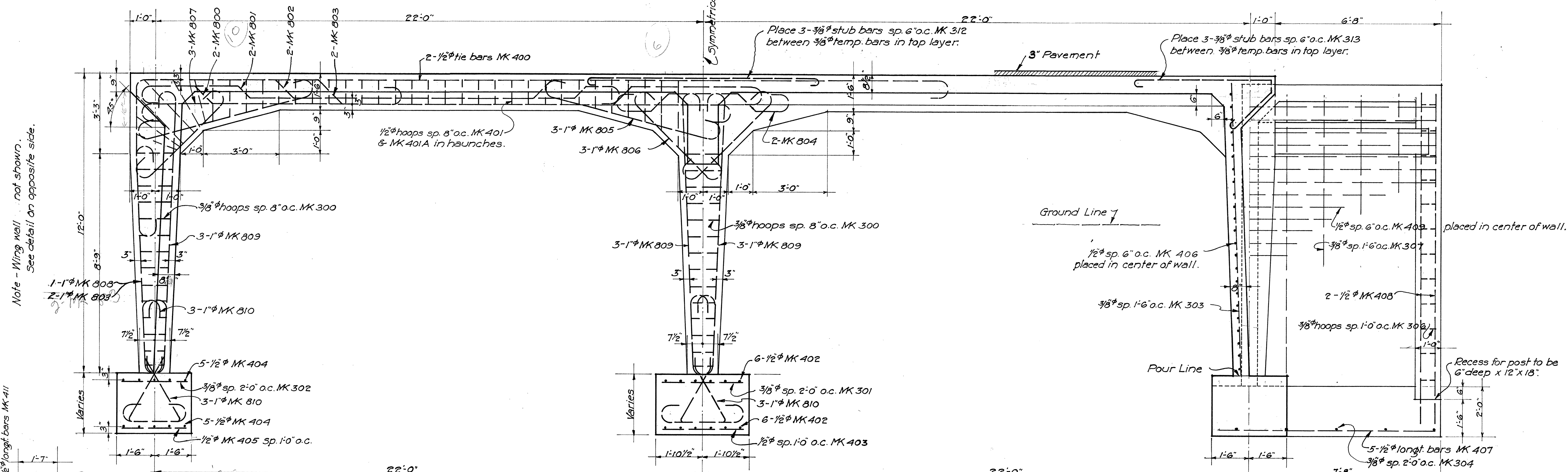




LONGITUDINAL SECTION THRU BRIDGE.

Scale 1/2" = 1'-0"

HALF X-SECTION SHOWING CENTER PIER.

HALF X-SECTION SHOWING END WALL.

CROSS SECTION THRU BRIDGE.

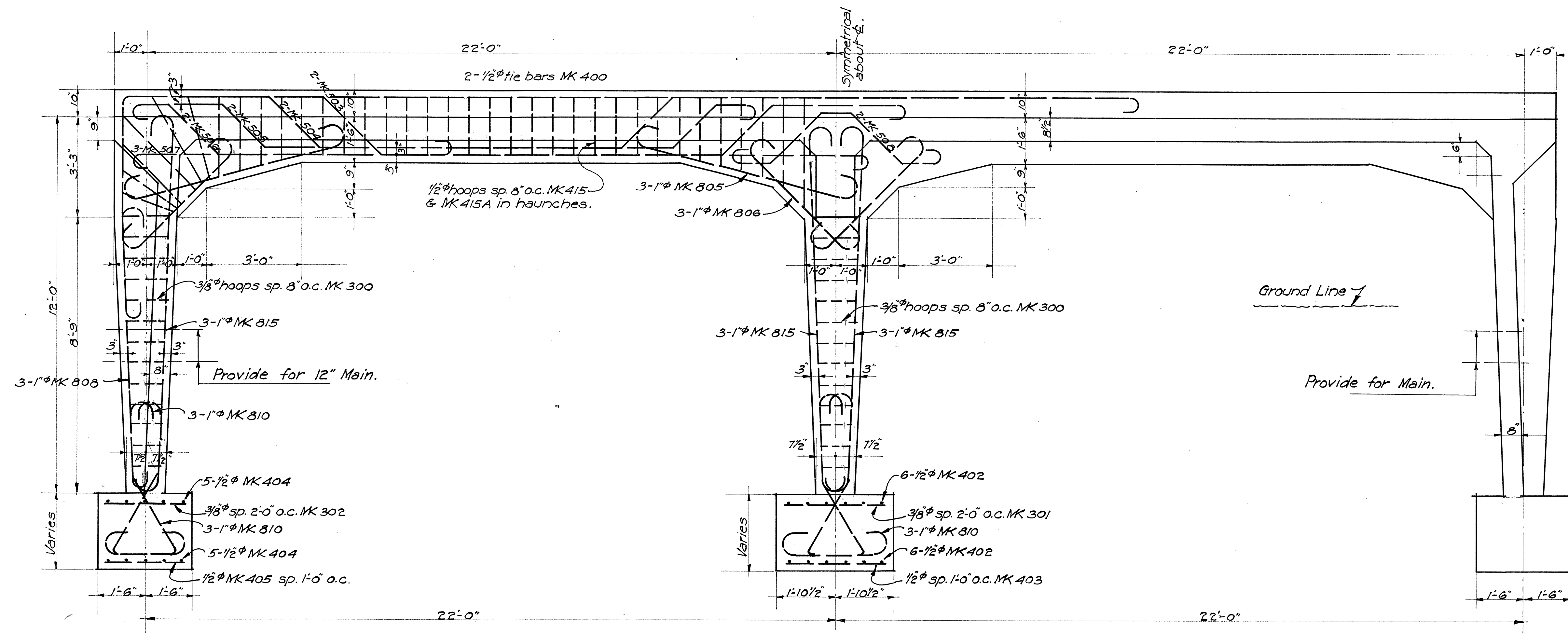
Scale 1/2" = 1'-0"

DETAILS FOR BRIDGES NO. 11 & 12.

Sheet 2 of 5 sheets.

4294.23

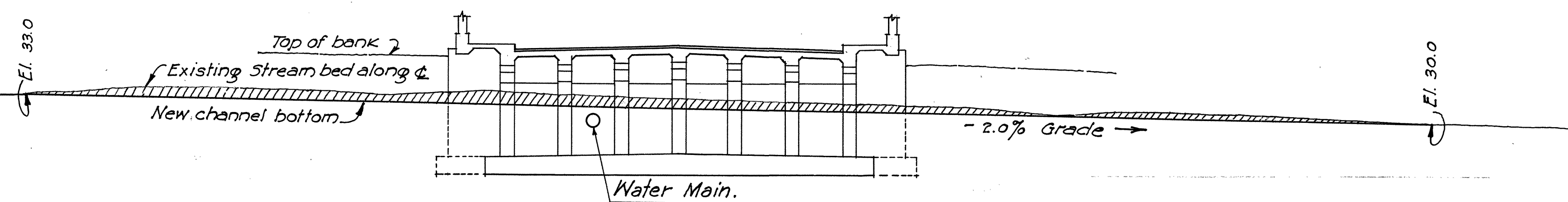
Note - Wing walls are not shown.
See detail on Sheet No. 2.



Note - Wing walls are not shown.
See detail on Sheet No. 2.

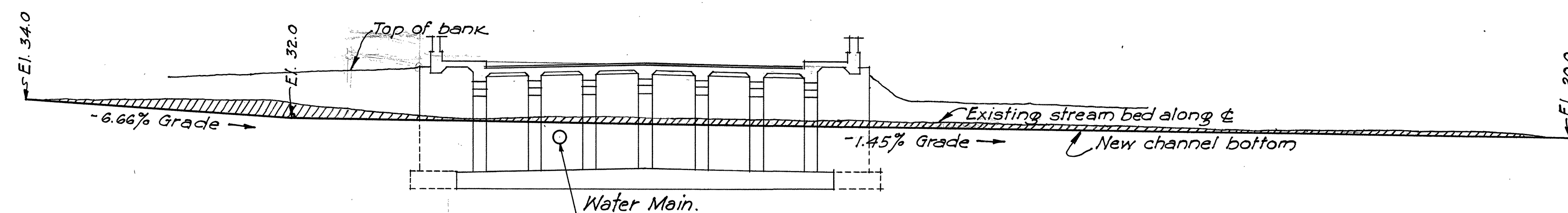
**LONGITUDINAL SECTION THRU BRIDGE
SHOWING OUTSIDE GIRDER REINFORCEMENT.**

Scale 1/2" = 1'-0"



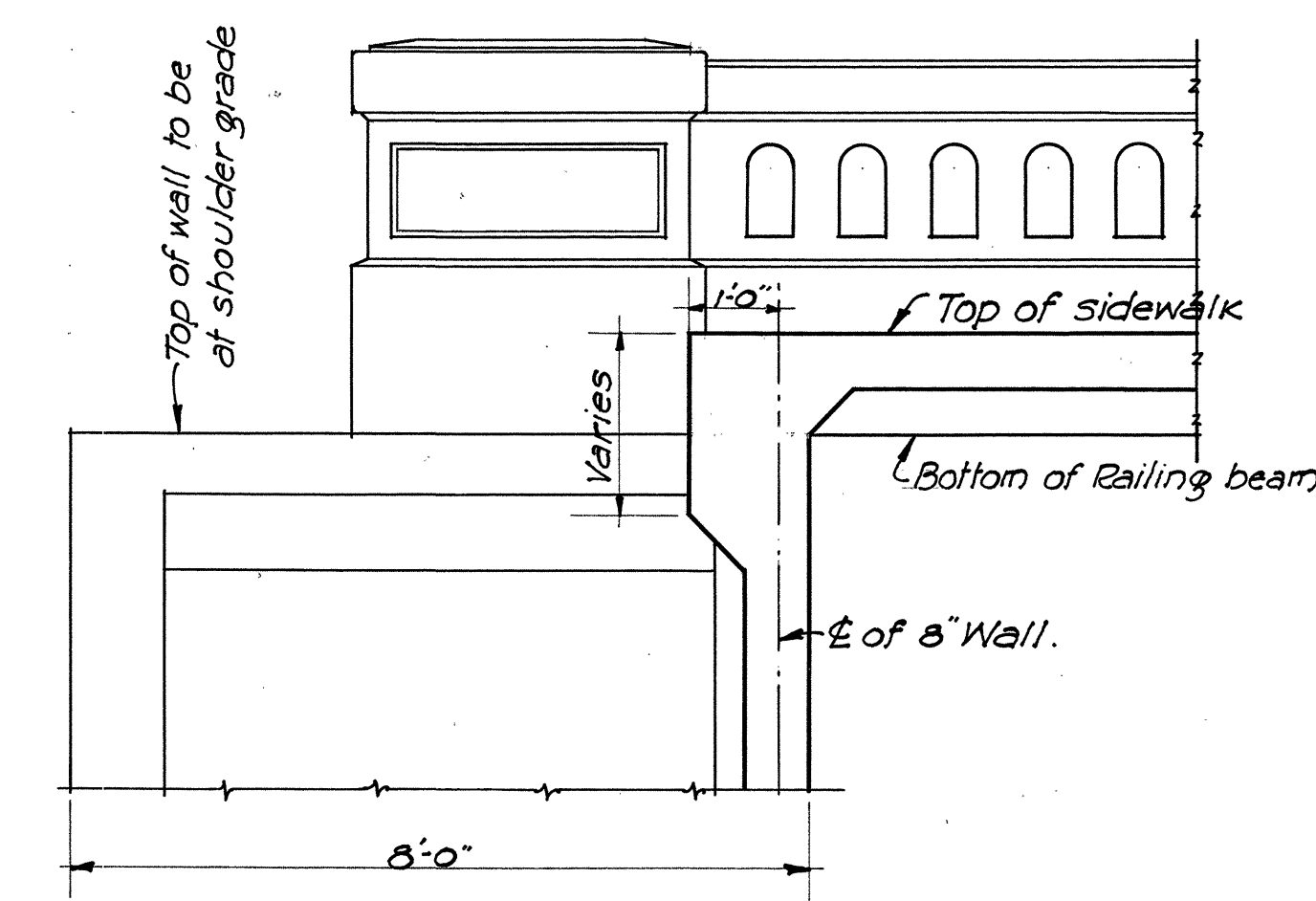
PROFILE OF CHANNEL FOR BRIDGE NO. 11.

Scale 1" = 10'



PROFILE OF CHANNEL FOR BRIDGE NO. 12.

Scale 1" = 10'



DETAIL OF SECTION X-X.

Scale 1/2" = 1'-0"

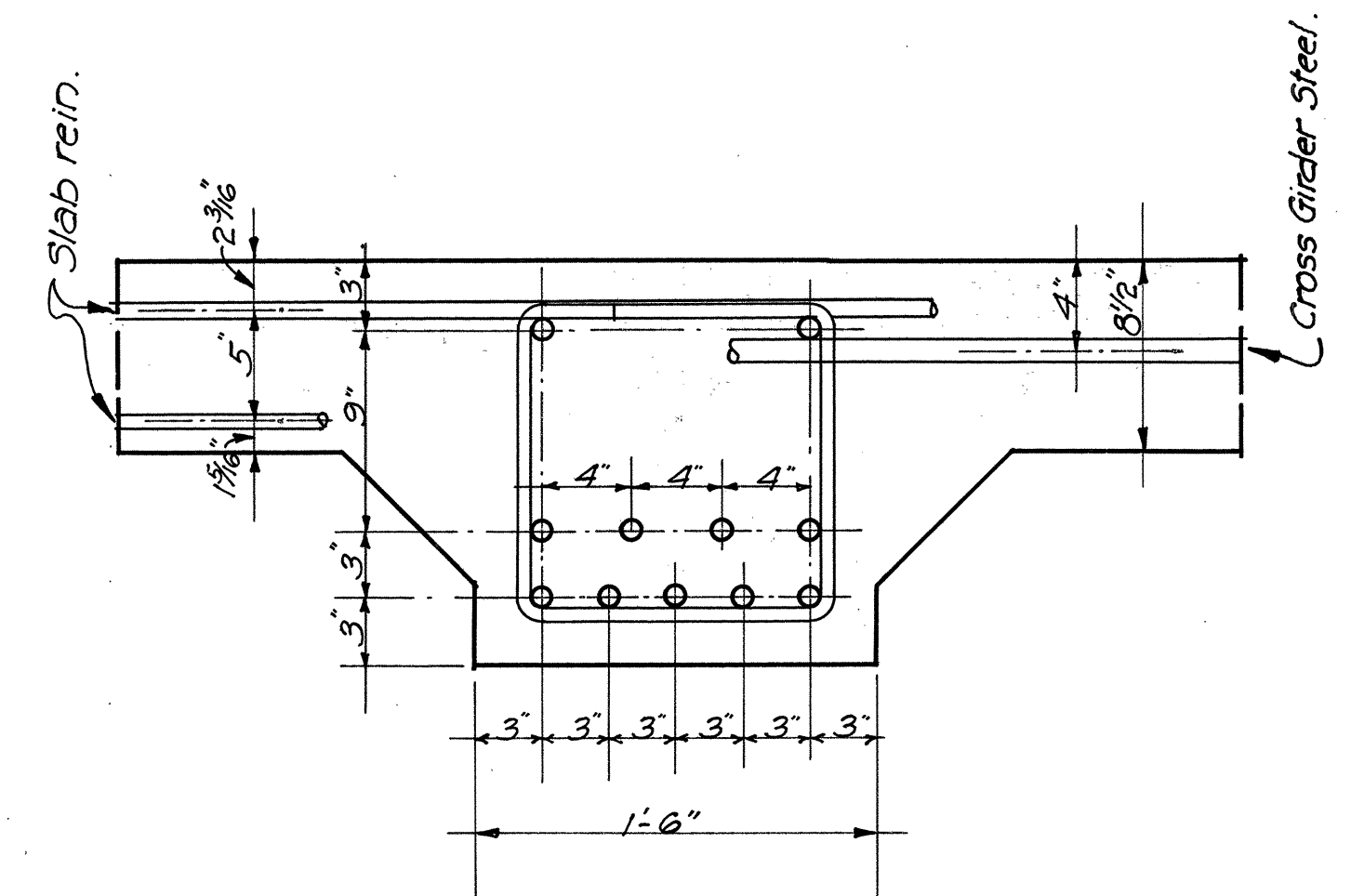
**DETAILS FOR
BRIDGES NO. 11 & 12.**

Sheet 4 of 5 Sheets.

STEEL SCHEDULE FOR ONE BRIDGE

PROJ. ROAD DIST. NO.	STATE	FED. AID YEAR	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	N.E.H. 61	1933	26	51

MK.	DESCRIPTION	LOCATION	SIZE	LENGTH	No. of bars in each unit	No. of units	Total no. of bars wanted	Total Length	Weight per ft.	Total Weight	MK.	DESCRIPTION	LOCATION	SIZE	LENGTH	No. of bars in each unit	No. of units	Total no. of bars wanted	Total Length	Weight per ft.	Total Weight
800																					



SEC. THRU BEAM
SHOWING REINFORCING.
Scale 1 1/2" = 1'-0"

MK.	DESCRIPTION	LOCATION	SIZE	LENGTH	No. of bars in each unit	No. of units	Total no. of bars	Total Length	Weight per foot.	Total Weight.
503		Outside Beams	3/8"	25'-2"	2	4	8	201.44	1.06	213.53
504		"	"	42'-1"	2	4	8	330.00	"	349.80
505		"	"	22'-3"	2	4	8	178.00	"	188.68
506		"	"	27'-2"	2	4	8	217.44	"	230.48
507		"	"	24'-9"	3	4	12	297.00	"	314.82
508		"	"	9'-4"	2	2	4	37.40	"	39.64
415		"	1/2"	6'-9"	19	4	76	509.96	0.68	346.77
415A		"	"	Varies				548.00	"	372.64
815		Center Col. End Col.	1"	14'-2"	6	2	24	340.08	2.70	918.21
		End Posts	1/2"	8'-4"	4	4	16	133.28	0.68	90.83
		Center Posts	"	6'-4"	4	2	8	50.64	"	34.43

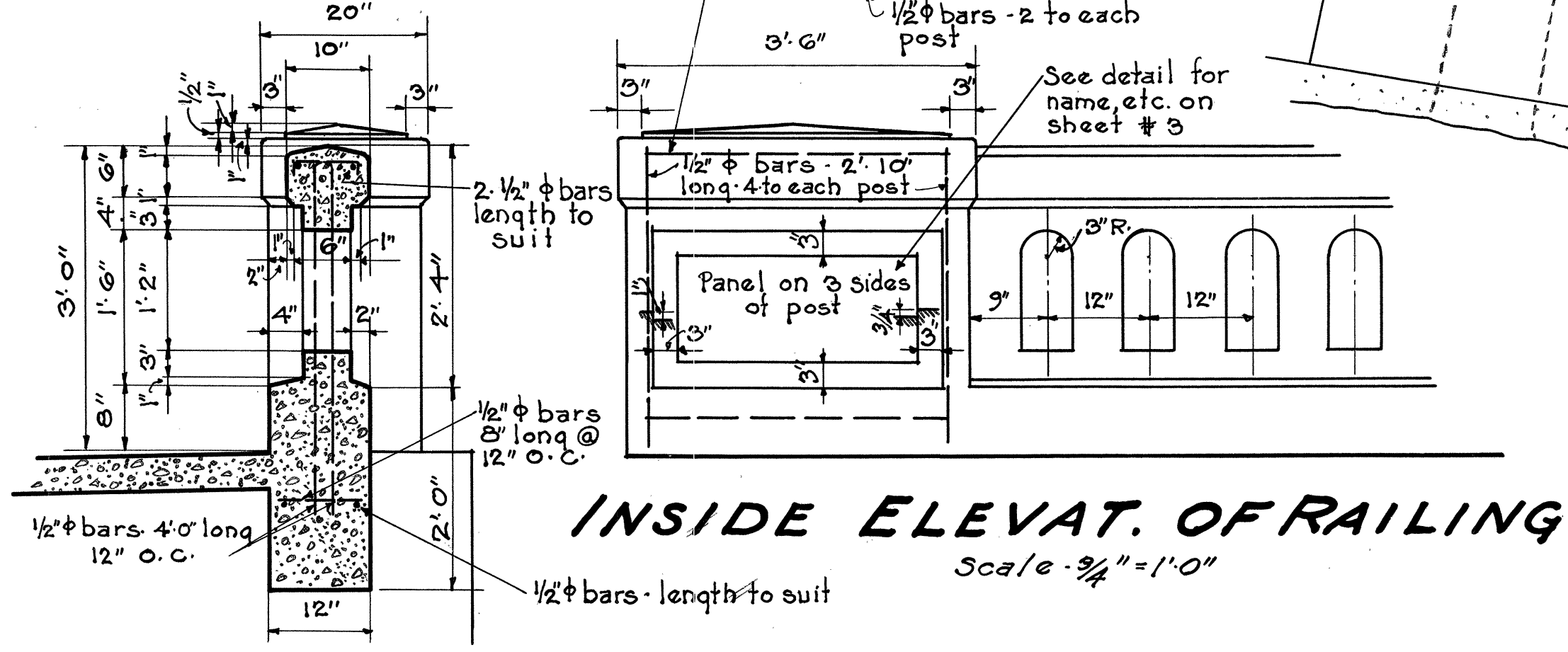
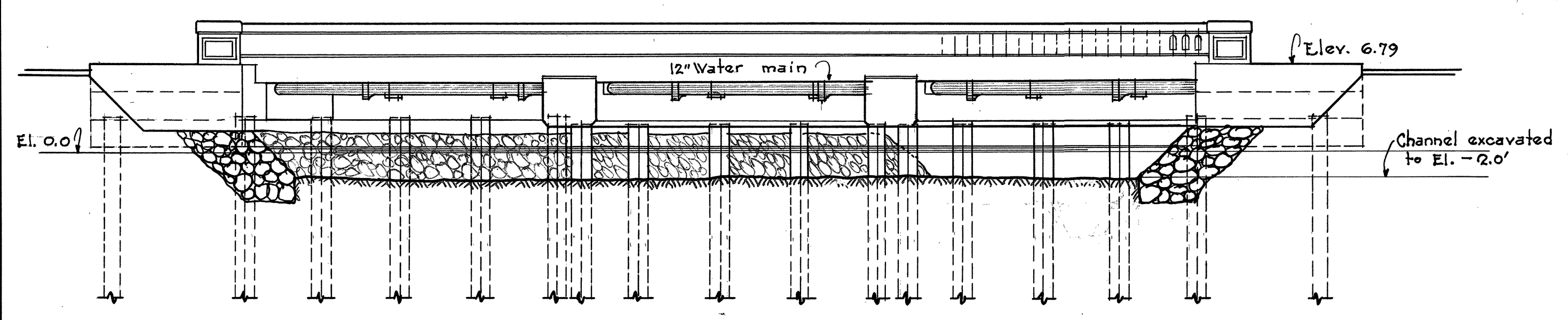
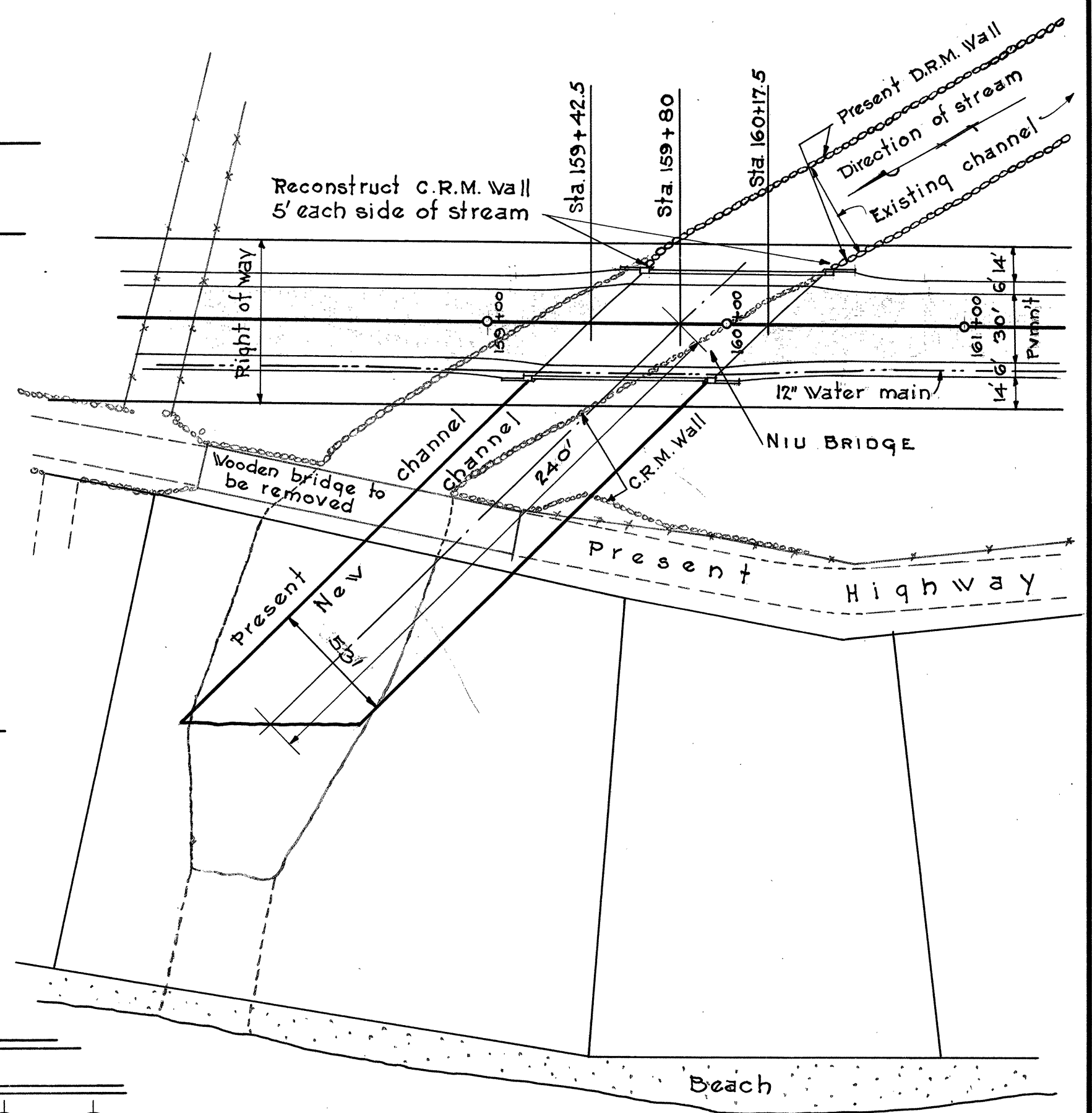
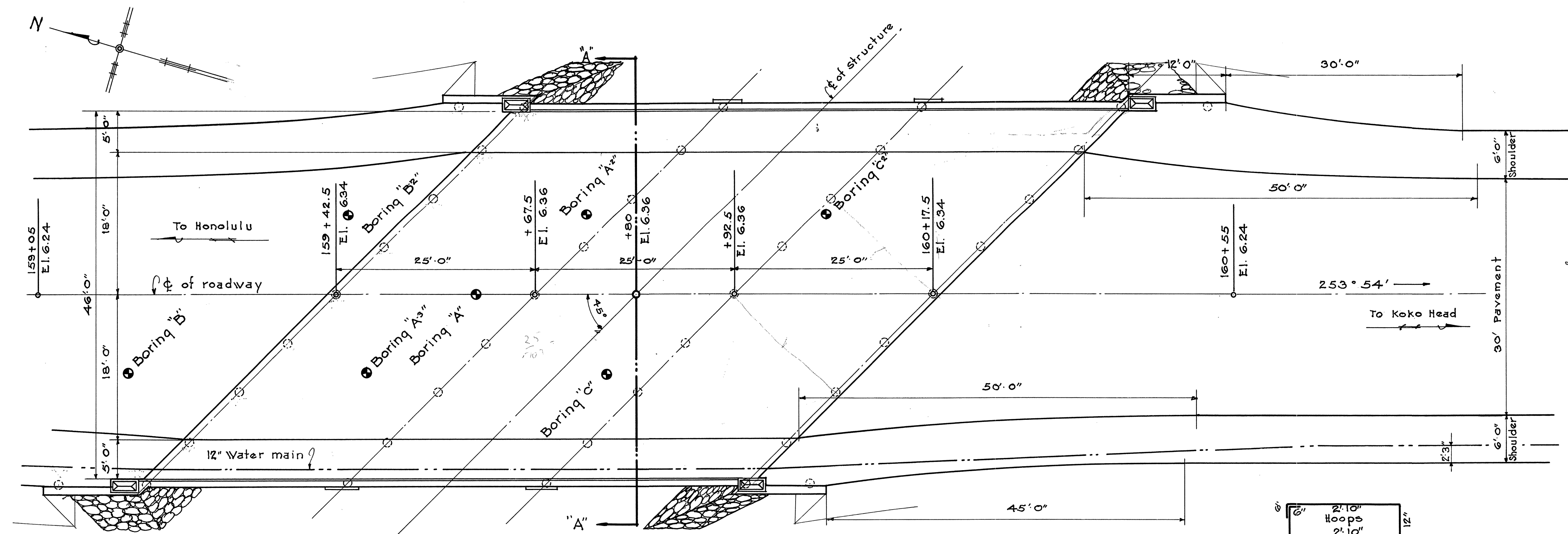
Total — 39,310.37*

DETAILS FOR
BRIDGES NO. 11 & 12.
Sheet 5 of 5 Sheets

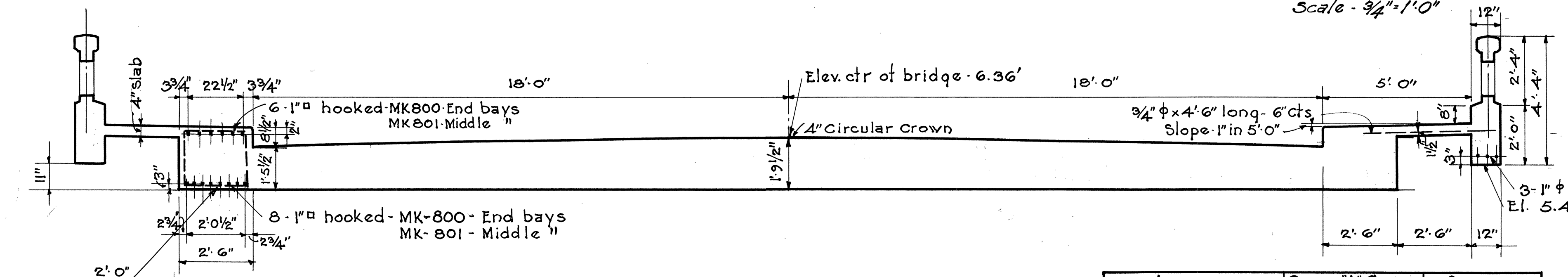
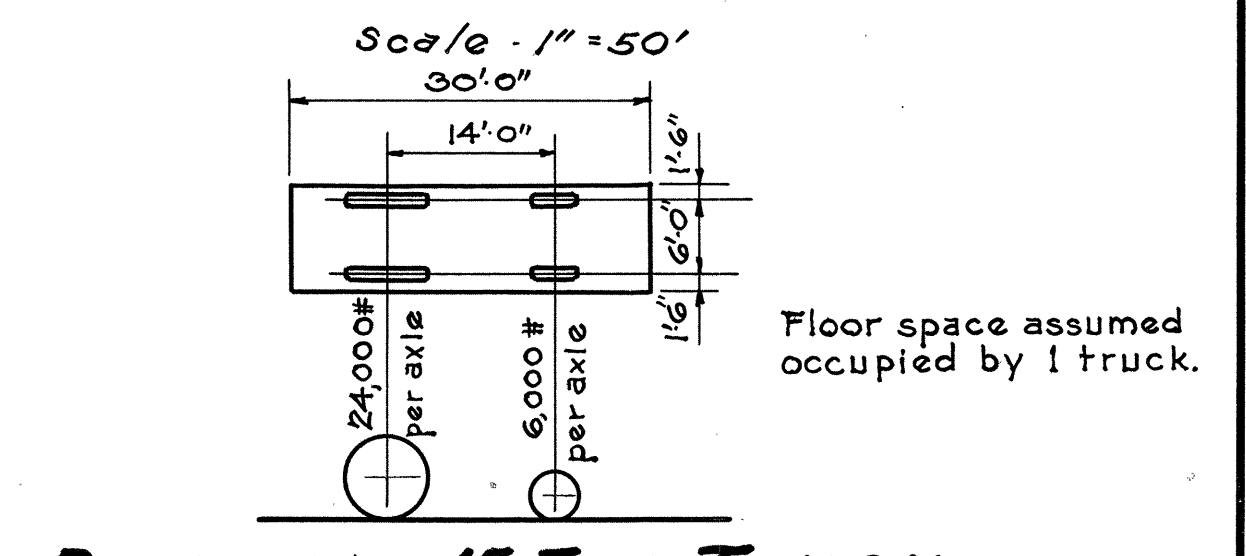
4294.26

ORIGINAL SUBMITTED BY: H.K.V. DATE: 1/33.
DRAWN BY: M.C.G.
CHECKED BY: C.F.W.
NOTED BY: C.F.W.
QUANTITIES BY: C.F.W.
COPIED BY: C.F.W.

Revisions in red by C.F.W. April 5, 1934.



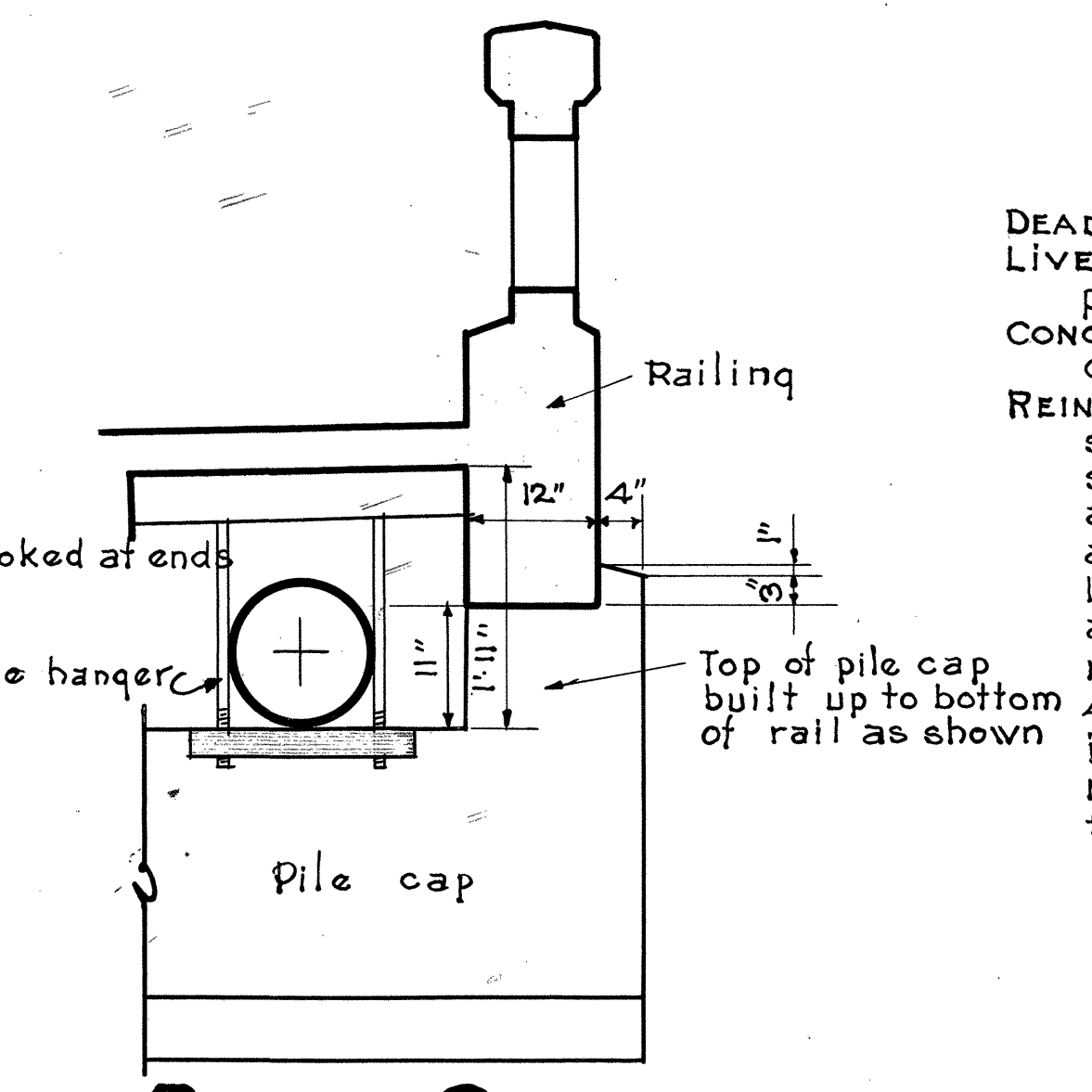
TYPICAL RAILING SECTION
Scale - 3/4" = 1'-0"



STIRRUP DETAIL
1/2" ϕ hoops
See plan for spacing

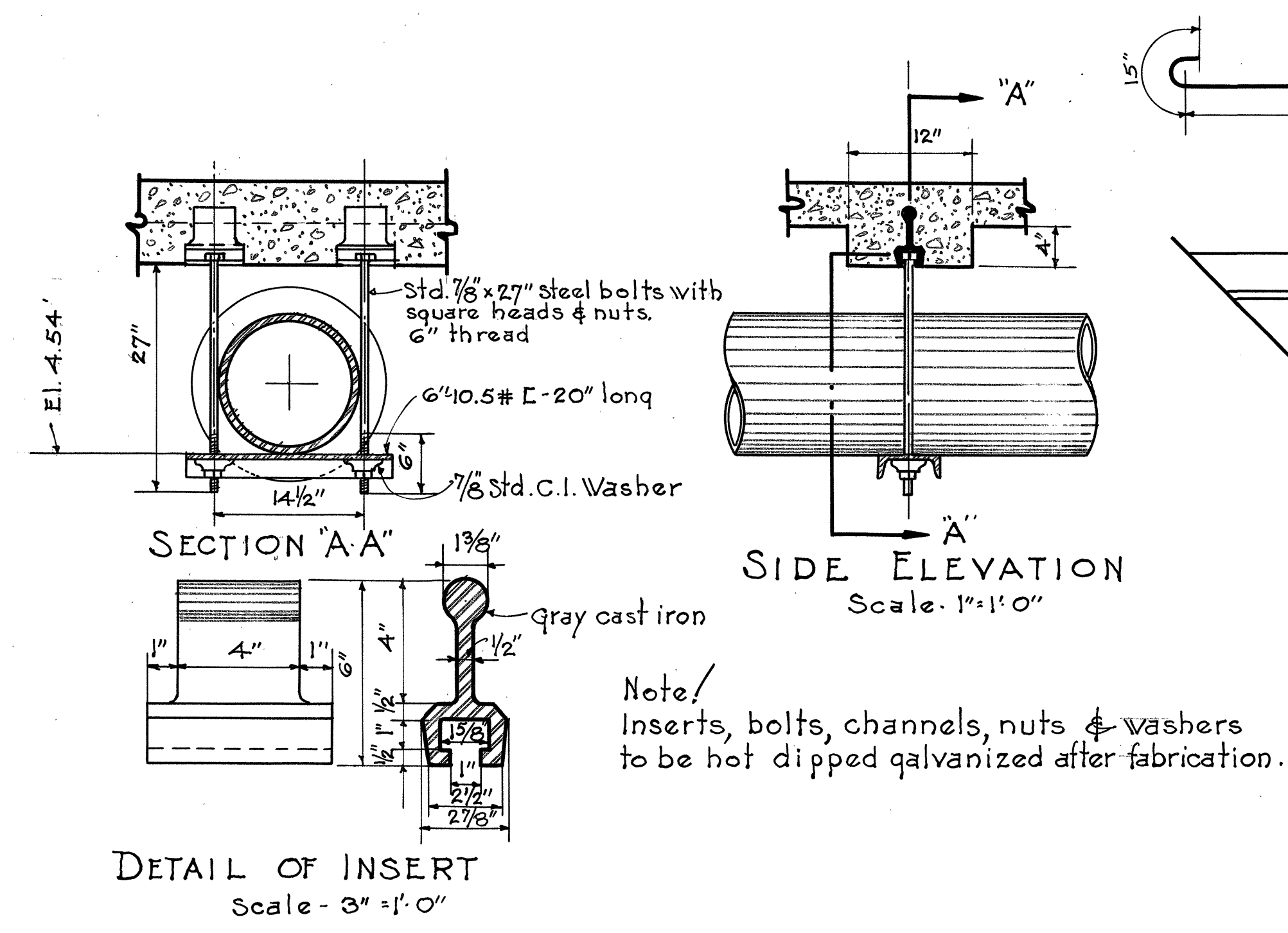
ITEM	CLASS 'A' CONC.	STEEL
ABUTMENTS	84.5 Cu. yds.	10,153.0 #
DECK	200.0 " "	26,239.0 "
RAILING	18.0 " "	2,783.0 "
TOTALS	302.5 " "	39,175.0 "

STRUCTURAL EX. 227 Cu. yds.
CHANNEL EX 797 " "
Rock Fill 302 " "
Concrete socket piles - 40 @ 18' long.
Wood piles - 2000 lin. ft.



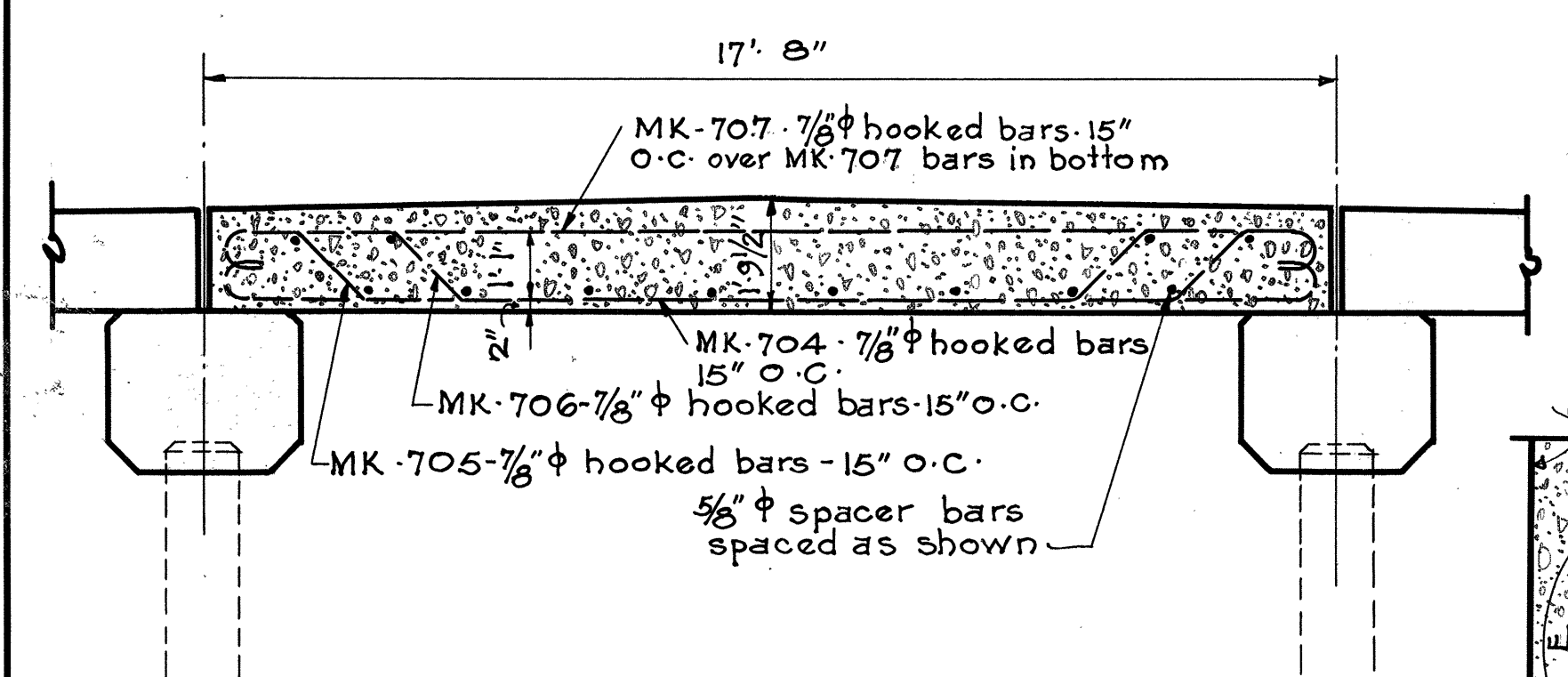
GENERAL NOTES
DEAD LOAD - Concrete at 150 # per cu. ft.
LIVE LOAD - Two 15 ton trucks with 30% impact ϕ 100 # per sq. ft. on sidewalks.
CONCRETE - All class 'A' (1:2:4 Mix) with all exposed corners chamfered. Allowable compression 650 # per sq. ft.
REINFORCING STEEL - Allowable tensile stress 16,000 # per sq. ft. All steel to be deformed bars, twisted bars not to be considered deformed. All dimensions relating to reinforcement are to center of bars. Where location of is not given they are to be placed 2" from the adjacent concrete surface. Length of all bars, unless given, are to be such as to reach a point 2" from the concrete face at their ends. Splices must be approved by the Engineer & shall have a lap of 40 diameters with splices staggered. The main longitudinal bars in beams cannot be spliced. Extra weight of steel required for splices will not be included in quantities for payment.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
KALANIANA'OLE HIGHWAY
NIU BRIDGE
No. 10 STA. 159+42.5 F.A.P. 6-I
SHEET No. 1 OF 3 SHEETS E.J.S.



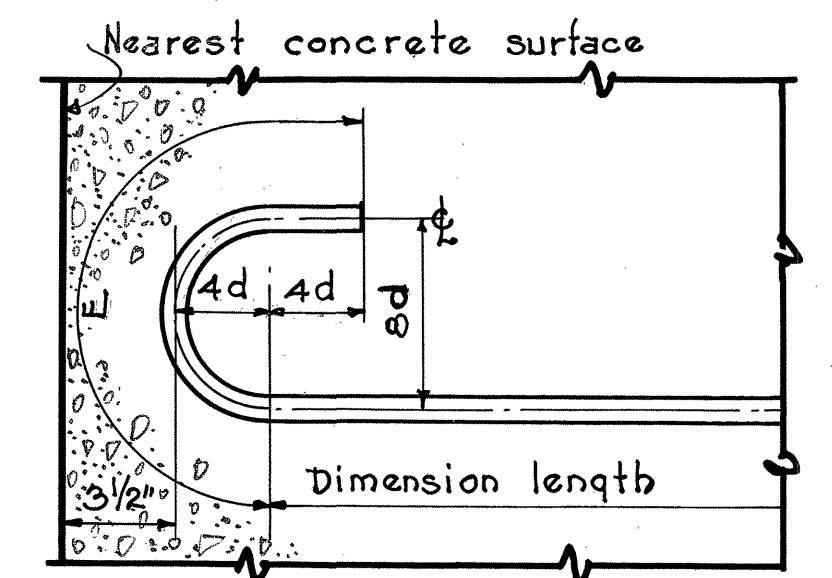
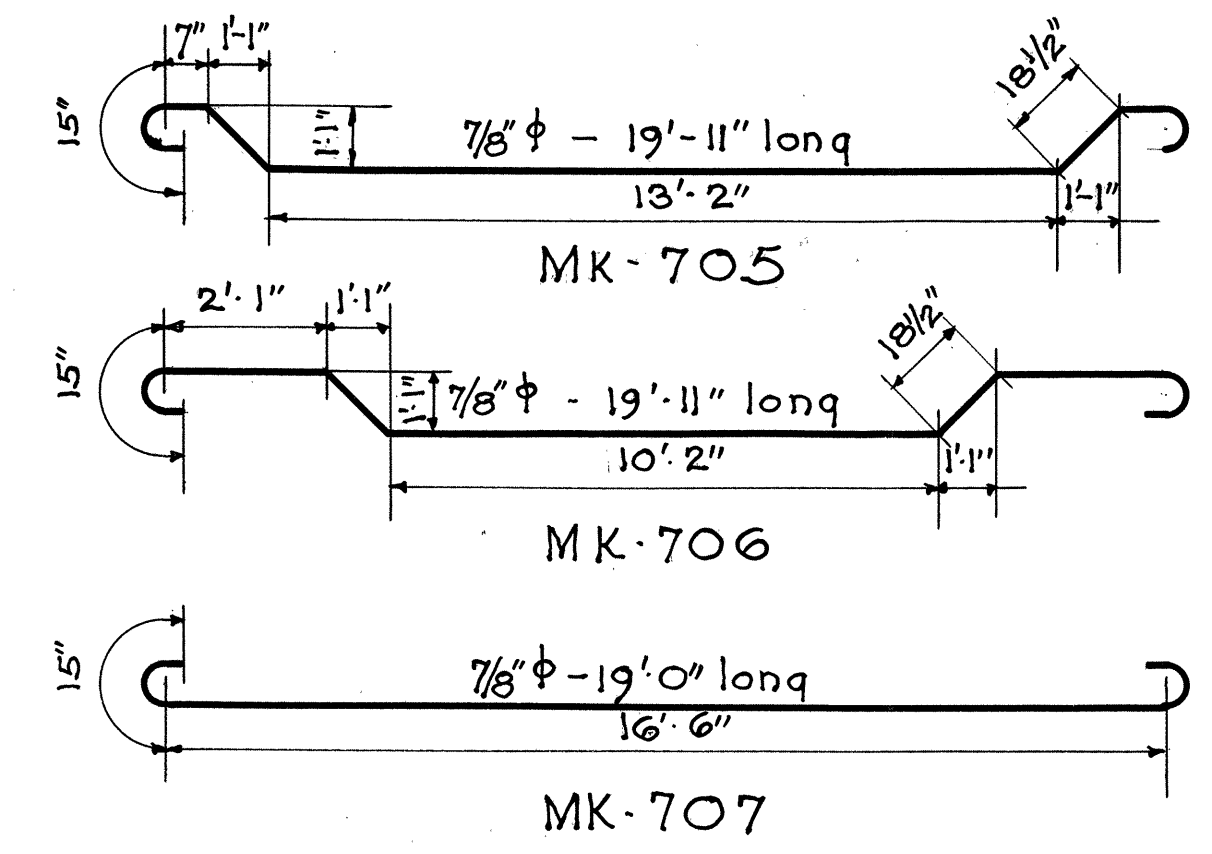
DETAIL OF PIPE HANGER FOR 12" C.I. WATER MAIN

6 Hangers wanted



SECTION THRU CENTER BAY SLAB

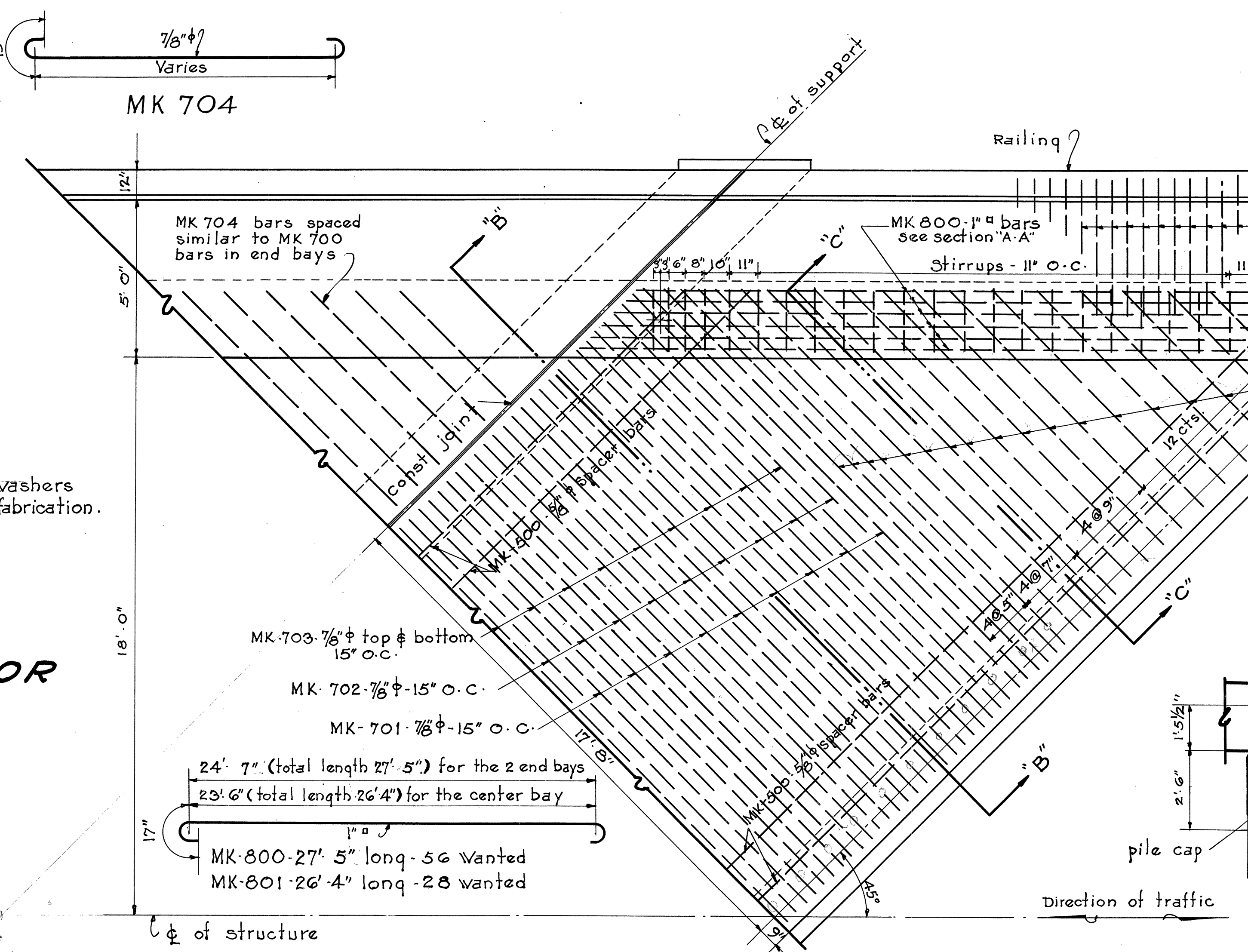
Scale - 3/4" = 1' 0"



Size	d	E
3/8"	3"	6"
1/2"	4"	8"
5/8"	5"	11"
3/4"	6"	13"
7/8"	7"	15"
1"	8"	17"
1 1/8"	9"	19"
1 1/4"	10"	21"

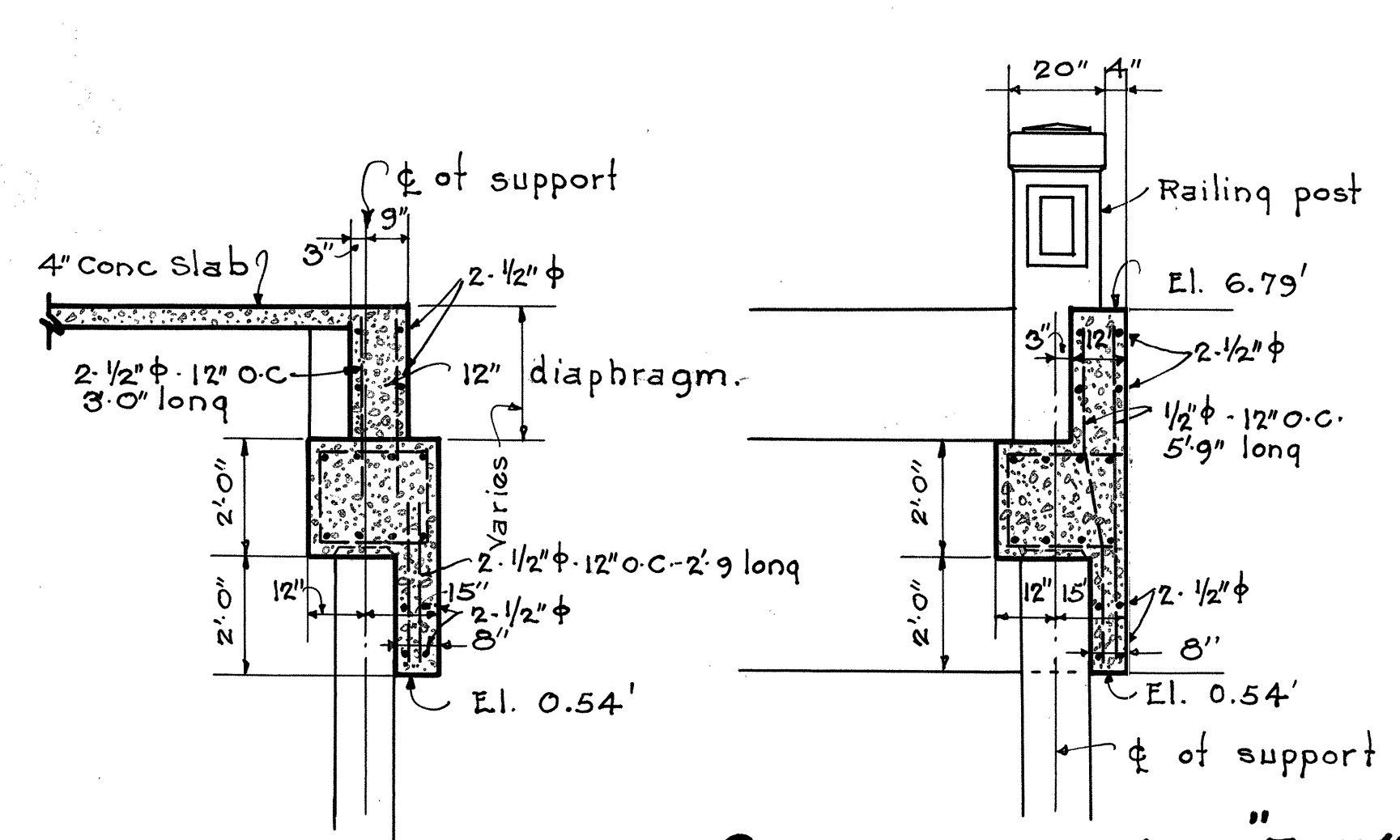
TABLE

Note!
E - Excess length of bar required for one hook.



PART PLAN OF BRIDGE SHOWING REINF.

Scale - 3/8" = 1' 0"

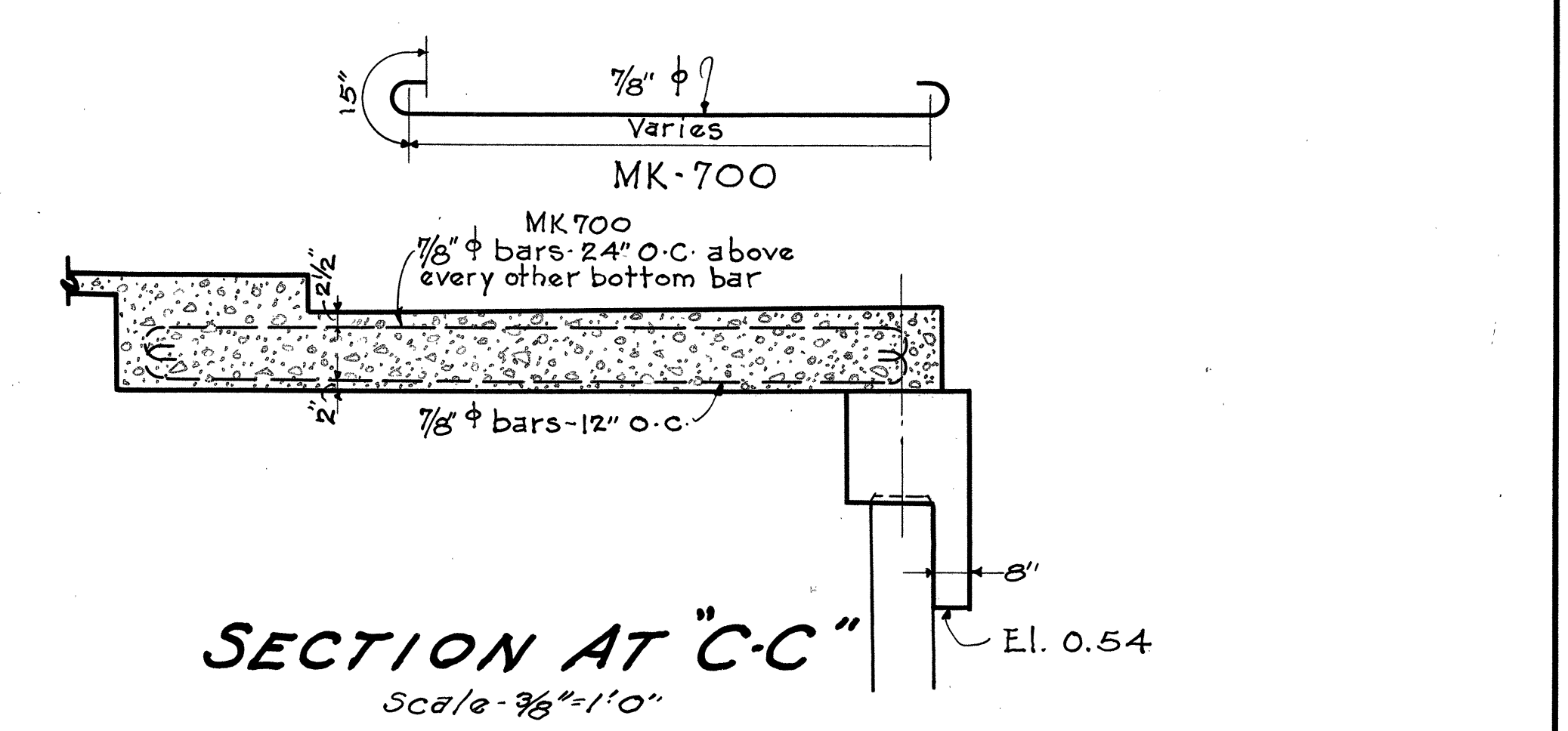


SECTION AT "E-E"

Scale - 3/8" = 1' 0"

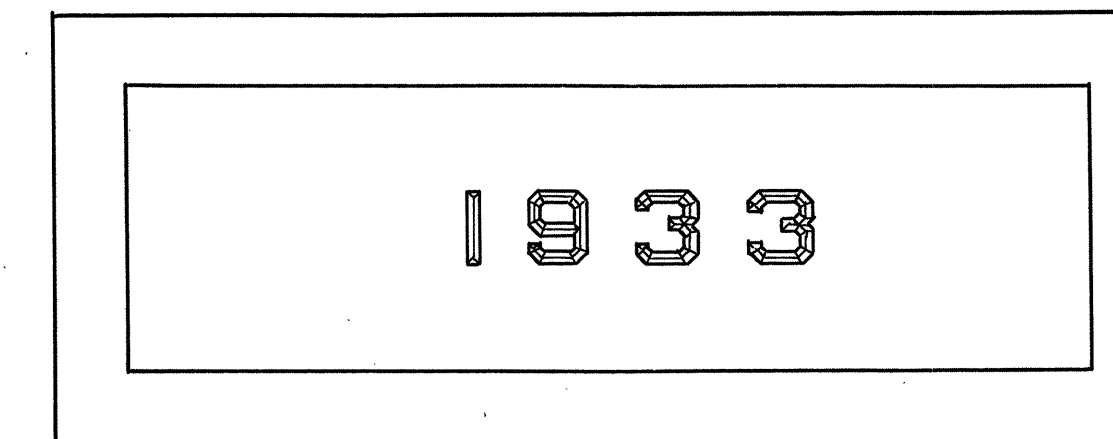
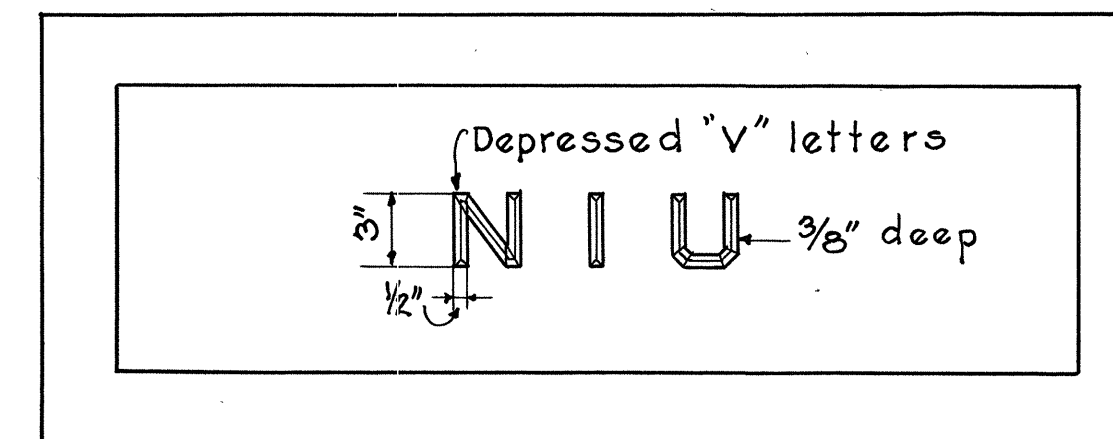
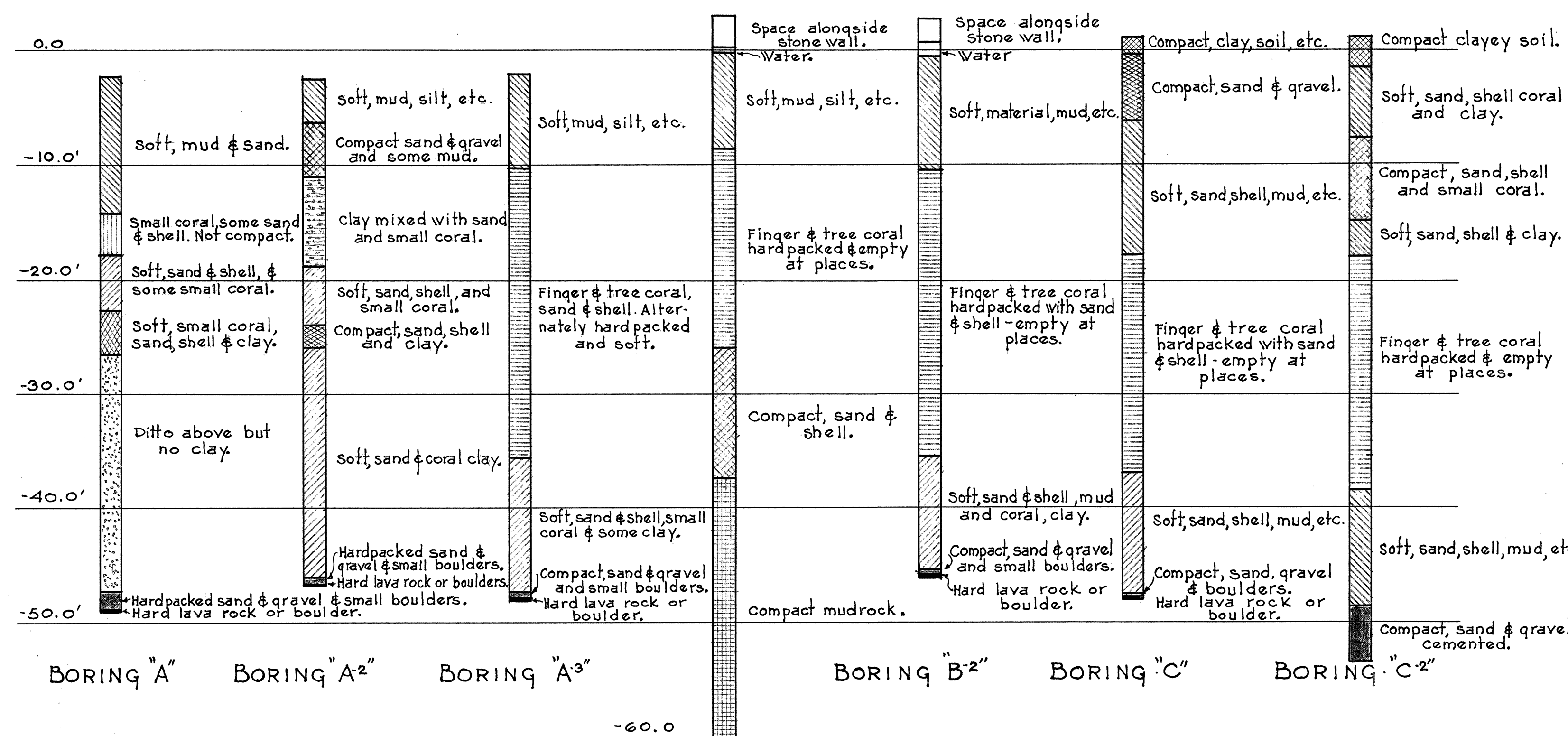
SECTION AT "B-B"

Scale - 3/8" = 1' 0"

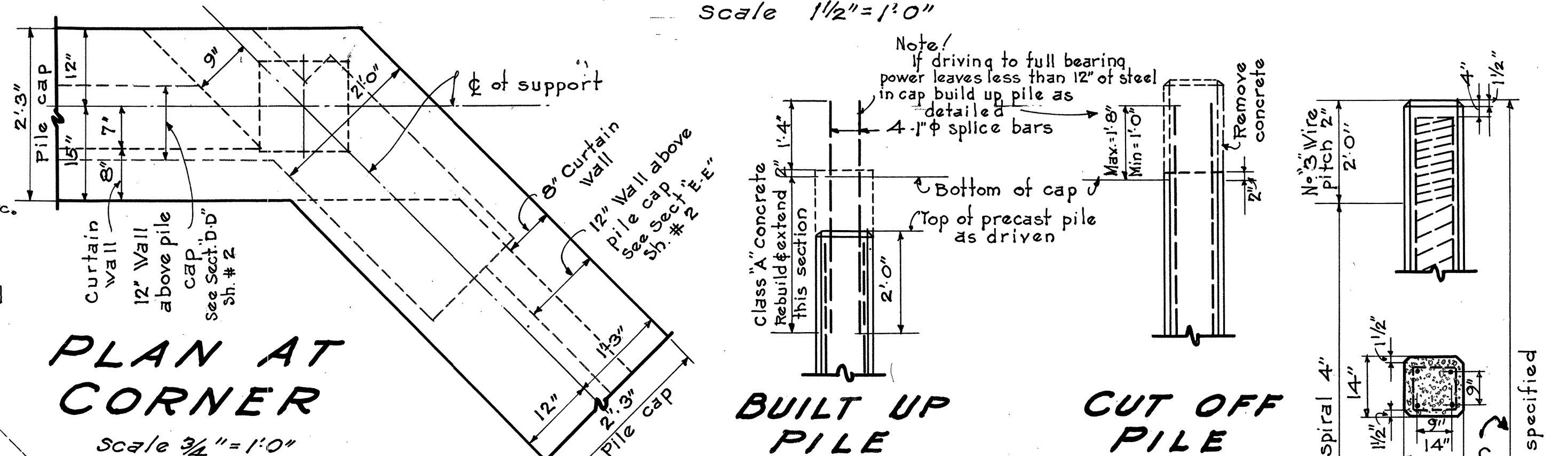


TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
**KALANIANA'OLE HIGHWAY
NIU BRIDGE**
No 10 STA. 159 + 42.5 F.A.P. 6-I
SHEET No 2 OF 3 SHEETS

BORING DATA

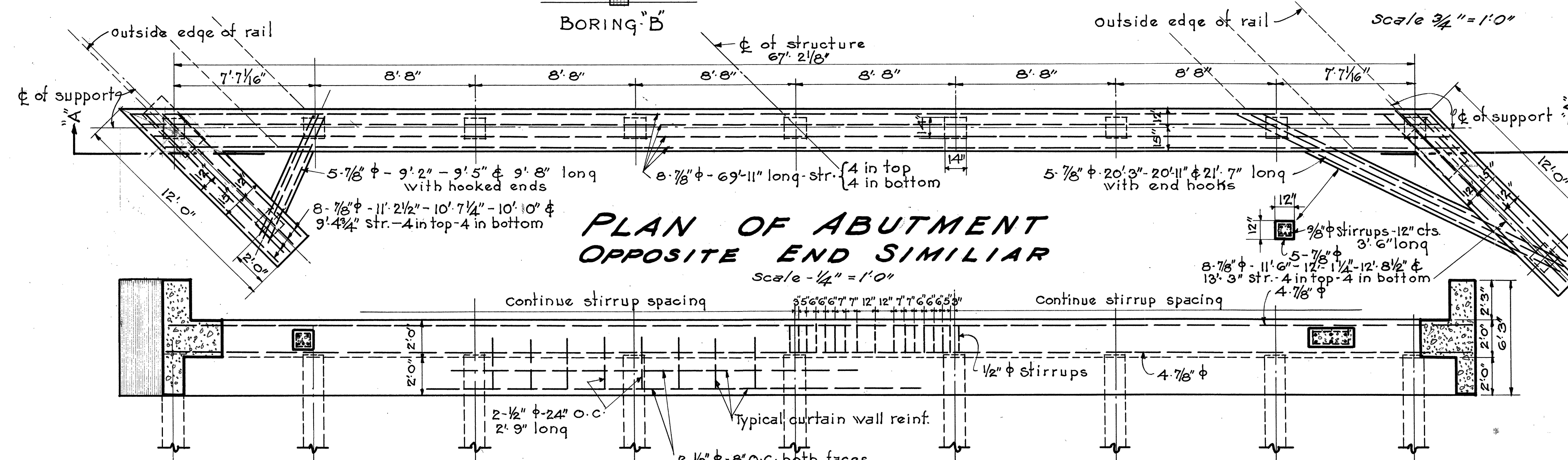


DETAIL OF LETTERS & FIGURES FOR BRIDGE RAILING



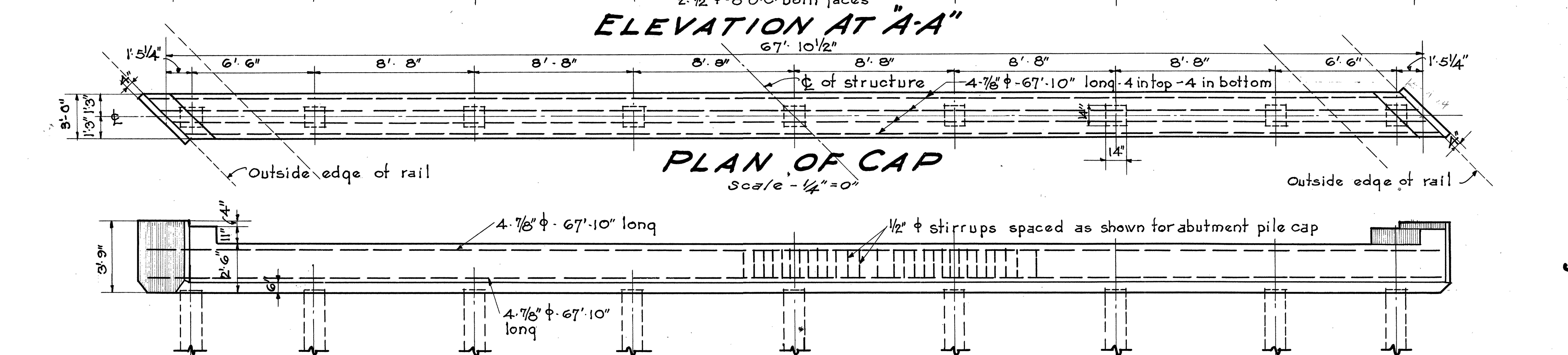
PLAN AT CORNER

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



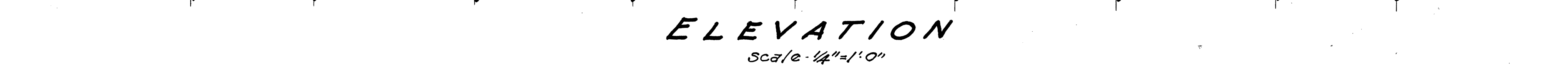
PLAN OF ABUTMENT OPPOSITE END SIMILAR

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



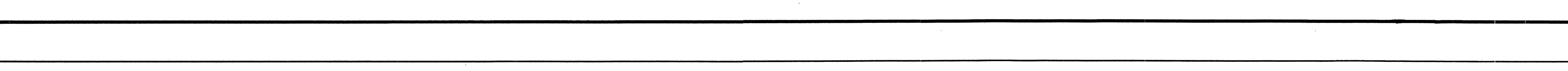
ELEVATION AT "A-A"

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



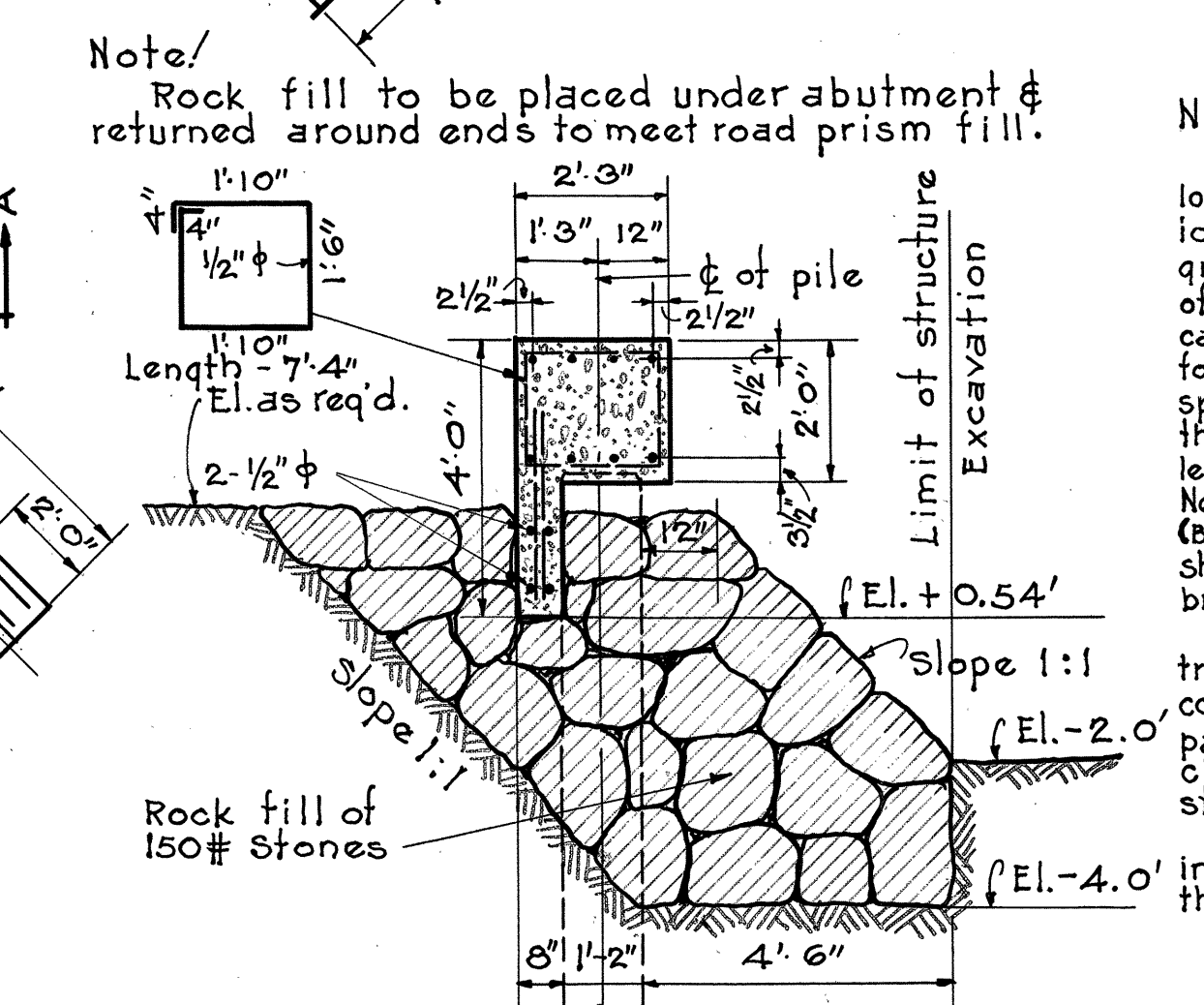
PLAN OF CAP

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



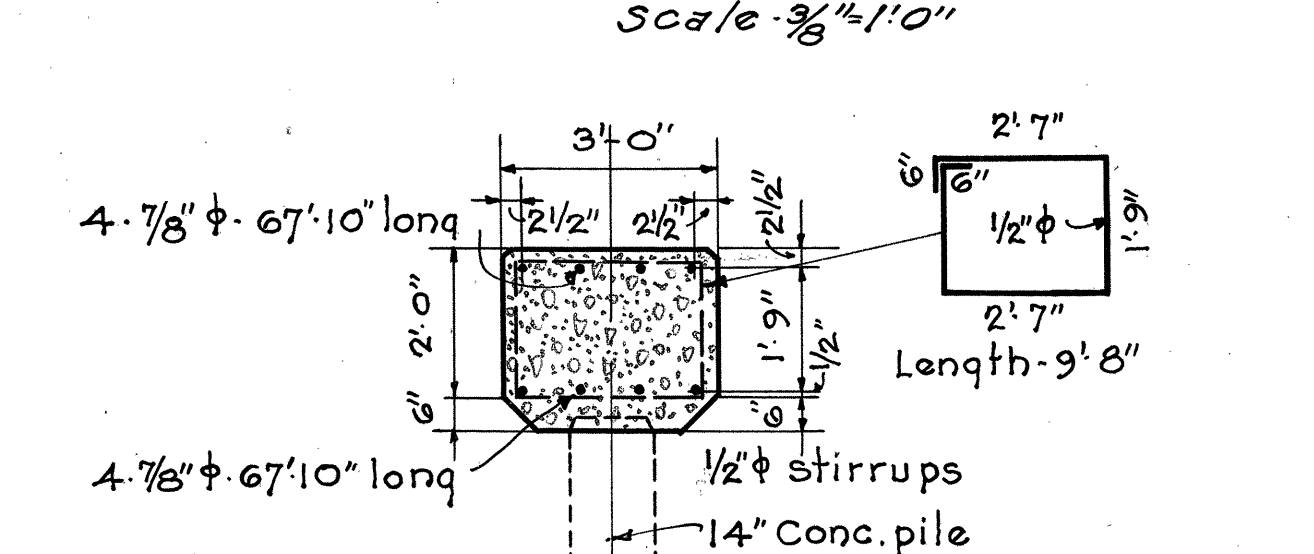
ELEVATION

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



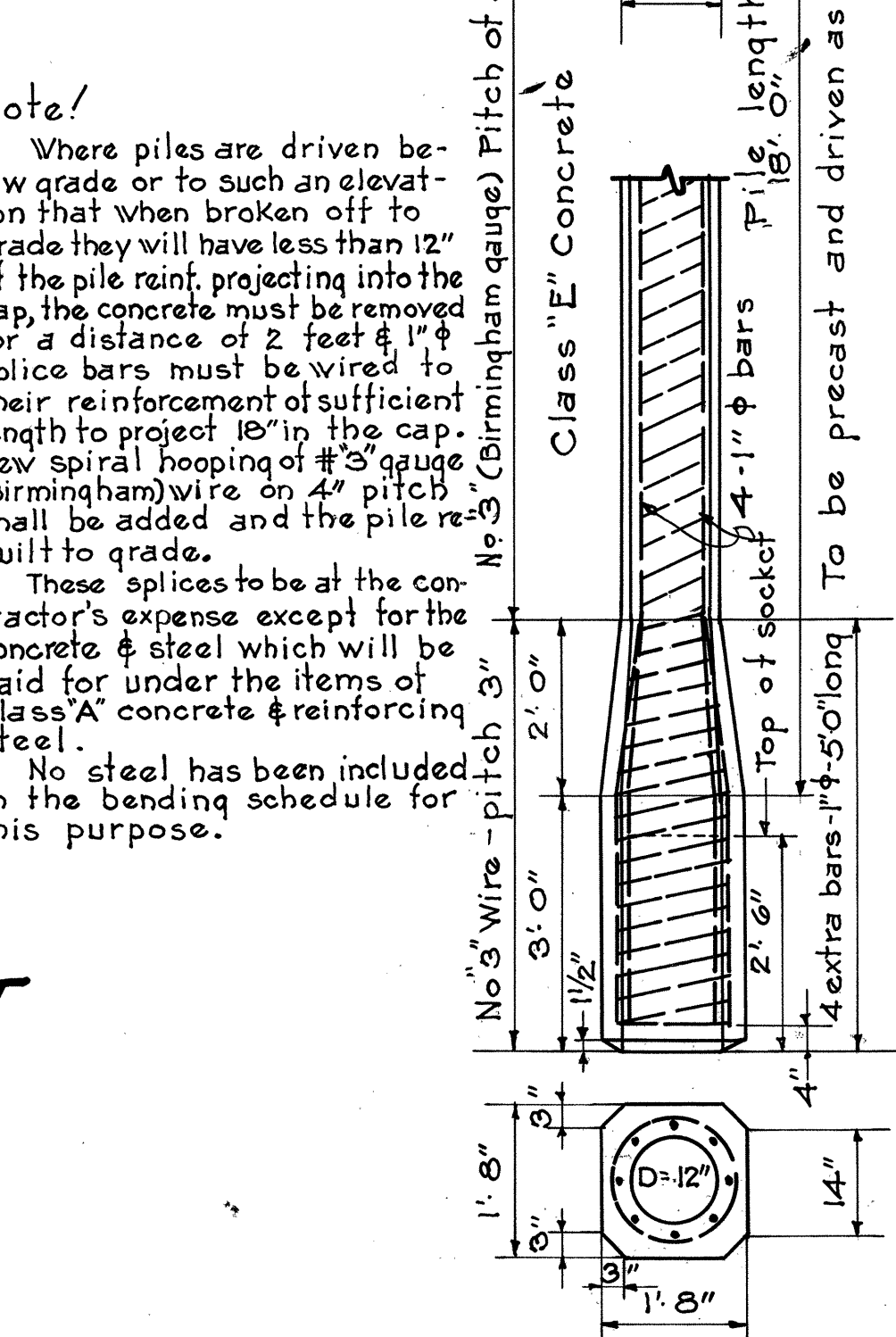
SECTION THRU ABUTMENT

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



SECTION THRU CAP

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



DETAIL OF CONC. SOCKET PILE

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

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII

KALANIANA'OLE HIGHWAY
 NIU BRIDGE

No. 10 STA. 159 + 42.5 F.A.P. 6-1
 SHEET No 3 OF 3 SHEETS

4294.29