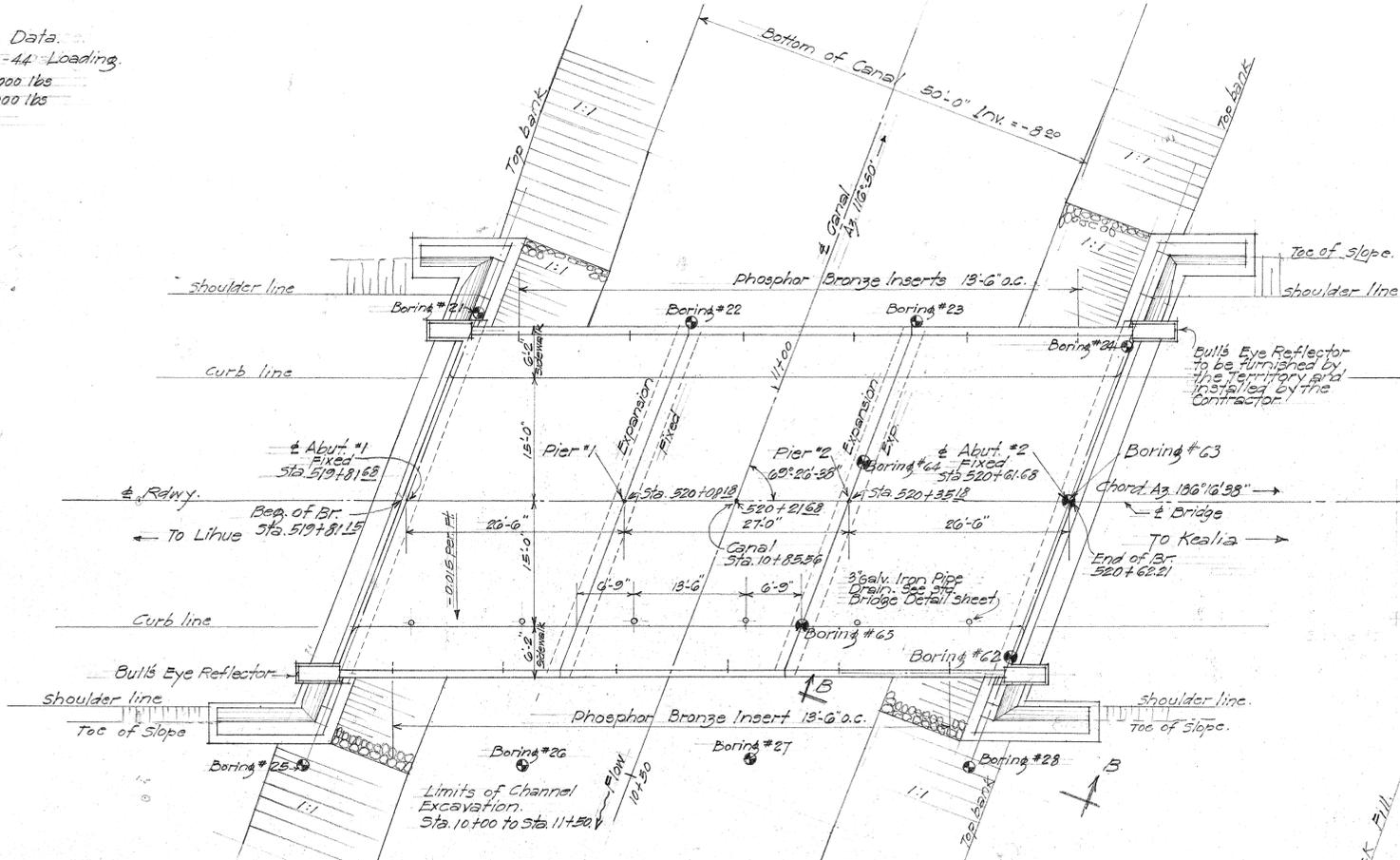


Design Data:  
 H-20-44 Loading.  
 $f_c = 18,000$  lbs  
 $f_s = 10,000$  lbs  
 $n = 10$

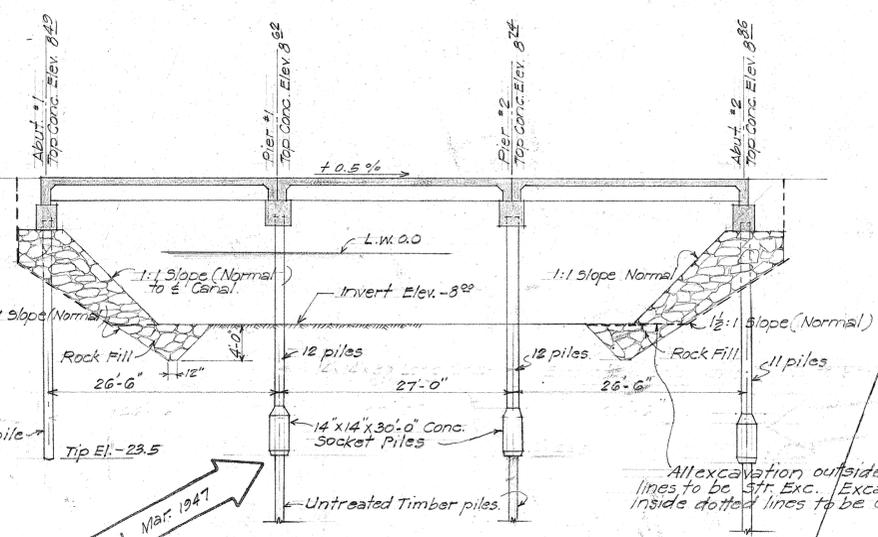
Revised: Mar. 1947.  
 Revision: original boring data eliminated. New borings located on Layout Plan. Concrete piles at Pier #1, Pier #2 and Abut #2 replaced with composite piles. Estimated quantities changed.



NOTE: There are 2 water lines, 2" & 5" in the bridge site area. Exact locations of the lines are not known. These lines to be relocated under the sidewalk. The selection of the side on which these lines are to be located shall be decided by the County Water Works.

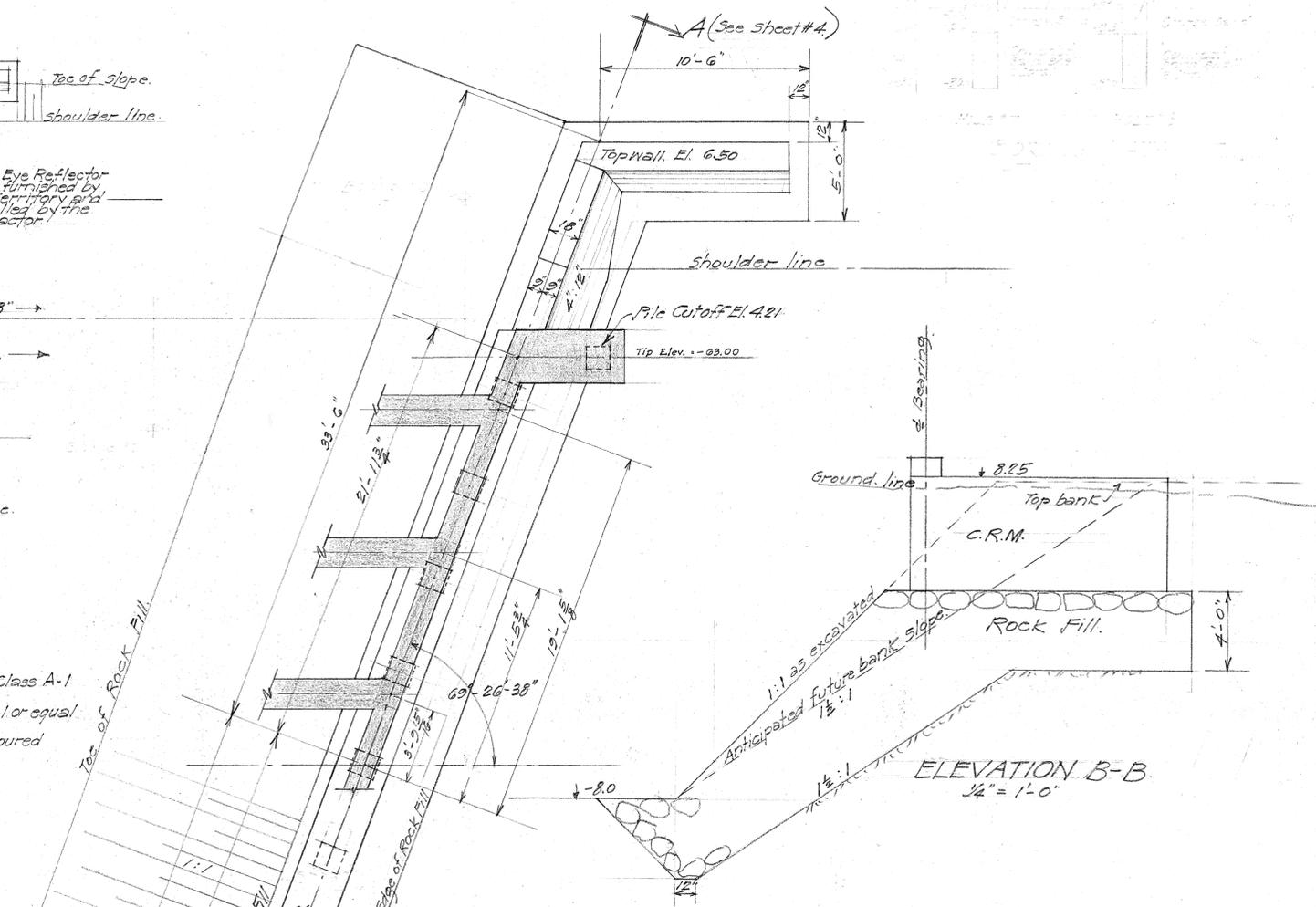
NOTE: All concrete except in Piles Class A-1 Concrete in Piles Class E-1 Piles to have admixture of Tricosal or equal See Special Provisions. Sidewalk and Railing to be poured after release of falsework.

LAYOUT PLAN  
 Scale 1"=10'-0"



NOTE: If tip elev cannot be reached by driving resort to jetting or drilling. See Specification Paragraph M.1

SECTION ALONG & BRIDGE  
 Scale 1"=10'-0"



ESTIMATED QUANTITIES

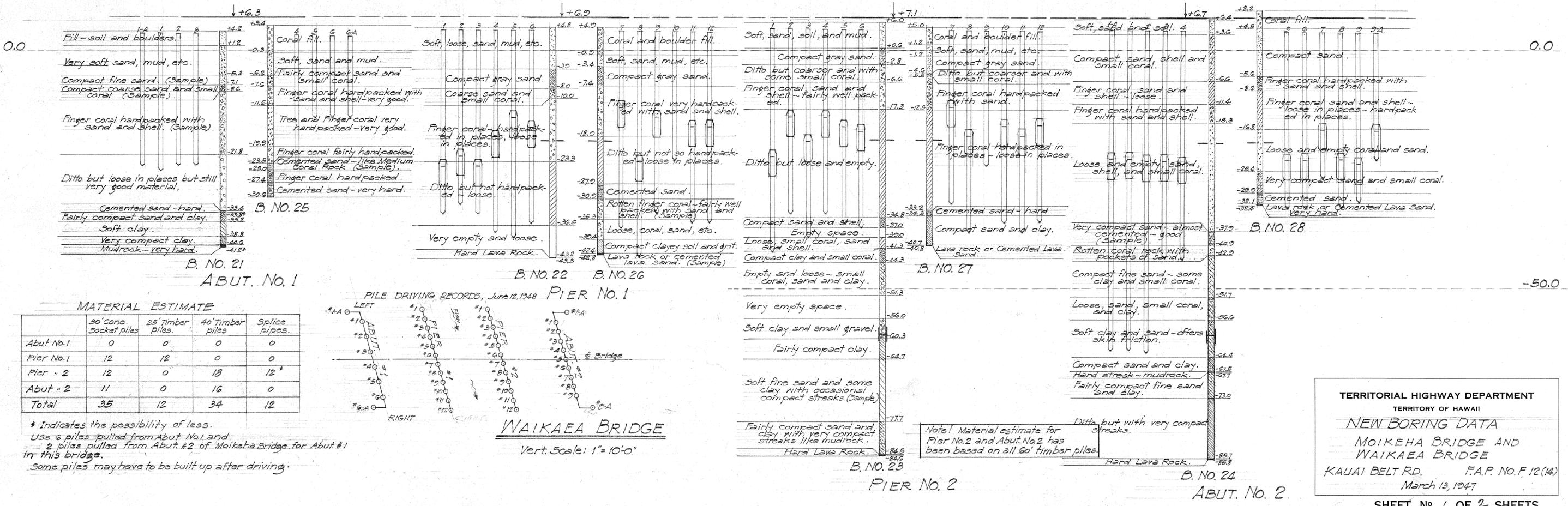
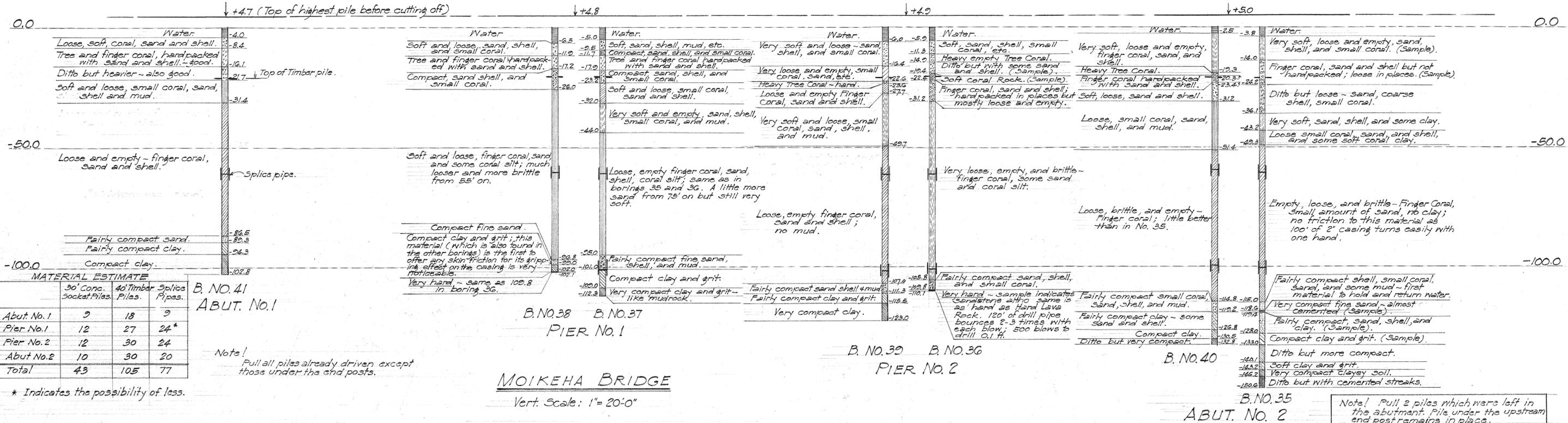
Item	Superstr.	Railings/End Post	Piers	Abutment	Total
Channel Exc.					5138 C.Y.
Class A-1 Conc.	124.45 C.Y.	13.70 C.Y.	26.14 C.Y.	31.67 C.Y.	265.96
Reinf. Steel.	36,221 lbs.	2241 lbs	2935 lbs.	3594 lbs.	44,991 lbs
14'x14'x30'-0" conc. Piles				8 pcs	8 pcs
14'x14'x30'-0" conc. socket Piles.			24 pcs.	11 "	35 pcs.
Untreated Timber Piling			1020 Lin. Ft.	640 Lin. Ft.	1660 Lin. Ft.
Rock Fill				530.0 C.Y.	530.0 C.Y.
Bituminous Binder	0.87 Tons				0.87 Tons
Screenings	1.4 C.Y.				1.4 C.Y.
Chips	0.8 "				0.8 "
Keystone	7.4 "				7.4 "
Str. Exc.				2650 C.Y.	2650 C.Y.
Cement Rubble Masonry				38.4 C.Y.	38.4 "

SURVEY PLOTTED BY: DATE: 10/21/45  
 DRAWN BY: J. J. BERRY  
 TRACED BY: J. J. BERRY  
 QUANTITIES CHECKED BY: J. J. BERRY  
 NOTE BOOK No. 1

TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
 WAIKAEA BRIDGE  
 KAUI BELT RD F 12(14)  
 Nov. 1945

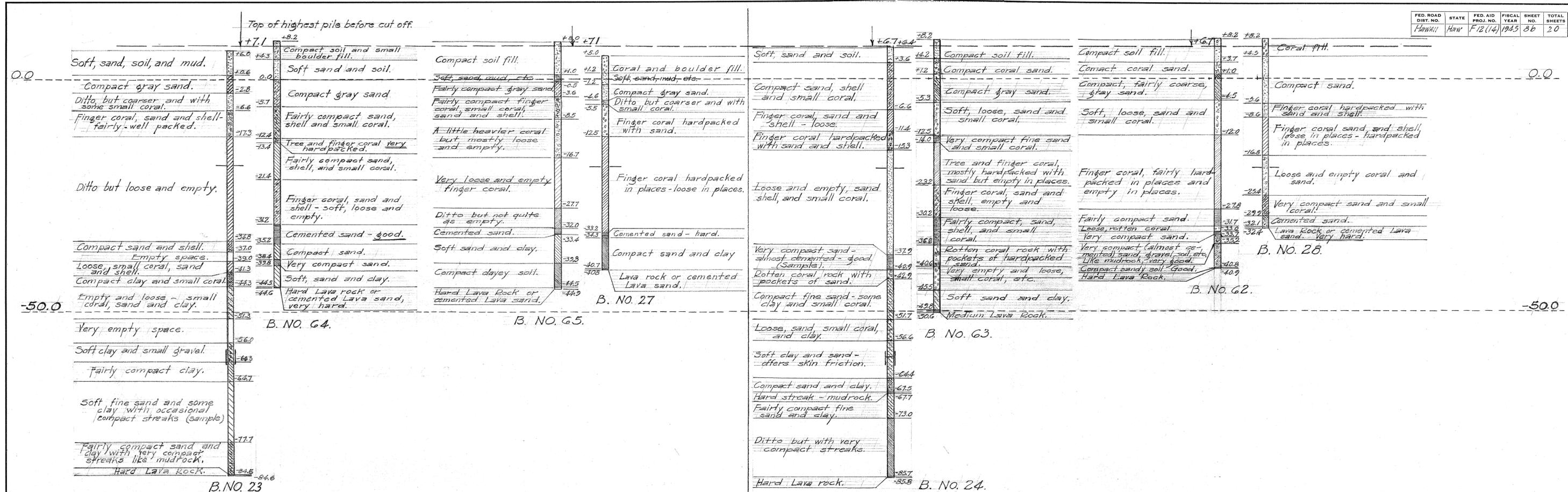
SHEET No 8 OF 5 SHEETS

5188.8



TERRITORIAL HIGHWAY DEPARTMENT  
TERRITORY OF HAWAII  
**NEW BORING DATA**  
MOIKEHA BRIDGE AND  
WAIKAEA BRIDGE  
KAUAI BELT RD. F.A.P. NO. F 12(14)  
March 13, 1947

SURVEY PLOTTED BY DATE  
 DRAWN BY K. KAMAHARU  
 TRACED BY  
 QUANTITIES CHECKED BY  
 NOTE BOOK  
 NO.



ORIGINAL PLAN NOTE BOOK No. \_\_\_\_\_

SURVEY PLOTTED BY \_\_\_\_\_ DATE \_\_\_\_\_

DRAWN BY \_\_\_\_\_

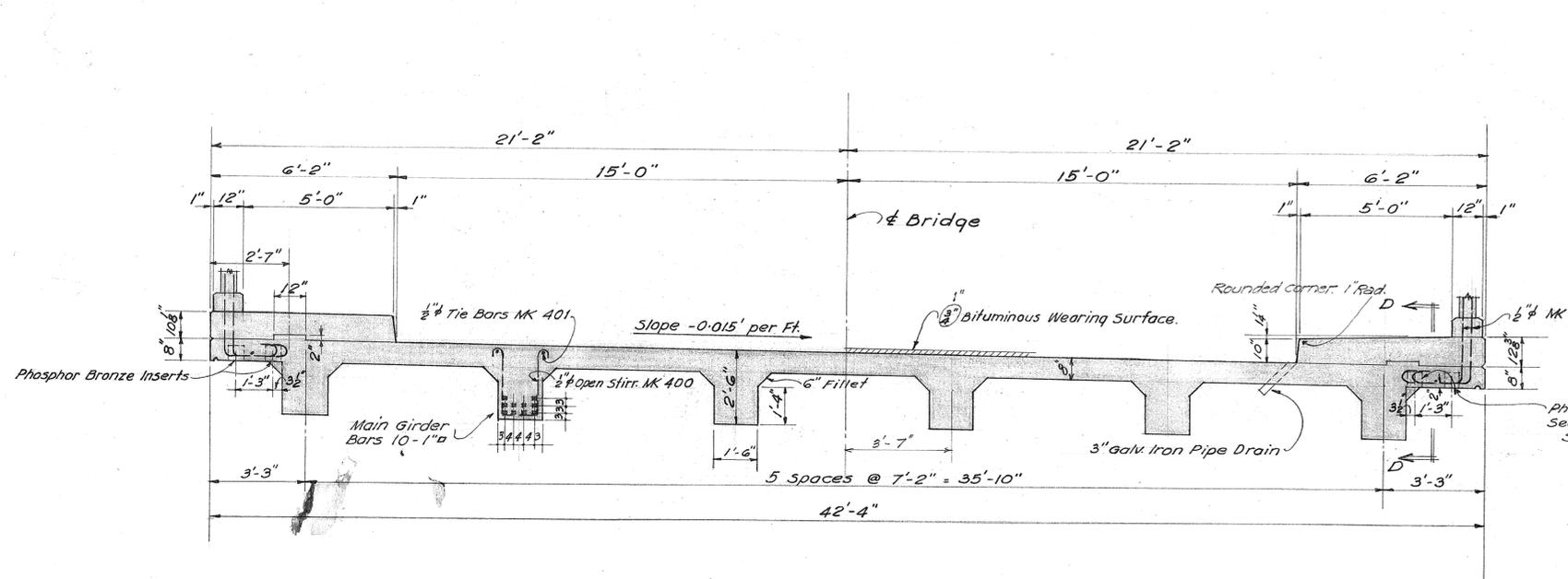
TRACED BY \_\_\_\_\_

QUANTITIES CHECKED BY \_\_\_\_\_

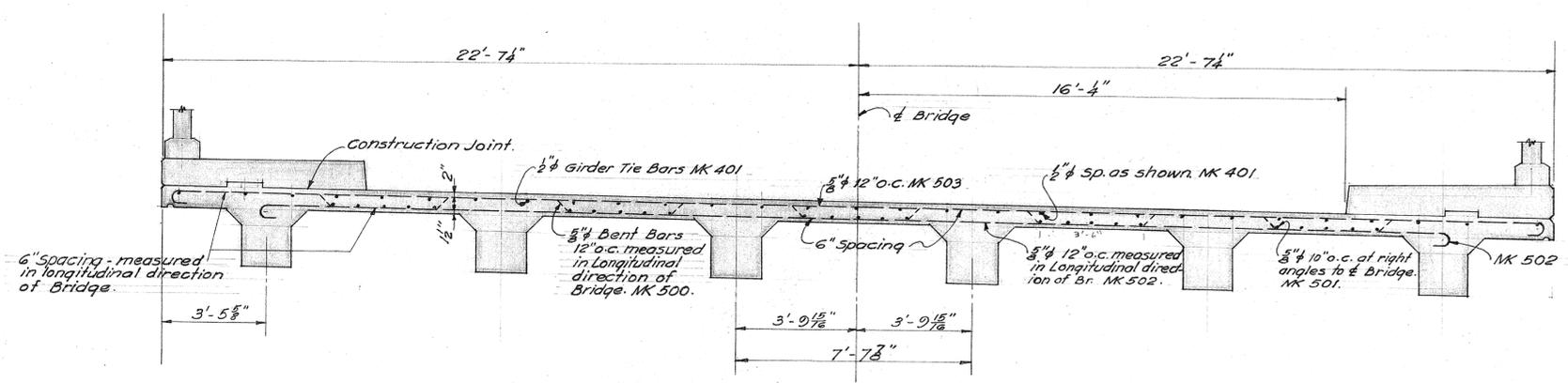
CHECKED BY \_\_\_\_\_

TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
 ADDITIONAL NEW BORING DATA  
 WAIKAEA BRIDGE  
 KAUAI BELT ROAD, F.A.P. No. F12(14)  
 April, 1947.  
 SHEET No 2 OF 2 SHEETS

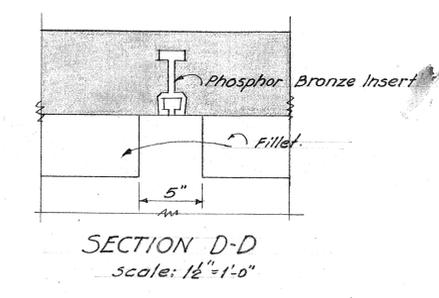
5188.SB



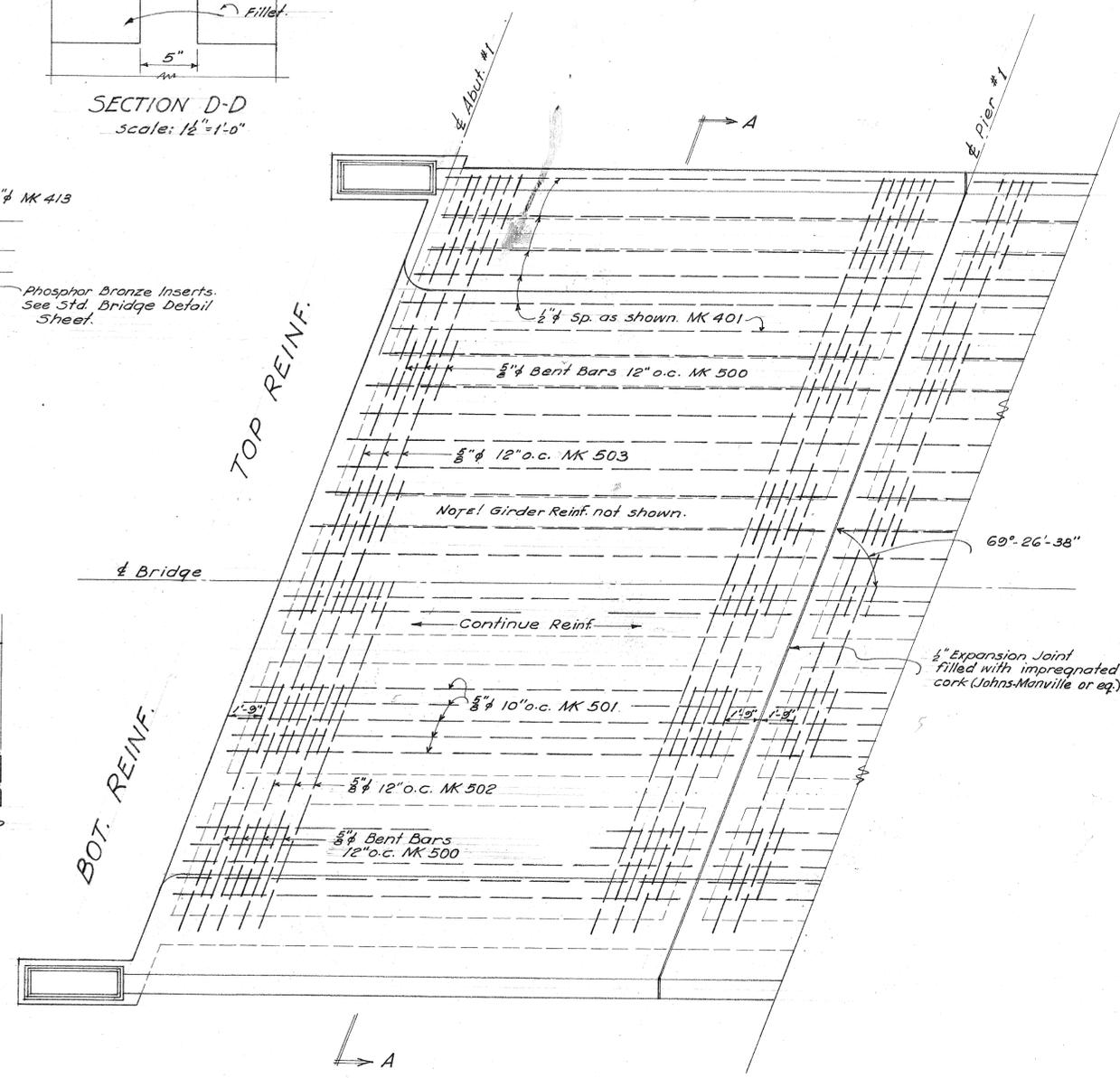
NORMAL SECTION AT CENTER OF SPAN  
Scale: 3/8" = 1'-0"



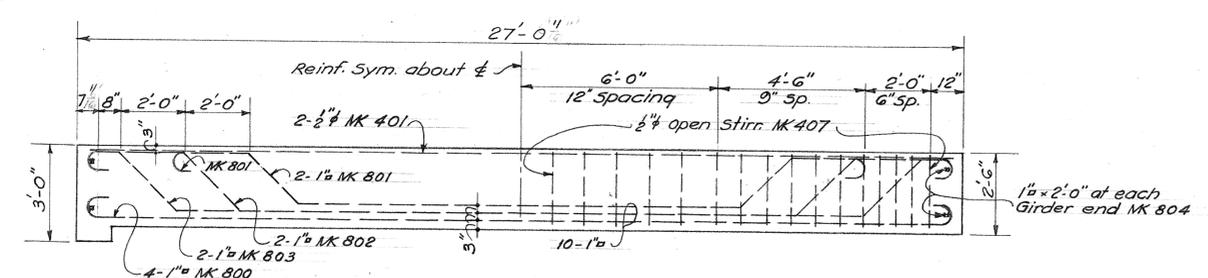
SECTION A-A  
Scale: 3/8" = 1'-0"



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



DECK SLAB REINF.  
Scale: 1/4" = 1'-0"



END SPAN GIRDER REINF.  
Scale: 3/8" = 1'-0"

INTERMEDIATE SPAN GIRDER REINF. SIMILAR

On account of unavailability of materials, contractor has substituted for 10-1" bars, 5-1" bars and 5-1 1/2" bars.  
9/20/46

SURVEY PLOTTED BY DATE  
DRAWN BY  
CHECKED BY  
NOTE BOOK

OBSELETE

SEE REVISED PLANS

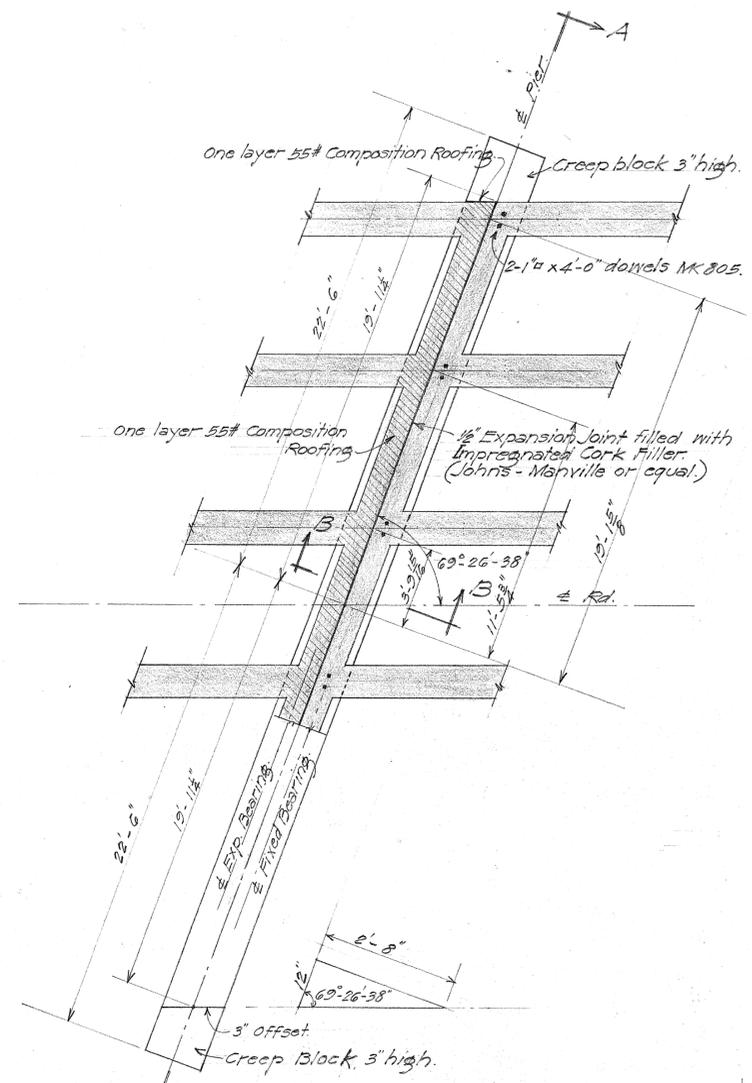
TERRITORIAL HIGHWAY DEPARTMENT  
TERRITORY OF HAWAII  
WAIKAEA BRIDGE  
KAUAI BELT RD. FAF 12(14)  
Nov. 1945

SHEET No. 2 OF 5 SHEETS

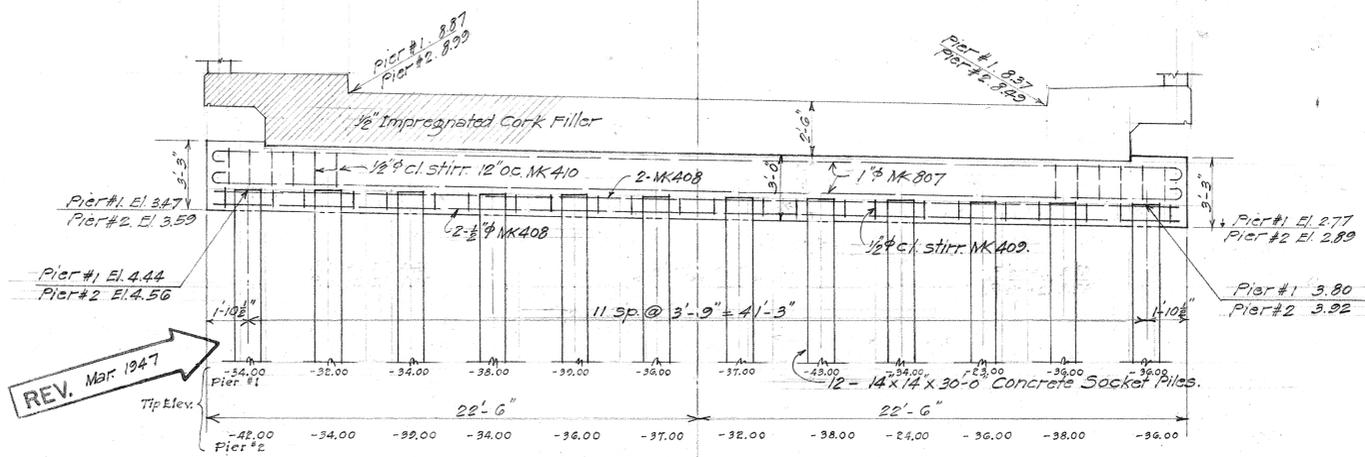
5188.9

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	F 12(4)	1945	10	20

Revised: April 25 1946  
 Revision: Recess added to Pier #2  
 Revised: Mar. 1947  
 Revision: Concrete piles in piers eliminated and composite piles substituted.

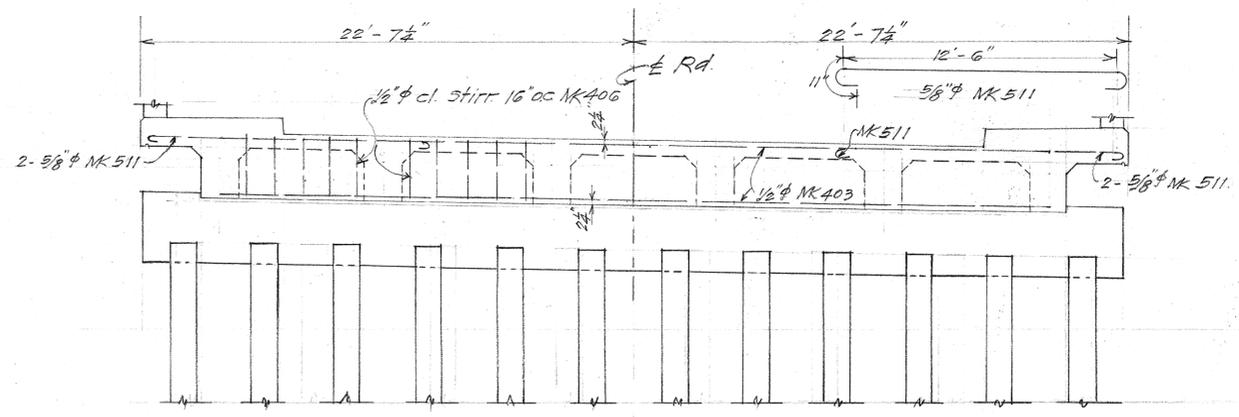


PLAN. PIER NO 1  
 1/4" = 1'-0"

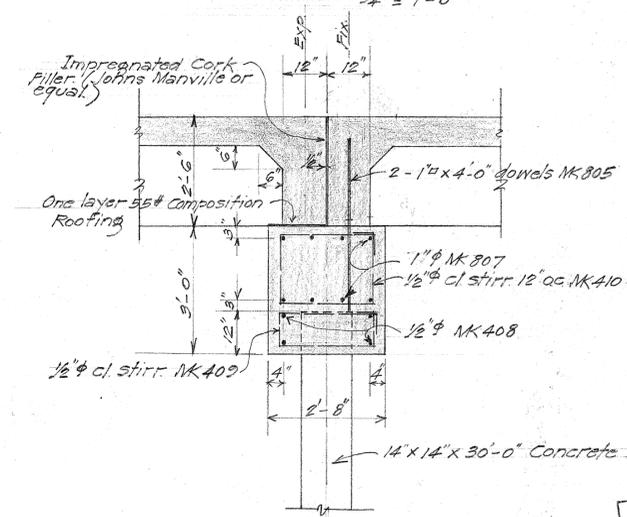


SECTION A-A  
 1/4" = 1'-0"

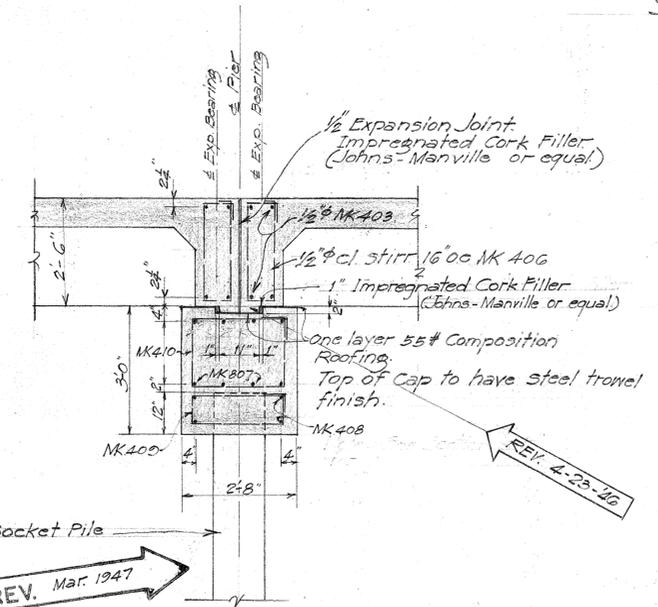
REV. Mar. 1947



SECTION A-A SHOWING BEAM REINF.  
 1/4" = 1'-0"



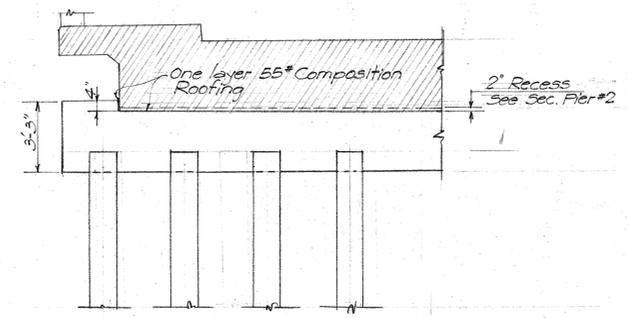
SECTION B-B  
 1/2" = 1'-0"



SECTION. PIER NO. 2  
 1/2" = 1'-0"

REV. Mar. 1947

REV. 4-23-46



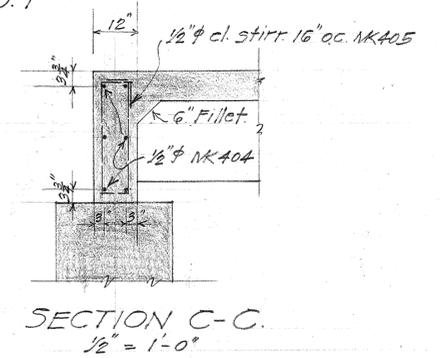
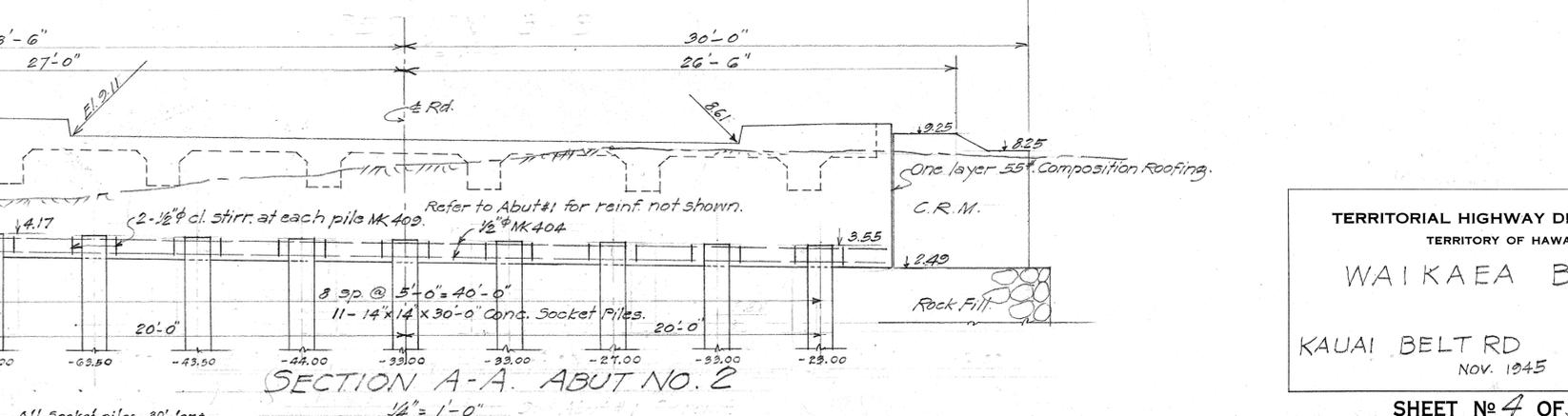
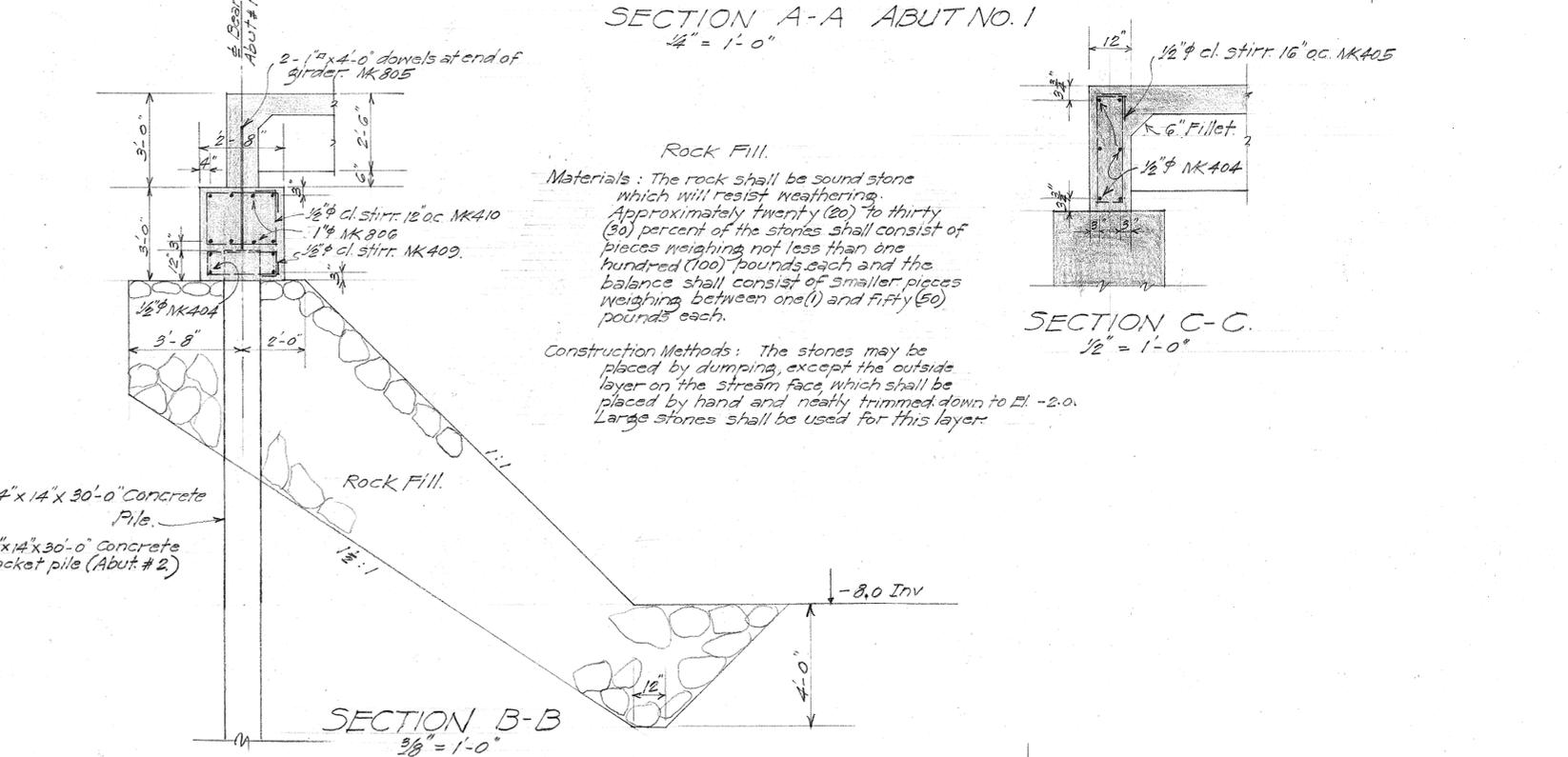
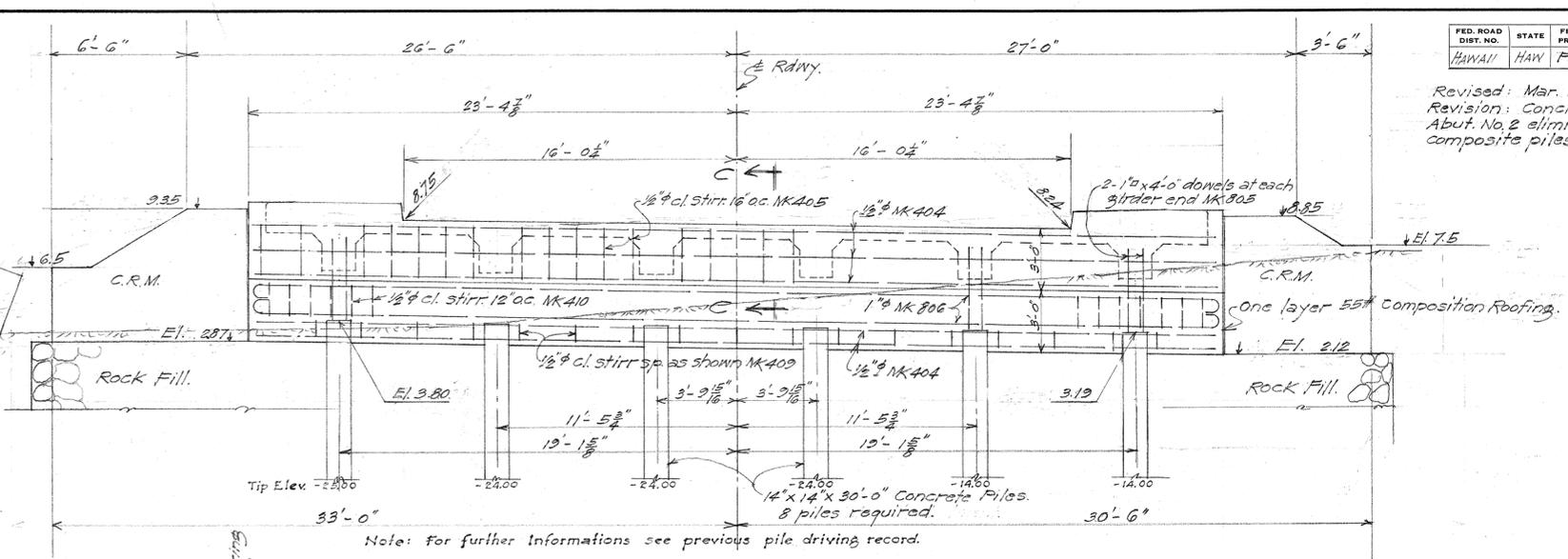
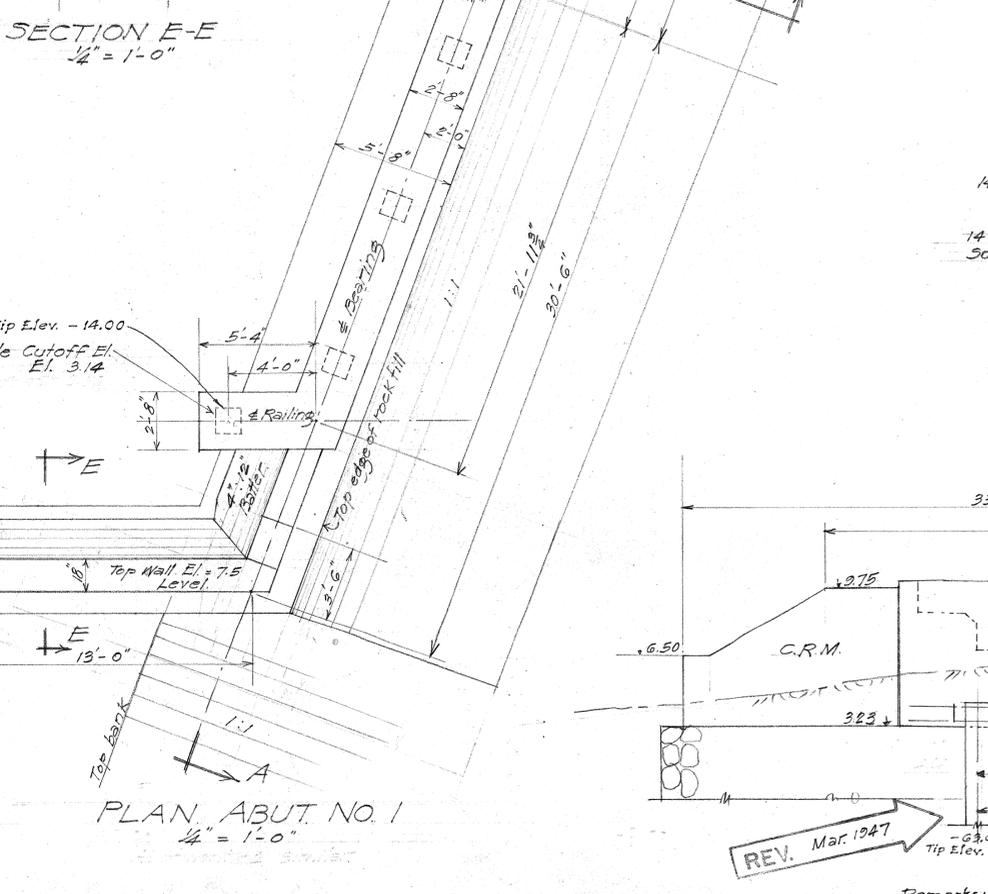
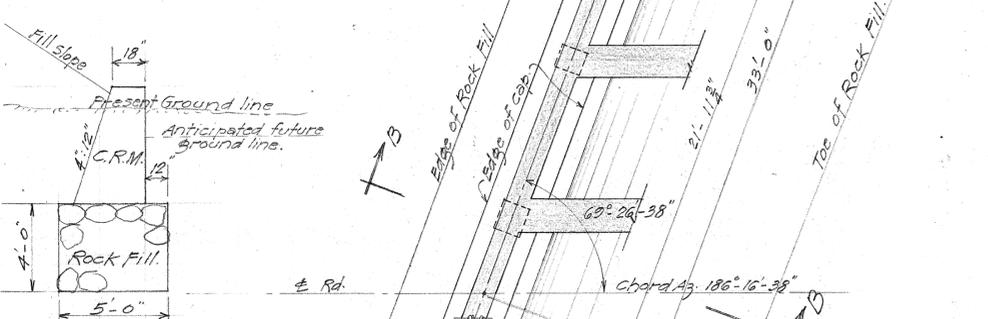
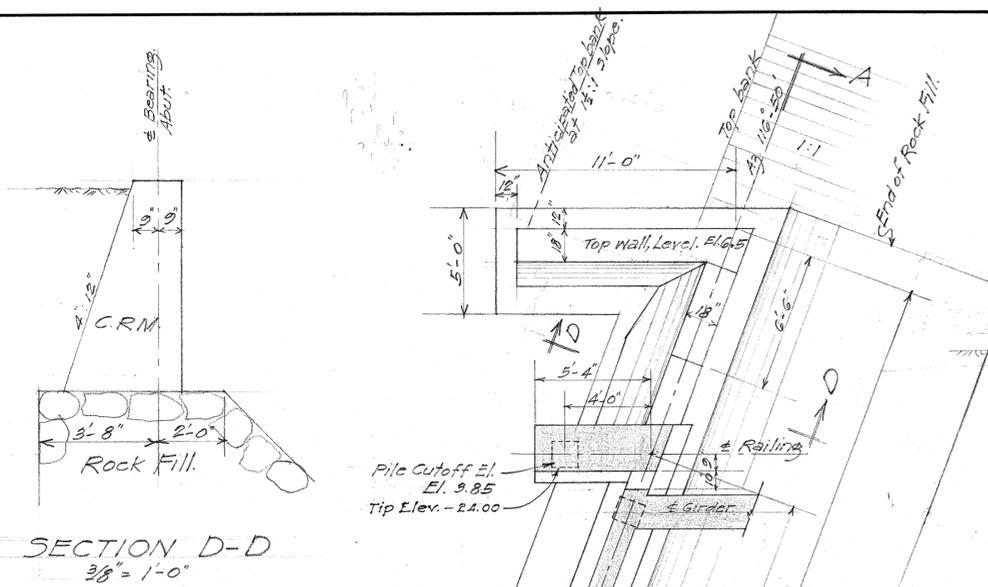
LONG. SECTION PIER #2  
 1/4" = 1'-0"

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

TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
 WAIKAEA BRIDGE  
 KAUAI BELT RD. FAF 12(14)  
 Nov. 1945  
 SHEET No 3 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	F 12(4)	1945	11	20

Revised: Mar. 1947  
 Revision: Concrete piles in Abut. No. 2 eliminated and composite piles substituted.



**Materials:** The rock shall be sound stone which will resist weathering. Approximately twenty (20) to thirty (30) percent of the stones shall consist of pieces weighing not less than one hundred (100) pounds each and the balance shall consist of smaller pieces weighing between one (1) and fifty (50) pounds each.

**Construction Methods:** The stones may be placed by dumping, except the outside layer on the stream face, which shall be placed by hand and neatly trimmed down to El. -2.0. Large stones shall be used for this layer.

REV. Mar. 1947

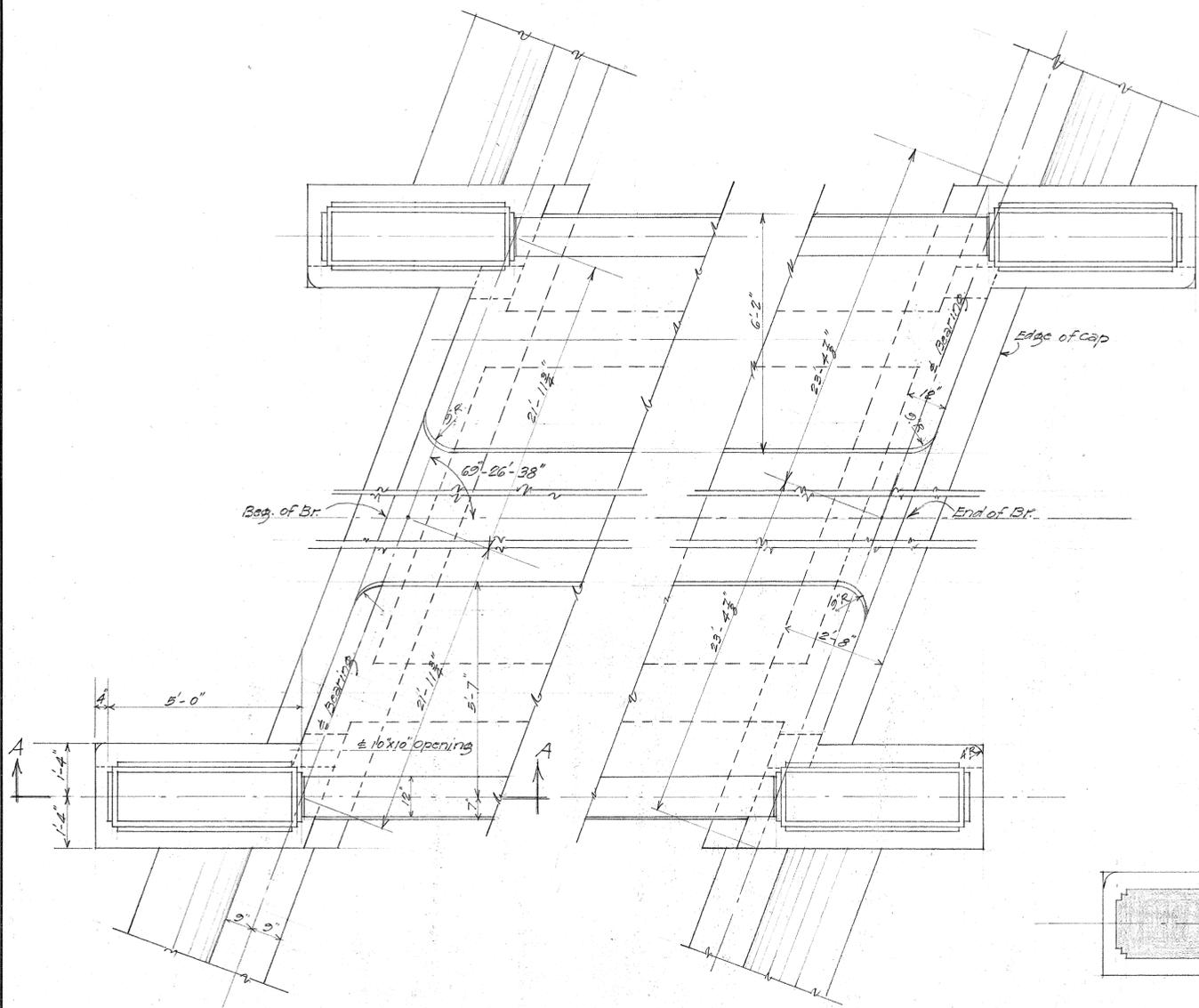
Remarks: All Socket piles 30' long.

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

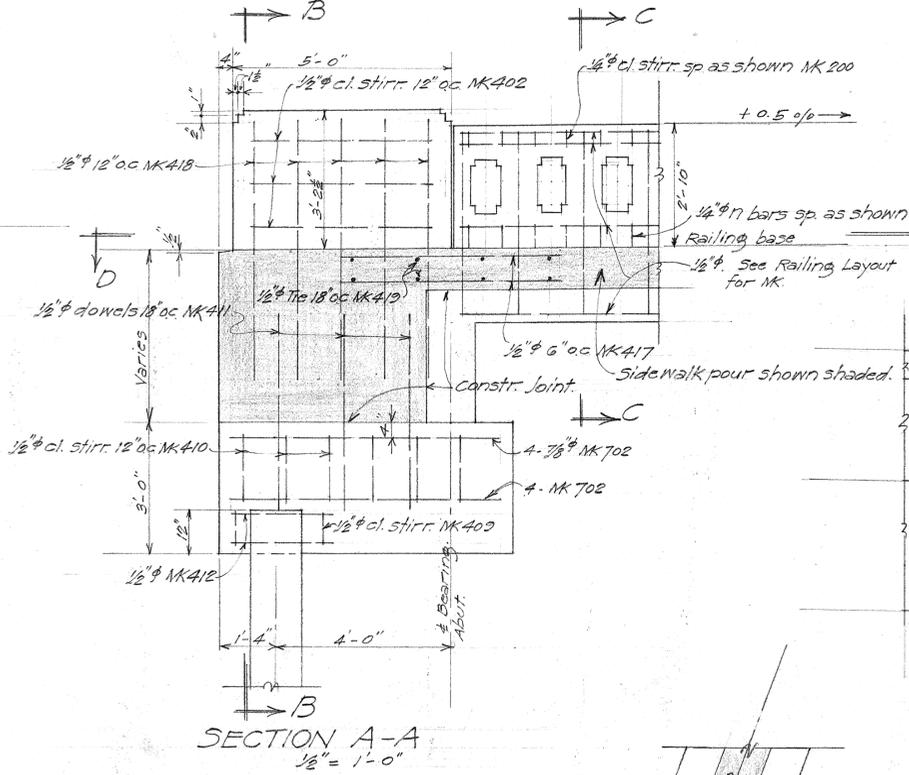
TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
**WAIKAEA BRIDGE**  
 KAUAI BELT RD F 12(4)  
 NOV. 1945

SHEET No 4 OF 5 SHEETS

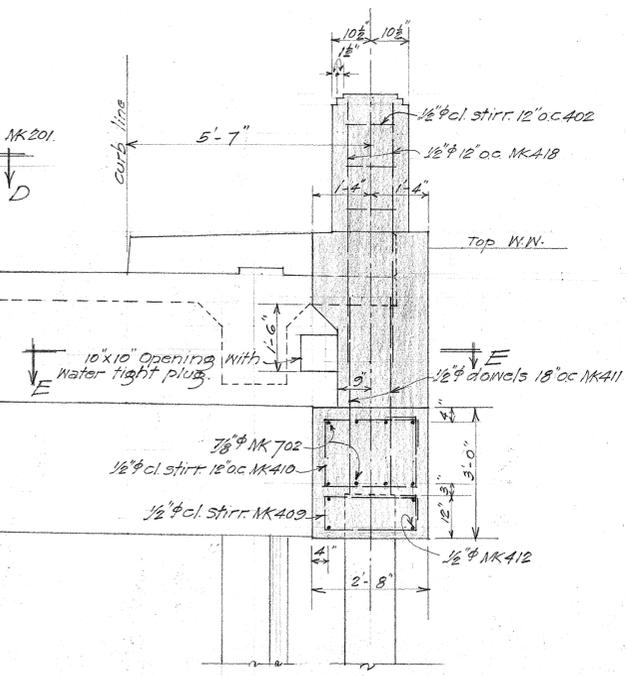
**5188.11**



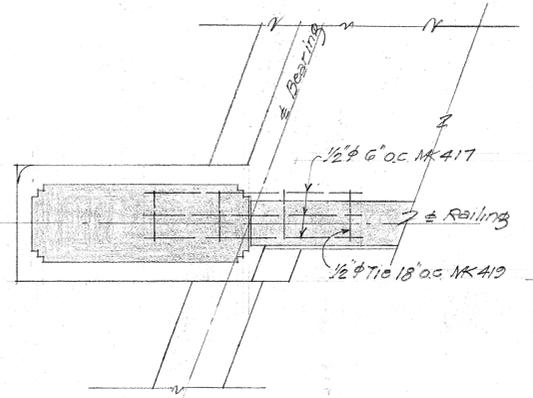
PLAN AT BEG AND END OF BRIDGE  
 $\frac{1}{2}" = 1'-0"$



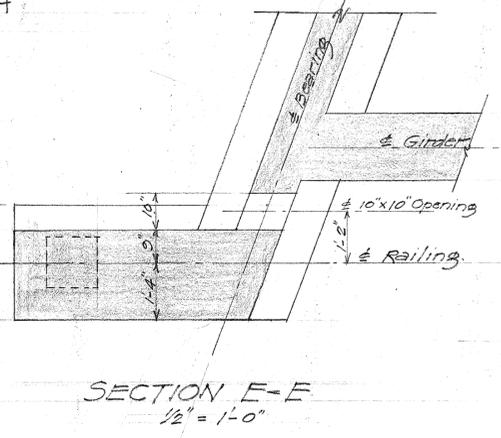
SECTION A-A  
 $\frac{1}{2}" = 1'-0"$



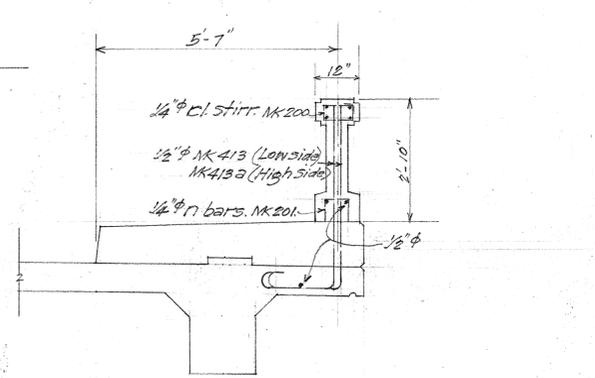
SECTION B-B  
 $\frac{1}{2}" = 1'-0"$



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



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

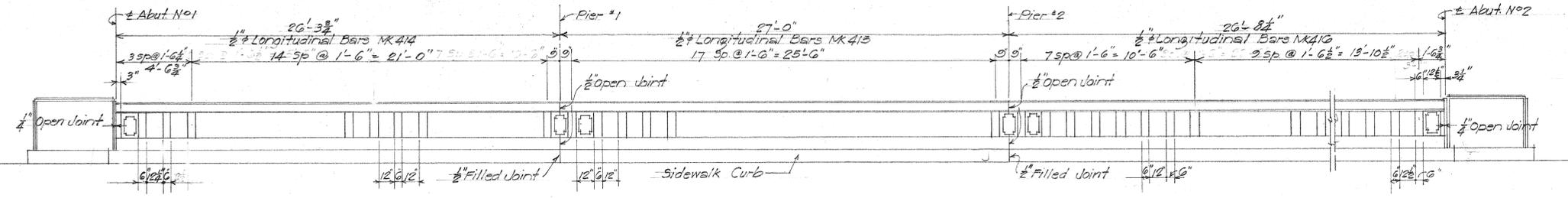


SECTION C-C  
 $\frac{1}{2}" = 1'-0"$

NOTE: Change of Railing Details  
 The railing details shown are hereby deleted. In lieu thereof the railings shall be built as detailed for Project No. F 12 (15) without changing the width of the supporting slabs. (Authorized by Work Order No. 6, dated June 9, 1948.)

Revised: 6-9-48

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
NO. BOOK	



LEFT RAILING LAYOUT  
 Scale  $\frac{1}{2}" = 1'-0"$  Right Railing layout similar but turned end for end

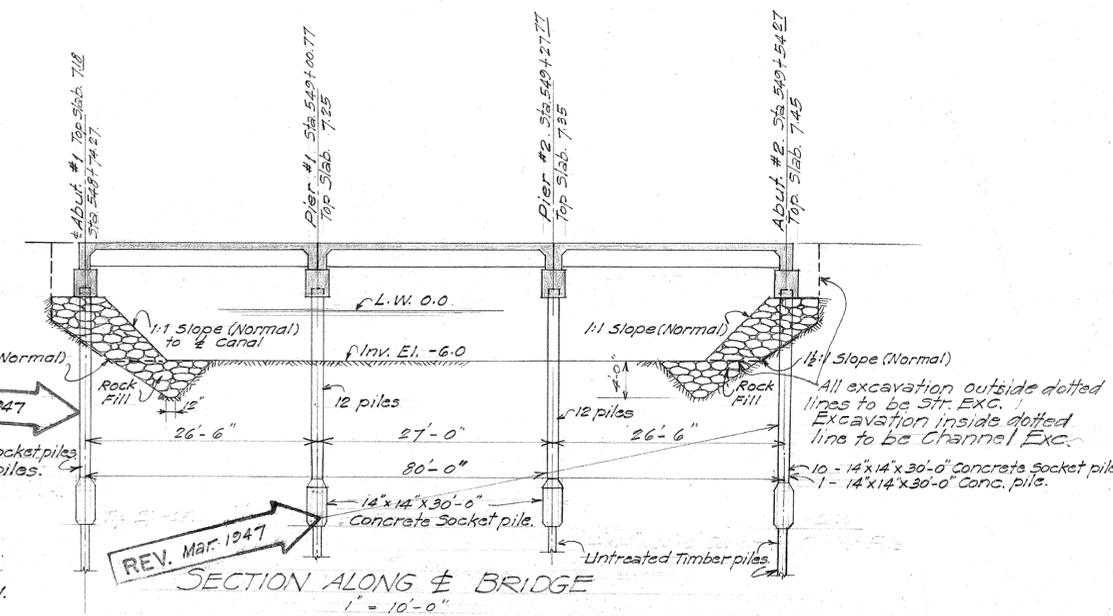
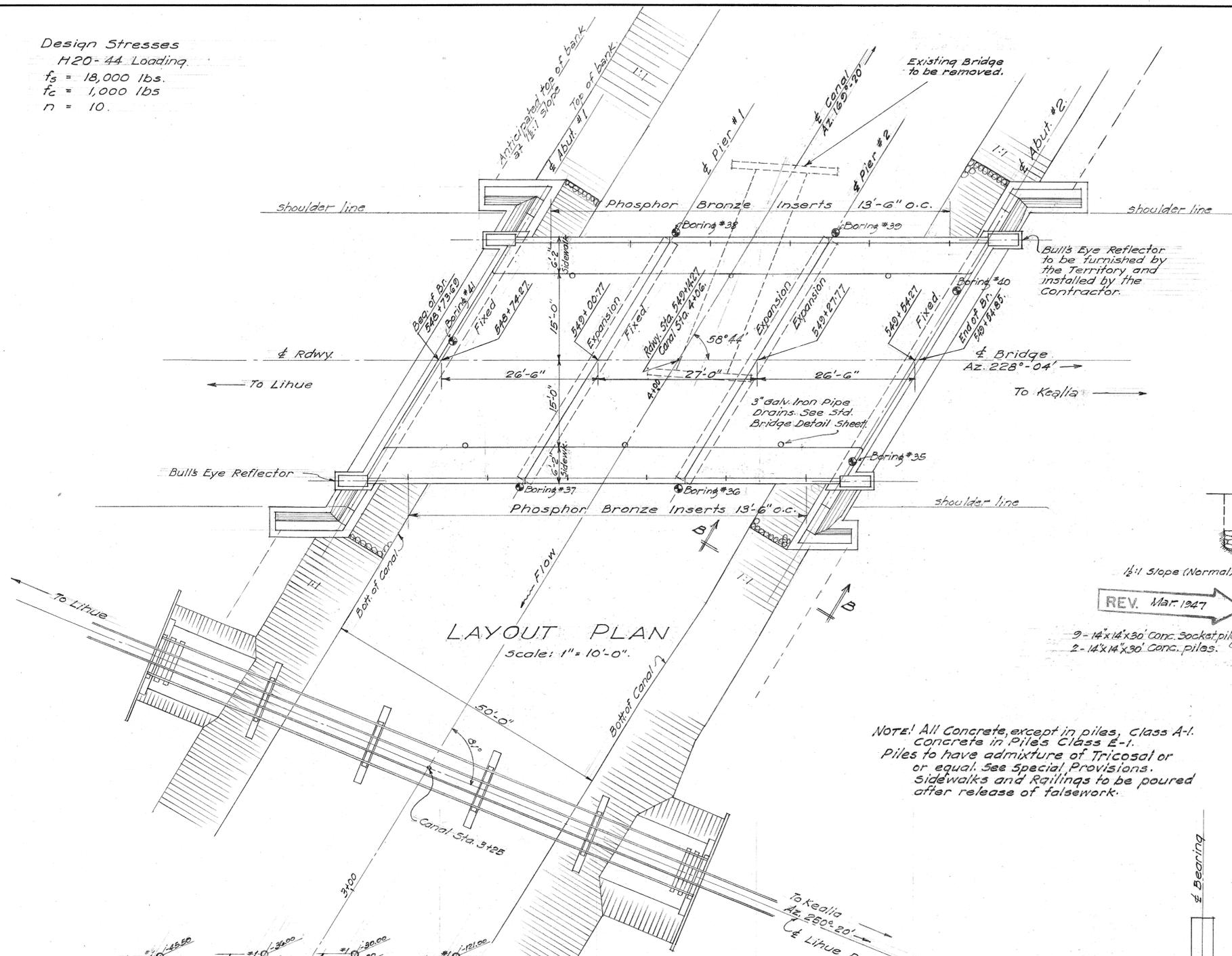
OBSOLETE

TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
**WAIKAEA BRIDGE**  
 KAUALA BELT RD F 12(14)  
 Nov. 1945.

SEE REVISED PLANS

Design Stresses  
H20-44 Loading  
 $f_s = 18,000$  lbs.  
 $f_c = 1,000$  lbs.  
 $n = 10$ .

Revised: Mar. 1947  
Revision: All concrete piles except those already driven under the abutment end posts eliminated and composite piles substituted. Original boring data eliminated. New borings located on Layout Plan. Estimated Quantities changed.

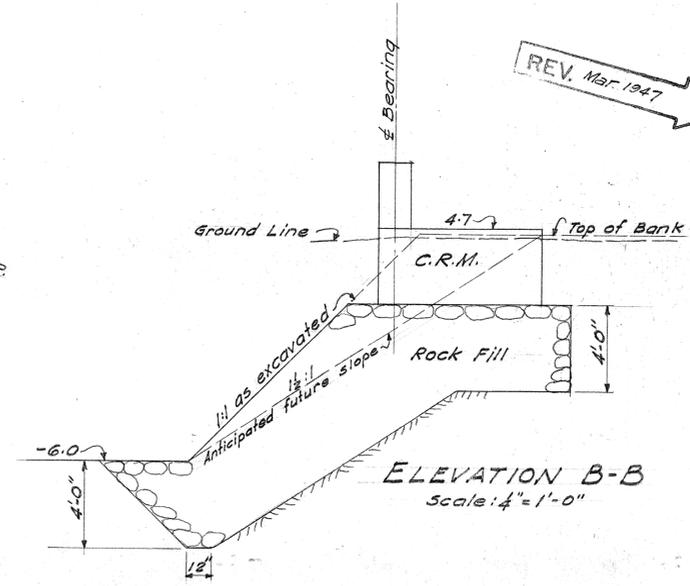
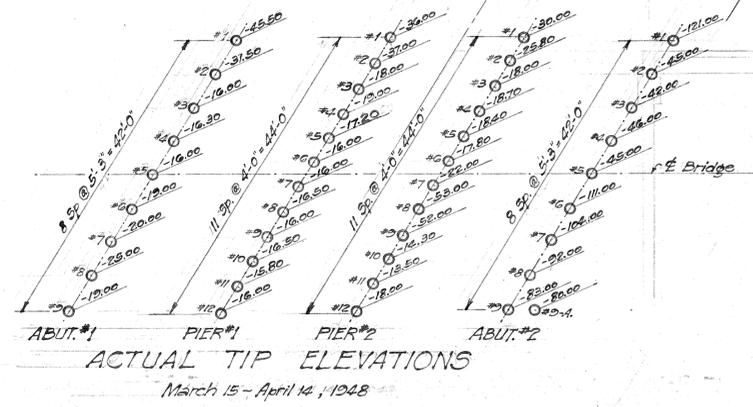


NOTE: All Concrete, except in piles, Class A-1. concrete in Piles Class E-1. Piles to have admixture of Tricosal or or equal. See Special Provisions. Sidewalks and Railings to be poured after release of falsework.

ESTIMATED QUANTITIES.

Item	Superstr.	Railing & End Post	Piers	Abutments	Total
Channel Exc.					*
Class A-1 Conc.	194.70 C.Y.	13.70 C.Y.	27.81 C.Y.	34.04 C.Y.	270.25 C.Y.
Reinf. Steel	38,157 lbs.	2,234 lbs.	3,117 lbs.	38,56 lbs.	47,364 lbs.
14" x 14" x 30" Conc. Piles				3 pcs.	3 pcs.
14" x 14" x 30" Conc. Socket Piles			24 pcs.	19 pcs.	43 pcs.
Untreated Timber Piling			2280 lin. ft.	1920 lin. ft.	4200 lin. ft.
Rock Fill				415 C.Y.	415 C.Y.
Bituminous Binder	0.87 tons				0.87 tons
Screenings	1.4 C.Y.				1.4 C.Y.
Chips	0.8 C.Y.				0.8 C.Y.
Keystone	7.4 C.Y.				7.4 C.Y.
Structural Exc.				310 C.Y.	310 C.Y.
Cement Rubble Masonry				29.5 C.Y.	29.5 C.Y.

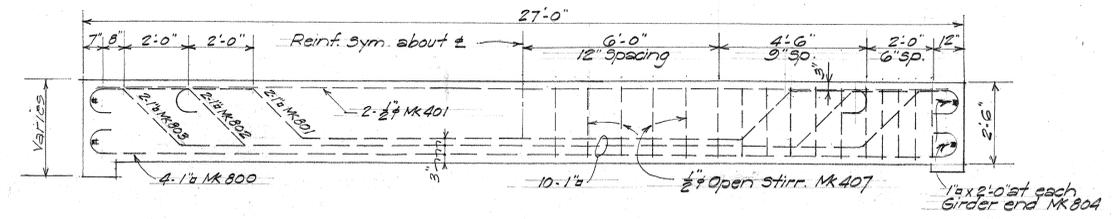
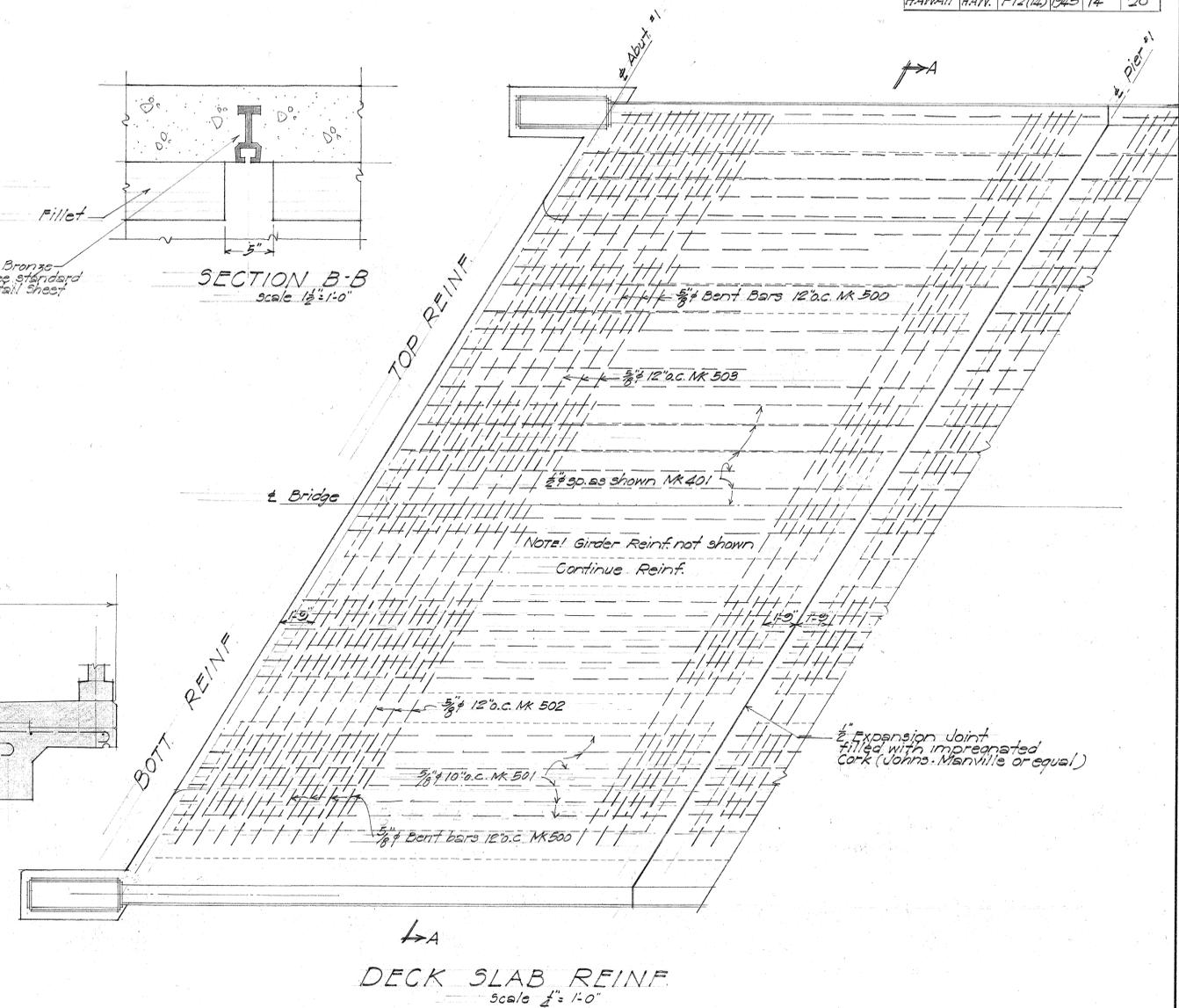
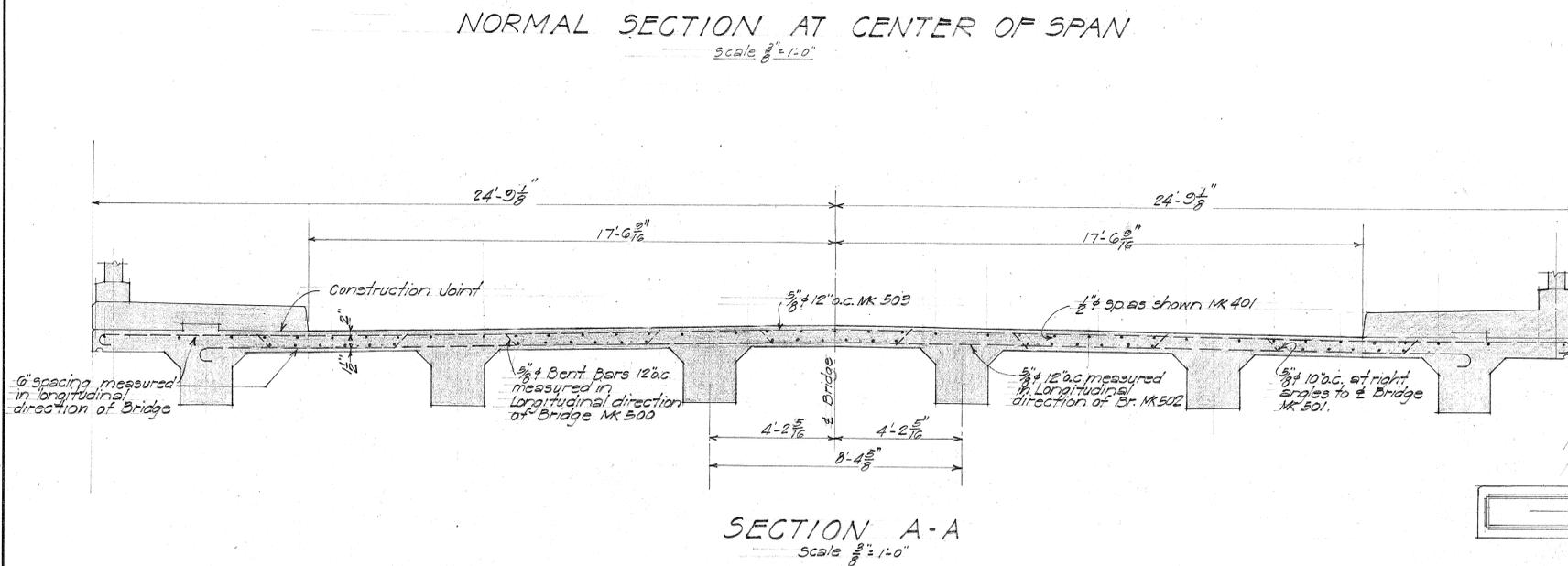
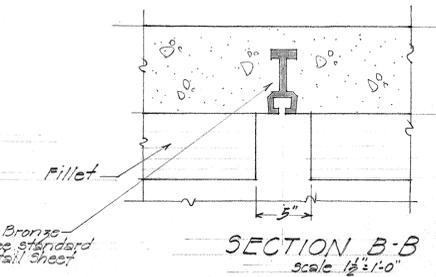
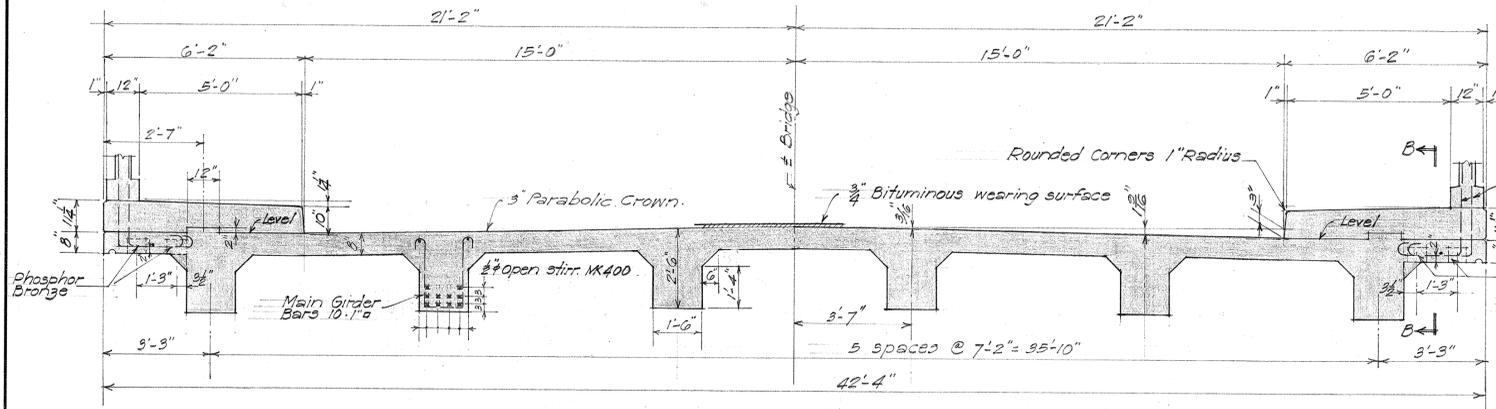
\* There will be some channel excavation. See Special Provisions.



TERRITORIAL HIGHWAY DEPARTMENT  
TERRITORY OF HAWAII  
MOIKEHA BRIDGE  
KAUAI BELT RD. PAP 12(14)  
NOV. 1945

ORIGINAL PLAN  
DESIGNED BY  
QUANTITIES BY  
NOTE BOOK  
CHECKED BY

Rev. 1-21-46 Channel Exc. Defined



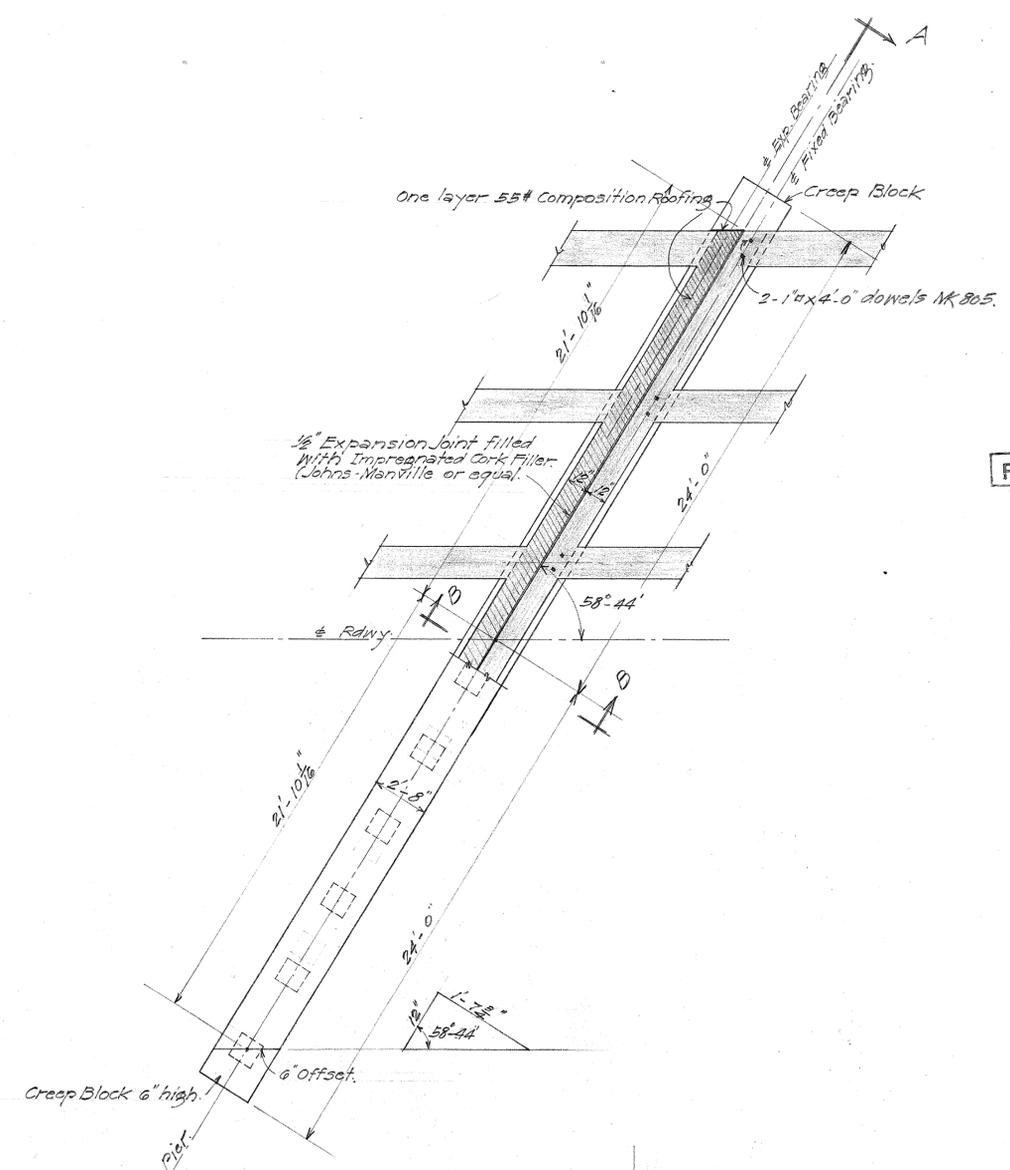
On account of unavailability of materials, contractor has substituted for 10-1/4 bars, 6-7/8 bars and 4-1/2 bars.  
 9/20/46

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

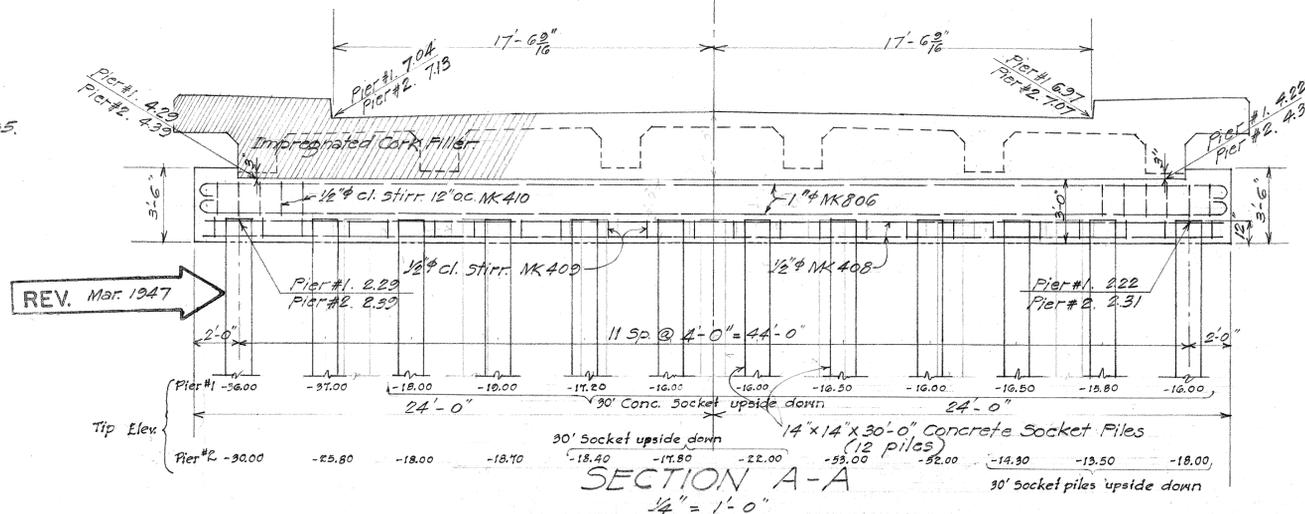
TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
**MOIKEHA BRIDGE**  
 KAUAI BELT RD. F 12 (4)  
 Nov. 1945  
 SHEET No. 2 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F/2(14)	1945	15	20

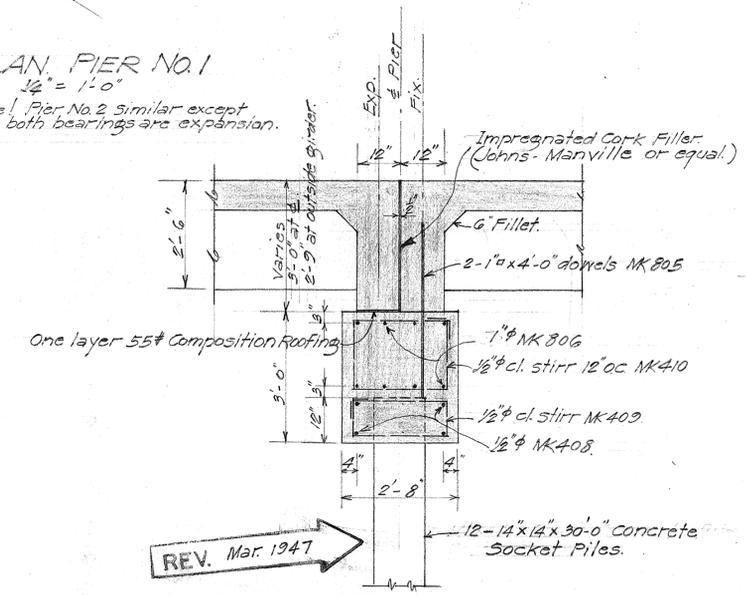
Revised: April 23, 1946  
 Revision: Recess added to Pier #2  
 Revised: Mar. 1947  
 Revision: Concrete piles in piers eliminated and composite piles substituted.



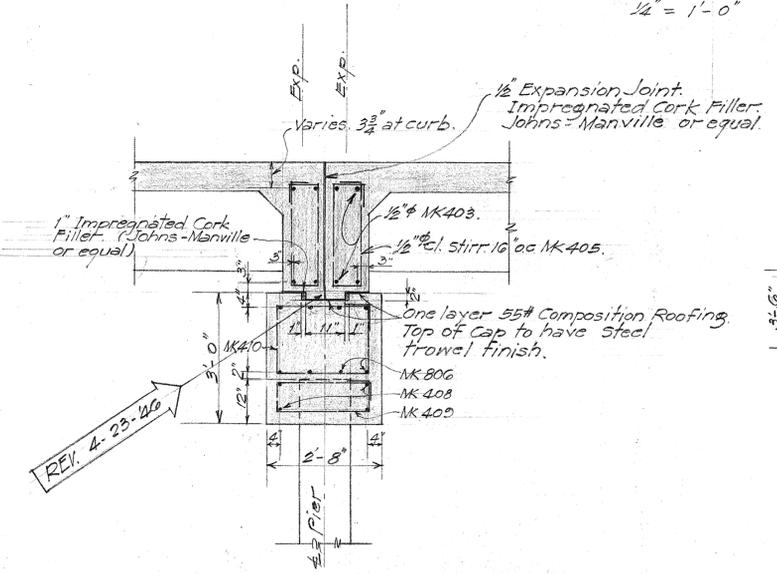
PLAN, PIER NO. 1  
 1/2" = 1'-0"  
 Note: Pier No. 2 similar except that both bearings are expansion.



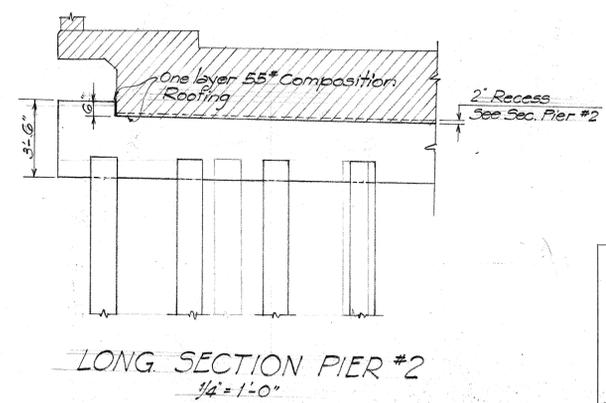
SECTION A-A SHOWING BEAM REINF.  
 1/2" = 1'-0"



SECTION B-B  
 1/2" = 1'-0"



SECTION PIER NO. 2  
 1/2" = 1'-0"

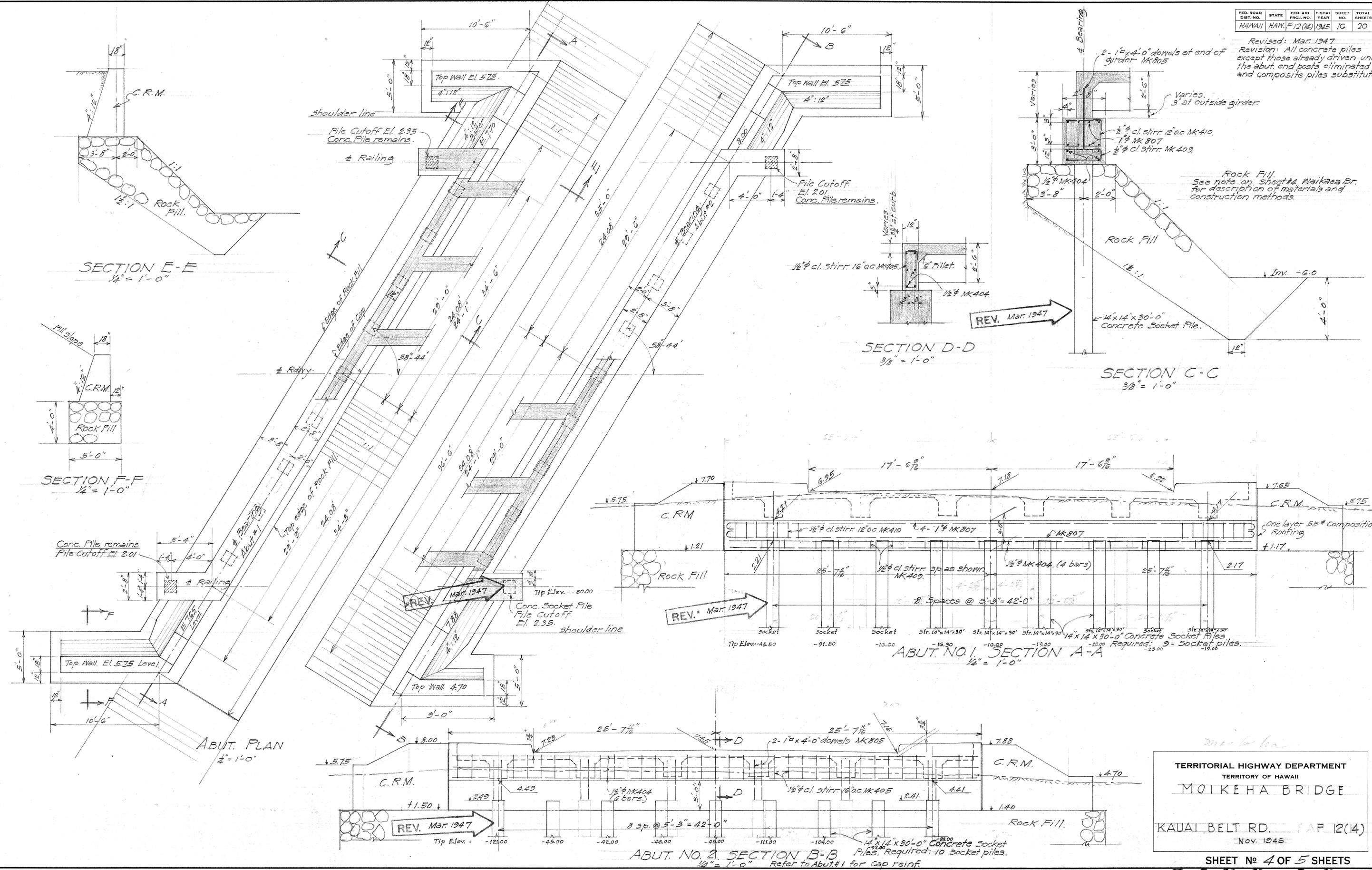


LONG SECTION PIER #2  
 1/2" = 1'-0"

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

Moukaha  
 TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
 MOI KEHA BRIDGE  
 KAUI BELT RD. FAF 12(14)  
 Nov. 1945

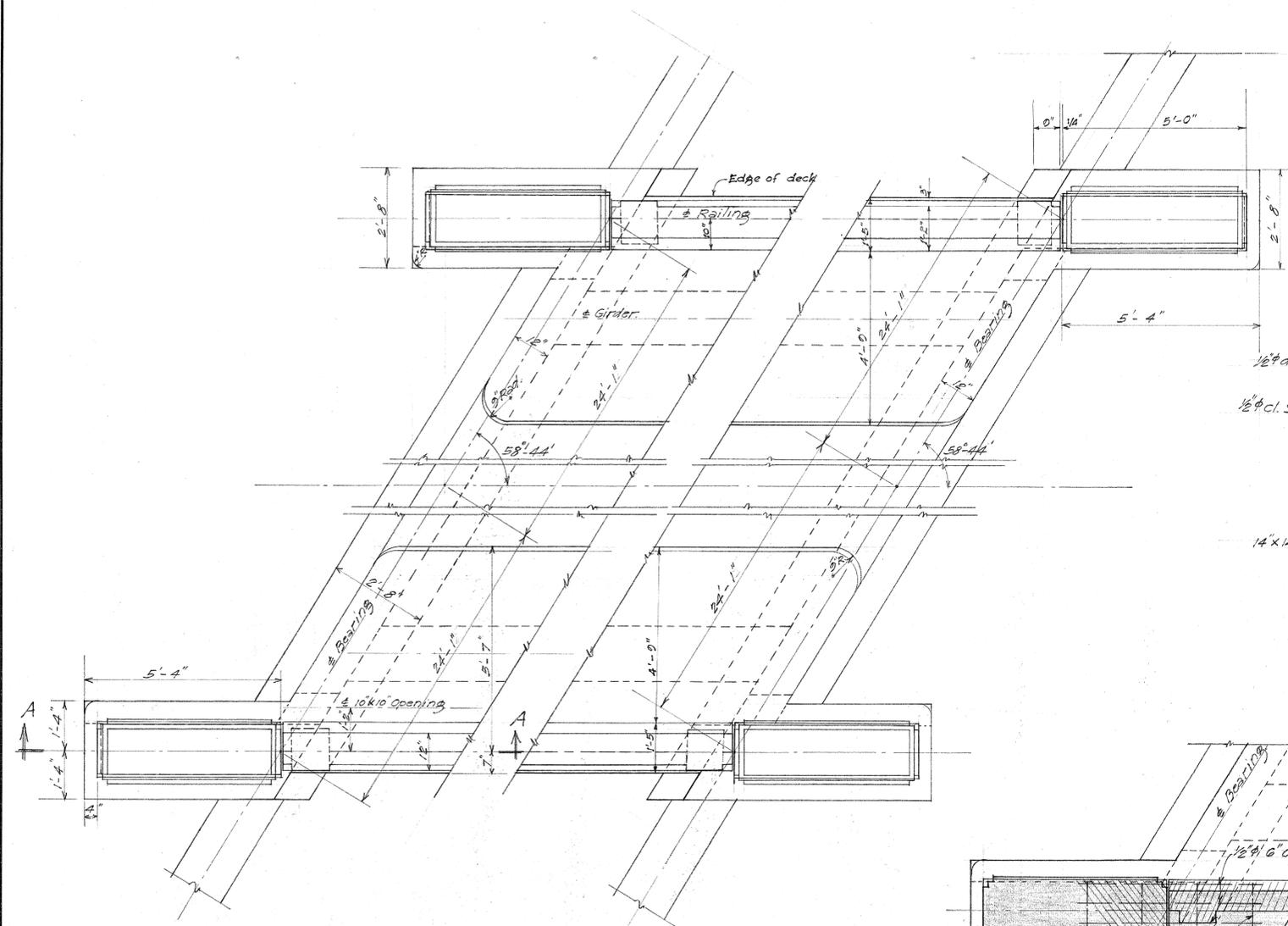
Revised: Mar. 1947  
 Revision: All concrete piles except those already driven under the abut. end posts eliminated and composite piles substituted.



SURVEY PLOTTED BY: DATE: \_\_\_\_\_  
 DESIGNED BY: M.S. STETZEL  
 TRACED BY: \_\_\_\_\_  
 QUANTITIES BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

ORIGINAL PLAN NOTE BOOK No. \_\_\_\_\_

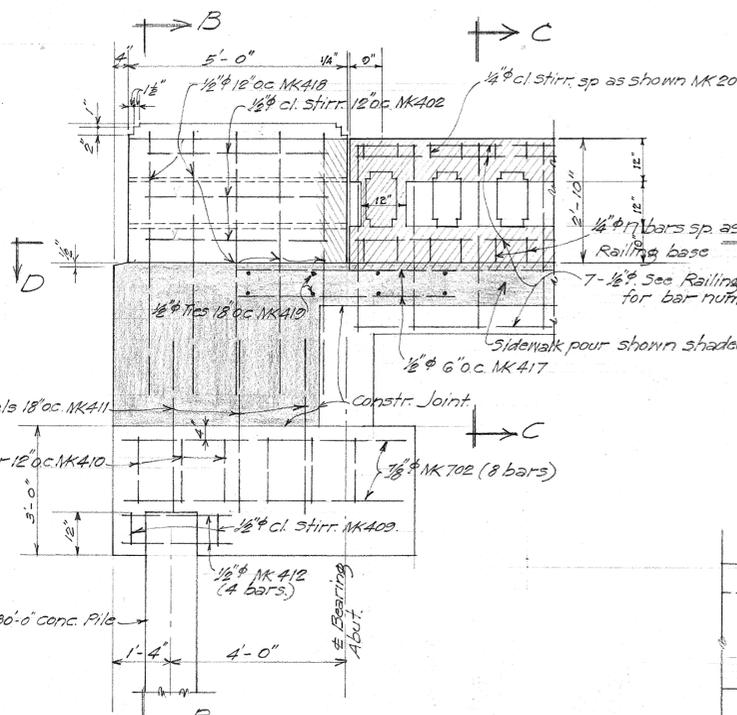
TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
 MOKUHA BRIDGE  
 KAUALI BELT RD. PAF 12(14)  
 Nov. 1945



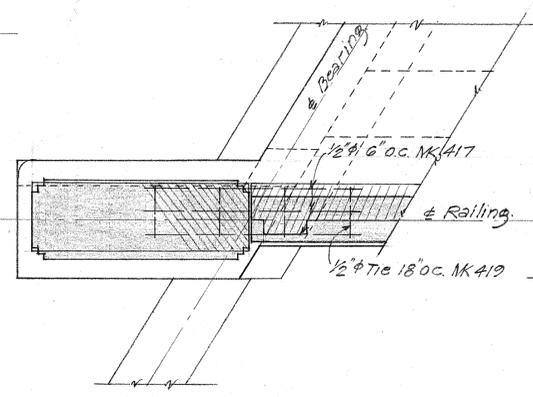
PLAN AT BEG AND END OF BRIDGE  
1/2" = 1'-0"

NOTE: Change of Railing Details.  
The railing details shown are hereby deleted. In lieu thereof the railings shall be built as detailed for Project No. F12(15) without changing the width of the supporting slabs. (Authorized by Work Order No. G, dated June 9, 1948.)

Revised: G-9-48

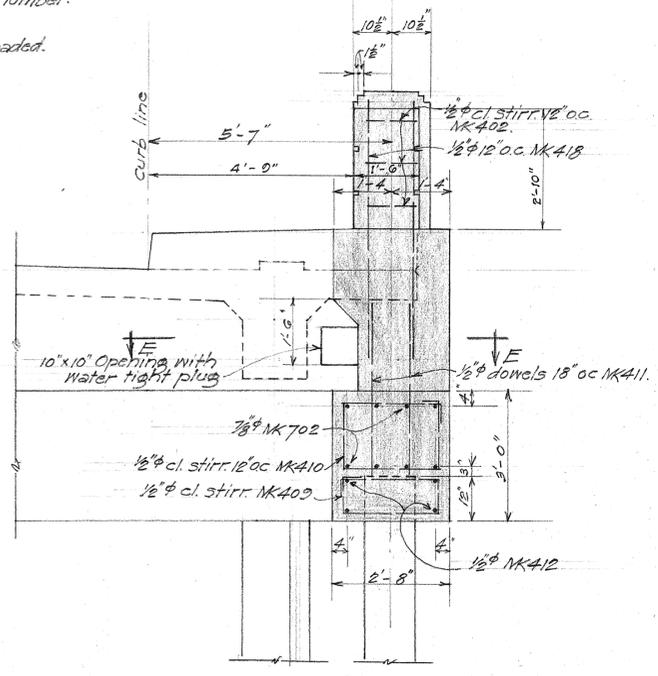


SECTION A-A  
1/2" = 1'-0"

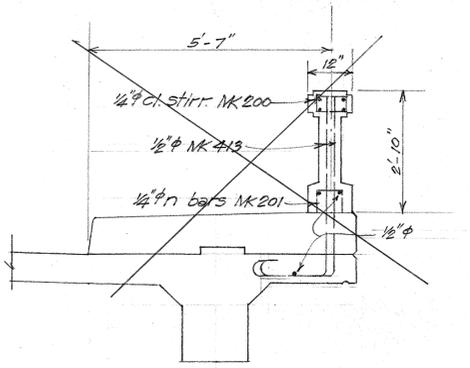


SECTION D-D  
1/2" = 1'-0"

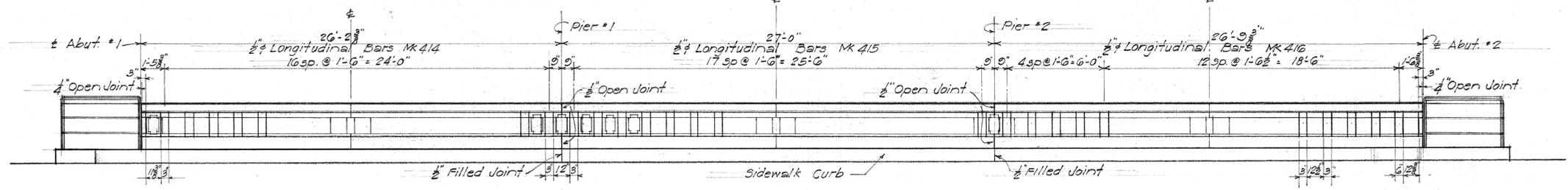
SECTION E-E  
1/2" = 1'-0"  
Note: See Waialua Br. F 12 (15) Sheet No. 5178.14 for Railing and Railing Post details. Use same details for Waikaea Br.



SECTION B-B  
1/2" = 1'-0"



SECTION C-C  
1/2" = 1'-0"



LEFT RAILING LAYOUT  
Scale 1/4" = 1'-0" Right Railing Layout similar but turned end for end.

REVISED RAILING, RAILING POST AND END POST DETAIL.

6/1/48

SURVEY PLOTTED BY: DATE: 1/2/48  
DESIGNED BY: M. E. BARTLETT  
TRACED BY: C. J. FARRIS  
QUANTITIES BY: C. J. FARRIS  
CHECKED BY: C. J. FARRIS

TERRITORIAL HIGHWAY DEPARTMENT  
TERRITORY OF HAWAII  
MOI KEHA BRIDGE  
KAUAI BELT RD. FAF 12(14)  
Nov. 1945

SHEET No 5 OF 5 SHEETS

5188.17