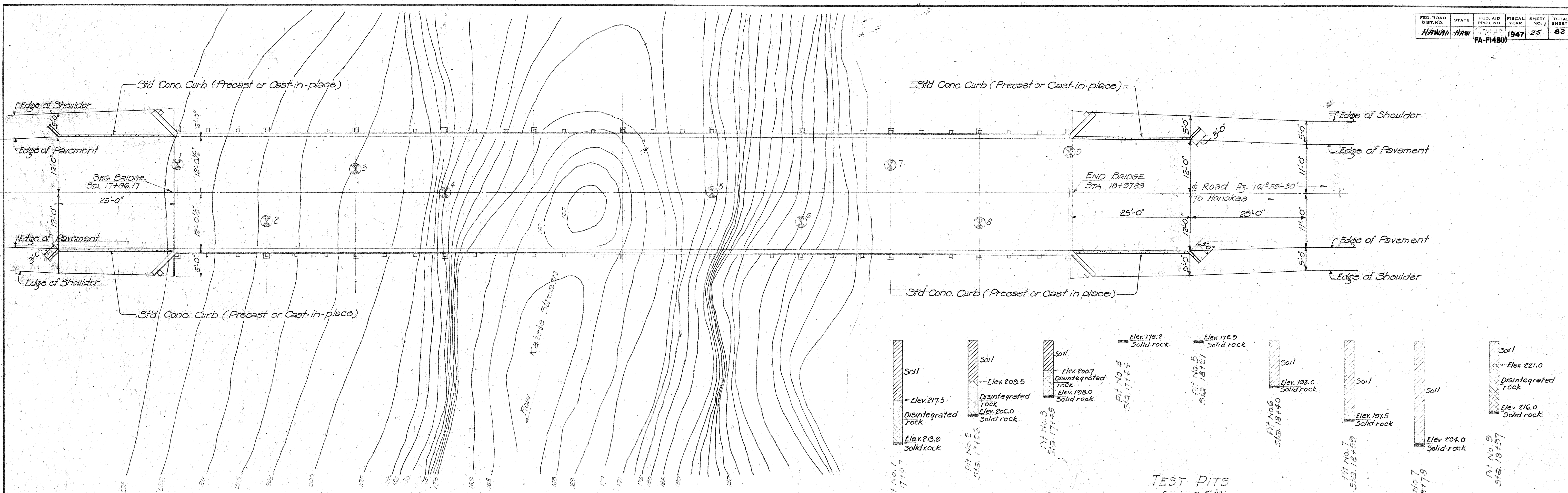




LAYOUT PLAN
Scale 1"=10'-0"

TEST PITS
Scale 1"=5'-0"

NOTE! Hatched and shaded portions represent work in place.

ESTIMATED QUANTITIES

Treated Timber	7,500 Ft. B.M.
Erecting Treated Timber	Furnished by Terr. 88,337 Ft. B.M.
Bituminous Gravel	26 c.y.
Structural Steel	42,200 LBS.
Screenings	26 c.y.
Chips	1.5 c.y.
Coarse Rock	53.0 c.y.

See Sheet No. 5 for Timber Bill of Material also Surfacing Materials

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE No. 1
17+06.17 - 18+97.83
HAWAII BELT RD. FA-148 (1)
Feb. 1946

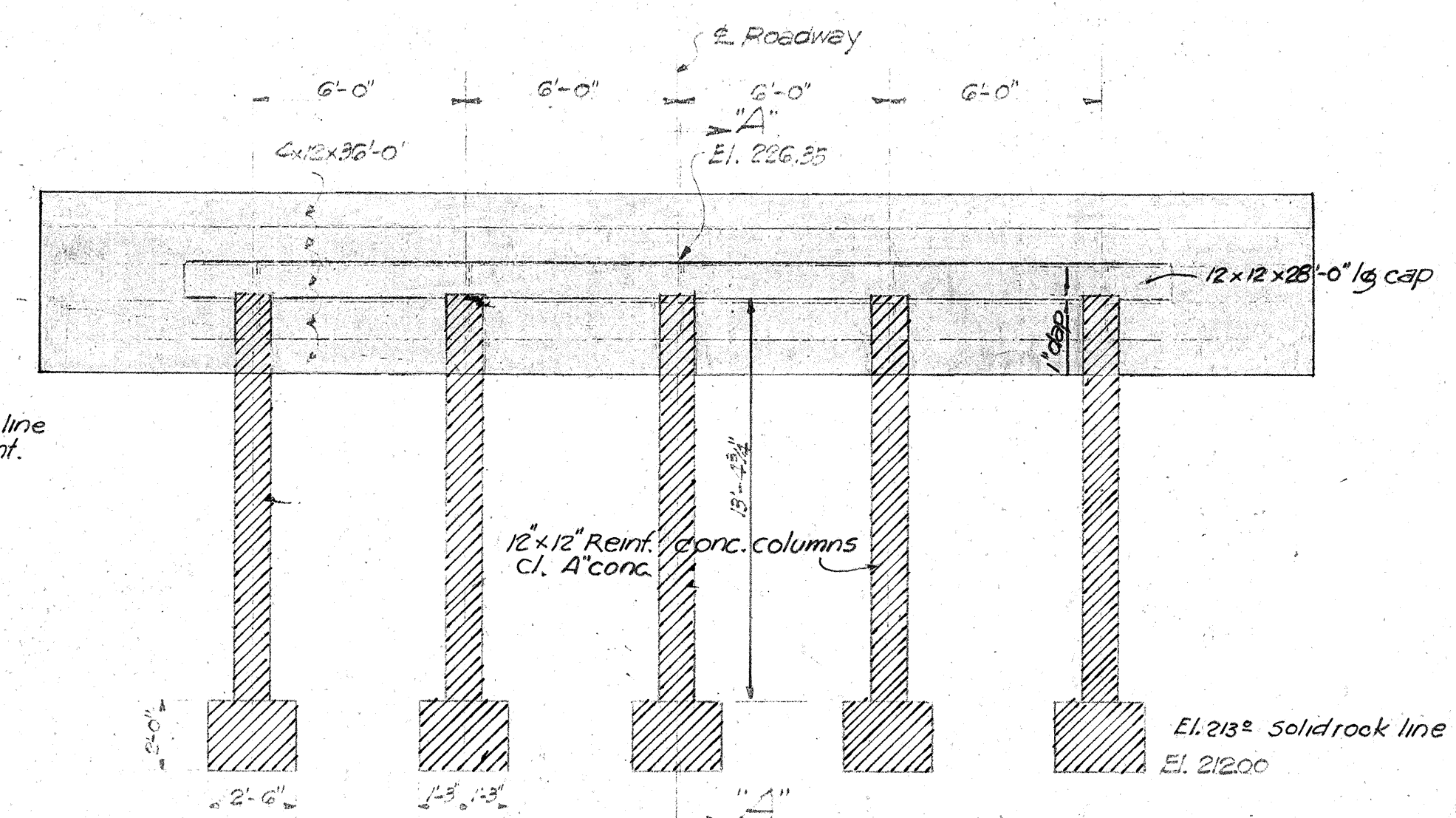
SHEET No. 1 OF 6 SHEETS

5194.25

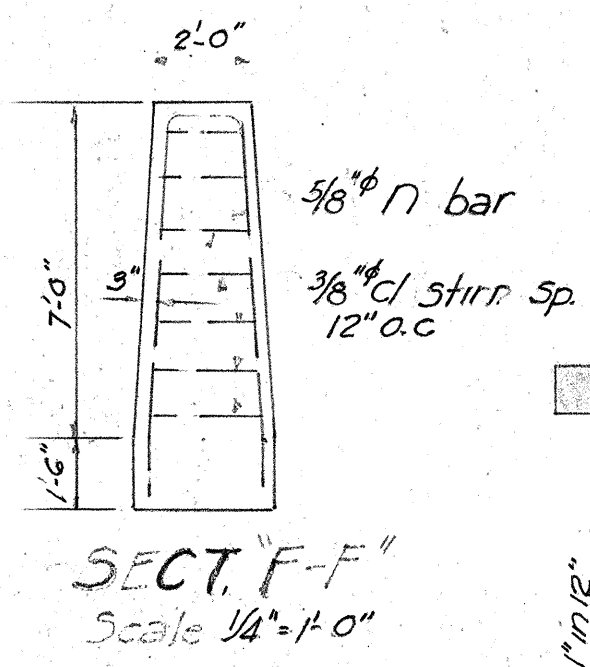
DOWNSTREAM ELEVATION
Scale 1"=10'-0"

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

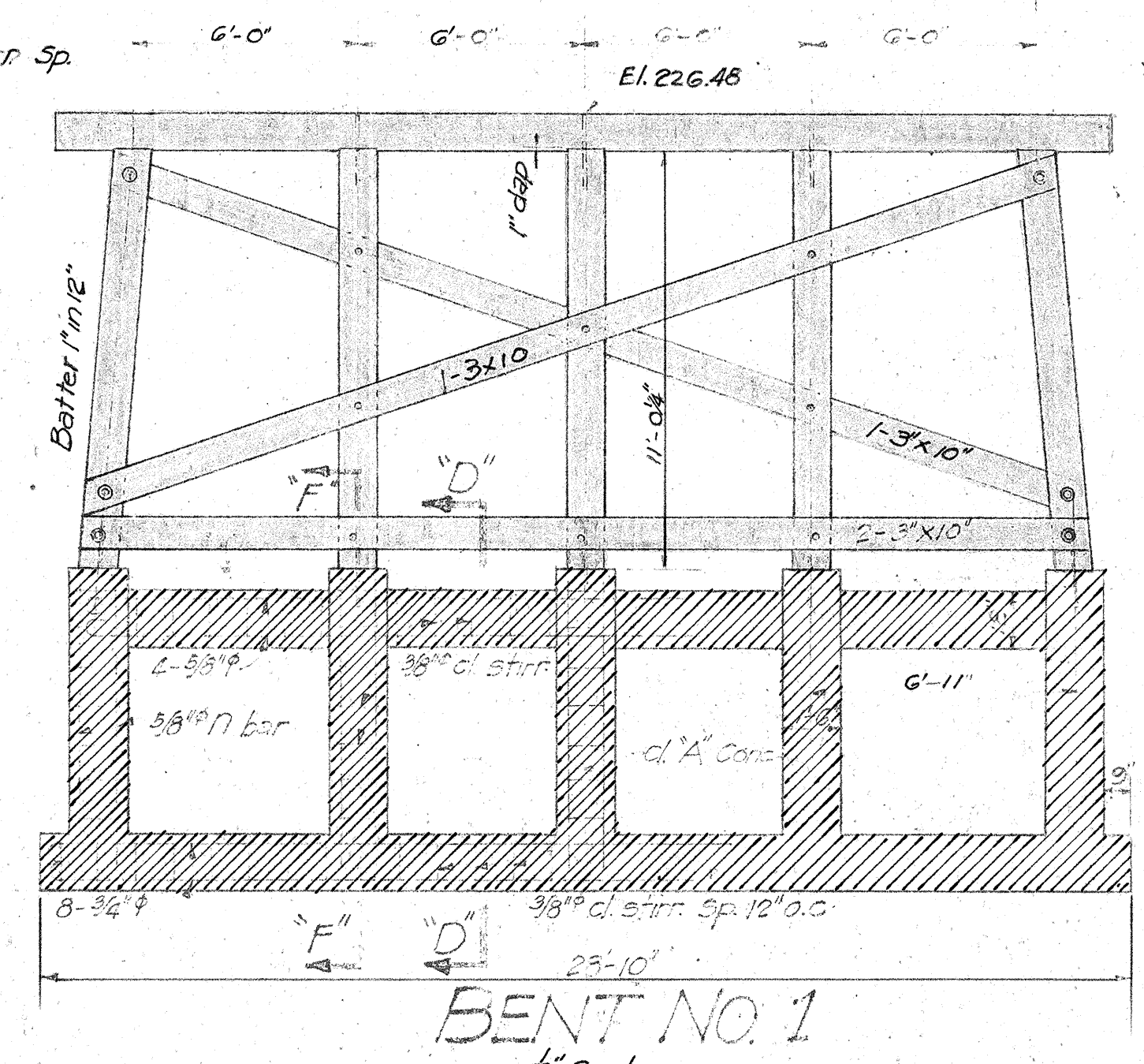
Timber Quant. Revised 7/46



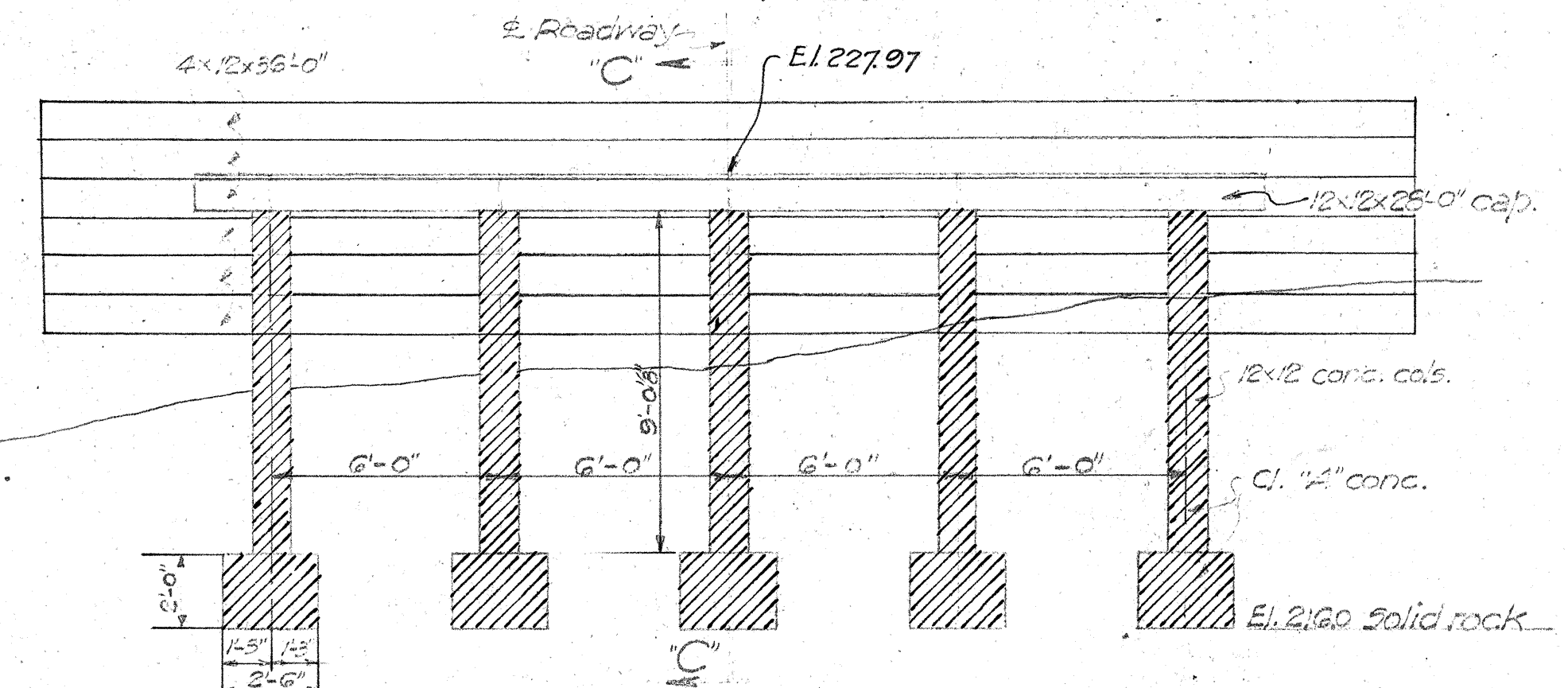
ABUT. NO. 1
1/4" Scale.



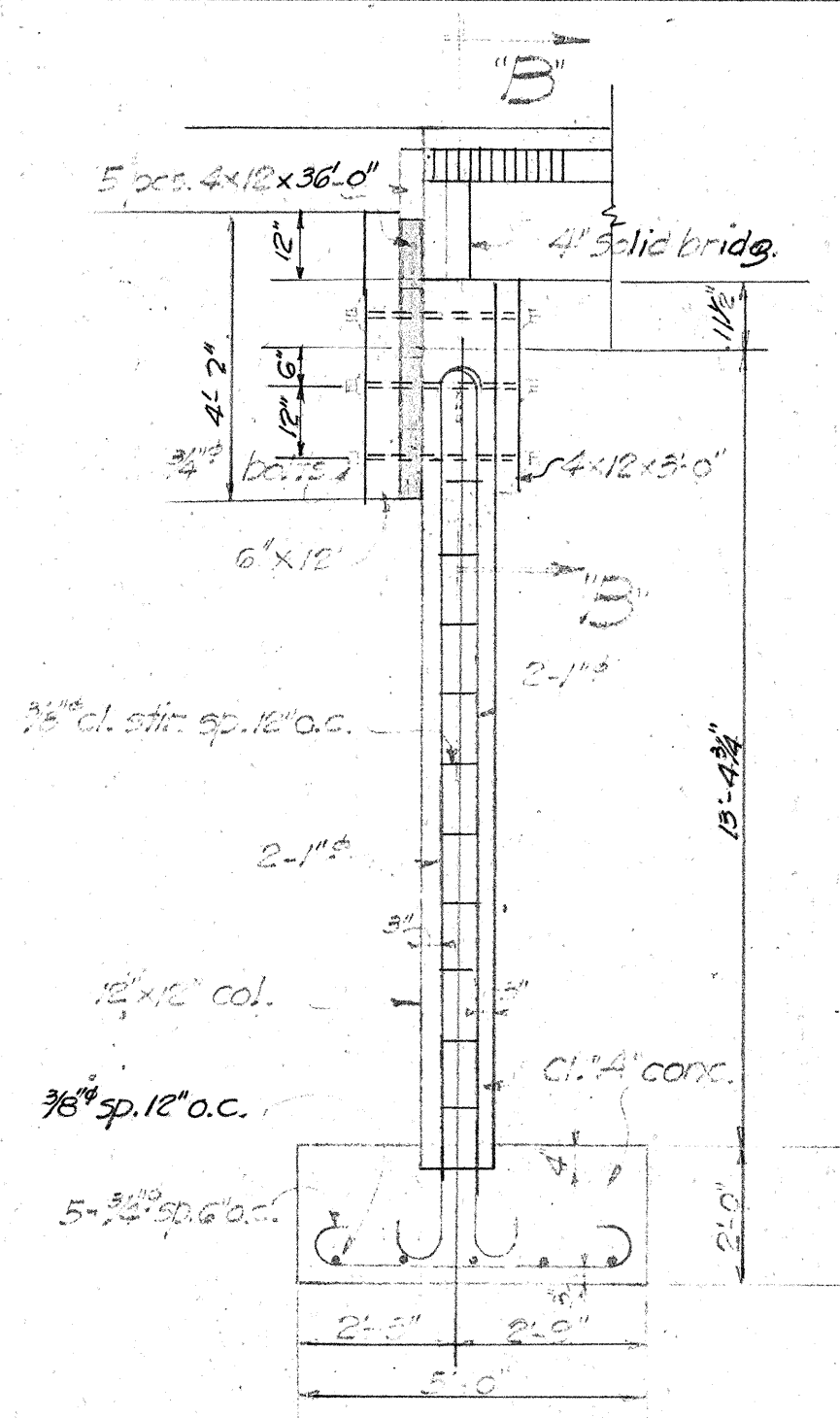
SECT. F-F
Scale 1/4" = 1'-0"



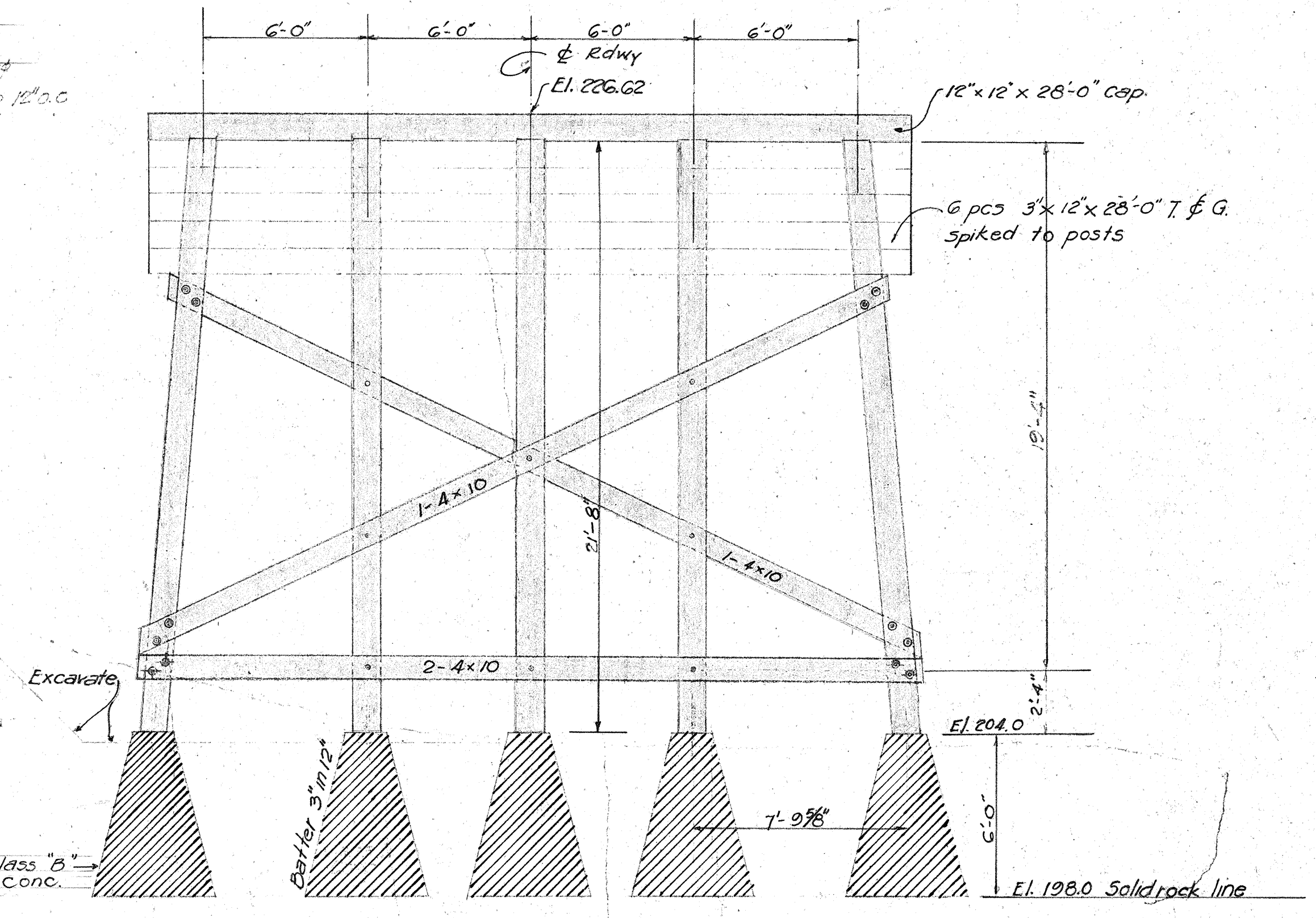
BENT NO. 1
1/4" Scale.



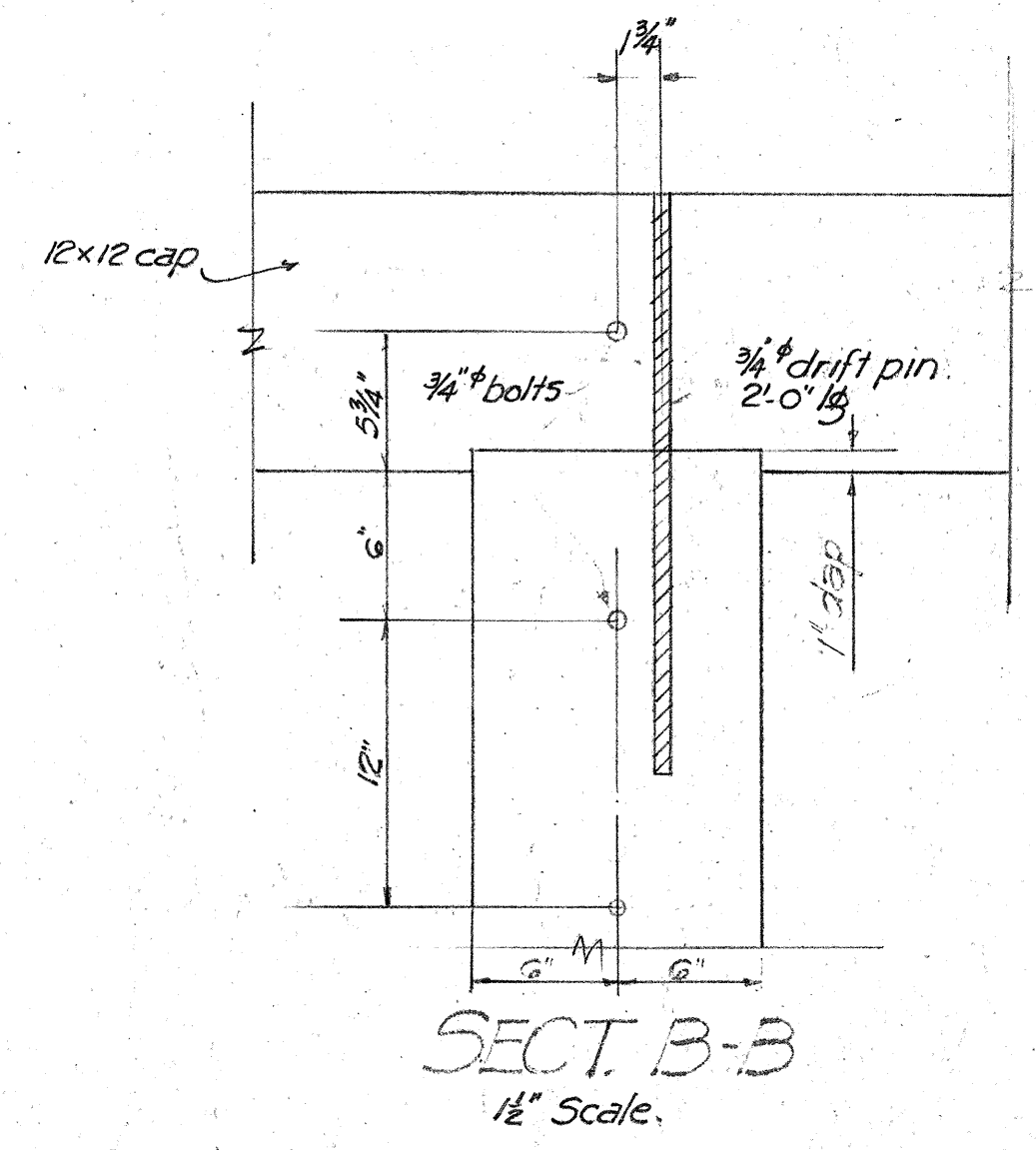
ABUT. NO. 2
1/4" Scale.



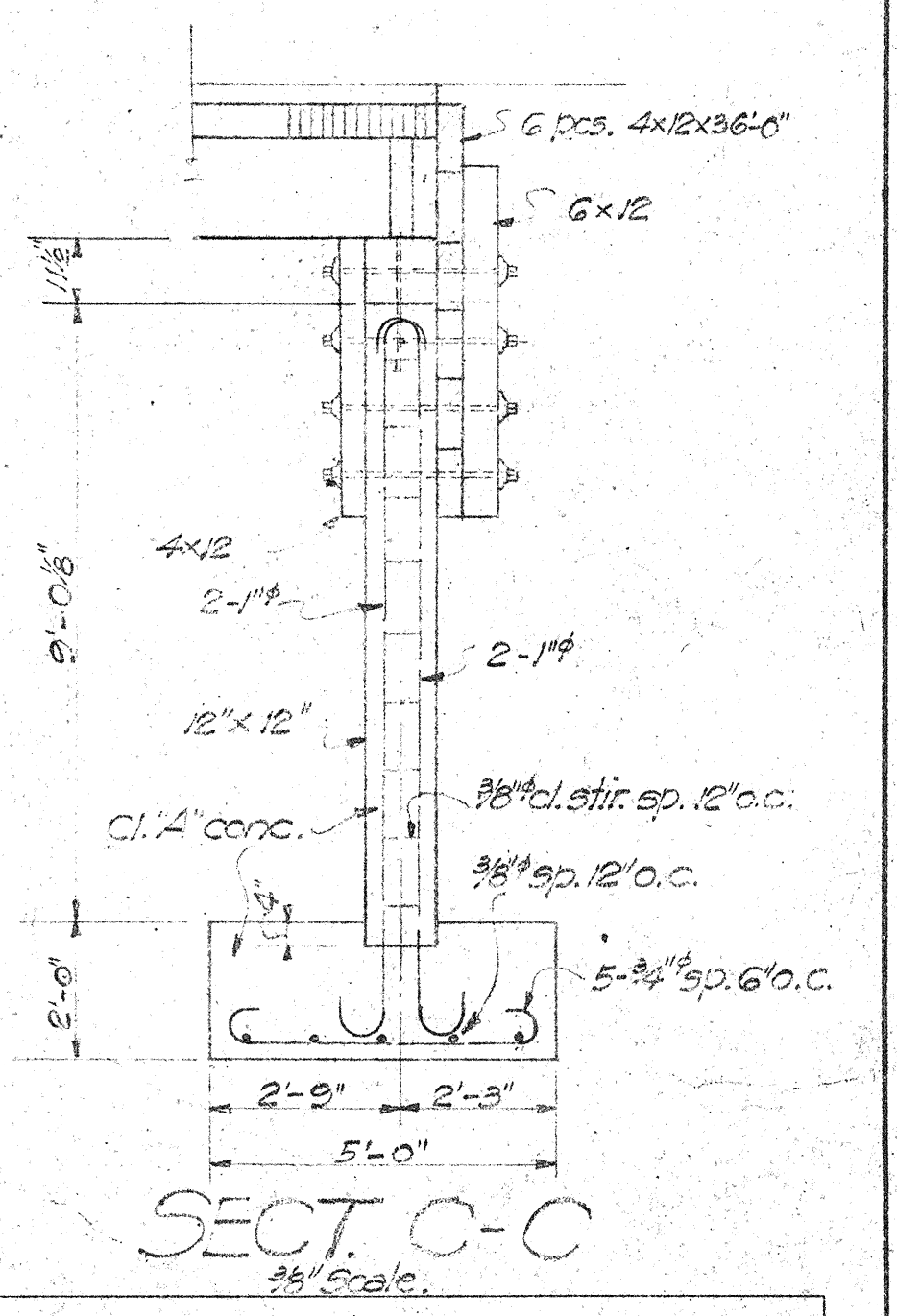
SECT. A-A
3/8" Scale.



BENT NO. 2
1/4" Scale.



SECT. B-B
1/2" Scale.



SECT. C-C
3/8" Scale.

NOTE: Hatched and shaded portions represent work in place.

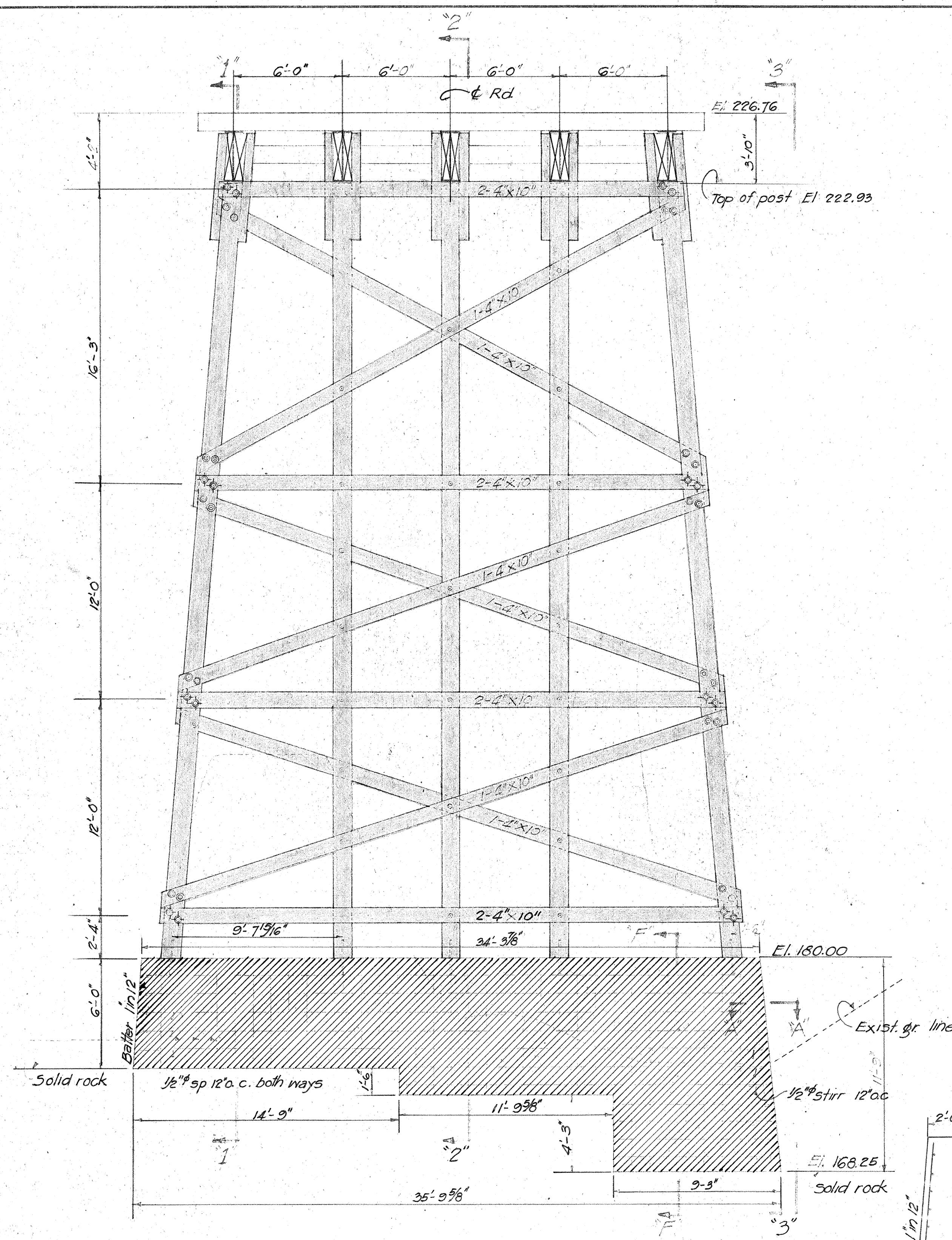
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE No. 1
17+06.17 to 18+97.83

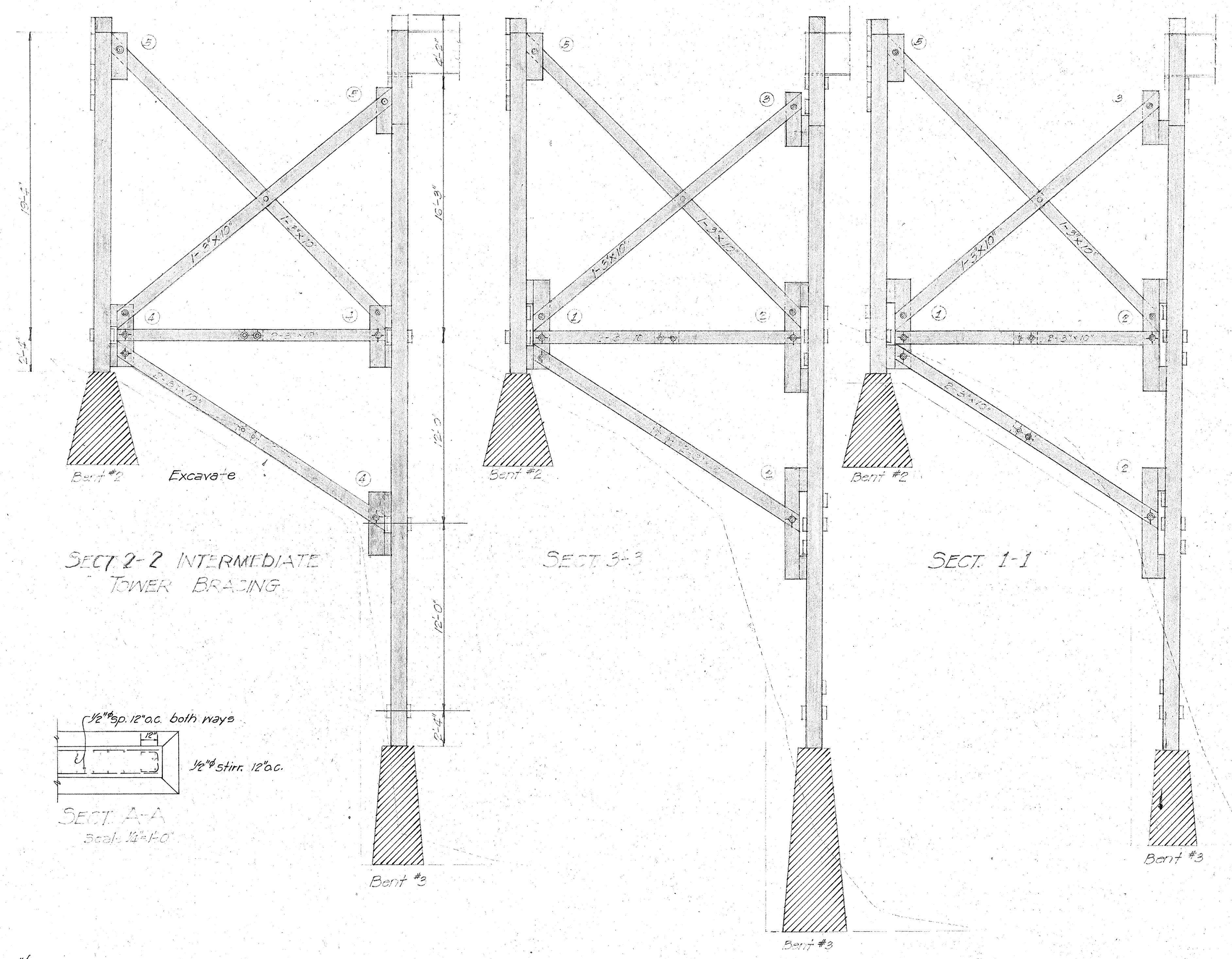
HAWAII BELT RD. FA-F14B (1) 1/4" = 1'-0"

SHEET No. 2 OF 6 SHEETS

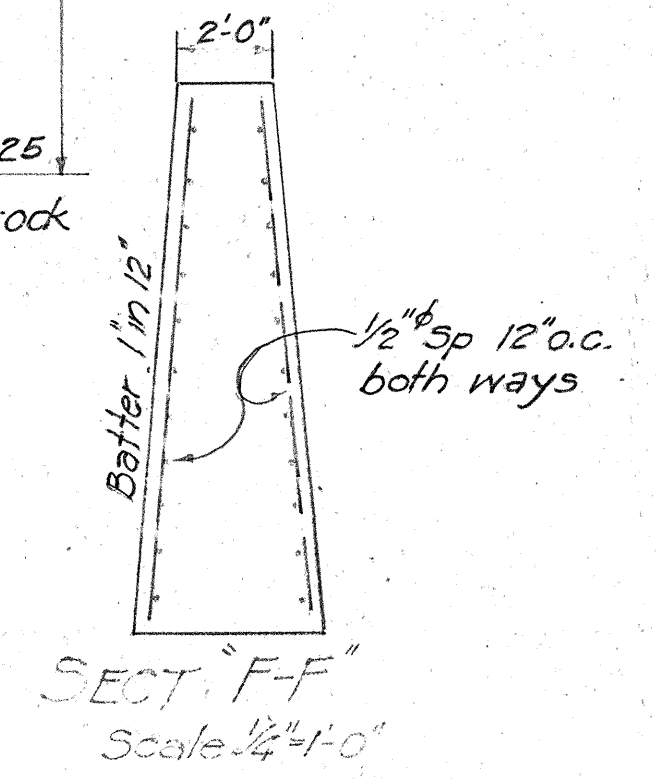
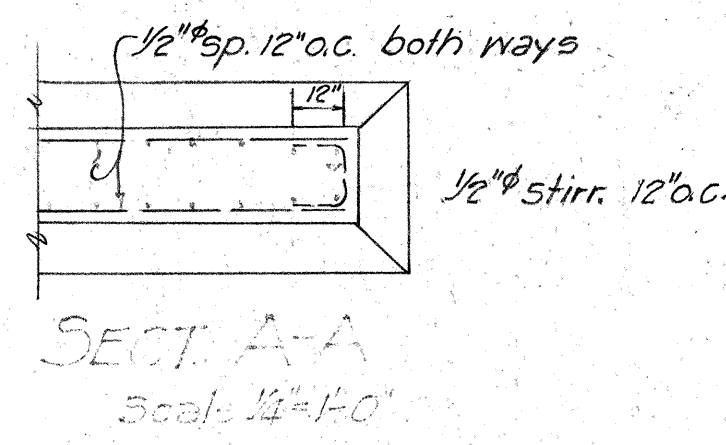
DATE	DESIGNED BY	CHECKED BY
10/1/47	J. H. HARRIS	J. H. HARRIS
10/1/47	DRAWN BY	NOTED BY
10/1/47	J. H. HARRIS	J. H. HARRIS
10/1/47	QUANTITIES BY	QUANTITIES CHECKED BY
10/1/47	J. H. HARRIS	J. H. HARRIS
10/1/47	NOTE BOOK	CHECKED BY
10/1/47	No.	No.



BENT No. 3
Scale 1/2" = 1'-0"



TOWER BRACING - BENTS No. 2 & 3
Scale 1/4" = 1'-0"



NOTE: Hatched and shaded portions represent work in place.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

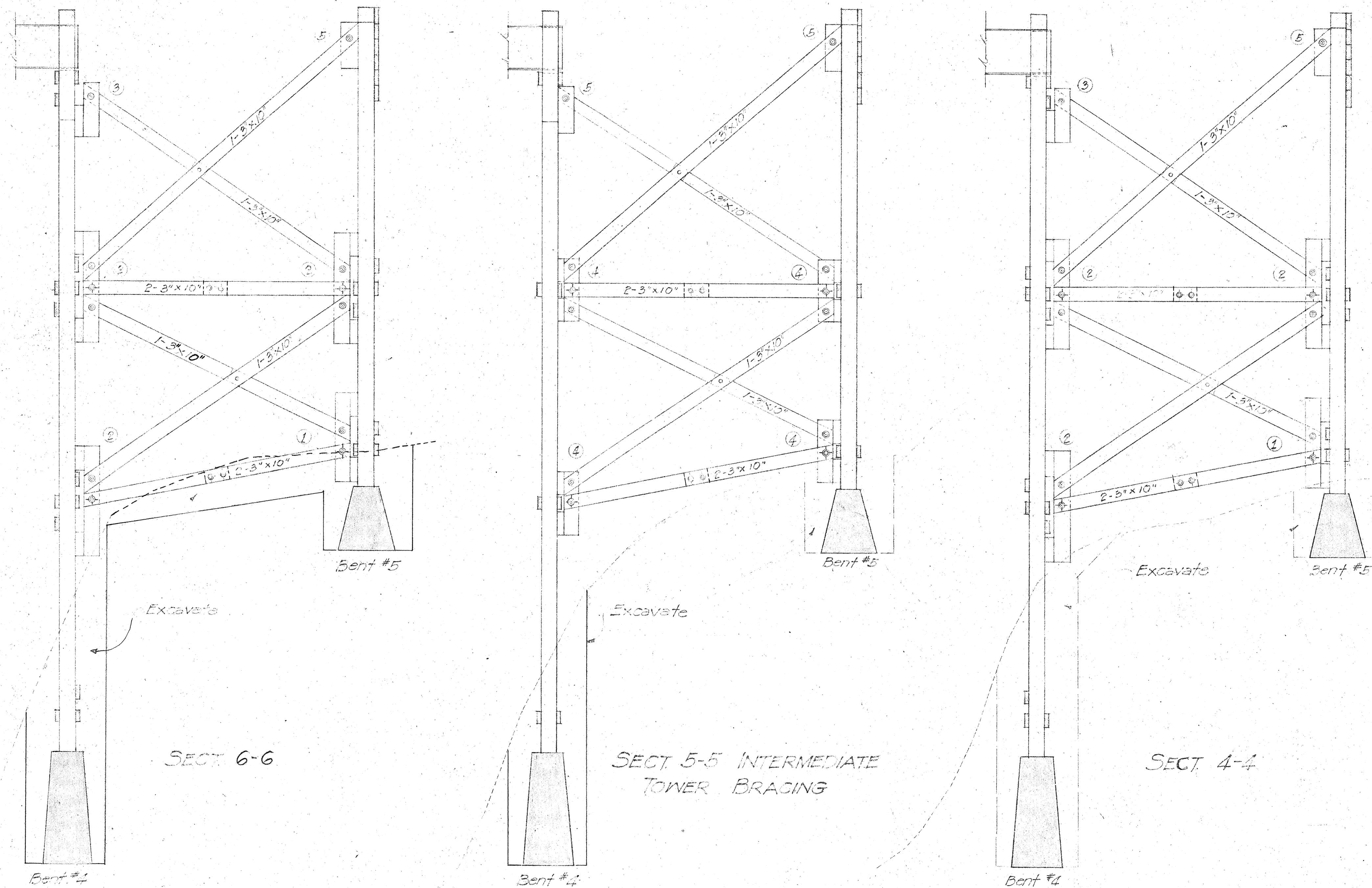
BRIDGE No. 1
17+06.17 to 18+97.83
HAWAII BELT RD. FA-F148 (1)
Feb. 1946

SHEET No. 3 OF 6 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DATE

DESIGNED BY
DRAWN BY
TRACED BY
QUANTITIES BY
CHECKED BY



TOWER BRACING - BENTS 4 & 5

Scale 1/4" = 1'-0"

Note:
For location of Sect 4-4, 5-5 & 6-6 see sheet #4

TIMBER BILL OF MATERIAL

DOUGLAS FIR - COAST REGION					
MEMBER	QTY	SIZE & LENGTH	LUMBER GRADING	MILL WORK	FT. S.M.
Floor Decking	1406	2" x 6" x 26'-0"	Structural Select Joists & Planks	S/S/E	36556
Bridge Railing	20	3" x 8" x 20'-0"	"	"	800
"	20	4" x 8" x 20'-0"	"	"	1067
Guard Railing	4	3" x 8" x 8'-0"	"	"	64
"	4	4" x 8" x 8'-0"	"	"	85
Bracing - Bents	10	3" x 10" x 28'-0"	"	Rough	700
"	2	3" x 10" x 32'-0"	"	"	160
"	4	4" x 10" x 28'-0"	"	"	347
"	2	4" x 10" x 28'-0"	"	"	373
"	10	4" x 10" x 30'-0"	"	"	1000
"	16	4" x 10" x 32'-0"	"	"	1707
"	8	4" x 10" x 34'-0"	"	"	207
Bracing - Tower	30	3" x 10" x 18'-0"	"	"	1350
"	5	3" x 10" x 20'-0"	"	"	250
"	30	3" x 10" x 22'-0"	"	"	1650
"	12	3" x 10" x 24'-0"	"	"	720
"	5	3" x 10" x 26'-0"	"	"	325
"	2	3" x 10" x 28'-0"	"	"	140
Tower Br. Gusset Plates	4	4" x 12" x 5'-8"	"	"	91
"	10	4" x 12" x 7'-0"	"	"	280
"	4	4" x 12" x 3'-6"	"	"	96
"	21	4" x 12" x 4'-0"	"	"	336
"	16	4" x 12" x 3'-0"	"	"	192
Tower Bracing Blocks	70	6" x 12" x 1'-0"	Structural Select Beams & Stringers	"	630
"	4	6" x 12" x 2'-0"	"	"	48
Splice Blocks	18	6" x 18" x 9'-0"	"	"	486
Filler Blocks at J's	4	10" x 12" x 2'-7 1/2"	"	S/S/E	108
"	16	6" x 12" x 2'-7 1/2"	"	Cut to fit	260
Stringers	130	6" x 18" x 20'-0"	"	S/S/E	23400
Post Scabs at J's	20	6" x 12" x 6'-0"	"	Rough	720
Bulkhead Scabs	5	6" x 12" x 10'-0"	"	"	300
"	5	4" x 12" x 8'-0"	"	"	160
Firestop	12	3" x 12" x 28'-0"	No. 1 Dimension Joists & Planks	"	1008
Strut Blocks	16	4" x 10" x 1'-0"	"	"	54
Solid Bridging	2	4" x 18" x 14'-0"	"	S/E	756
"	2	4" x 18" x 20'-0"	"	"	240
Solid Bridging at J's	2	4" x 10" x 16'-0"	"	Rough	107
"	4	4" x 12" x 16'-0"	"	"	258
Cross Bridging	60	2" x 4" x 10'-0"	"	"	400
Blocks at Bear. Plate	20	1" x 2" x 1'-0"	"	"	5
Bulkhead	11	4" x 12" x 36'-0"	"	"	1584
Fills of Rail Posts	62	2" x 8" x 1'-6"	"	"	124
Caps	11	12" x 12" x 28'-0"	Structural Select Posts & Timbers	S/S	3626
Bridge Railing Posts	62	8" x 8" x 6'-0"	"	S/S	1284
Guard Railing Posts	4	12" x 12" x 8'-0"	"	"	384
Post - Bents	5	12" x 12" x 12'-0"	"	Rough	720
"	5	12" x 12" x 14'-0"	"	"	840
"	5	12" x 12" x 20'-0"	"	"	1200
"	5	12" x 12" x 22'-0"	"	"	1320
"	5	12" x 12" x 30'-0"	"	"	1800
"	10	12" x 12" x 44'-0"	"	"	5280
Wheel Guard	20	12" x 14" x 20'-0"	No. 1 Dimension Post & Timbers	S/S/E	5600
"	4	12" x 14" x 8'-0"	"	"	448
Blocks at Tower Brace	10	4" x 10" x 1'-0"	Structural Select Beams & Stringers	Rough	34
"	25	4" x 10" x 1'-6"	"	"	125
					103233

See Sheets 5194, 56 A, & 56 C, for Supplementary Timber Bill of Materials.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE No. 1
17+06.17 to 18+27.83

HAWAII BELT RD. FA-F148(1) 1/11

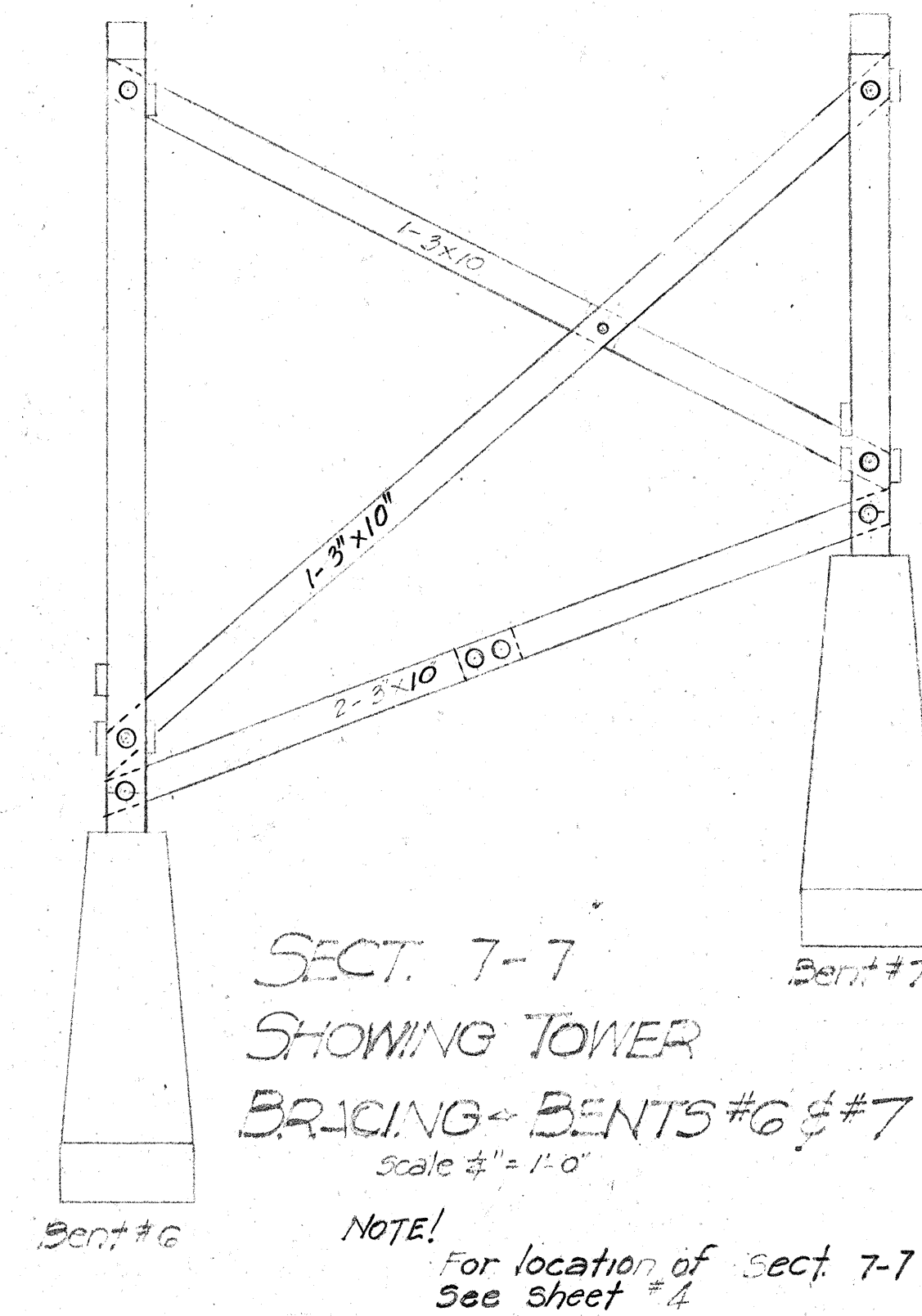
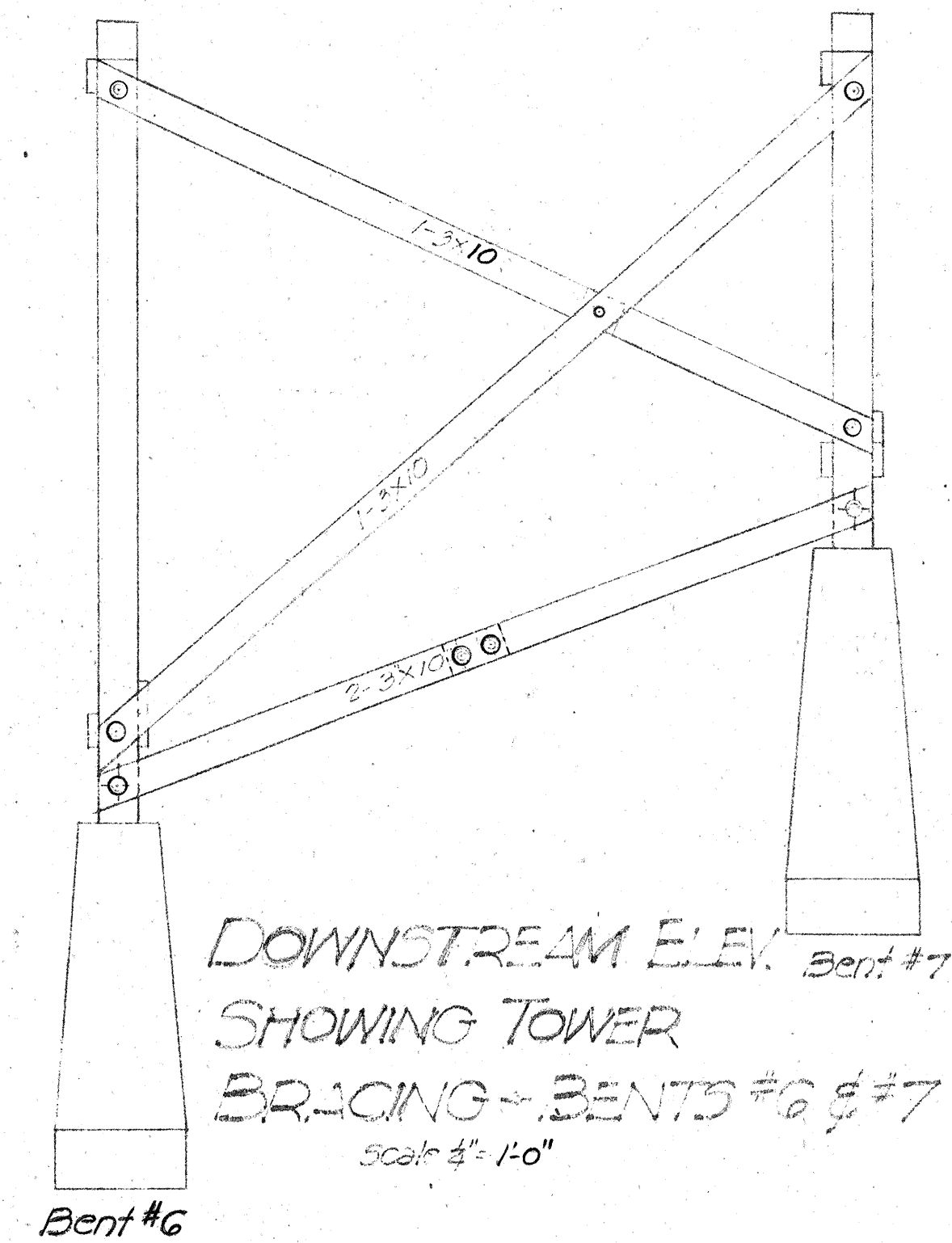
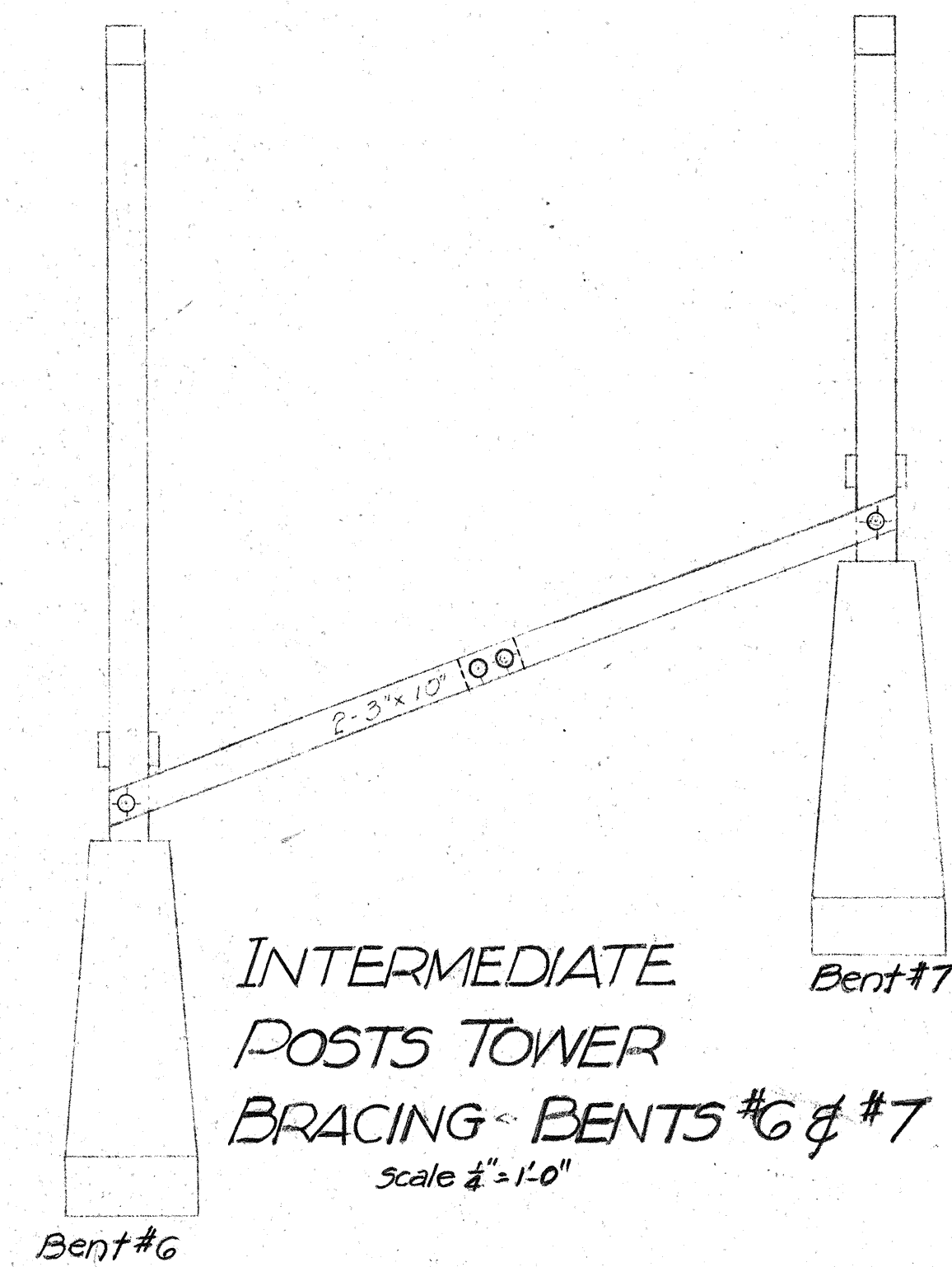
Feb. 1946

SHEET No 5 OF 6 SHEETS

5194.29

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

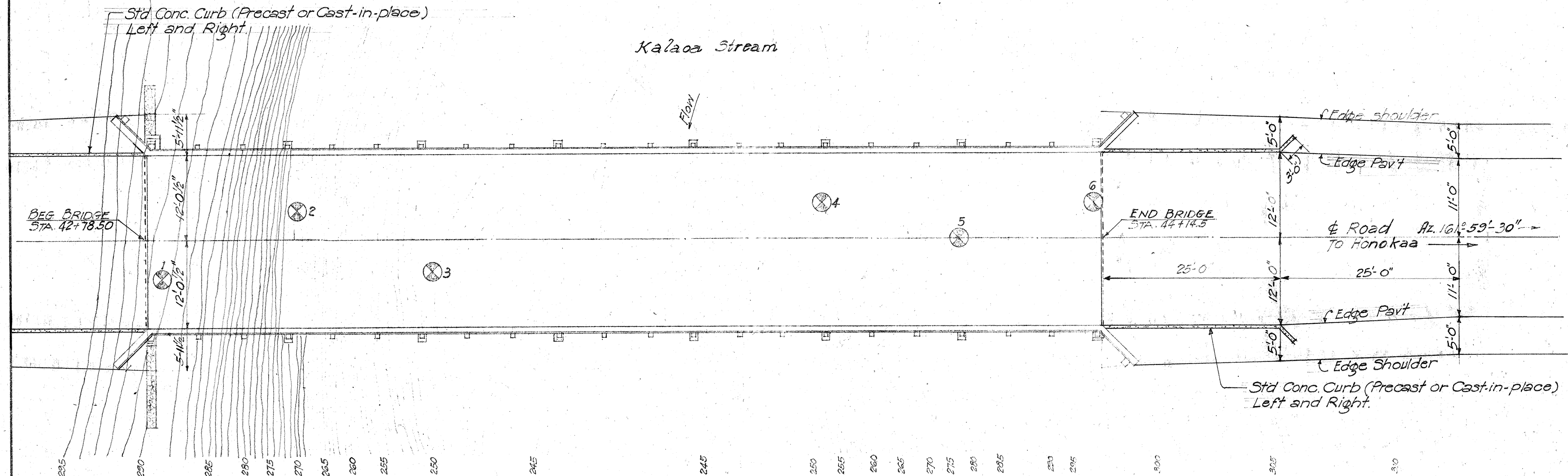
ORIGINAL PLAN	NOTE BOOK
No.	No.



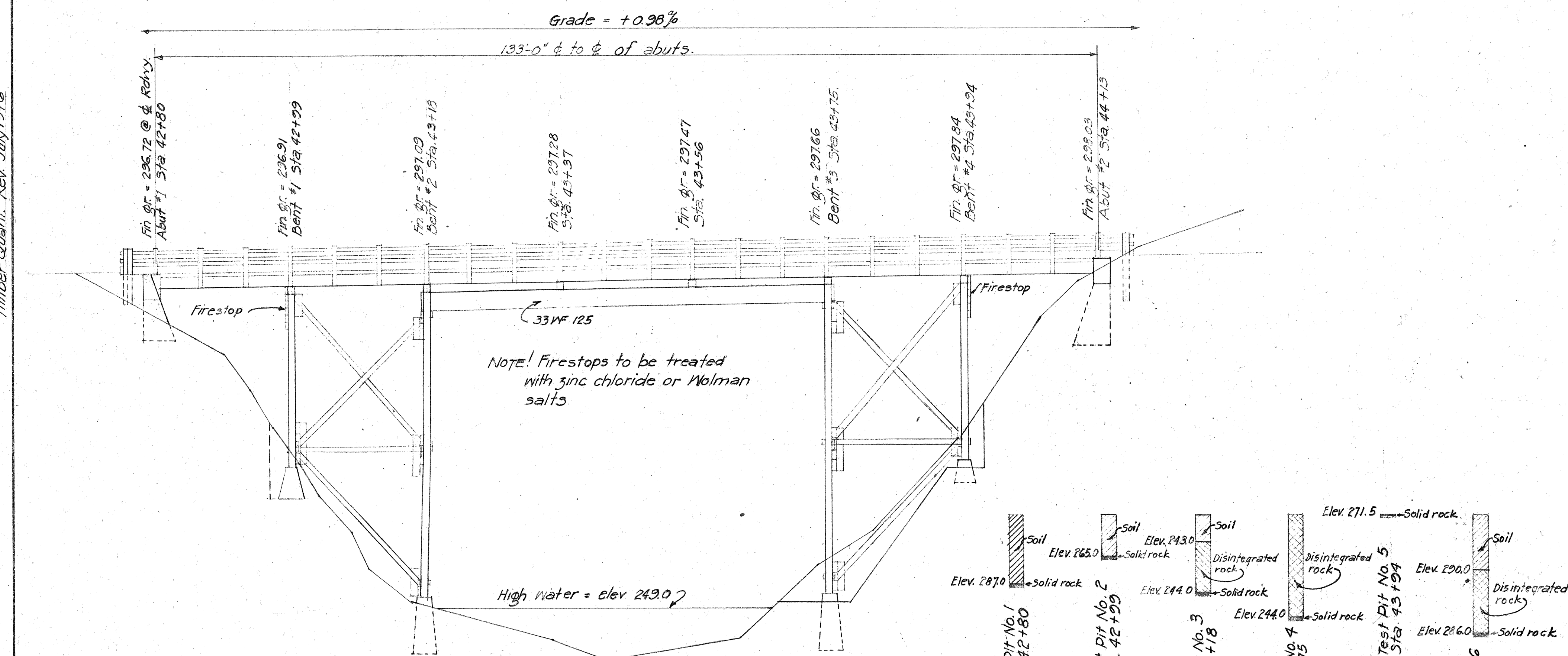
ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DESIGNED BY	
NOTE BOOK	TRACED BY	
No.	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY	

TERRITORIAL HIGHWAY DEPARTMENT	
TERRITORY OF HAWAII	
BRIDGE No. 1	
17+06.17 - 18+27.83	
HAWAII BELT RD.	FA-F148(1)
Feb. 1946	
SHEET No. 6 OF 6 SHEETS	

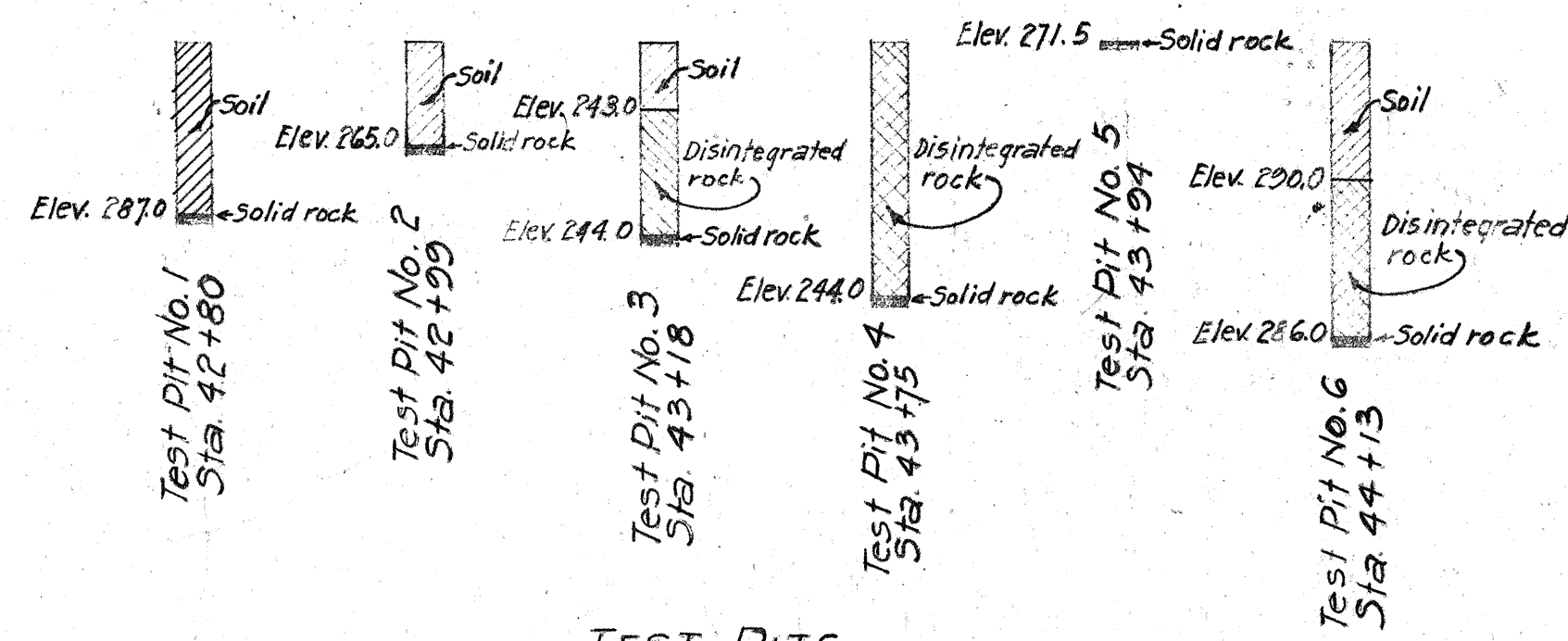
5194.30



LAYOUT PLAN
Scale 1"=10'-0"



DOWNSTREAM ELEVATION
Scale 1"=10'-0"



TEST PITS
Scale: 1"=5'-0"

TIMBER BILL OF MATERIAL

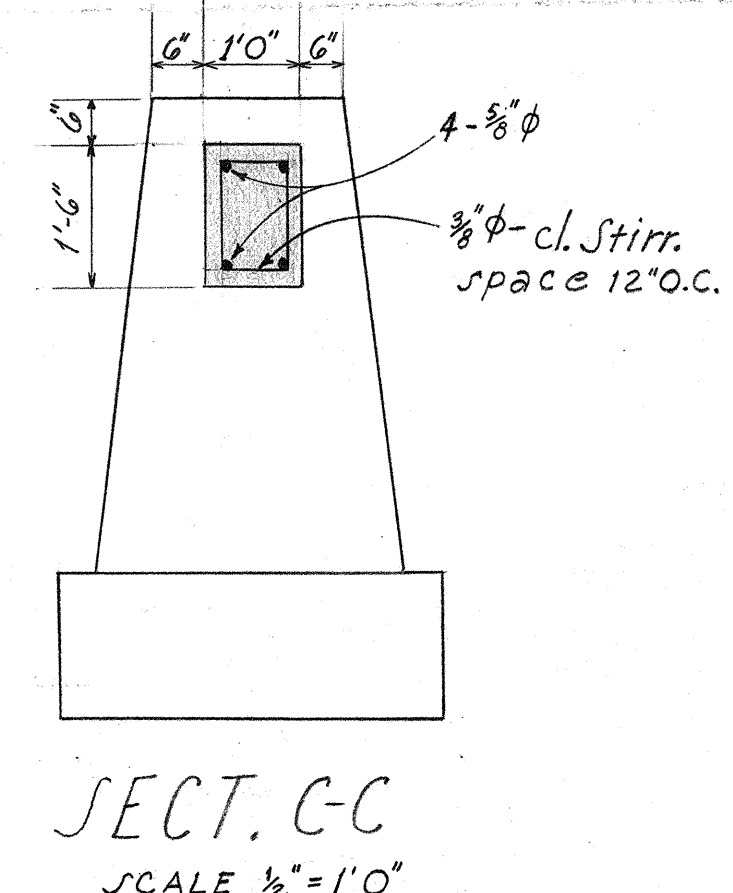
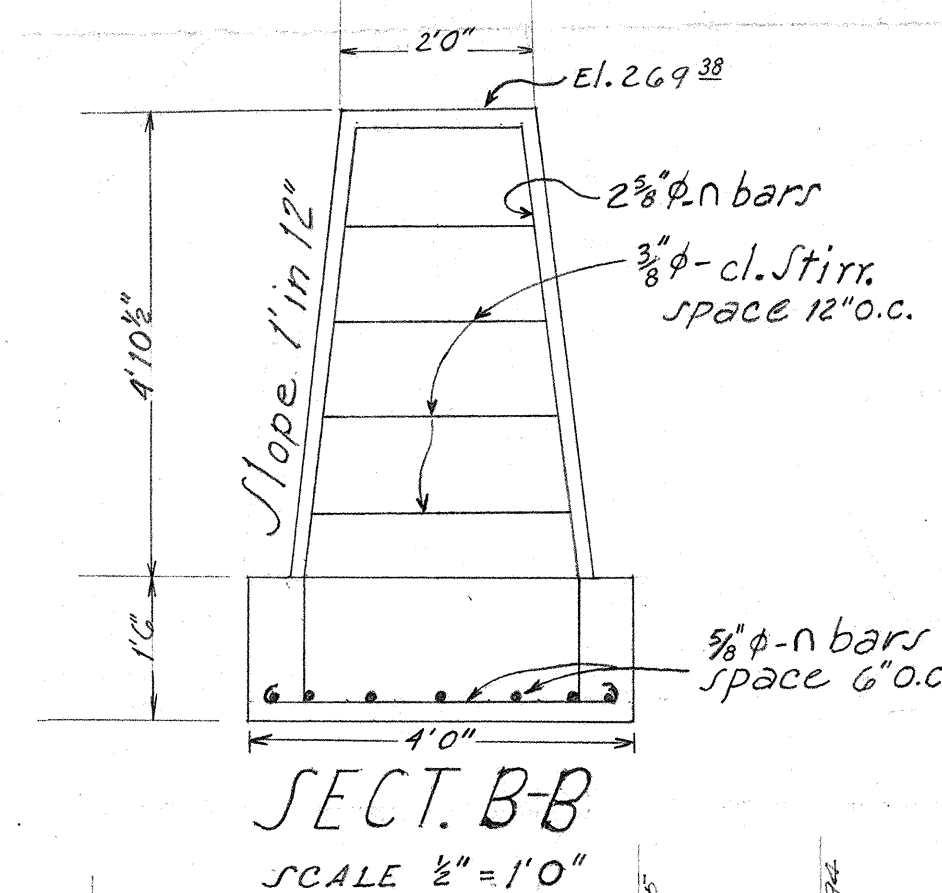
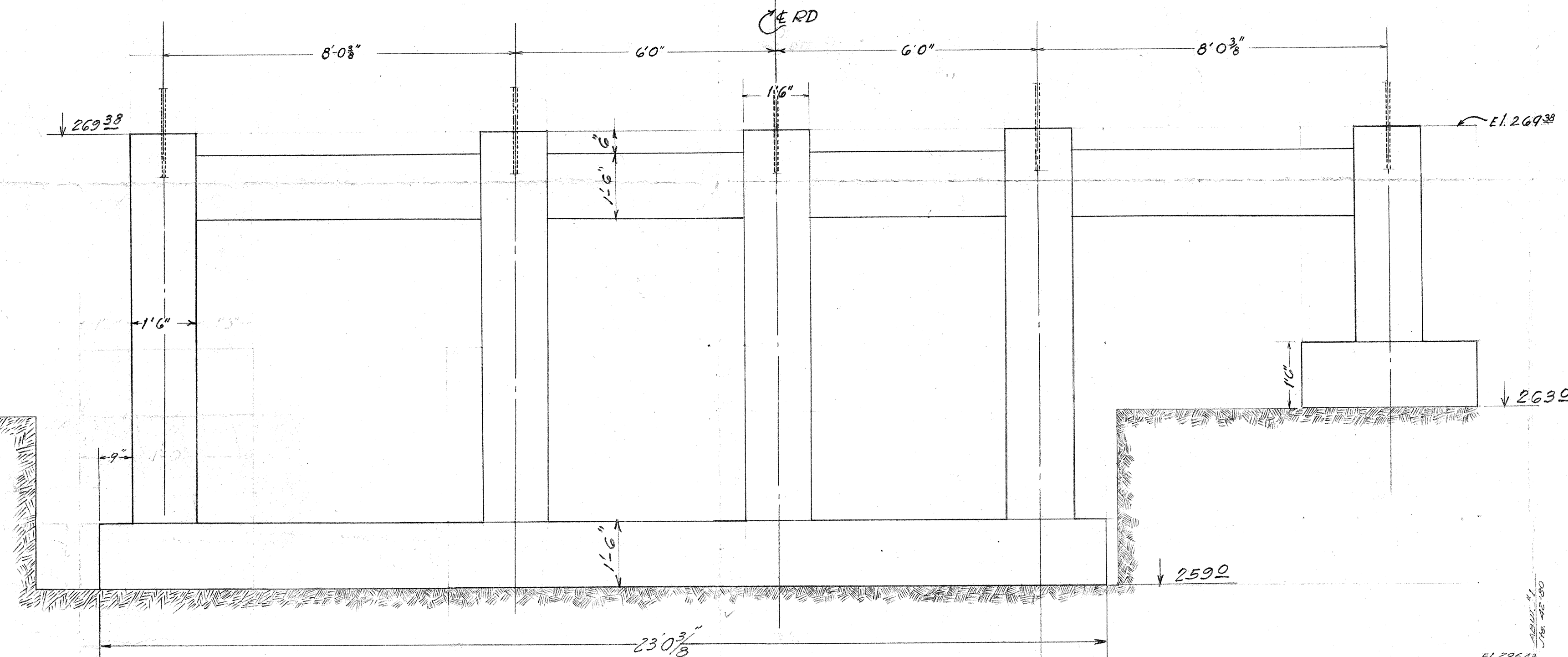
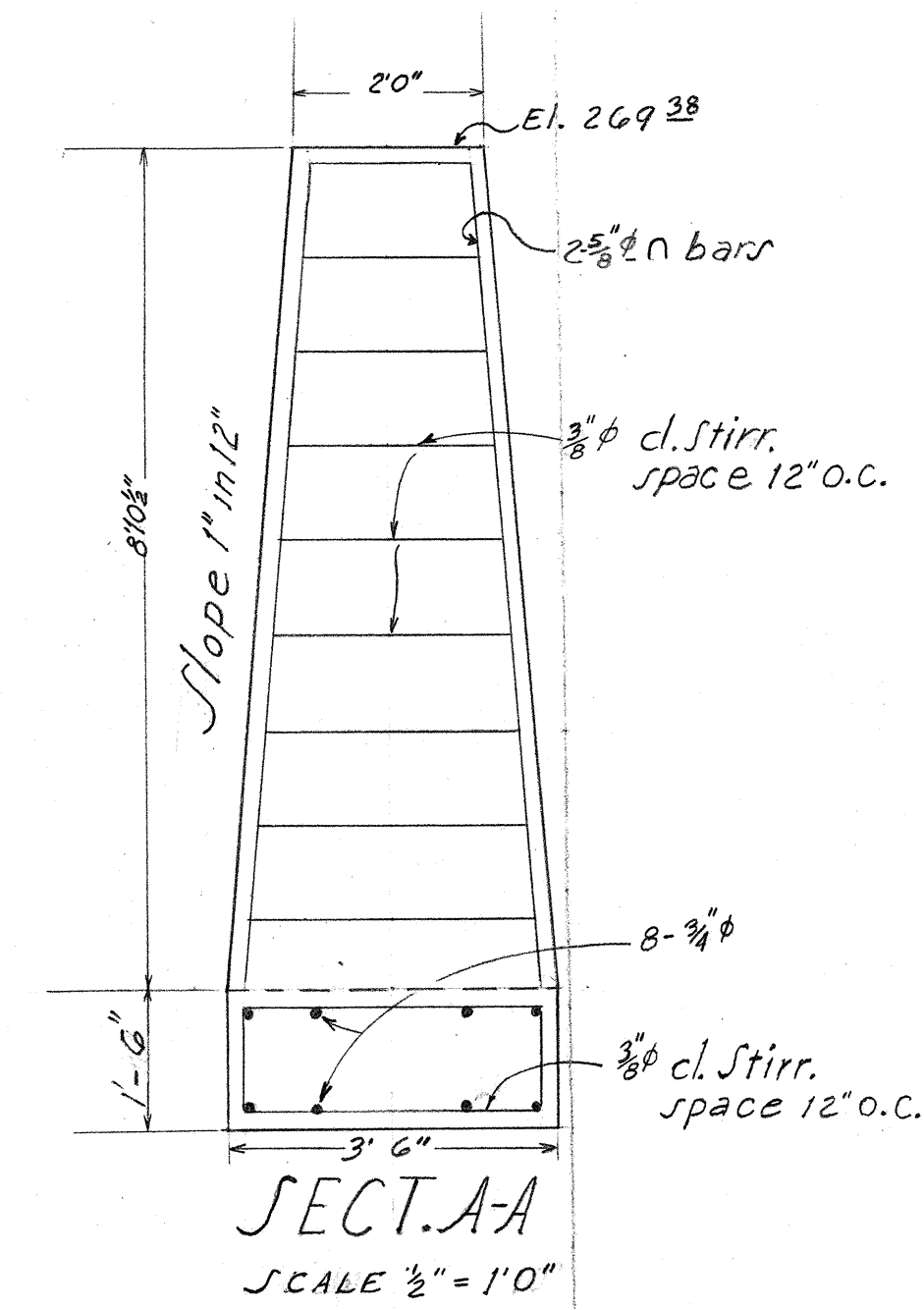
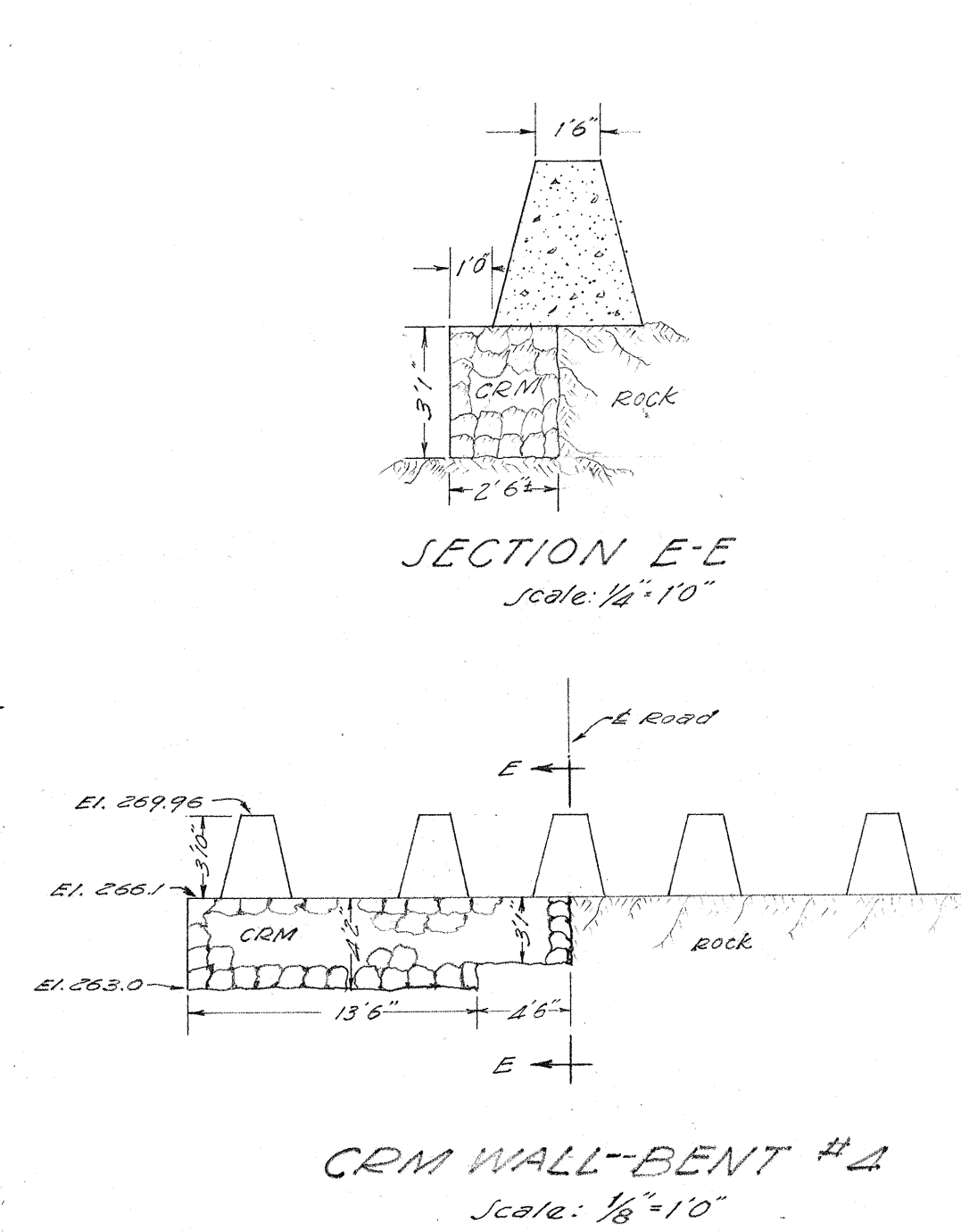
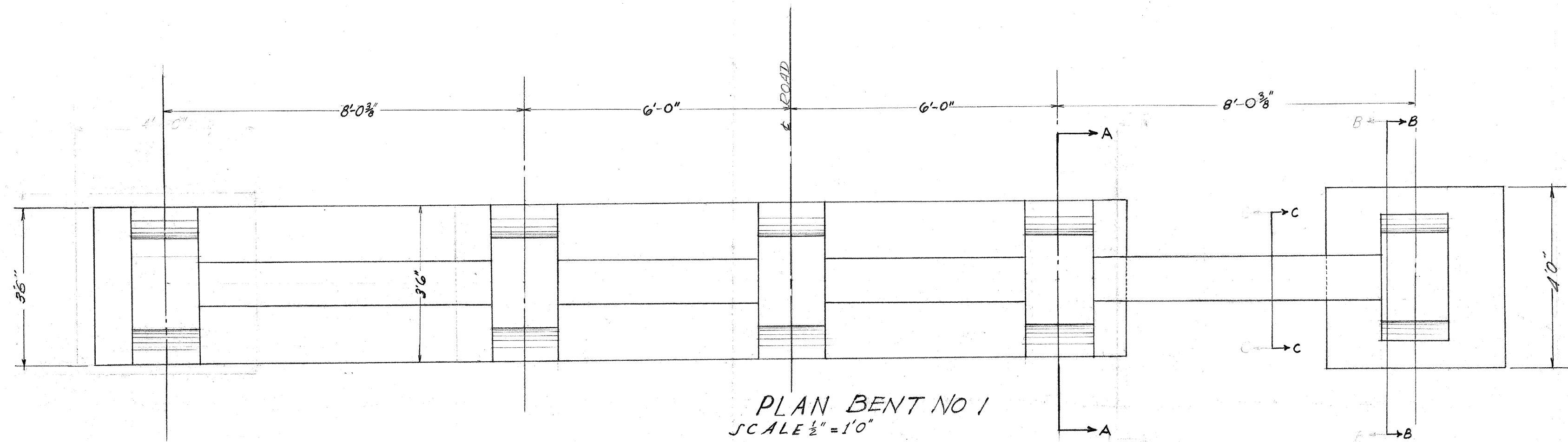
DOUGLAS FIR - COAST REGION					
MEMBER	NO.	SIZE & LENGTH	LUMBER GRADING	MILL WORK	FT. B.M.
Floor Decking	986	2" x 6" x 26'-0"	Structural Select Joists and Planks	S/S/E	25636
Guard Railing	4	3" x 8" x 8'-0"	"	S4S	64
"	4	4" x 8" x 8'-0"	"	"	85
Bridge Railing	14	4" x 8" x 20'-0"	"	"	747
"	14	3" x 8" x 20'-0"	"	"	560
Bracing - Bents	4	4" x 10" x 26'-0"	"	Rough	347
"	8	4" x 10" x 30'-0"	"	"	800
"	4	4" x 10" x 32'-0"	"	"	427
"	8	4" x 10" x 34'-0"	"	"	906
"	4	4" x 10" x 36'-0"	"	"	480
Bracing - Tower	20	3" x 10" x 18'-0"	"	"	900
"	30	3" x 10" x 26'-0"	"	"	1950
"	10	3" x 10" x 28'-0"	"	"	700
Tower Br. Gusset Plates	8	4" x 12" x 5'-8"	"	"	192
"	4	4" x 12" x 7'-0"	"	"	112
"	4	4" x 12" x 3'-6"	"	"	56
"	18	4" x 12" x 4'-0"	"	"	288
"	16	4" x 12" x 3'-0"	"	"	192
Splice Blocks	12	6" x 17 1/2" x 3'-0"	Structural Select Beams & Stringers	S/S/E	324
Tower Br. Blocks	60	6" x 12" x 1'-6"	"	Rough	540
"	4	6" x 12" x 2'-0"	"	"	48
Firestop	12	3" x 12" x 28'-0"	No. 1 Dimension Joists & Planks	Rough T&G	1008
Stringers	91	6" x 18" x 20'-0"	Structural Select Joists & Stringers	S/S/E	16380
Deck Starter	2	6" x 6" x 26'-0"	"	S/E	156
Filler Blocks	44	2" x 8" x 1'-5 1/2"	"	Rough	88
"	4	10" x 12" x 2'-7 1/2"	"	"	107
"	16	6" x 12" x 2'-7 1/2"	"	"	256
Post Scabs @ Steel Span	20	6" x 12" x 6'-0"	"	"	720
Railing Posts	44	8" x 8" x 6'-0"	Structural Select Post & Timbers	S4S	1408
"	4	12" x 12" x 8'-0"	"	"	384
Caps	6	12" x 12" x 28'-0"	"	S/S	2016
Posts - Bents	10	12" x 12" x 26'-0"	"	Rough	3120
"	10	12" x 12" x 42'-0"	"	"	5040
Wheel Guard	14	12" x 14" x 20'-0"	No. 1 Dimension Post & Timbers	S/S/E	3920
"	4	12" x 14" x 8'-0"	"	"	448
Strut Blocks	16	4" x 10" x 1'-0"	No. 1 Dimension Joists & Planks	Rough	53
Solid Bridging	6	4" x 18" x 14'-0"	"	S/E	504
"	2	4" x 18" x 20'-0"	"	"	240
"	2	4" x 10" x 16'-0"	"	Rough	107
"	4	4" x 12" x 16'-0"	"	"	256
Cross Bridging	42	2" x 4" x 10'-0"	"	"	280
Blocks at Bear Plates	20	1" x 3" x 1'-0"	"	"	5
End Planking Support	2	2" x 4" x 6'-0"	"	"	8
End Planking	2	2" x 12" x 3'-0"	"	"	12
"	2	2" x 5" x 4'-0"	"	"	6
Sills	2	6" x 9" x 28'-0"	No. 1 Dimension Post & Timbers	S/S	264
Blocks at Tower Bracing	10	4" x 10" x 1'-0"	Structural Select Beams & Stringers	Rough	100
"	20	4" x 10" x 1'-0"	"	"	72234

NOTE! See Sheets 5194, 56B & 56C for Supplementary Timber Bill of Material.

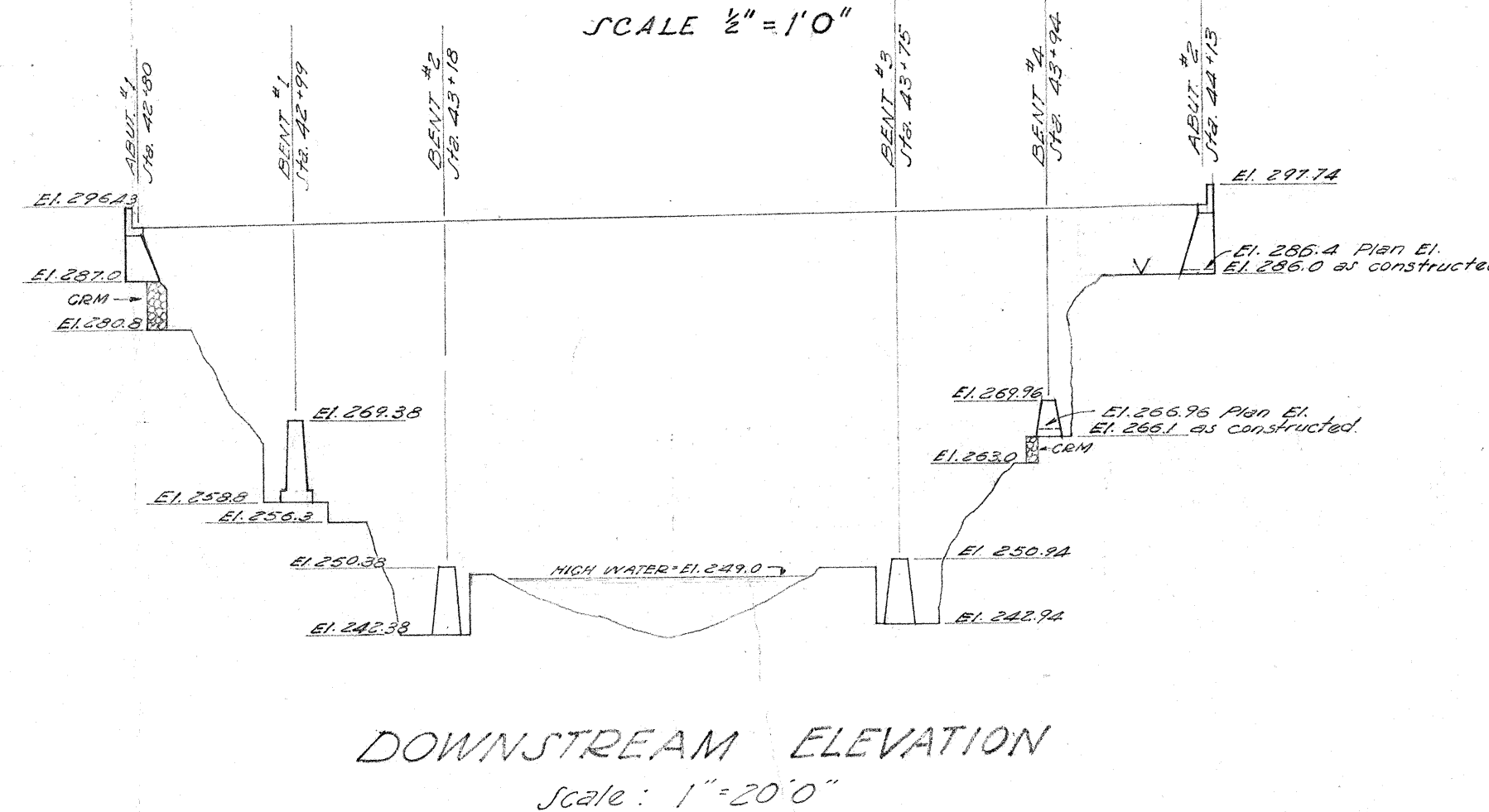
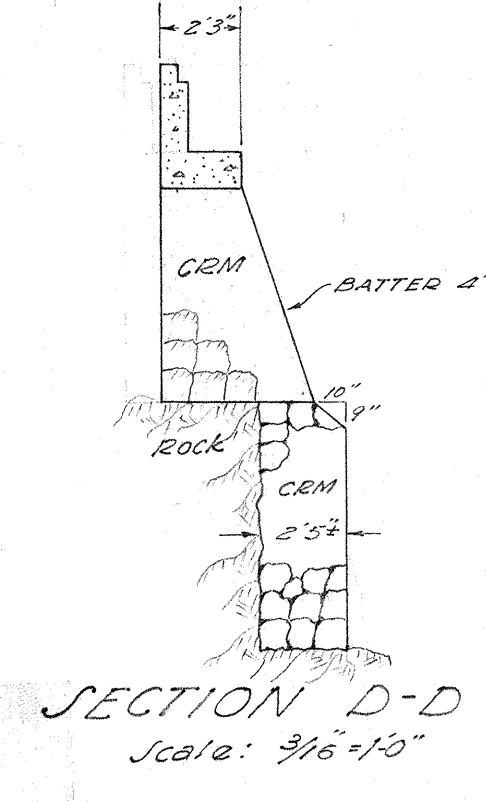
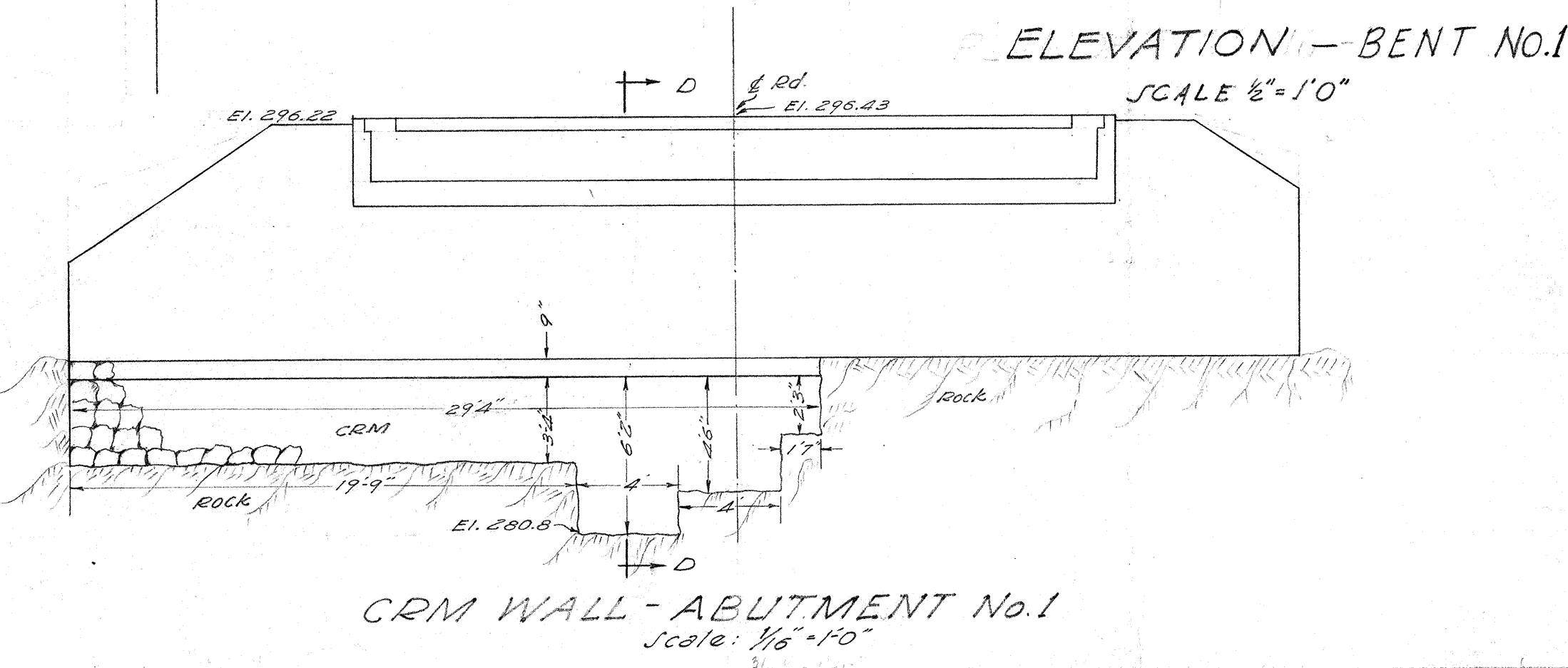
ESTIMATED QUANTITIES
Treated Timber 9340 Ft. B.M.
Class "A" Concrete 91 C.Y.
"B" " 63.6 C.Y.
Cement Rubble Masonry 68 C.Y.
Structural Steel 42200 LBS.
Reinf. Steel 1932 LBS.
Structural Excavation 400 C.Y.
Erecting Treated Timber
Furnished by the Territory 67118 Ft. B.M.
also Surfacing Materials

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BRIDGE NO. 2
42+78.5 - 44+14.5
HAWAII BELT RD
Feb 1946
FA-F148(1)
SHEET No 1 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FA-F4B(1)	1947	31 A	82

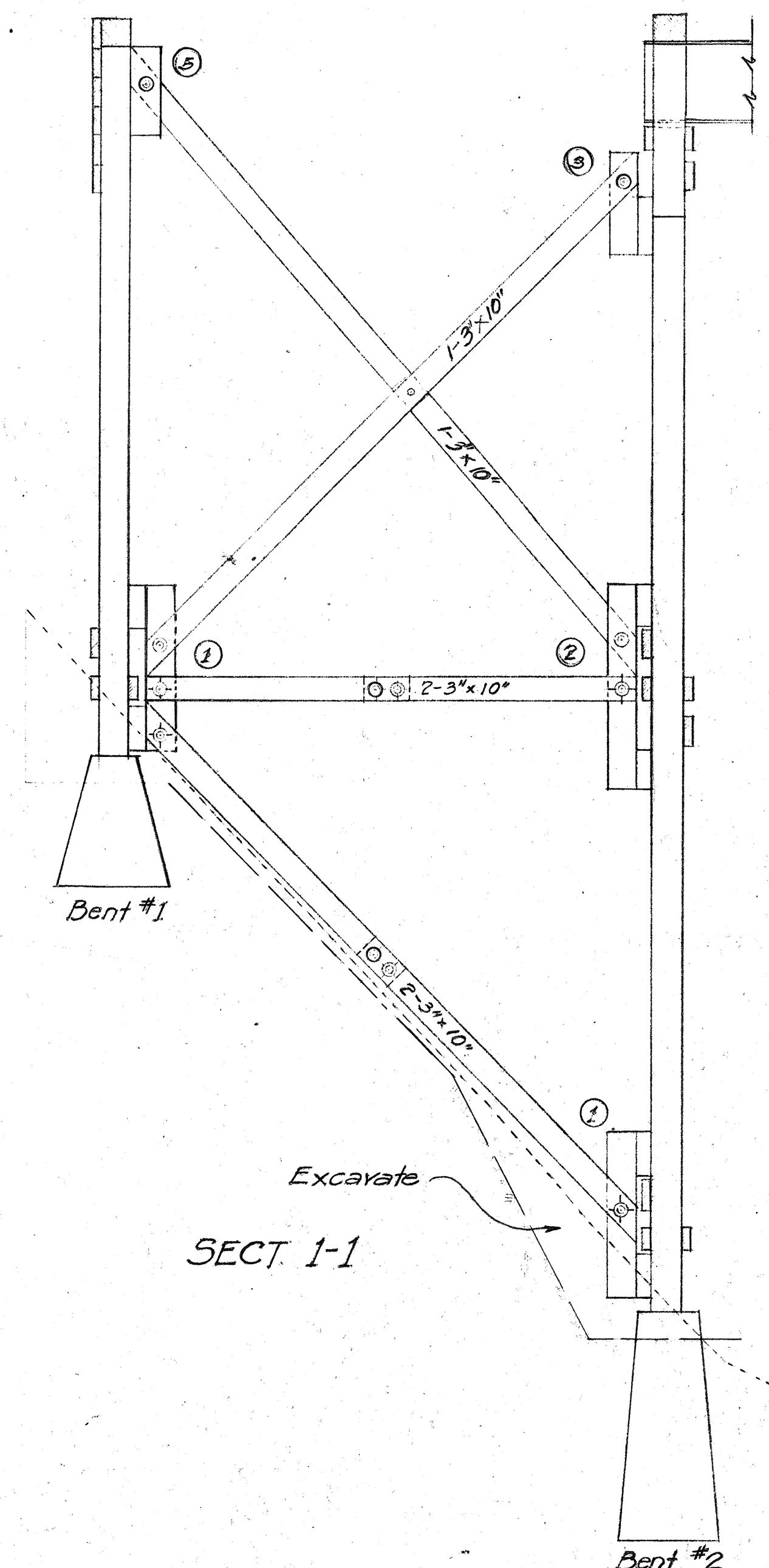
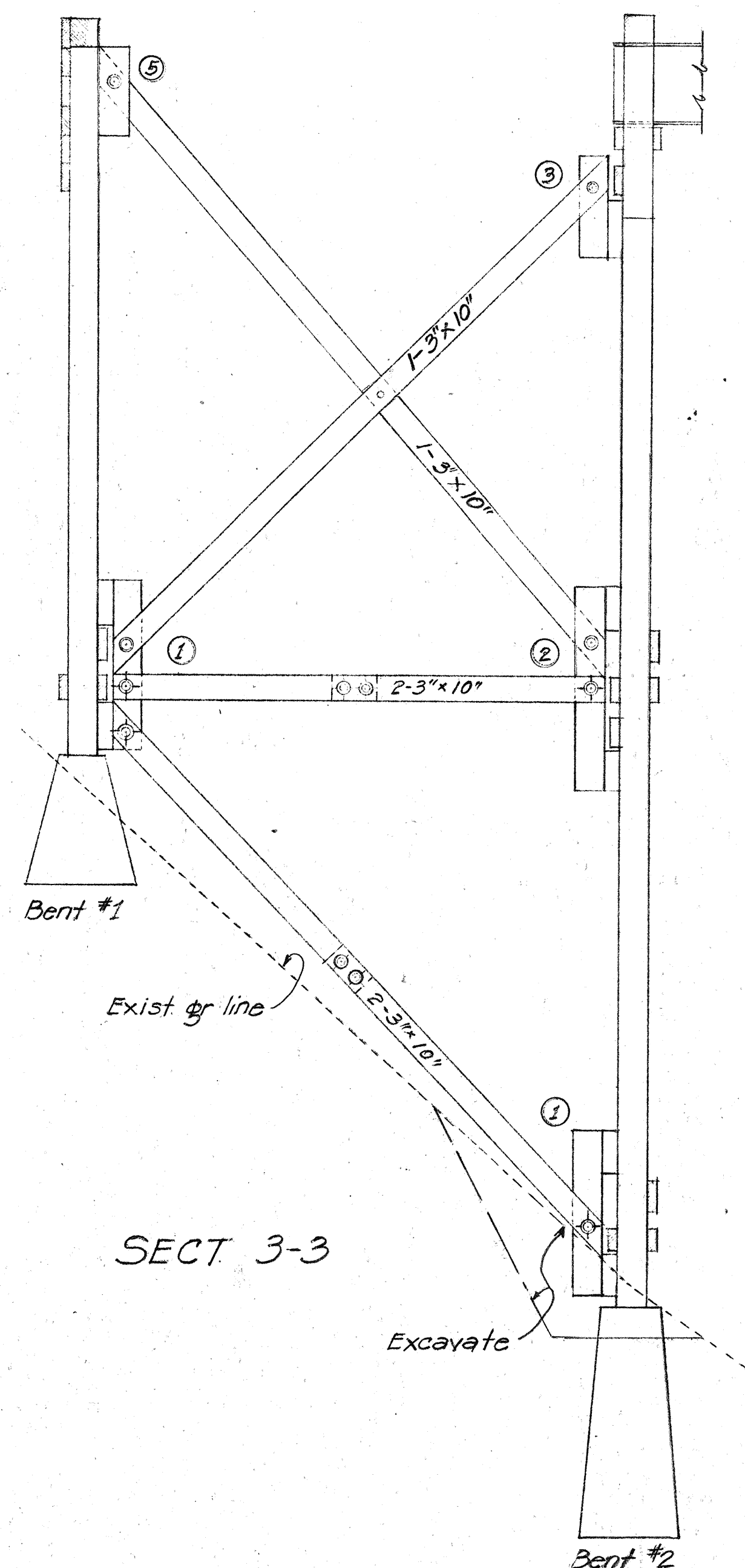
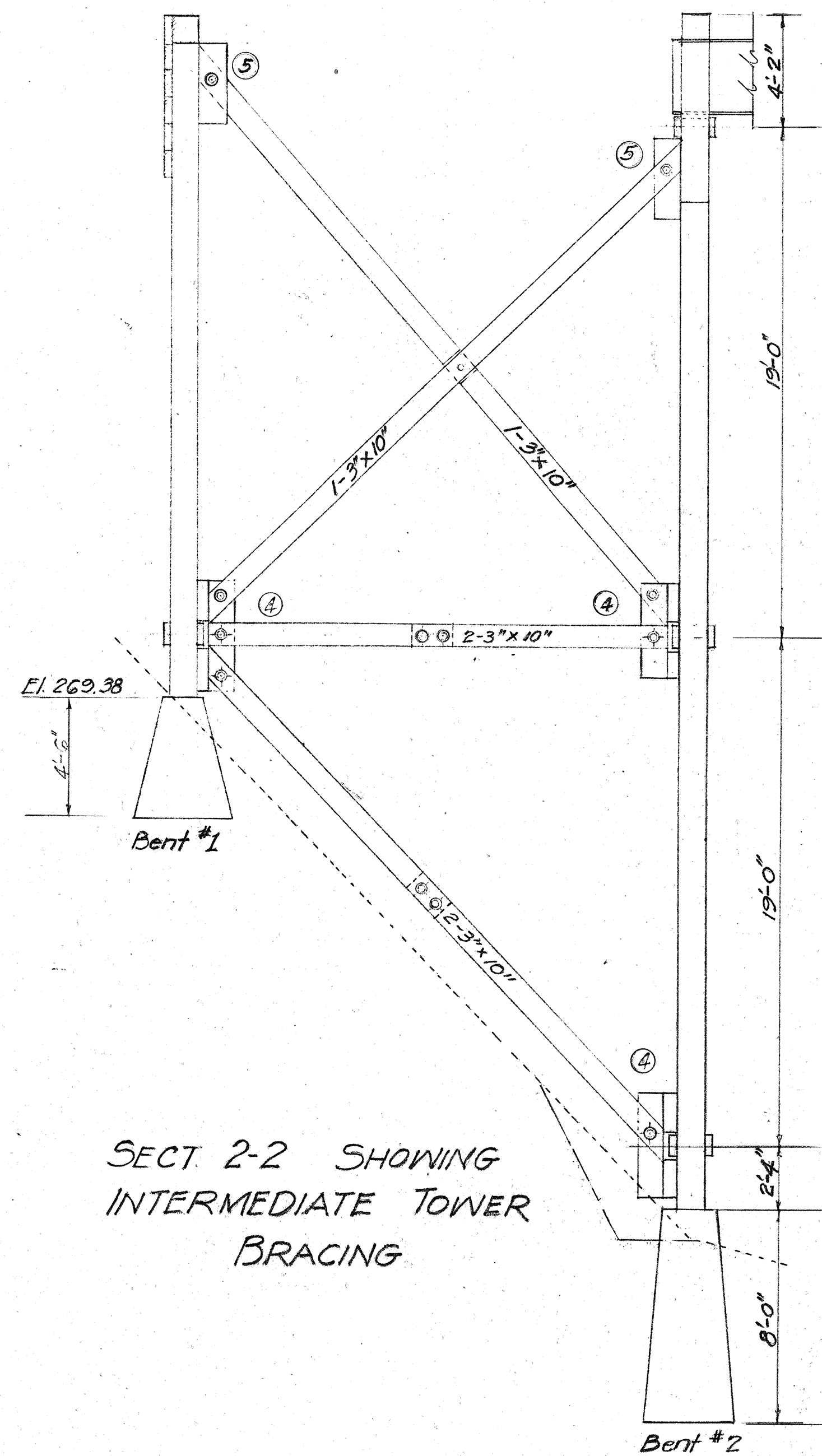


Note!!
This sheet shows footings as revised to meet field conditions. Details shown hereon supercede similar details on sheets 31-32 & 34.



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BRIDGE No. 2
Sta 42+78.5 to 44+14.5
HAWAII BELT ROAD FAF-14B(1)
REVISED PLAN - ALL FOOTINGS
SCALE AS NOTED MAY 1948

5194.31A



TOWER BRACING - BENTS 1 & 2

Scale $\frac{1}{4}'' = 1'-0''$

NOTE:
For location of Sect 1-1, 2-2 & 3-3
see sheet no.

① Number shown in circle refers to joint details. See sheet no. 5194.23A.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE No. 2

42+78.5 - 44+14.5

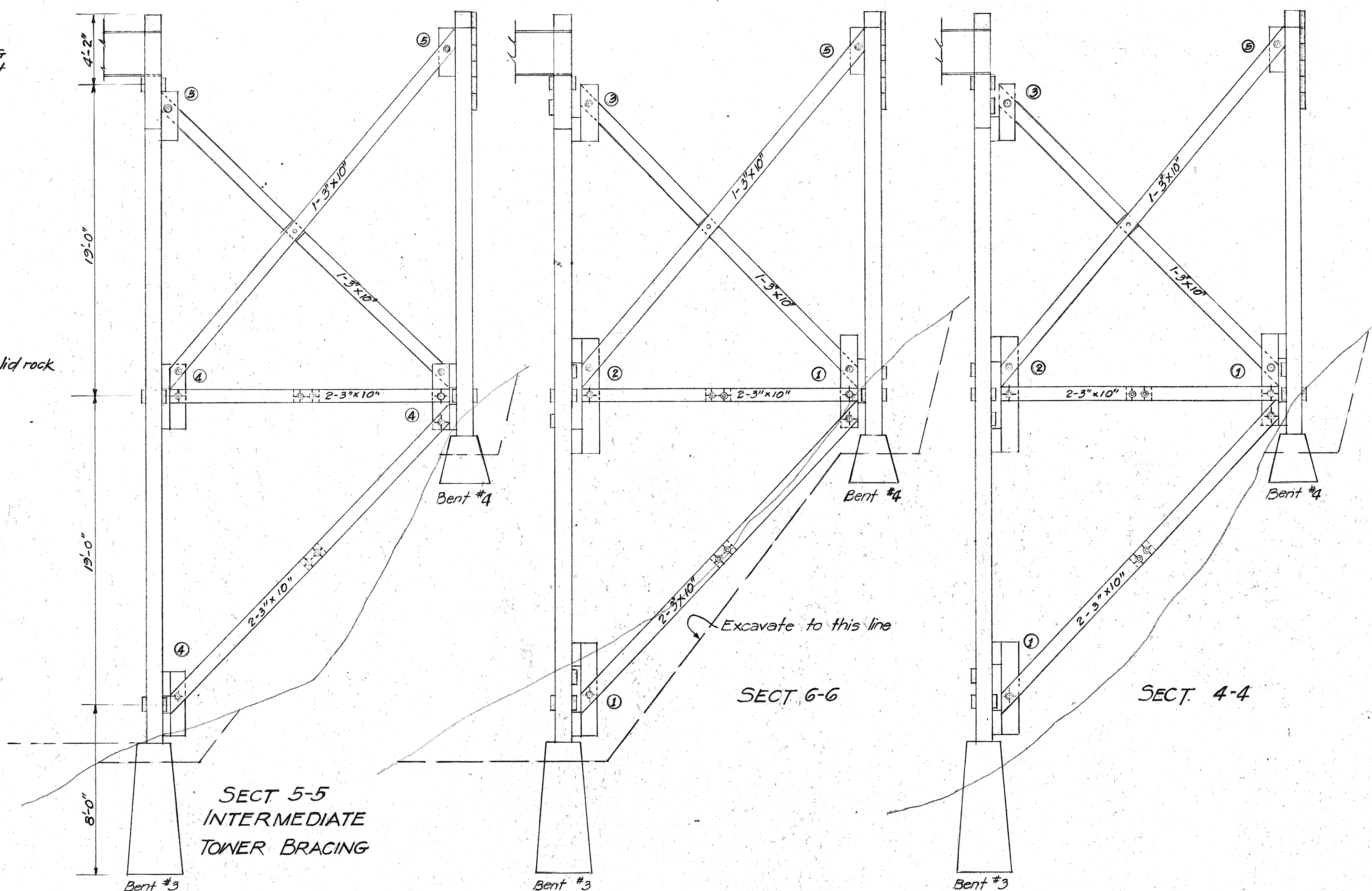
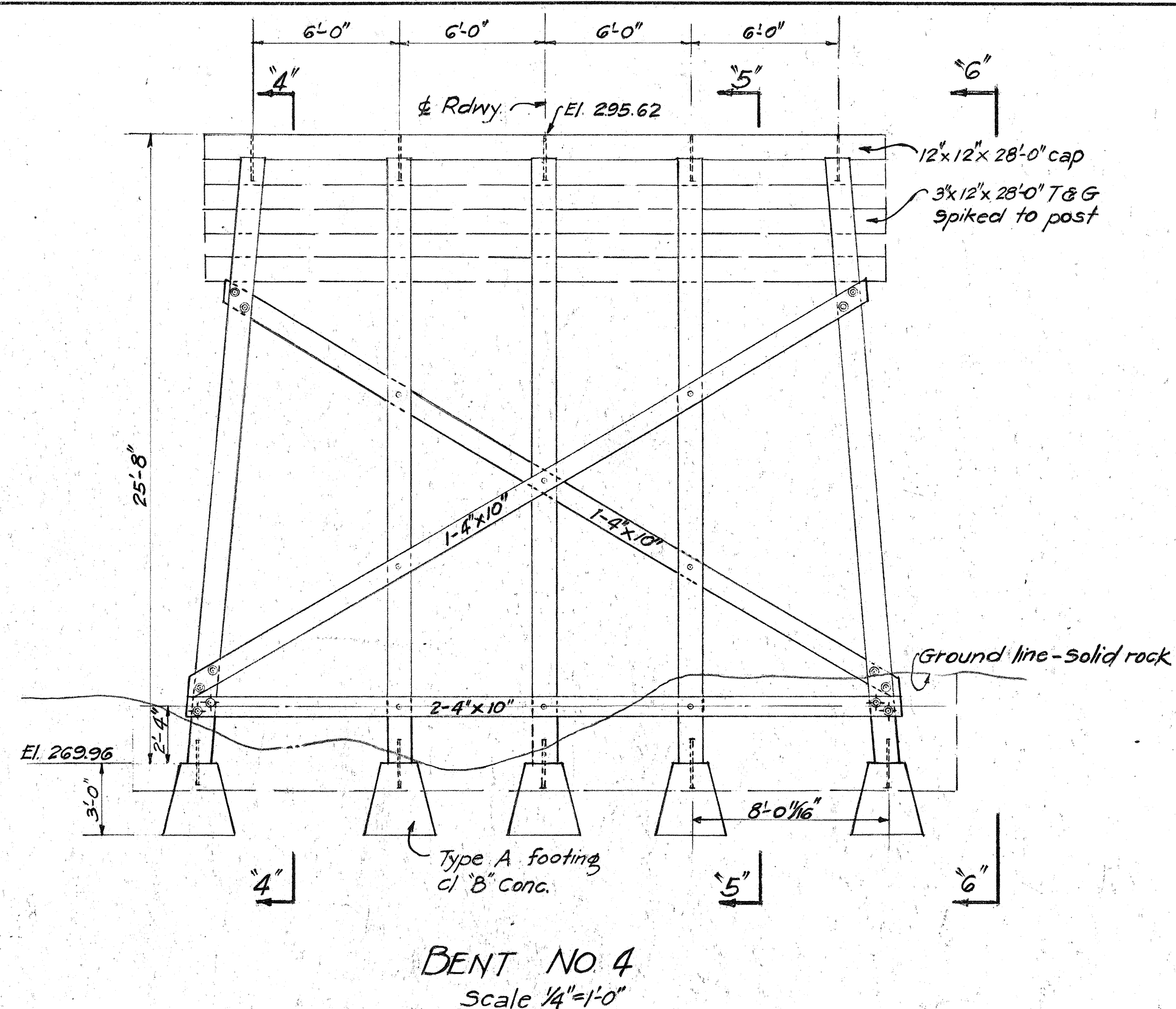
HAWAII BELT RD

FA-F14B(1)

Feb. 1946

SHEET No 3 OF 4 SHEETS

5194.33



TOWER BRACING - BENTS 3 & 4
Scale 1/4" = 1'-0"

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

Corrected 4/26/41

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	FA-F1480	1947	35	82

TIMBER BILL OF MATERIAL

DOUGLAS FIR - COAST REGION

MEMBER	No.	SIZE & LENGTH	LUMBER GRADING	MILL WORK	Ft. B.M.
Floor Decking	2606	2x6x24'-0"	Structural Select	545	72958
Bridge Railing	40	4x8x20'-0"	"	"	2153
Guard Railing	40	4x8x20'-0"	"	"	1800
Bracing-Bents	2	4x8x12'-0"	"	"	72
	2	4x8x12'-0"	"	"	56
	1	4x10x15'-0"	"	"	37
	2	4x10x18'-0"	"	"	93
	3	4x10x22'-0"	"	"	165
	17	4x10x28'-0"	"	"	1120
	16	4x10x30'-0"	"	"	1200
	30	4x10x20'-0"	"	"	2400
	23	4x10x24'-0"	"	"	1958
	20	4x10x26'-0"	"	"	1920
	16	4x10x28'-0"	"	"	1520
	12	4x10x40'-0"	"	"	1200
	6	4x10x26'-0"	"	"	623
	2	4x10x28'-0"	"	"	187
	16	4x10x30'-0"	"	"	1600
	12	4x10x32'-0"	"	"	1280
	10	4x10x32'-0"	"	"	1135
	6	4x10x36'-0"	"	"	960
	6	4x10x38'-0"	"	"	760
Bracing-Tower	132	4x10x18'-0"	"	"	5940
	39	4x10x20'-0"	"	"	1950
	57	4x10x22'-0"	"	"	3135
	91	4x10x24'-0"	"	"	5480
	15	4x10x26'-0"	"	"	975
	6	4x10x28'-0"	"	"	420
Tower Br. Gusset Pl.	25	4x12x5'-8"	"	"	600
	52	4x12x7'-0"	"	"	1456
	27	4x12x8'-0"	"	"	432
	72	4x12x4'-0"	"	"	1152
	19	4x12x5'-0"	"	"	228
Tower Bracing Plks.	298	6x12x1'-0"	Structural Select Beams & stringers	"	2688
Bracing Separators	27	6x12x2'-0"	"	"	324
	66	4x10x1'-0"	"	"	220
	80	4x10x1'-6"	"	"	400
	24	12x10x1'-6"	"	"	360
Splice blocks	38	6x18x4'-0"	"	"	1022
Filler blocks of 1/2"	16	6x12x6'-0"	"	"	576
	4	6x12x6'-0"	"	"	216
Stringers	260	6x18x20'-0"	"	"	46800
Post seats at 1/2"	40	6x12x6'-0"	"	"	1440
Built-in Seats	5	6x12x6'-0"	"	"	180
	5	4x12x4'-0"	"	"	80
Caps	20	12x12x28'-0"	"	"	6720
Bridge railing posts	122	3x8x6'-0"	"	"	3904
Guard railing posts	4	12x12x8'-0"	"	"	384
Posts-Bents	1	12x12x12'-0"	"	"	144
	1	12x12x14'-0"	"	"	168
	2	12x12x16'-0"	"	"	384
	3	12x12x18'-0"	"	"	1296
	6	12x12x20'-0"	"	"	720
	3	12x12x22'-0"	"	"	528
	1	12x12x24'-0"	"	"	288
	3	12x12x26'-0"	"	"	352
	3	12x12x28'-0"	"	"	1008
	1	12x12x30'-0"	"	"	360
	6	12x12x32'-0"	"	"	3072
	7	12x12x34'-0"	"	"	2856
	9	12x12x36'-0"	"	"	4688
	2	12x12x38'-0"	"	"	912
	4	12x12x40'-0"	"	"	1920
	12	12x12x42'-0"	"	"	6048
	23	12x12x44'-0"	"	"	12144
	1	12x12x46'-0"	"	"	552
	6	12x12x50'-0"	"	"	3600
TOTAL FORWARD					222,876

NOTE! See Sheets 5194.56A & 56C for Supplementary Timber Bill of Materials. See Sh. No. 2 for Timber Bill of Materials Cont'd

ESTIMATED QUANTITIES

Treated Timber	27,914 Ft. B.M.
Class 'A' Concrete	44.6 C.Y.
" 'C-1' "	231.7 C.Y.
Cement Rubble Masonry	163.0 C.Y.
Structural Steel	84400 LBS.
Reinf. Steel	7985 LBS.
Structural Excavation	570 C.Y.
Unclassified Excavation	67 C.Y.
Cement Rubble Masonry Paving	27 C.Y.
Hand Placed Rock Fill	49 C.Y.
also Surfacing Materials	

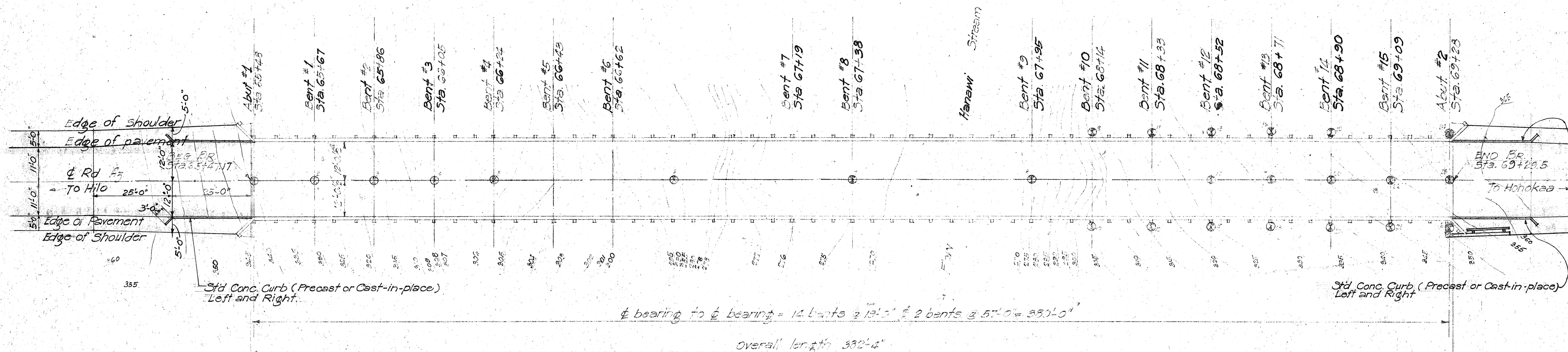
Erecting Treated Timber Furnished by T.H. 214,062 Ft. B.M.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAIIBRIDGE No. 3
Sta. 65+47.17 to 69+29.5

HAWAII BELT ROAD FA-F14 B (1)

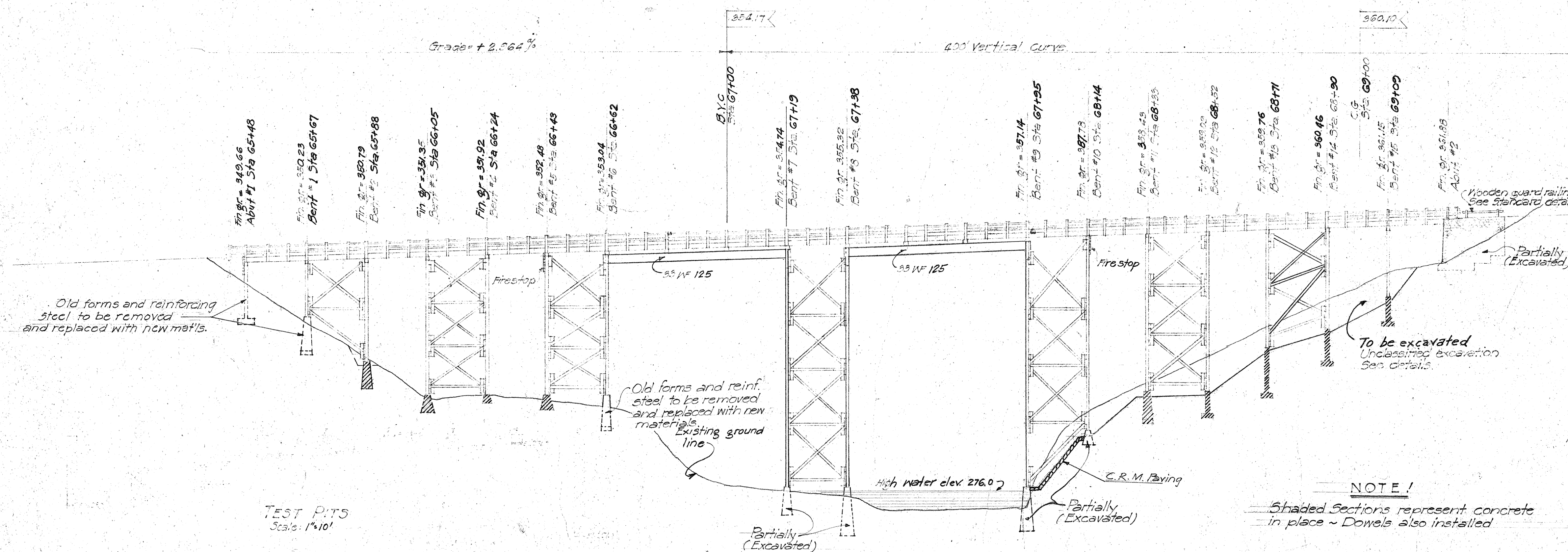
JAN 1946

SHEET No. 1 OF 12 SHEETS



LAYOUT PLAN OF BRIDGE

Scale 1"=20'



DOWNSTREAM ELEVATION

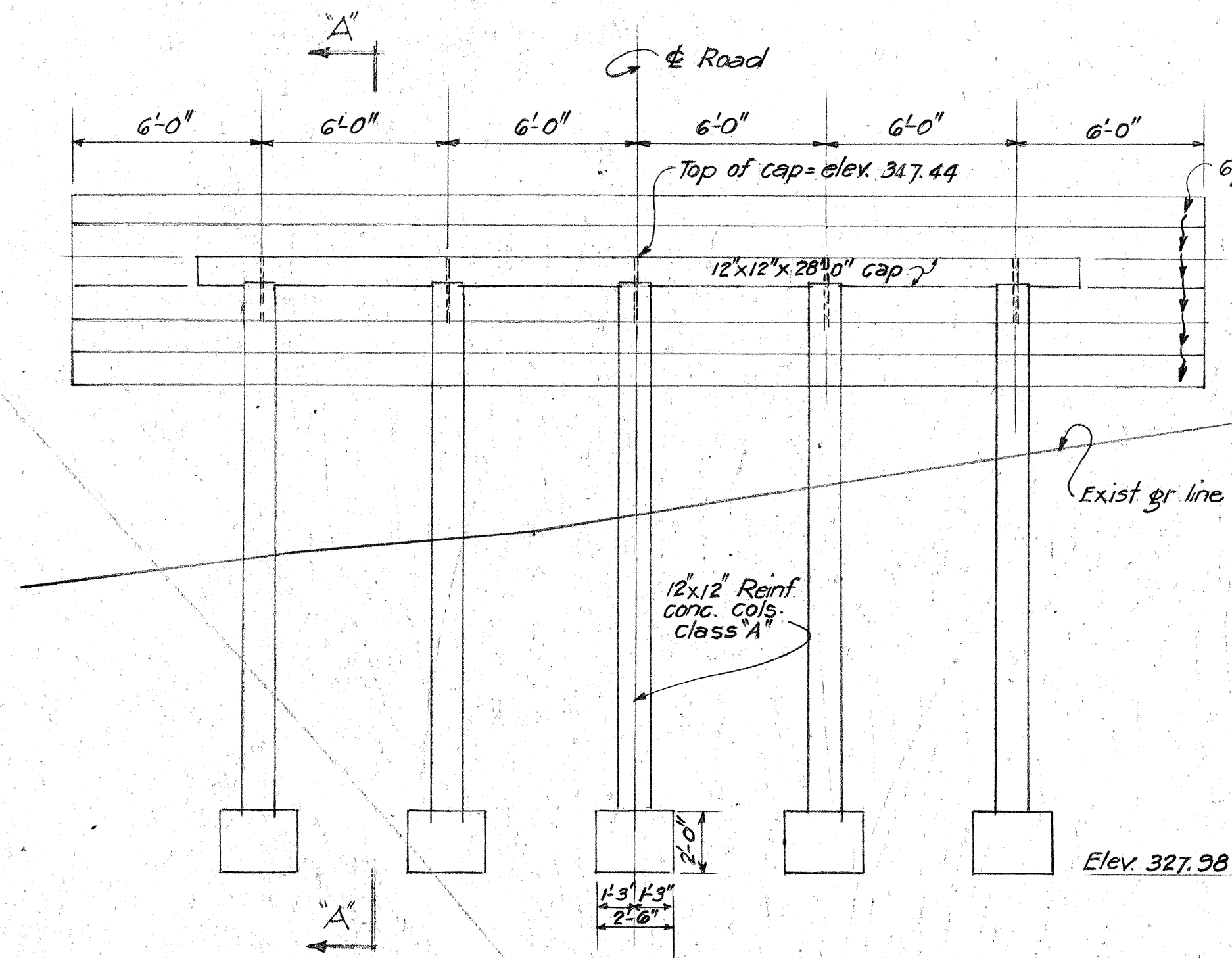
Scale 1"=20'

NOTE!
Firestops to be treated with zinc chloride or Wolman saltsNOTE!
Shaded Sections represent concrete in place ~ Dowels also installedTEST PITS
Scale 1"=10'

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

Timber Quant. Rev. July 1946

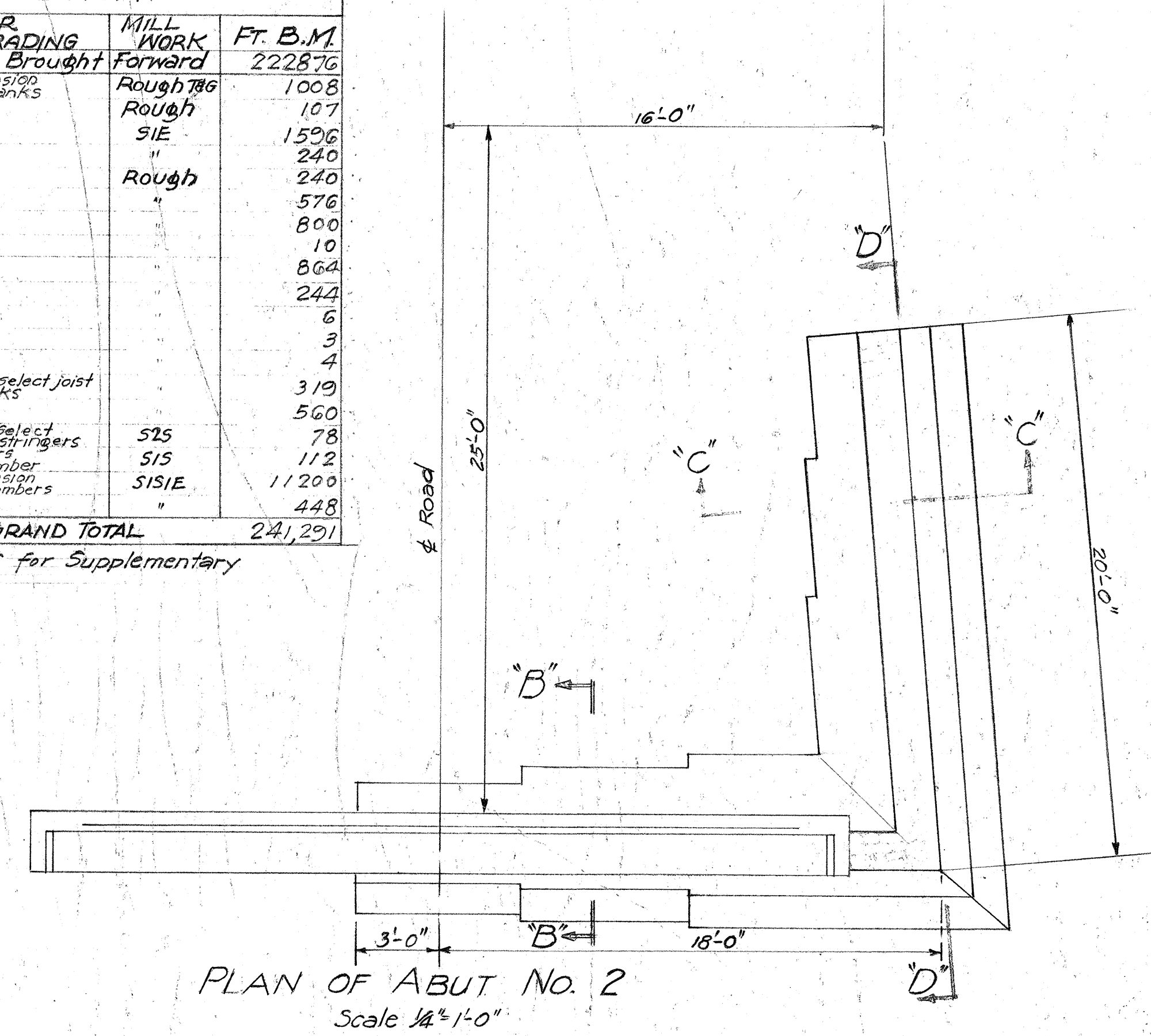
Correction: 1/11/46 See 5194.56A to 5194.56C



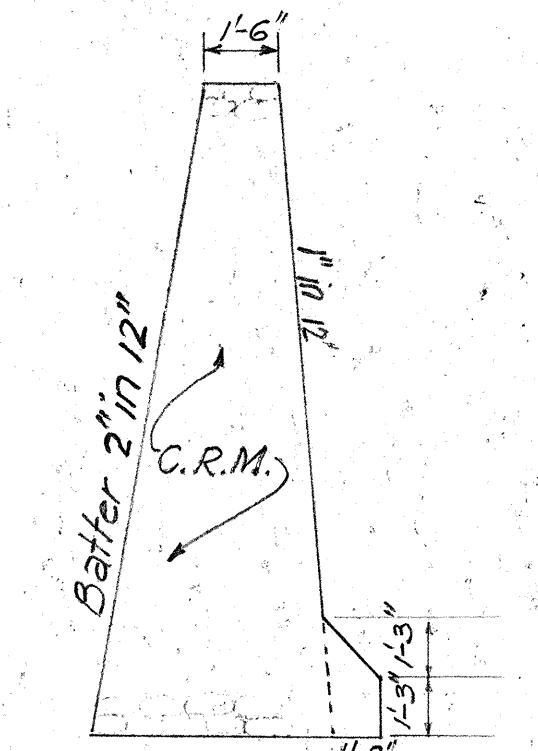
ABUT. NO. 1
Scale $\frac{1}{4}" = 1'-0"$

TIMBER BILL OF MATERIAL (CONT'D.)						
DOUGLAS FIR - COAST REGION.						
MEMBER	NO.	SIZE & LENGTH	LUMBER GRADING TOTAL Brought Forward	MILL WORK Forward	FT. B.M.	
Firestop	12	3 x 12 x 28'-0"	No. 1 Dimension Joist & Planks	Rough	786	1008
Strut Blocks	32	4 x 10 x 1'-0"		Rough		107
Solid Bridging	19	4 x 18 x 14'-0"		SIE		1596
"	2	4 x 18 x 20'-0"		"		240
Solid brdg. at I's	4	4 x 10 x 18'-0"		Rough		240
"	8	4 x 12 x 18'-0"		"		576
Cross bridging	120	2 x 4 x 10'-0"				800
Blocks at brg. pt.	40	1 x 3 x 1'-0"				10
Bulkhead	6	4 x 12 x 36'-0"				864
Fills at rail posts	122	2 x 8 x 1'-6"				244
Planking at Abut.	1	2 x 12 x 3'-0"				6
" "	1	2 x 6 x 3'-0"				3
Planking supports	1	2 x 4 x 6'-0"				4
Bent Brace splice	30	3 x 10 x 4'-3"	Structural select joist & Planks			319
Bent Post splice	40	4 x 12 x 3'-6"				560
Deck starter	1	6 x 6 x 26'-0"	Structural select beams & stringers	SIS		78
Abutment Sill	1	6 x 8 x 28'-0"	No. 1 Timber	SIS		112
Wheel Guard	40	12 x 14 x 20'-0"	No. 1 Timber	SIS/SIE		11200
" "	4	12 x 14 x 8'-0"	No. 1 Dimension Posts & Timbers			448
GRAND TOTAL						241,291

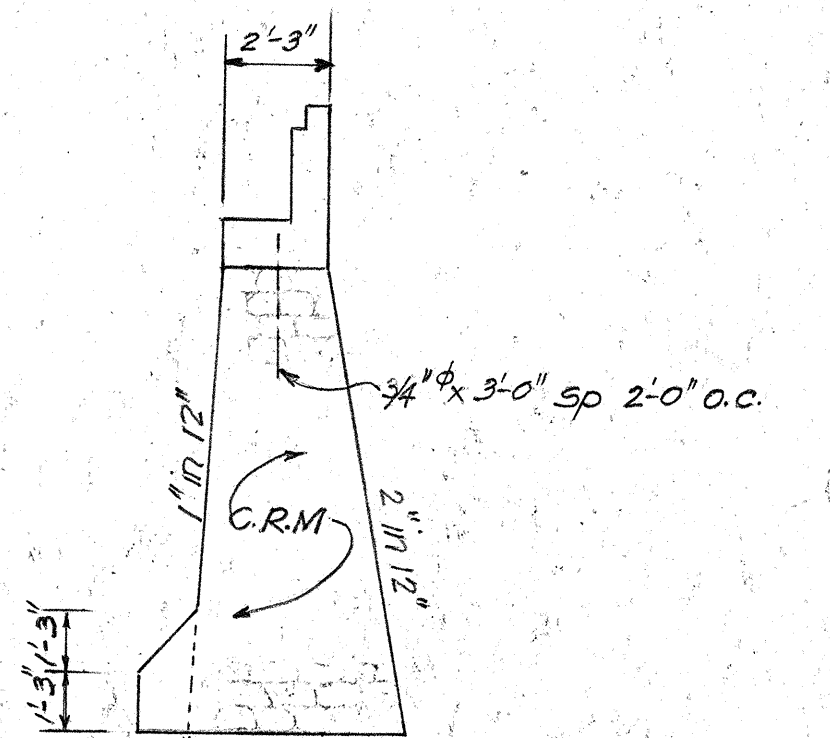
See Sheets 5194, 56A & 56C for Supplementary Timber Bill of Material.



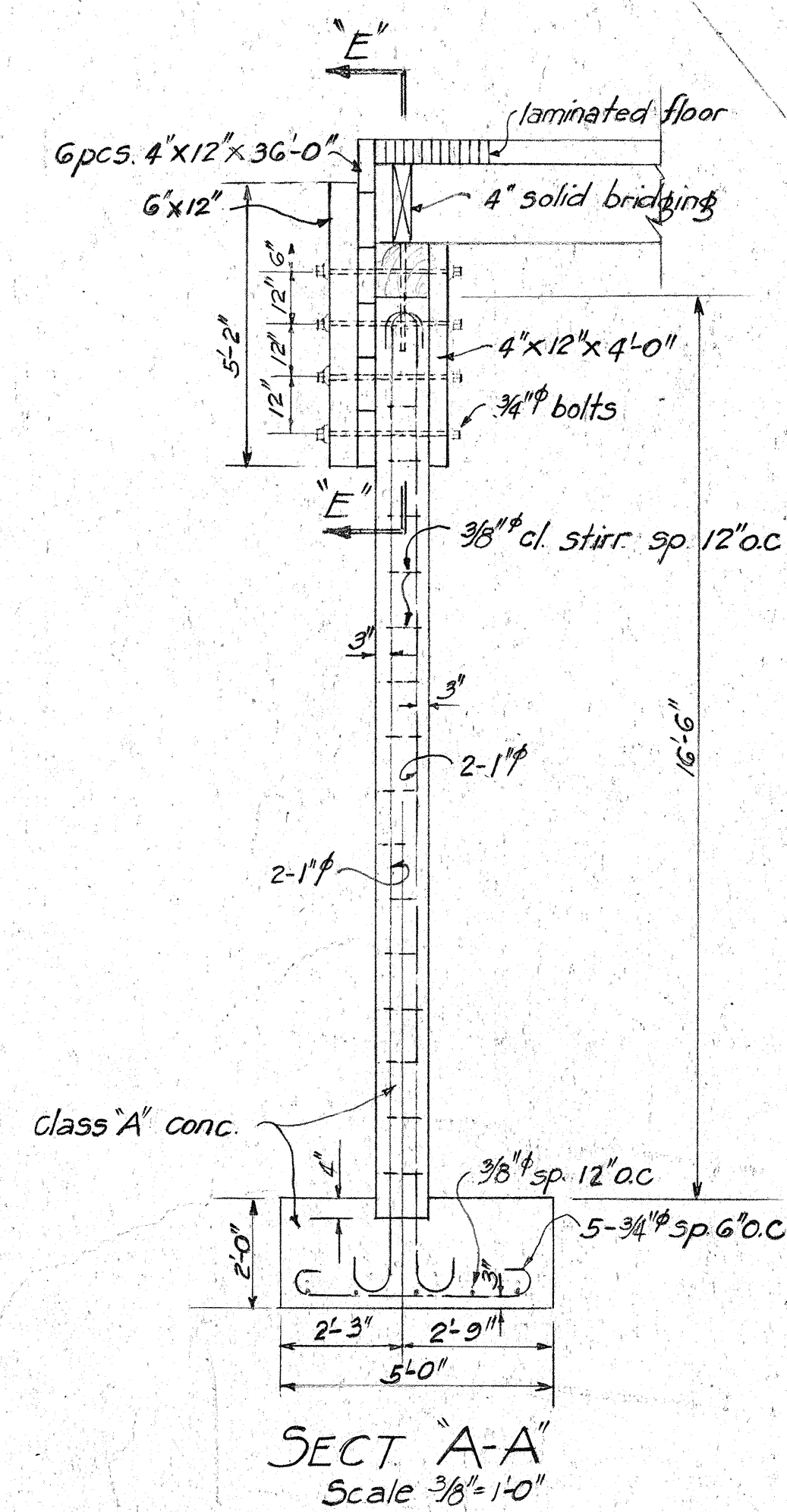
PLAN OF ABUT. NO. 2
Scale 1/4" = 1'-0"



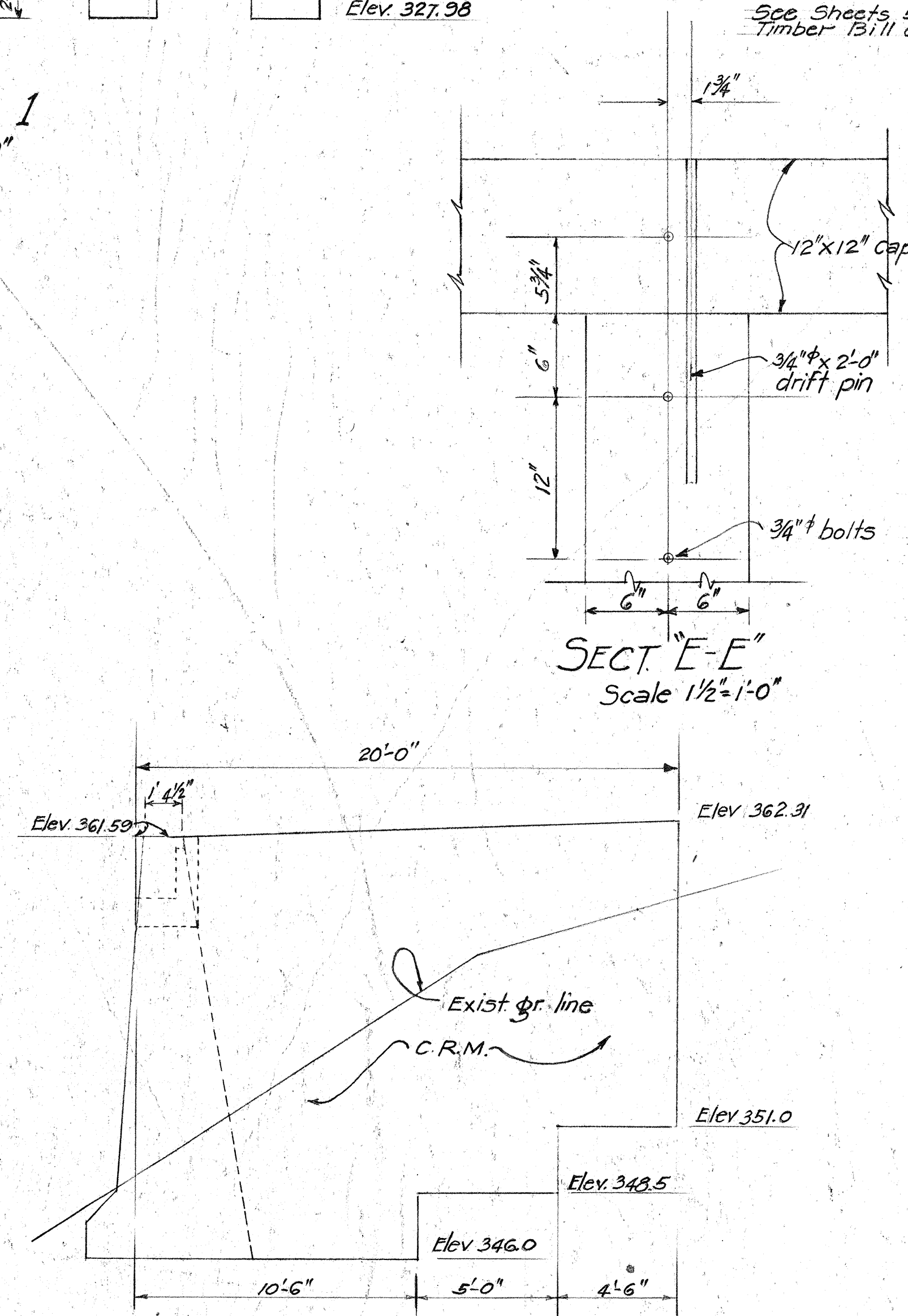
SECT "C-C"
Scale 1/4"=1'-0"



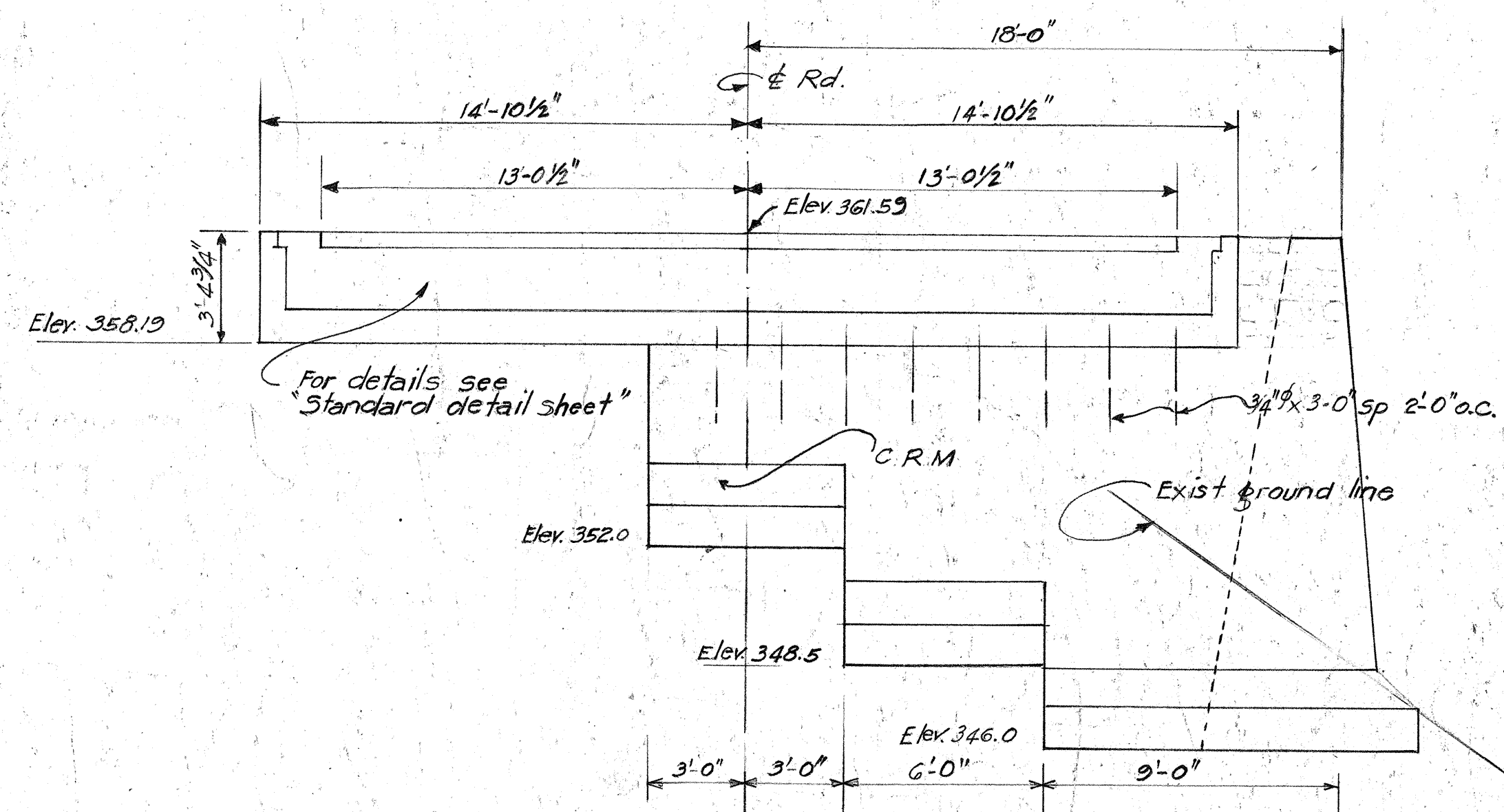
SECT "B-B"
Scale 1/4" = 1'-0"



SECT "A-A"
Scale $\frac{3}{8}'' = 1'-0''$



SECT. "D-D"
Scale 1/4"=1'-0"



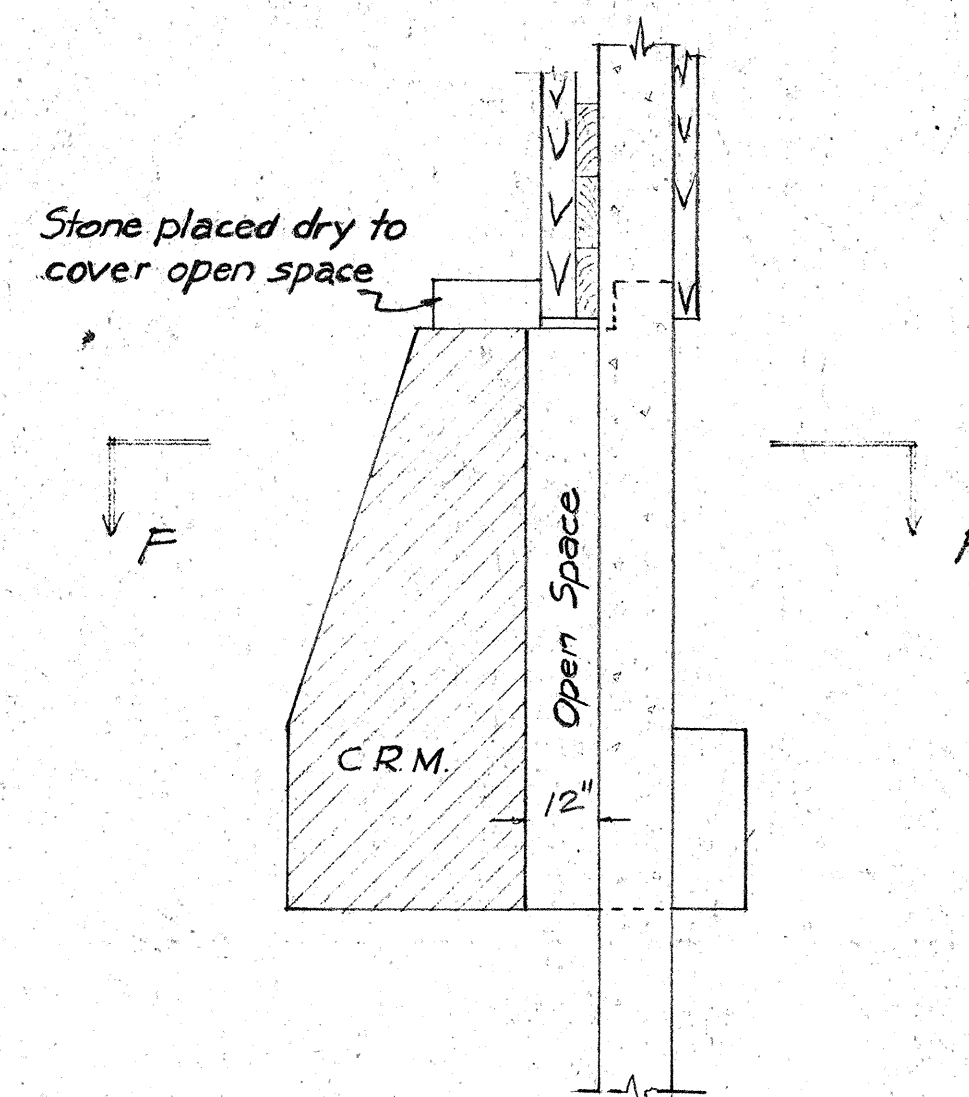
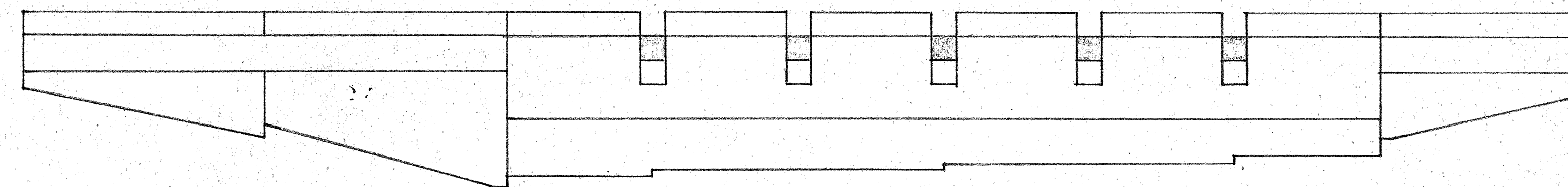
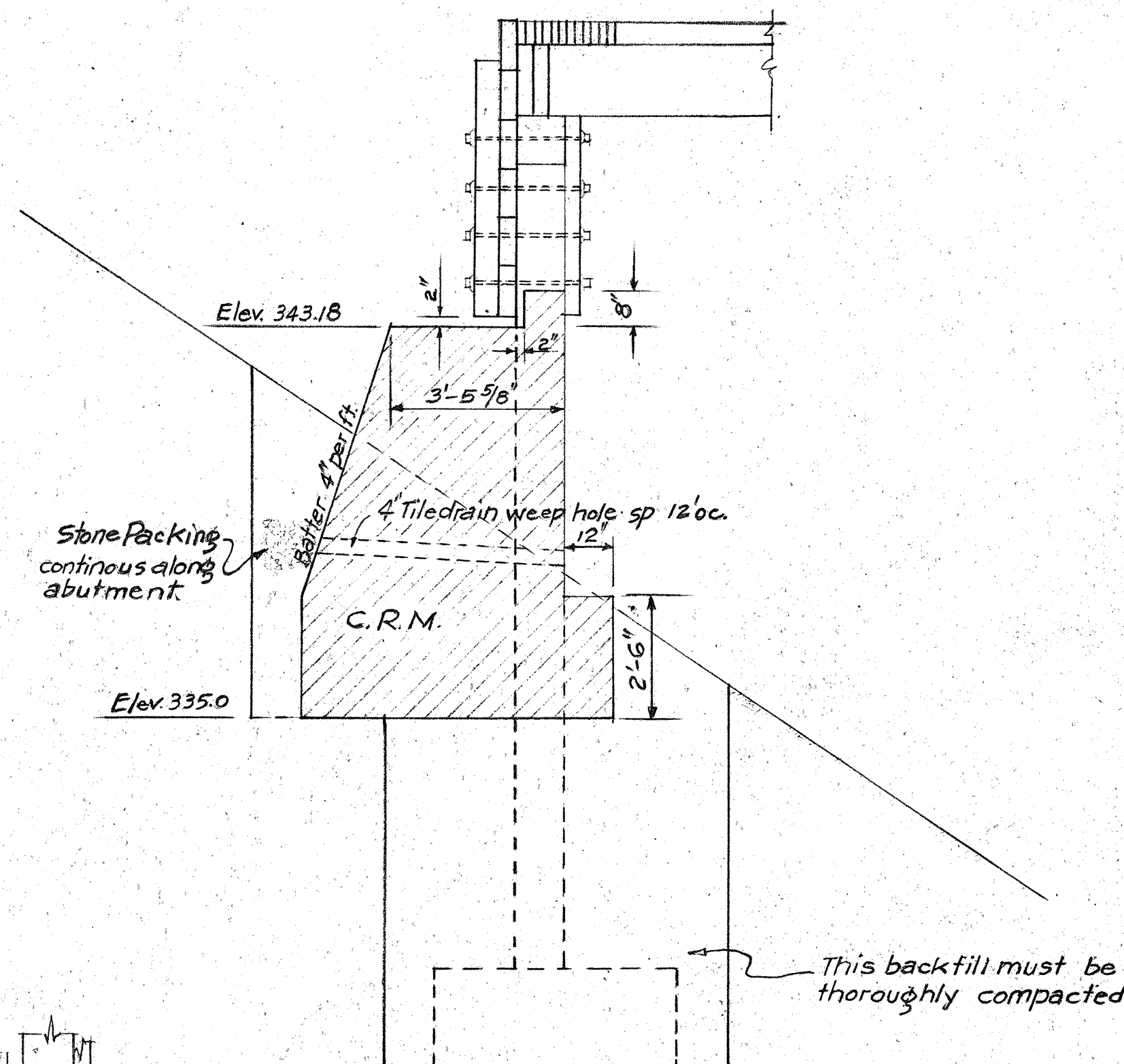
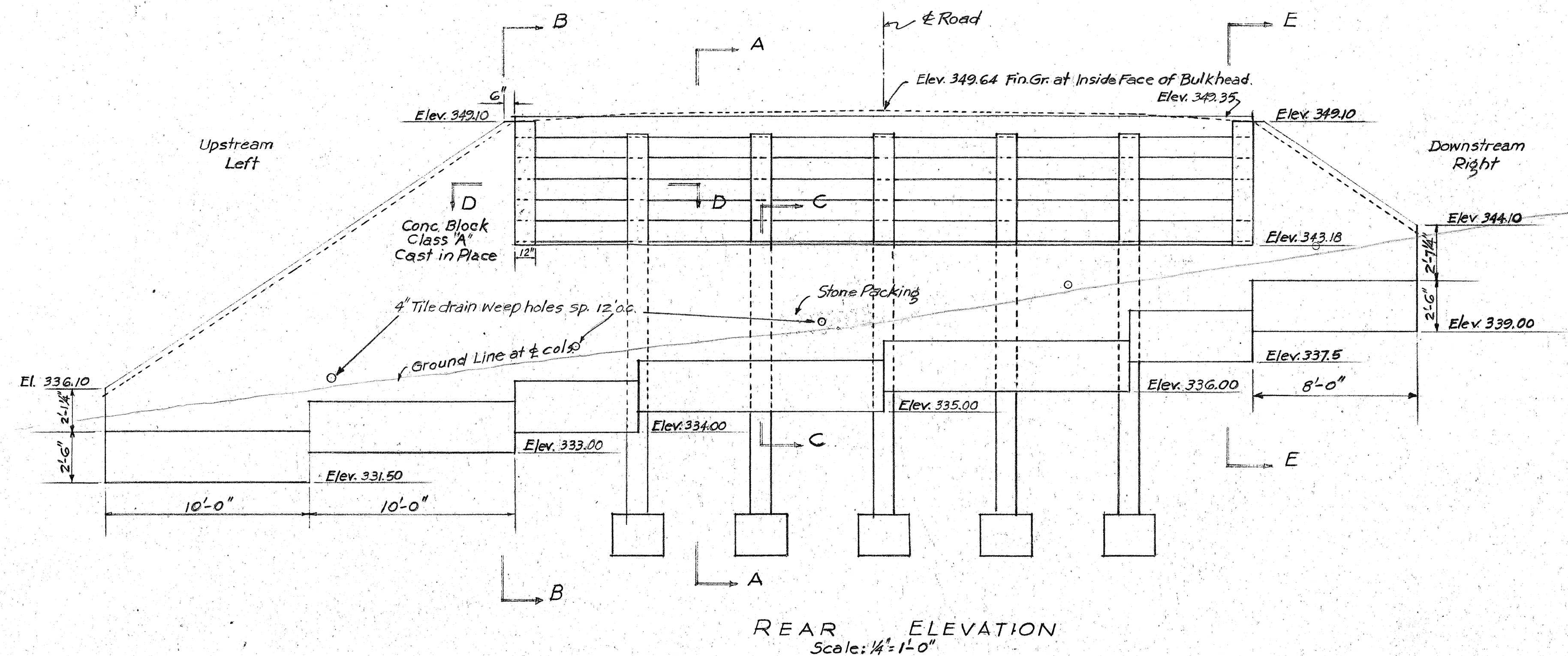
ABUT. No. 2
Scale $\frac{1}{4}'' = 1'-0''$

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE, No. 3
Sta 65+47.12% 69+29.5
HAWAII BELT ROAD
Jan. 1946
FA-14B(1)

Note: Retaining wall & wing walls as shown on this sheet are in addition to that part of Abut. No. 1 shown on Sheet No. 5039-46.

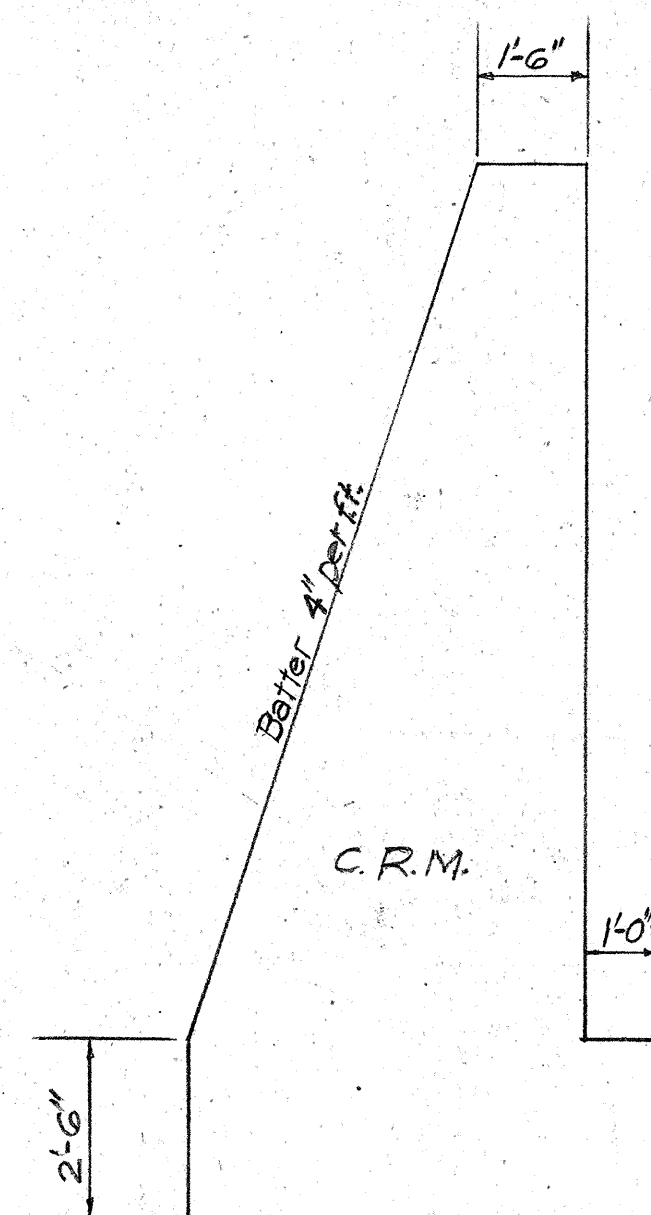
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	FA-F148(1)	1947	37	82



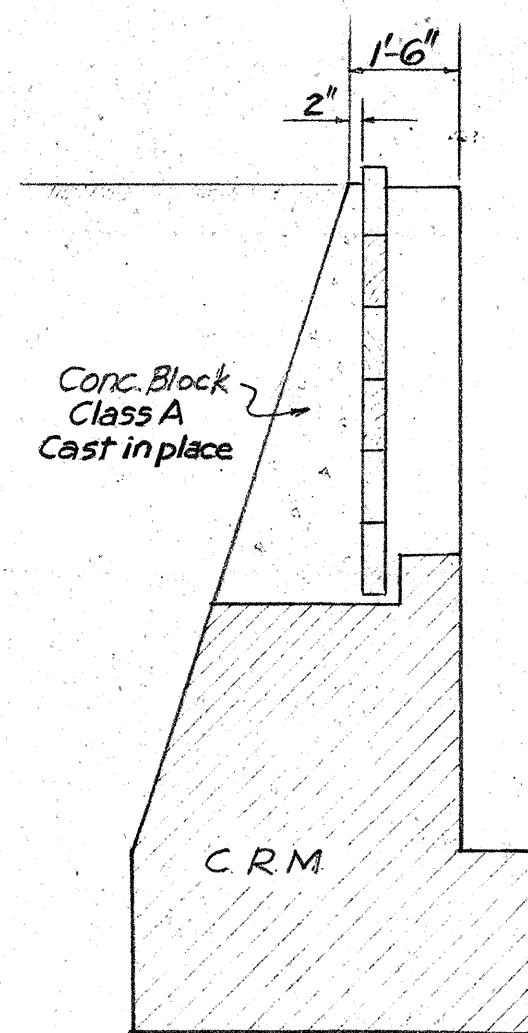
SECTION A-A
3/8" = 1'-0"

SECTION C-C

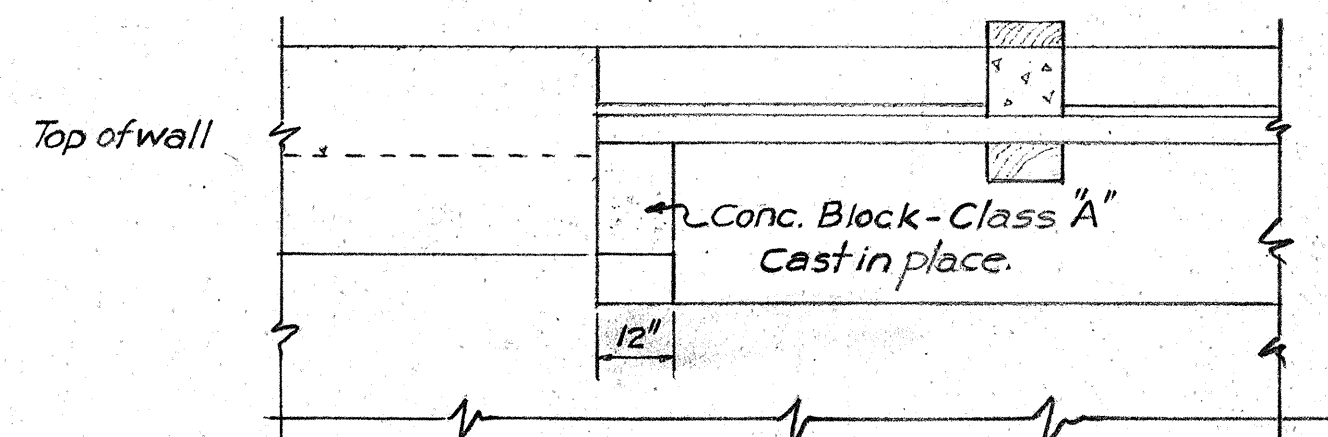
QUANTITIES	
Class A Concrete	0.6 c.y.
Cement Rubble Masonry	84.0 c.y.
Structural Excavation	70.0 c.y.



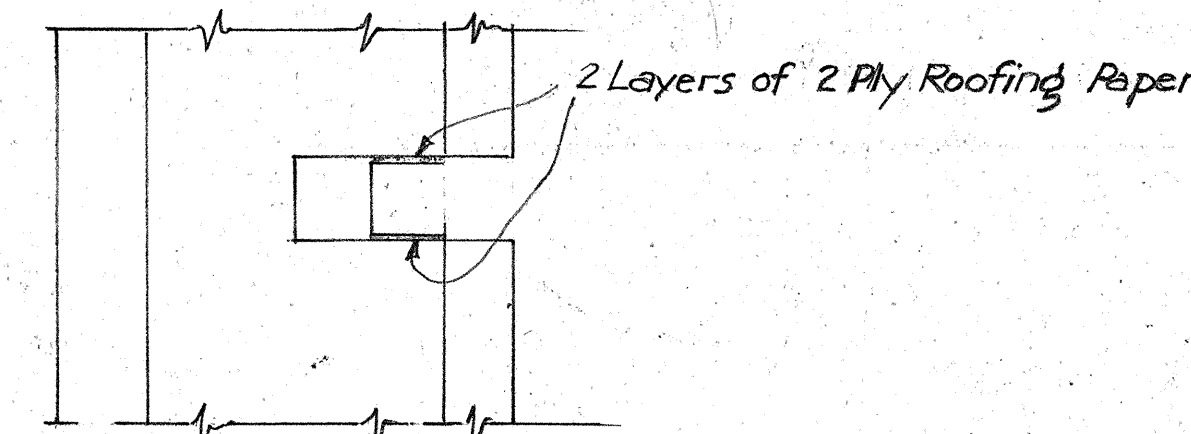
SECTION B-B
3/8" = 1'-0"



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



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



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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BRIDGE No. 3
Sta. 65+47.17 to 65+29.5
RETAINING WALL AT ABUT. No. 1
HAWAII BELT ROAD
Jan. 1946

SHEET No. 2A OF 14 SHEETS

3194.37

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

The drawing consists of two main views: a plan view at the top and an elevation view below it.

Plan View (Top):

- Overall width: 14'-0" (split into two 7'-0" sections).
- Overall length: 13'-1 1/4" (split into 2'-0", 6'-0", 6'-0", 6'-0", 6'-0", and 2'-0").
- Centerline of road: ϕ Road, Elev 348.01.
- Drift pins: 3/4" x 2'-0" drift pins.
- Posts: 12" x 12" posts.
- Cap: 12" x 12" x 28'-0" cap.
- Diagonal bracing: 1-3" x 10" (two members).
- Horizontal bracing: 2-3" x 10" (two members).
- Labels A, B, and C indicate specific points or sections.

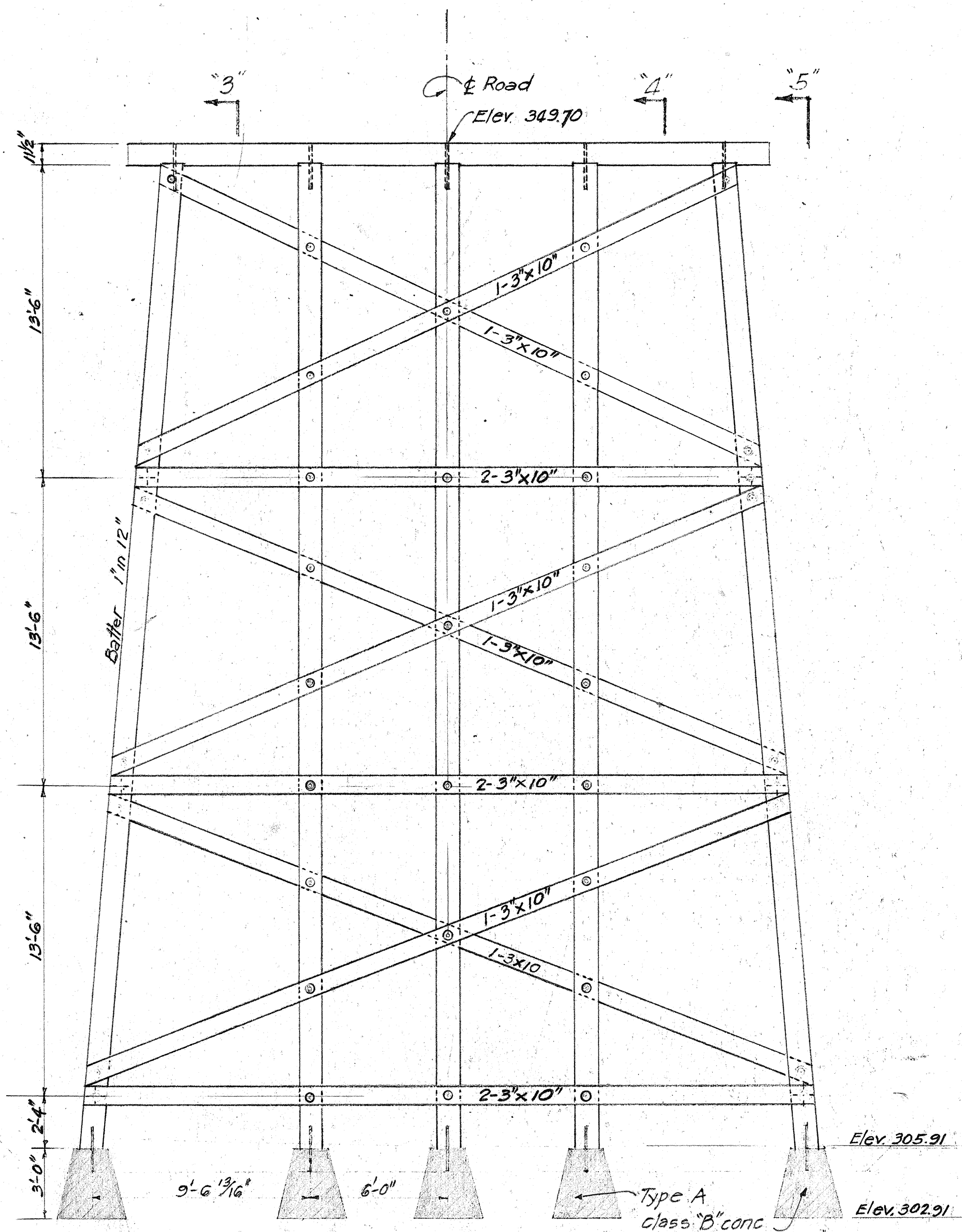
Elevation View (Bottom):

- Overall height: 13'-1 1/4" (split into 2'-4", 10'-6", and 1'-6").
- Top elevation: Elev 330.78.
- Bottom elevation: Elev 318.78.
- Class "A" Conc. (Concrete).
- Reinforcement: 2-3/8" ϕ bar, 3/8" cl. stir 12" o.c., 4-5/8" ϕ .
- Drift pins: 3/4" x 2'-0" drift pins.
- Labels A, B, and C indicate specific points or sections.

5194.38

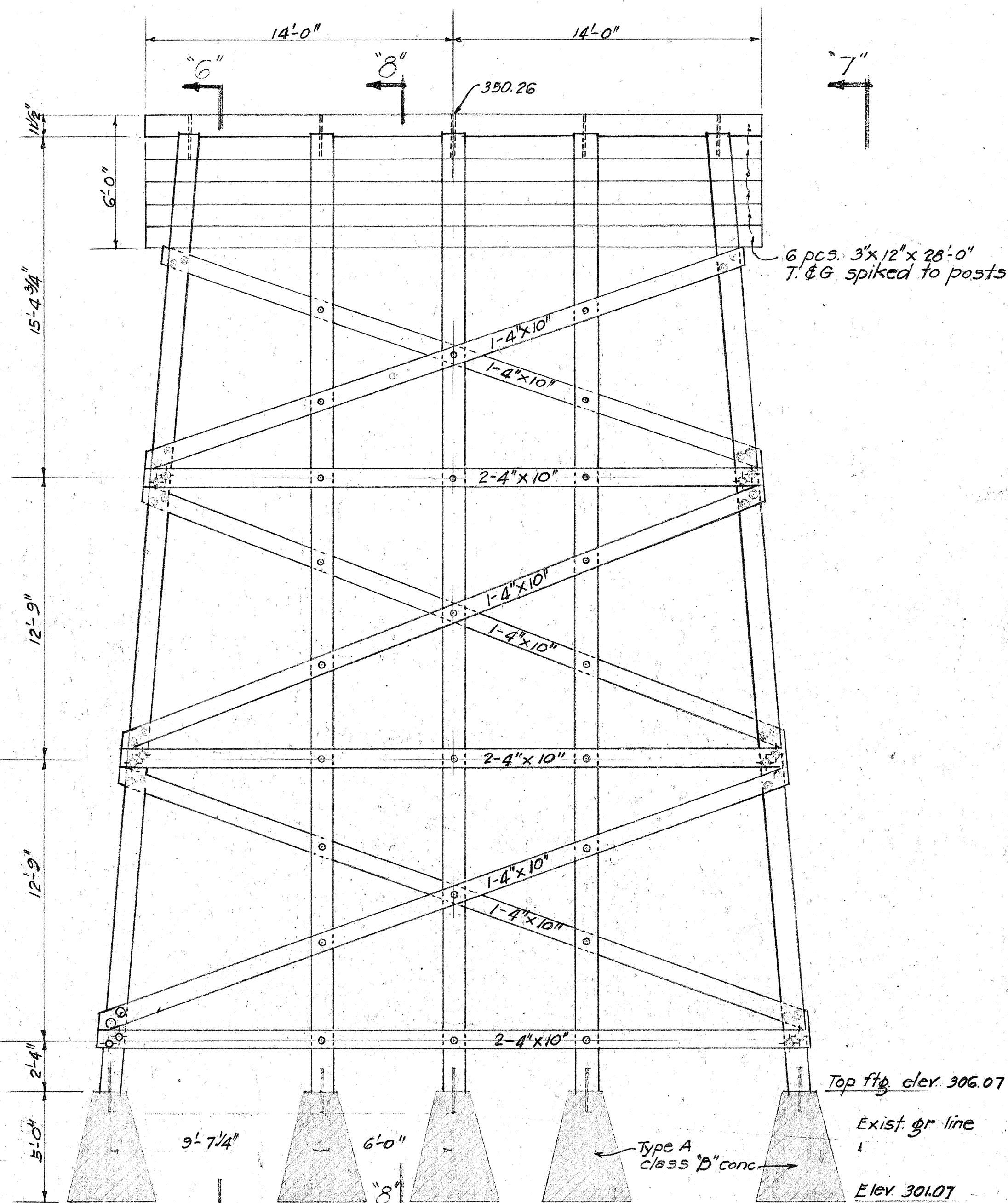
Revision.
Bent No. 6 Footing dimension
between post #2 and post #5 corrected.

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



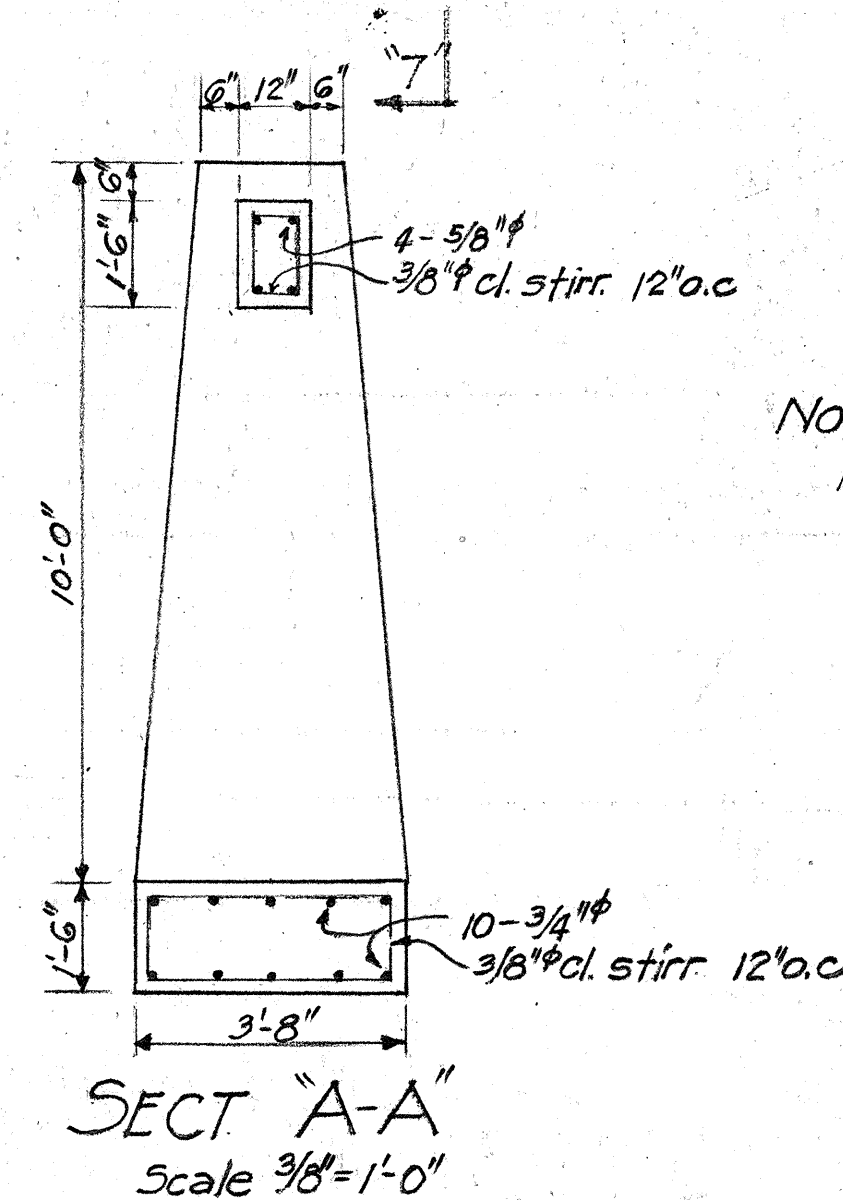
BENT NO. 4
Scale 1/4"=1'-0"

NOTE: For sect. 3-3, 4-4 & 5-5 see sheet #9

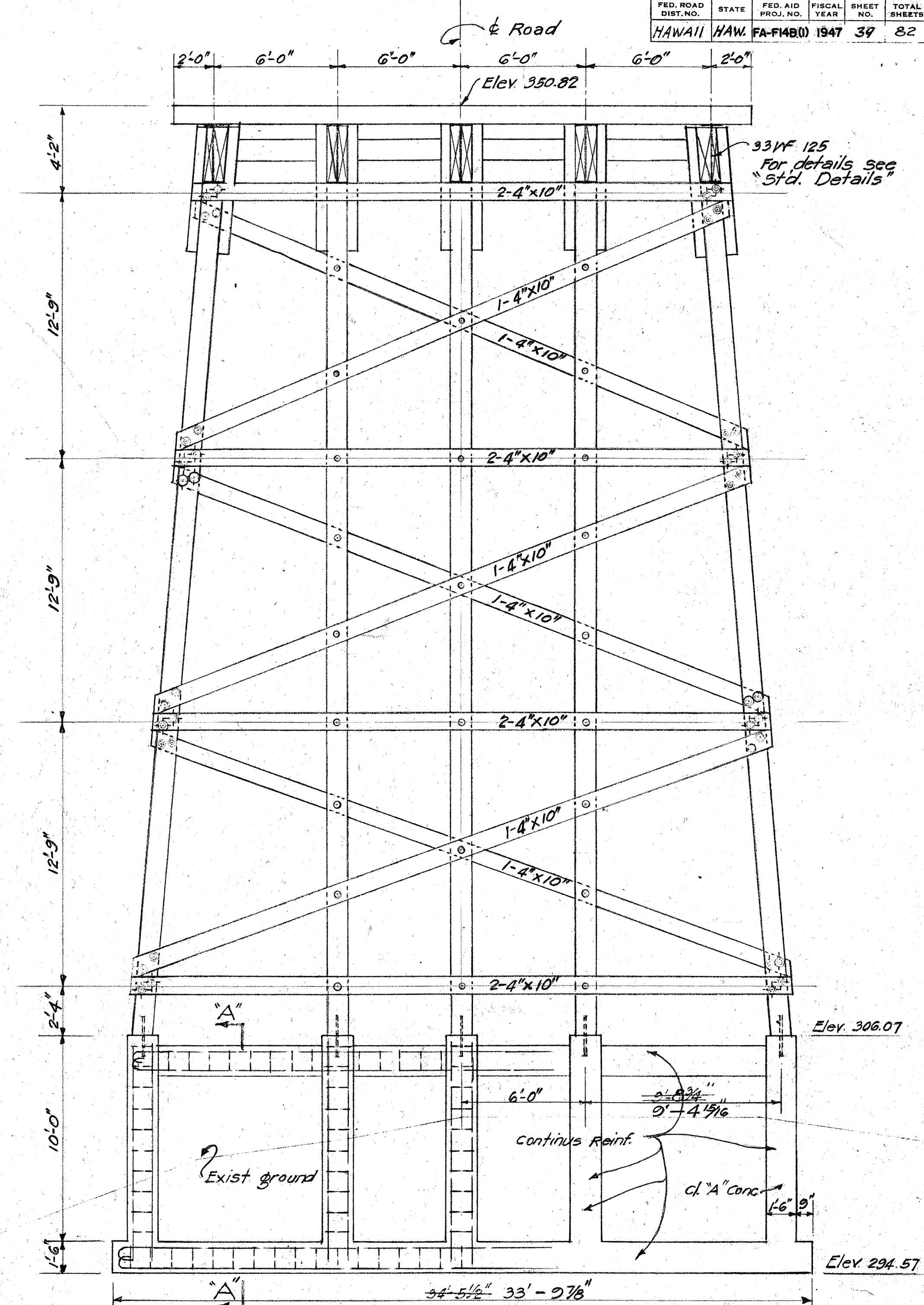


BENT NO. 5
Scale 1/4"=1'-0"

NOTE! For section "6-6" 7-7" see
sheet No. 12, for sect. 8-8 see sh #10



SECT "A-A"
Scale 3/8"=1'-0"



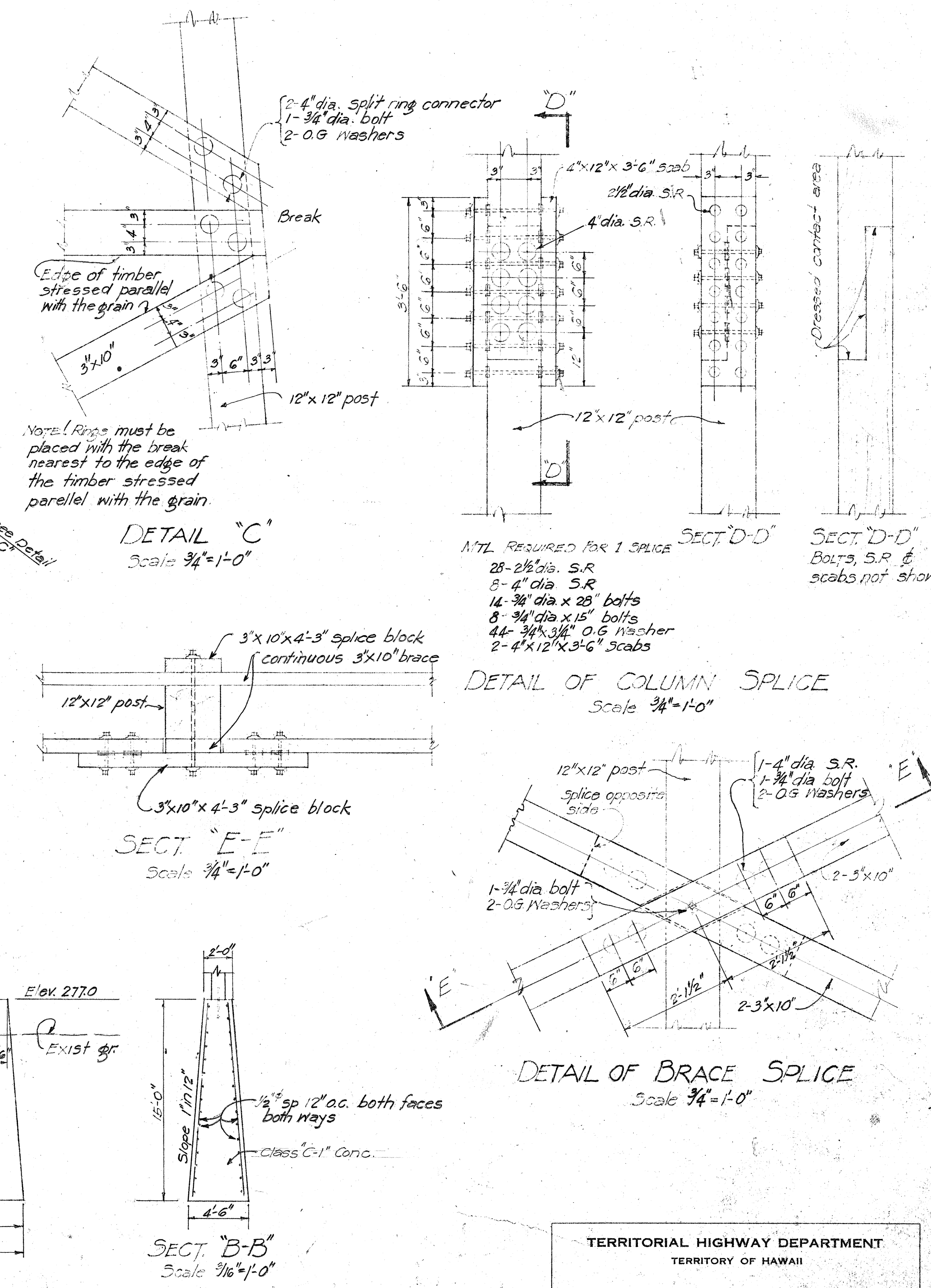
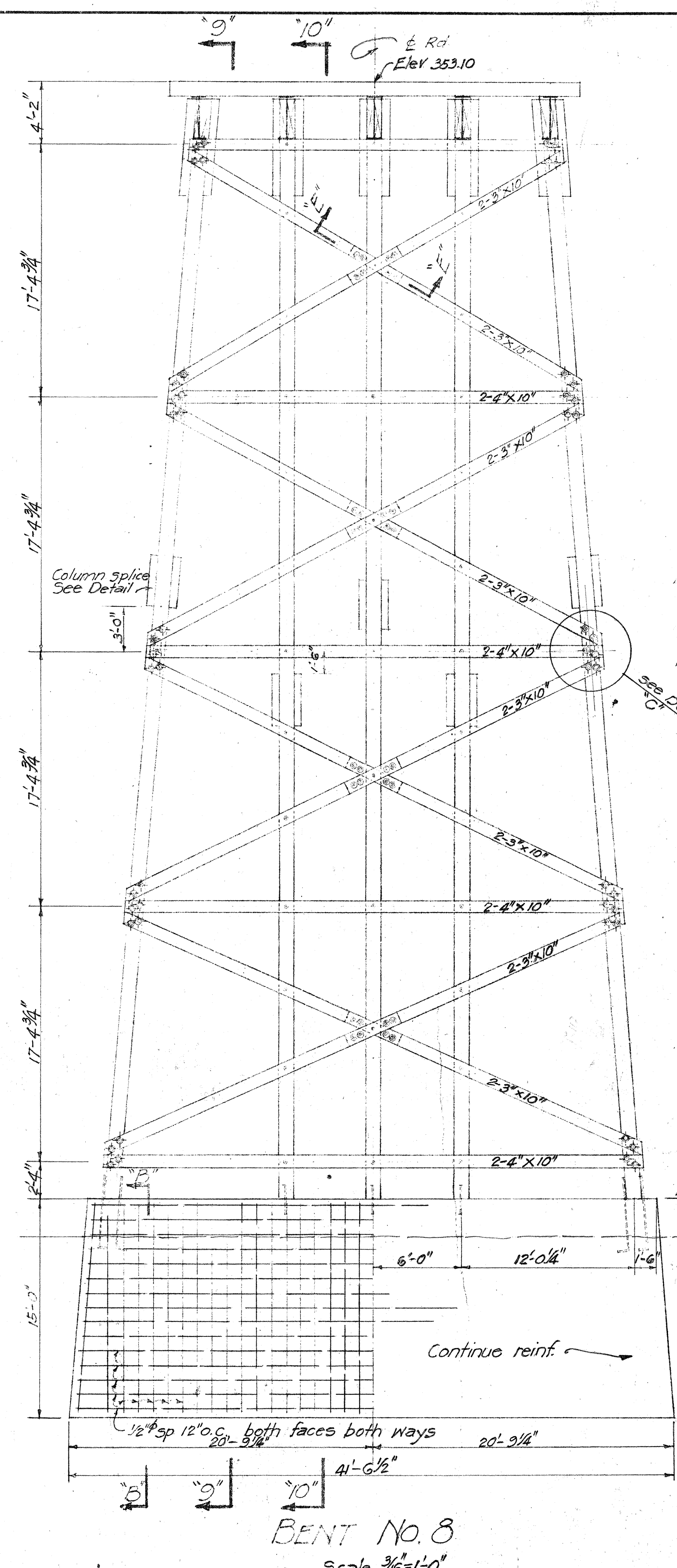
BENT NO. 6
Scale 1/4"=1'-0"

NOTE! For footing details
not shown, see Bent No. 1

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BRIDGE No. 3
Sta. 65+47.17 to 69+29.5
HAWAII BELT ROAD
Jan. 1946
FA-F148(1)

SHEET No. 4 OF 14 SHEETS

3194.39
5194.39



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE No. 3
Sta. 65+47.17 to 69+29.5

HAWAII BELT ROAD

FA-F148(D)

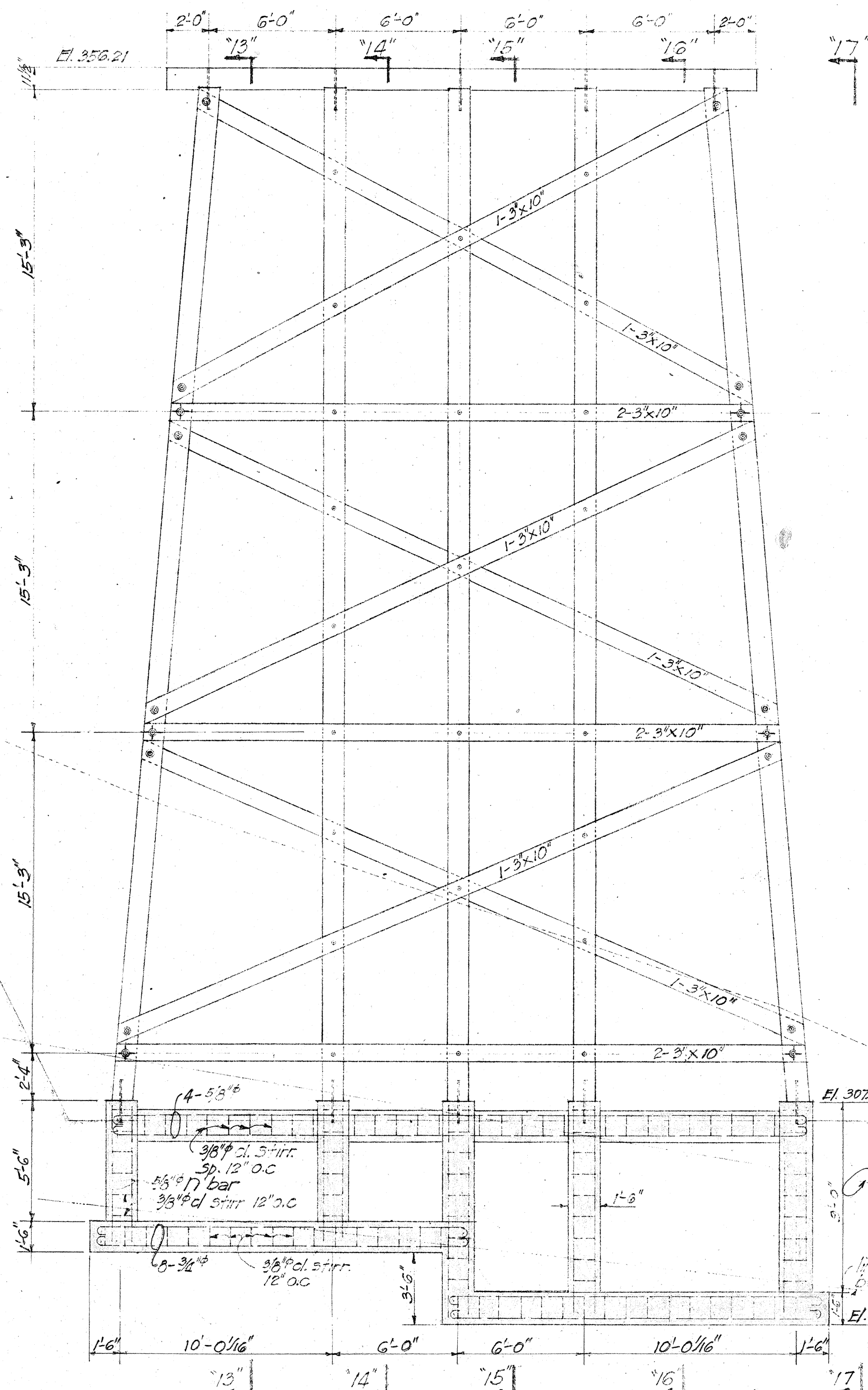
Jan. 1946

SHEET No. 5 OF 14 SHEETS

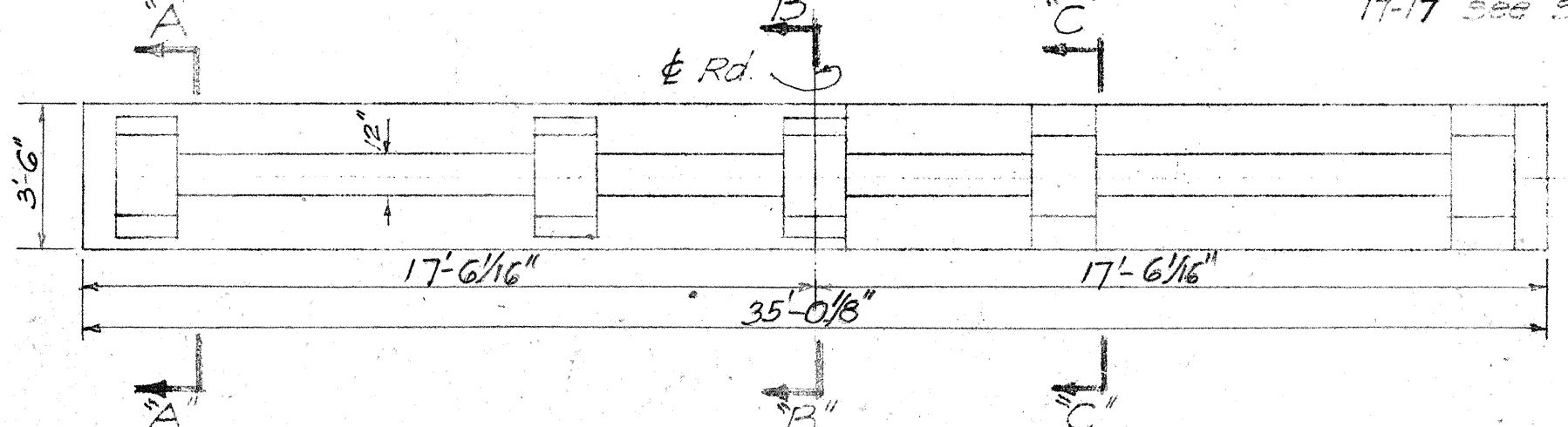
ORIGINAL PLAN	SURVEY PLOTTED BY DESIGNED BY DRAWN BY TRACED BY	DATE 44 5/15/54
NOTE BOOK	QUANTITIES BY QUANTITIES CHECKED BY CHECKED BY	44 5/15/54 44 5/15/54 44 5/15/54
N _o		44

5194.41

5194. 41

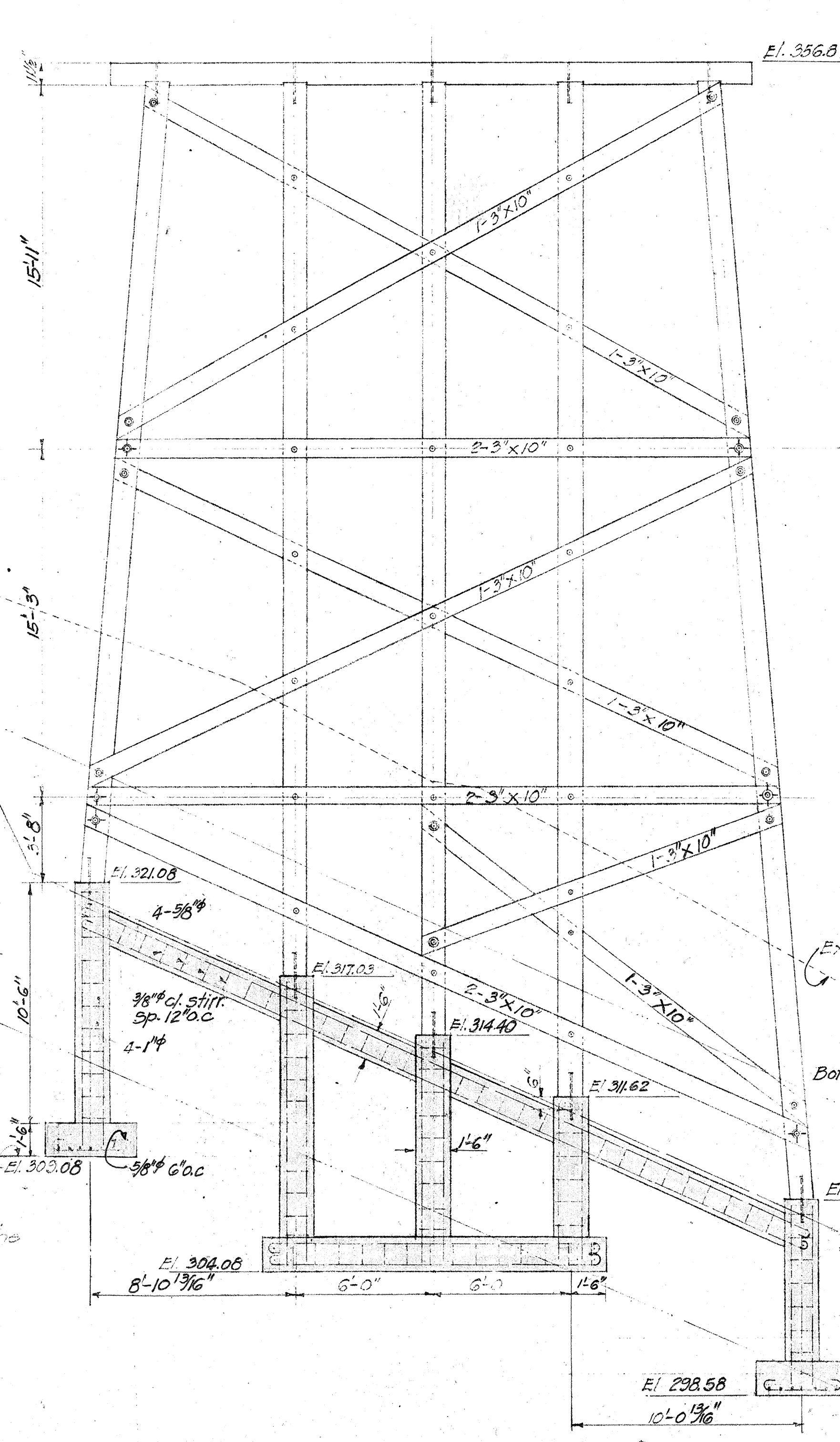


BENT No. 11
Scale 1/4"=1'-0"

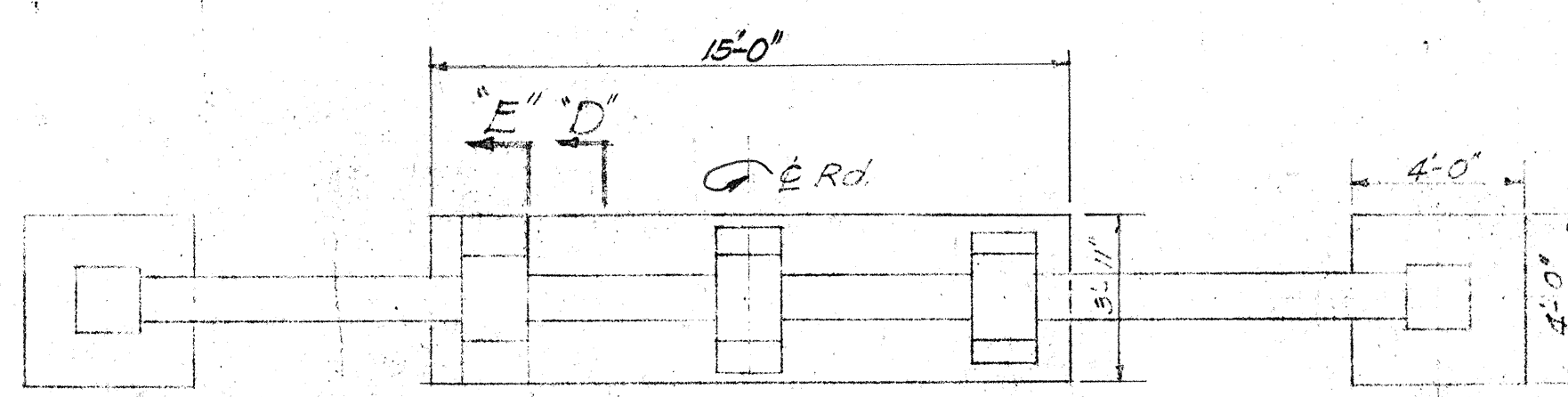


PLAN OF FOOTING - BENT No. 11
Scale 1/4"=1'-0"

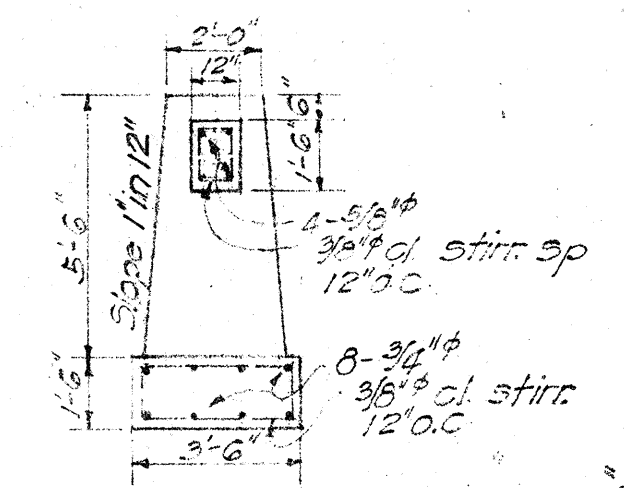
NOTE:
For Sect. 13-14 & 14-15 see sheet
no. 12 For Sect. 15-16 & 16-17
see sheet no. 13



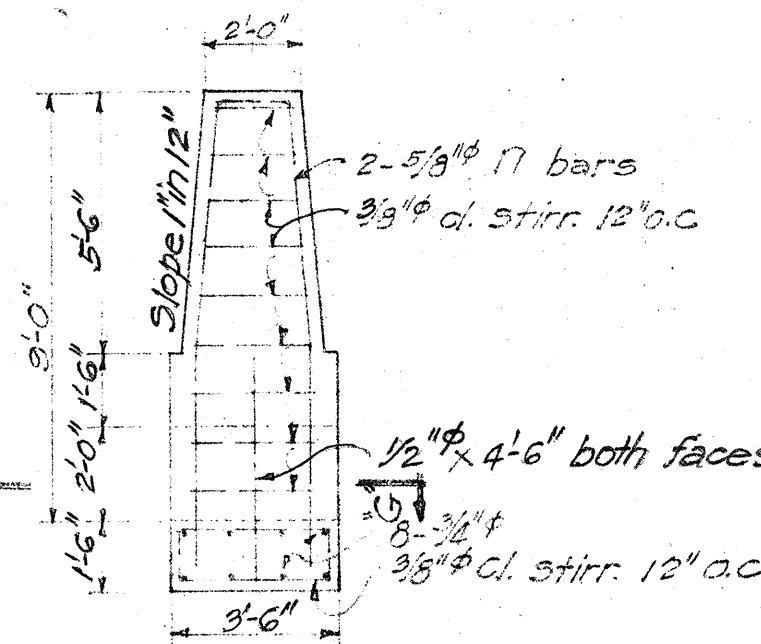
BENT No. 12
Scale 1/4"=1'-0"



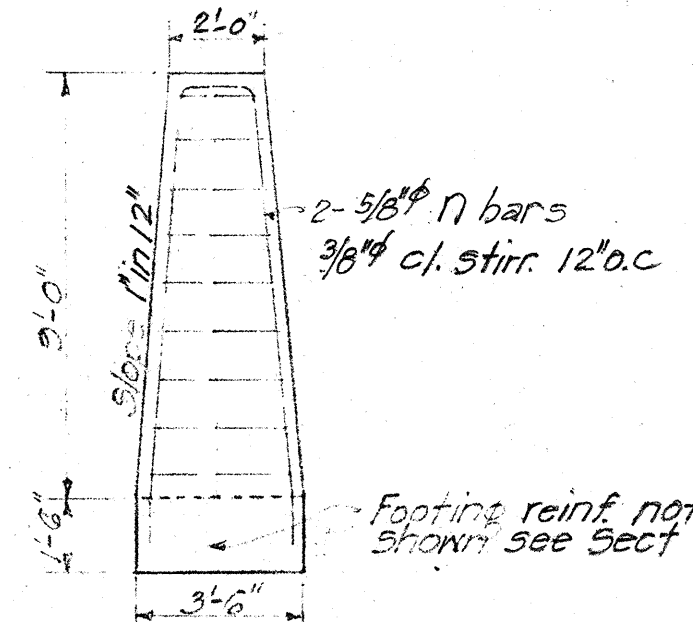
PLAN OF FOOTING - BENT No. 12
Scale 1/4"=1'-0"



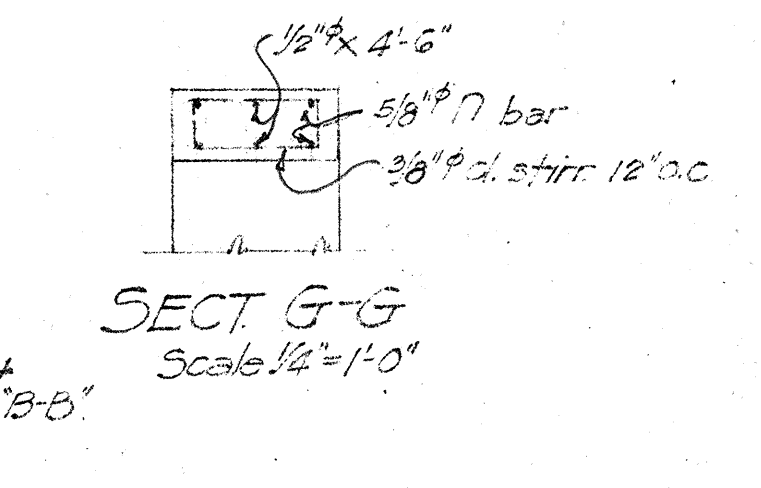
SECT. A-A
Scale 1/4"=1'-0"



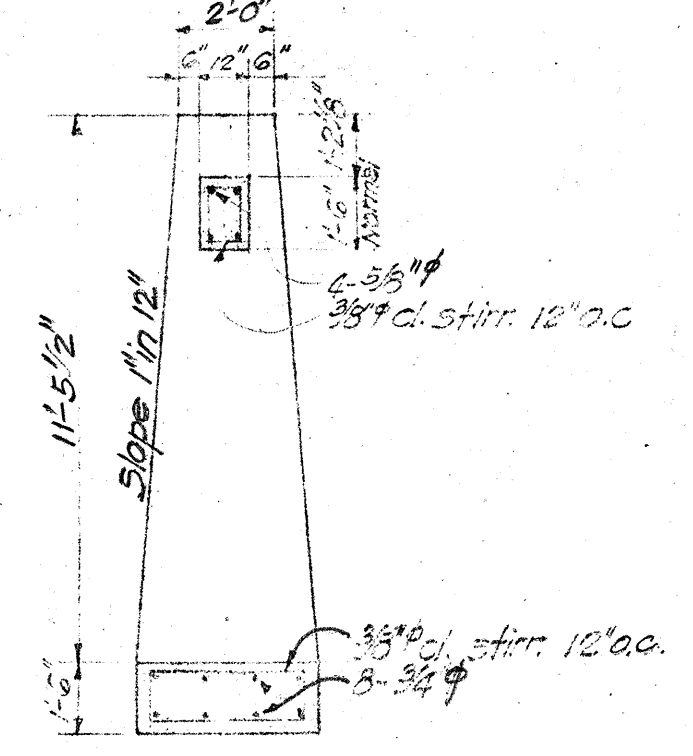
SECT. B-B
Scale 1/4"=1'-0"



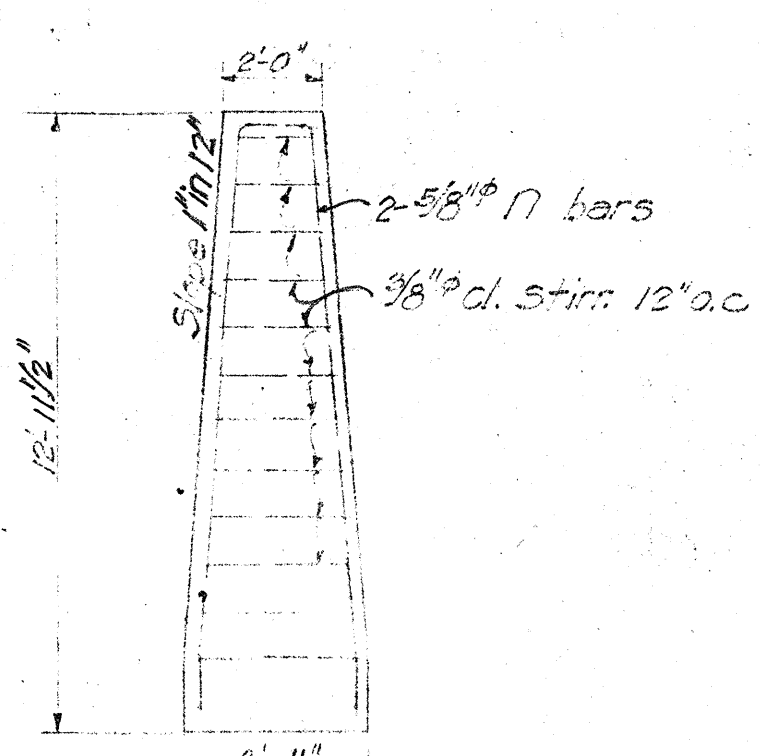
SECT. C-C
Scale 1/4"=1'-0"



SECT. G-G
Scale 1/4"=1'-0"



SECT. D-D
Scale 1/4"=1'-0"



SECT. E-E
Scale 1/4"=1'-0"

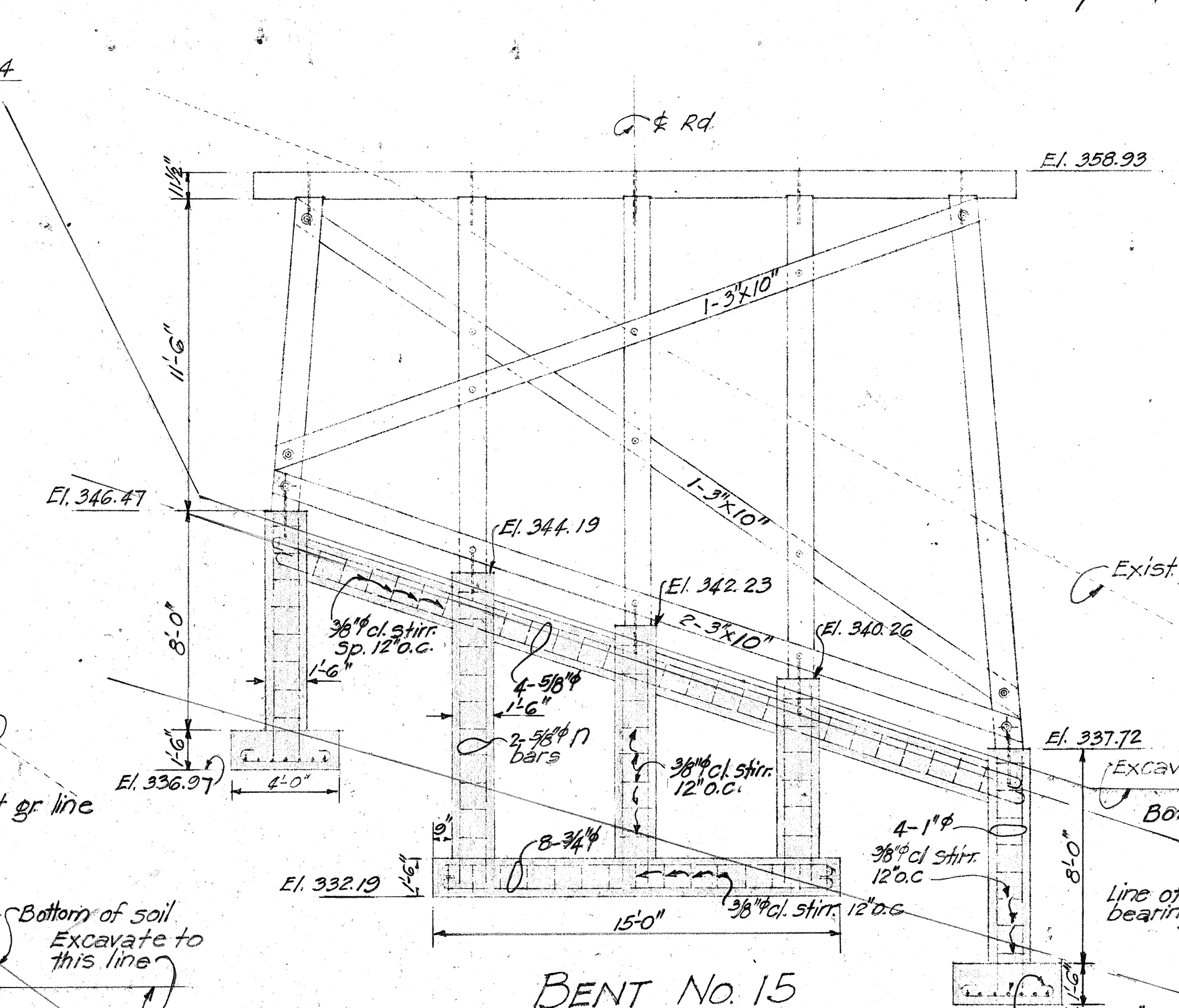
NOTE! Shaded portions represent
work in place.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

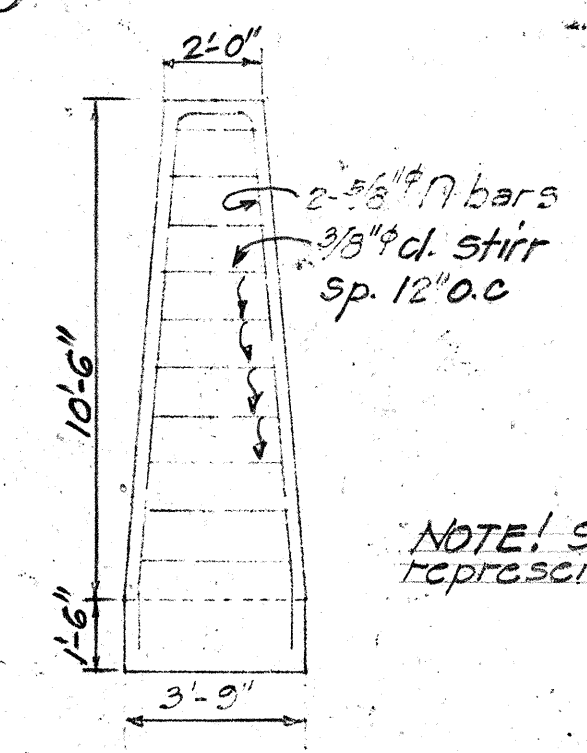
BRIDGE No. 3
Sta 65+47.17 to 69+29.5
HAWAII BELT ROAD

FA-F148(II)
Jan. 1946

ORIGINAL
PLAN
DRAWN BY
NOTE BOOK
QUANTITIES CHECKED BY
No.



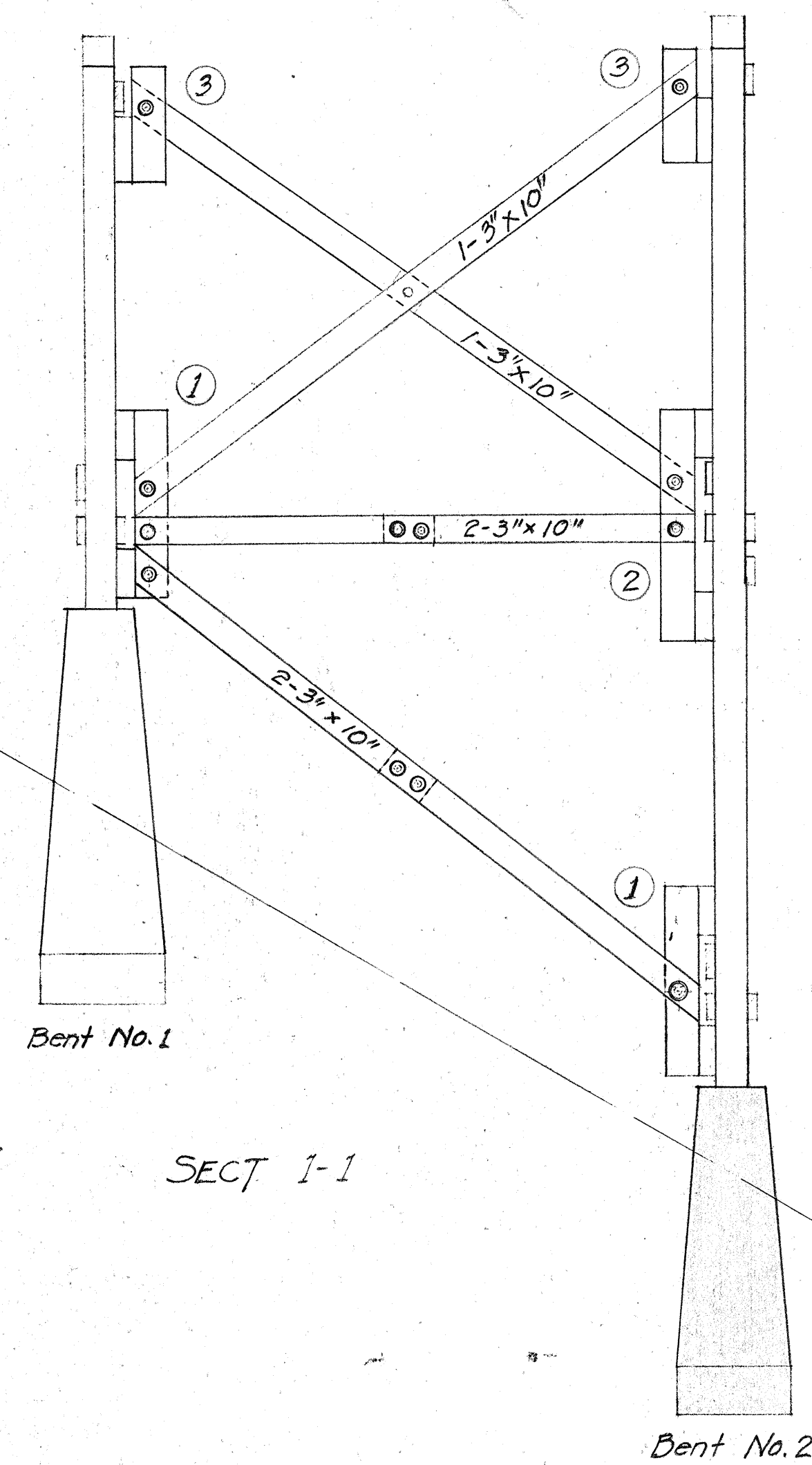
BENT No. 15
Scale $\frac{1}{4}" = 1'-0"$



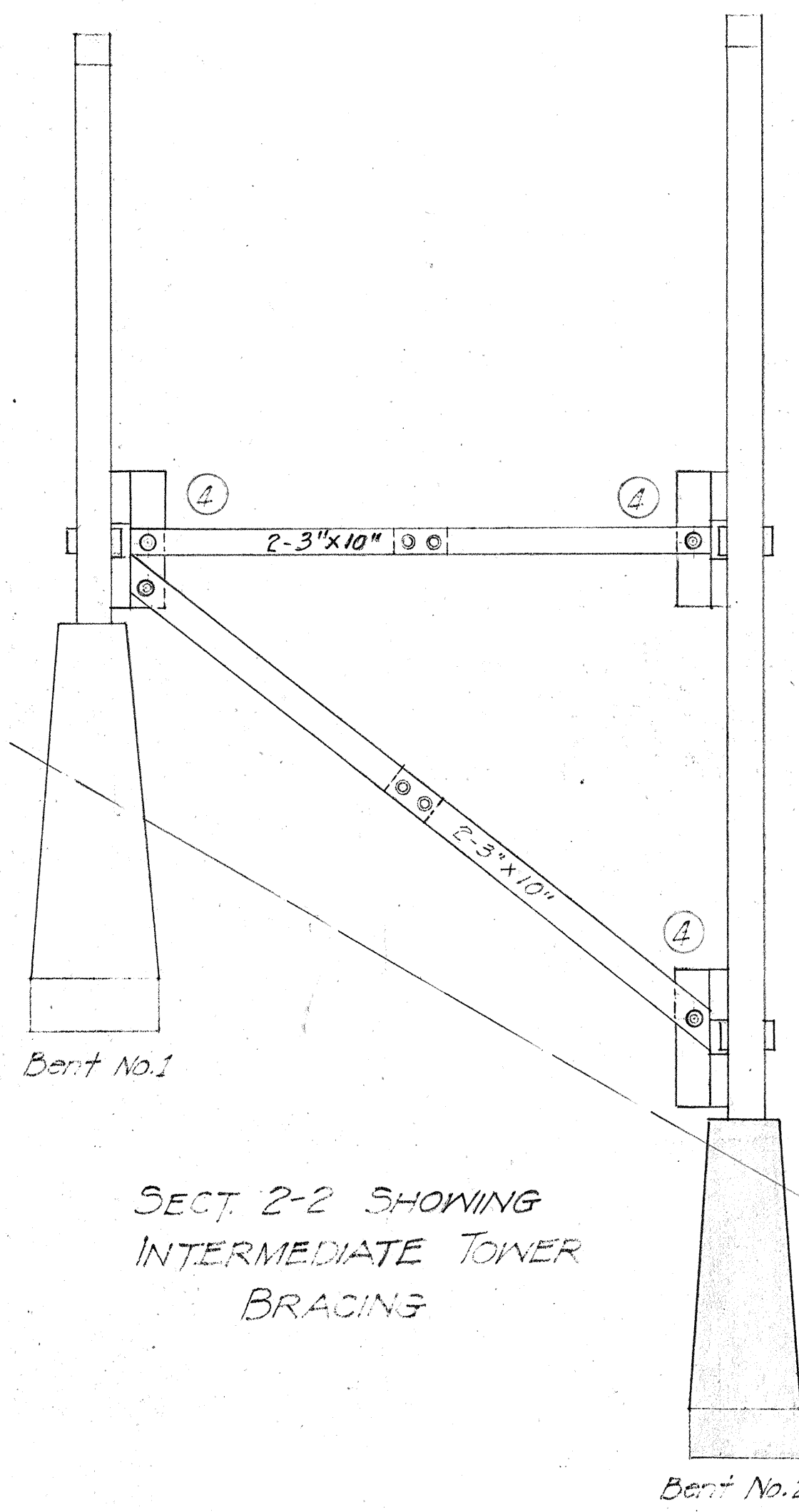
SECT. G-G
Scale 1/4" = 1'-0"

SHEET № 8 OF 14 SHEETS

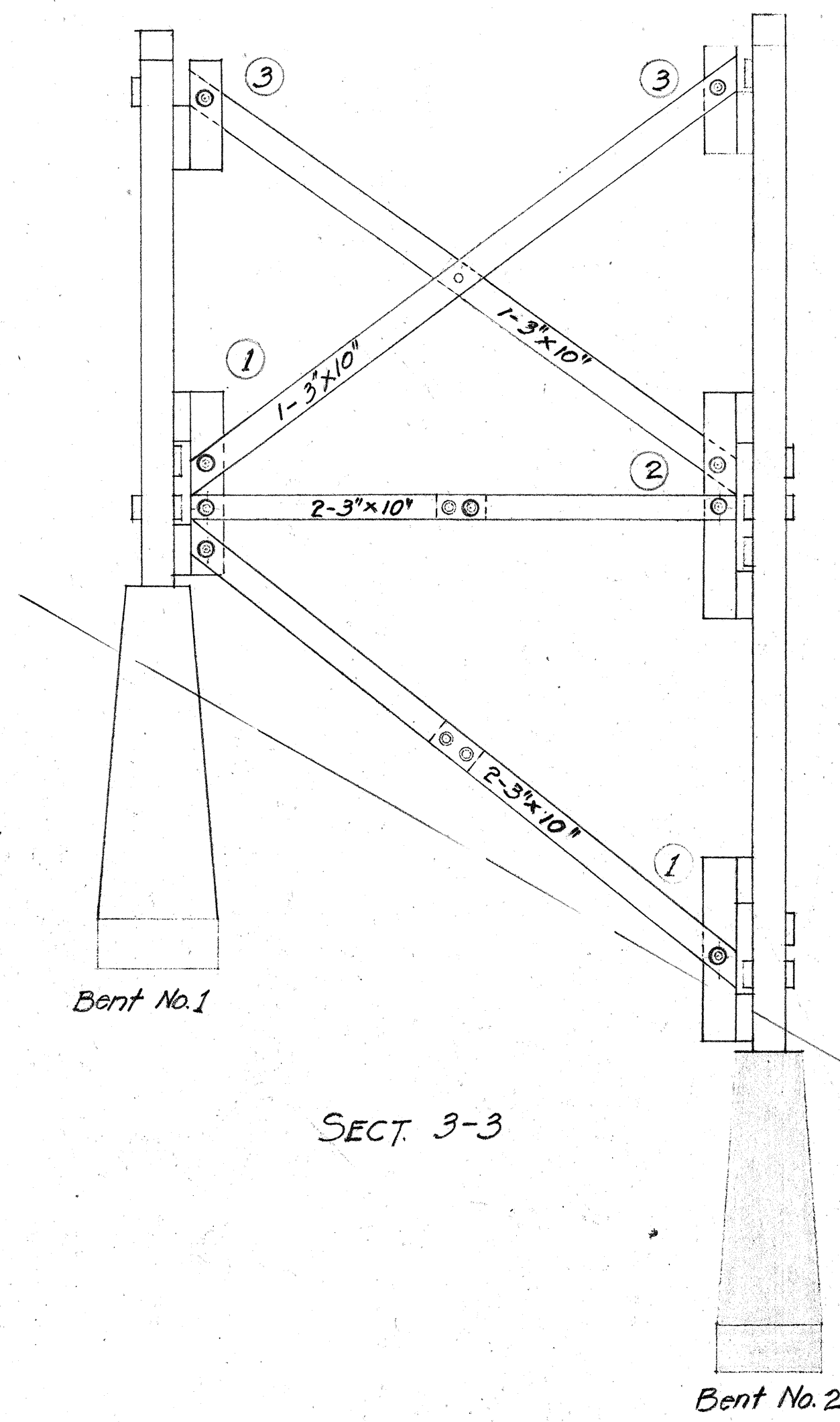
ORIGINAL PLAN	SURVEY PLOTTED BY DESIGNED BY DRAWN BY TRACED BY QUANTITIES BY QUANTITIES CHECKED BY CHECKED BY	DATE " " " " " " " " " " " "
NOTE BOOK		
No.		



SECT. 1-1



SECT. 2-2 SHOWING
INTERMEDIATE TOWER
BRACING



SECT. 3-3

TOWER BRACING BENTS 1 & 2 Scale 1/4"=1'-0"

NOTE

For location of sect 1-1, 2-2 & 3-3 see sh. #3

④ Number shown in circle refers to joint details. See sheet no. 5194.23A

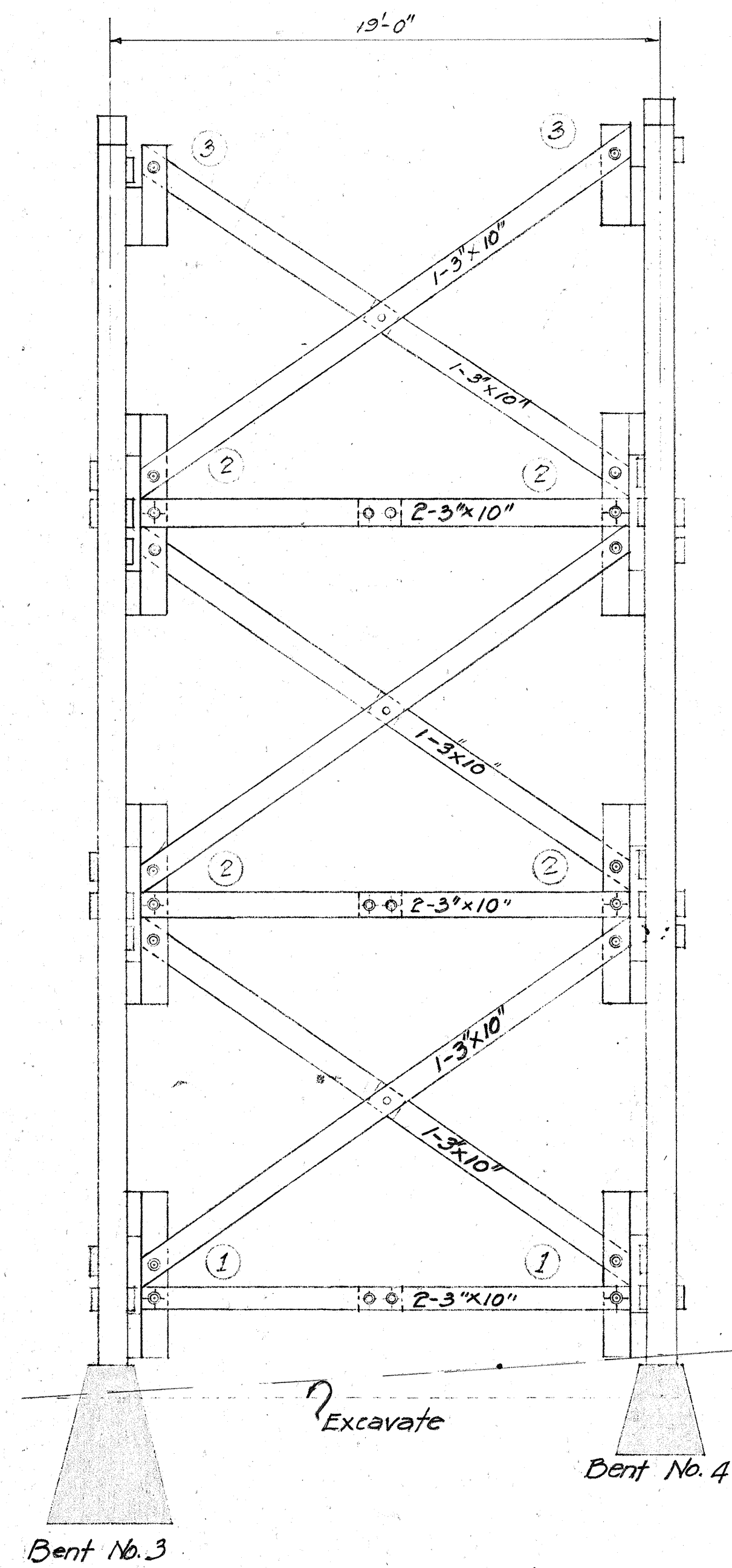
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES CHECKED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BRIDGE No. 3
Sta. 65+47.17 to 69+29.5
HAWAII BELT ROAD
FA-F148 (1)
Jan. 1946

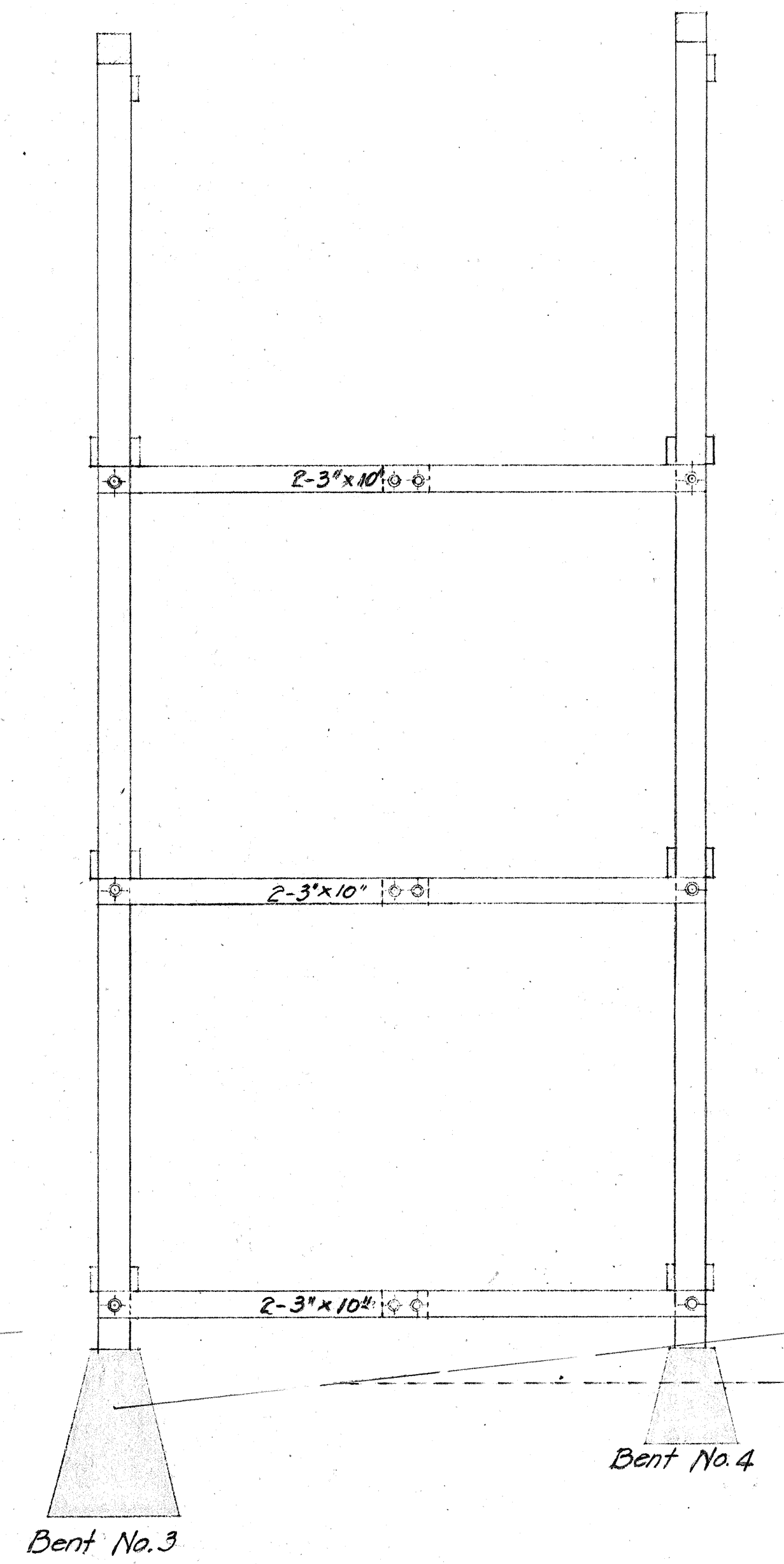
SHEET No. 9 OF 14 SHEETS

5194.44

5194.44



SECT. 3-3

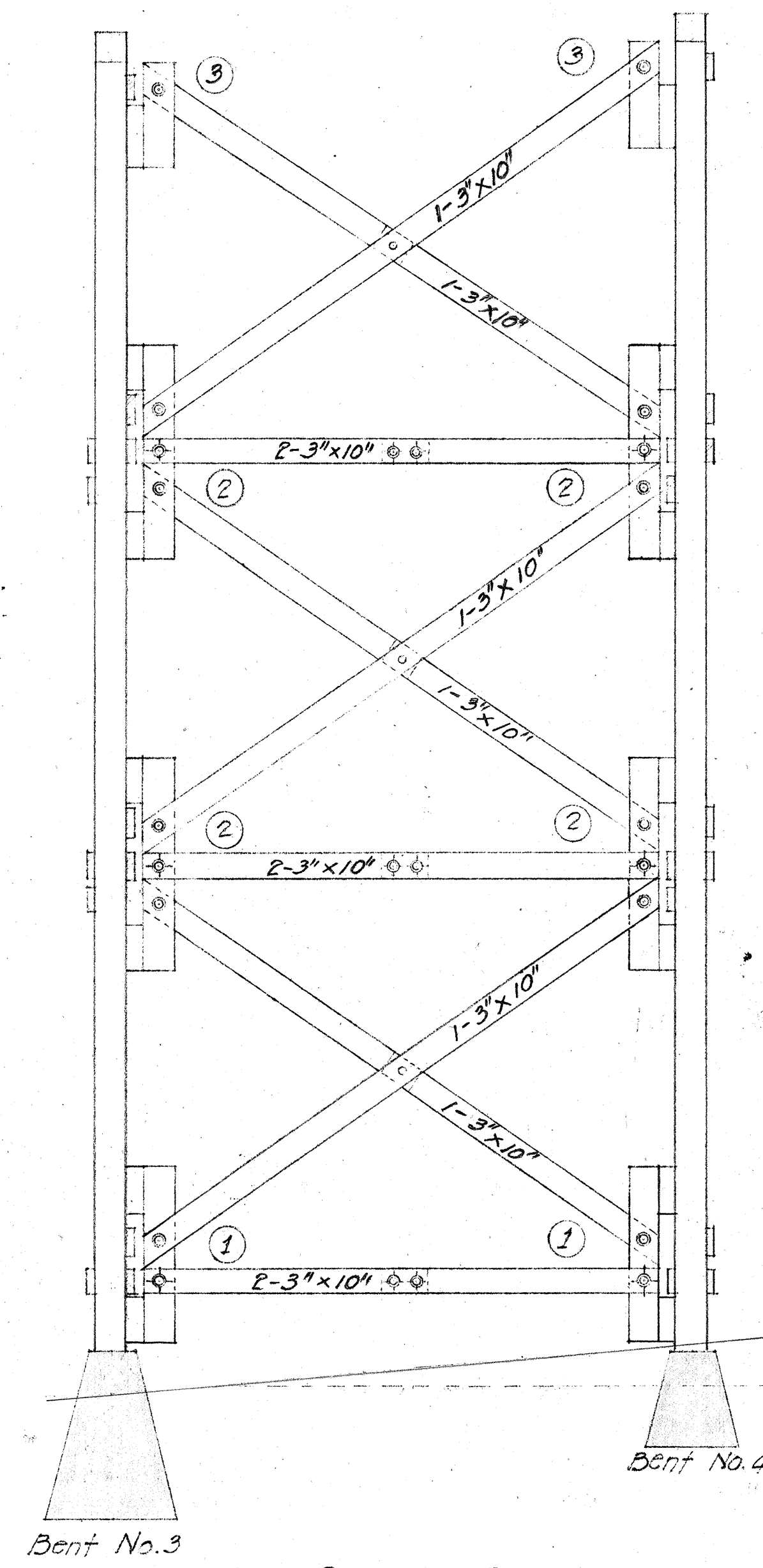


SECTION 4-4 SHOWING
INTERMEDIATE TOWER BRACING

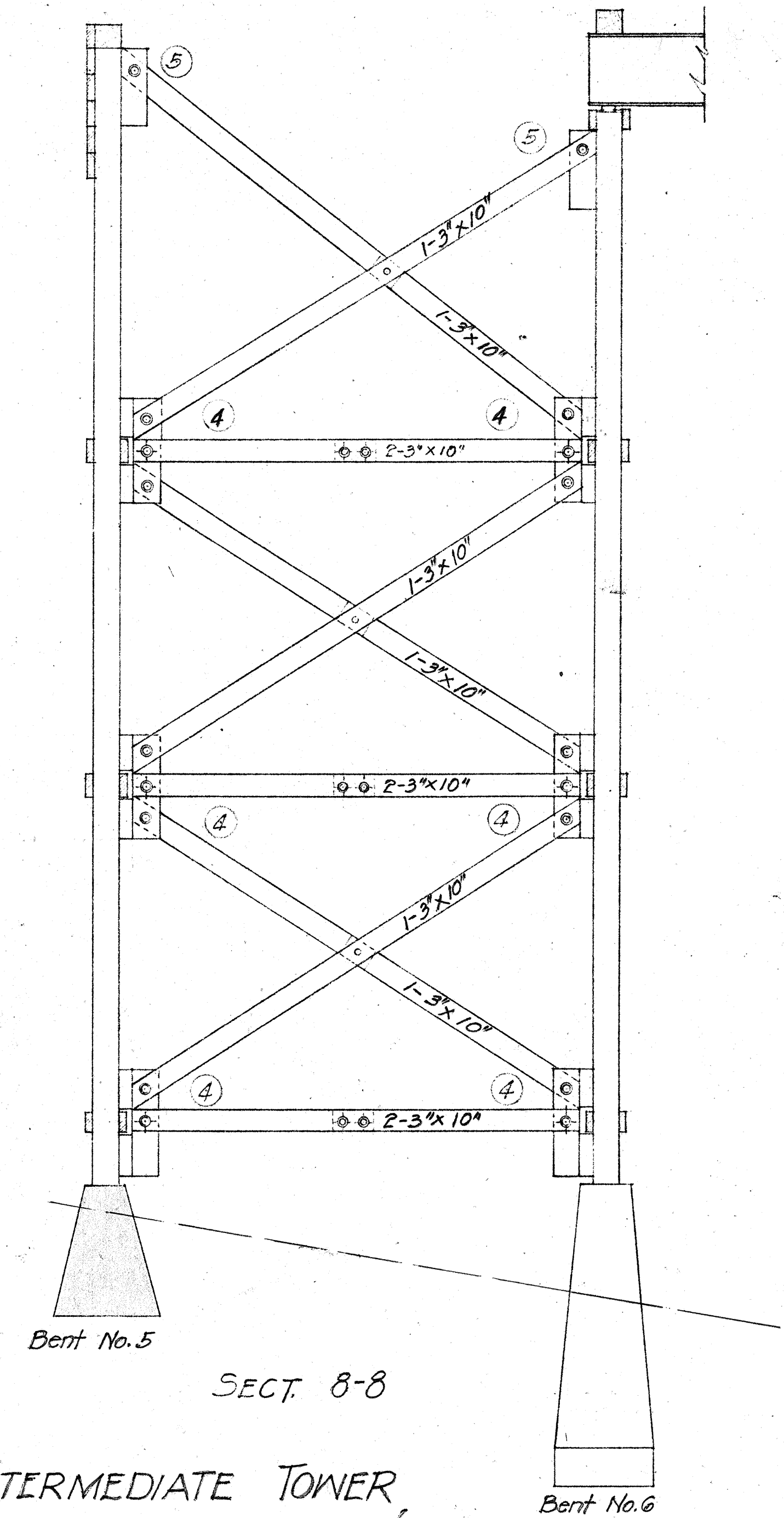
TOWER BRACING BENTS 3 & 4

Scale 1/4"=1'-0"

NOTE
For location of Sect. 3-3, 4-4 & 5-5 see sheet #4



SECT. 5-5



SECT. 8-8

INTERMEDIATE TOWER BRACING BENTS 5 & 6

NOTE:
For location of Sect. 8-8 see sheet #4
For outside post bracing see sheet #12

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

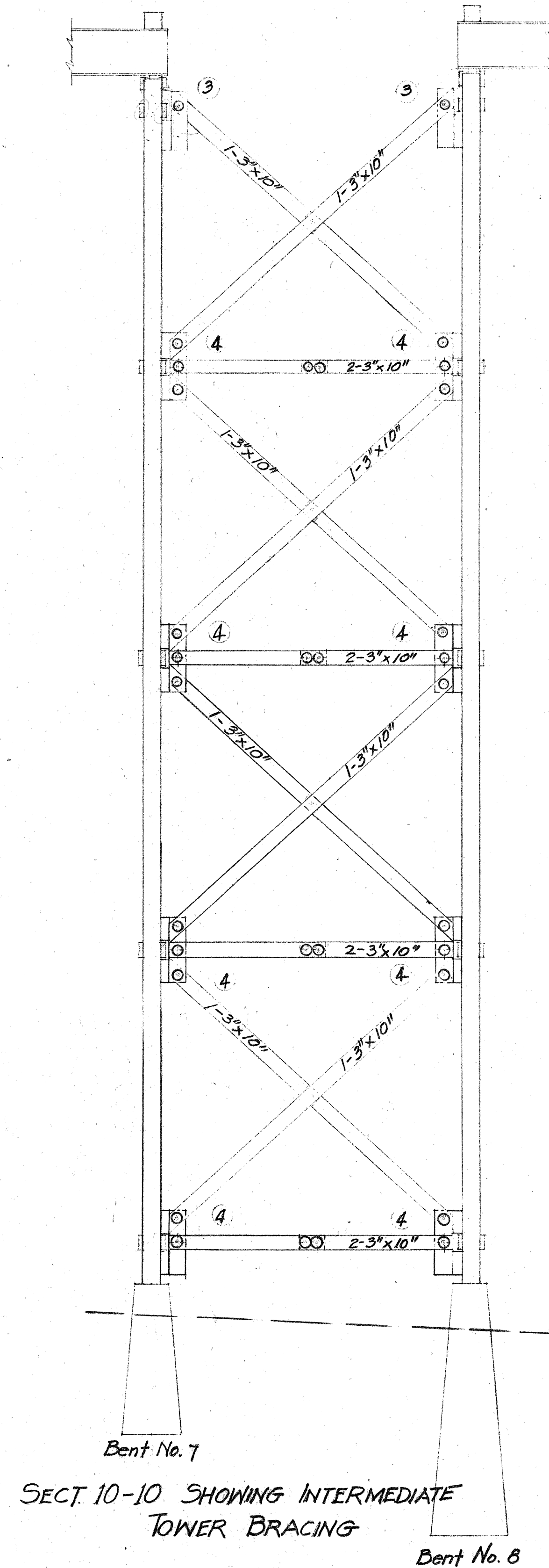
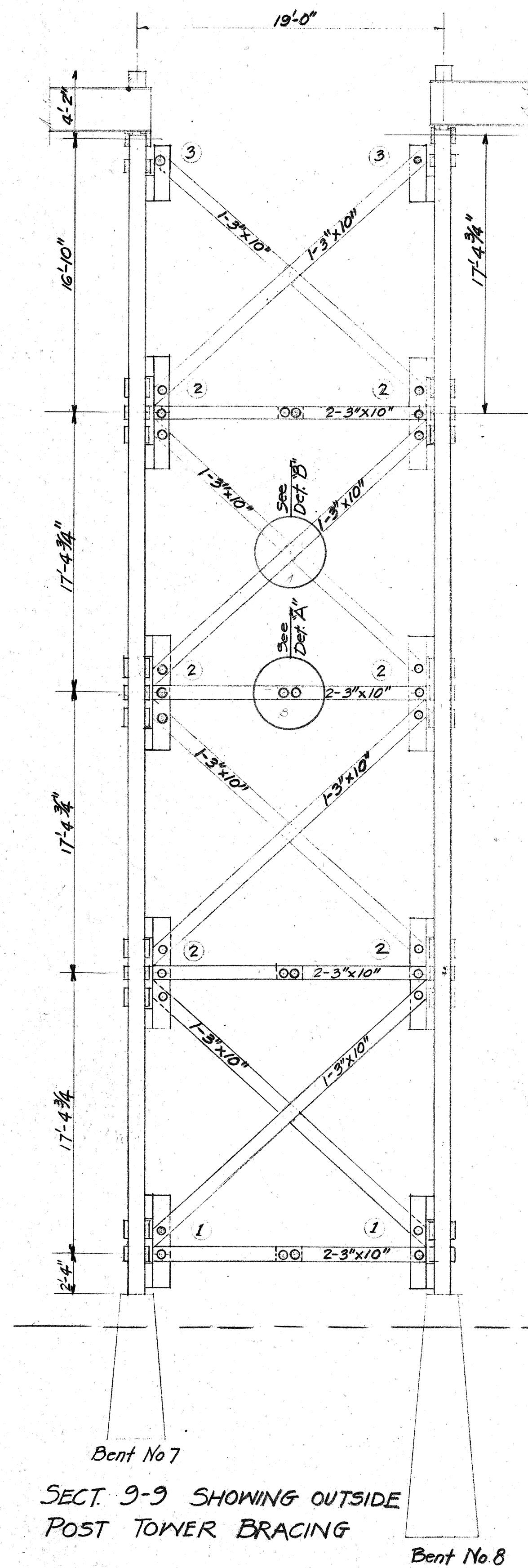
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE No. 3
Sta. 65+47.17 to 69+29.5
HAWAII BELT ROAD
Jan. 1946

FA-F14B(1)

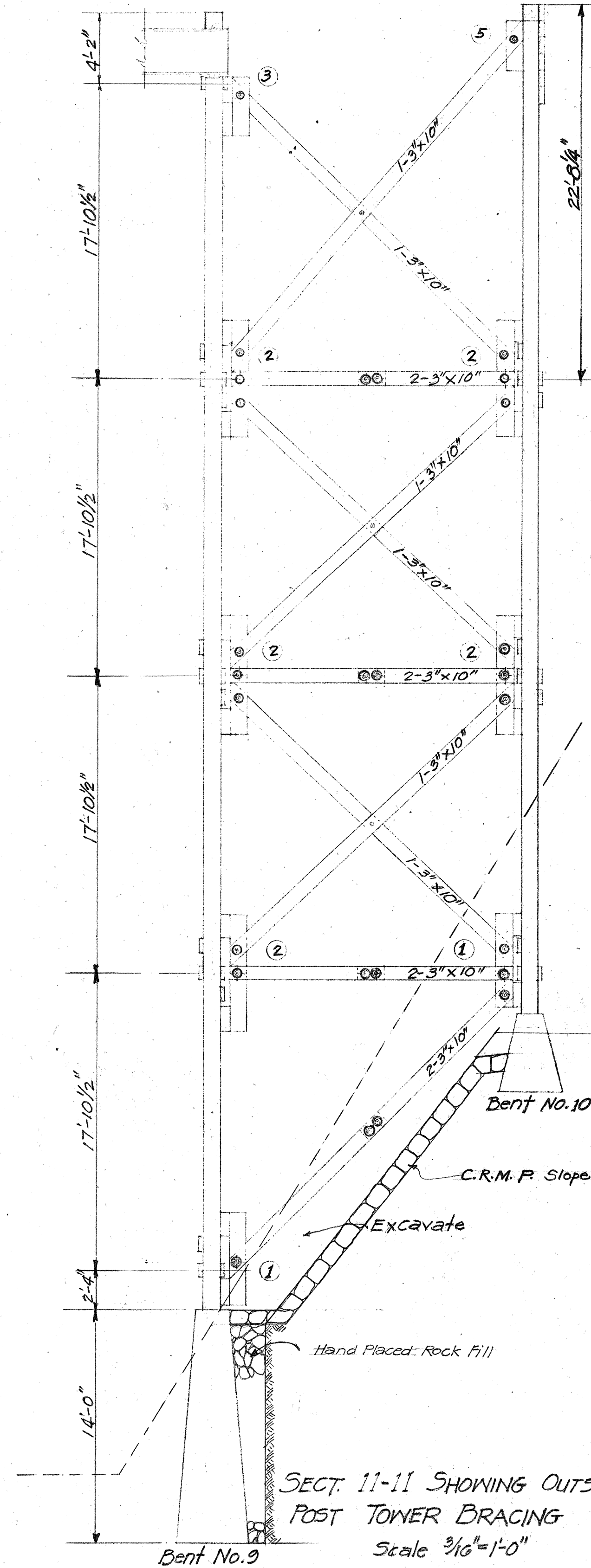
SHEET No 10 OF 14 SHEETS

3194.45



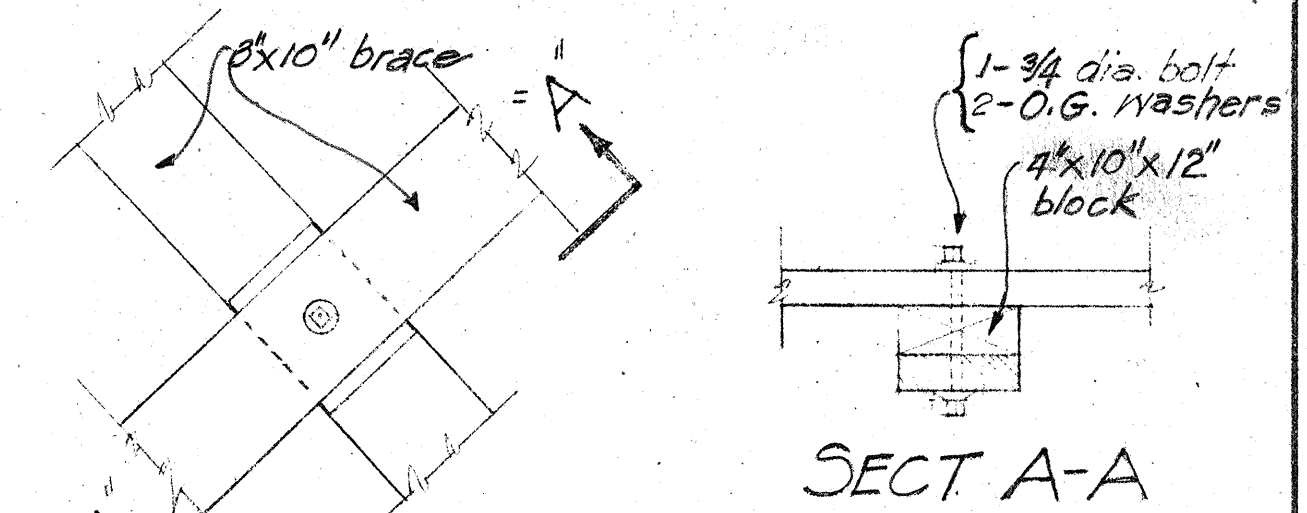
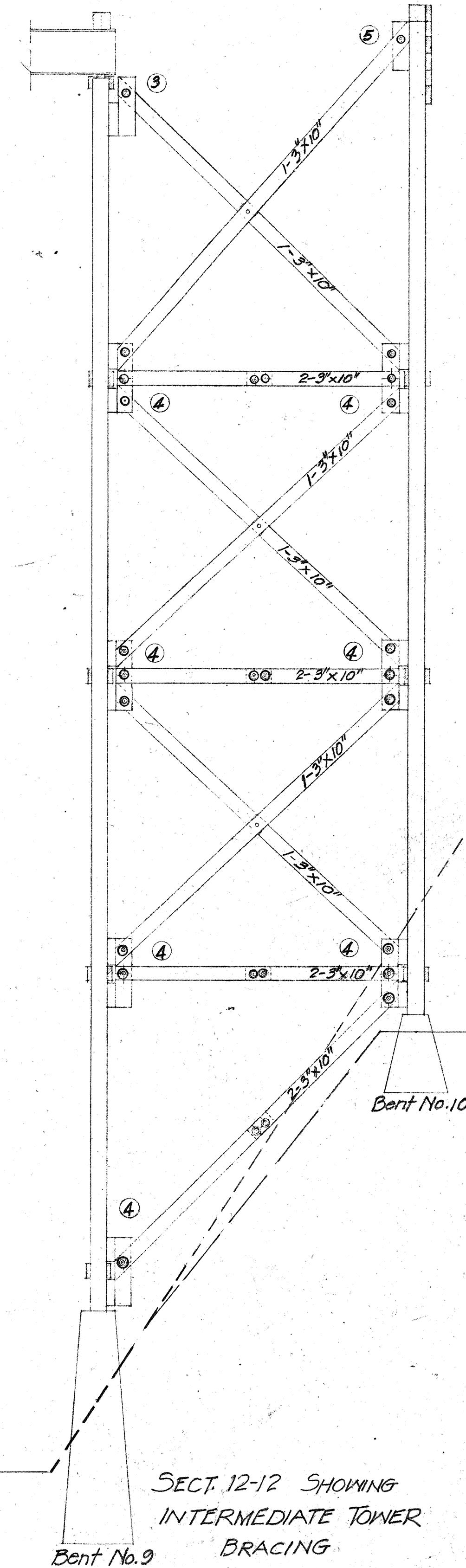
TOWER BRACING BENTS 7 & 8
Scale $\frac{3}{16}'' = 1'-0''$

NOTE: For location of Sect 9-9 & 10-10 see sheet no. 5

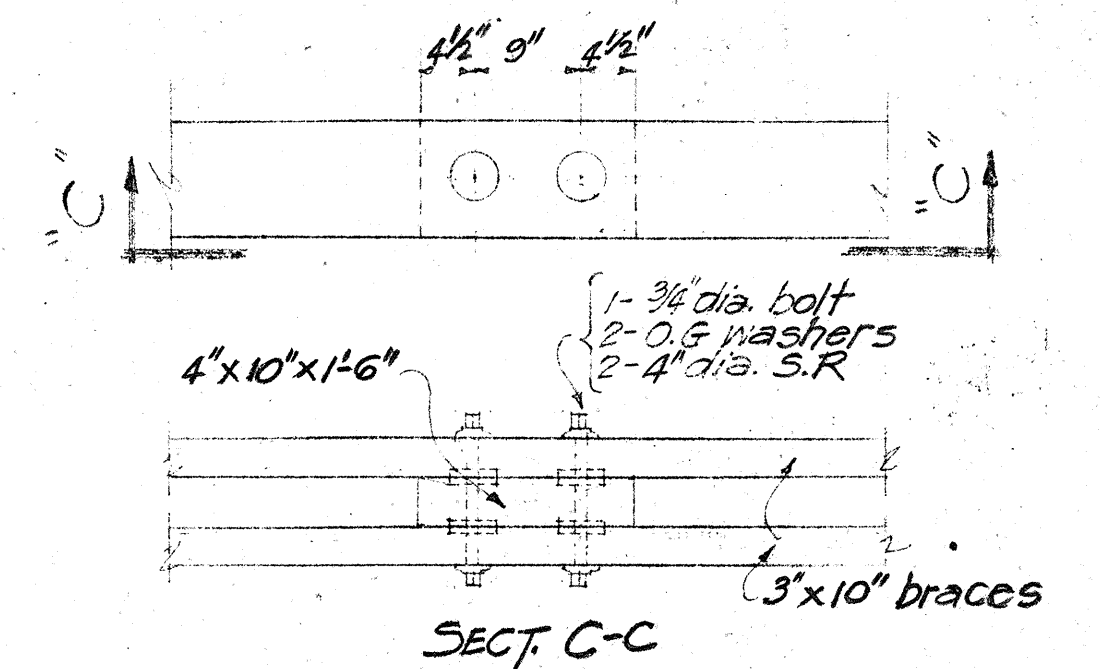


TOWER BRACING BENTS 9 & 10
Scale $\frac{3}{16}'' = 1'-0''$

NOTE: For location of Sect 11 & 12-12 see sheet no. 6



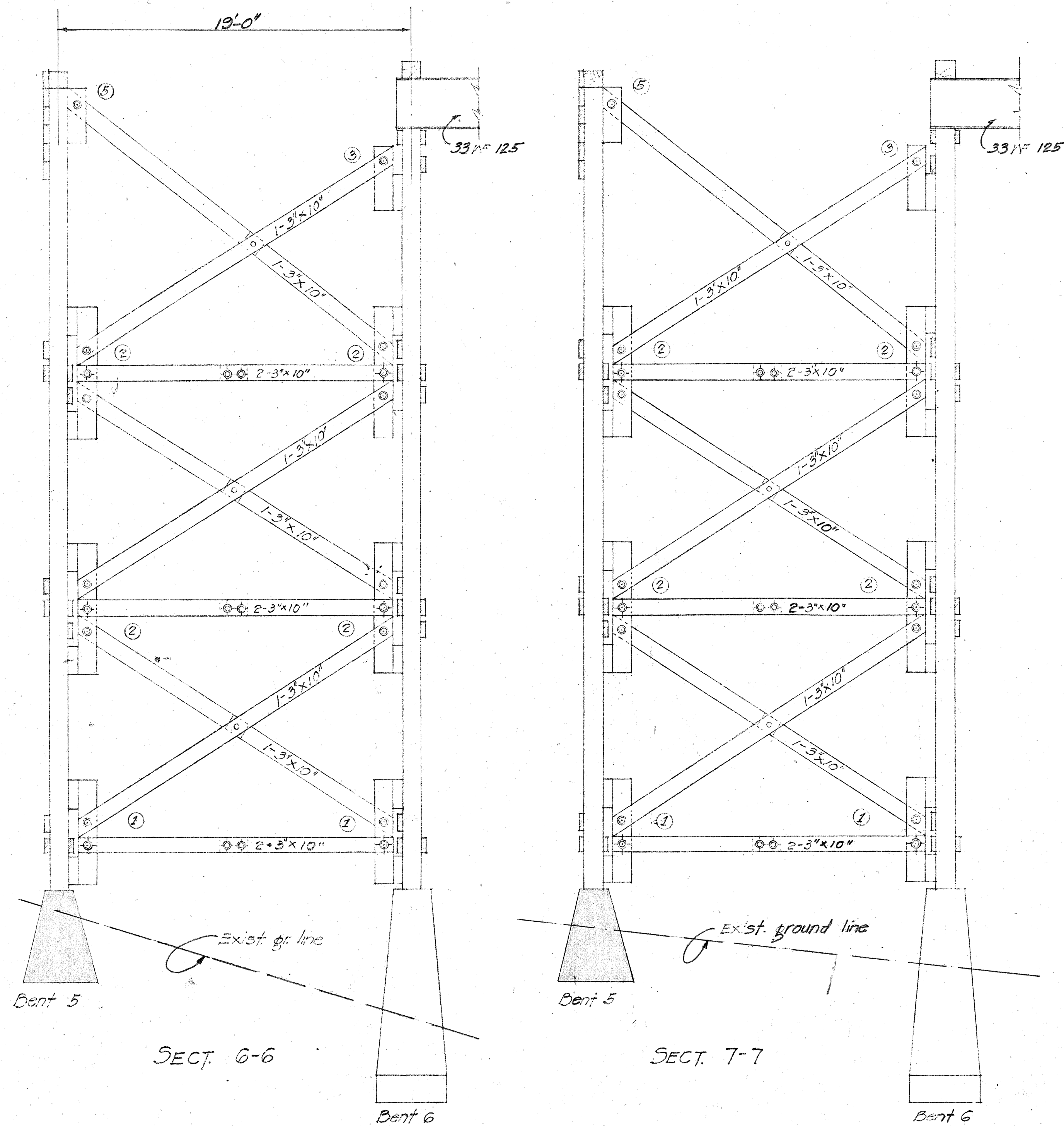
DETAIL "B"
Scale $\frac{3}{4}'' = 1'-0''$



DETAIL "A"
Scale $\frac{3}{4}'' = 1'-0''$

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

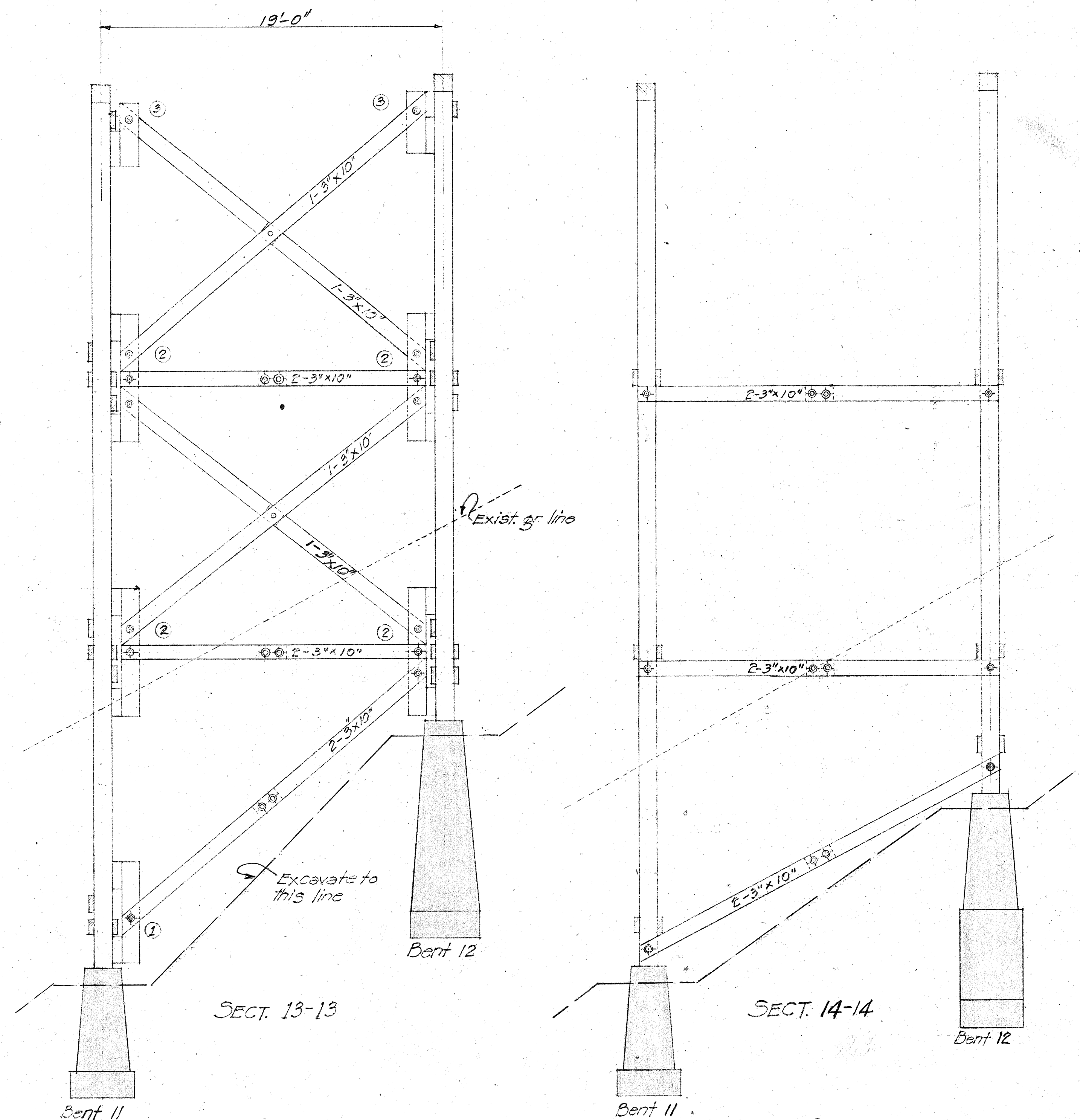
BRIDGE No. 3
Sta. 65+47.17 to 69+29.5
HAWAII BELT ROAD
FA-F148(II)
Jan. 1946



TOWER BRACING BENTS 5 & 6

Scale 1/4"=1'-0"

NOTE:
For location of Sect. 6-6 & 7-7 see sheet no. 4
For intermediate tower bracing see sheet no. 10



TOWER BRACING - BENTS 11 & 12

Scale 1/4"=1'-0"

NOTE:
For location of Sect. 13-13 & 14-14 see sheet no. 7

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

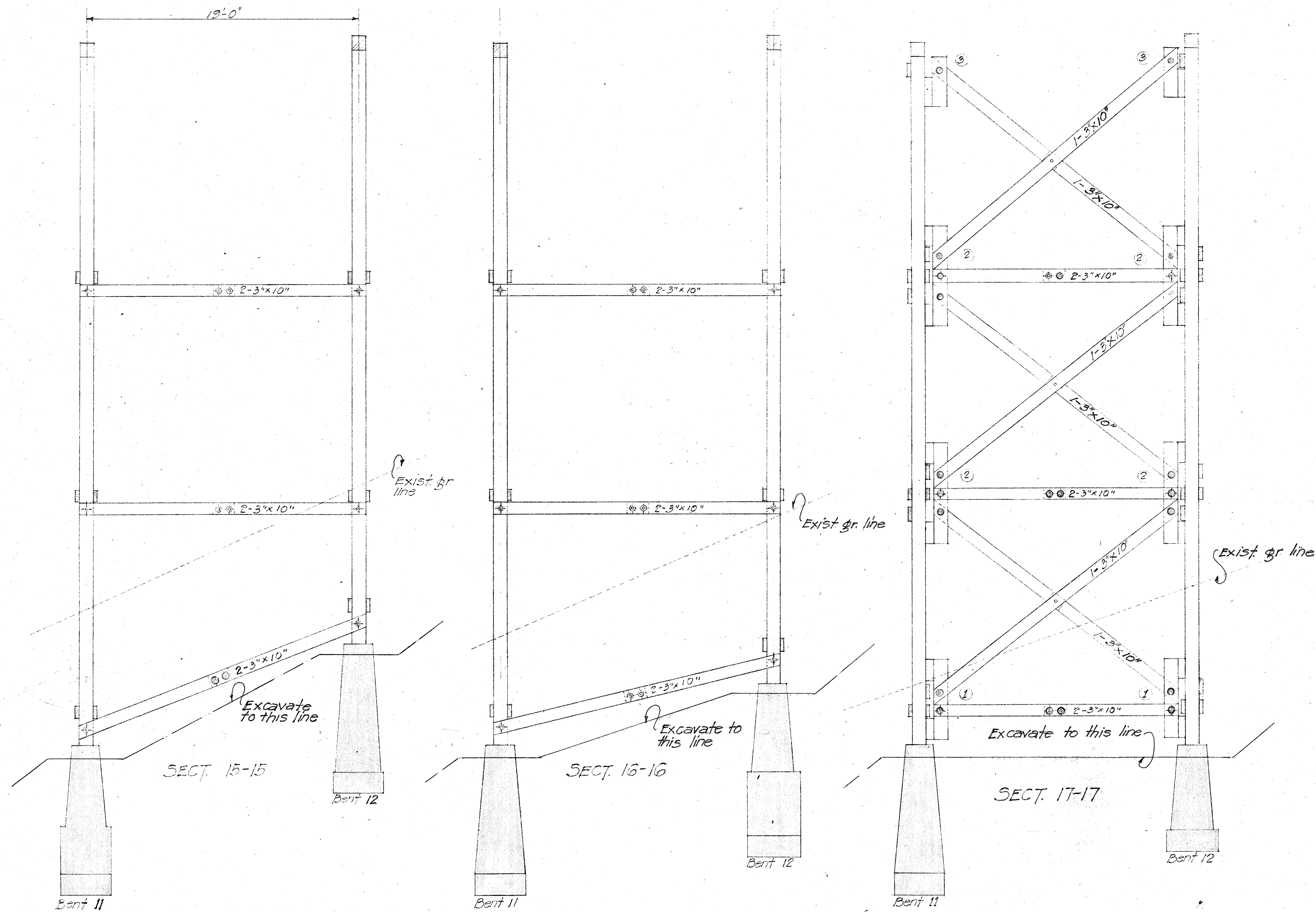
BRIDGE No. 3
Sta. 65+47.17 to 69+29.5

HAWAII BELT ROAD
Jan. 1946

SHEET No. 12 OF 14 SHEETS

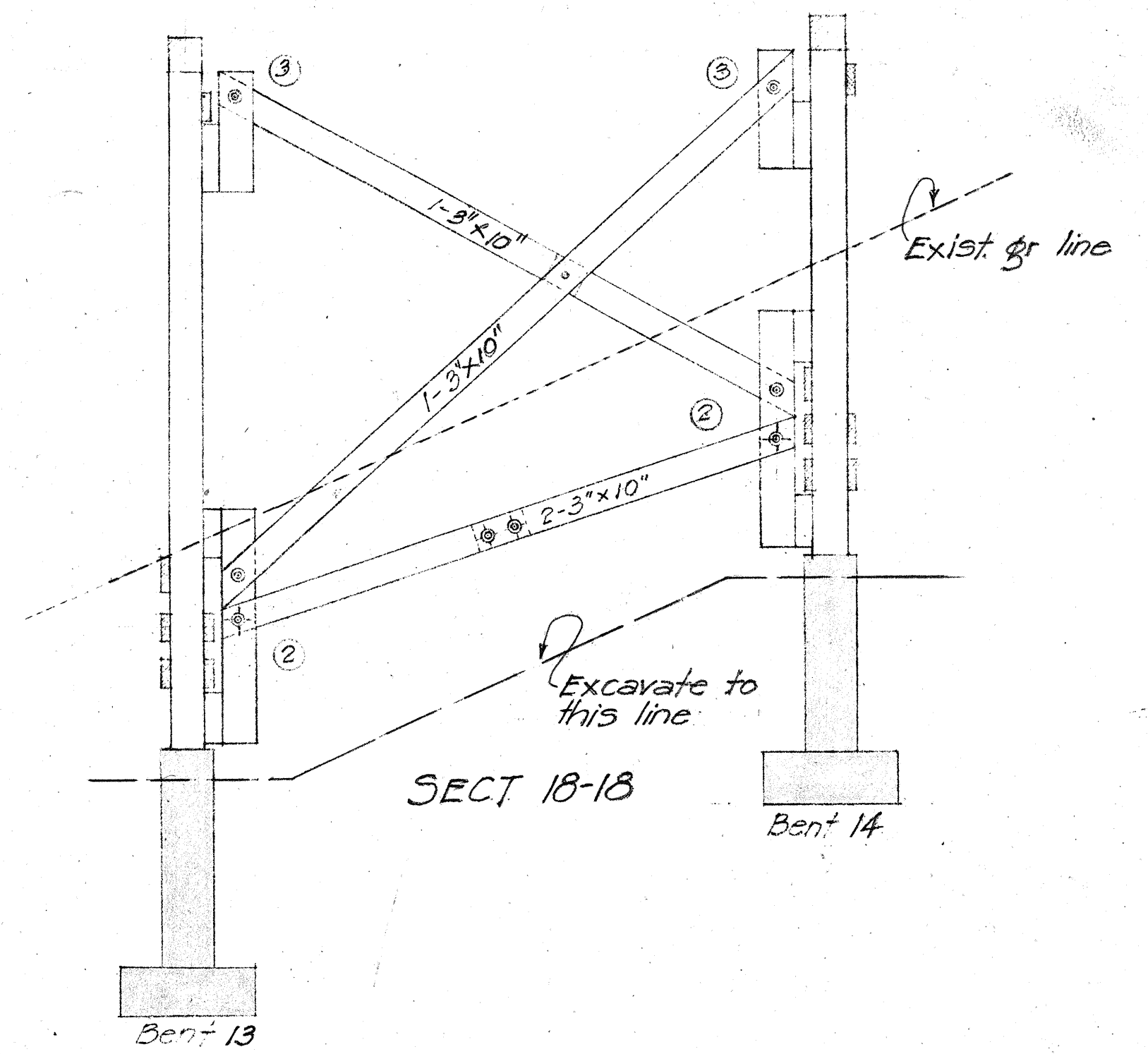
3194.45

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



TOWER BRACING - BENTS 11 & 12
Scale 1/4"=1'-0"

NOTE For location of Sect. 15-15, 16-16 & 17-17 see sheet no. 7



TOWER BRACING - BENTS 13 & 14
Scale 1/4"=1'-0"

NOTE For location of Sect. 18-18 see sheet no. 8

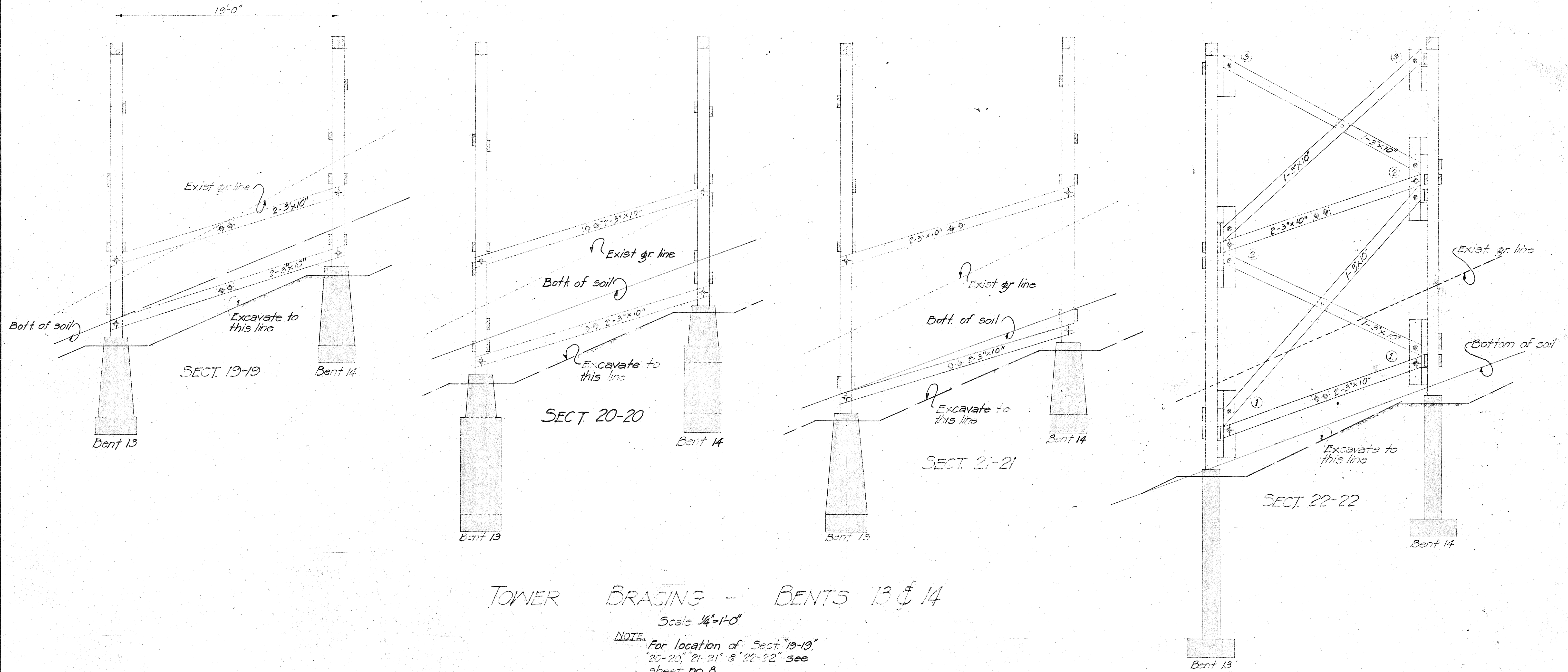
Shaded portions represent work in place.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BRIDGE No. 3
STA 65+47.17 to 69+25.45
HAWAII BELT ROAD
Jan. 1946

SHEET No. 13 OF 14 SHEETS

3194.48

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



TOWER BRACING - BENTS 13 & 14

Scale 1/4"=1'-0"

NOTE: For location of Sect. "19-19," "20-20," "21-21" & "22-22" see sheet no. 8

Shaded portions represent work in place.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
BRIDGE No. 3
Sta. 65+47.17 to 67+29.5
HAWAII BELT ROAD
Jan. 1946
FA-F148(1)

SHEET No. 14 OF 14 SHEETS

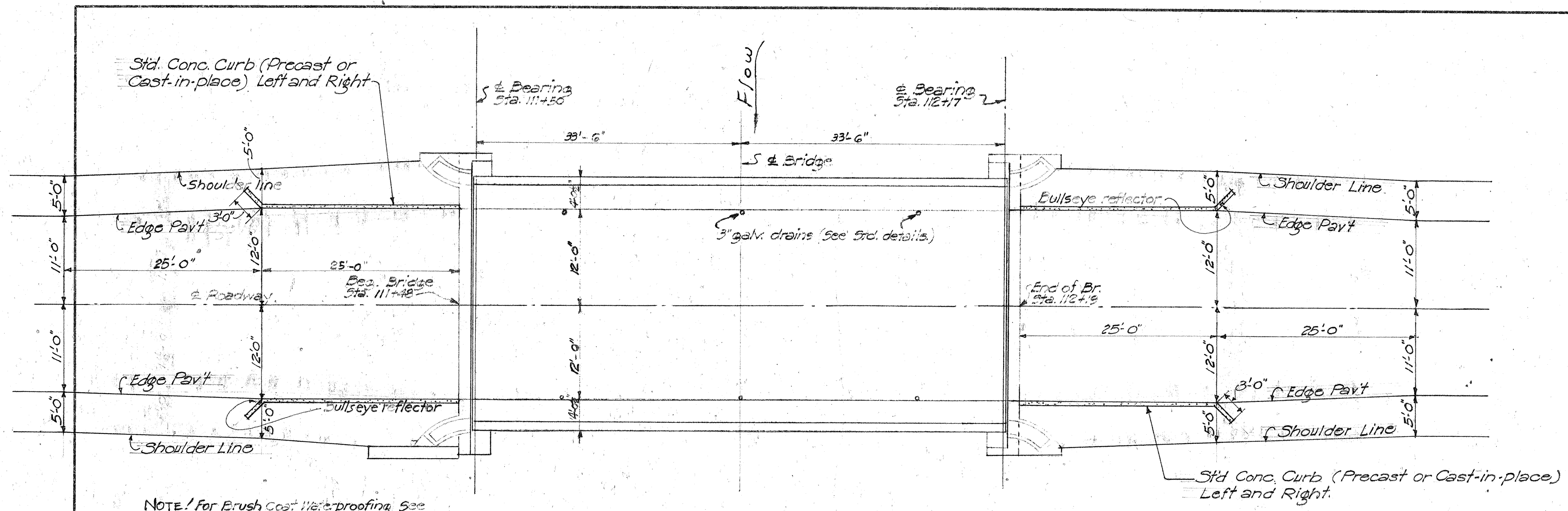
5194.49

5794.49

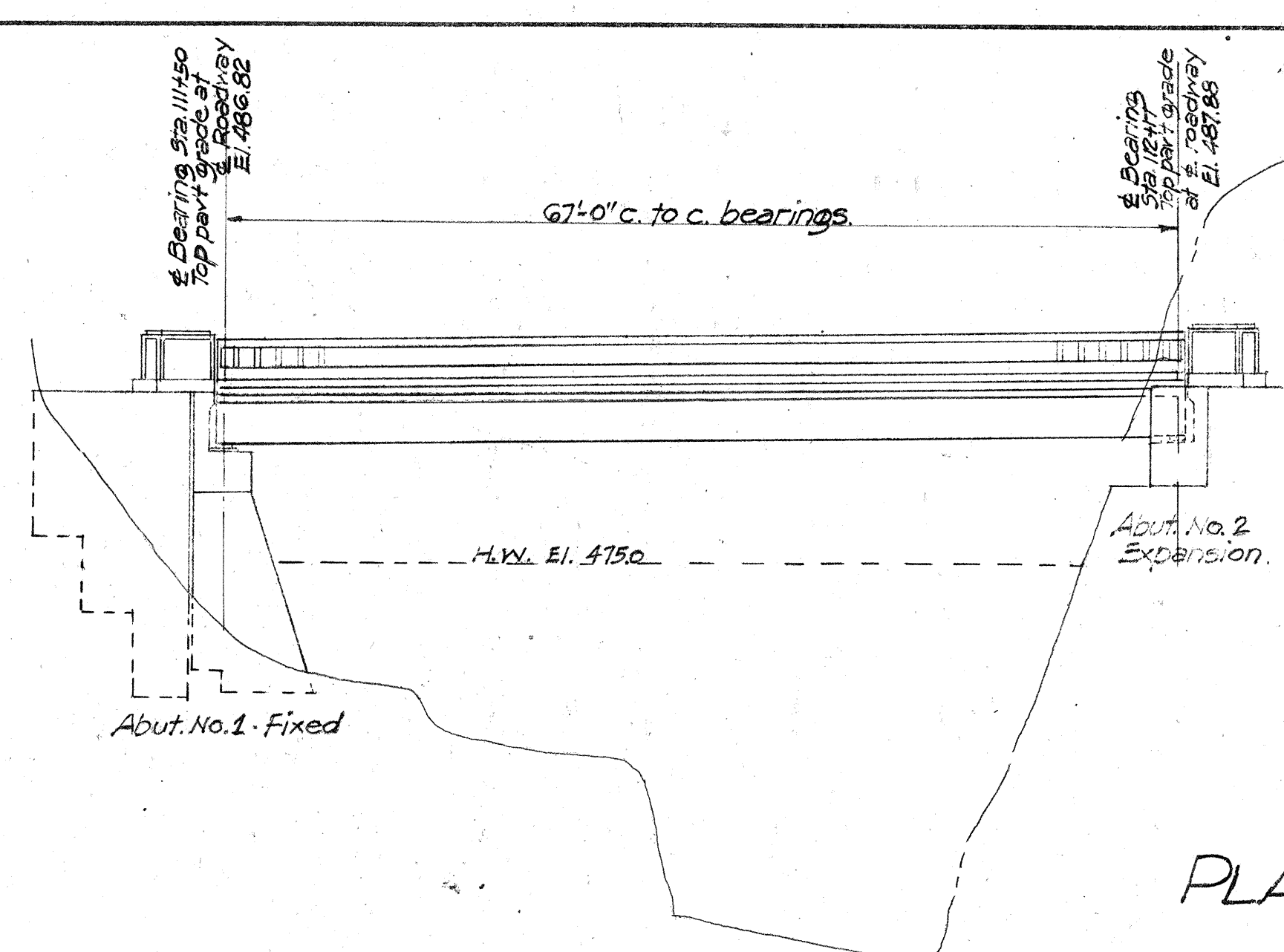
SURVEY PLANNED BY	DATE
DESIGNED BY	
DRAWN BY	
CHECKED BY	
QUANTITIES CHECKED BY	
NOTE BOOK	
NO.	

Revision: Camber of S.W. Girder changed to 1/8"

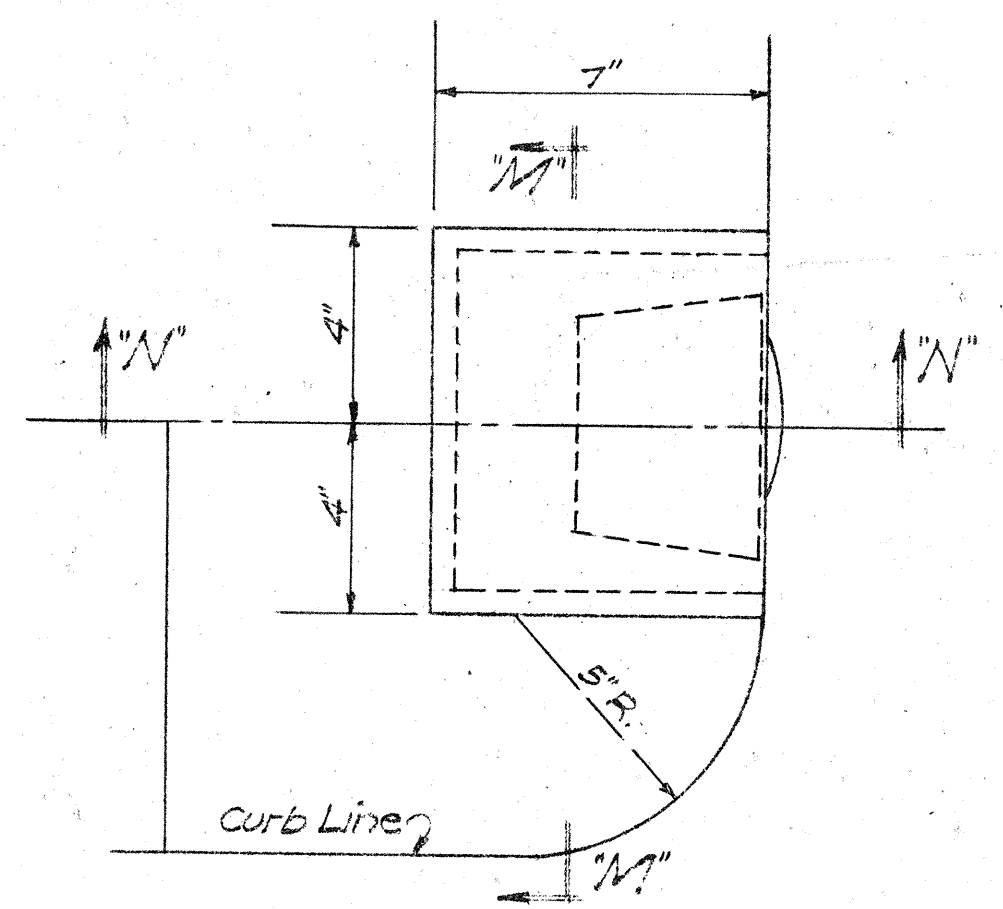
DATE	Aug 76
DESIGNED BY	M. J. ...
TRACED BY	...
QUANTITIES BY	...
CHECKED BY	...
ORIGINAL PLAN	No.
NOTE BOOK	No.



LAYOUT PLAN
Scale: 1"=10'

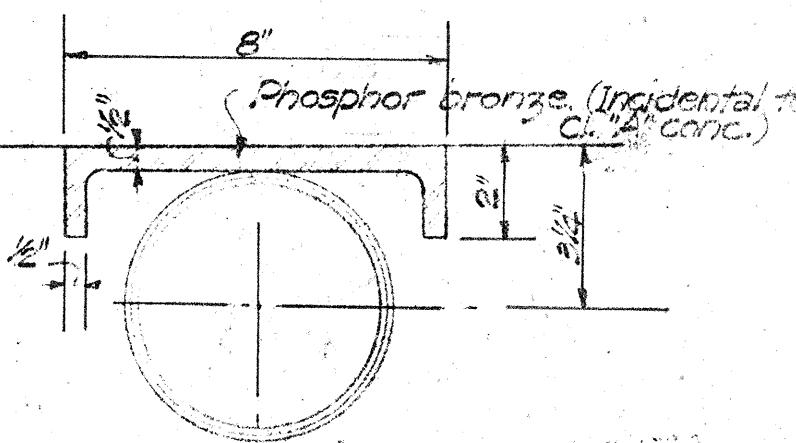
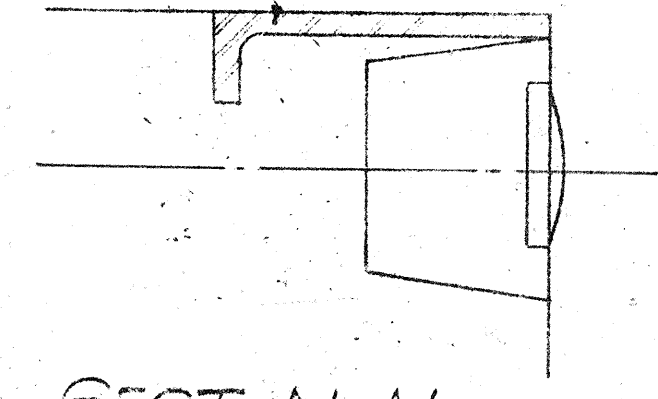


DOWNSTREAM ELEVATION
Scale: 1"=10'

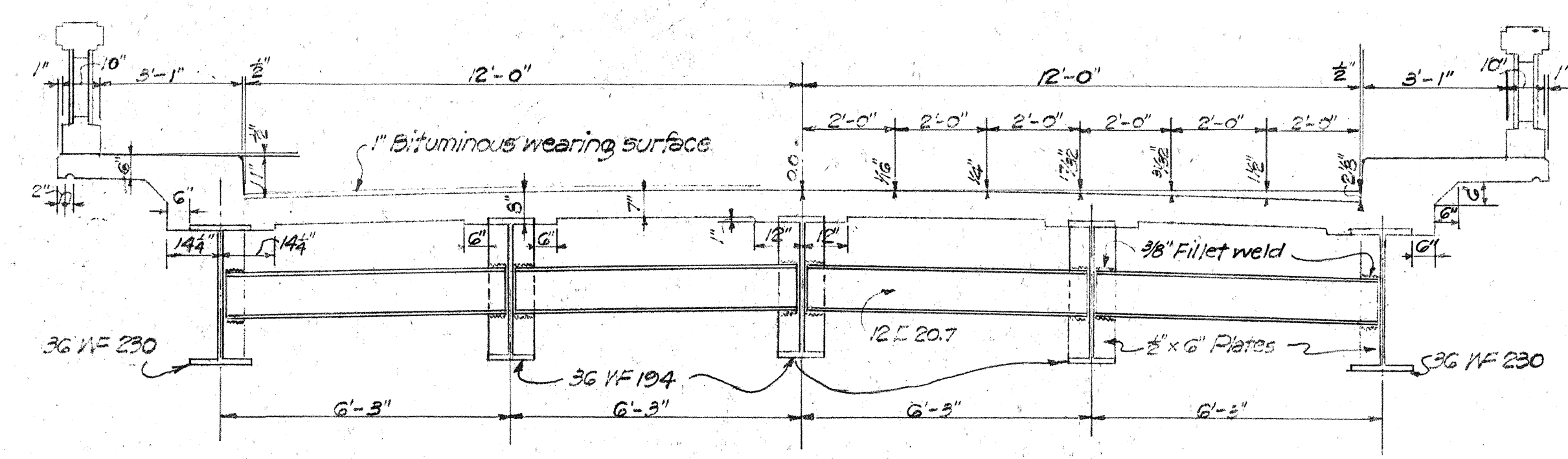


Note: Bullseye reflector to be furnished by the Territorial Highway Dept. and to be installed by the Contractor.

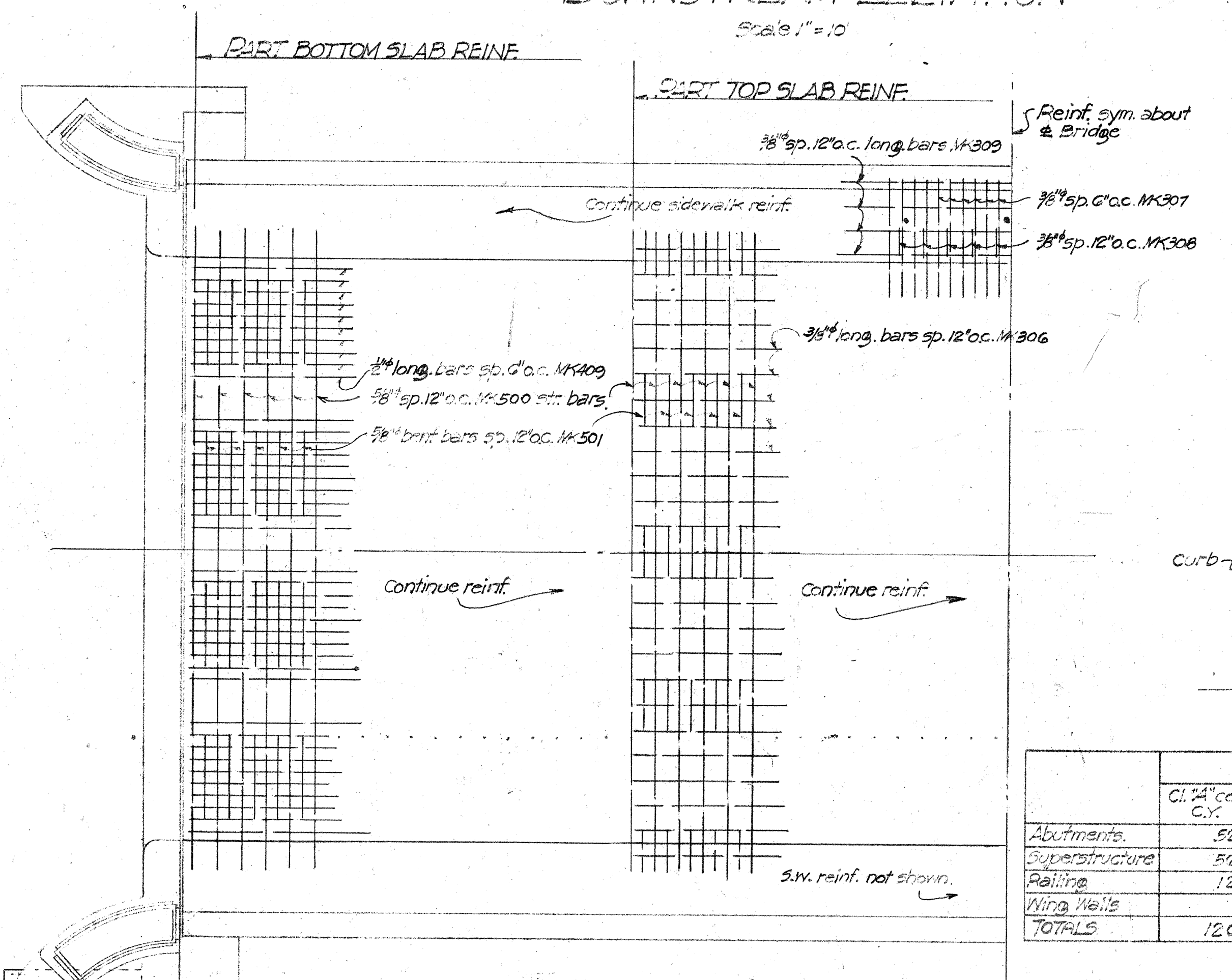
(Phosphor bronze plate incidental to C.I. 12" conc.)



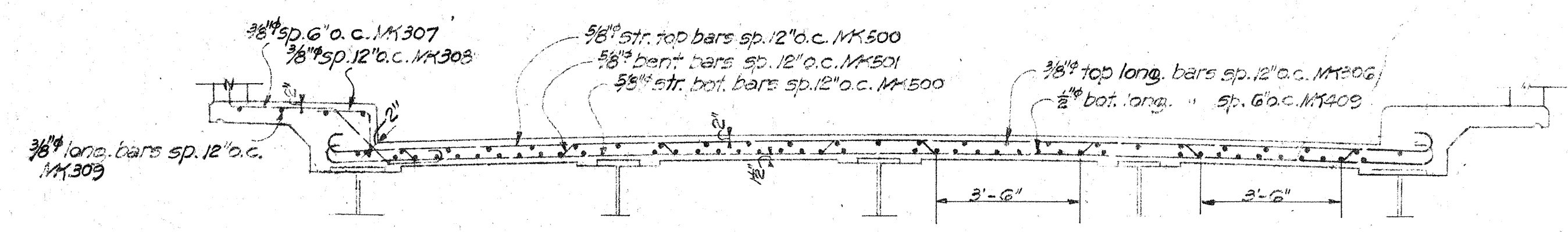
SECT. M-M
3" Scale.



NORMAL SECTION
3/8" Scale

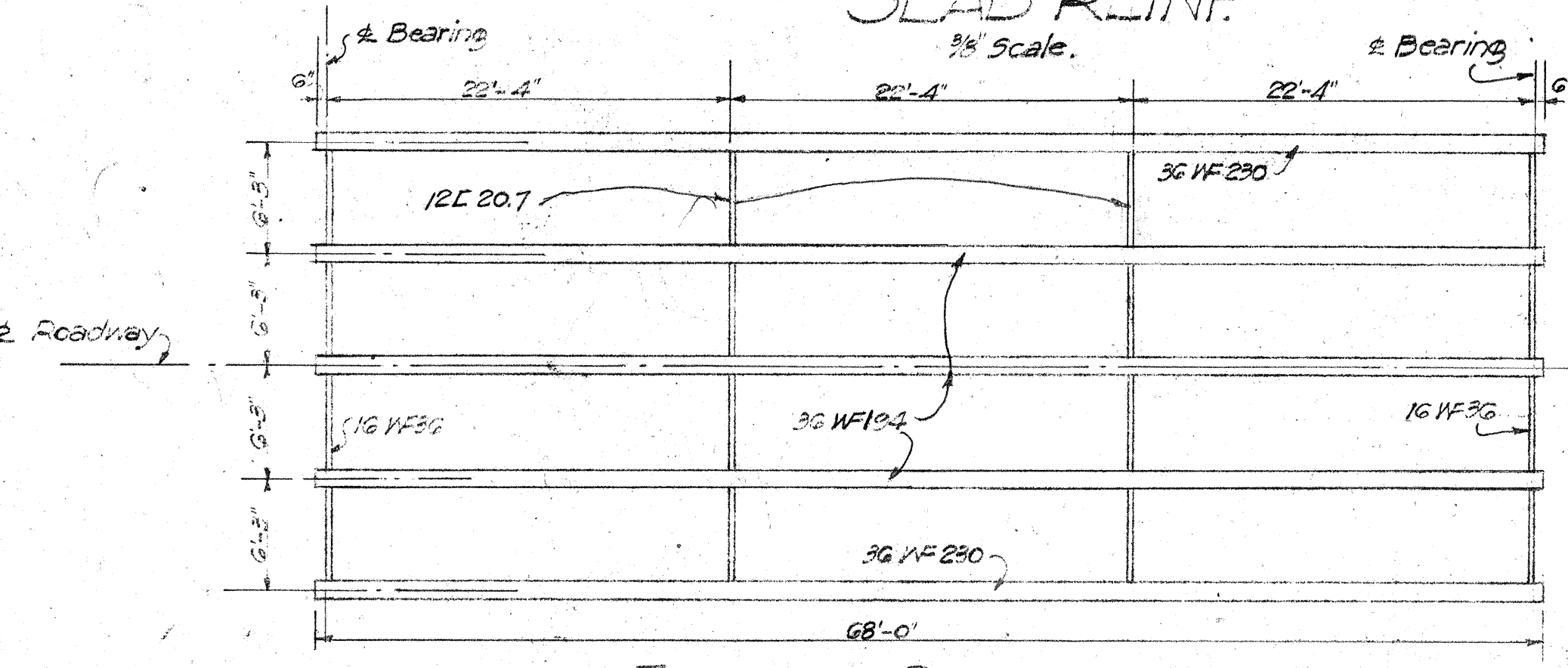


SLAB REIN.
3/8" Scale.

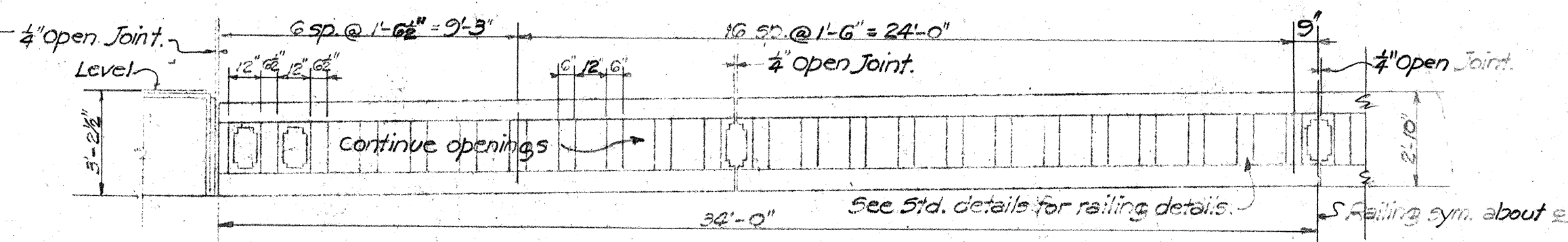


SLAB REIN.
3/8" Scale.

NOTE: Steel Company to furnish girders with camber as follows:-
Sidewalk girders 1/8" inch.
Interior " 1/8" inch.
All structural steel except bearing plates to receive one shop coat of red lead paint, and two field coats of black paint, as per specifications Pamphlet "R" Section 1.
Field coats to be applied after pouring of deck slab.



FRAMING PLAN
1/8" Scale



RAILING DETAILS
1/8" Scale.

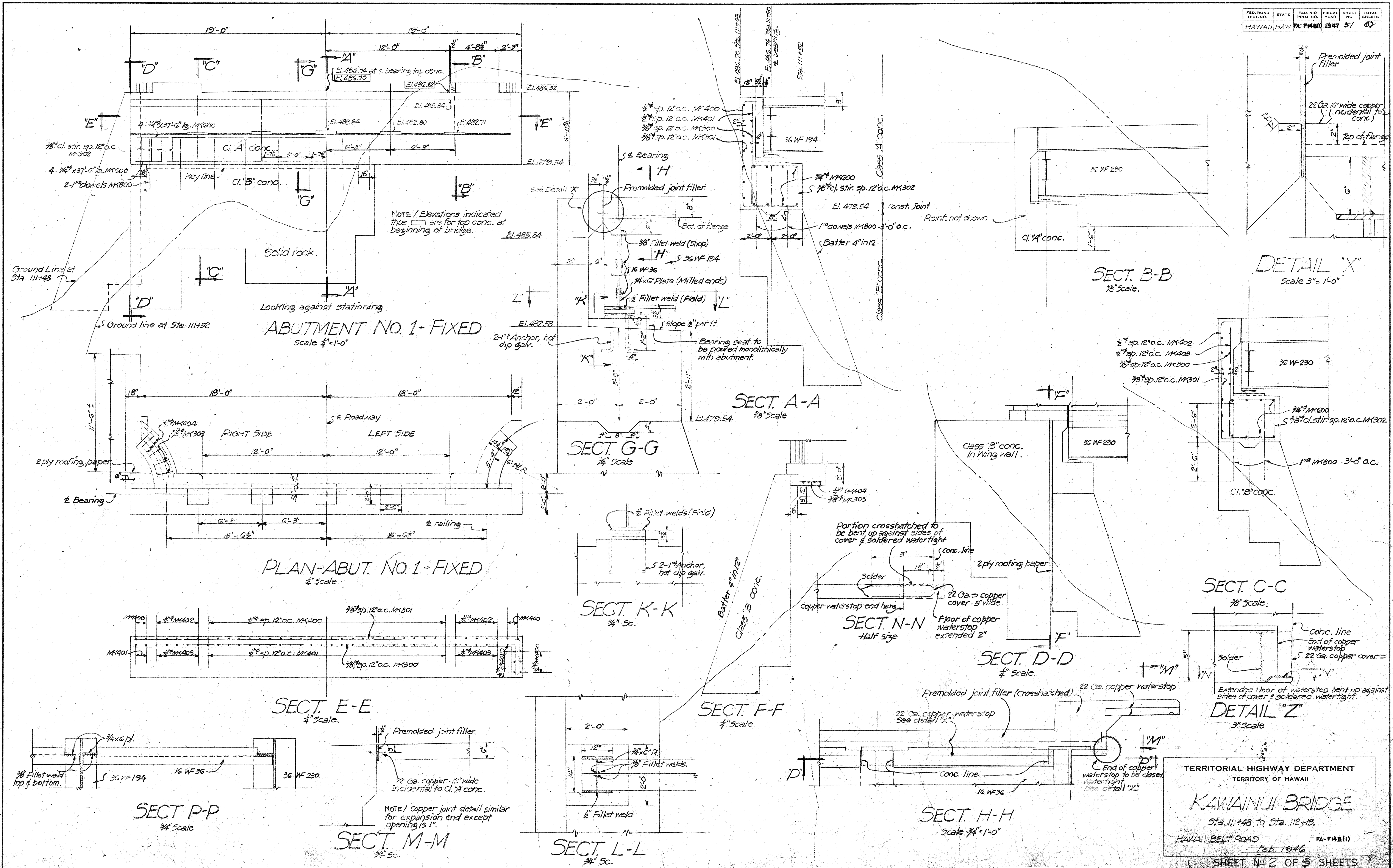
	ESTIMATED QUANTITIES					
	C.I. 12" conc. C.Y.	C.I. 8" conc. C.Y.	Reinf. Steel Lbs.	Struct. Steel Lbs.	Struct. Exc. C.Y.	Phosphor Bronze Lbs.
Abutments	52.6	44.5	2,898		156	290
Superstructure	56.2		9,436	76,437		
Railing	12.0		976			
Wing Walls		29.2			20	
TOTALS	120.8	73.7	13,310	76,437	176	290

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

KAWAINUI BRIDGE
Sta. 111+48 to Sta. 112+19

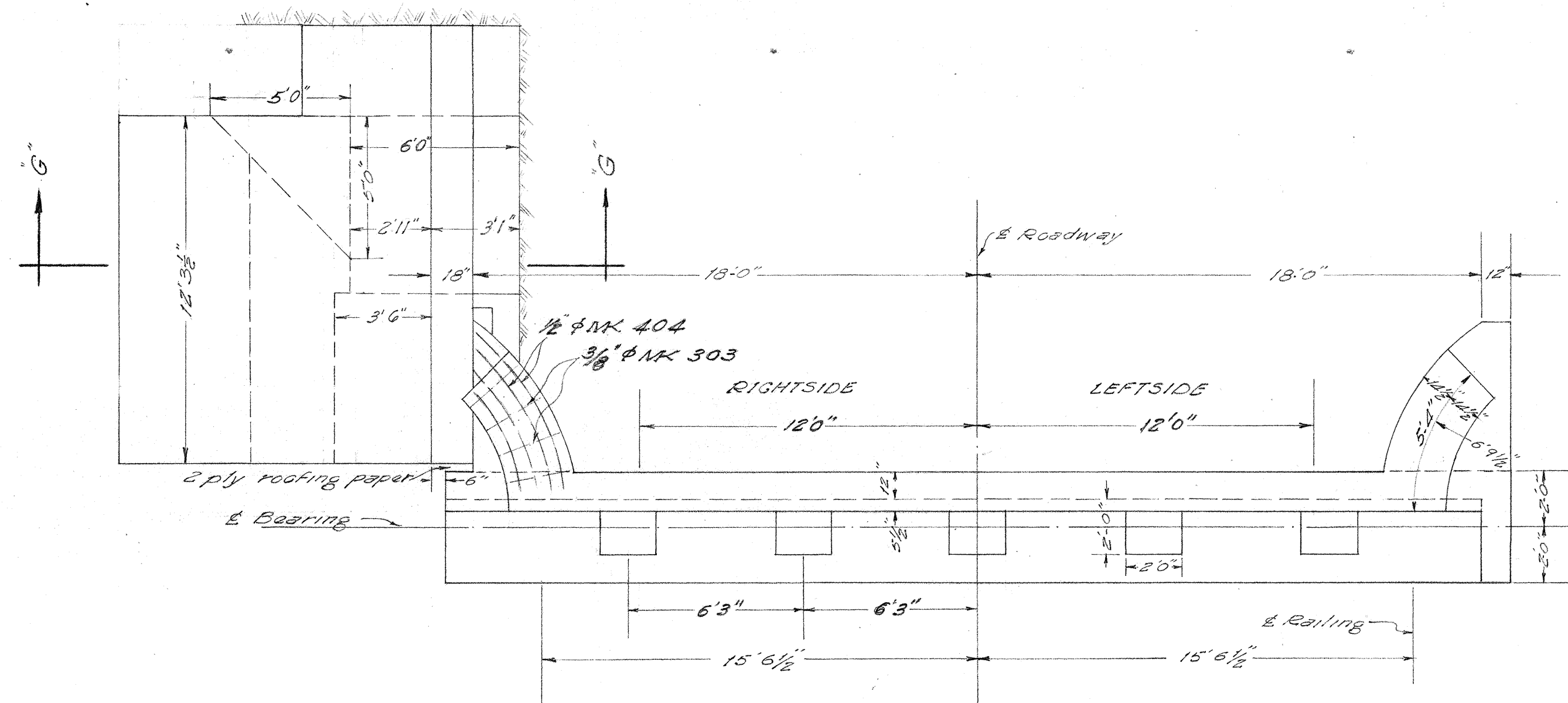
HAWAII STATE ROAD
Feb. 1946
FA-F148(1)

SHEET No. 2 OF 3 SHEETS

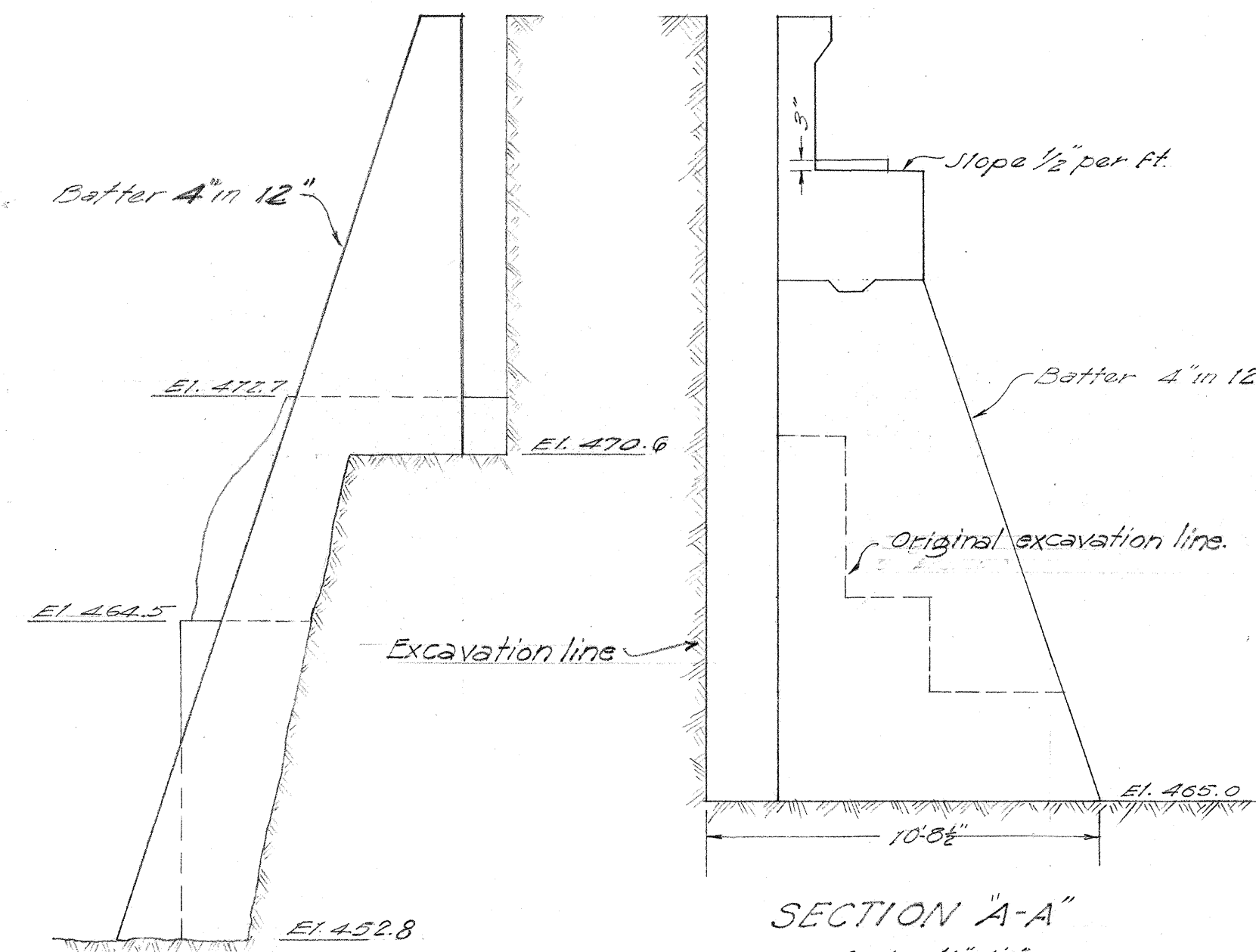


SURVEY PLOTTED BY: DATE: 12-2-46
 DESIGNED BY: H. H. HARRIS
 DRAWN BY: J. H. HARRIS
 QUANTITIES BY: J. H. HARRIS
 CHECKED BY: J. H. HARRIS

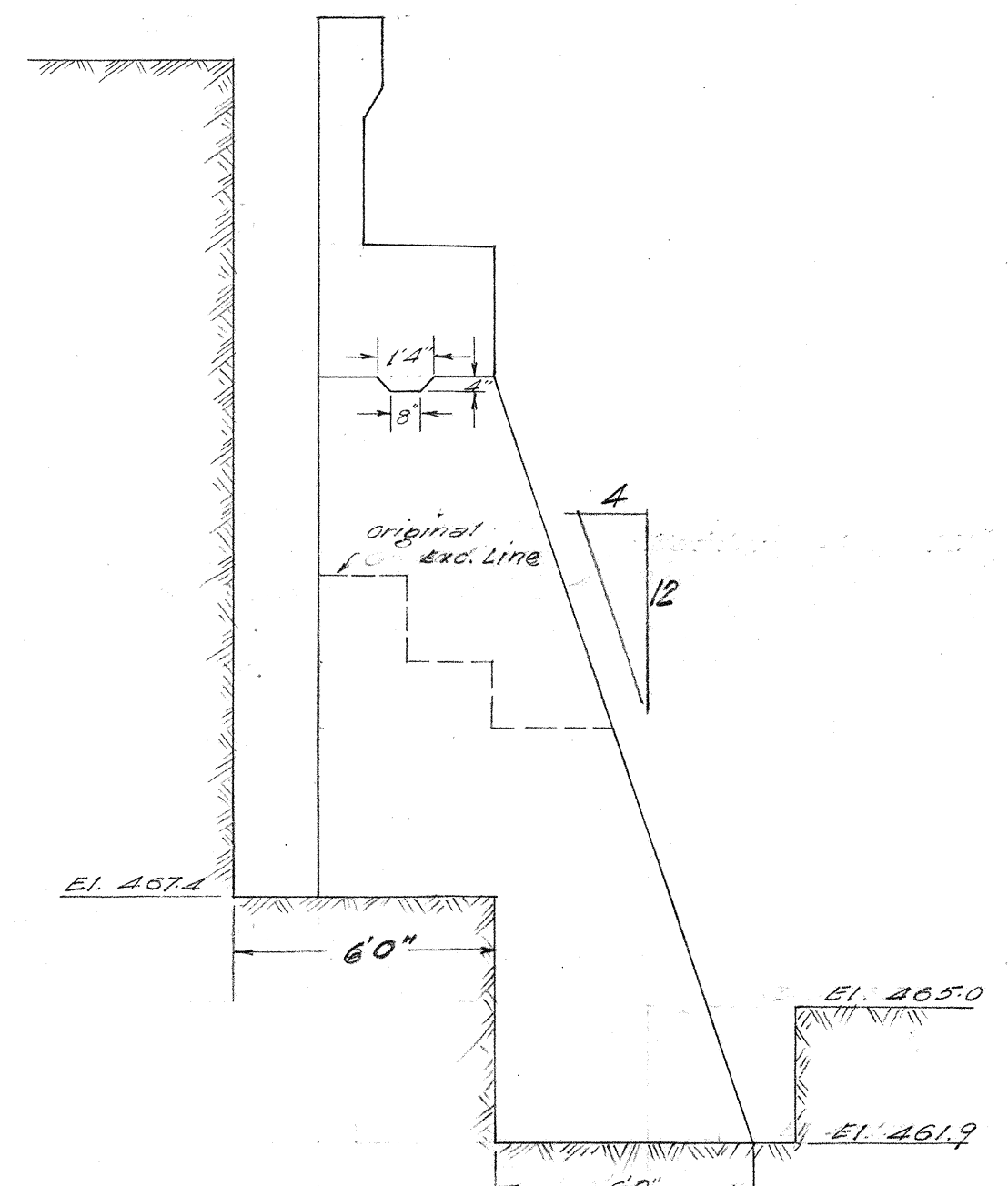
ORIGINAL PLAN
 NOTE BOOK
 No.



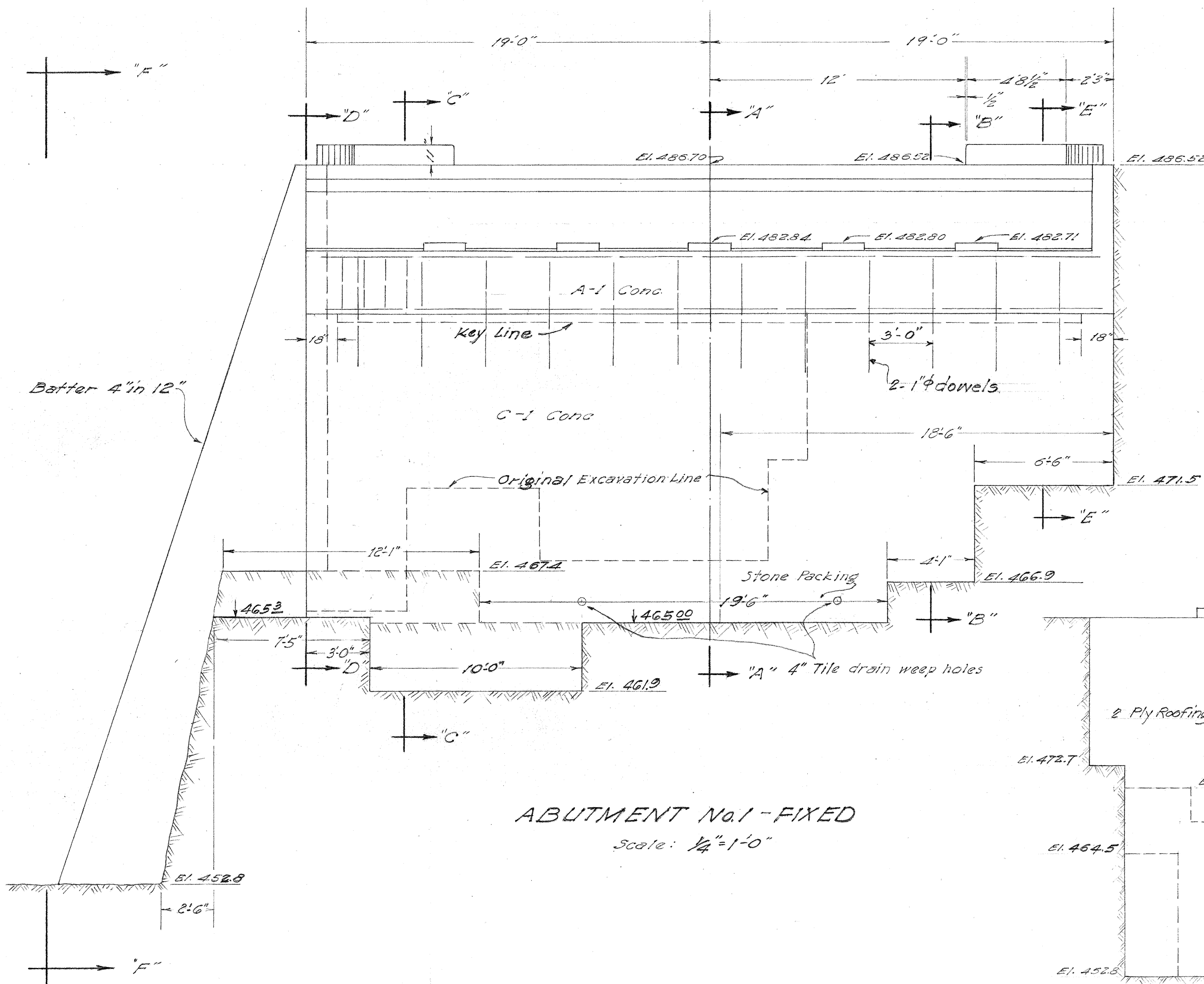
PLAN-ABUTMENT No. 1 - FIXED
Scale: 1/4"=1'-0"



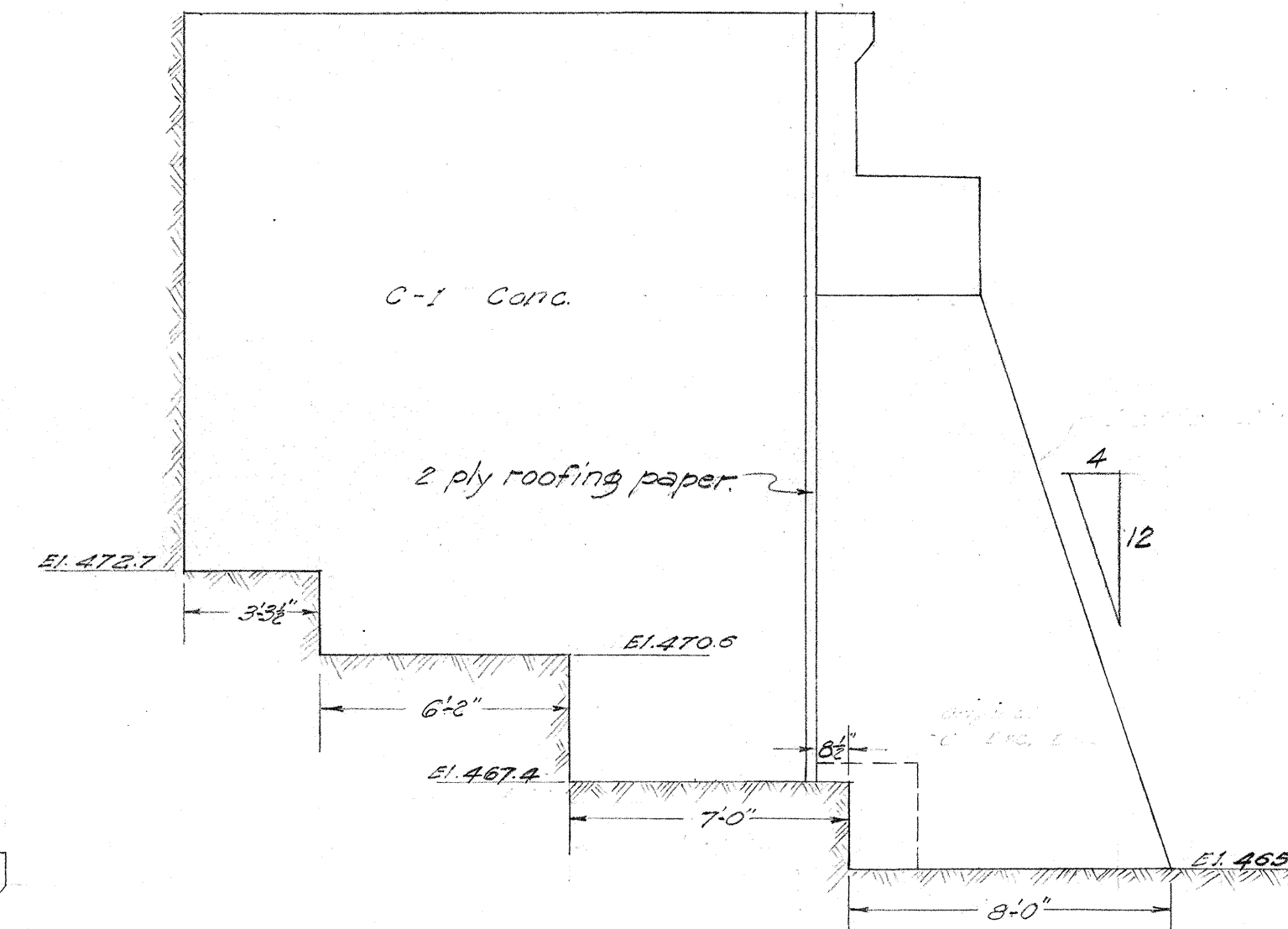
SECTION "A-A"
Scale: 1/4"=1'-0"



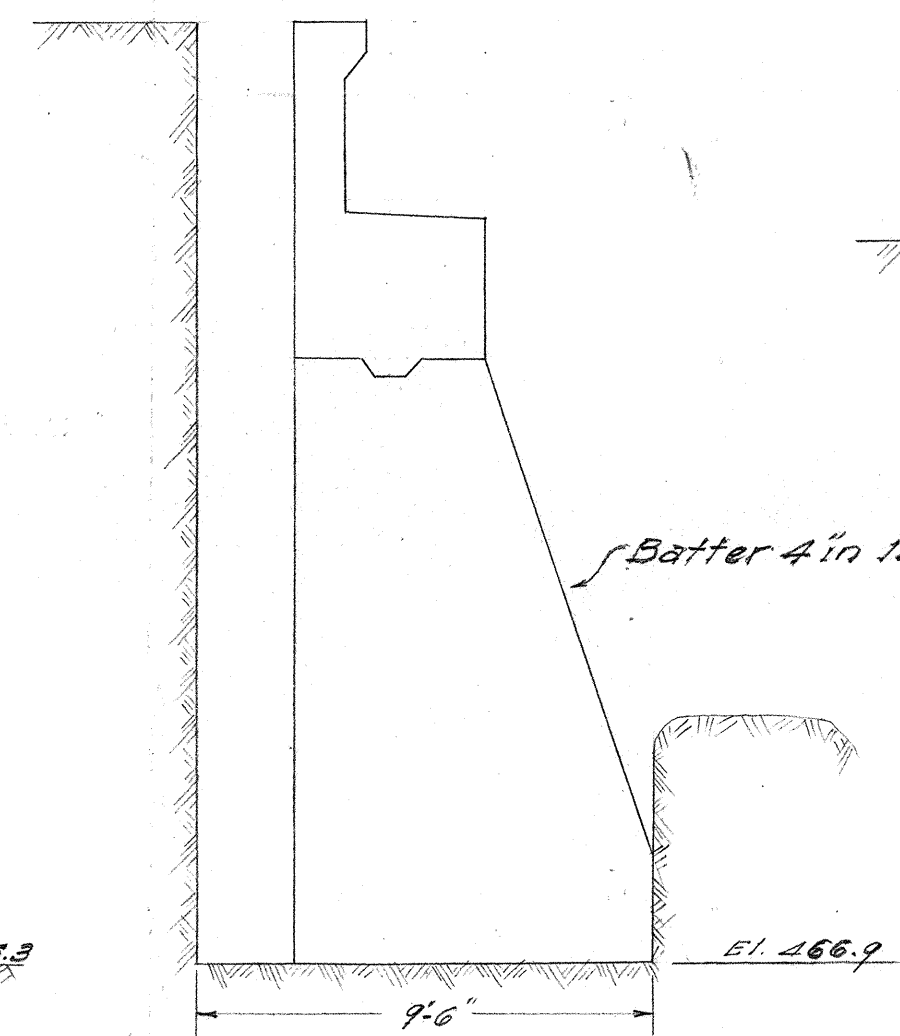
SECTION "C-C"
Scale: 1/4"=1'-0"



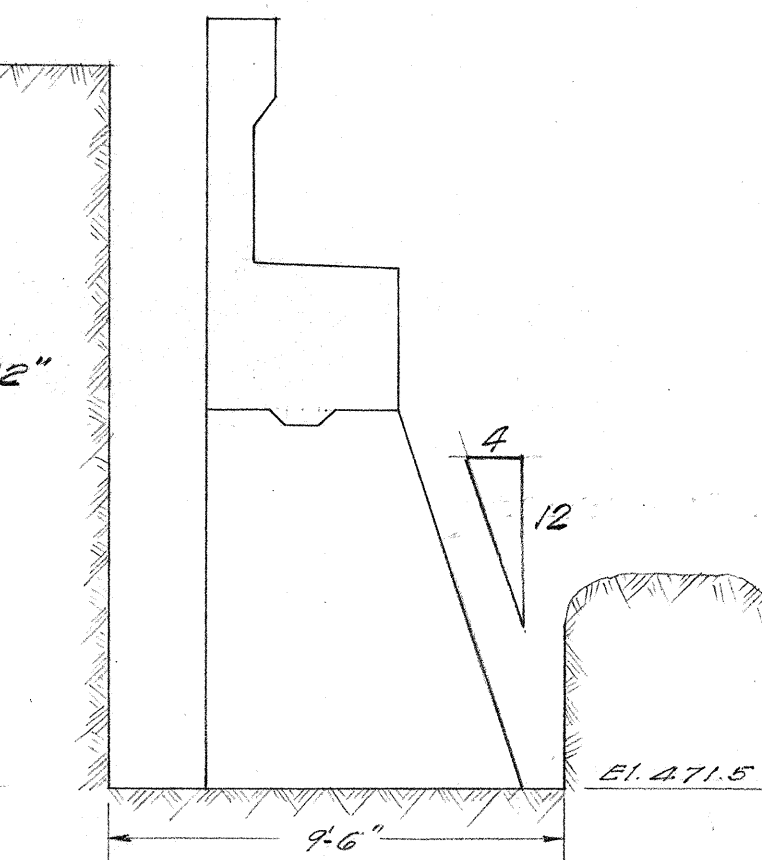
ABUTMENT No. 1 - FIXED
Scale: 1/4"=1'-0"



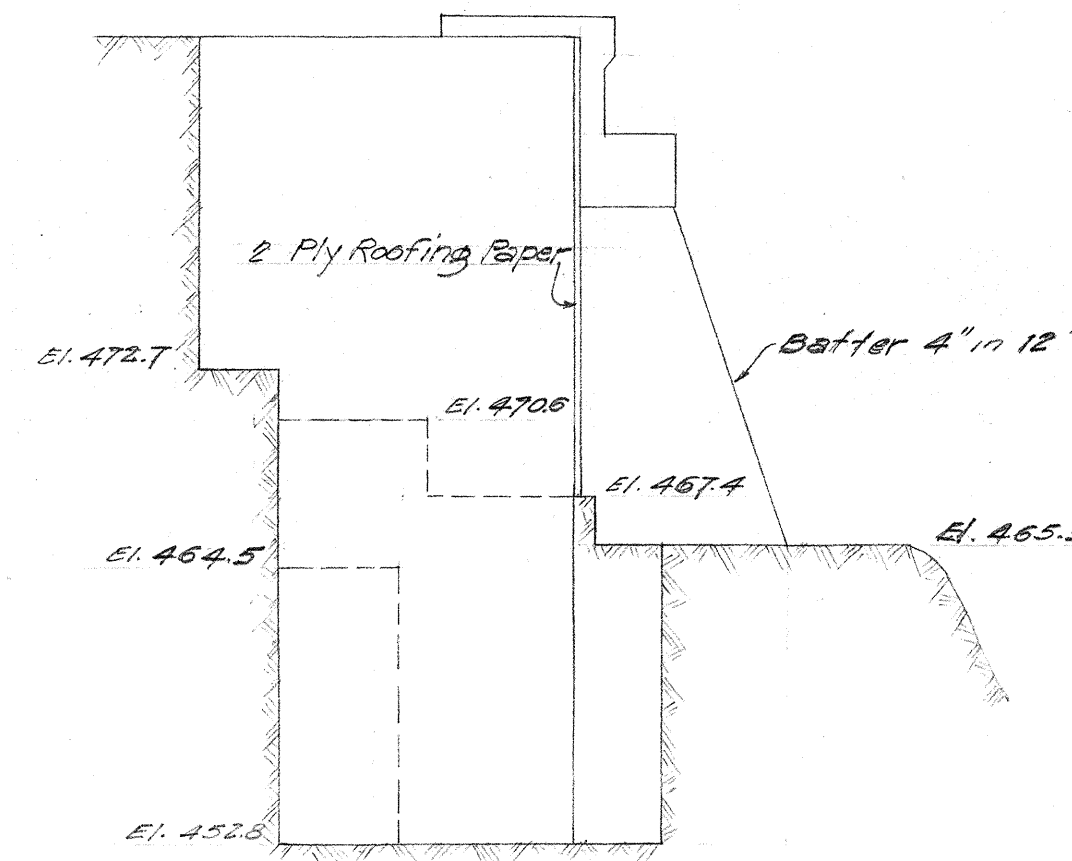
SECTION "D-D"
Scale: 1/4"=1'-0"



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



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



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

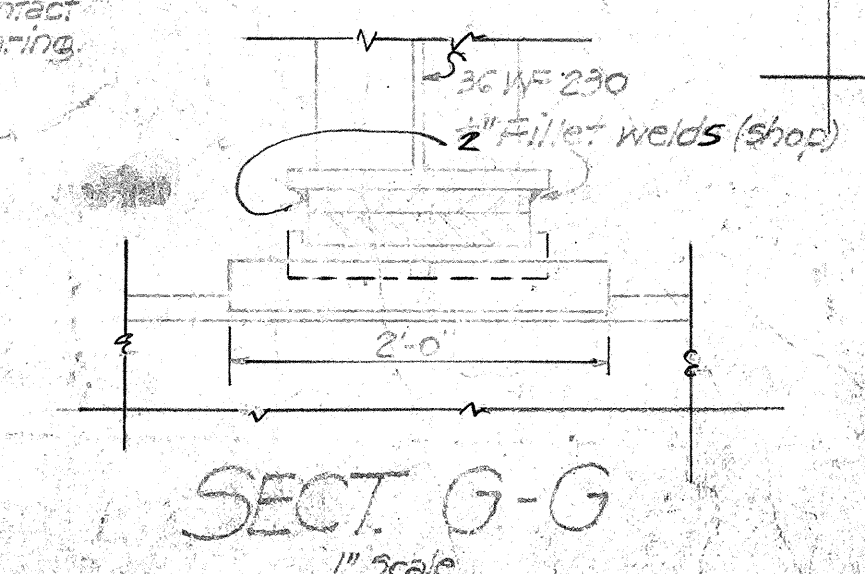
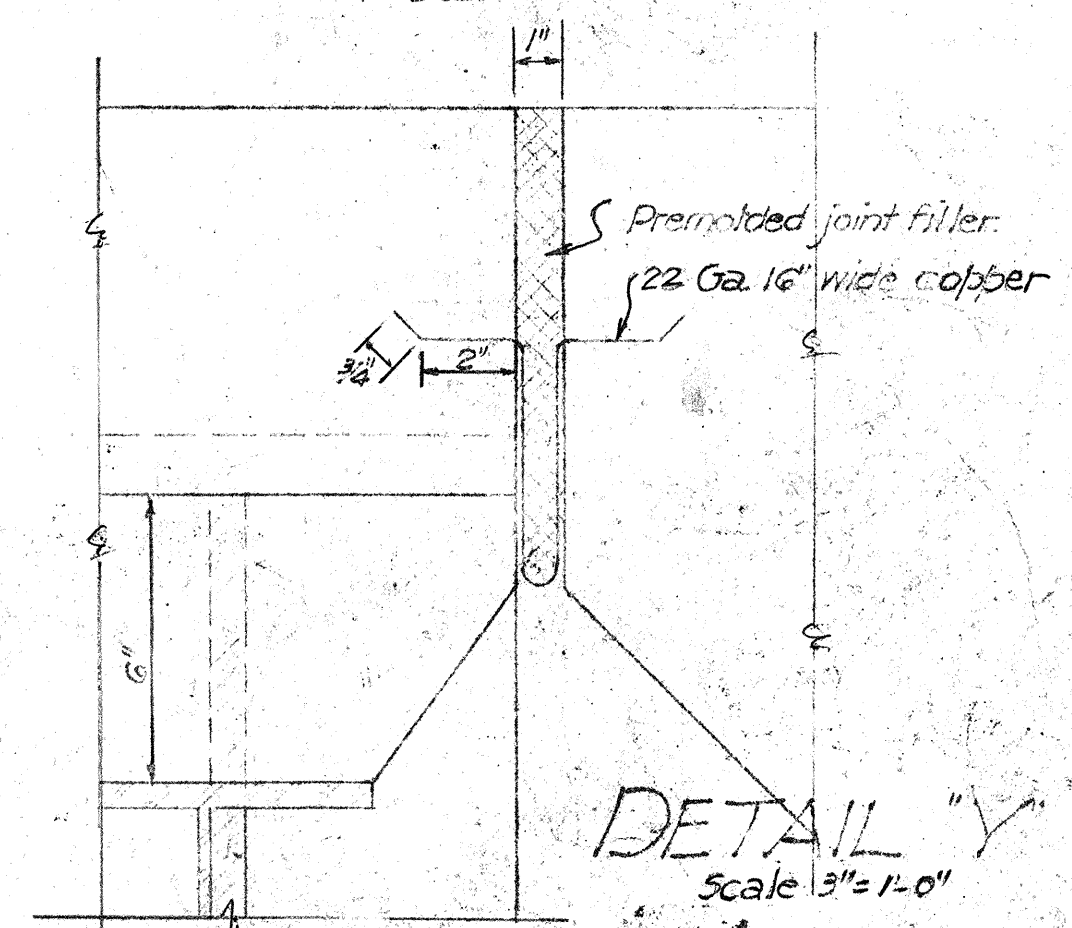
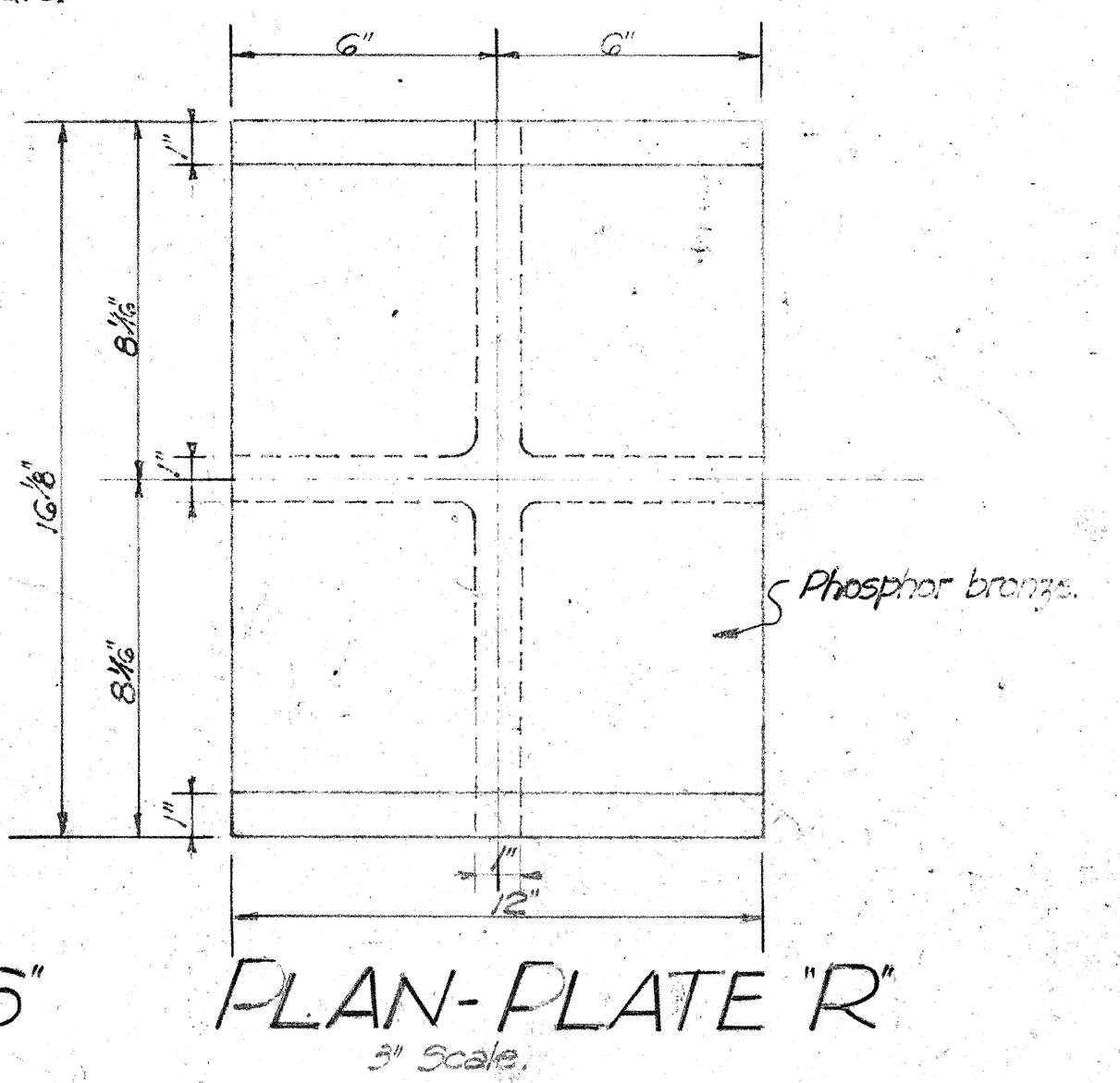
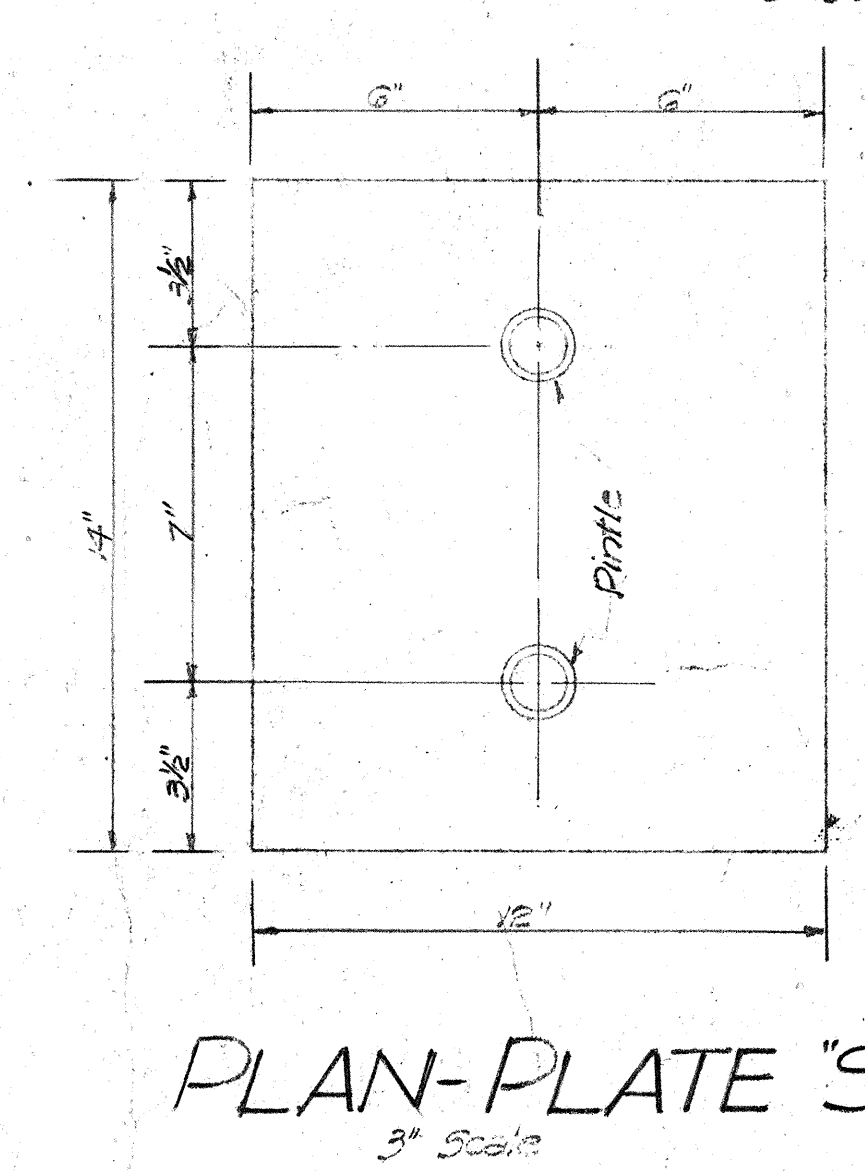
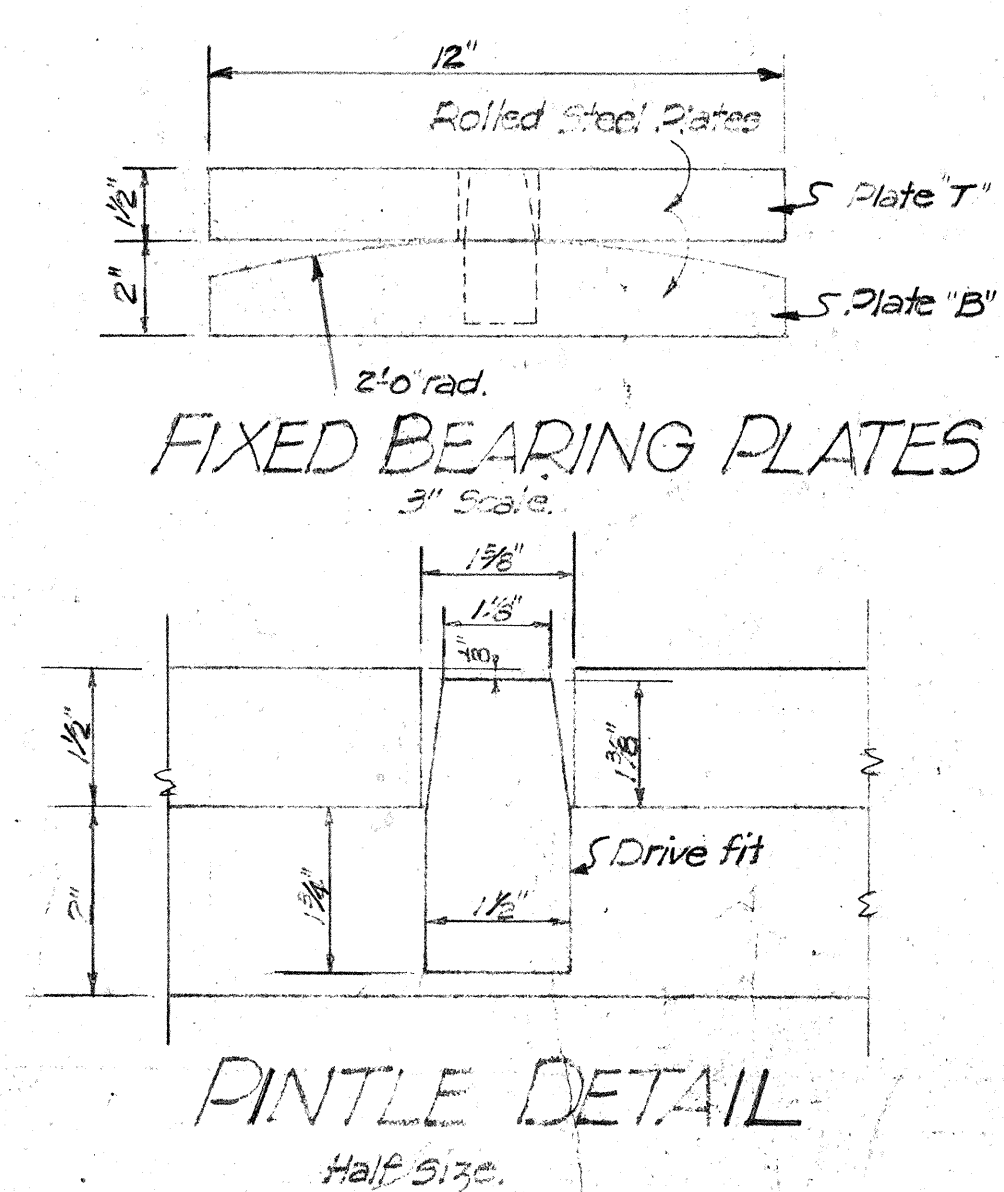
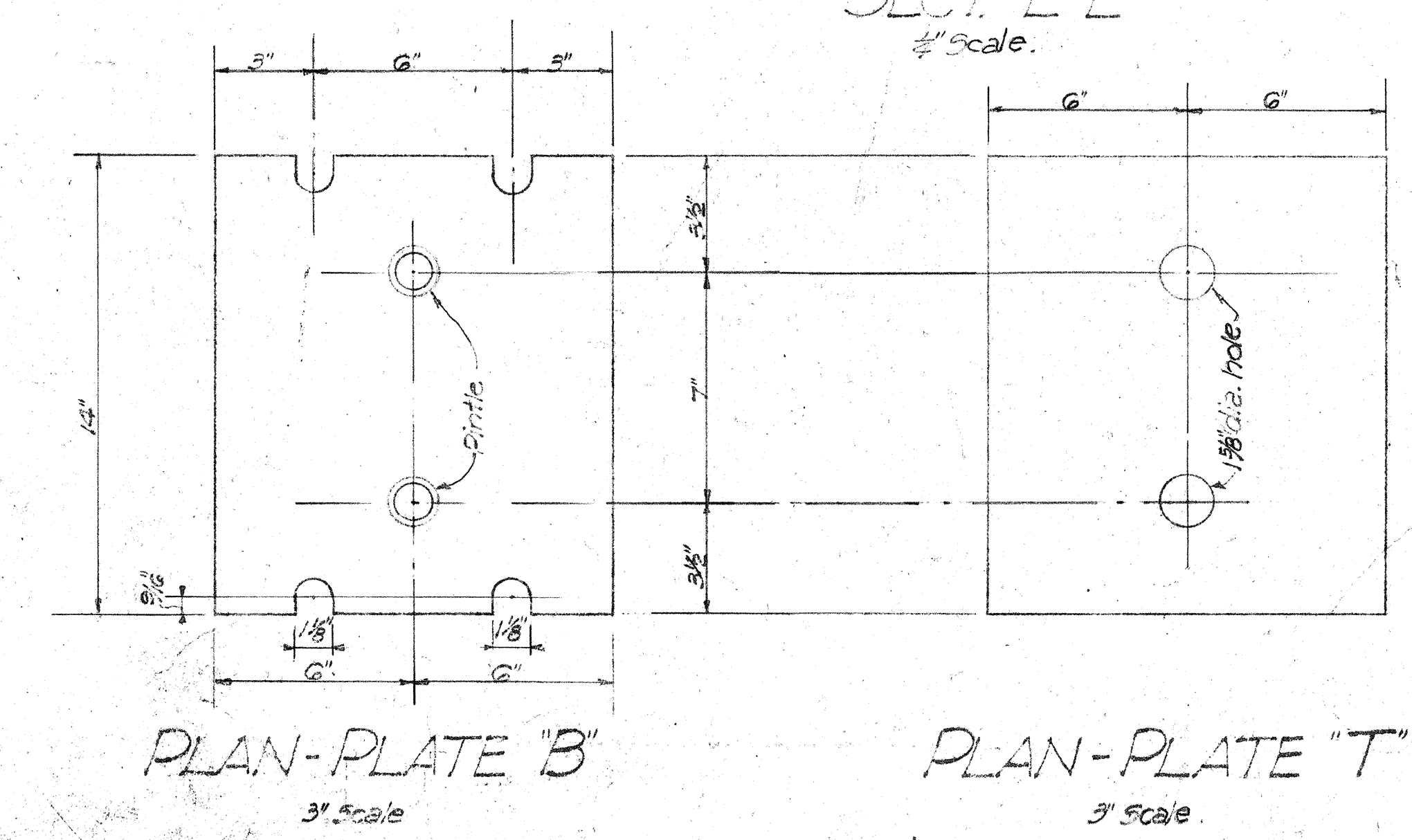
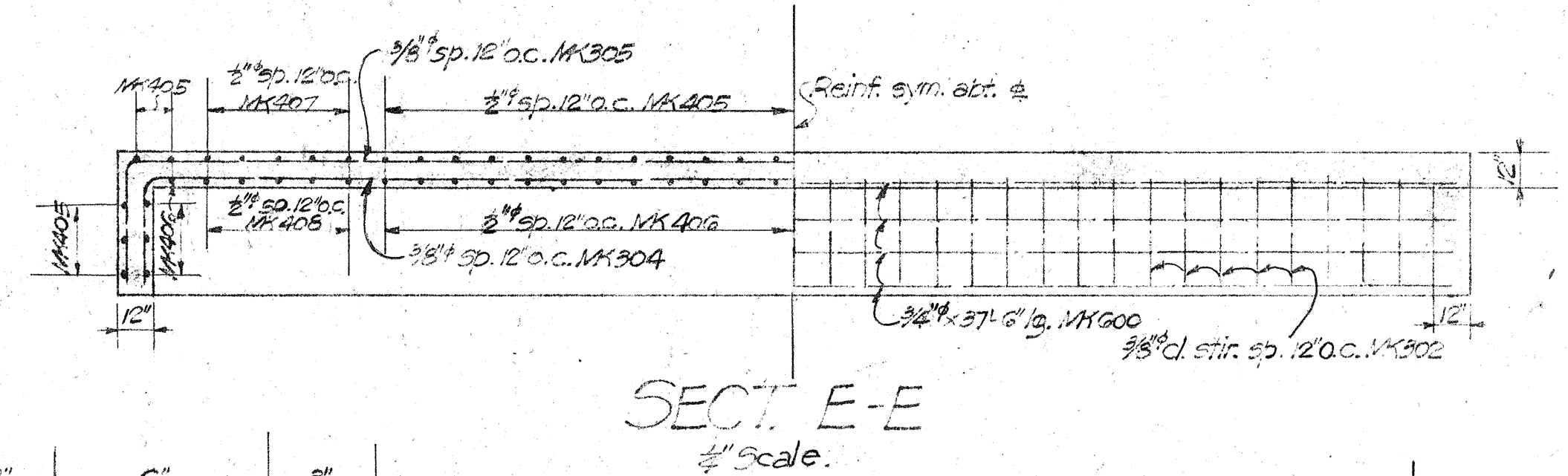
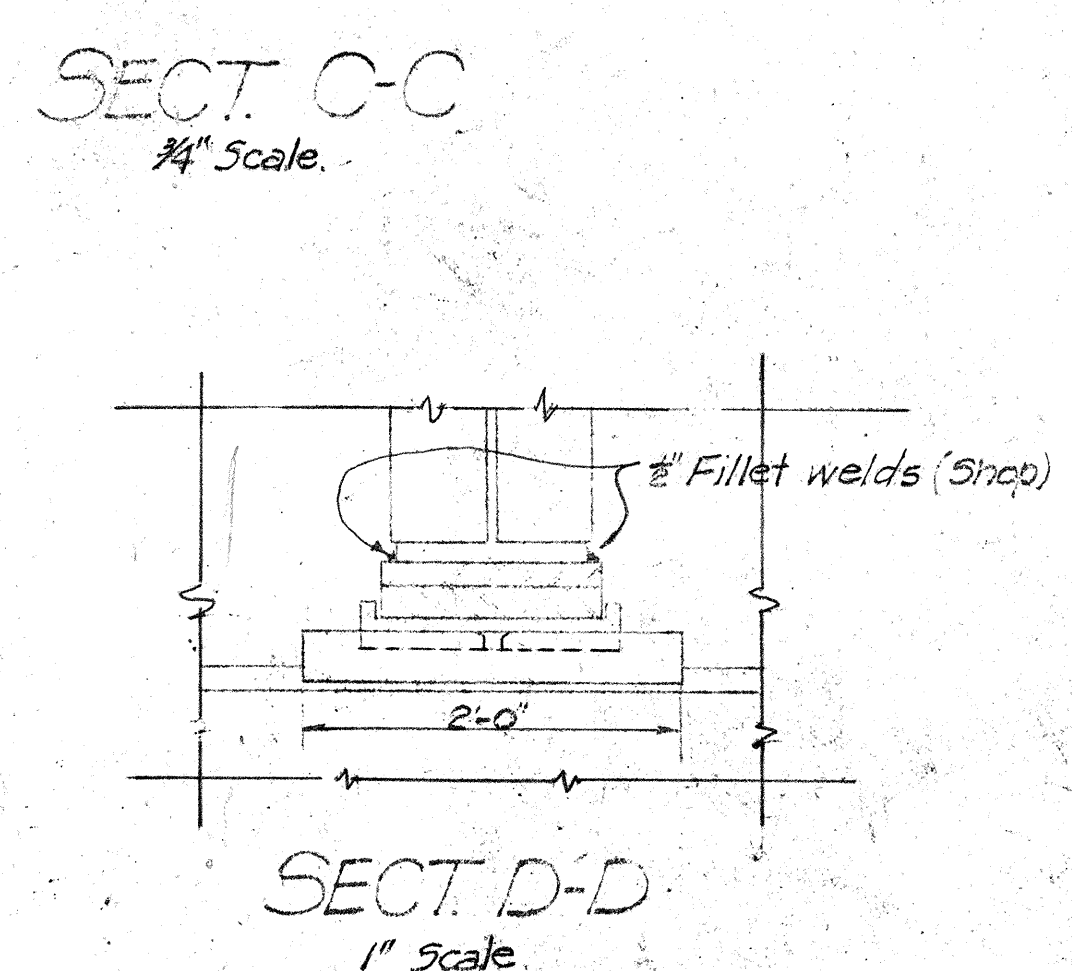
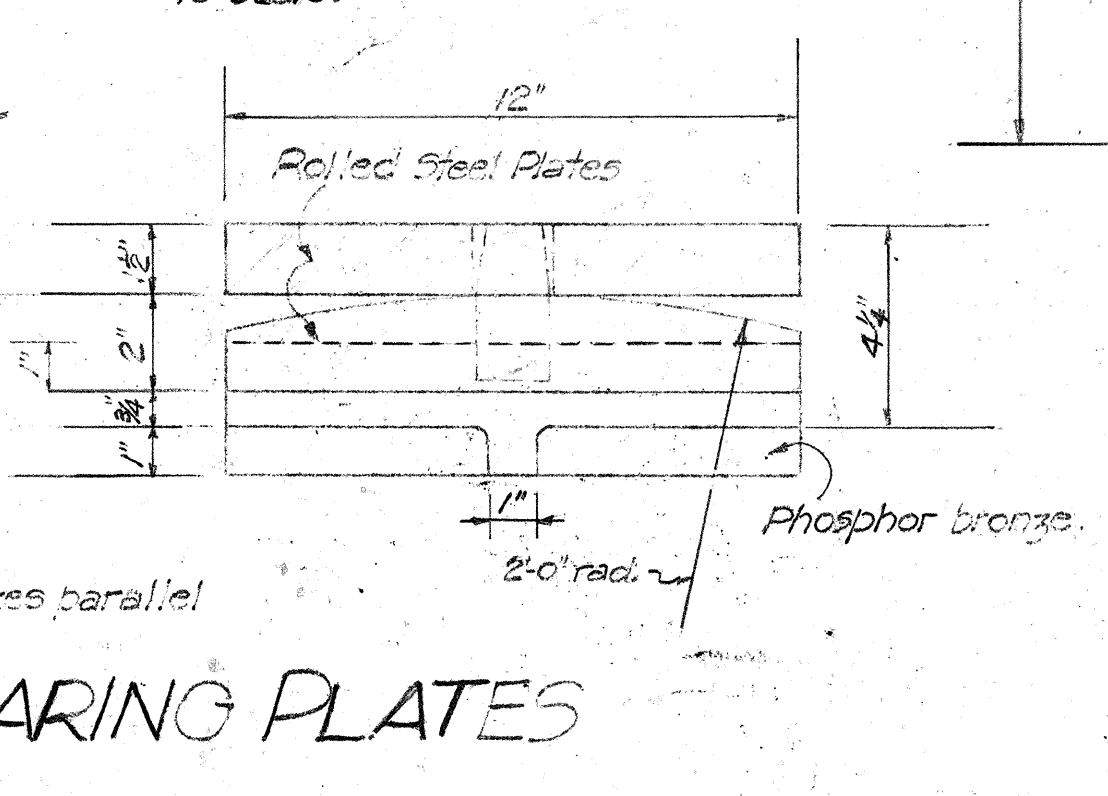
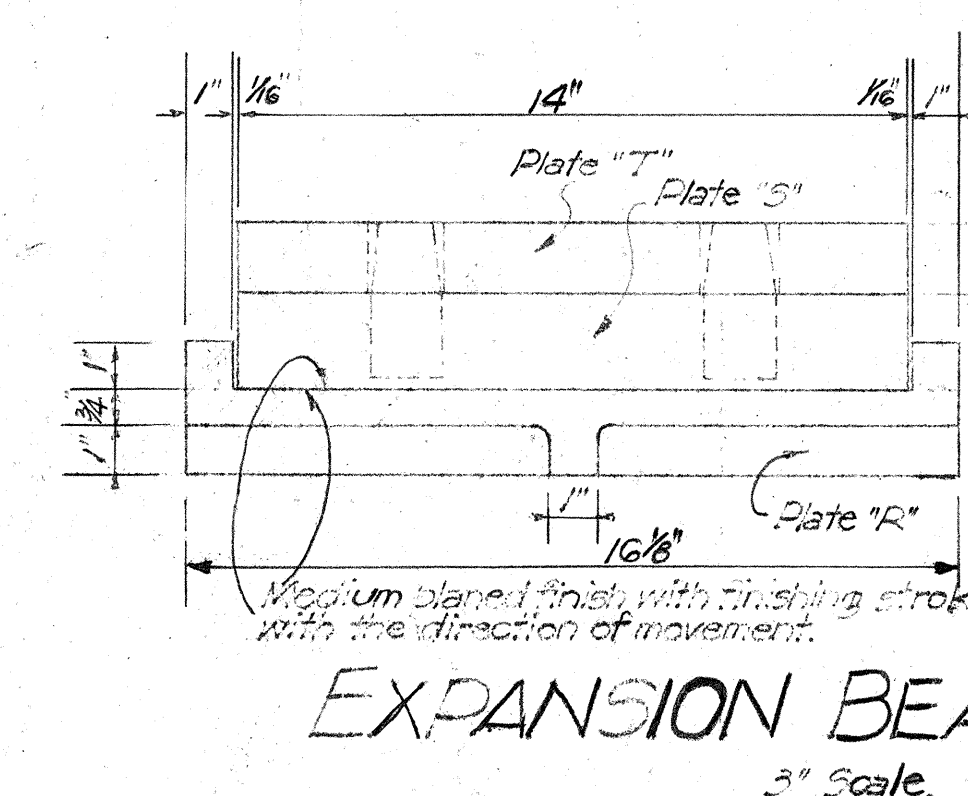
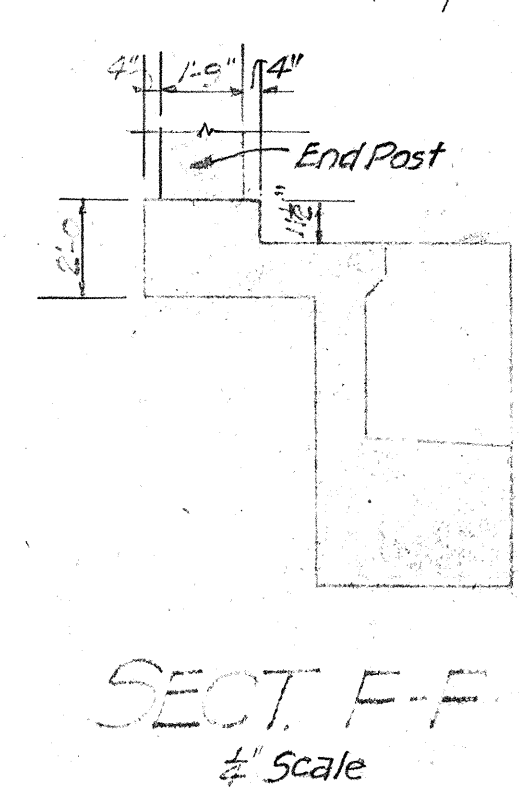
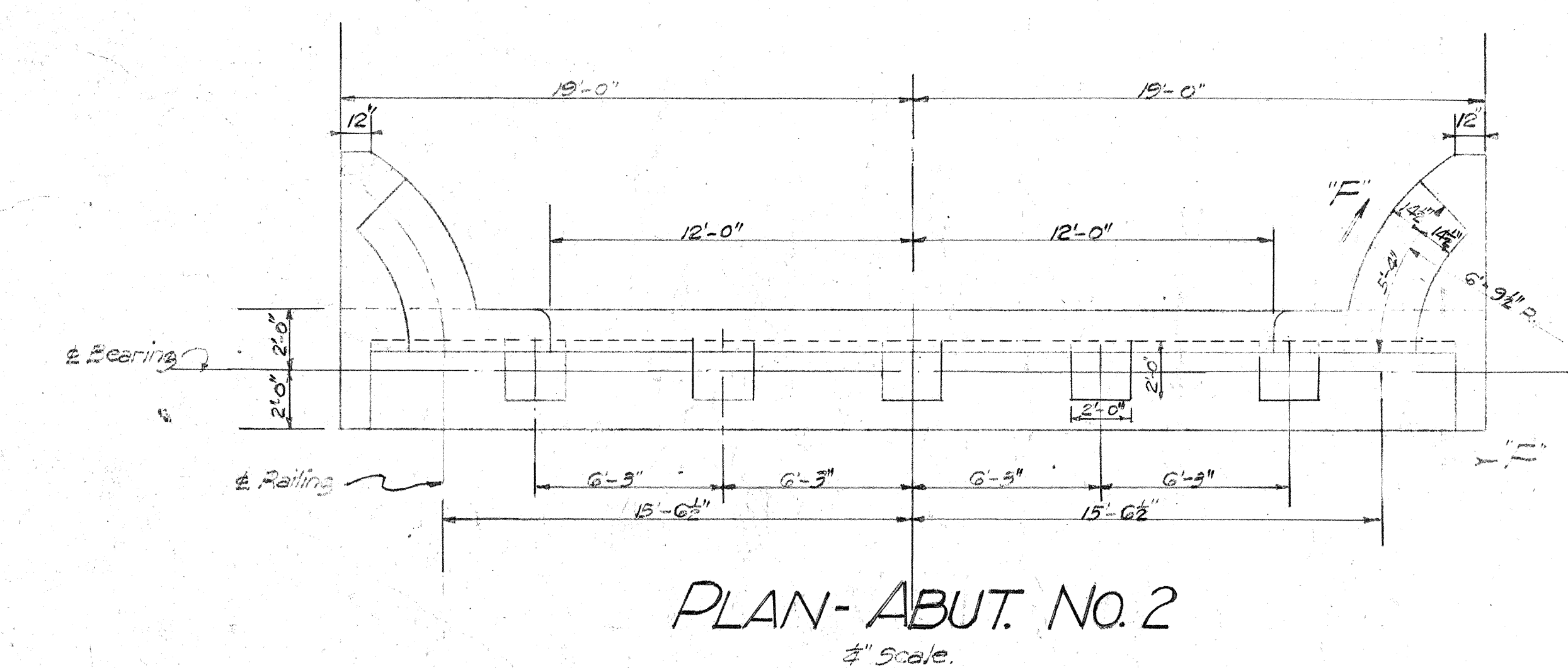
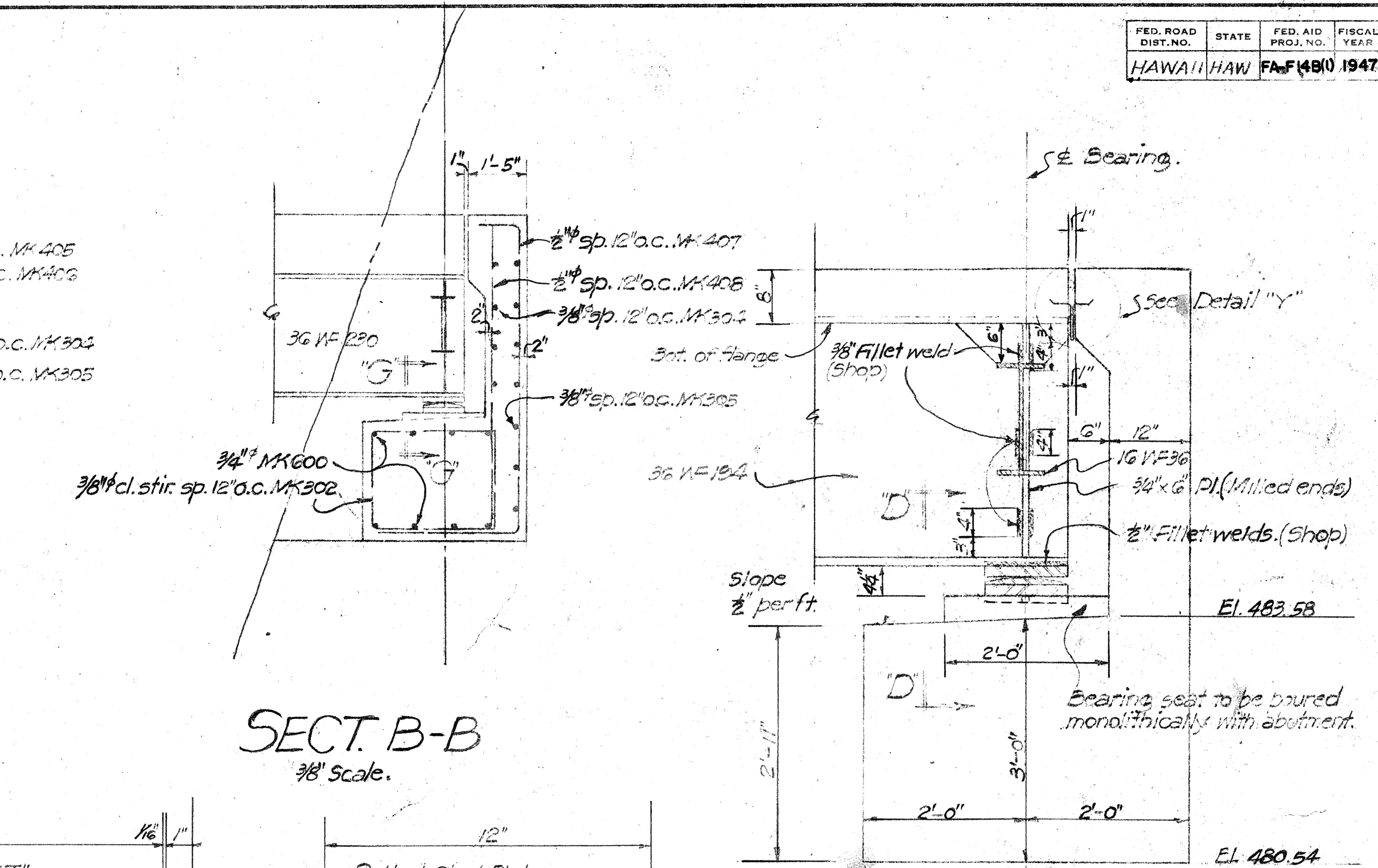
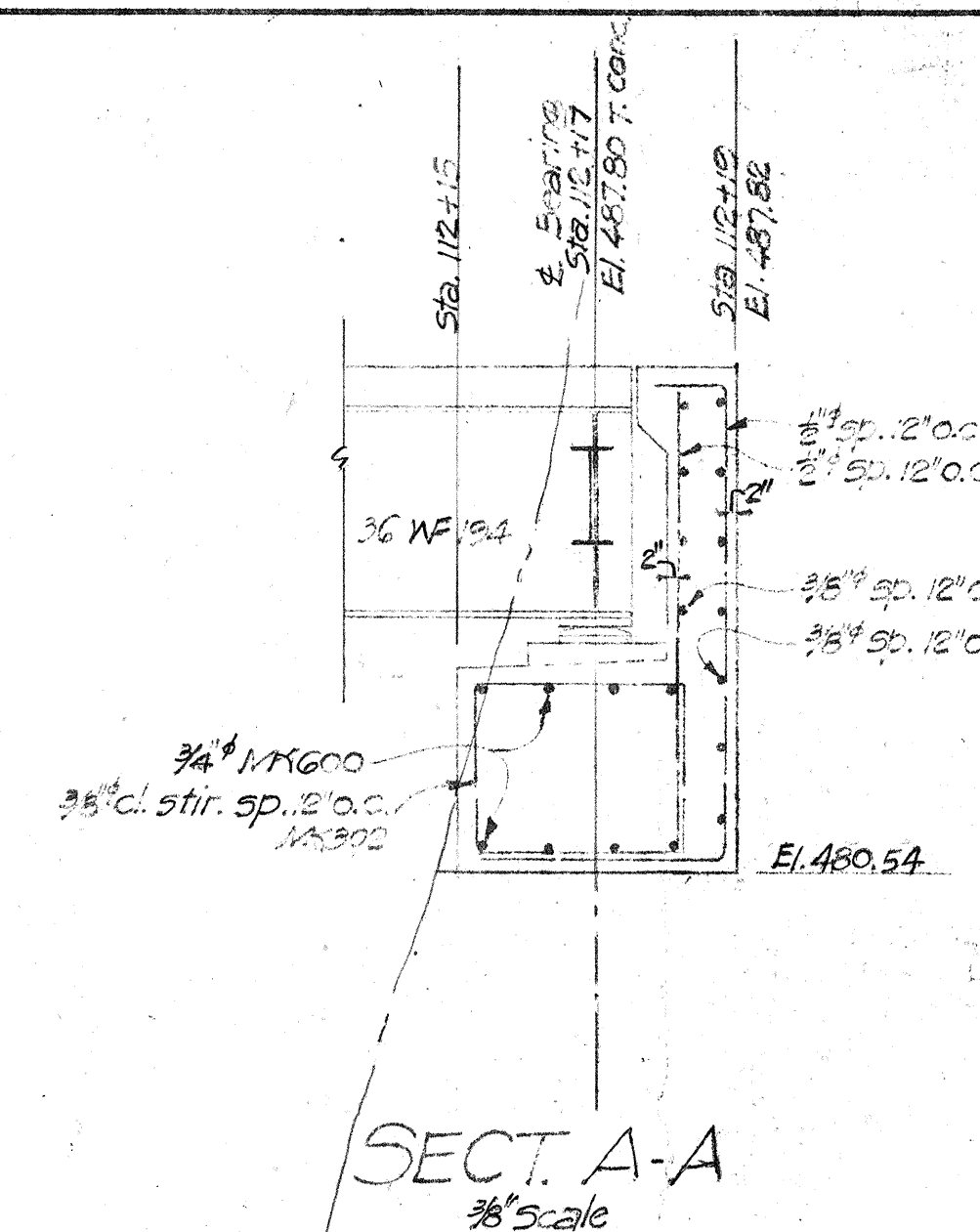
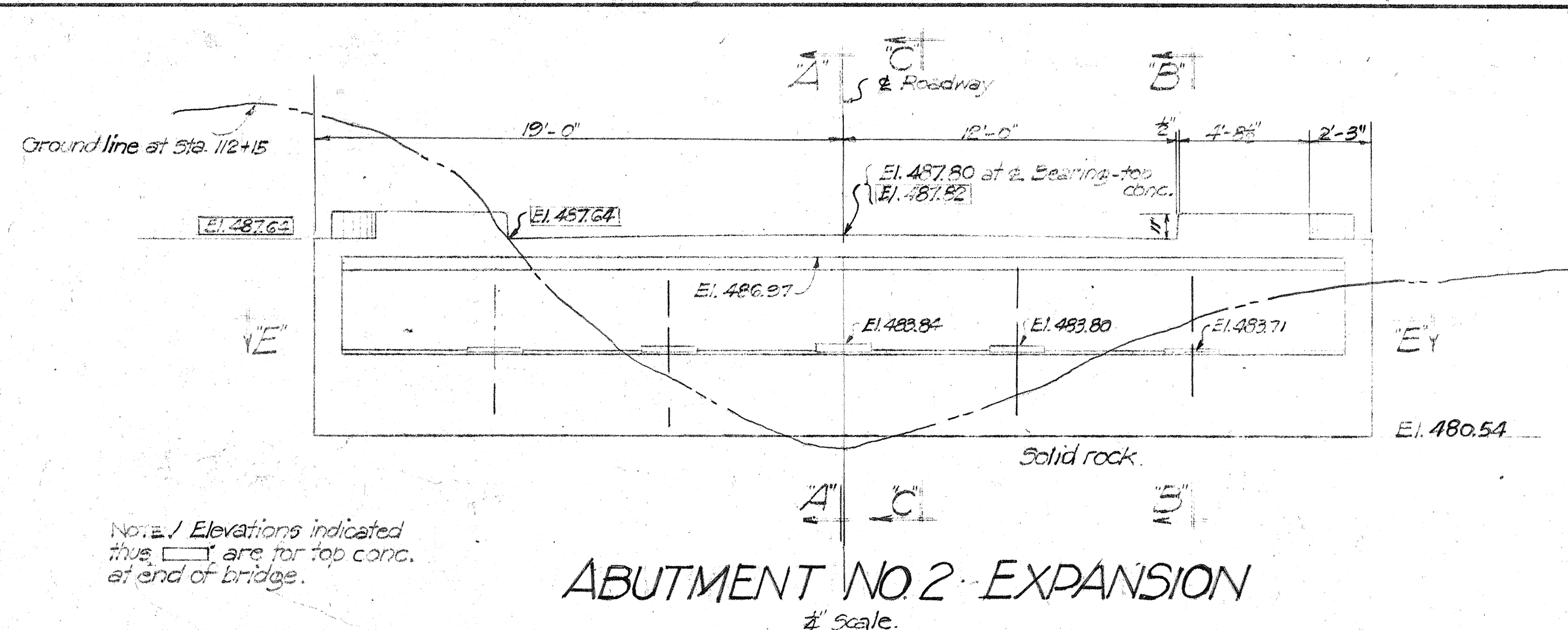
Note!!
This sheet is a supplement to sheet No. 5194.51 of the original plans and shows revisions to Abut #1 necessitated by foundation conditions.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
KAWAINUI BRIDGE
Sta. 111+51.5 to Sta. 112+22.5
ABUTMENT No. 1 REVISION PLAN
HAWAII BELT ROAD FA-F14B(1)
June 1948

SHEET No. OF SHEETS

5194.51A

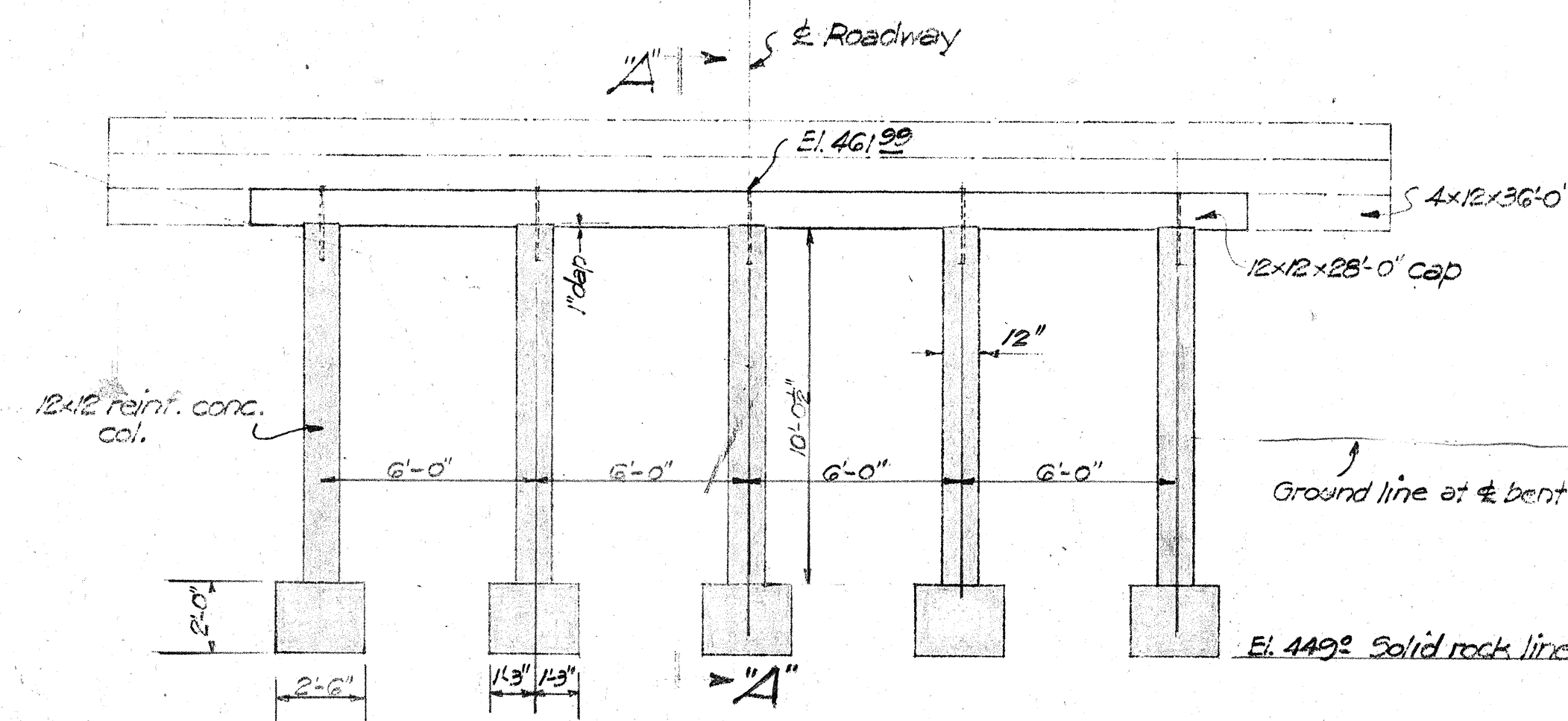
ORIGINAL PLAN
DESIGNED BY
DRAWN BY
CHECKED BY
DATE



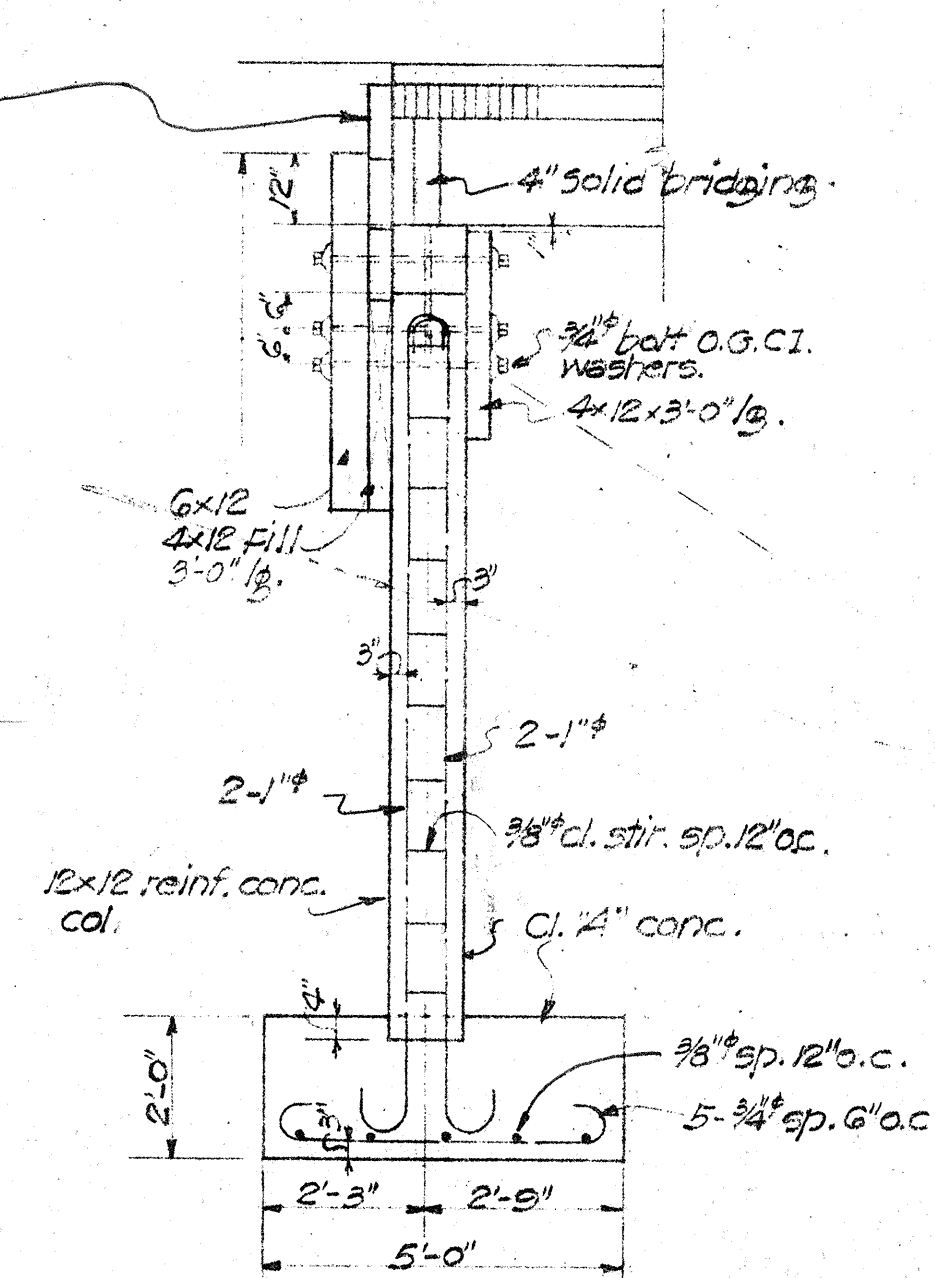
ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DESIGNED BY <i>J. E. B. K. 11-15</i>	<i>7-20</i>
	DRAWN BY <i>J. E. B. K.</i>	"
	TRACED BY	"
NOTE BOOK	QUANTITIES BY <i>J. E. B. K.</i>	"
	QUANTITIES CHECKED BY <i>J. E. B. K.</i>	"
N.	CHECKED BY	"

NOTE: Contractor shall apply a heavy coating of No-Oxide to all steel plates prior to placing of girders, except contact area between bronze and steel plates in expansion bearing.

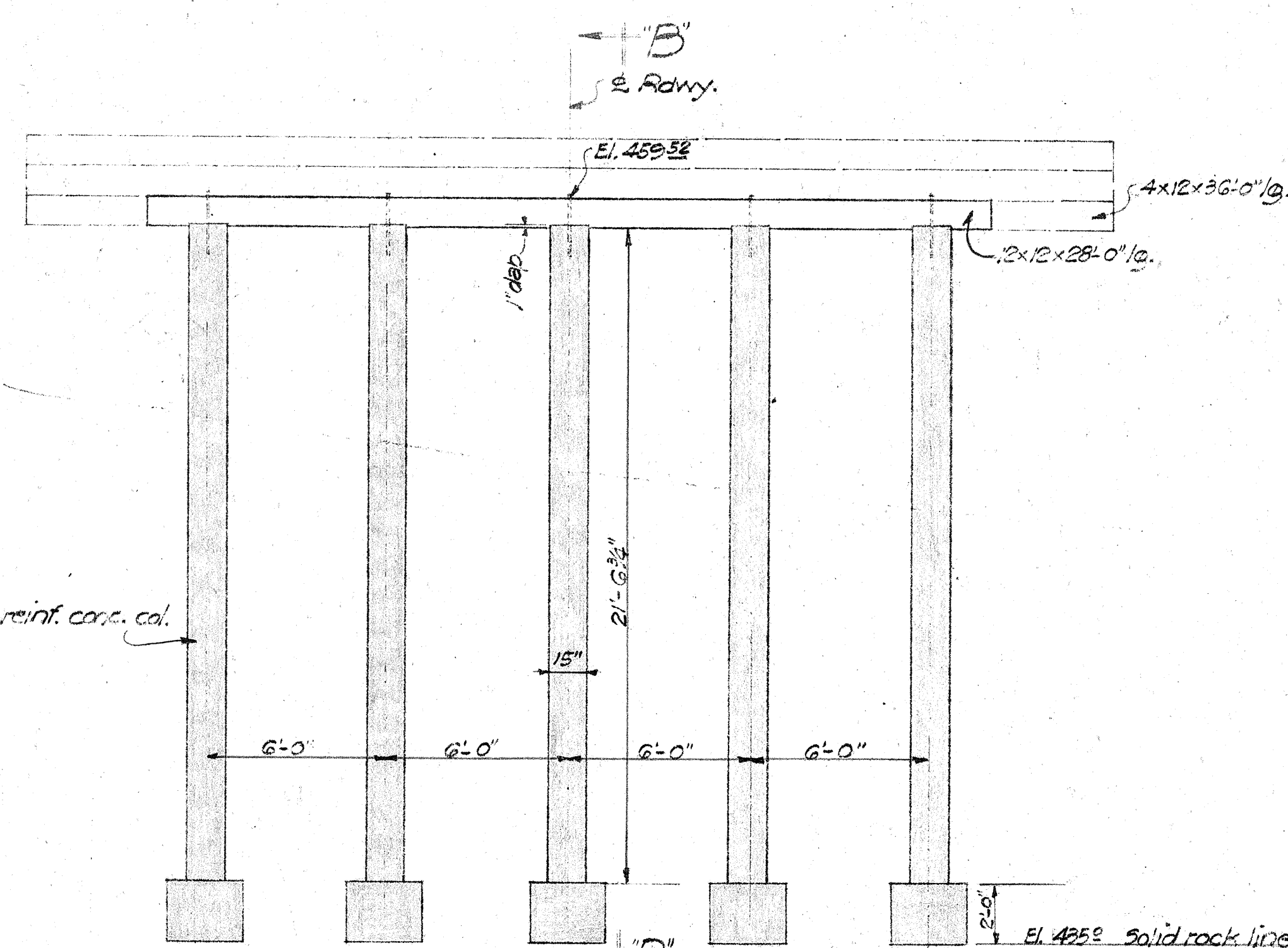
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
KAWAII
Sta. 111+48 to Sta. 112+13.
HAWAII BELT ROAD FA-F148(H)
Feb. 1946
SHEET No 3 OF 3 SHEETS



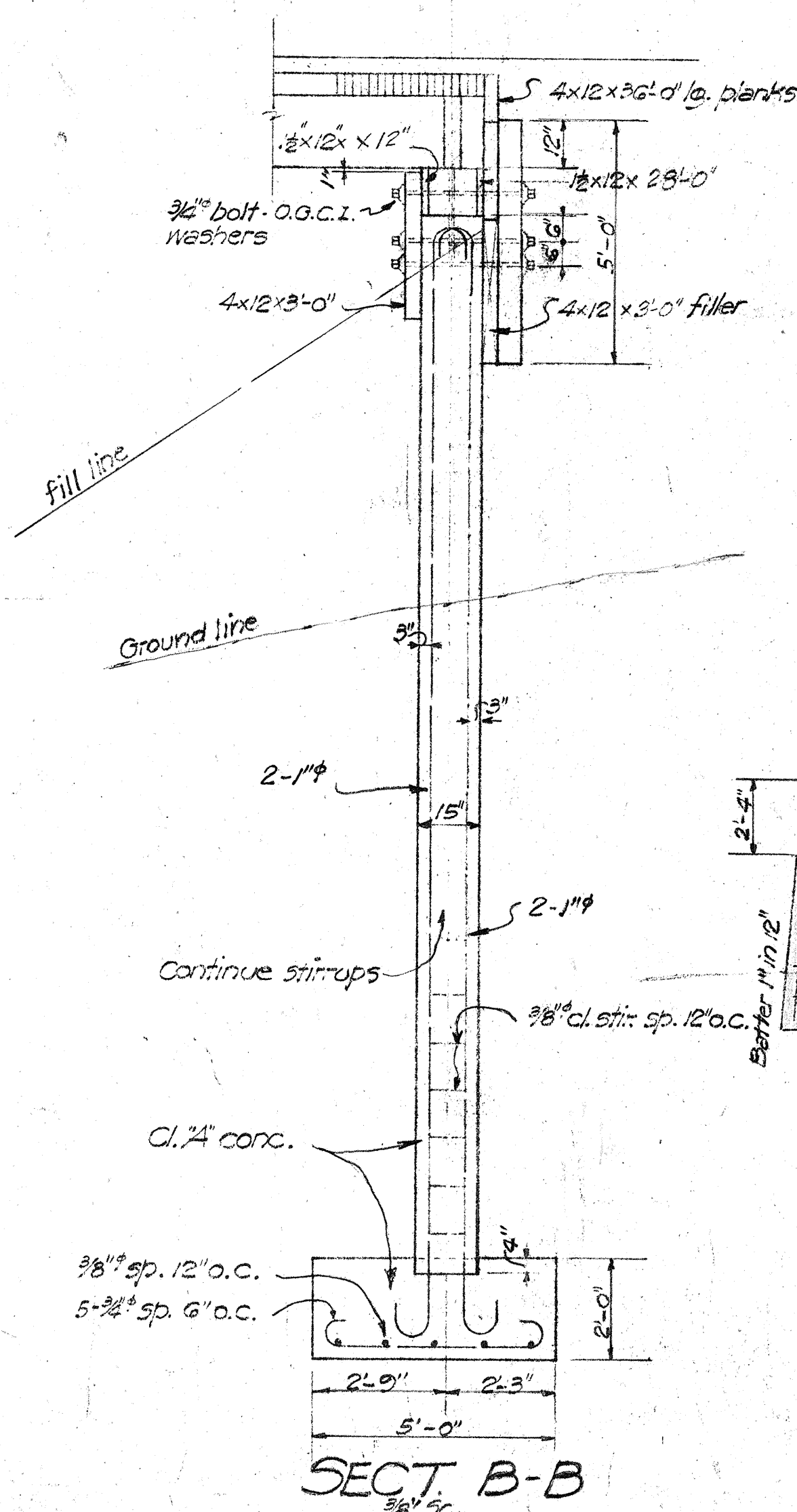
ABUT. NO. 1
1/4" Scale



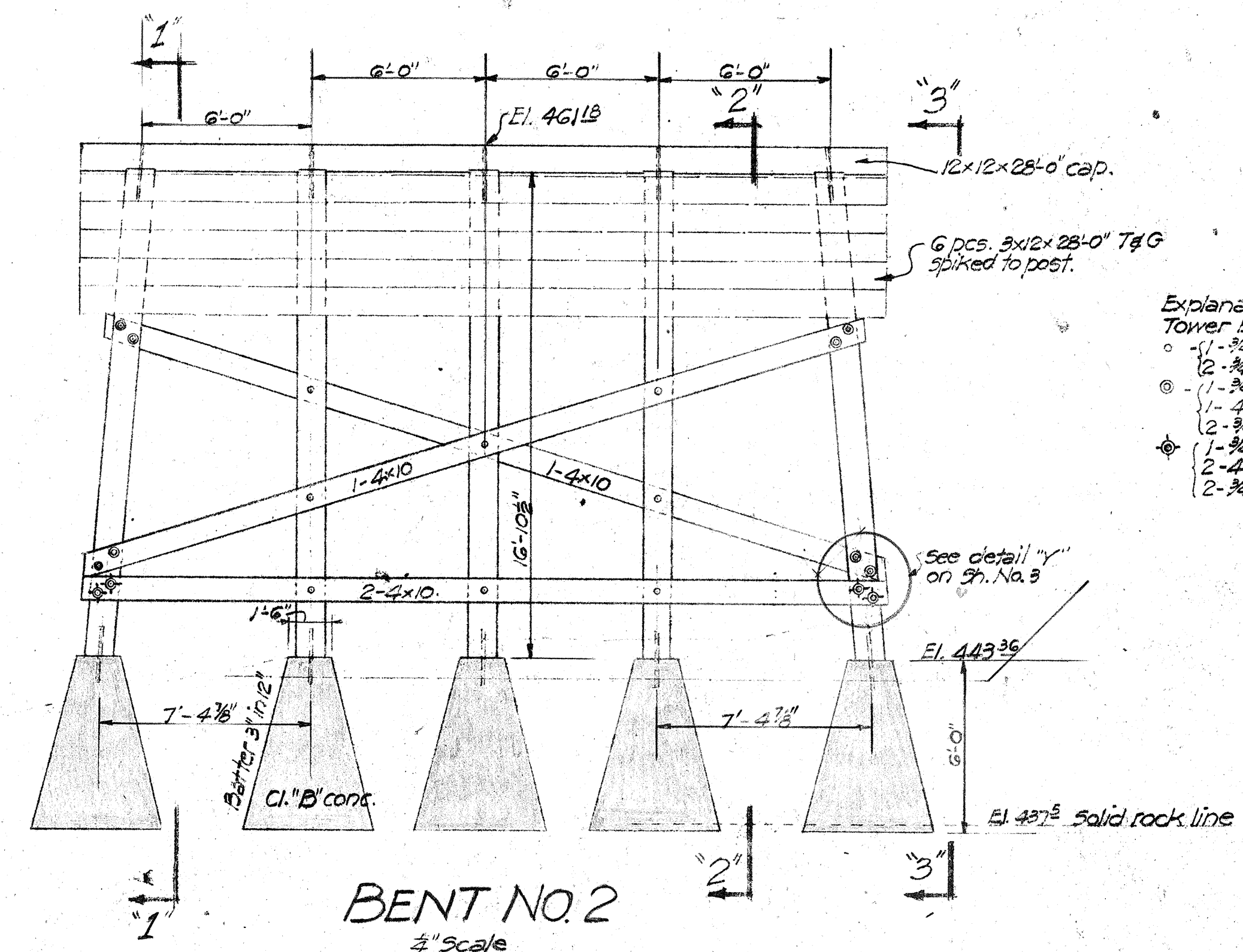
SECT. A-A
3/8" Scale



ABUT. NO. 2
1/4" Scale

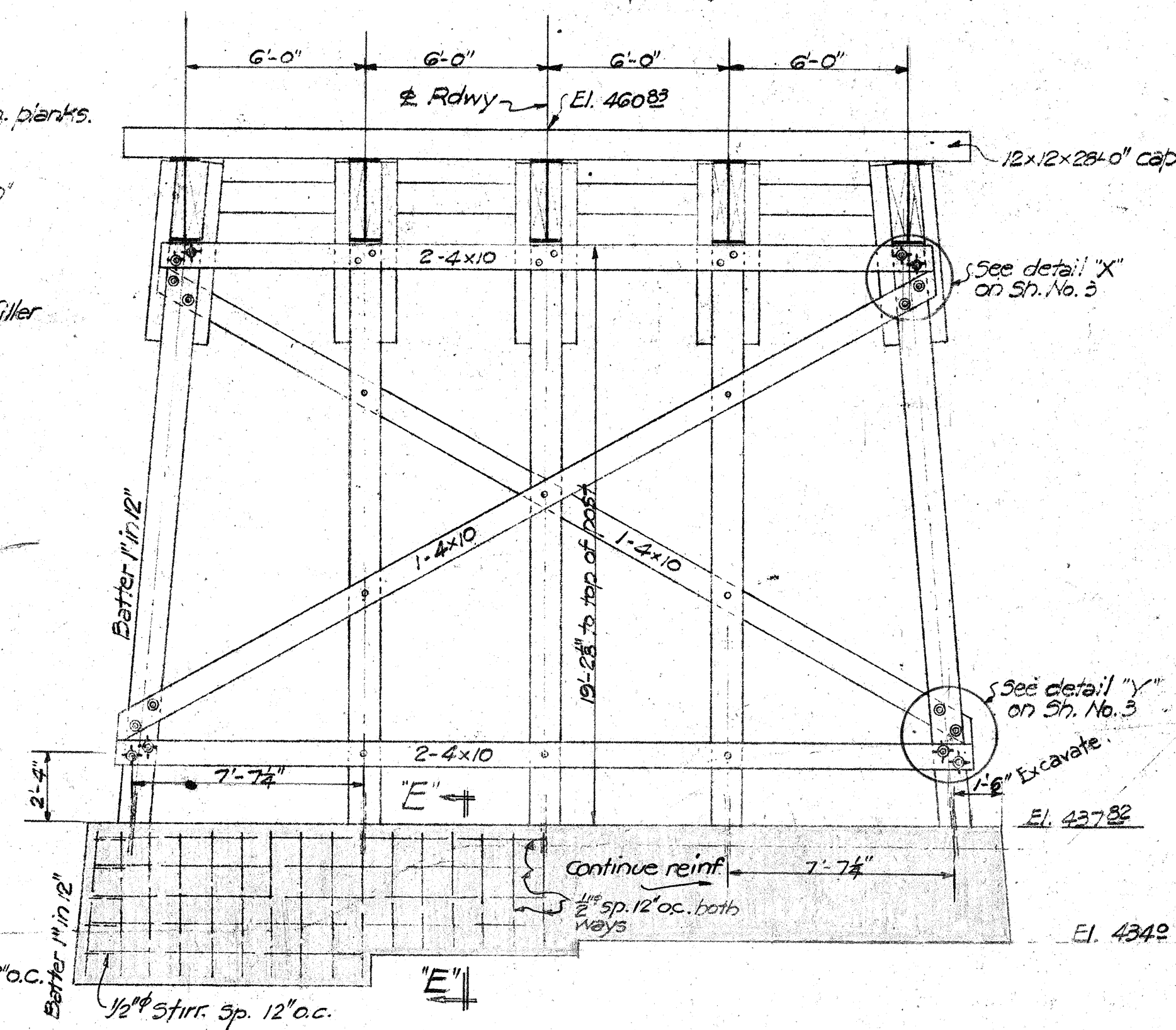


SECT. B-B
3/8" Scale

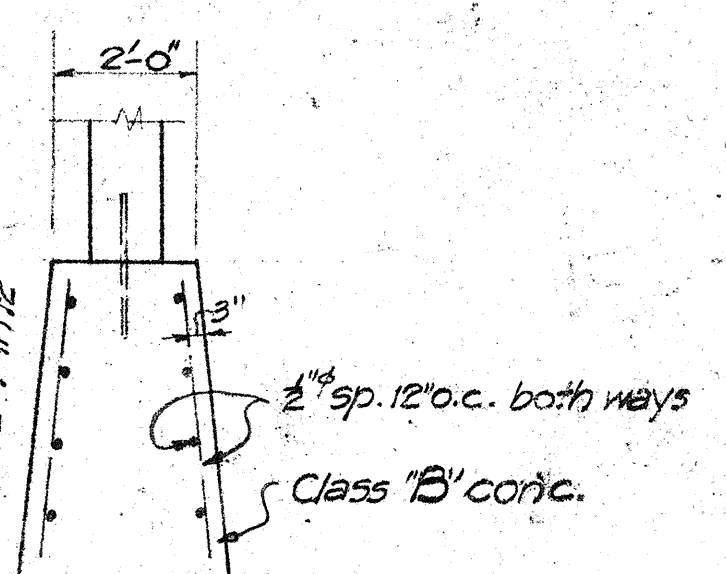


BENT NO. 2
1/4" Scale

NOTE: For Sect. 1-1, 2-2 & 3-3 see sheet #4



BENT NO. 3
1/4" Scale



SECT. E-E
3/8" Scale

NOTE: Shaded portions represent work in place.

SURVEY PLOTTED BY	DATE
DRAWN BY	5-26
CHECKED BY	
NOTE BOOK	
QUANTITIES CHECKED BY	
CHECKED BY	

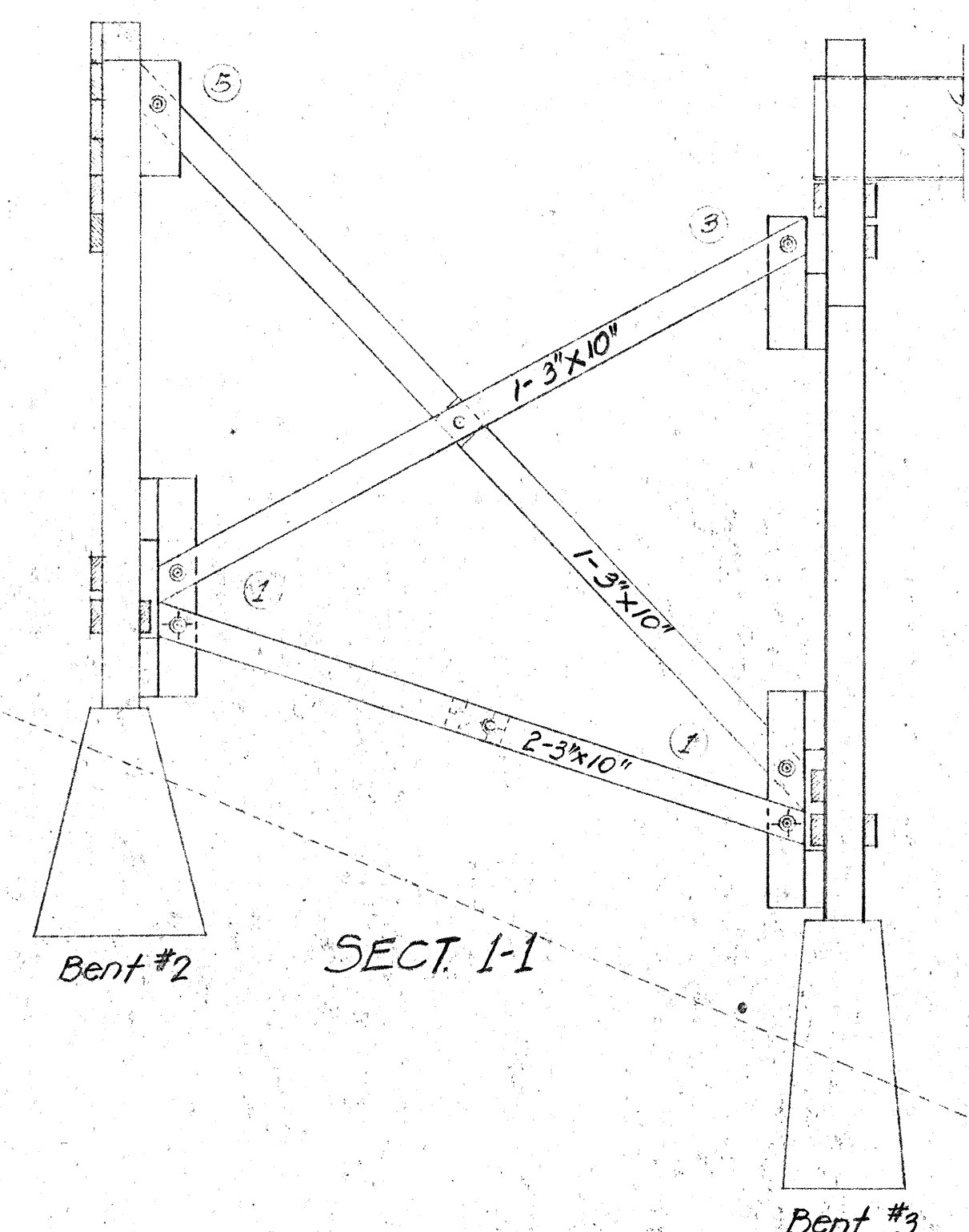
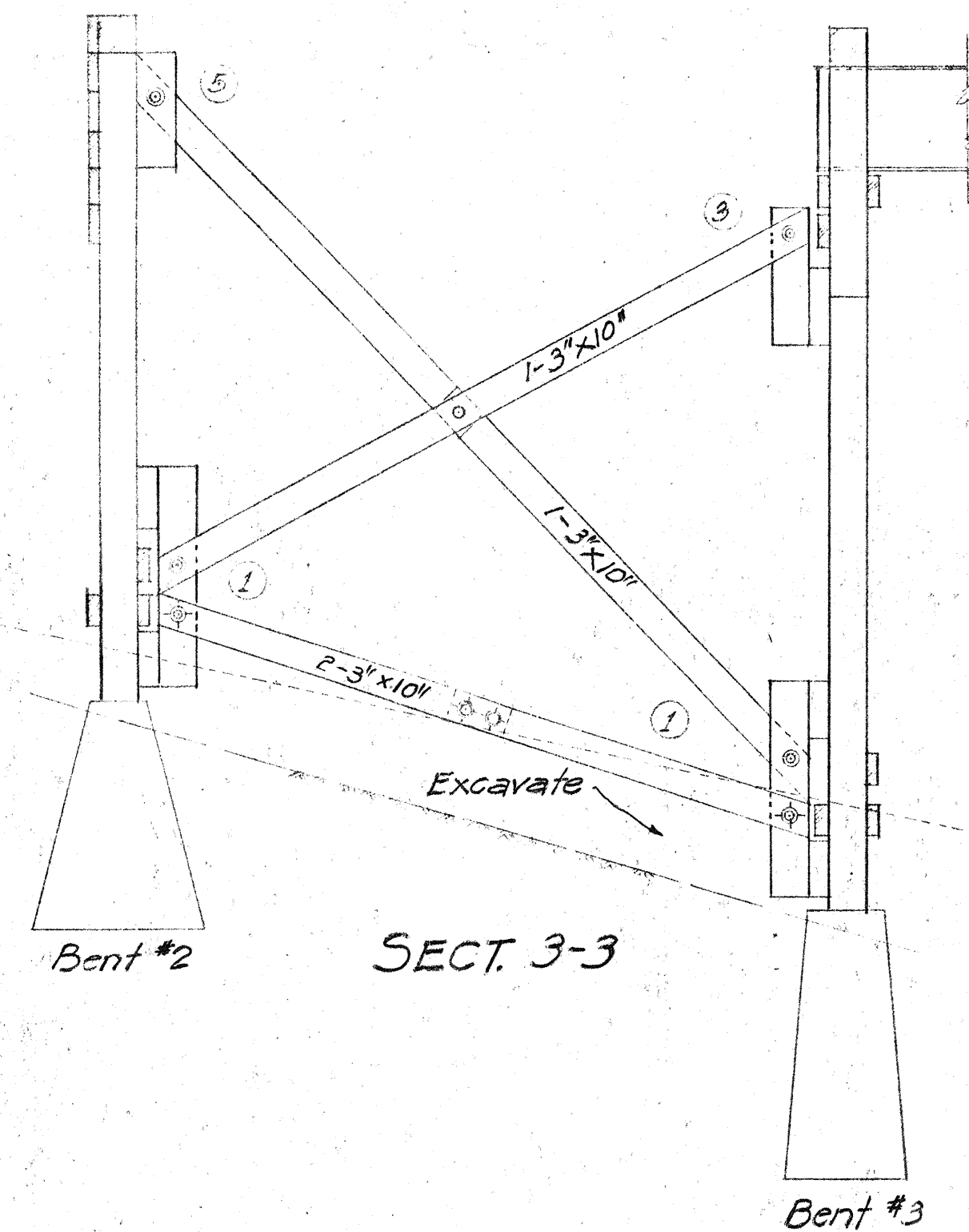
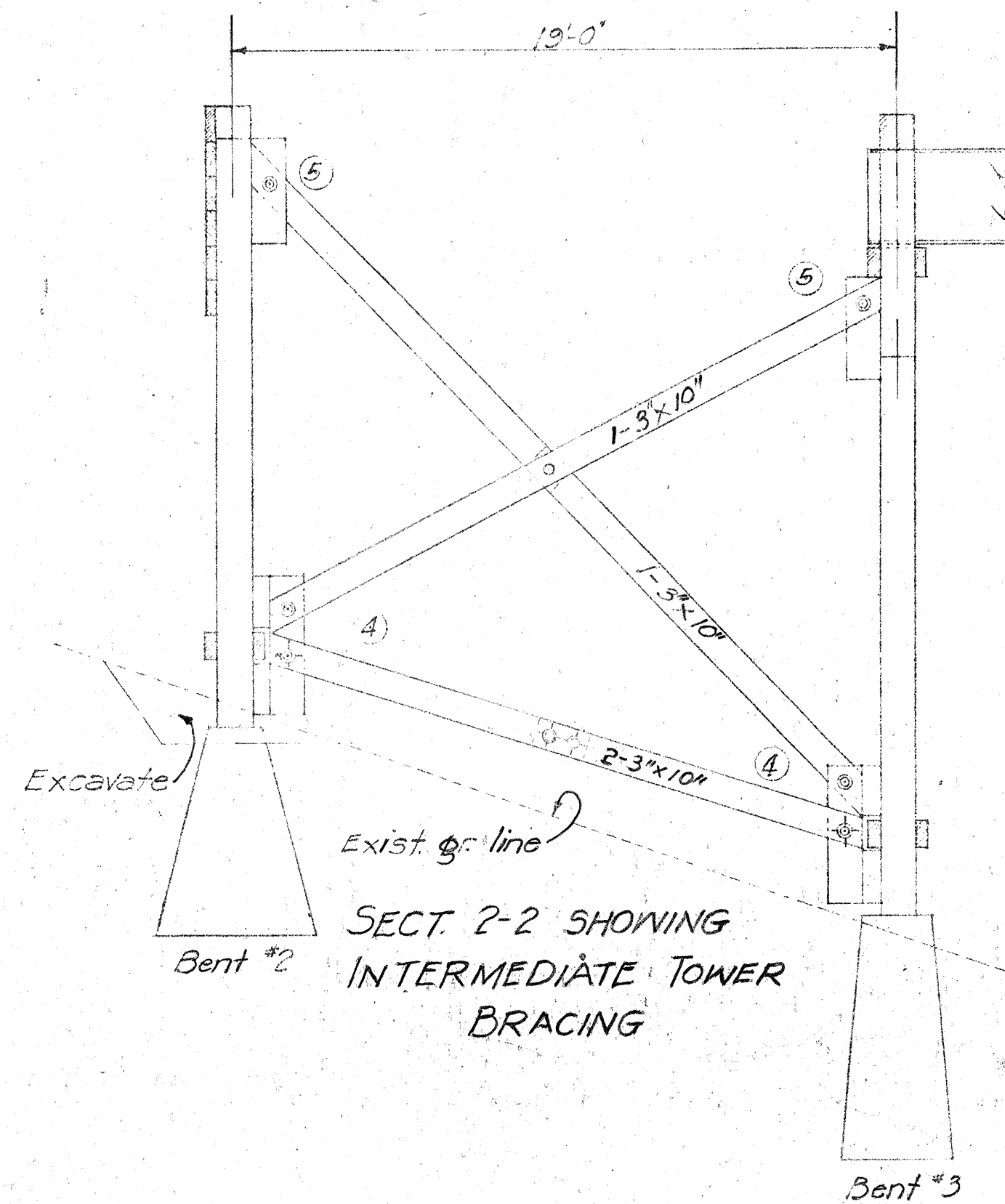
BENT NO. 1
1/4" Scale

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE NO. 5
Sta. 142+42.17 to Sta. 144+15.22

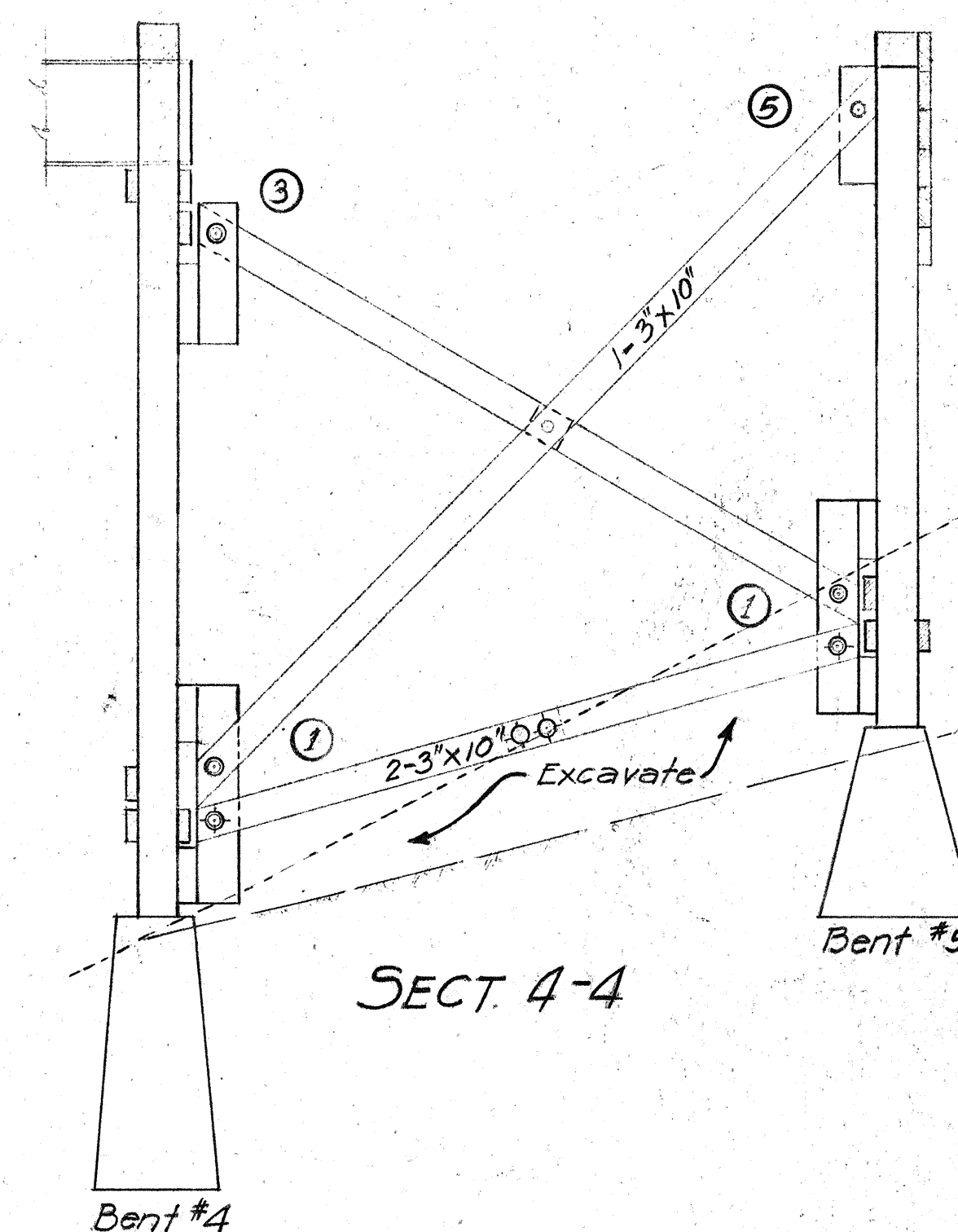
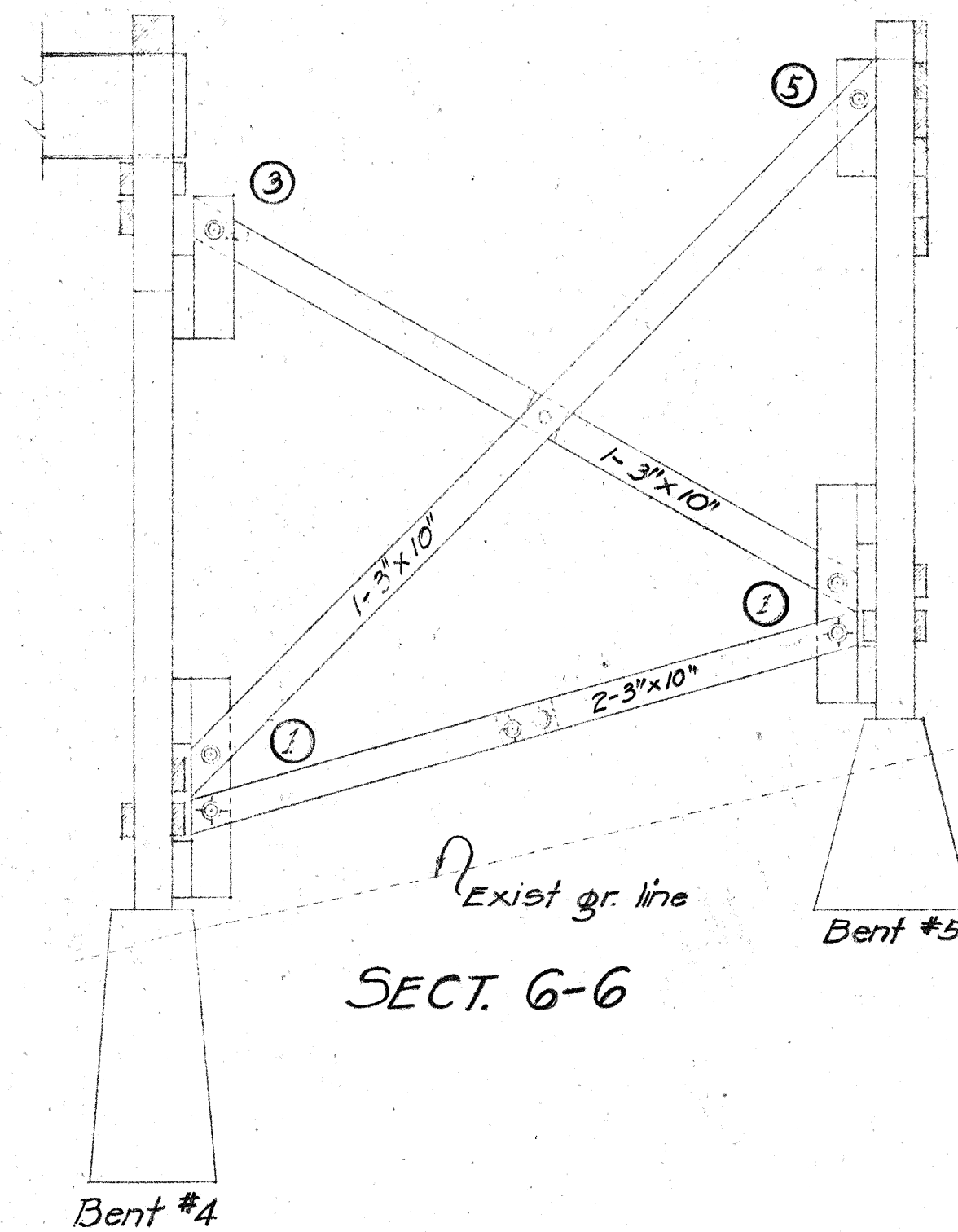
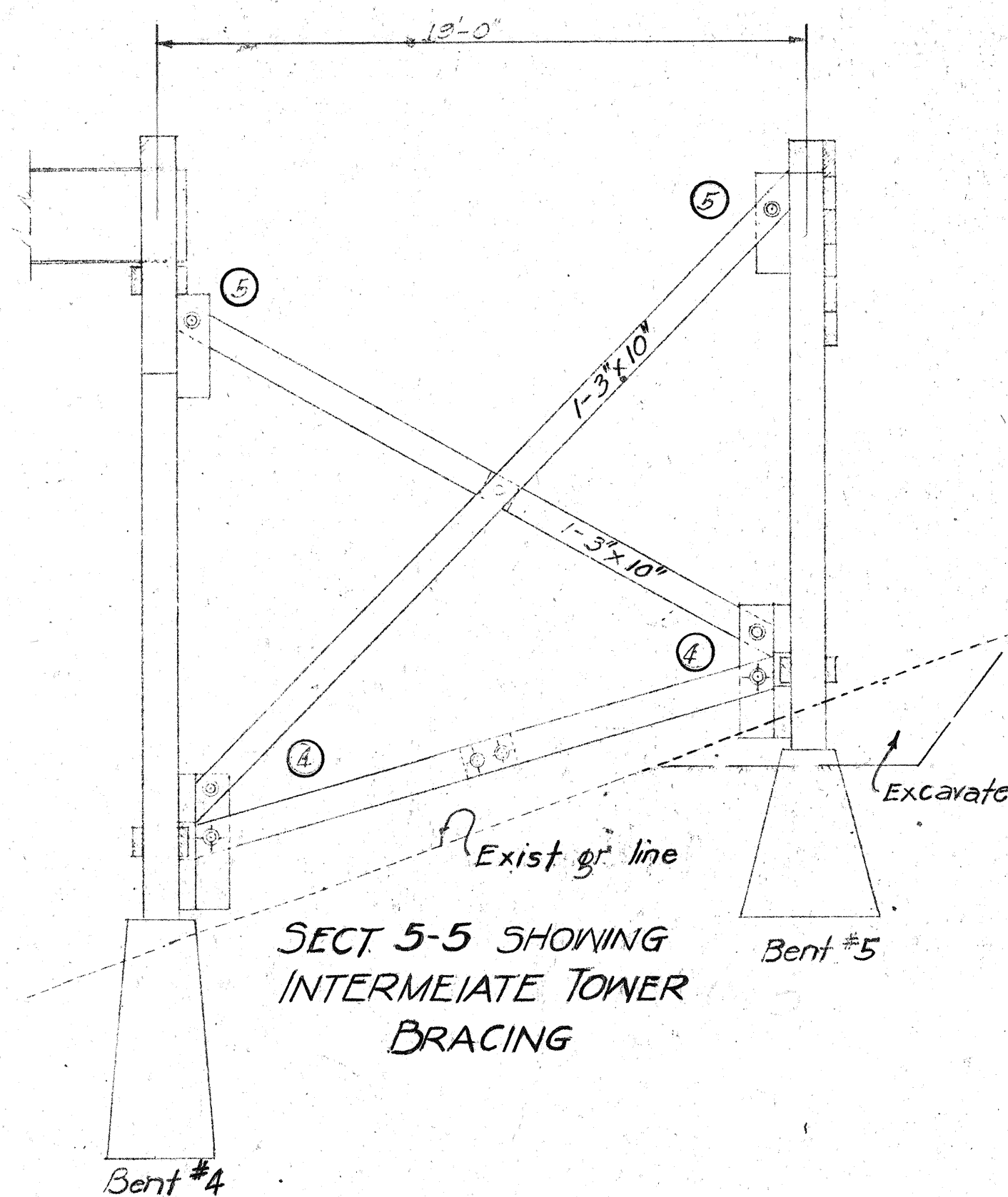
HAWAII BELT RD. FA-F148(1)
Feb. 1946

SHEET NO. 2 OF 4 SHEETS



TOWER BRACING - BENTS 2 & 3
Scale 1/4" = 1'-0"

NOTE: For location of Sect. 1-1, 2-2 & 3-3 see sheet #2



TOWER BRACING - BENTS 4 & 5
Scale 1/4" = 1'-0"

NOTE: For location of Sect. 4-4, 5-5 & 6-6 see sheet #3

TIMBER BILL OF MATERIAL
DOUGLAS FIR - COAST REGION

MEMBER	NO	SIZE & LENGTH	LUMBER GRADING	MILL WORK	FT. B.M.
Floor Decking	1266	2" x 6" x 26'-0"	Structural Select Joists & Planks	S1S1E	32916
Guard Railing	4	3" x 8" x 8'-0"	"	543	64
"	4	4" x 2" x 8'-0"	"	"	85
Bridge Railing	18	4" x 3" x 20'-0"	"	"	960
"	18	3" x 3" x 20'-0"	"	"	720
Bracing - Bents	10	3" x 10" x 28'-0"	"	Rough	700
"	2	3" x 10" x 30'-0"	"	"	150
"	2	4" x 10" x 28'-0"	"	"	187
"	6	4" x 10" x 30'-0"	"	"	600
"	4	4" x 10" x 32'-0"	"	"	426
Bracing - Tower	20	3" x 10" x 13'-0"	"	"	900
"	4	3" x 10" x 20'-0"	"	"	200
"	6	3" x 10" x 22'-0"	"	"	330
"	10	3" x 10" x 26'-0"	"	"	650
Tower Br. Gusset Plates	14	4" x 12" x 5'-8"	"	"	318
"	4	4" x 12" x 7'-0"	"	"	112
"	4	4" x 12" x 4'-0"	"	"	96
"	16	4" x 12" x 3'-0"	"	"	192
Splice Blocks	16	6" x 17 1/2" x 3'-0"	Structural Select Beams & Stringers	S1S1E	432
Tower Br. Joint Blocks	4	6" x 12" x 2'-0"	"	Rough	48
"	16	6" x 12" x 3'-0"	"	"	288
"	40	6" x 12" x 1'-0"	"	"	360
Stringers	117	6" x 8" x 20'-0"	"	S1E Engrched to 17 1/2" x 6" x 2"	21060
Filler Blocks	10	4" x 12" x 3'-0"	"	Cut to fit	120
Filler Blocks at 1's	4	10" x 12" x 2'-7 1/2"	"	"	107
"	16	6" x 12" x 2'-7 1/2"	"	"	256
Scabs at Abut.	10	6" x 12" x 0'-0"	"	Rough	360
"	10	4" x 12" x 3'-0"	"	"	120
Post Scabs at 1's	20	6" x 12" x 0'-0"	"	"	720
Caps	10	12" x 12" x 28'-0"	Structural Select Posts & Timbers	S1S	3360
Bridge Rail Posts	56	8" x 8" x 0'-0"	"	543	1792
Guard Rail Posts	4	12" x 12" x 8'-0"	"	"	384
Posts - Bents	5	12" x 12" x 8'-0"	"	Rough	480
"	5	12" x 12" x 12'-0"	"	"	720
"	10	12" x 12" x 18'-0"	"	"	2160
"	10	12" x 12" x 20'-0"	"	"	2400
Wheel Guard	18	12" x 14" x 20'-0"	No. 1 Dimension Posts & Timbers	S1S1E	5040
Filler Blocks	4	12" x 14" x 8'-0"	"	"	448
Solid Bridging	56	2" x 8" x 1'-5 1/2"	No. 1 Dimension Joists & Planks	Rough	112
"	8	4" x 18" x 14'-0"	"	"	672
"	2	4" x 18" x 20'-0"	"	"	240
Bulkhead	6	4" x 12" x 36'-0"	"	"	864
Firestop	12	3" x 12" x 28'-0"	"	T&G	1008
Strut Blocks	16	4" x 10" x 1'-0"	"	"	54
Solid Bridging	2	4" x 10" x 16'-0"	"	"	107
"	4	4" x 12" x 16'-0"	"	"	256
Cross Bridging	54	2" x 4" x 10'-0"	"	"	360
Blocks @ Bear Plates	20	1" x 3" x 1'-0"	"	"	5
Blocks @ Tower Bracing	10	4" x 10" x 1'-0"	Structural Select Beams & Stringers	"	34
"	10	4" x 10" x 1'-0"	"	"	50
					84023

NOTE: See Sheets No. 56 B & 56 C for Supplementary Timber Bill of Material.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

BRIDGE No. 5
Sta. 142+42.43 to Sta. 144+15.25

HAWAII BELT RD. FA-F1480
Feb. 1946

SHEET No. 4 OF 4 SHEETS

5194.56