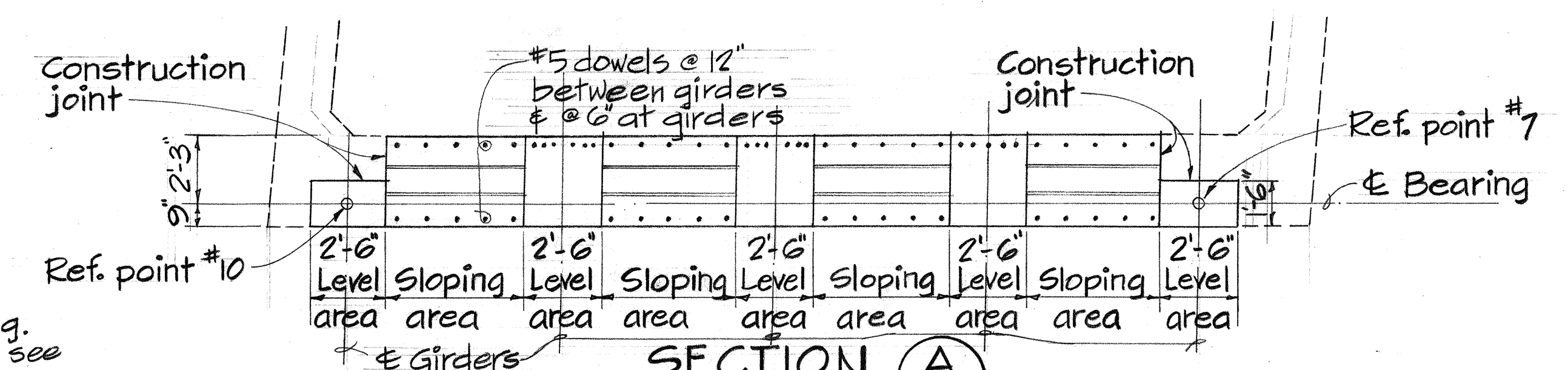
PLAN OF ABUTMENT NO. 1

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



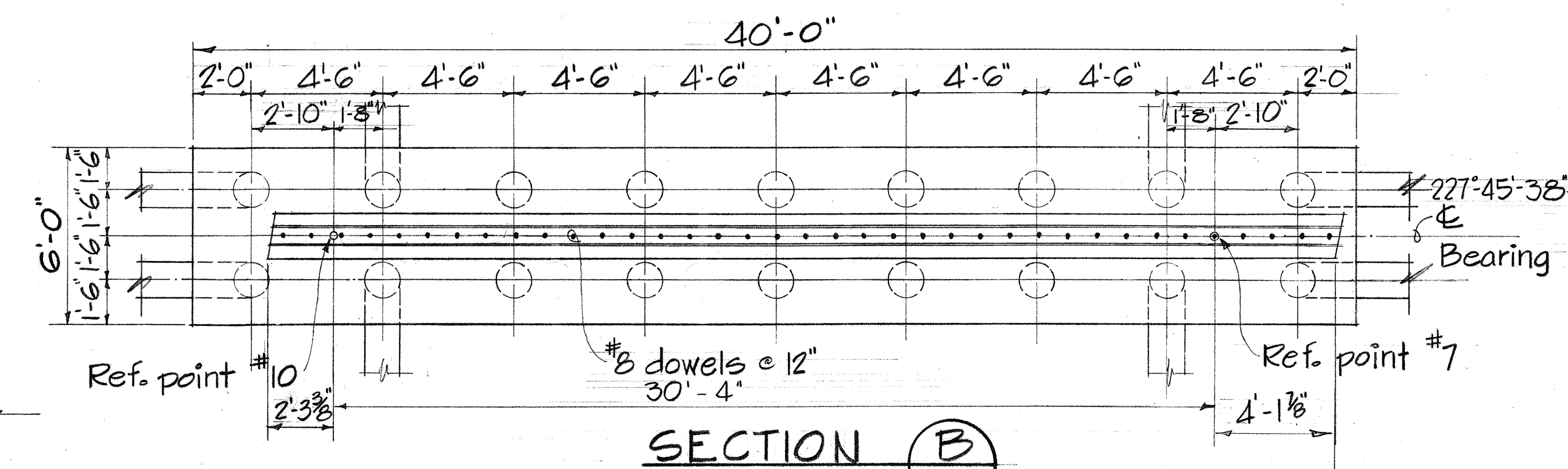
ELEVATION OF ABUTMENT NO. 1

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



PLAN OF GIRDER SEATS

Not to scale

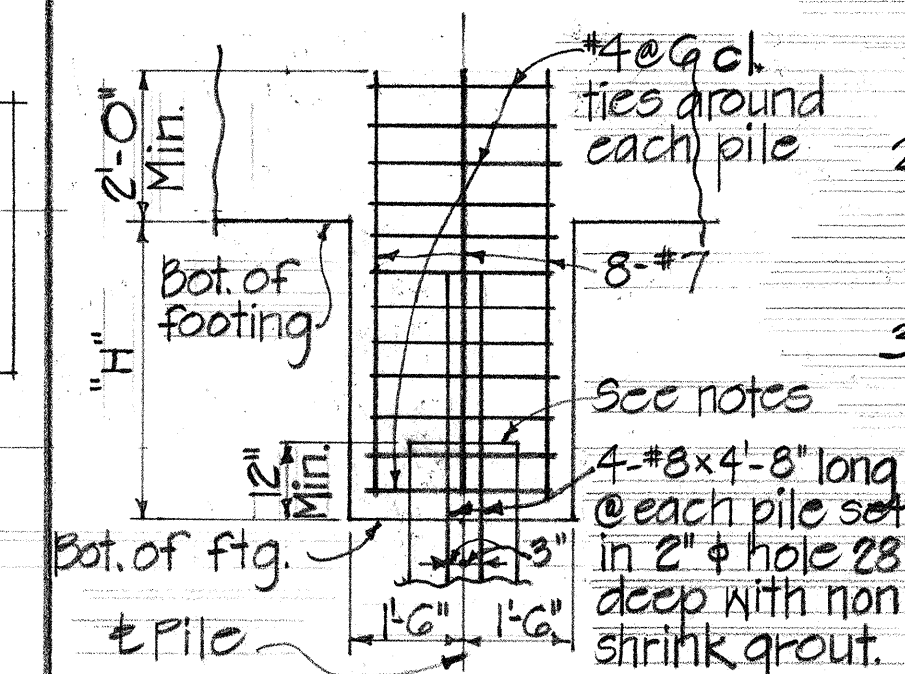
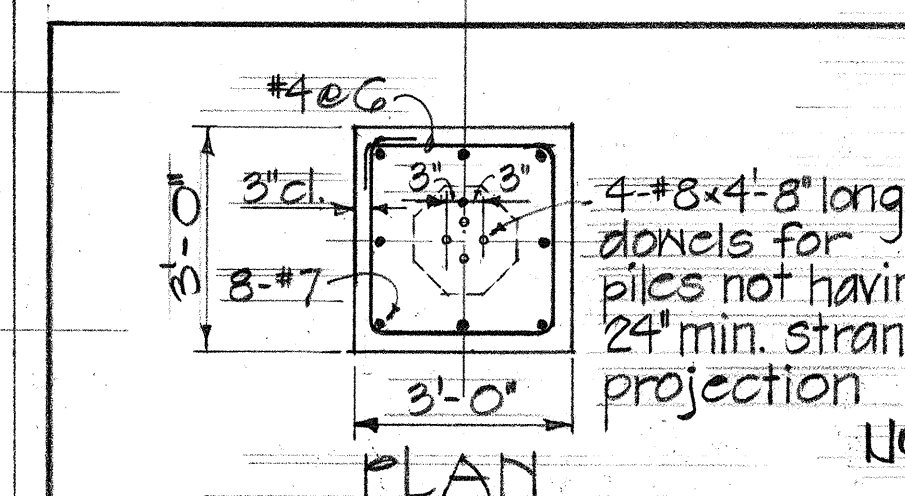


PLAN OF PILE CAP

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

NOTES:

- Piles shall be 16" Octagonal Prestressed Concrete Piles, Type I. Tip elev. = 71.50. Design load = 32 tons.
- For additional Abut. details, see shts. 13 & 14.
- Abutments shall be braced until backfilling is completed. Backfilling shall be done after the superstructure is completed. Backfill for Abut. #1 and 2 shall be brought up simultaneously to prevent unbalanced earth pressures on the bridge. Check Abutments for plumbness.



PLAN OF FOOTING EXTENSION

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

NOTES:

- Portion of pile embedded in fig. shall be of sound conc. Remove damaged portions & lower pile cut-off elev. as reqd. by the Engineer.
- When "H" exceeds 4'-0", pour the extension separately from the main body of the footing.
- Fig. extension may be omitted for pile heads embedded at least 4" into fig., provided that at least 90% of the piles in that fig. are embedded 6" in the fig.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Paul J. Taniguchi

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIWA INTERCHANGE
UNIT II

STRUCTURES 10a & 10b
ABUTMENT NO. 1 DETAILS

F.A.I. Proj. No. I - HI - 1(47) - 9

Scale: As shown Date: Aug. 1968

SHEET No. 9 OF 16 SHEETS

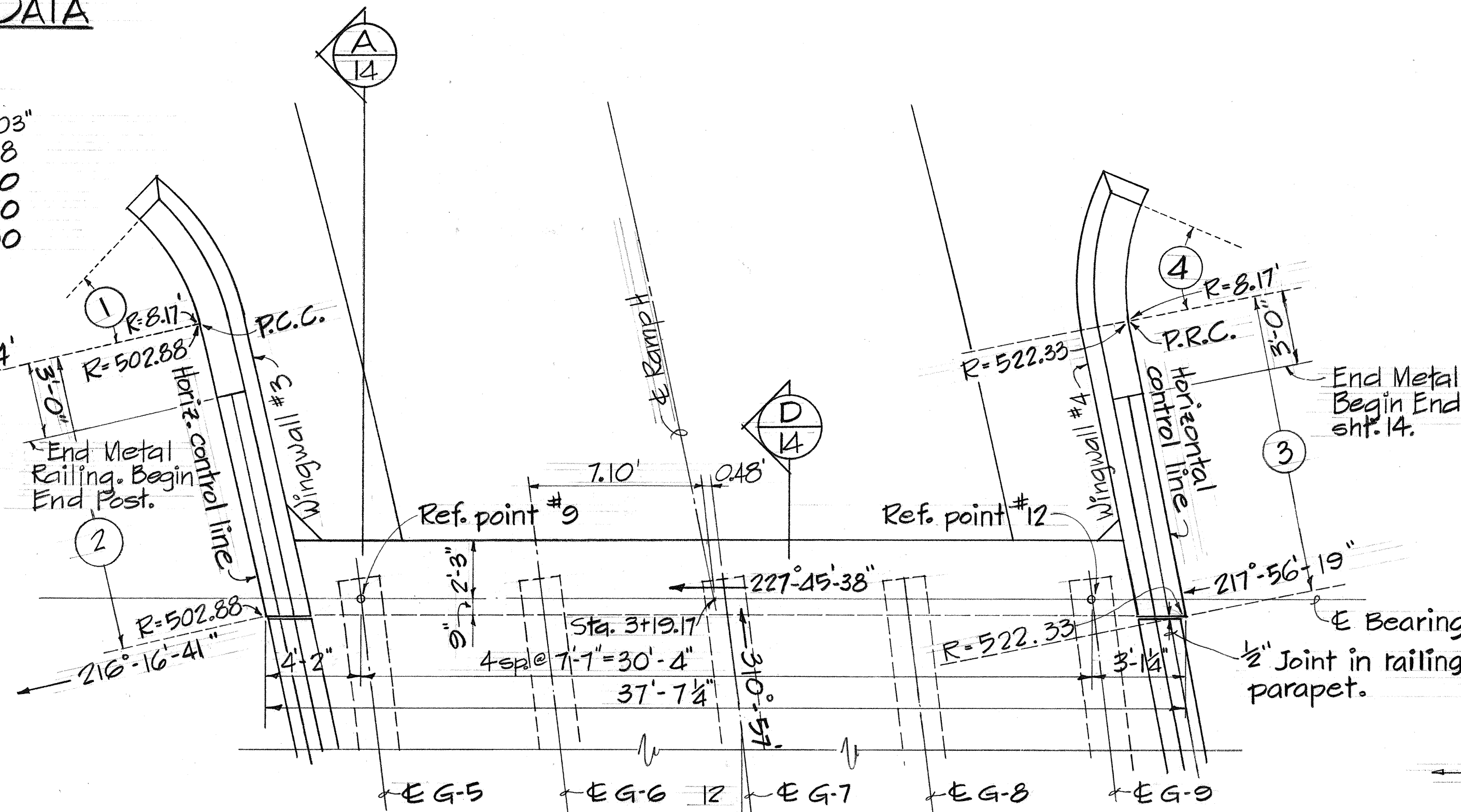
WING WALL CURVE DATA

①
 $\Delta = 33^\circ-44'$
 $R = 8.17$
 $T = 2.48$
 $L_c = 4.81$
 $Ch = 4.74$

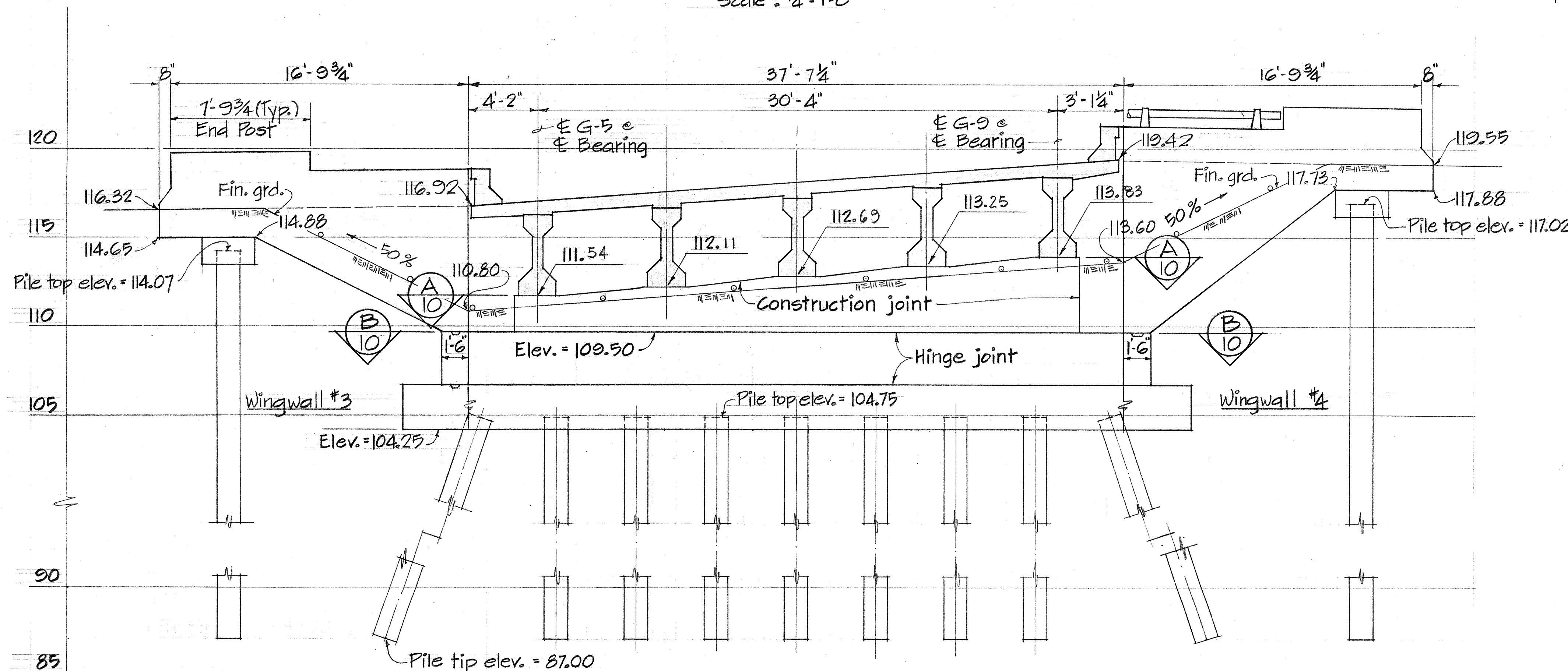
②
 $\Delta = 1^\circ-22'-03''$
 $R = 502.88$
 $T = 6.00$
 $L_c = 12.00$
 $Ch = 12.00$

③
 $\Delta = 1^\circ-18'-59''$
 $R = 522.33$
 $T = 6.00$
 $L_c = 12.00$
 $Ch = 12.00$

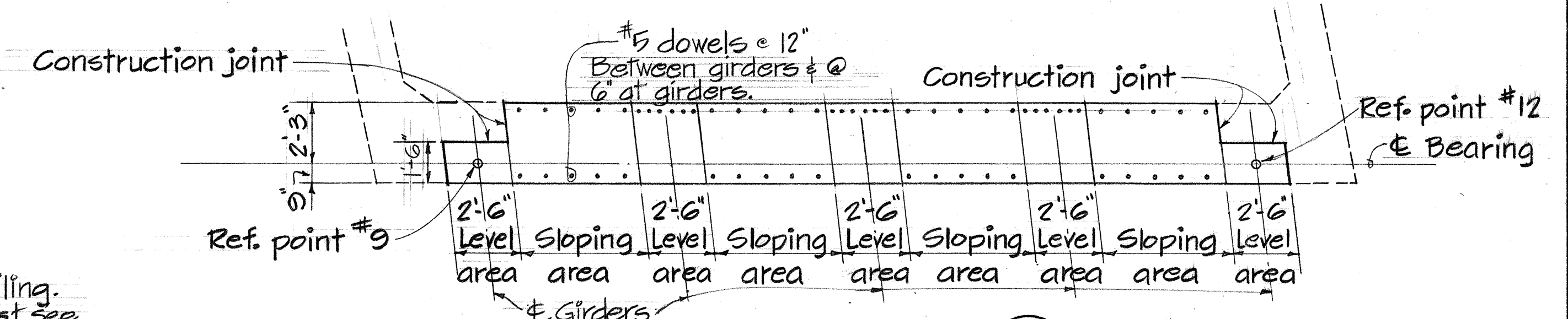
④
 $\Delta = 33^\circ-44'$
 $R = 8.17$
 $T = 2.48$
 $L_c = 4.81$
 $Ch = 4.74$



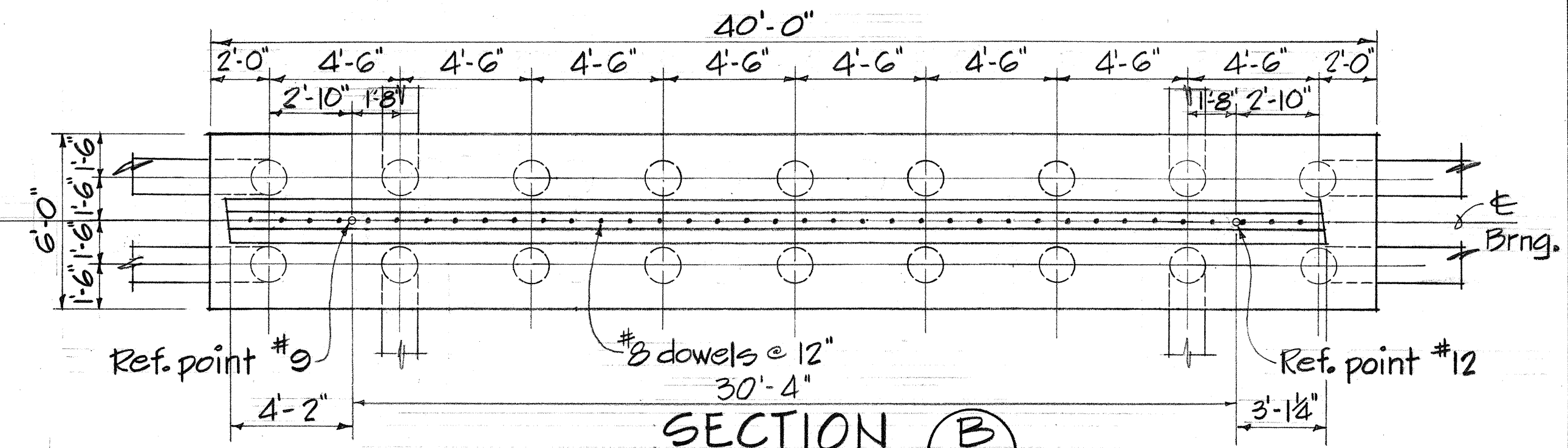
PLAN OF ABUTMENT NO. 2
 Scale: $\frac{1}{4}'' = 1'-0''$



ELEVATION OF ABUTMENT NO. 2
 Scale: $\frac{1}{4}'' = 1'-0''$



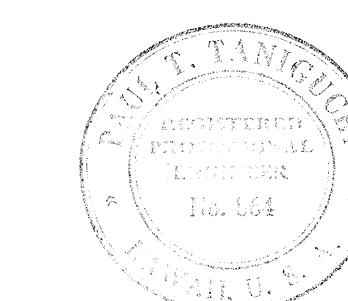
SECTION A
 PLAN OF GIRDER SEATS
 Not to scale



SECTION B
 PLAN OF PILE CAP
 Scale: $\frac{1}{4}'' = 1'-0''$

NOTES:

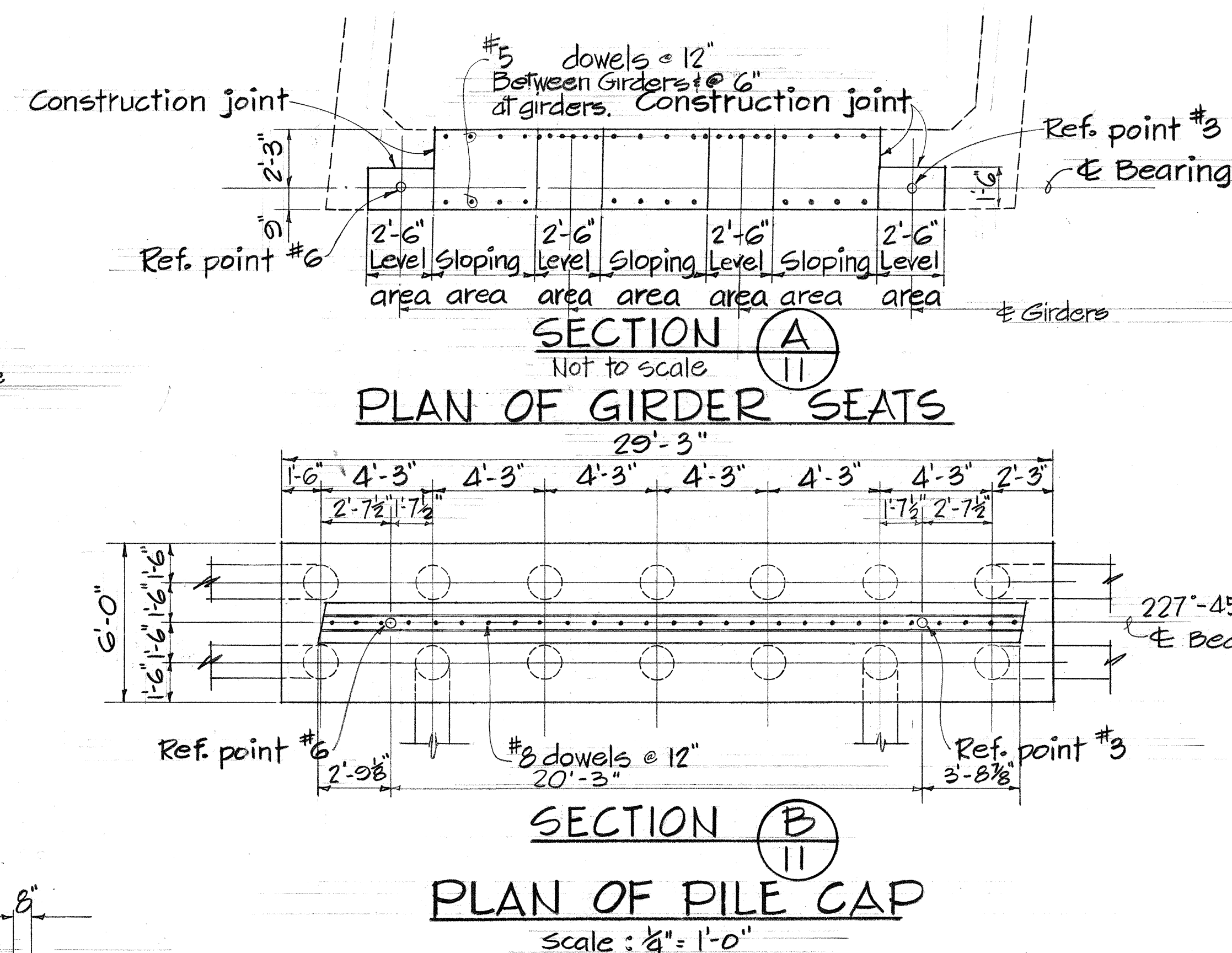
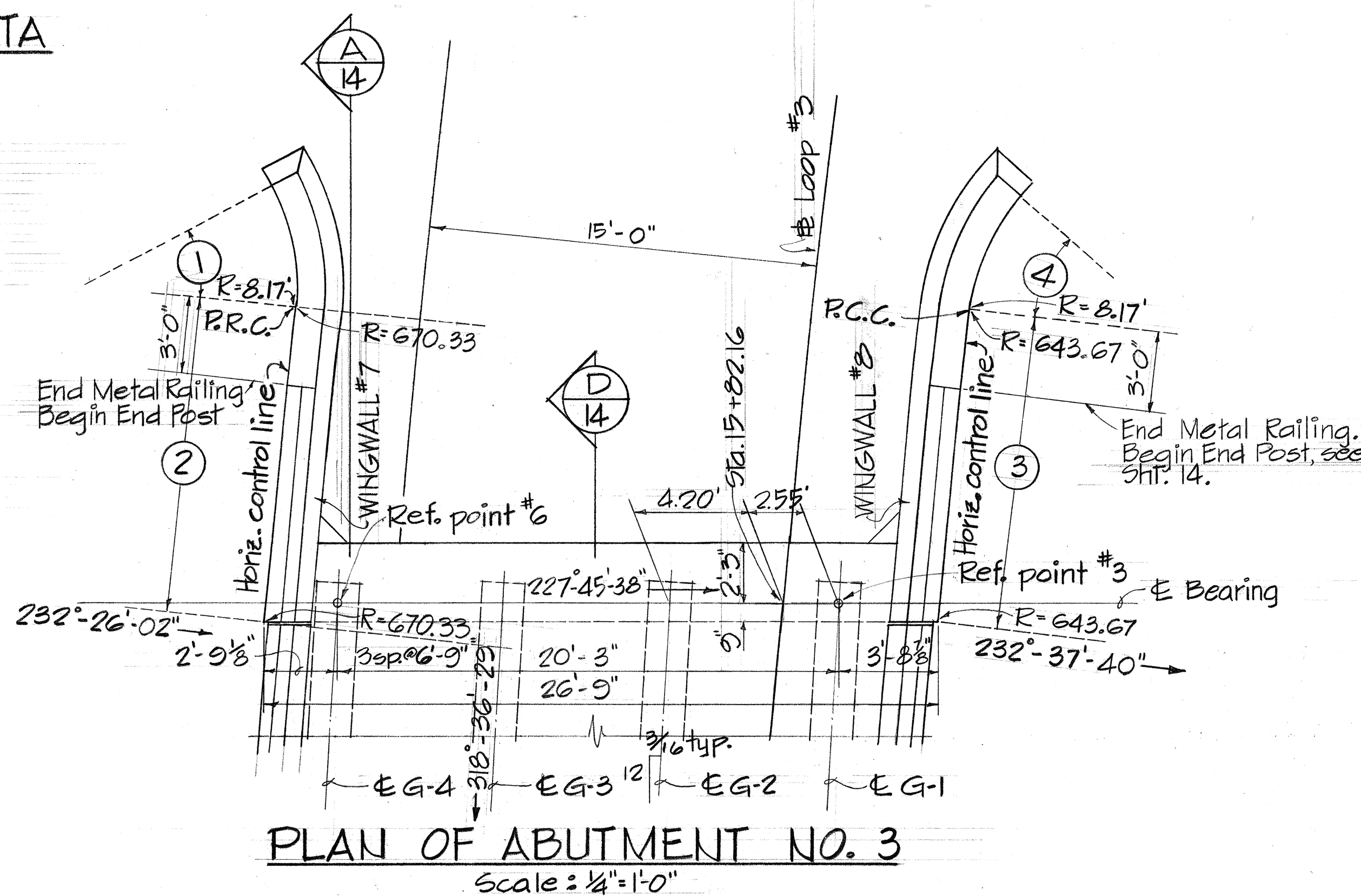
1. Piles shall be 16" Octagonal Prestressed Concrete Piles, Type I.
 Tip elev. = 87.00
 Design load = 32 tons
2. For additional Abut. details, see shts. 13 & 14.
3. See note 3 on sht. 9



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 WAI'AWA INTERCHANGE
 UNIT II
 STRUCTURES 10a & 10b
 ABUTMENT NO. 2 DETAILS
 F.A.I. Proj. No. I-HI-1(47):9
 Scale: As shown Date: Aug. 1968
 SHEET No. 10 OF 16 SHEETS

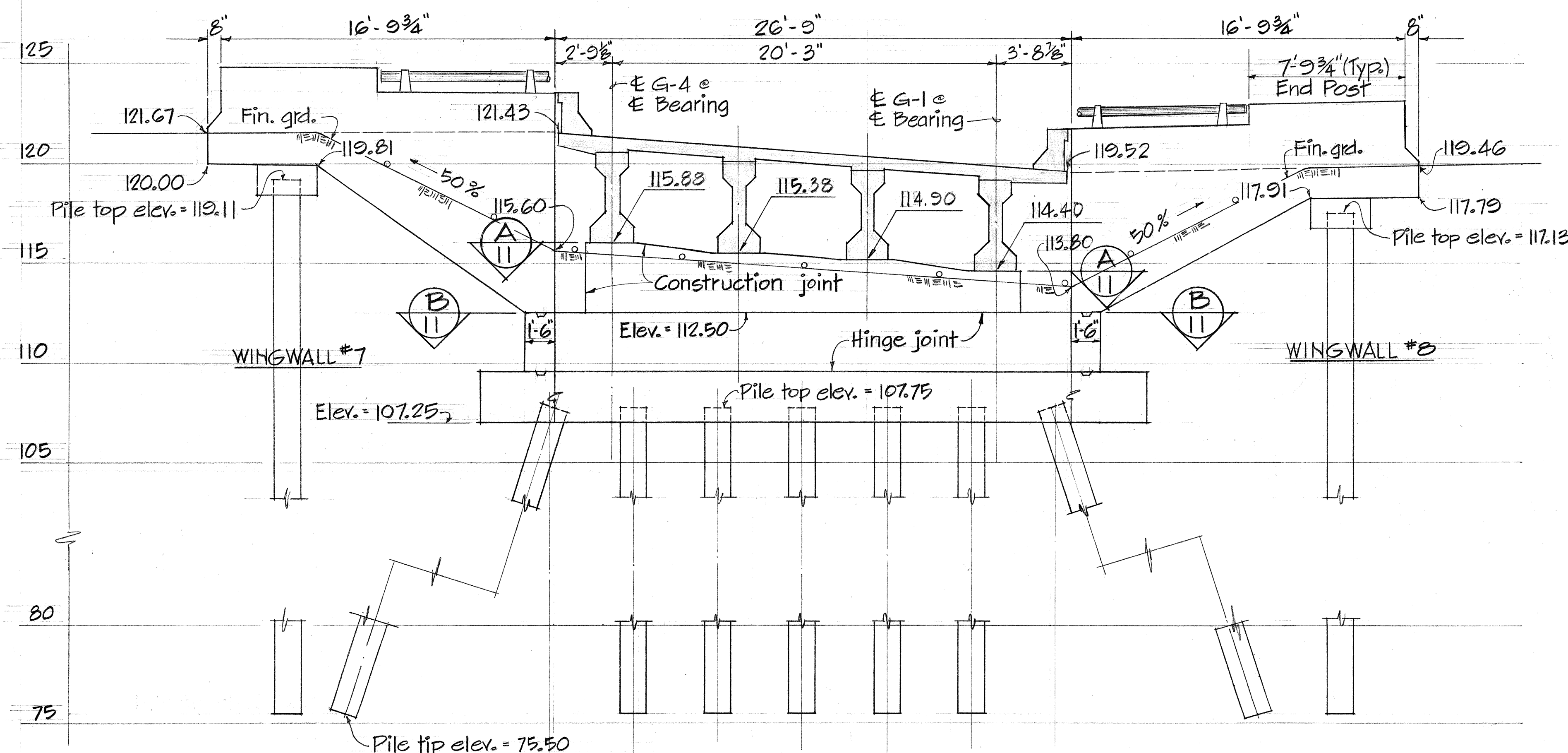
WING WALL CURVE DATA

①	②
$\Delta = 33^\circ-44'$	$\Delta = 1^\circ-01'-32''$
$R = 8.17$	$R = 670.33$
$T = 2.48$	$T = 6.00$
$L_c = 4.81$	$L_c = 12.00$
$Ch = 4.74$	$Ch = 12.00$
③	④
$\Delta = 1^\circ-04'-05''$	$\Delta = 33^\circ-44'$
$R = 643.67$	$R = 8.17$
$T = 6.00$	$T = 2.48$
$L_c = 12.00$	$L_c = 4.81$
$Ch = 12.00$	$Ch = 4.74$

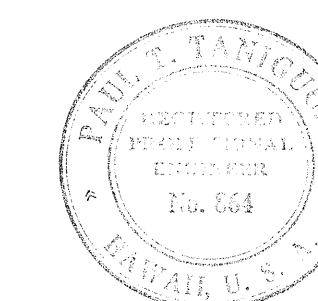


NOTES :

1. Piles shall be 16" Octagonal Prestressed Concrete Piles, Type I. Tip elev. = 75.50 Design load = 32 tons
2. For additional abut. details, see Shit. 13 and 14.
3. Abut. shall be braced until backfilling is completed. Backfilling shall be done after the superstructure is completed. Backfill for Abut. 3 and 4 shall be brought up simultaneously to prevent unbalanced earth pressures on the bridge. Check Abutments for plumbness.



ELEVATION OF ABUTMENT NO. 3
Scale: 1/4" = 1'-0"

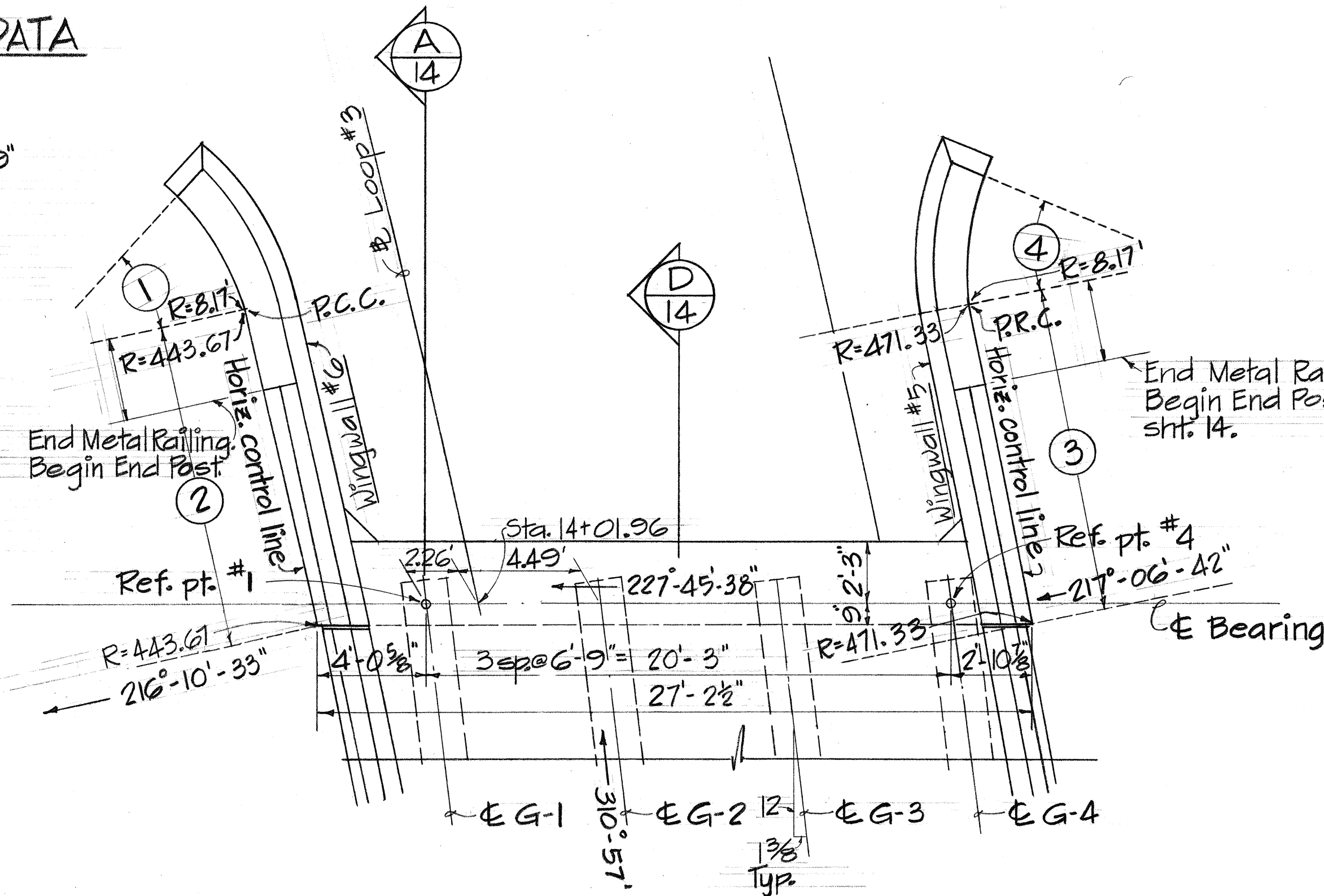


THIS WORK WAS PREPARED BY
ME UNDER MY SUPERVISION
Paul J. Tamm

STATE OF HAWAII	
DEPARTMENT OF TRANSPORTATION	
HIGHWAYS DIVISION	
WAIAWA INTERCHANGE	
UNIT II	
STRUCTURES 10a & 10b	
ABUTMENT NO. 3 DETAILS	
F.A.I. Proj No I-11-1(47):9	
Scale: As shown	Date: Aug. 1968
SHEET No. 11 OF 16 SHEETS	

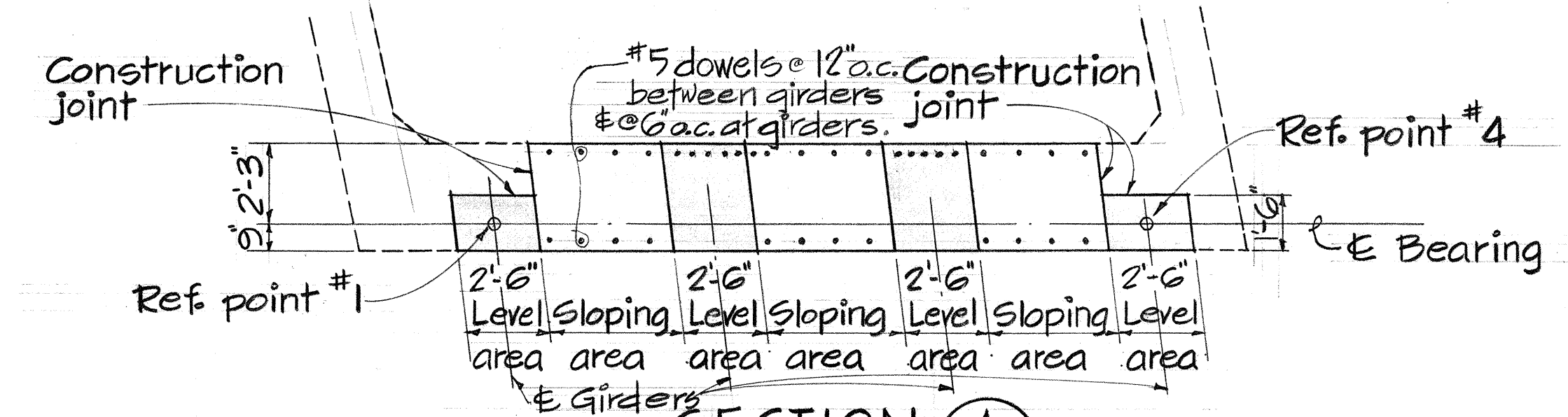
WING WALL CURVE DATA

①	②
$\Delta = 33^\circ-44'$	$\Delta = 1^\circ-32'-59''$
$R = 8.17$	$R = 443.67$
$T = 2.48$	$T = 6.00$
$L_c = 4.81$	$L_c = 12.00$
$Ch = 4.74$	$Ch = 12.00$
③	④
$\Delta = 1^\circ-27'-31''$	$\Delta = 33^\circ-44'$
$R = 471.33$	$R = 8.17$
$T = 6.00$	$T = 2.48$
$L_c = 12.00$	$L_c = 4.81$
$Ch = 12.00$	$Ch = 4.74$



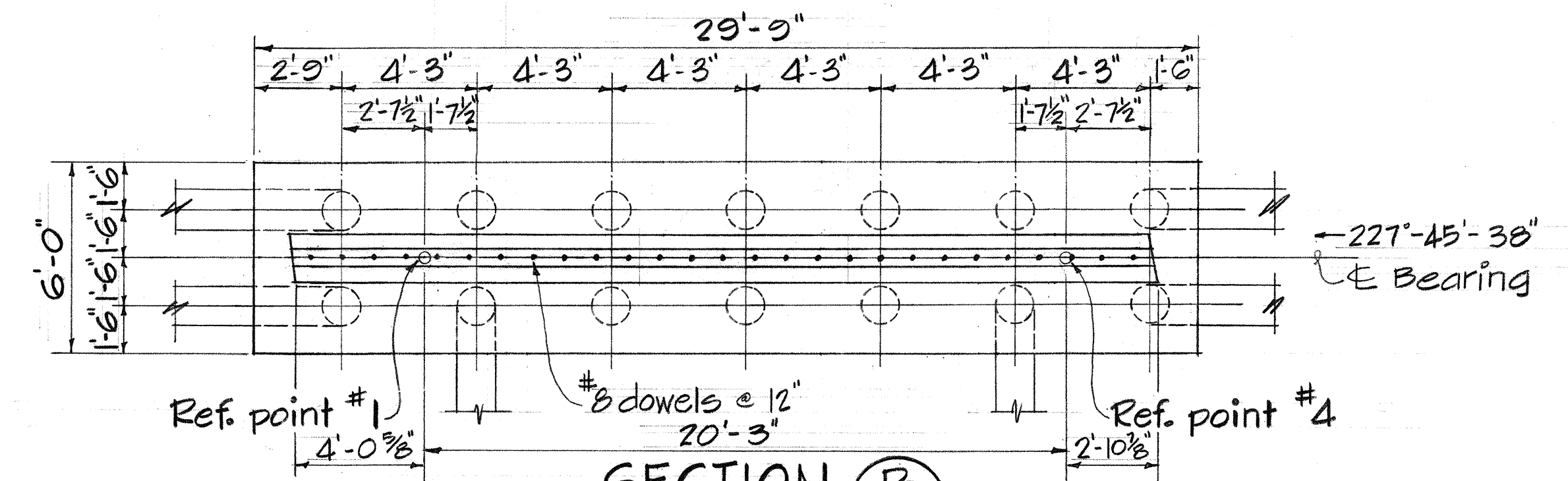
PLAN OF ABUTMENT NO. 4

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



PLAN OF GIRDER SEATS

Not to scale

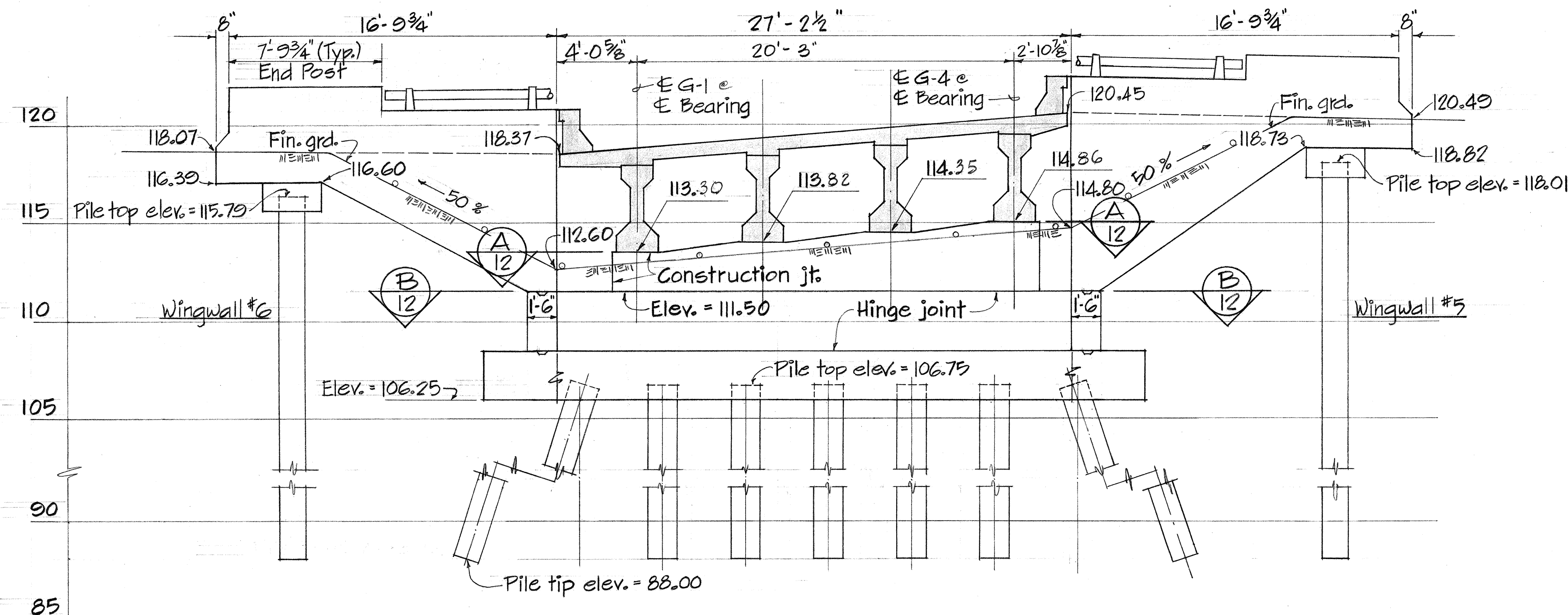


PLAN OF PILE CAP

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

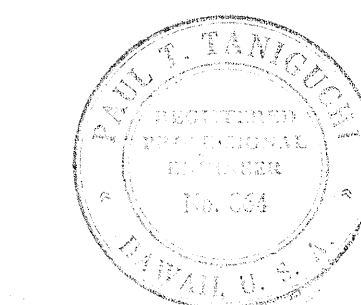
NOTES:

1. Piles shall be 16" Octagonal Prestressed Concrete Piles, Type I.
Tip elev. = 88.00
Design load = 32 tons
2. For additional Abut. details, see sht. 13 & 14.
3. See note 3 on sht. 11.



ELEVATION OF ABUTMENT NO. 4

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



THIS WORK WAS PREPARED BY
PAUL J. TANGUAY
REGISTERED PROFESSIONAL ENGINEER
HAWAII, U.S.A.

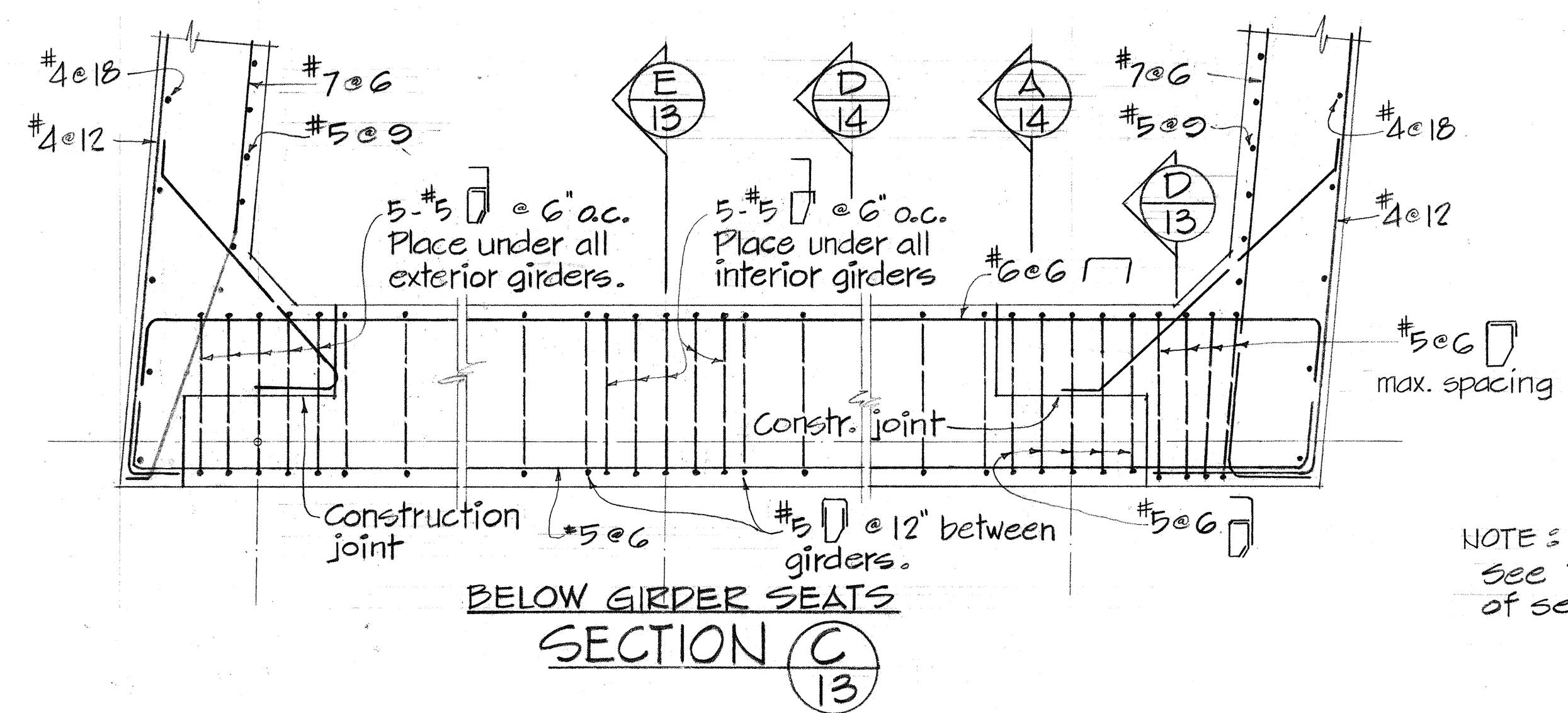
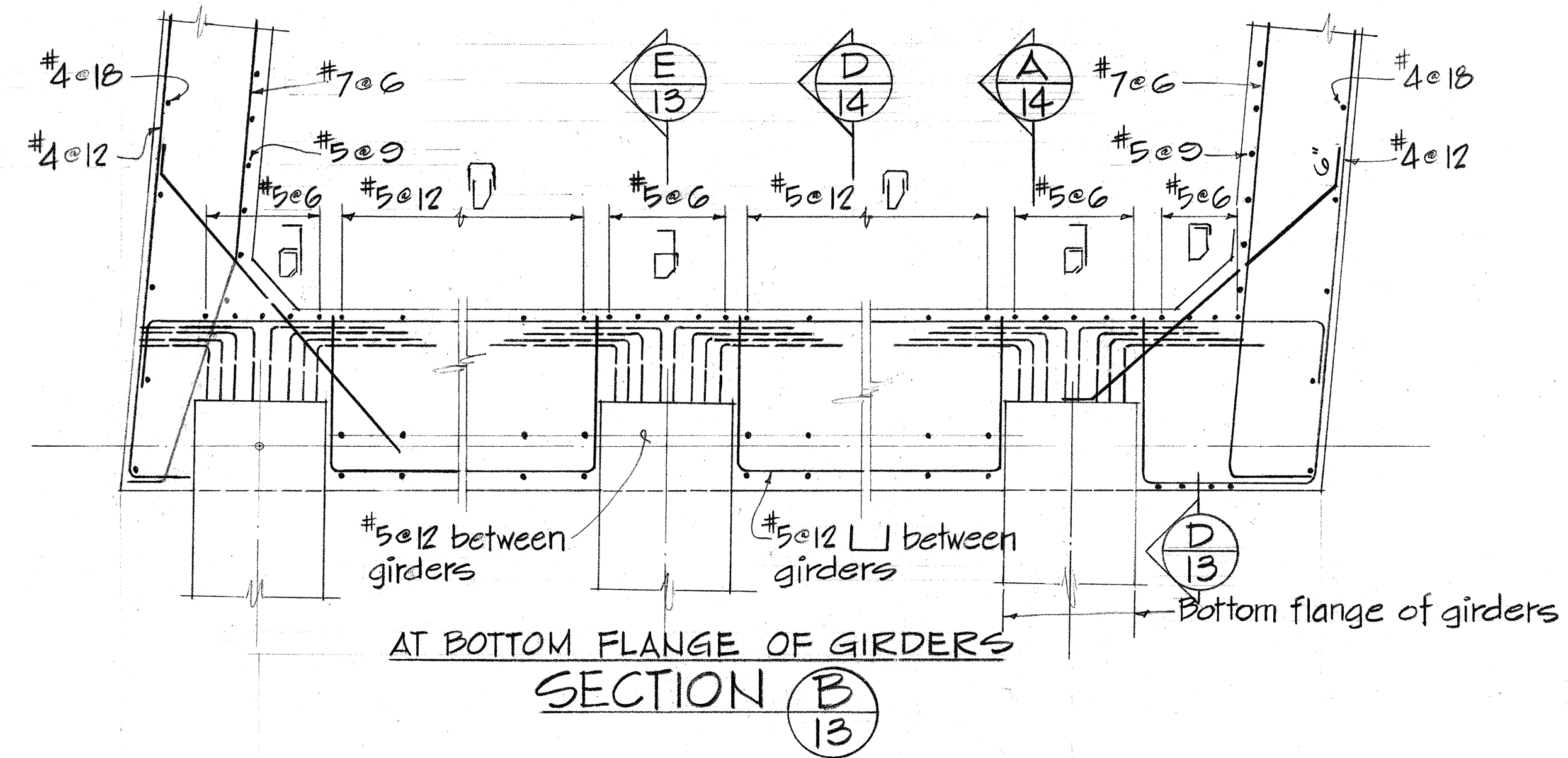
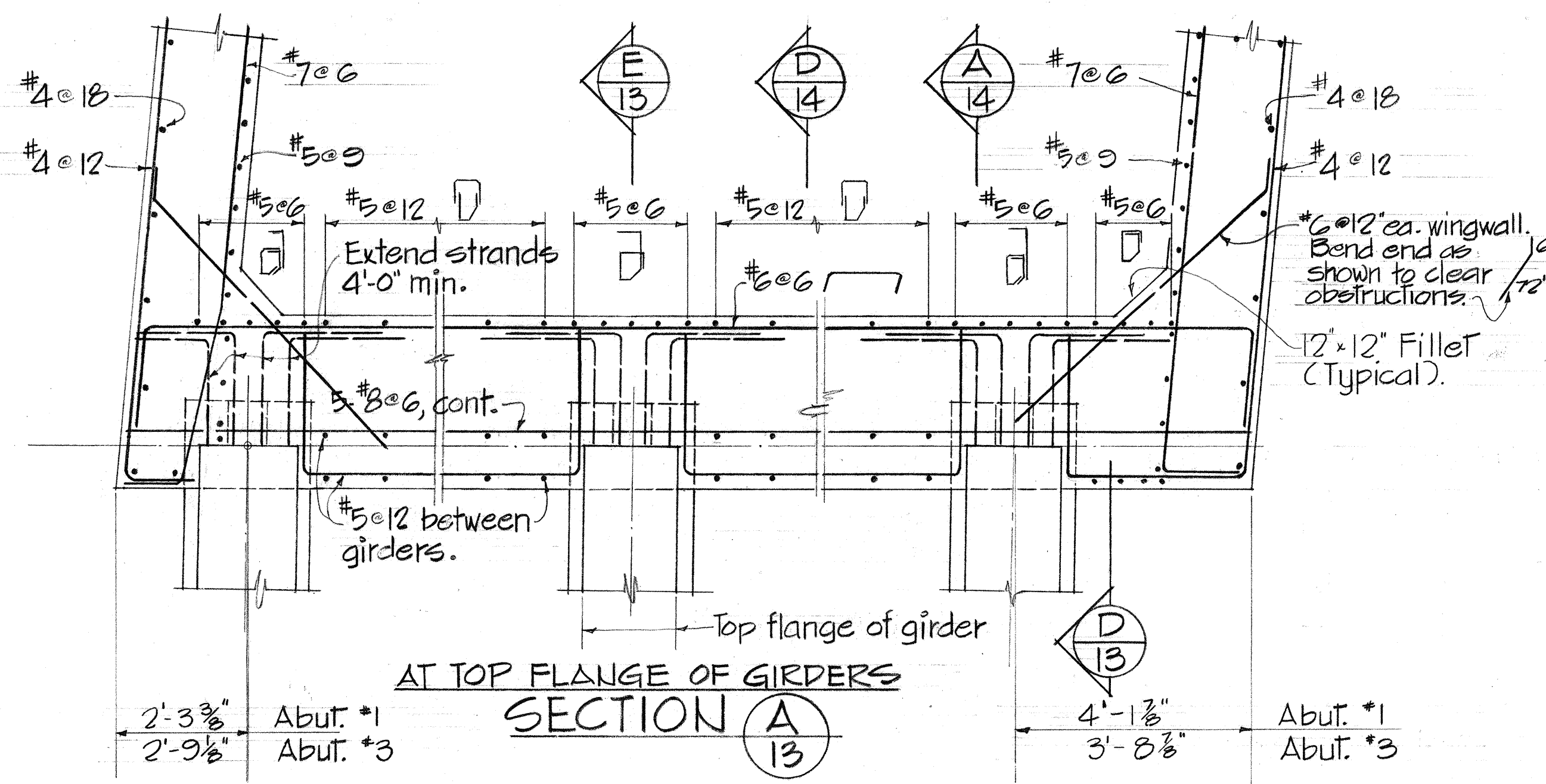
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIKAWA INTERCHANGE
UNIT II

STRUCTURES 10a & 10b
ABUTMENT NO. 4 DETAILS

F.A.I. Proj. No. I-HI-1(47)-9

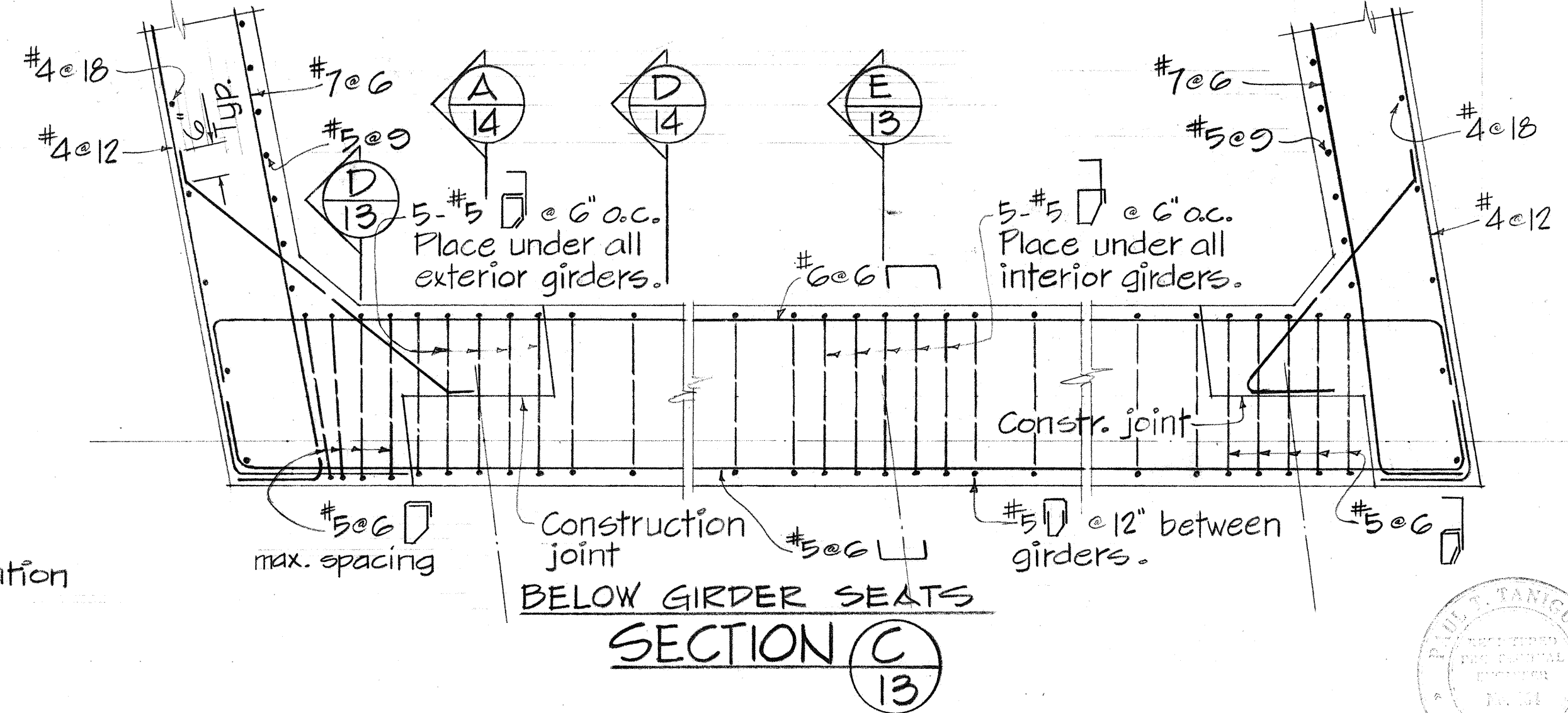
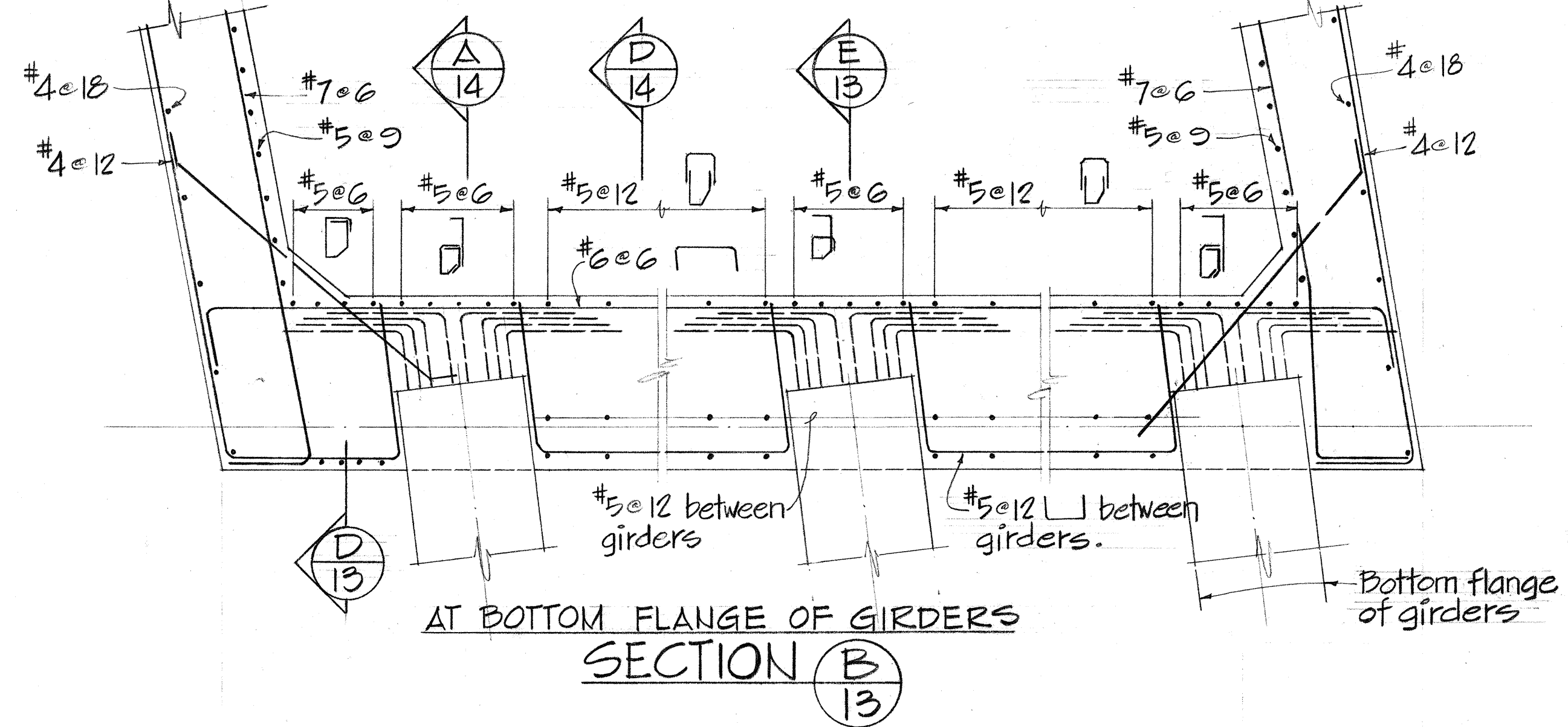
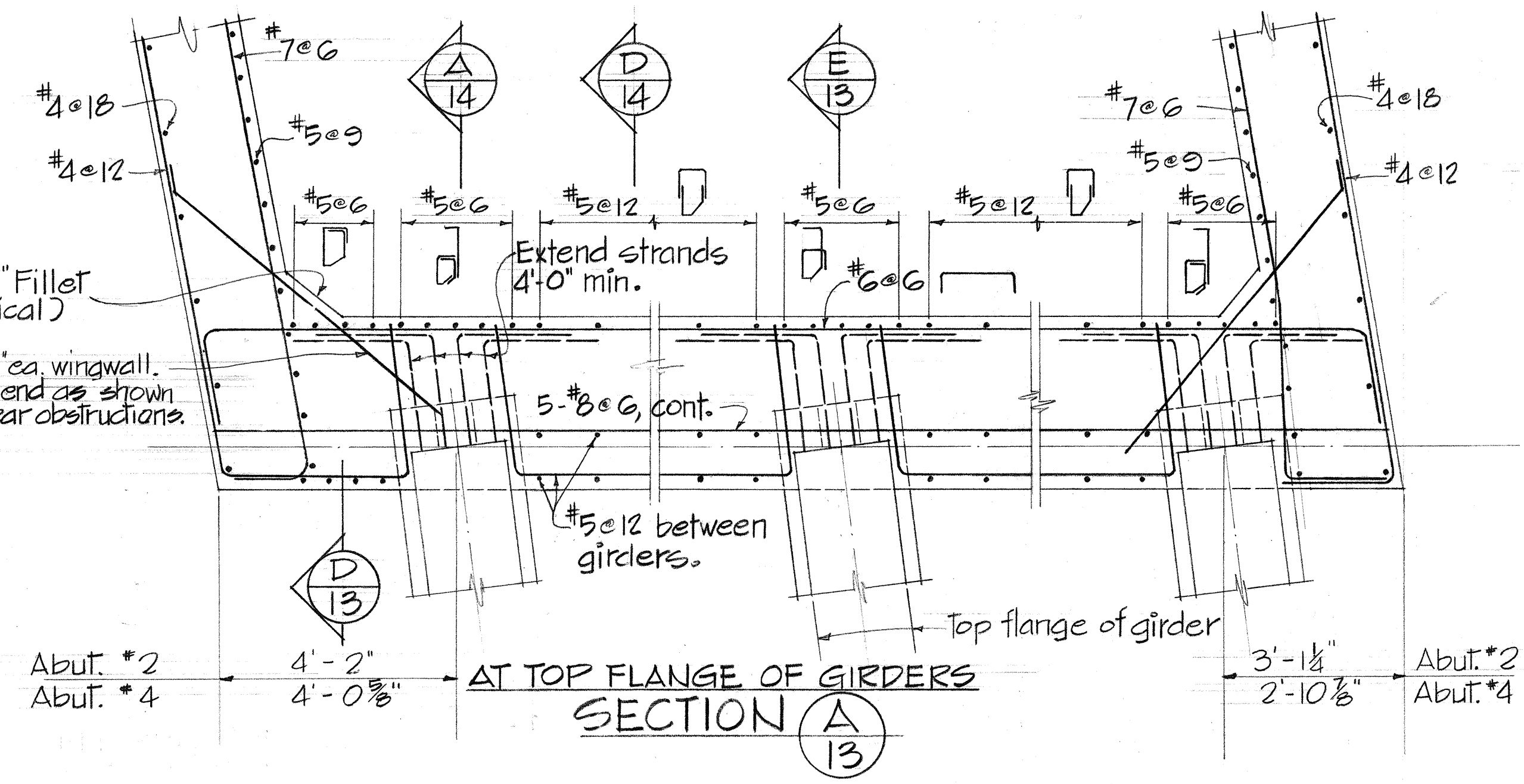
Scale: As shown Date: Aug. 1968
SHEET No. 12 OF 16 SHEETS

DATE: _____
 SURVEY PLOTTED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 No. _____



ABUTMENTS #1 & #3
 Scale: 1/2" = 1'-0"

NOTE: See 7/4 for location of sections.



ABUTMENTS #2 & #4
 Scale: 1/2" = 1'-0"

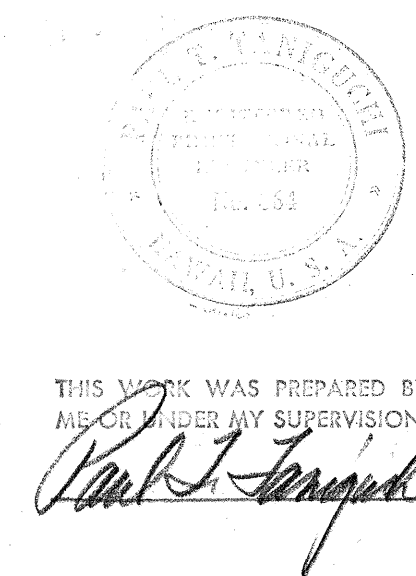
FED. ROAD DIST. NO.	STATE	FED. AID DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(47)9	1968	93	227

Longit. slab steel
 5-#8@6
 4-#8, cont.
 #4@12 Wing wall bars
 4" tile drain @ 6' max. spcg.
 #5@6 cont. below girders
 Fin. gr.
 #5@12
 #8 dowels, 7' long @ 12" a.c.
 2-#5
 2" c.c. 4-#8
 8-#6, cont.
 8-#6, cont.
 4-#4, cont.
 2-#4 ea. side of pile pairs.
 SECTION D
 13
 Scale: 1/2" = 1'-0"

Longit. slab steel
 5-#8@6
 4-#8, cont.
 #6@6
 #5@6
 Constr. joint.
 #5@6 cont. below girders
 #8 dowels, 7' long @ 12" a.c.
 4-#8
 4-#8
 2" c.c. 4-#8
 4-#5
 4-#8
 NOTE: Footing notes similar to above.
 #4@18
 #5@12
 2" c.c. 4-#8
 4-#8
 #Bearing
 AT INTERIOR GIRDERS
 SECTION E
 13
 Scale: 1/2" = 1'-0"

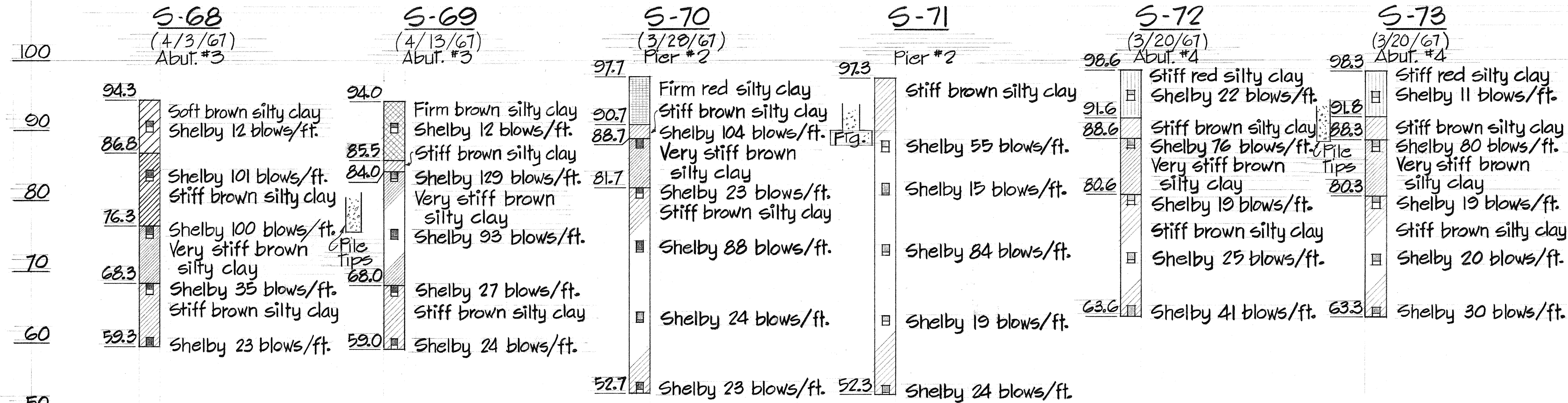
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 WAI'ANA INTERCHANGE
 UNIT II
 STRUCTURES 10a & 10b
 ABUTMENT DETAILS
 F.A.I. Proj. No. I-HI-1(47)9
 Scale: As shown Date: Aug. 1968
 SHEET No. 13 OF 16 SHEETS

THIS WORK WAS PREPARED BY
 AND UNDER MY SUPERVISION
 Carl J. Langford
 PROFESSIONAL ENGINEER
 No. 1141

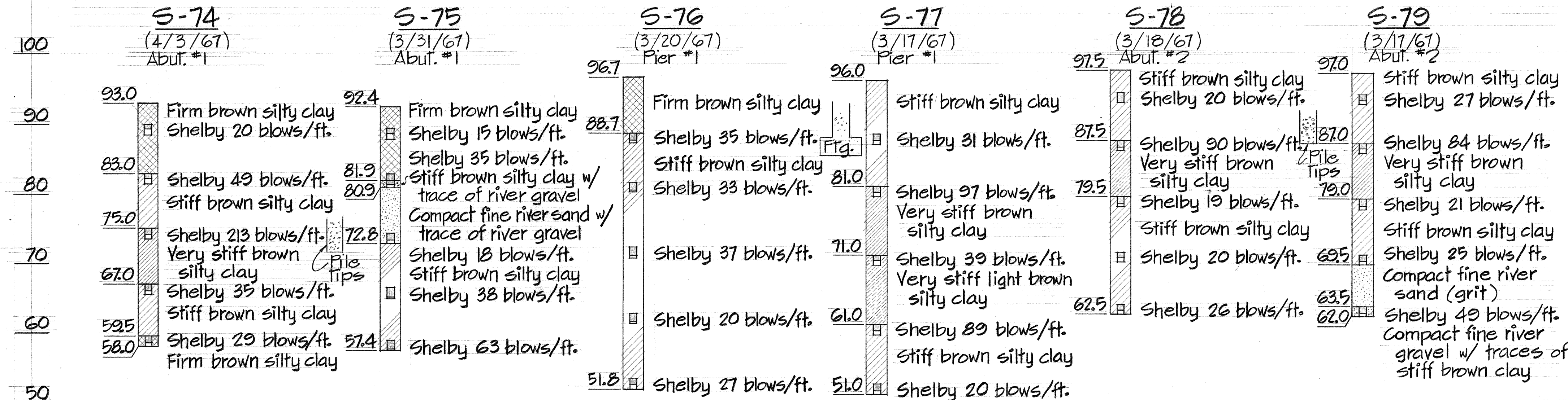


199

STRUCTURE 10a

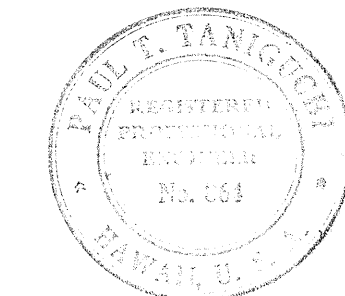


STRUCTURE 10b



BORING LOGS

Vert. scale : 1" = 10'



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WAIAWA INTERCHANGE
UNIT II
STRUCTURES 10a & 10b
BORING LOGS
F.A.I. Proj. No. I - H1 - 1(47) : 9
Scale : As shown Date : Aug. 1968
SHEET No. 10 OF 16 SHEETS

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Paul J. Tanguish