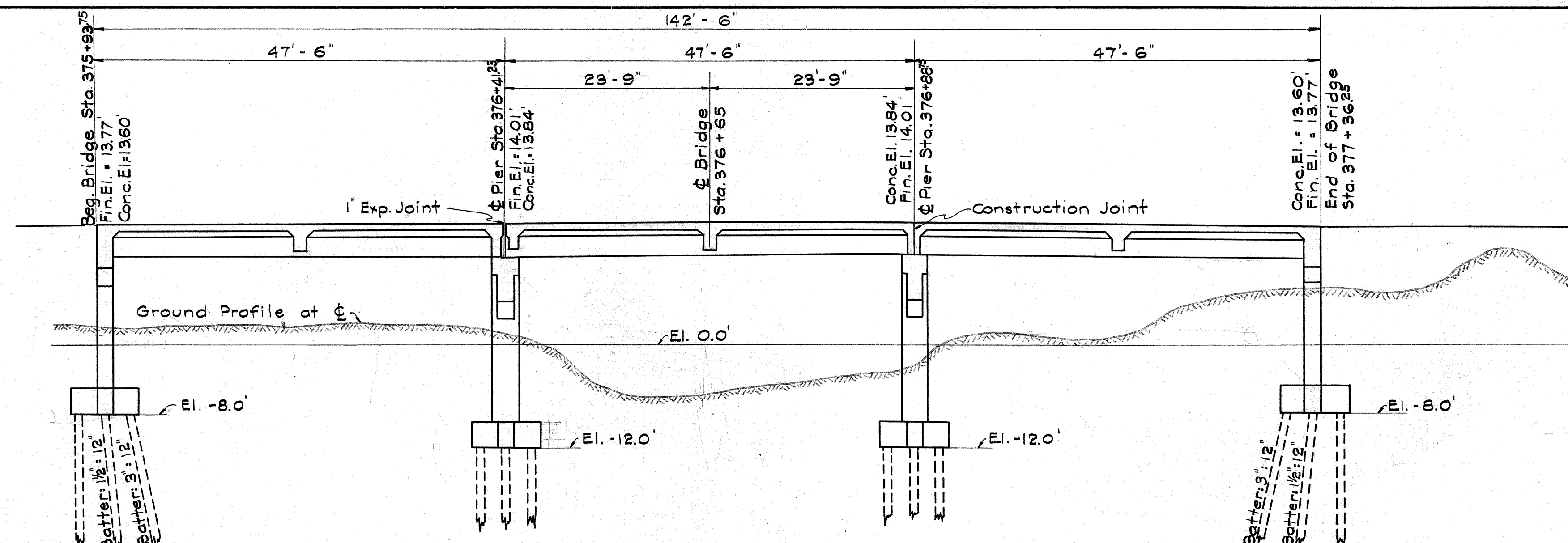
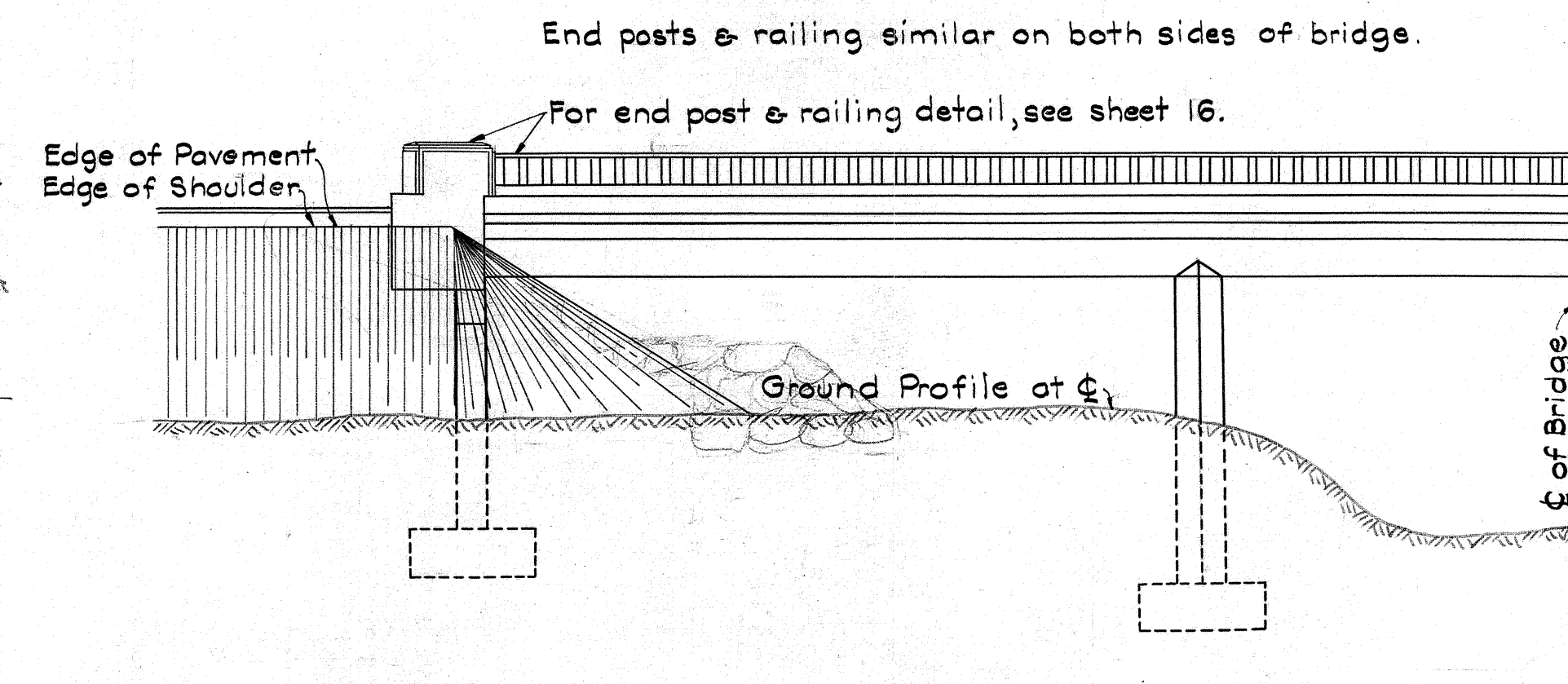
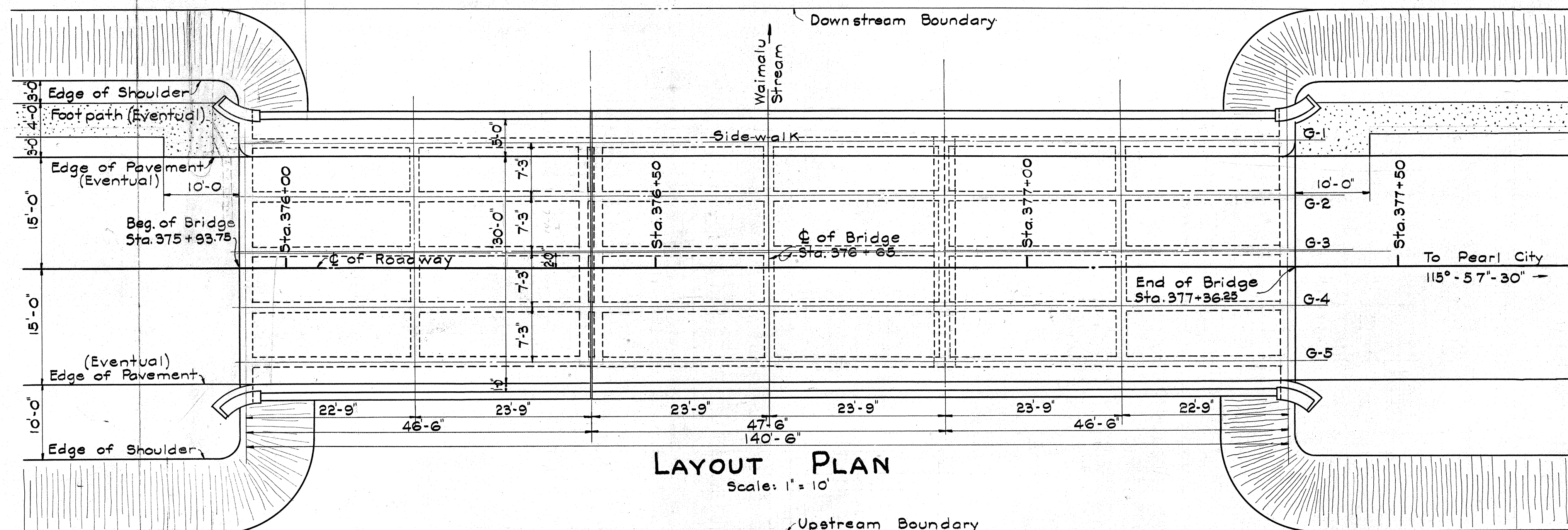




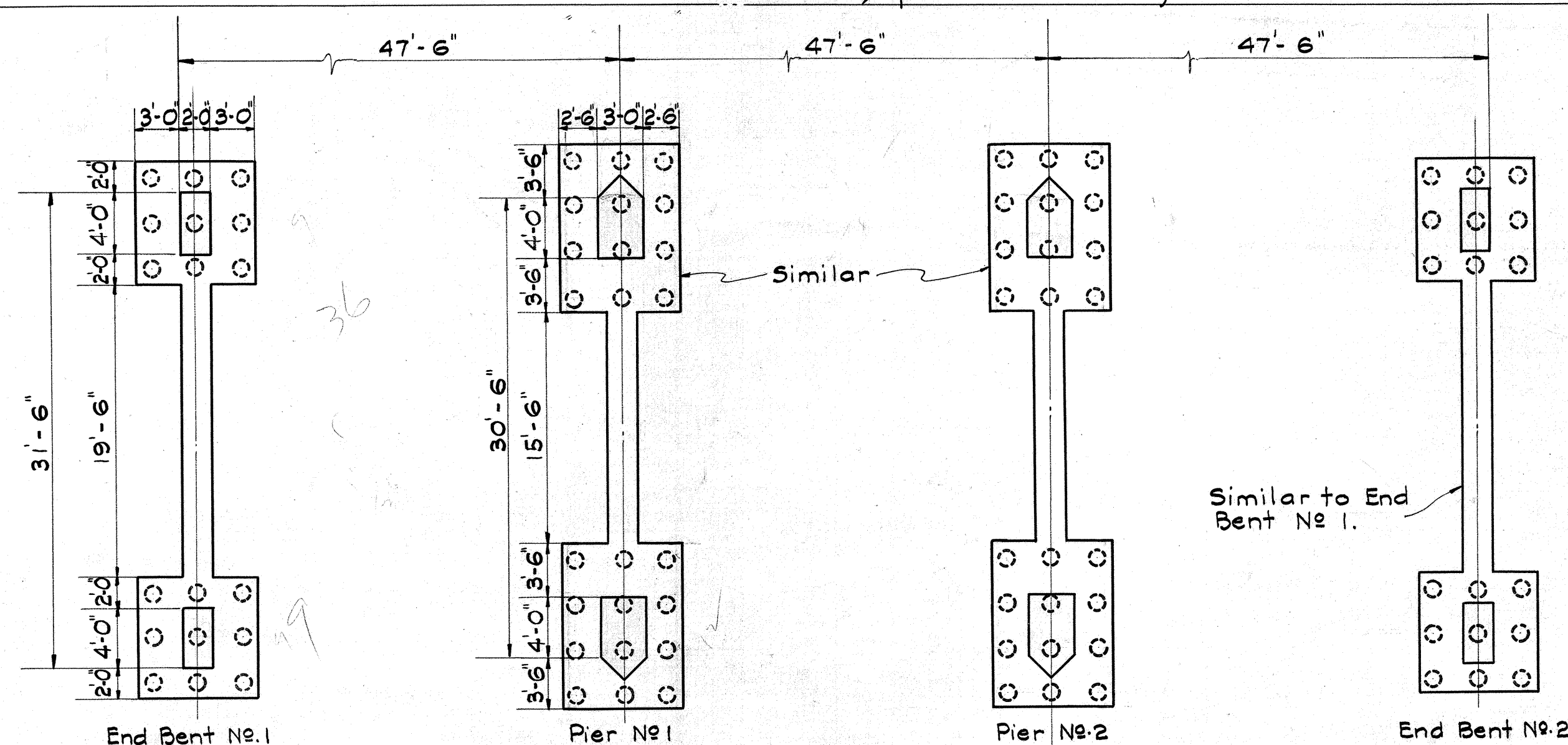
SECTION AT C OF ROADWAY
Scale: 1" = 10'



HALF ELEVATION
Scale: 1" = 10'



LAYOUT PLAN
Scale: 1" = 10'



FOOTING PLAN
Scale: 1/8" = 1'

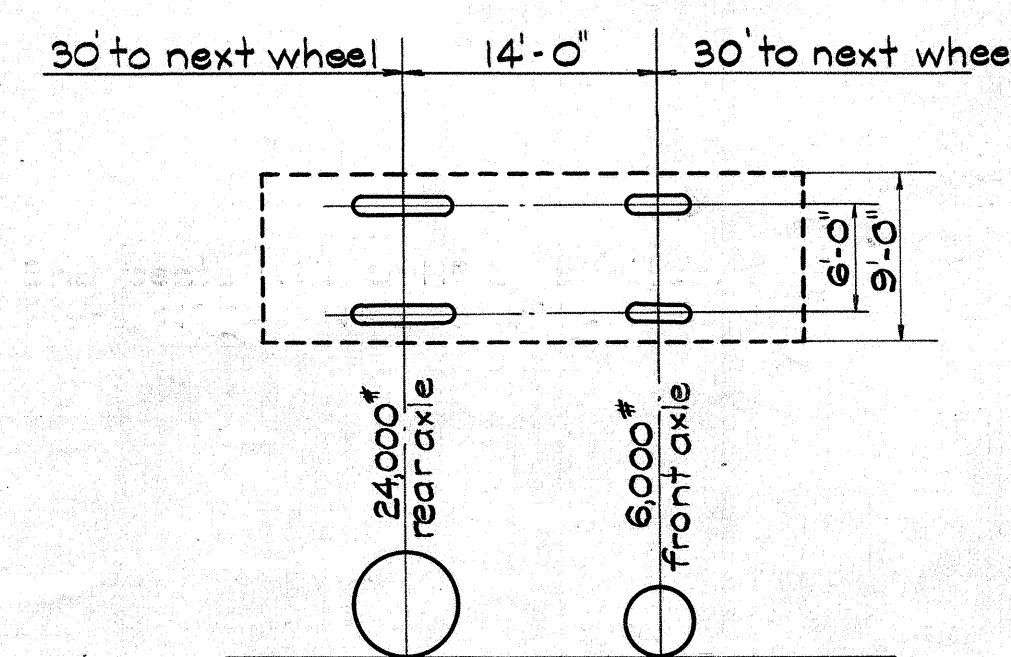


DIAGRAM OF TYPICAL 15 TON TRUCK

QUANTITIES							
LOCATION	H.L.R.R.	C.R.M.	CHAN. EX.	STR. EX.	CONC.	REINF. ST.	LN. FT. PILES
FOOTING				402 CY	81 CY	10,025 LB	5040
ABUT. & WINGWALLS				118	105	24,366	
SUPERSTRUCTURE					285	67,439	
RAILING					47	1954	
TOTAL				520	518	103,784	5040

GENERAL NOTES

- Dead Load: Concrete at 150#/Cubic foot.
- Live Load: Train of 15-ton trucks in three traffic lanes. Impact allowance = 25%. Spacing of trucks as per diagram.
- Concrete: Class A (1:2:4) with all exposed edges chamfered 3/4" unless otherwise noted. Allowable compression 650# per Sq. inch.
- Reinforcing Steel: Intermediate grade; allowable tensile stress 18,000# per Sq. inch. All steel to be round or square deformed bars of approved design; square twisted bars not to be considered deformed. All dimensions relating to reinforcement are to centers of bars unless otherwise noted. Where splicing of reinforcement is necessary, bars are to be lapped 40 diameters and splices are to be staggered. No splices will be permitted in main reinforcement. No allowance will be made in the quantities for extra weight of steel required for splicing. Unless otherwise noted, the minimum covering measured from the surface of concrete to the face of any steel shall be not less than 2 1/2" in abutments and abutment footings; 2" in beams, girders, and handrails and 1 1/4" in slab. Steel to be held rigidly and accurately in place before and during placing of concrete.
- Brush Coat Waterproofing: Remove all projections, cement film, dirt etc. and apply waterproofing as specified. Waterproofing is incidental to the concrete used and will not be paid for separately.
- Construction Joints: All construction joints to have surface roughened and 1:2 cement grout applied immediately before second pouring.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

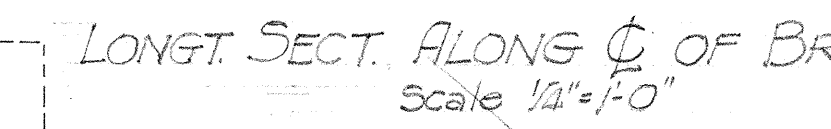
WAIMALU BRIDGE

No. 8 STA. 375+93.75 TO STA. 377+36.25

KAMEHAMEHA HIGHWAY F.A.P. 9F

SHEET No. 1 OF 6 SHEETS

4338.11



4"x8" timber bumper, top trimmed to crown

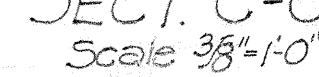
3/4" bolts sp. 2'-0" o.c.

conc. approach slab

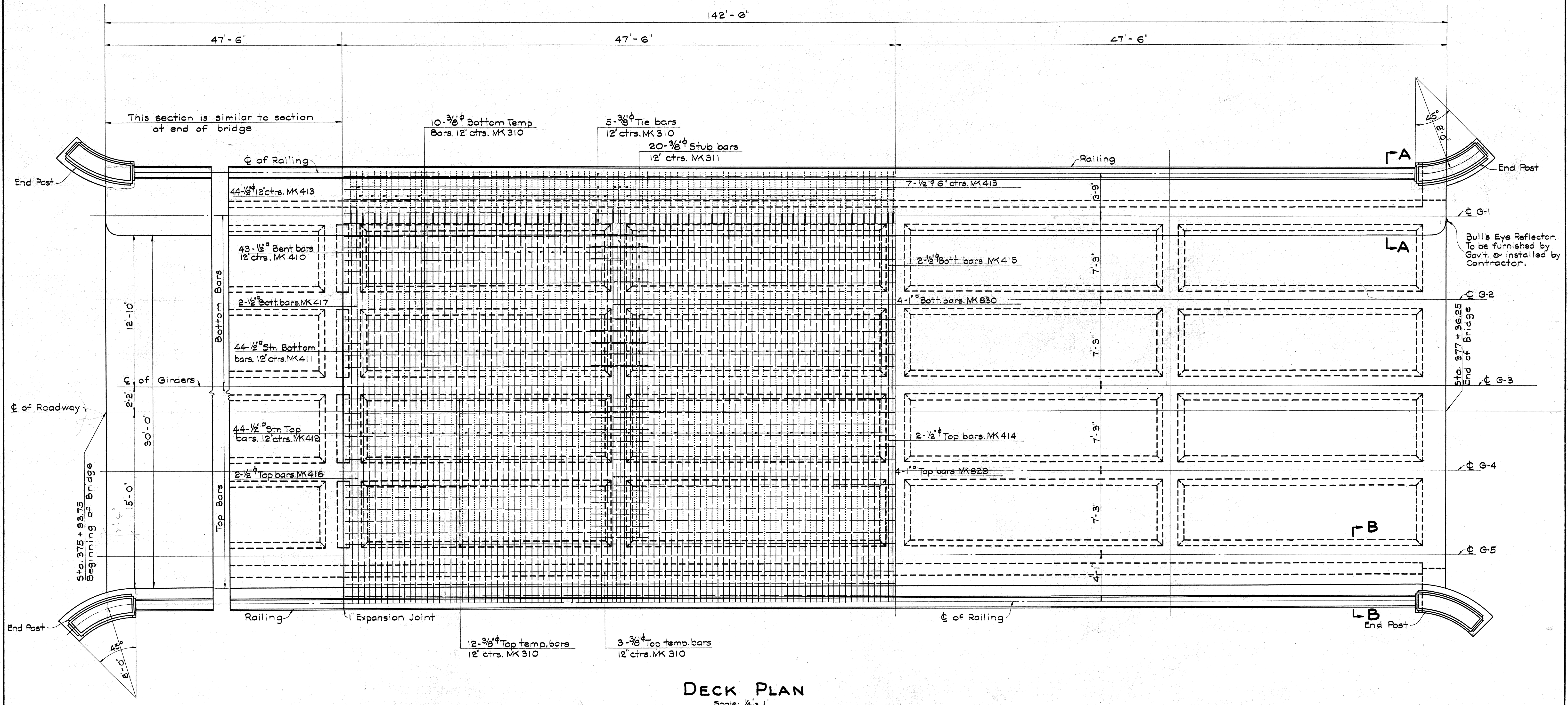
ELEV. SHOWING TIMBER BUMPER AT END OF CONC. APPROACH SLAB

Scale 3/8"=1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
DETAIL OF CONC SLAB APPROACH
& C.R.M PAVING AT WAIMALU
BRIDGE No 8
Sta 375+93.75 - 377+36.25
Kamehameha Highway F.A.P. 2-F



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	9-F	1935	12	42

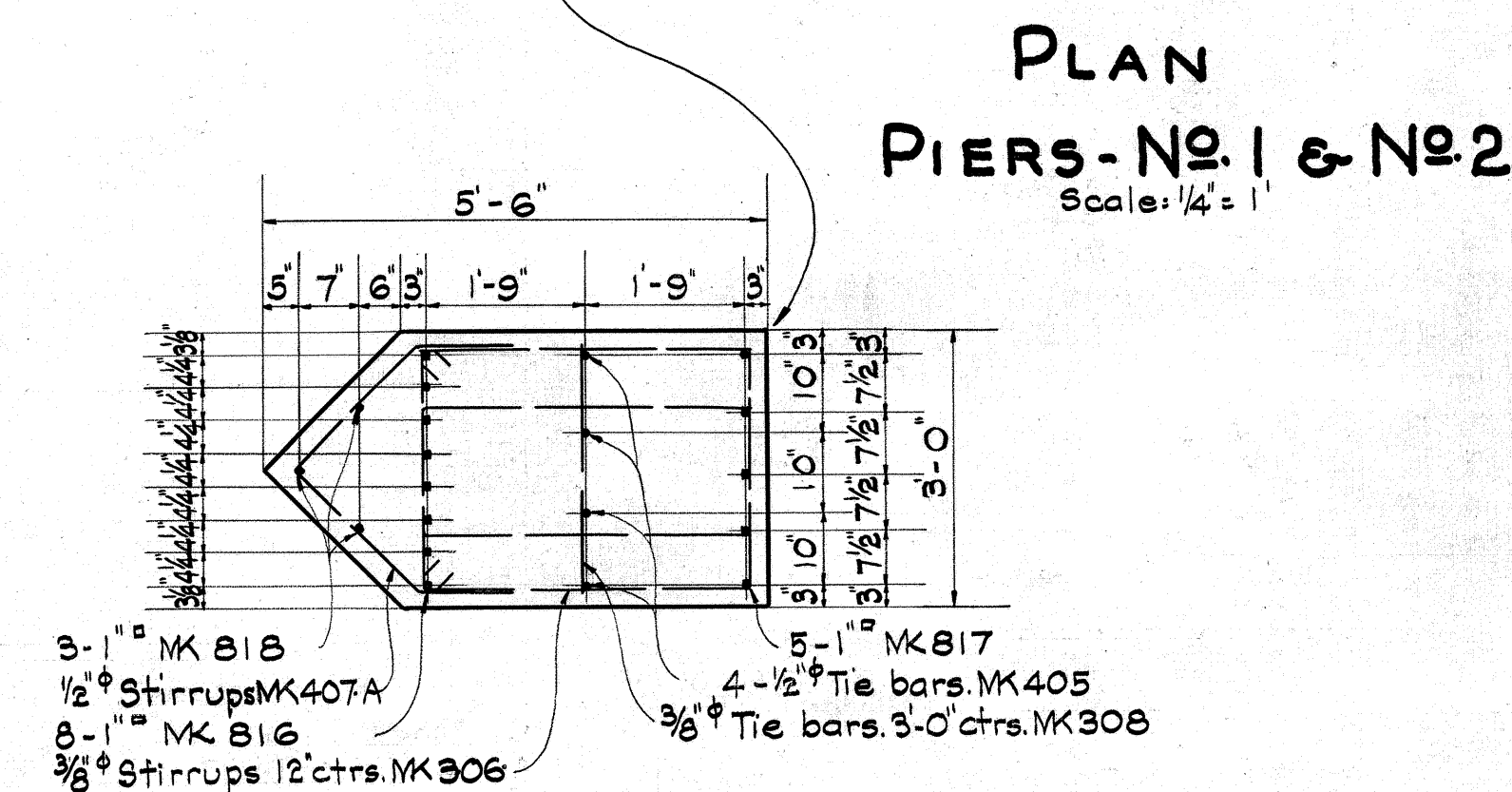
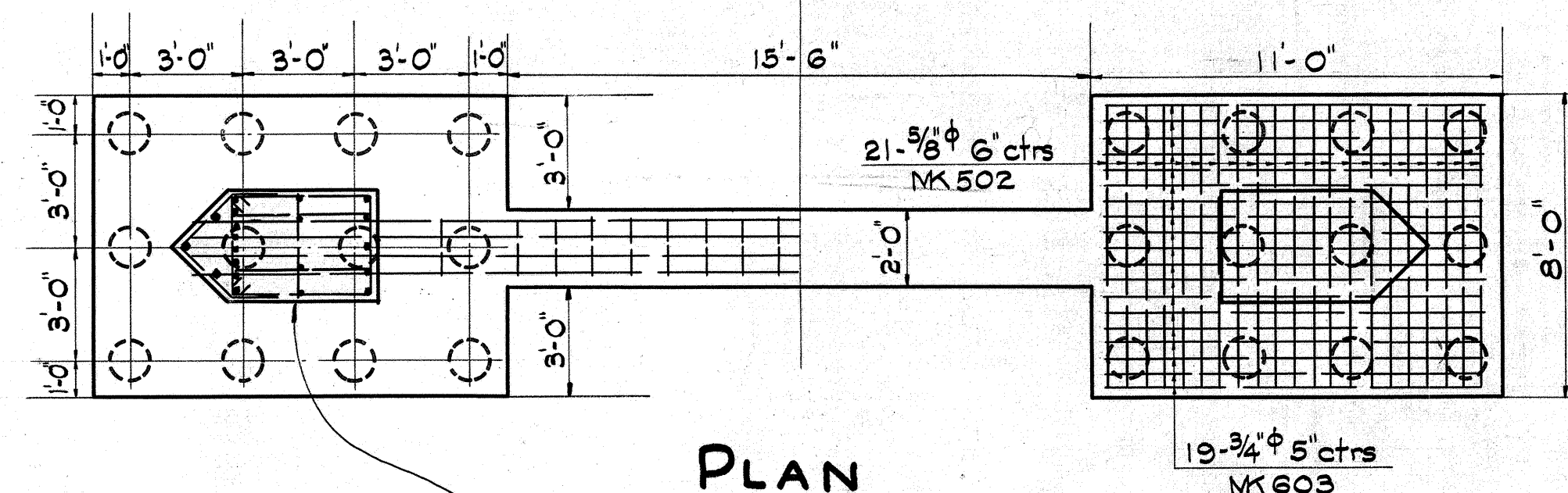
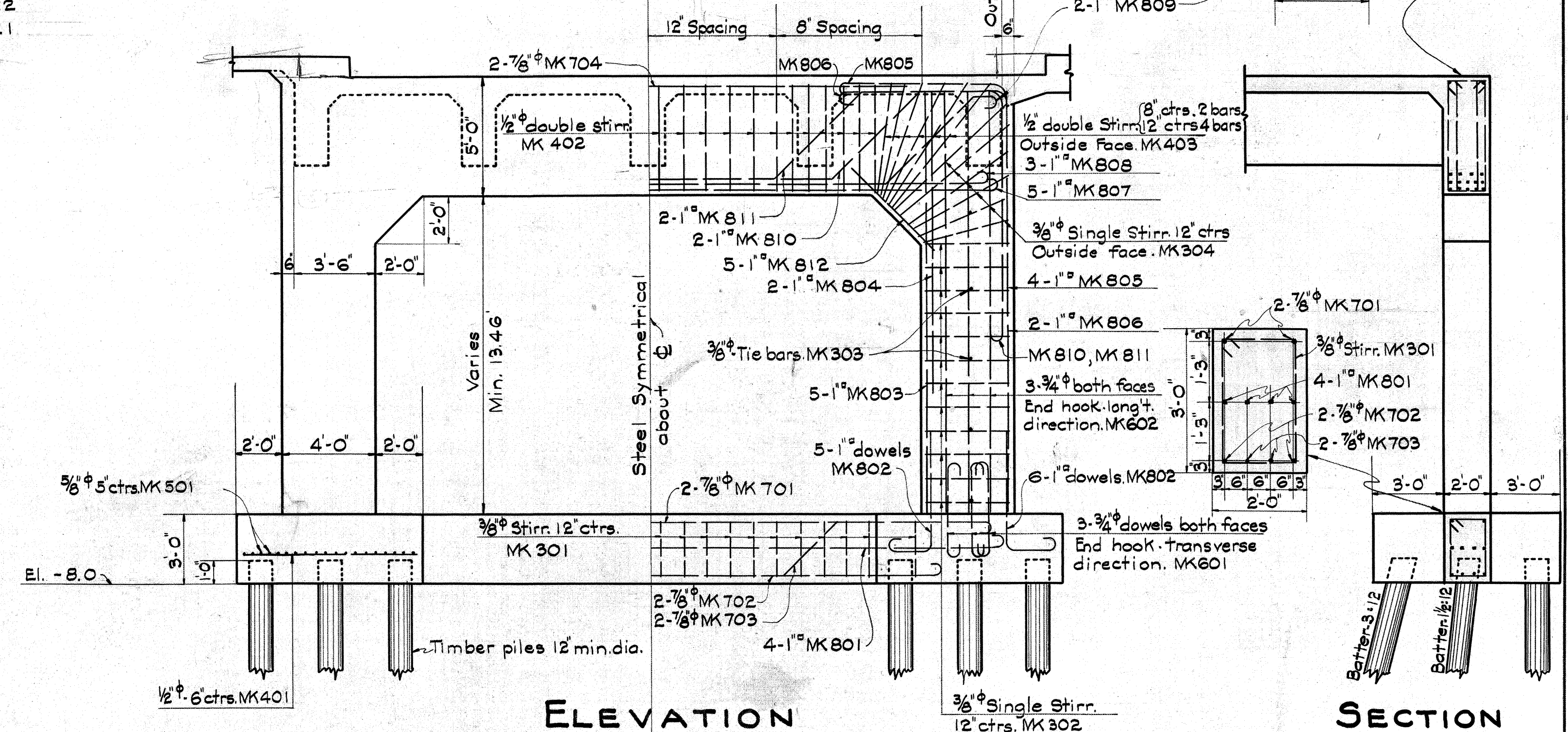
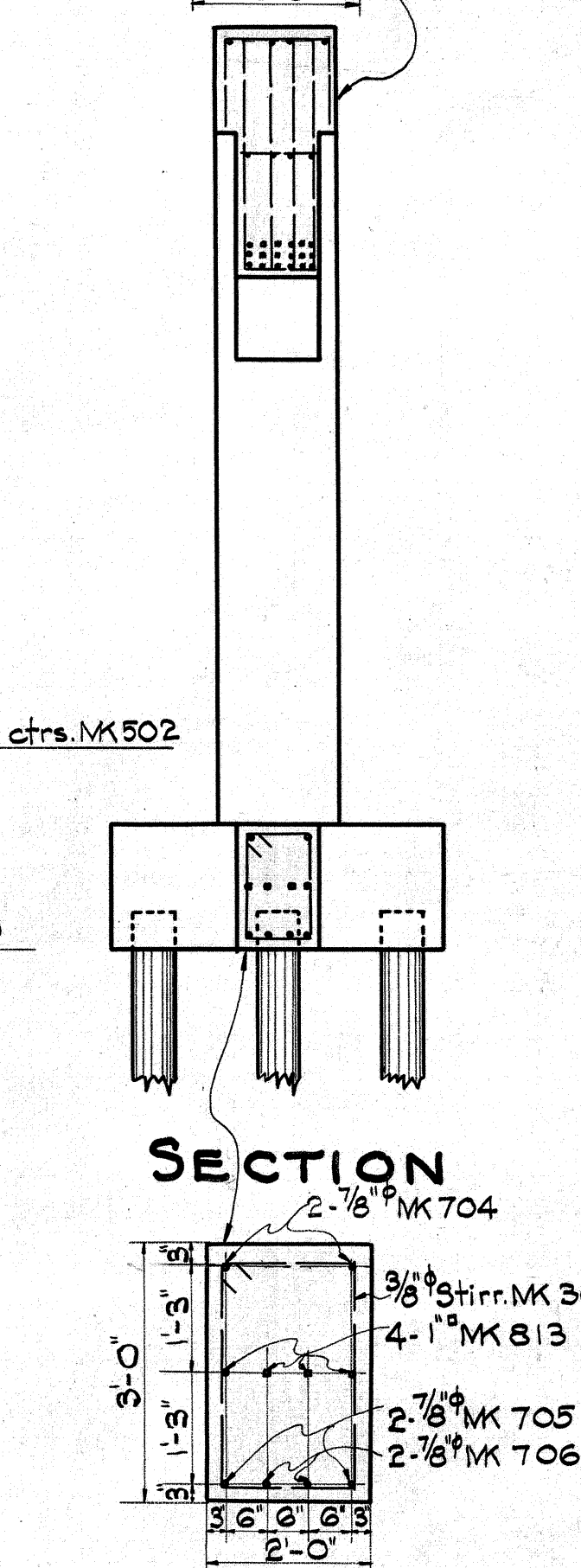
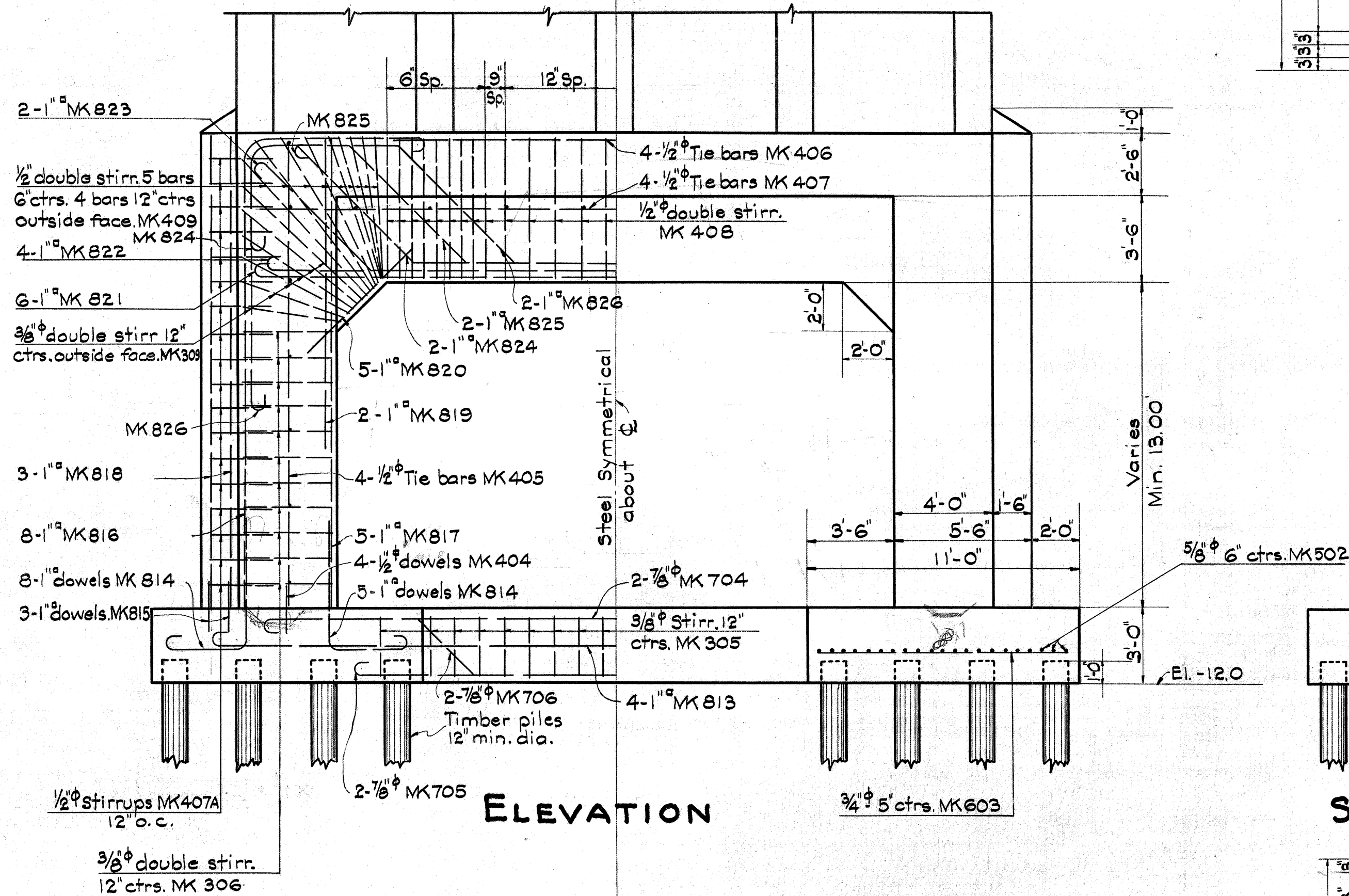
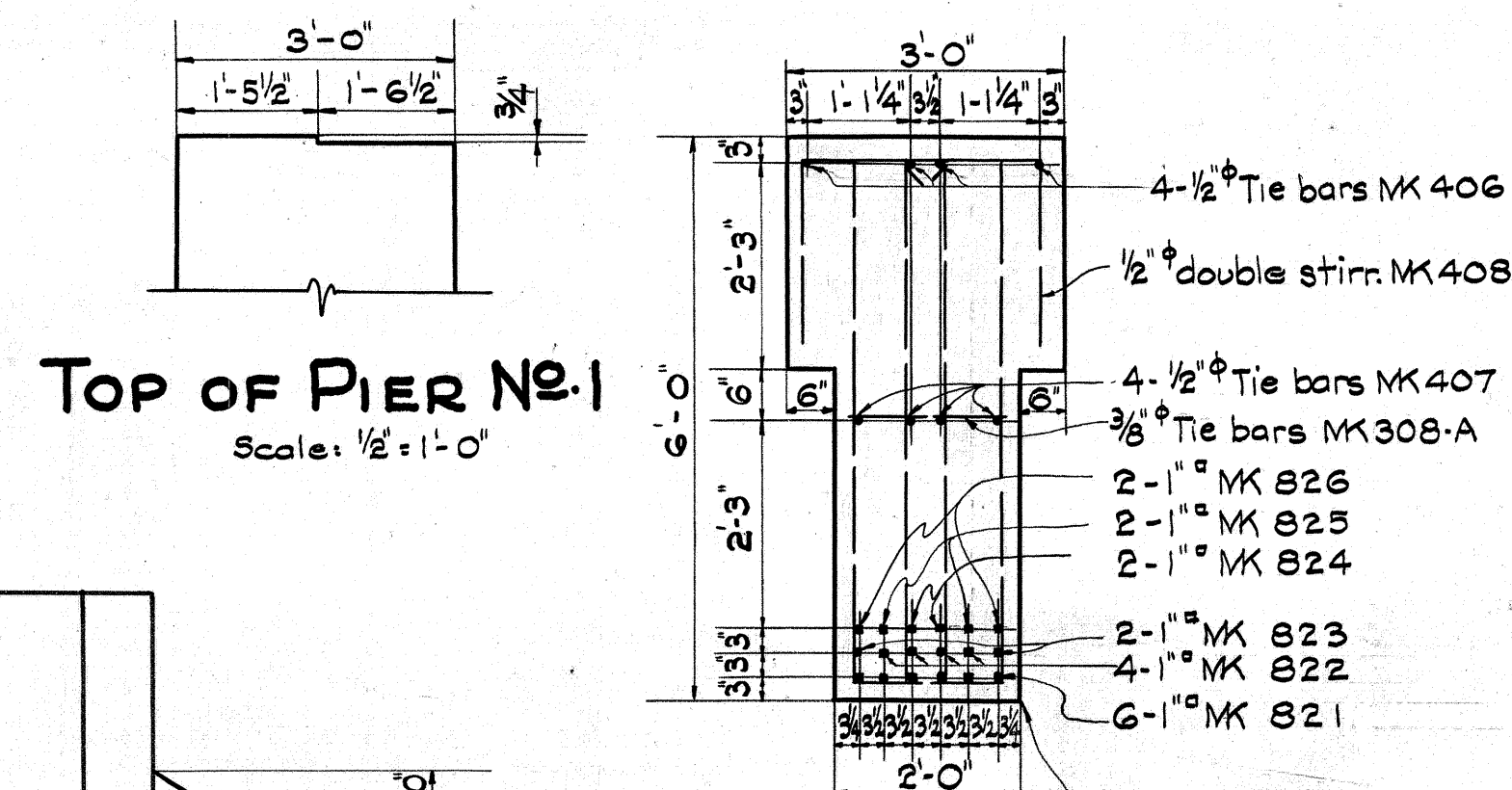


DECK PLAN
Scale: 1/4" = 1'

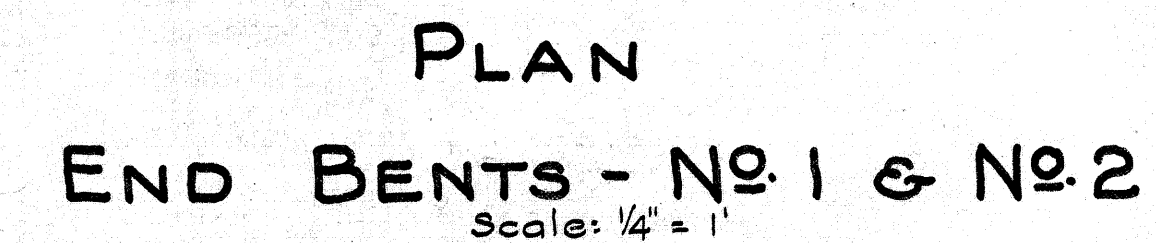
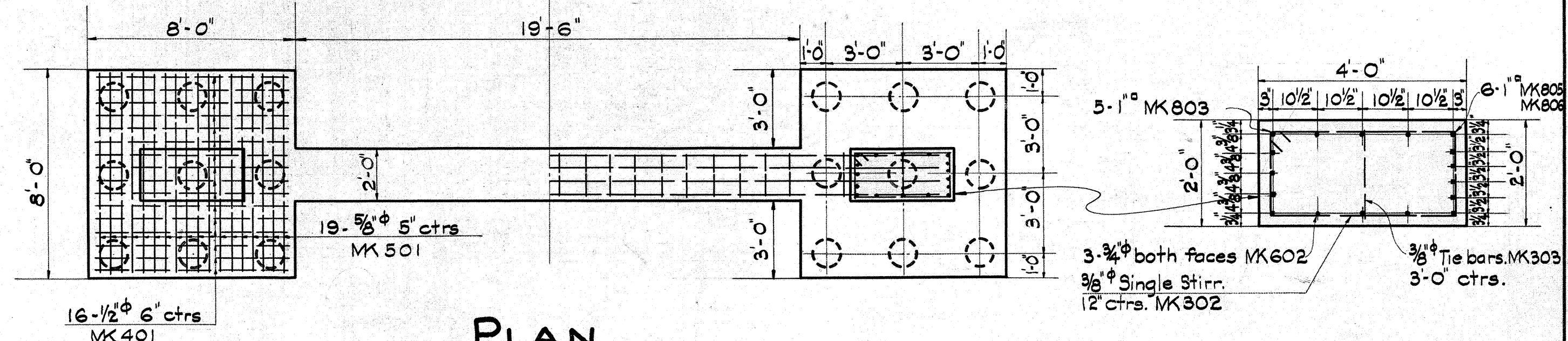
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
WAIMALU BRIDGE
No. 8 STA. 375+93⁷⁵ TO STA. 377+36²⁵
KAMEHAMEHA HIGHWAY F.A.P. 9F

SURVEY PLOTTED BY	DATE
DRAWN BY	Sept. 1935
TRACED BY	Oct.
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	9-F	1935	13	42



Note: All enlarged details are drawn to $\frac{1}{2}''=1'$ scale.



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

WAIMALU BRIDGE

NO. 8 STA. 375+93⁷⁵ TO STA. 377+36²⁵

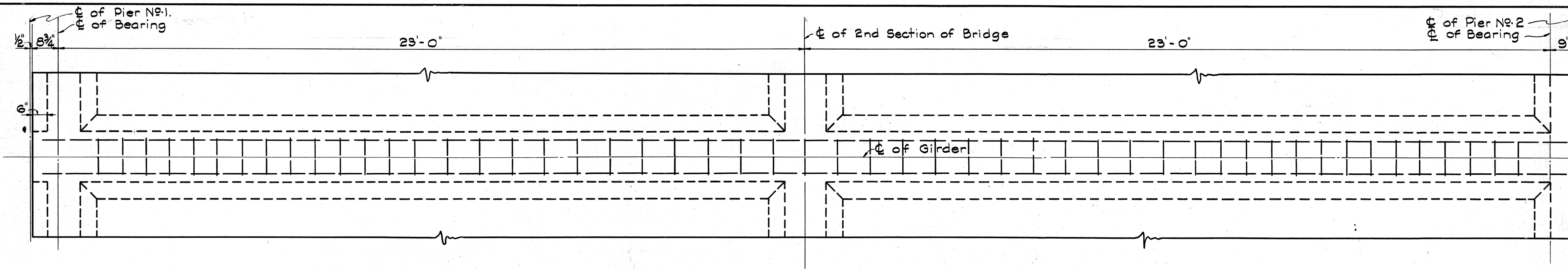
KAMEHAMEHA HIGHWAY F.A.P. 9F

SHEET N^o 3 OF 6 SHEETS

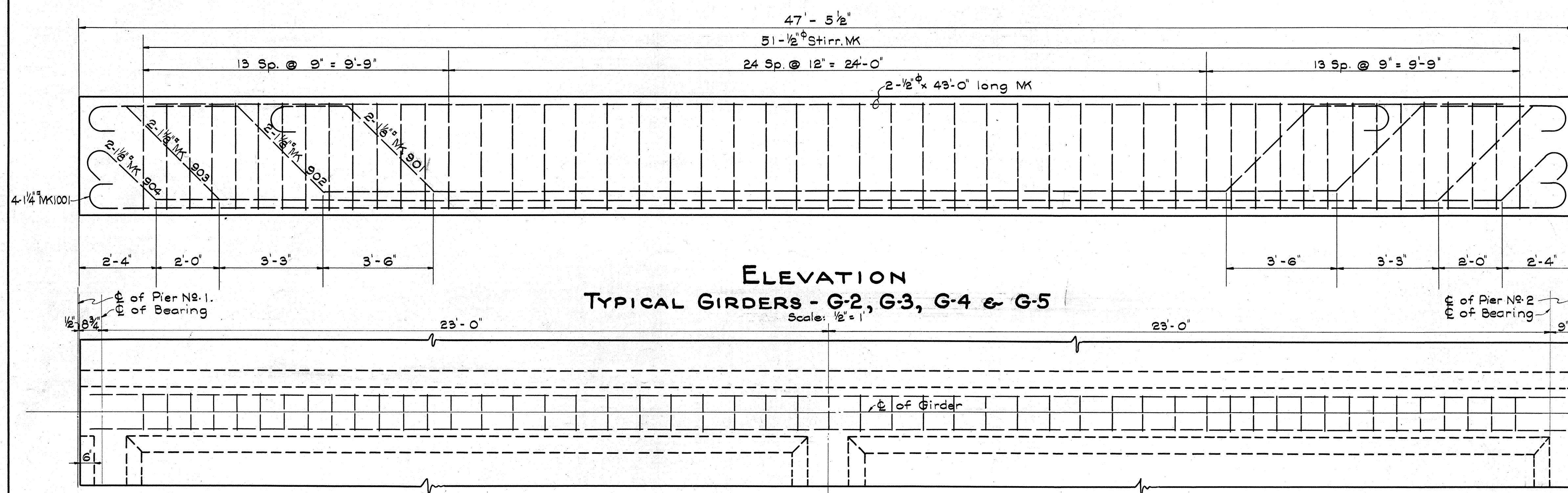
433 \$.13

ORIGINAL PLAN	SURVEY PLOTTED BY DESIGNED BY DRAWN BY TRACED BY QUANTITIES BY CHECKED BY	DATE " " " " " " " Sept. 1935 " " " " " " " Oct " " " " "
NOTE BOOK	W. C. COO W. L. LIA T. L. LIA	
No.		

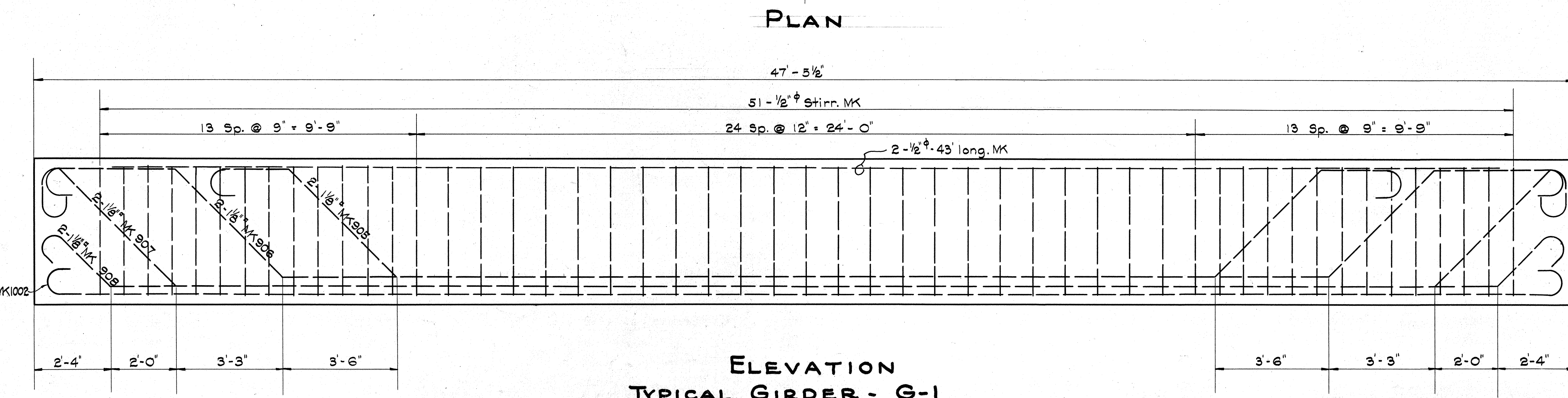
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	9-F	1935	14	42



PLAN



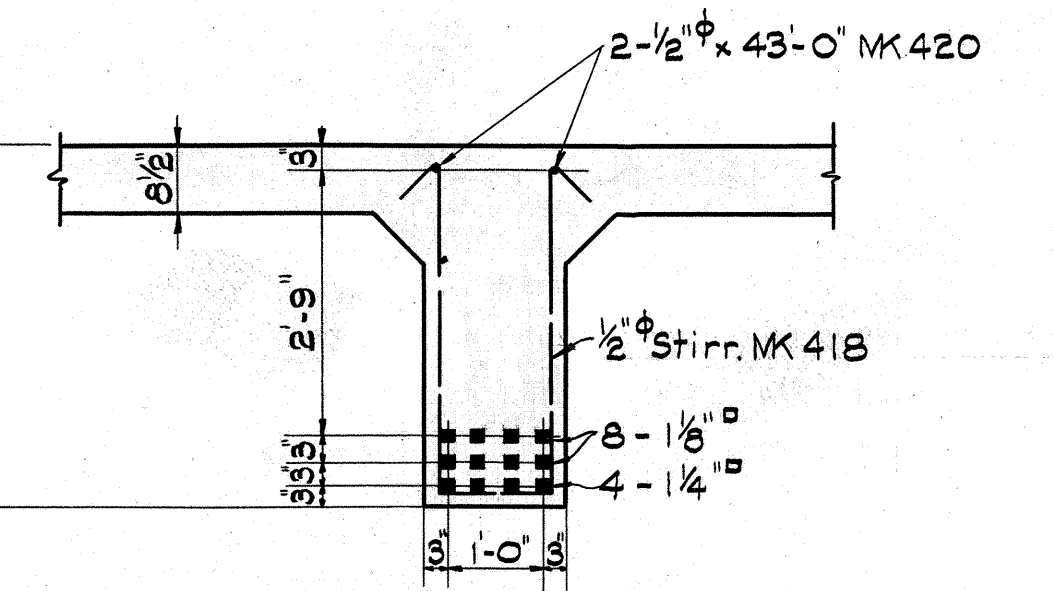
ELEVATION
TYPICAL GIRDERS - G-2, G-3, G-4 & G-5
Scale: 1/2" = 1'



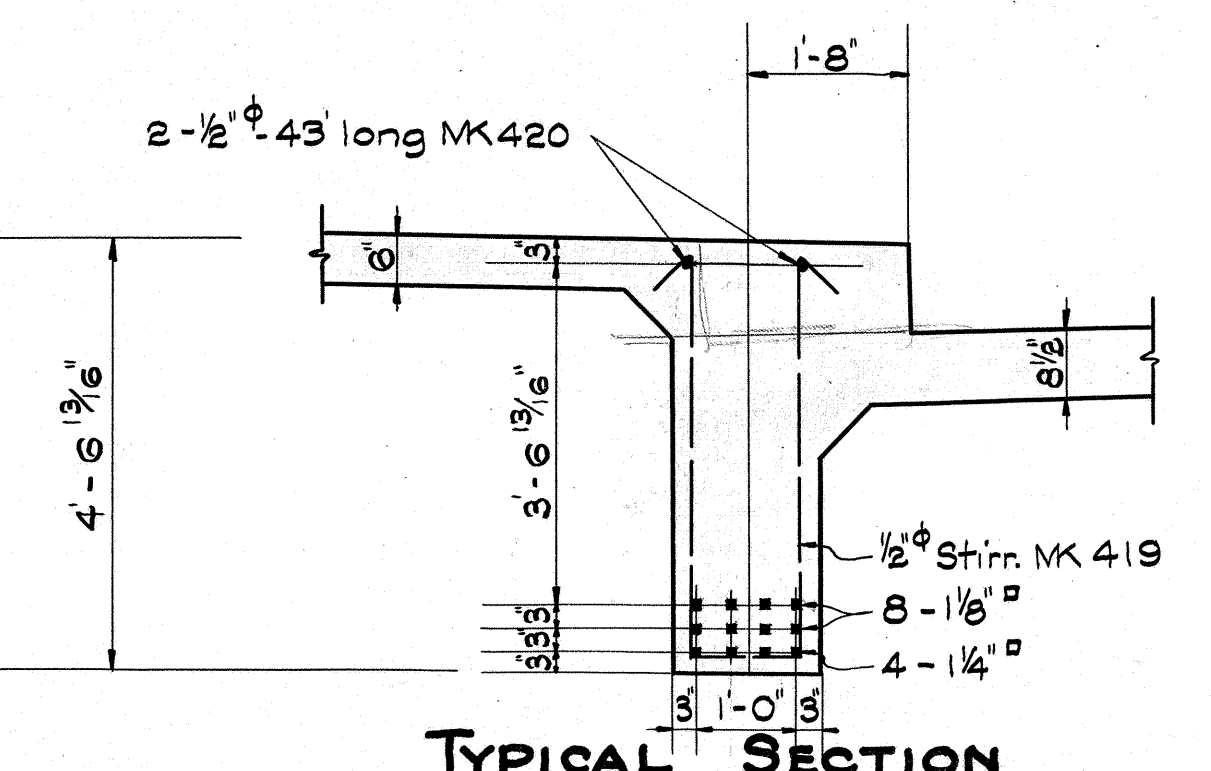
ELEVATION
TYPICAL GIRDER - G-1
Scale: 1/2" = 1'

NOTE: Girders between Pier No. 2 & End Bent No. 2 are 1/2' longer than those shown above (i.e. Overall length 47'-6"). The distance between girder end & C of bearing at Pier No. 2 is 9", while at End Bent No. 2, the distance is 12".

NOTE: Girders between End Bent No. 1 & Pier No. 1 are identical to those shown above except for the location of the C's of bearing. At the beginning of bridge, the distance between girder end & C of bearing is 12", while at Pier No. 1, the distance is 8 1/2".



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



TYPICAL SECTION

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

WAIMALU BRIDGE

NO. 8 STA. 375+93.75 TO STA. 377+36.25

KAMEHAMEHA HIGHWAY F.A.P. 9F

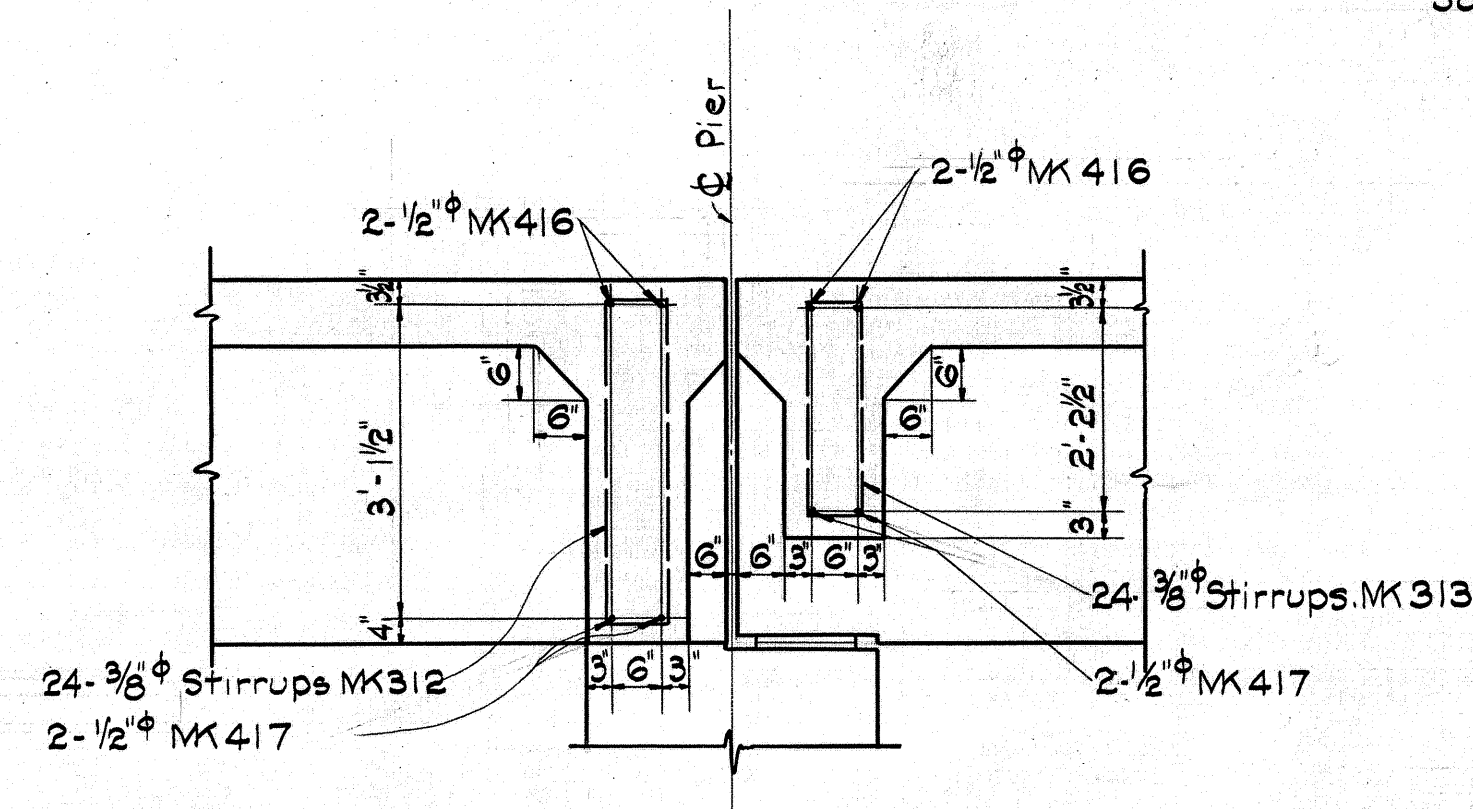
SHEET NO. 4 OF 6 SHEETS

4338.14

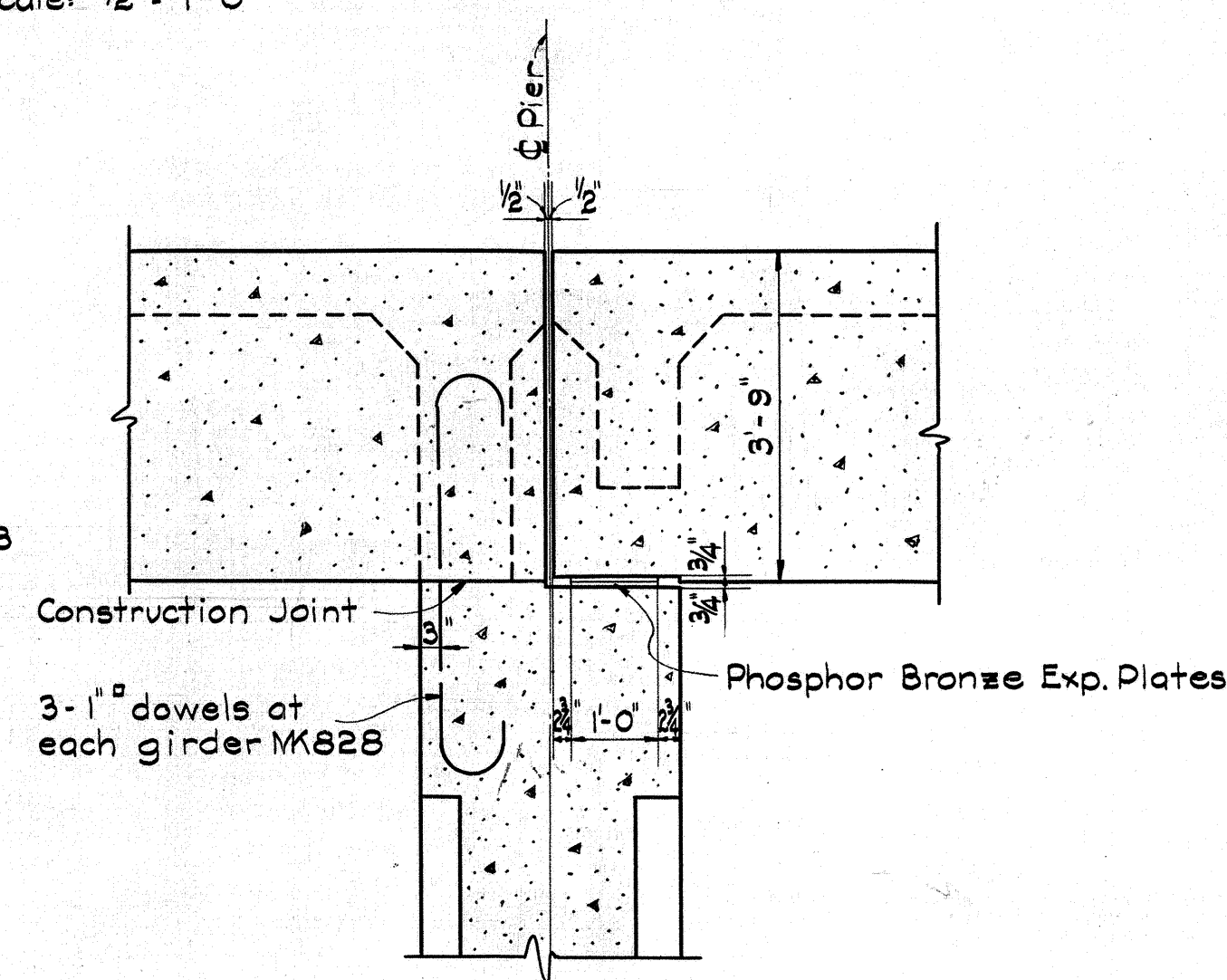
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	"
	DRAWN BY	"
	TRACED BY	"
	QUANTITIES BY	"
	CHECKED BY	"
NOTE BOOK		
No.		

Technical drawing of a bridge deck cross-section. The drawing shows a multi-span bridge with a total length of 36'-10". The spans are 15'-0" and 15'-0". The deck width is 2'-2" at the centerline of the roadway. The bridge is supported by piers with a width of 3'-9". The deck is 8 1/2" thick. Reinforcement details include 5-3/8" tie bars, 1/2" dia 12 ctrs MK 413, 1/2" dia 12 ctrs MK 412, 1/2" dia bent bars, 3/8" dia long temp bars, and 1/2" dia str bottom bars. The drawing also shows the centerline of the girder and the centerline of the bridge.

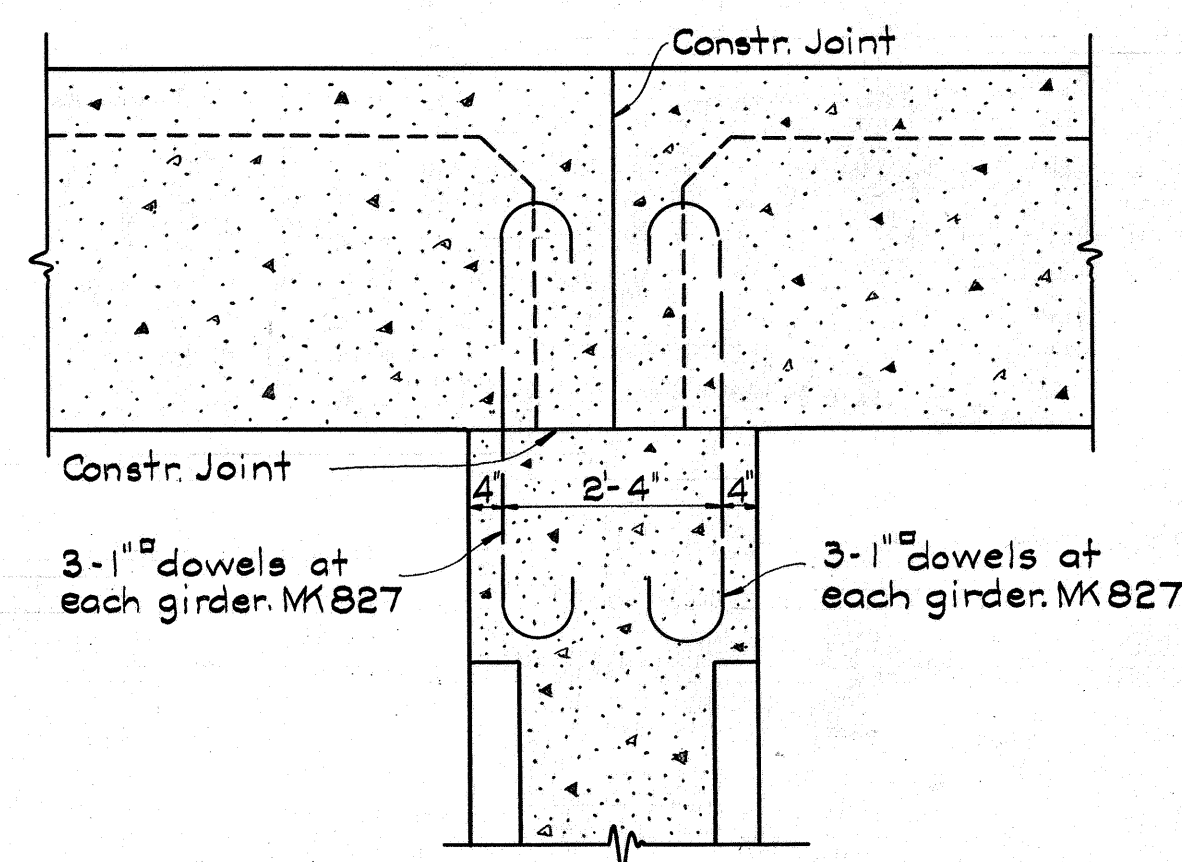
Scale: $\frac{1}{2}" = 1' - 0"$



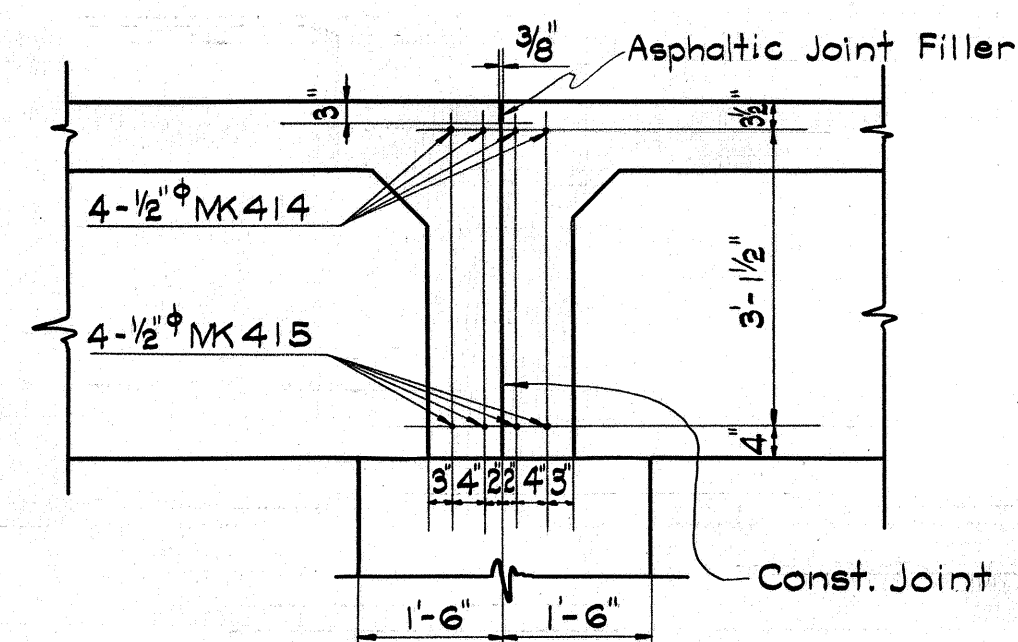
Scale: $\frac{1}{2}'' = 1'-0''$



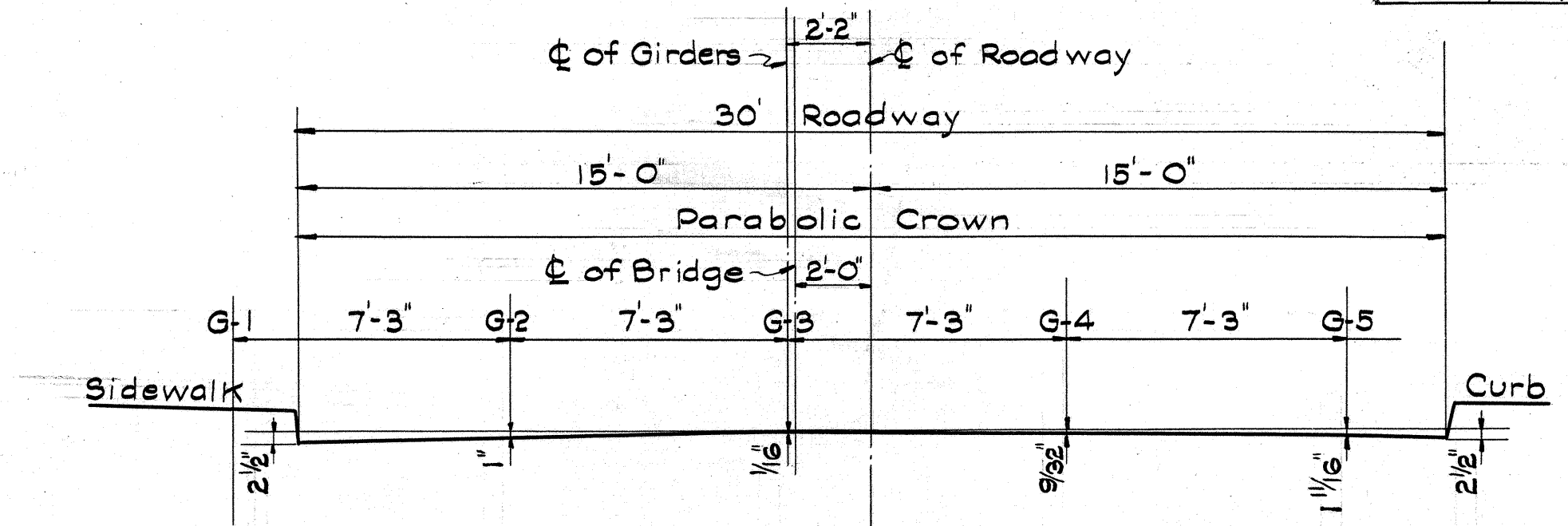
Scale: $\frac{1}{2}'' = 1' - 0''$



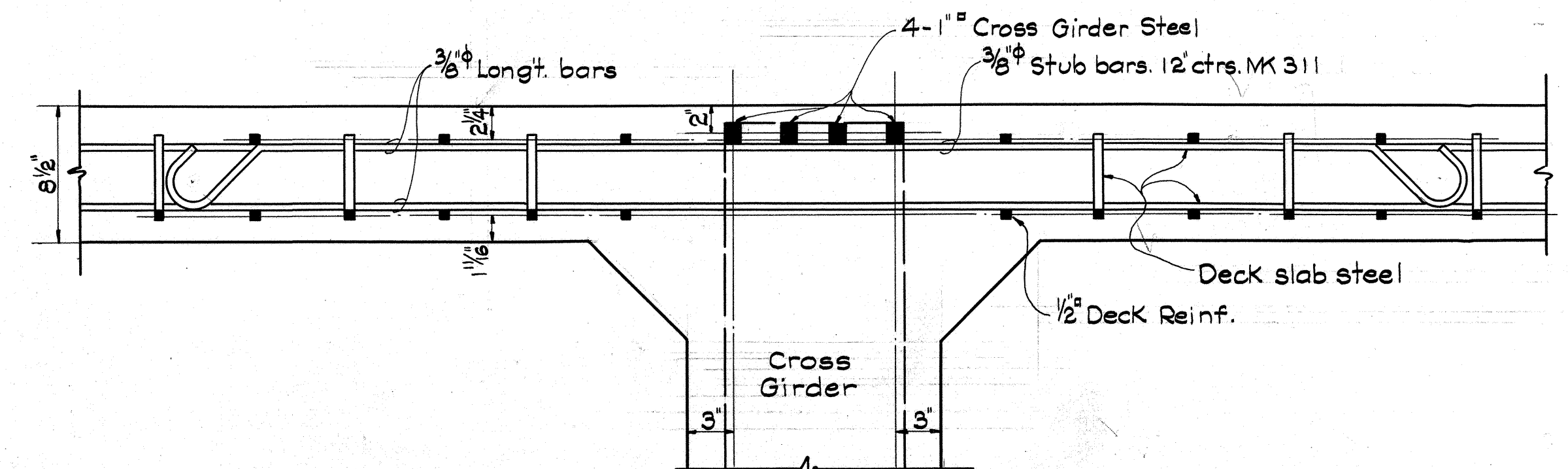
Scale: $\frac{1}{2}'' = 1' - 0''$



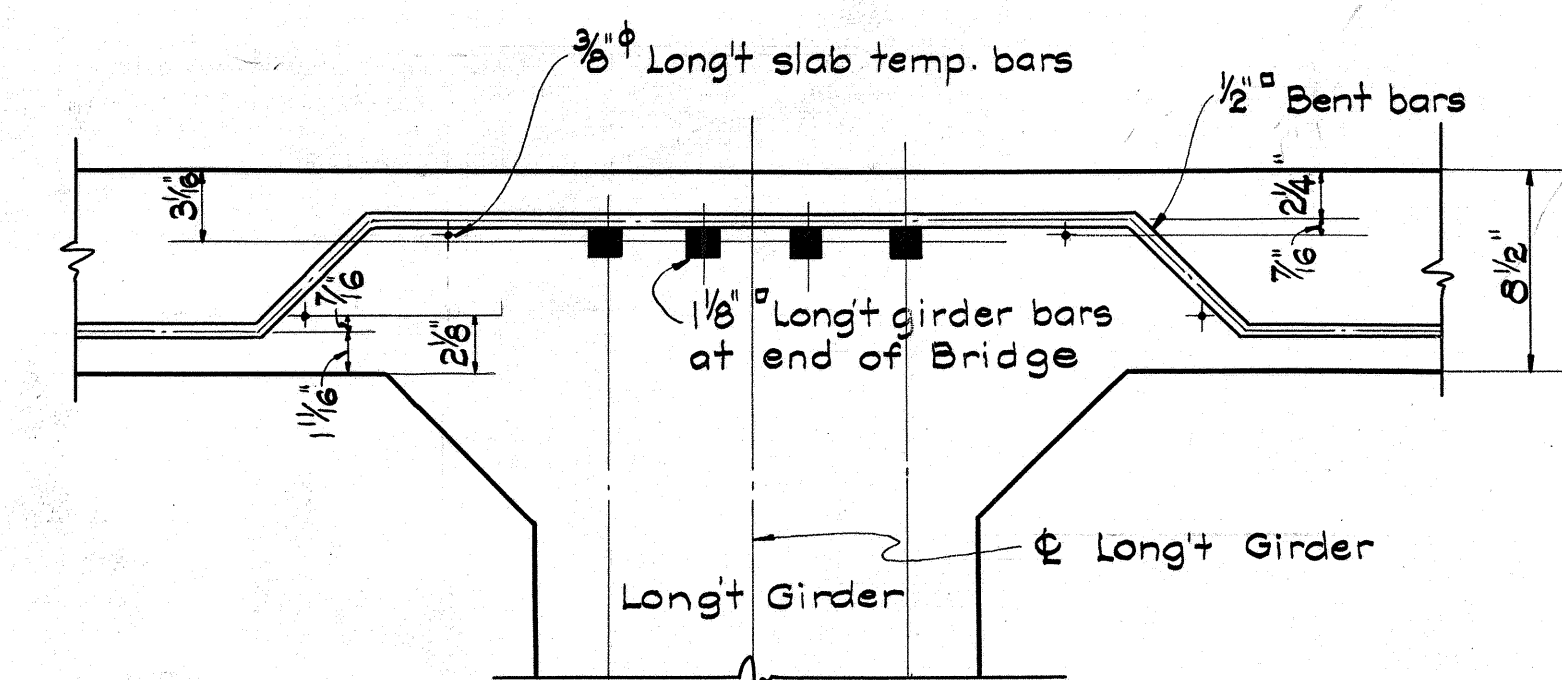
Scale: $\frac{1}{2}" = 1' - 0"$



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



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



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

433 \$.15

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	W. B.	"
DRAWN BY	H. C.	" Sept 1935
TRACED BY	H. C.	"
QUANTITIES BY	H. C.	"
CHECKED BY	K. A.	" Oct
No.		"

[illegible]

Depressed "V" letters $\frac{3}{8}$ " deep

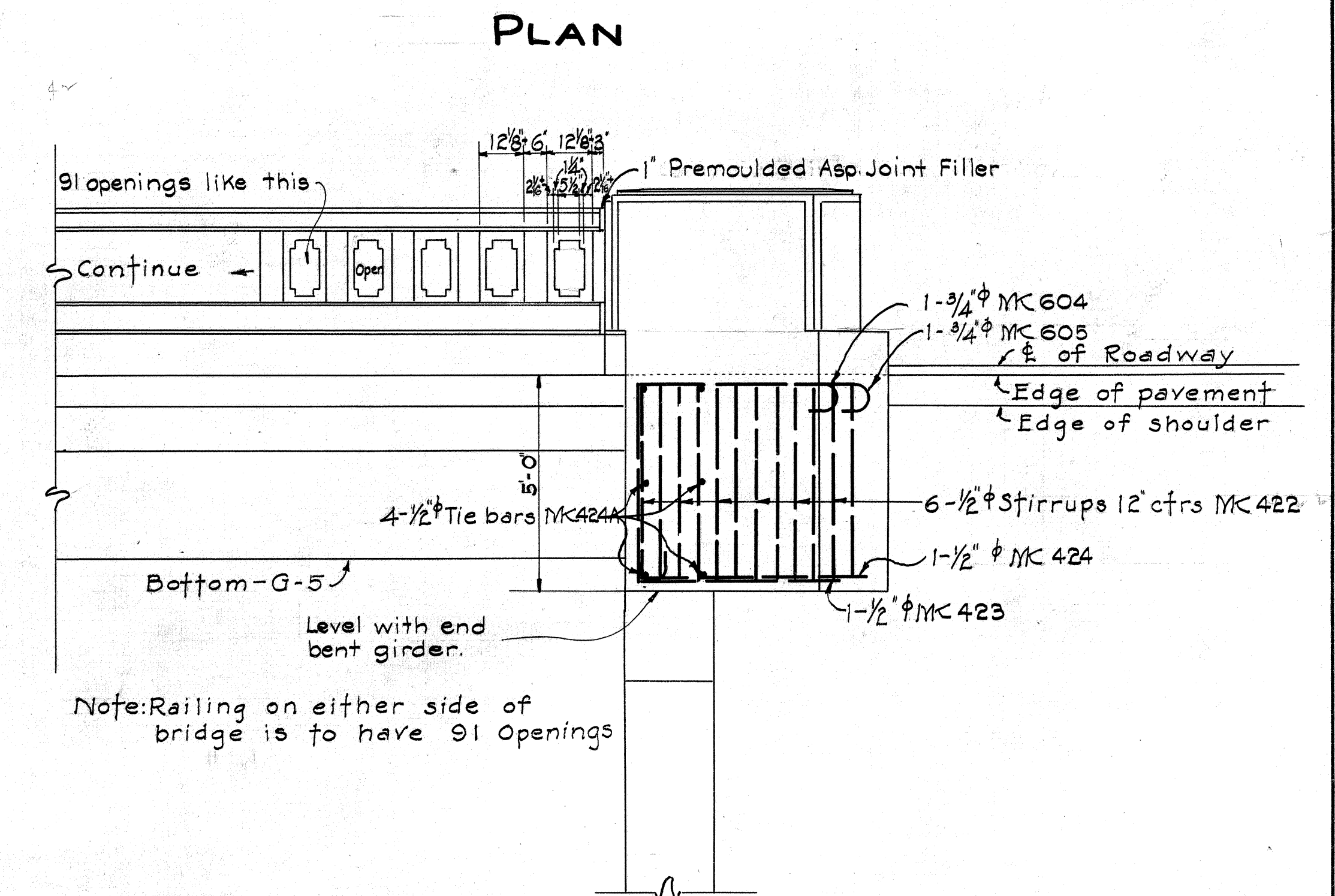
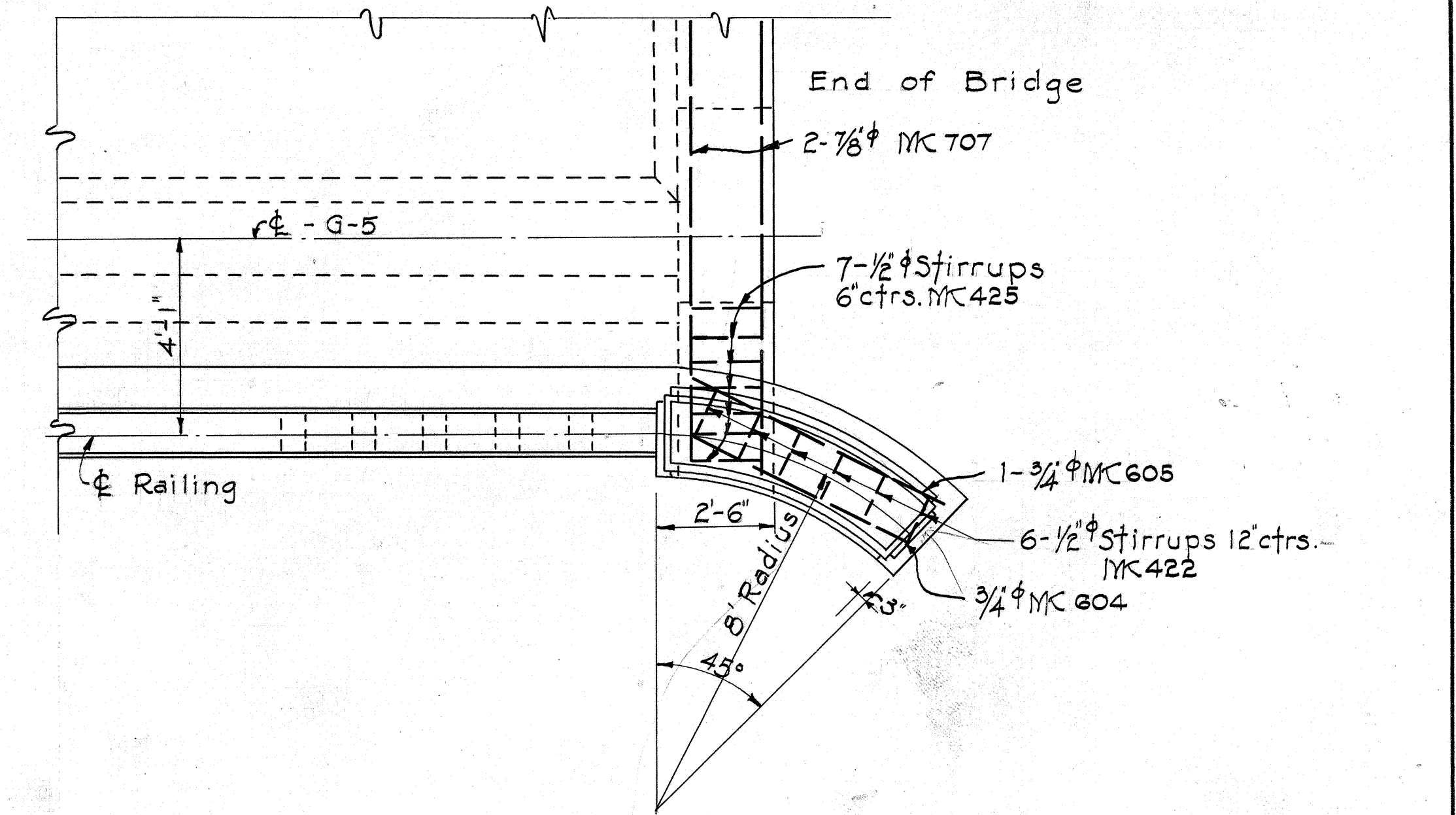
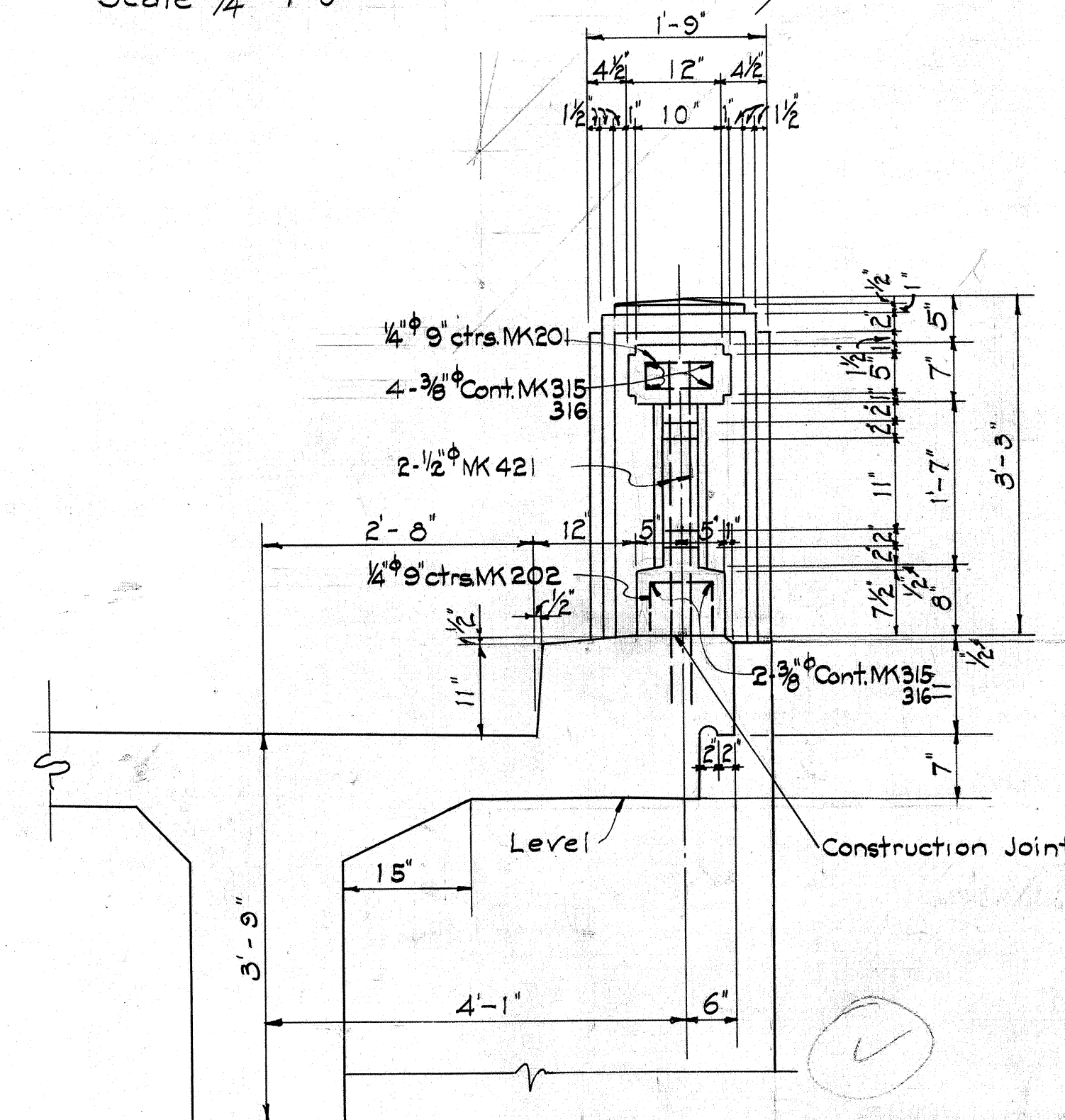
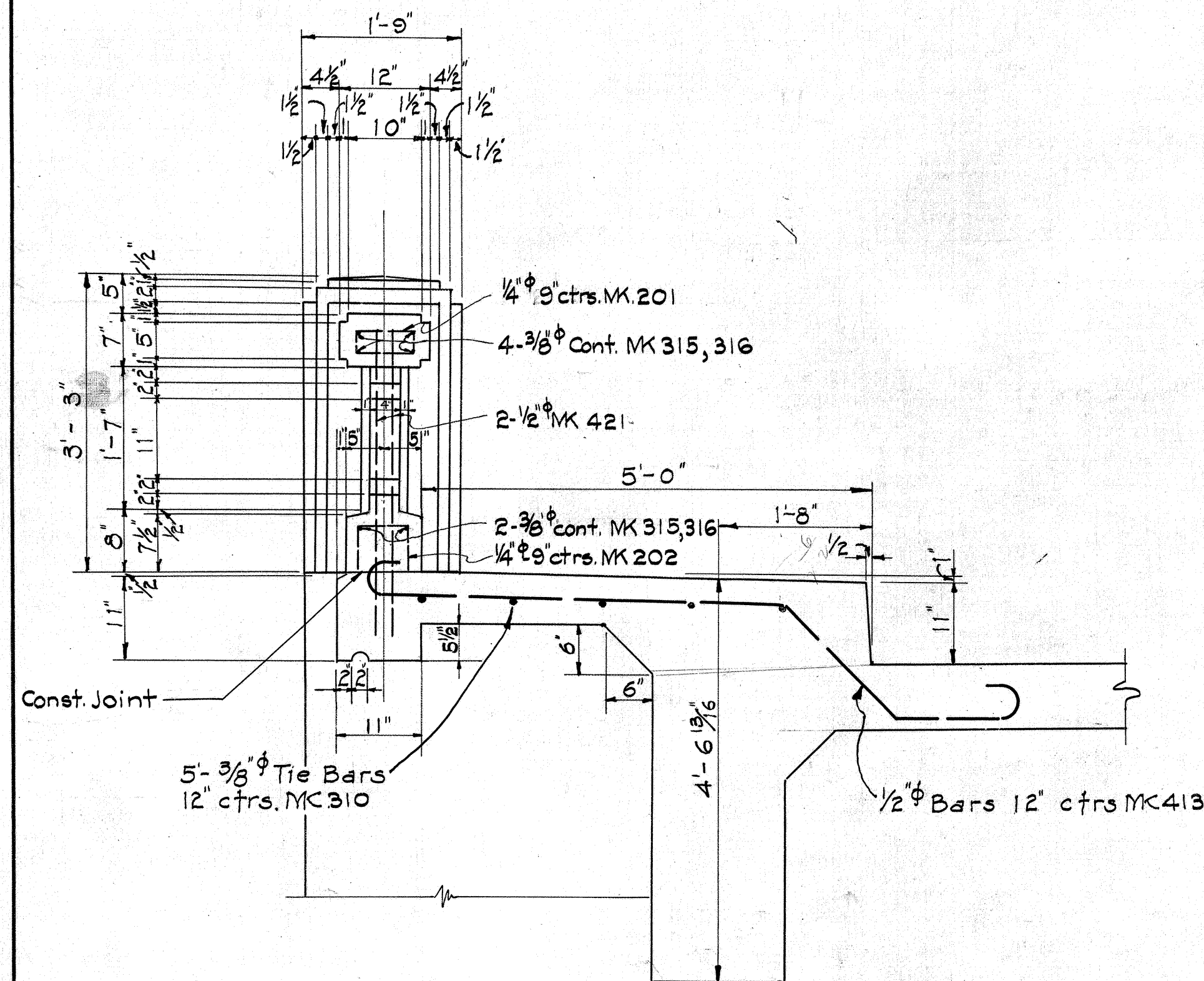
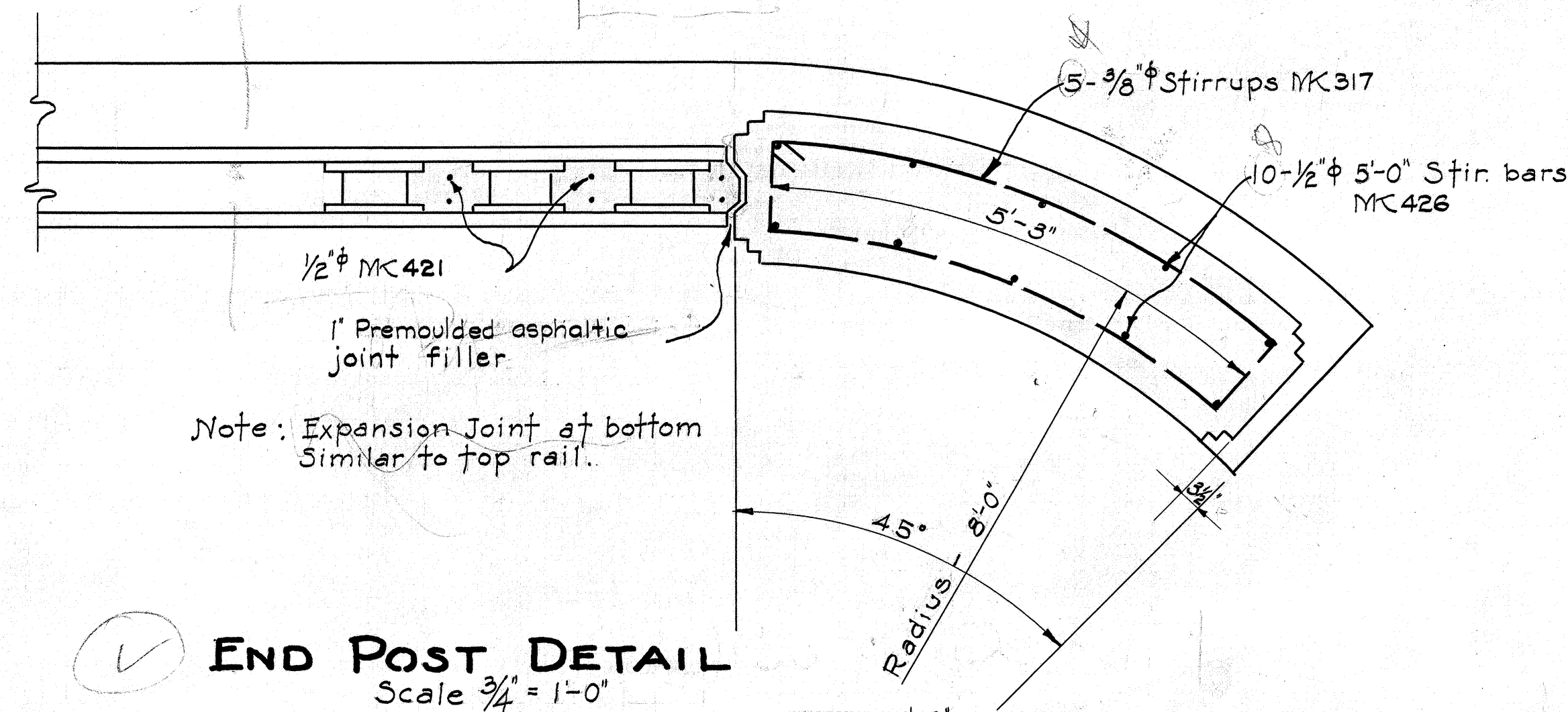
NAME **DATE**

Use Correct name of stream Date of year built

Left Hand Side Right Hand Side

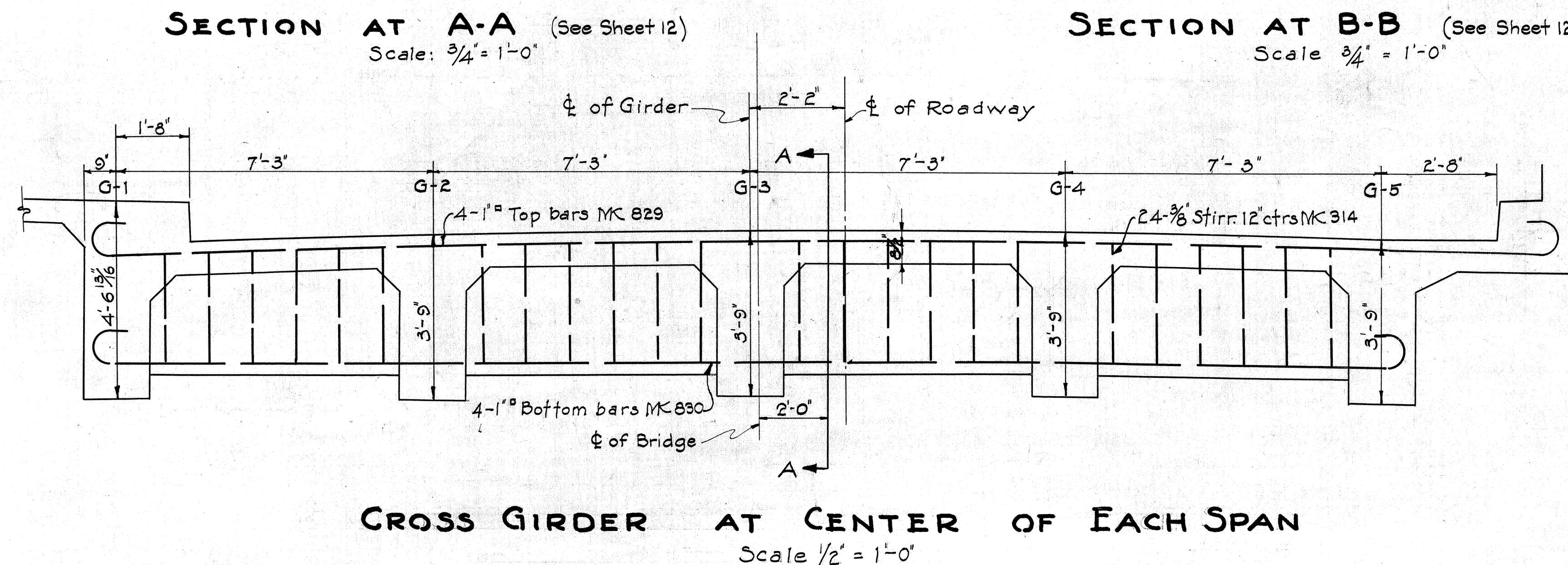
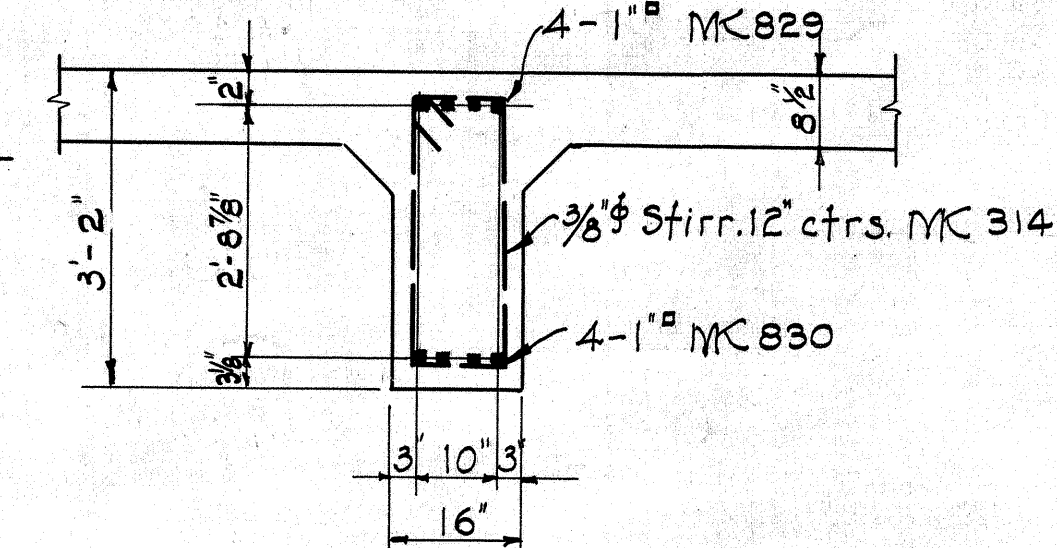
DETAIL OF LETTERS & FIGURES AT BOTH APPROACHES

Note: Name of stream to be placed in left end post panels & date in right end post panels on entering bridge using standard block letters 3" in height.



REINF. DETAIL FOR END POST SUPPORTS - RAILING DETAIL

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



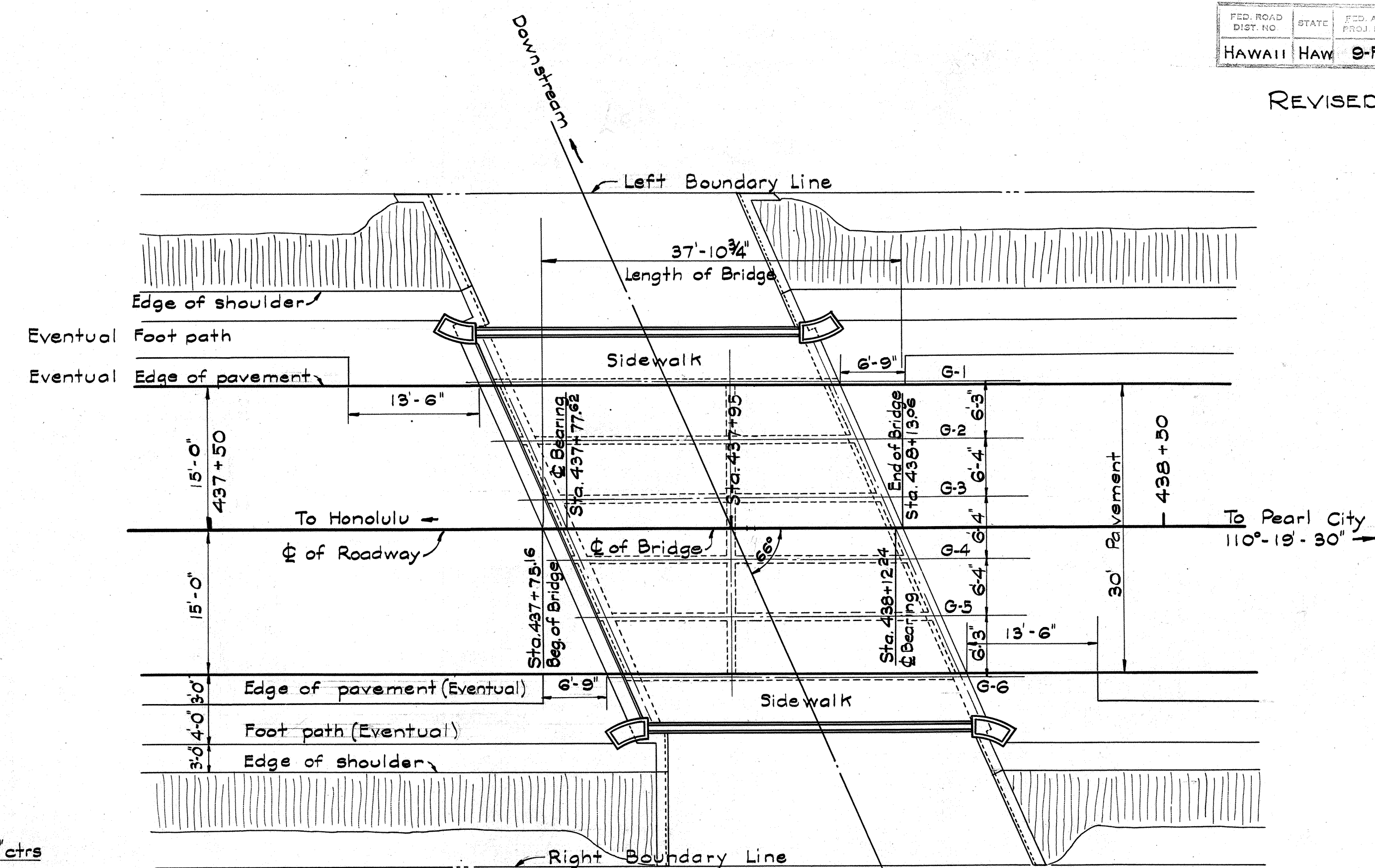
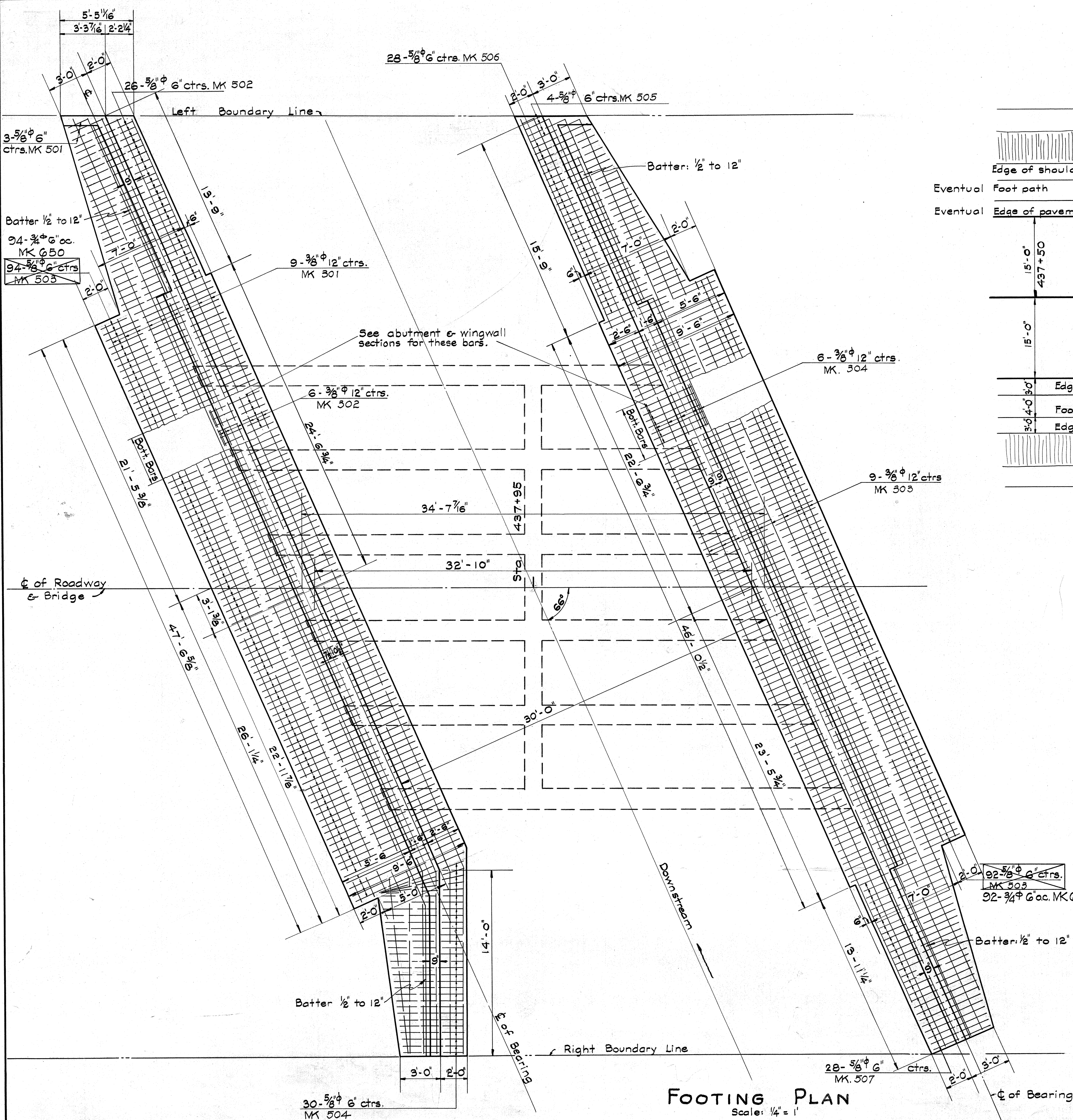
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

WAIMALU BRIDGE

No. 8 STA. 375+93.75 TO STA. 377+36.25
KAMEHAMEHA HIGHWAY F.A.P. 9F

SHEET No 6 OF 6 SHEETS

REVISED 1/28/36



LAYOUT PLAN

Scale: 1" = 10'

QUANTITIES

LOCATION	H.L.R.R.	C.R.M.	CHAN. EX.	STR. EX.	CONC.	REINF. ST.	REVISED
FOOTING				259 CY.	91 CY.	3815.16	4,695.16
ABUT. & WINGWALLS			262 CY.	231 CY.	111 CY.	10,117.16	
SUPERSTRUCTURE					76 CY.	15,462.16	
RAILING					13 CY.	682.16	
TOTAL			262 CY.	490 CY.	291 CY.	39,276.16	31,156.16

GENERAL NOTES

- Dead Load: Concrete at 150#/Cubic foot.
 Live Load: Train of 15-ton trucks in three traffic lanes. Impact allowance = $\frac{50}{2+125}$. Spacing of trucks as per diagram.
 Concrete: Class A (1:2:4) with all exposed edges chamfered $\frac{3}{4}$ " unless otherwise noted. Allowable compression 650# per Sq. inch.
 Reinforcing Steel: Intermediate grade; allowable tensile stress 18,000# per Sq. inch. All steel to be round or square deformed bars of approved design; square twisted bars not to be considered deformed. All dimensions relating to reinforcement are to centers of bars unless otherwise noted. Where splicing of reinforcement is necessary, bars are to be lapped 40 diameters and splices are to be staggered. No splices will be permitted in main reinforcement. No allowance will be made in the quantities for extra weight of steel required for splicing. Unless otherwise noted, the minimum covering measured from the surface of concrete to the face of any steel, shall be not less than $\frac{1}{2}$ " in abutments and abutment footings; 2" in beams, girders, and handrails and $\frac{1}{4}$ " in slab. Steel to be held rigidly and accurately in place before and during placing of concrete.
 Brush Coat Waterproofing: Remove all projections, cement film, dirt etc. and apply waterproofing as specified. Waterproofing is incidental to the concrete used and will not be paid for separately.
 Construction Joints: All construction joints to have surface roughened and 1:2 cement grout applied immediately before second pouring.

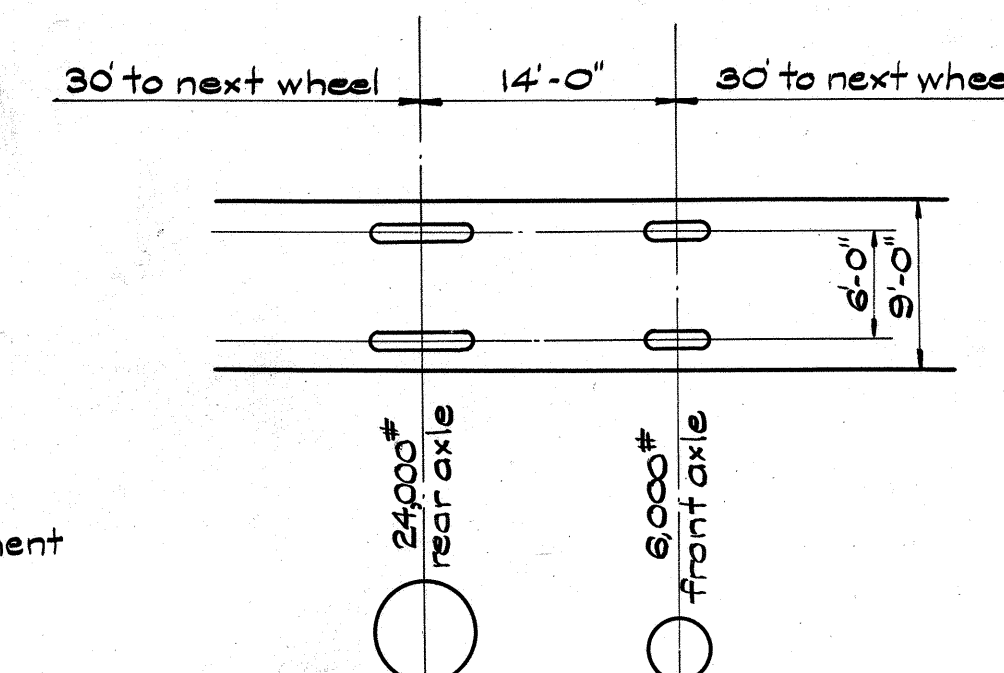


DIAGRAM OF TYPICAL 15 TON TRUCK

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
PEARL CITY BRIDGE
 NO. 9 STA. 437+75.6 TO STA. 438+130.6
 KAMEHAMEHA HIGHWAY F.A.P. 9F
 SHEET NO. 1 OF 7 SHEETS.

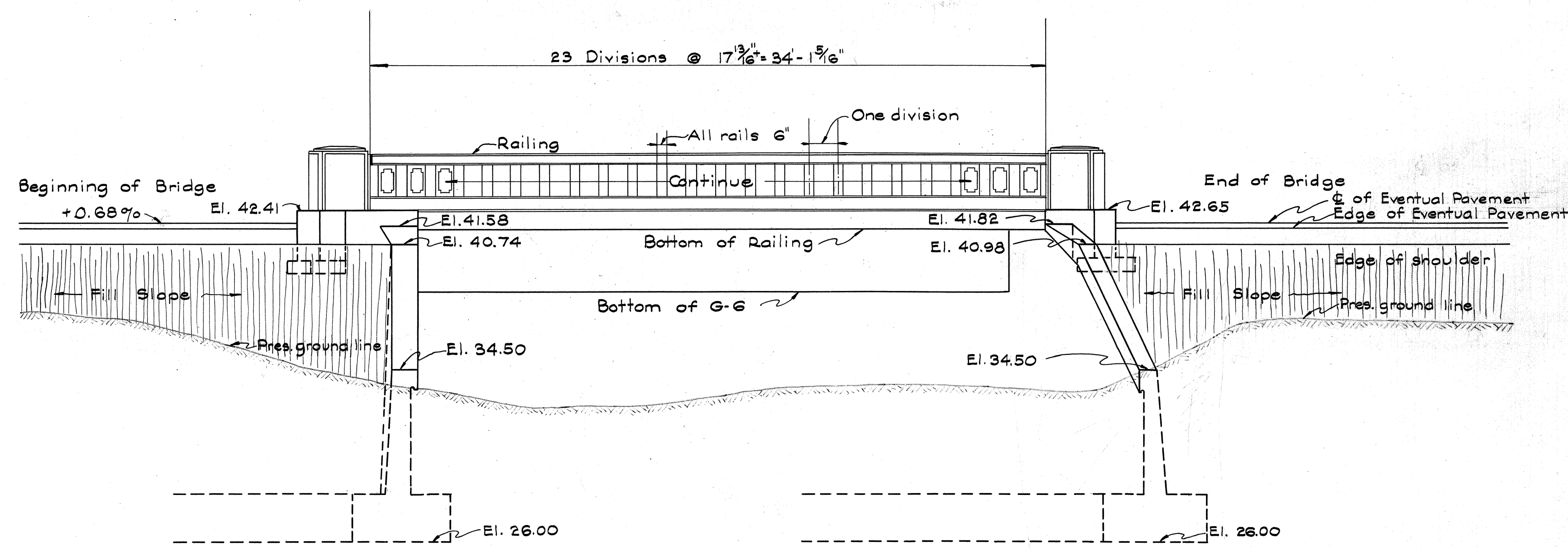
4338.17

REVISIONS
 DATE
 BY
 1. June 1935
 2. July
 3. July
 4. July
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Rev by J.C.M.

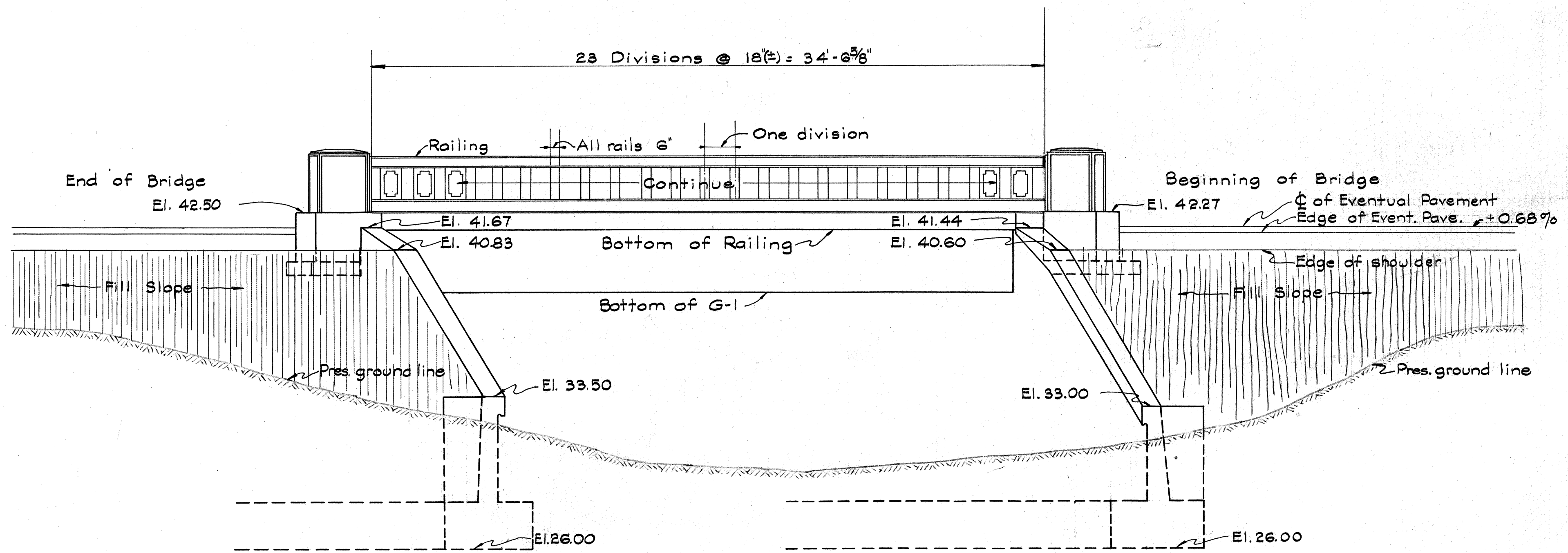
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	9F	1935	18	42

REVISED 1/28/36



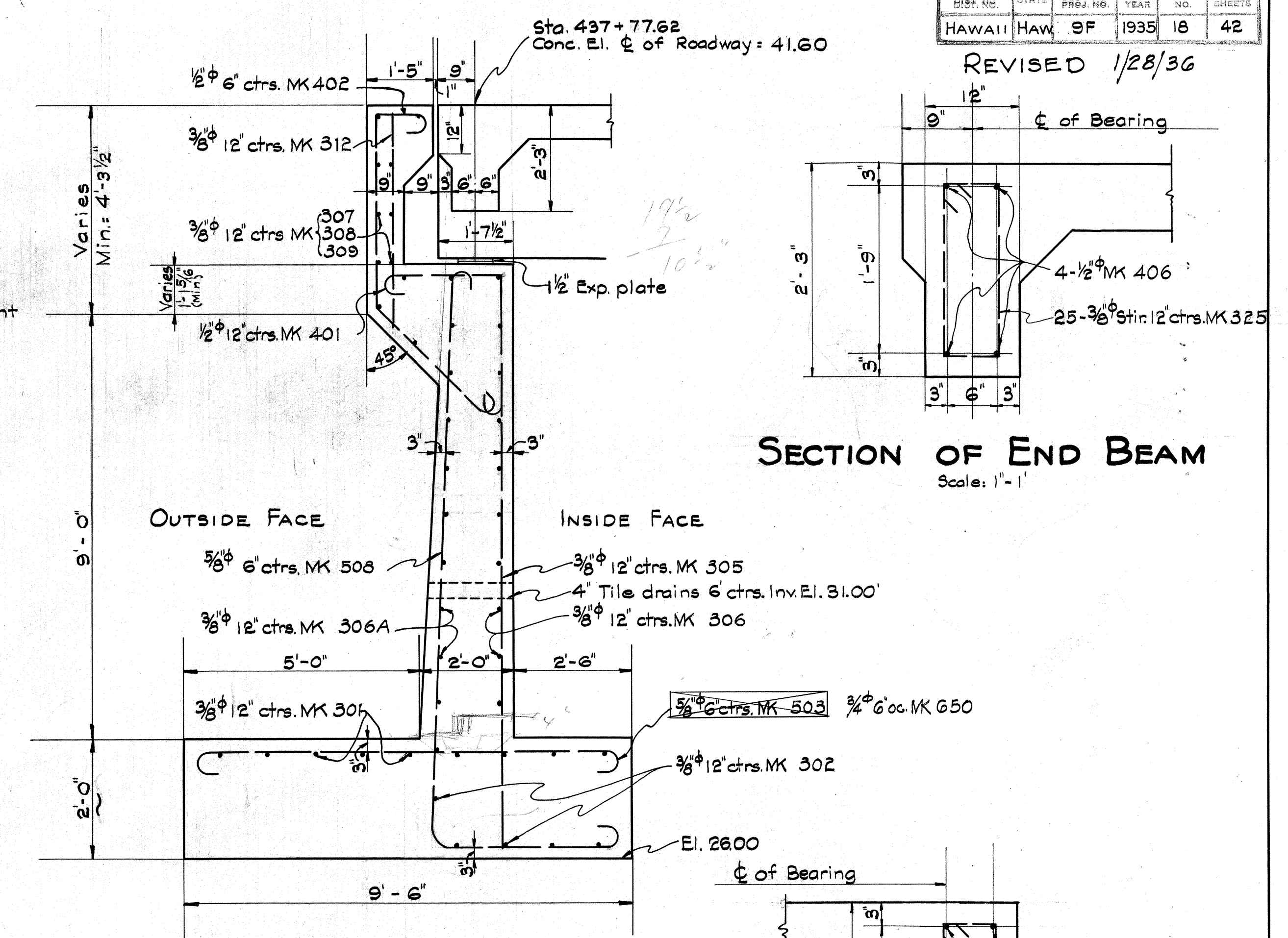
RIGHT BRIDGE ELEVATION

Scale: $\frac{1}{4}'' = 1'$
TAKEN ON LINE 35' RIGHT OF ϕ OF ROAD



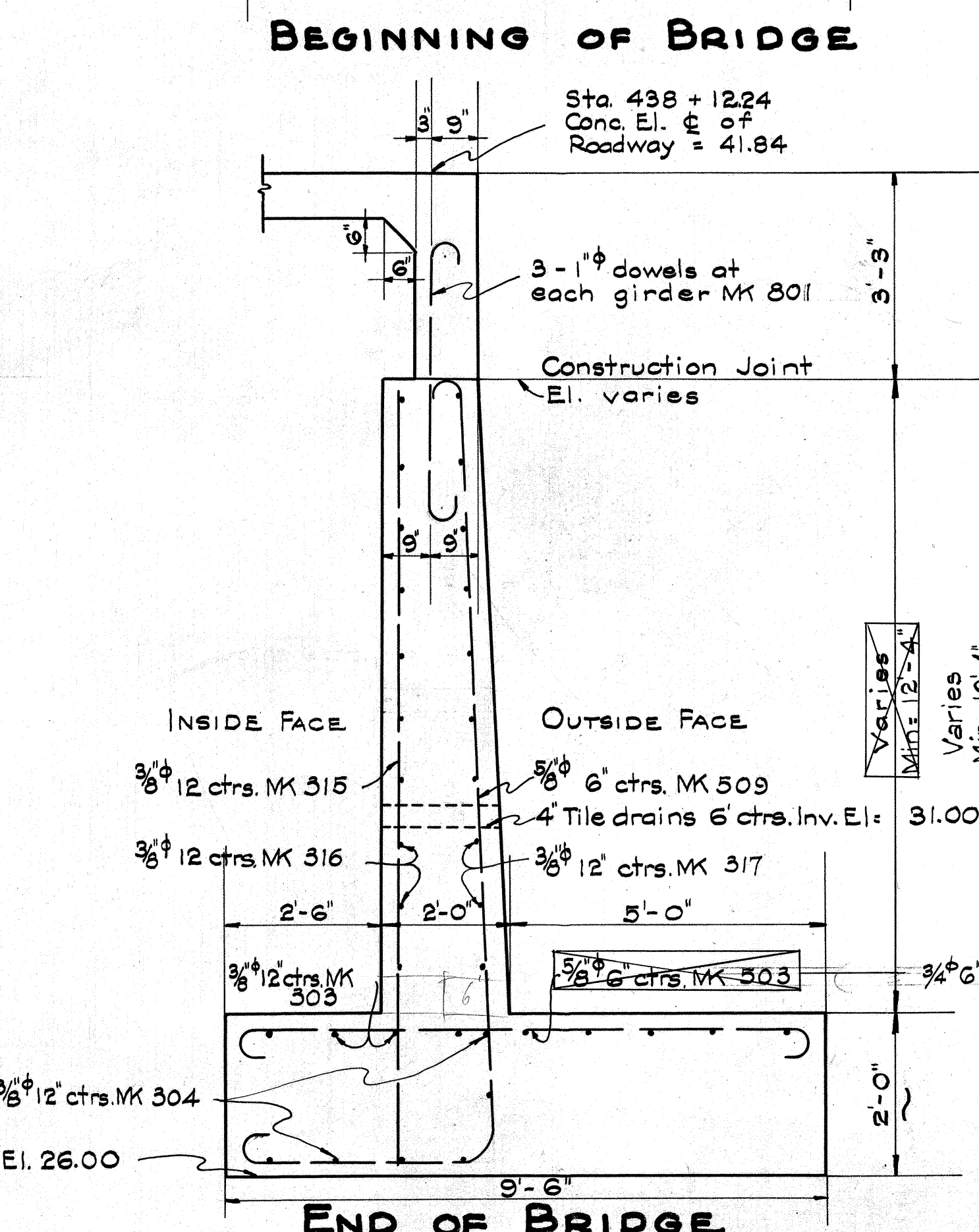
LEFT BRIDGE ELEVATION

Scale: $\frac{1}{4}'' = 1'$
TAKEN ON LINE 35' LEFT OF ϕ OF ROAD

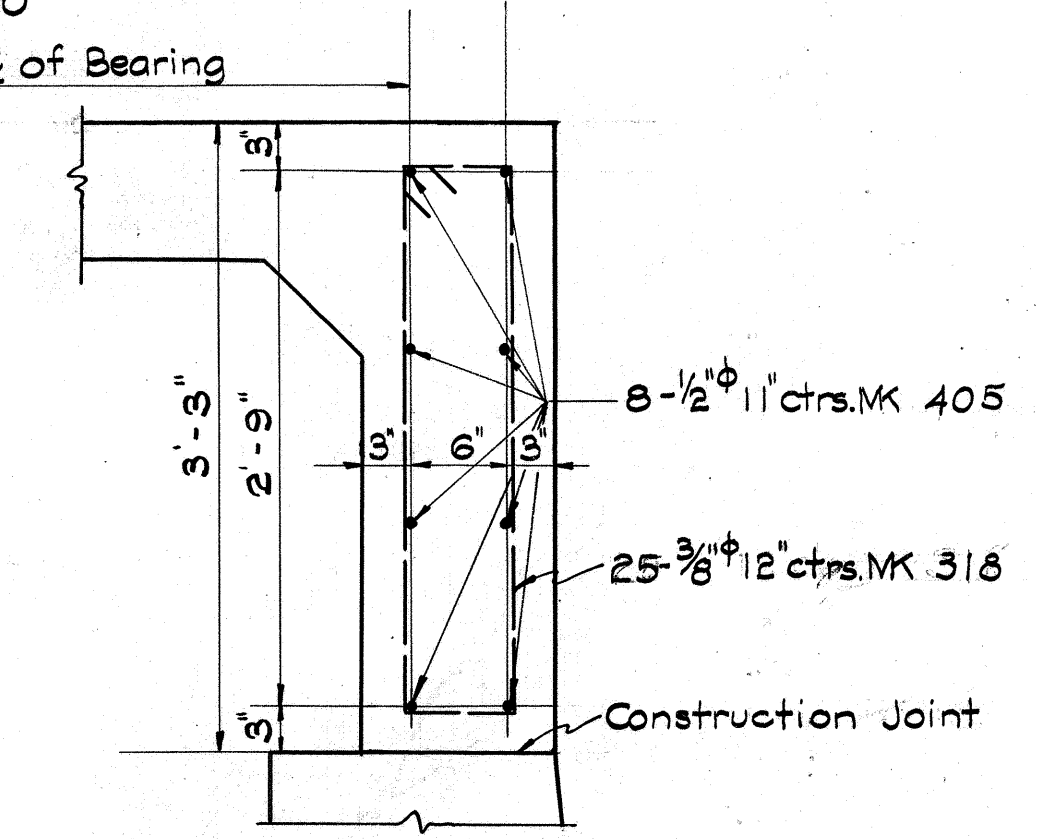


SECTION OF END BEAM

Scale: $1'' = 1'$



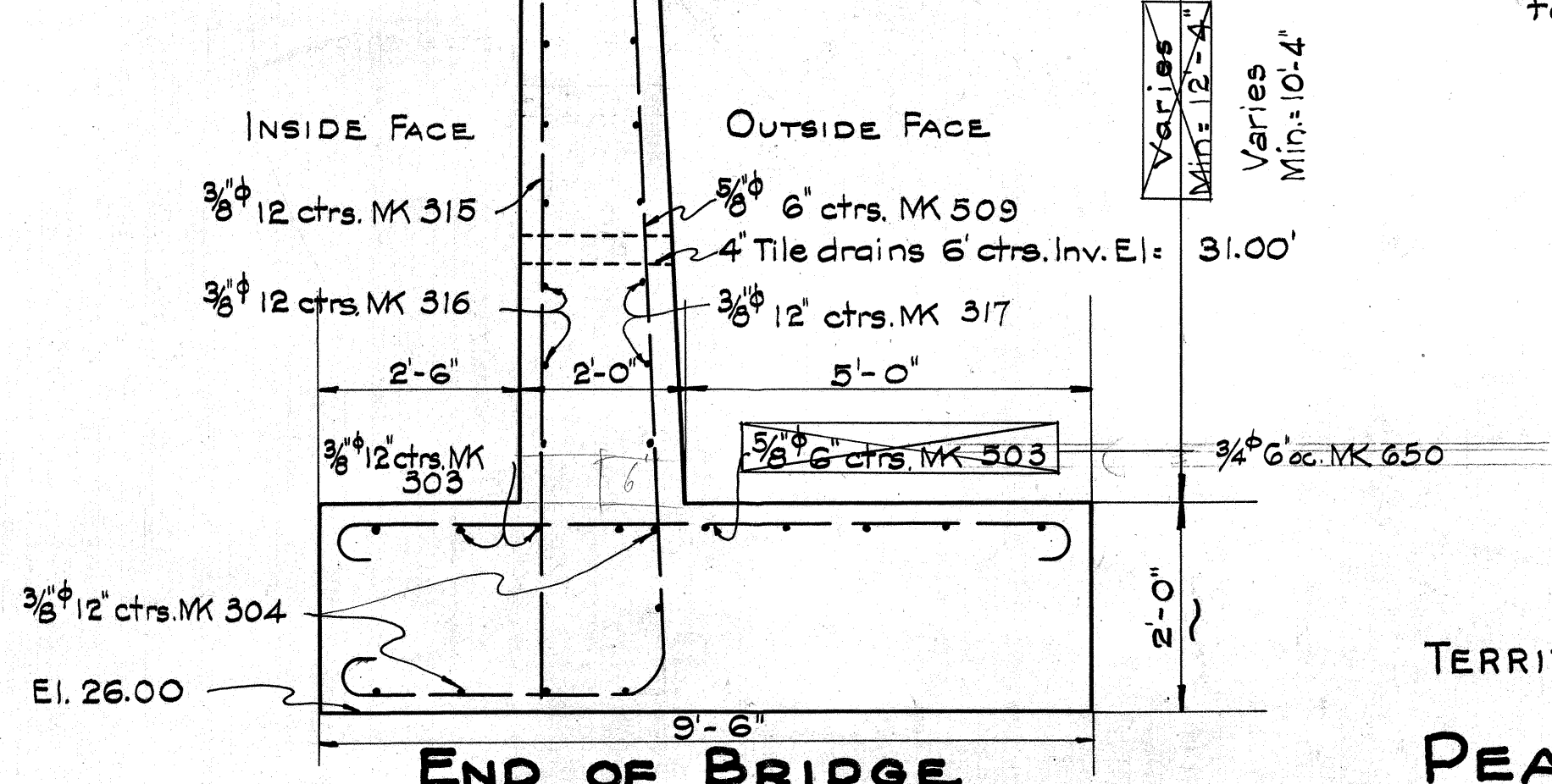
BEGINNING OF BRIDGE



SECTION OF END BEAM

Scale: $1'' = 1'$

Note! Depth of footing is NOT to scale.



END OF BRIDGE

TYPICAL CROSS SECTIONS OF ABUTMENTS

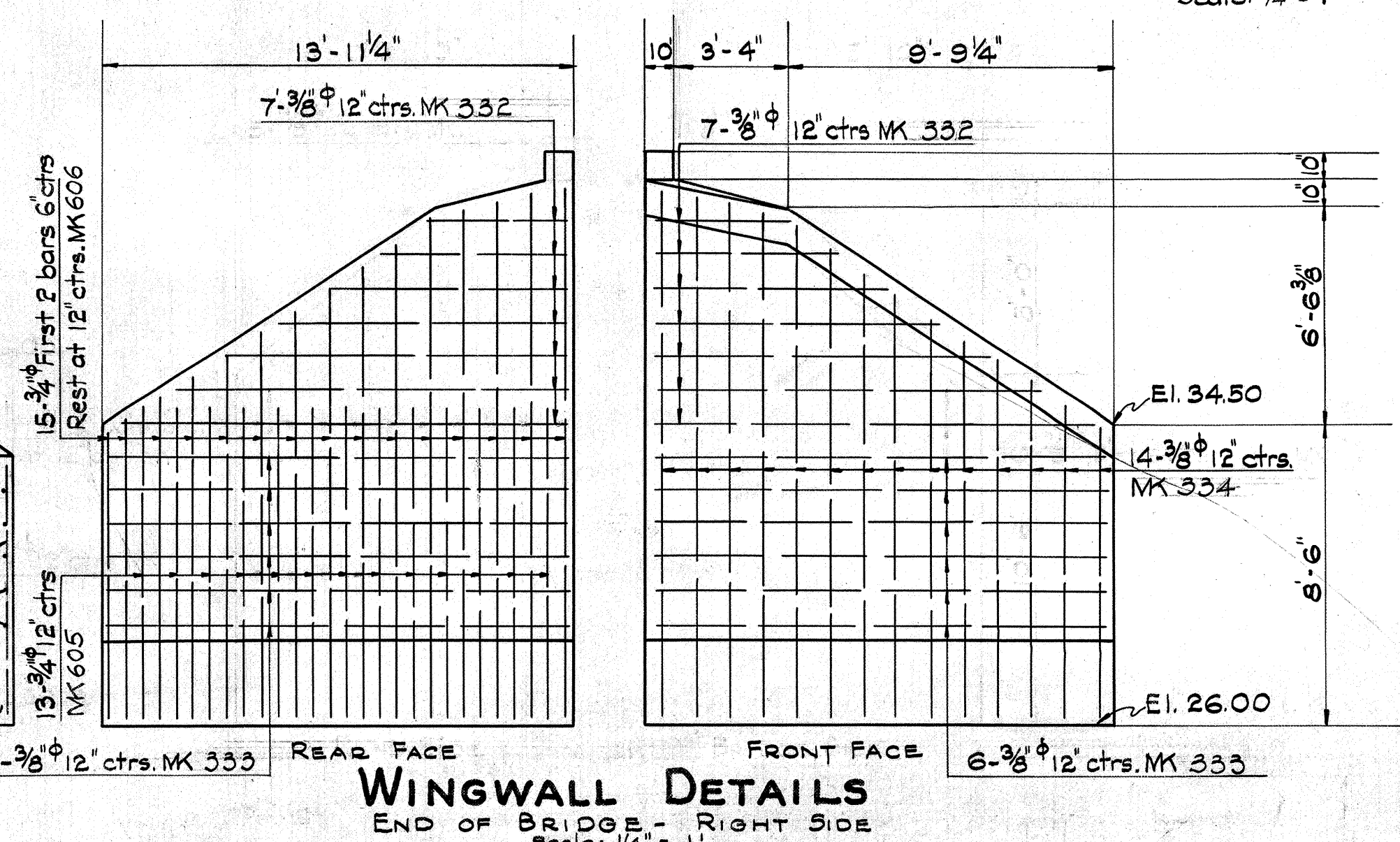
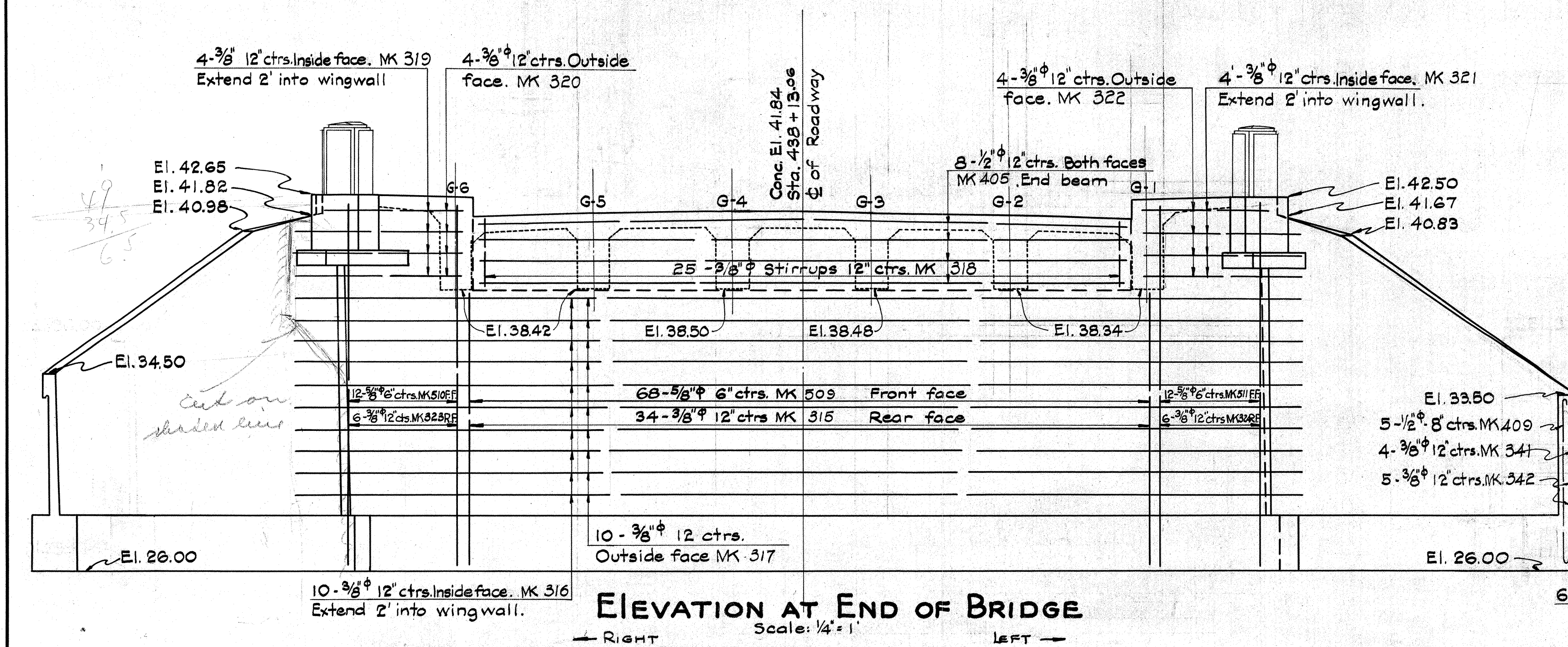
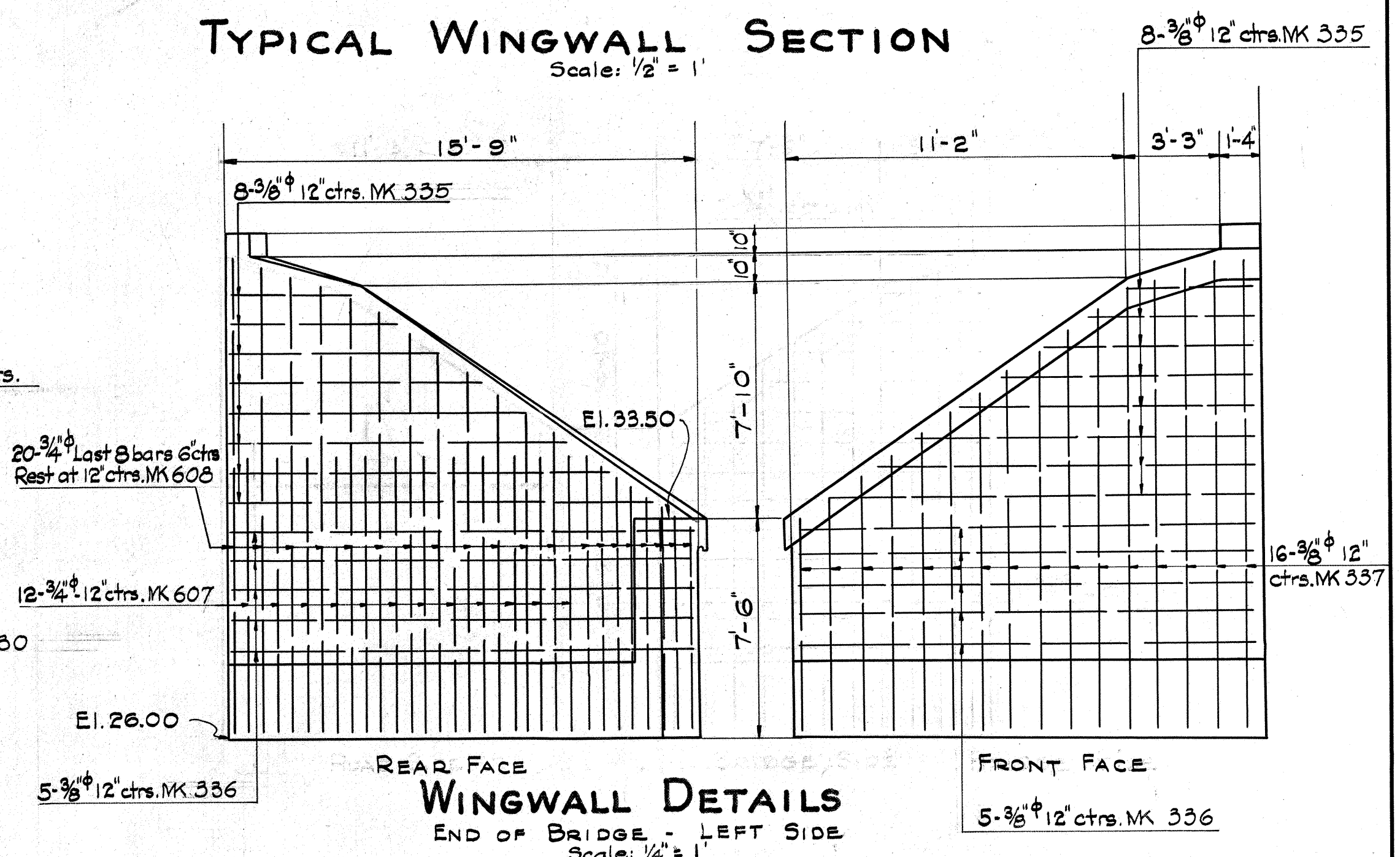
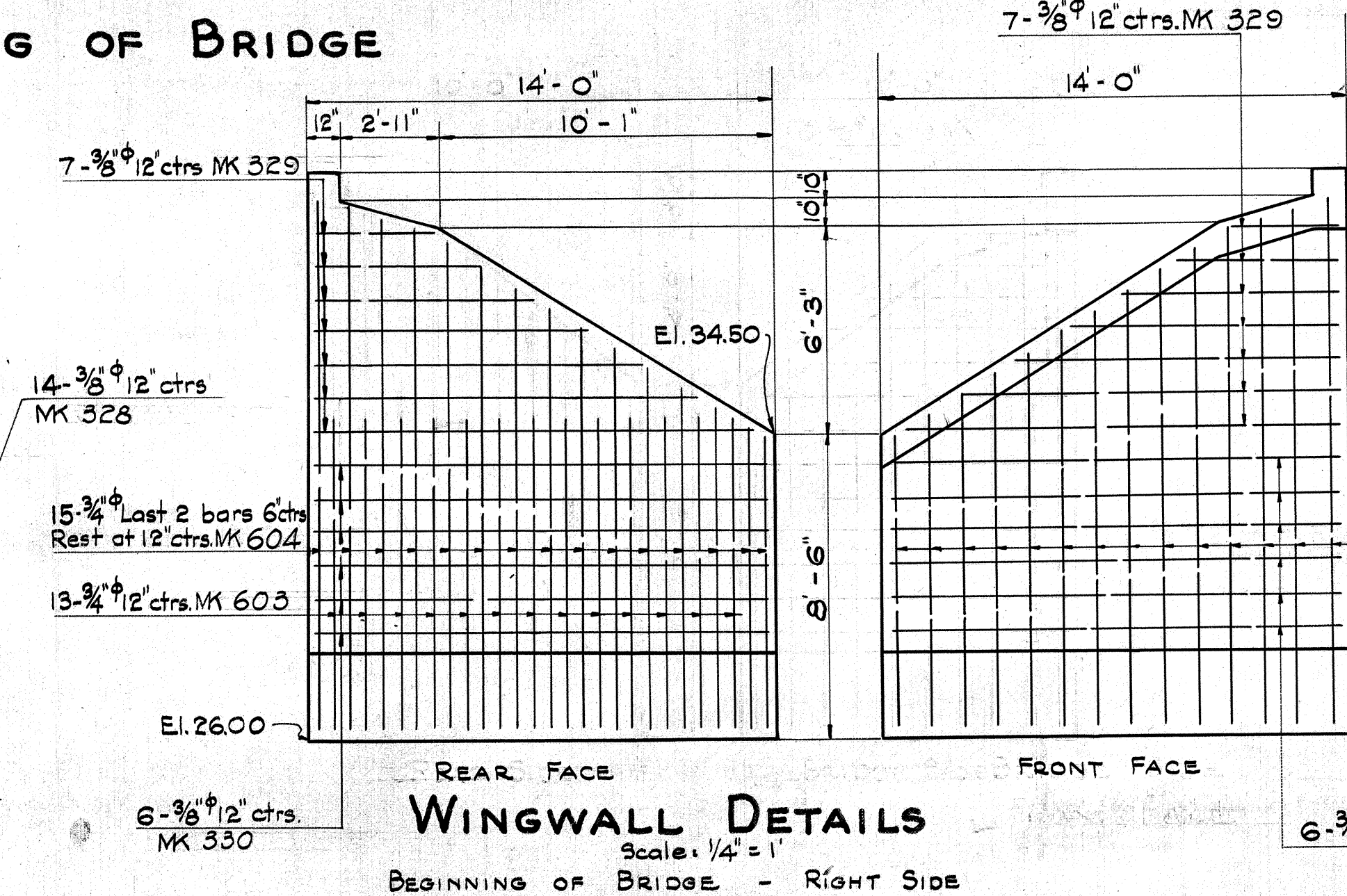
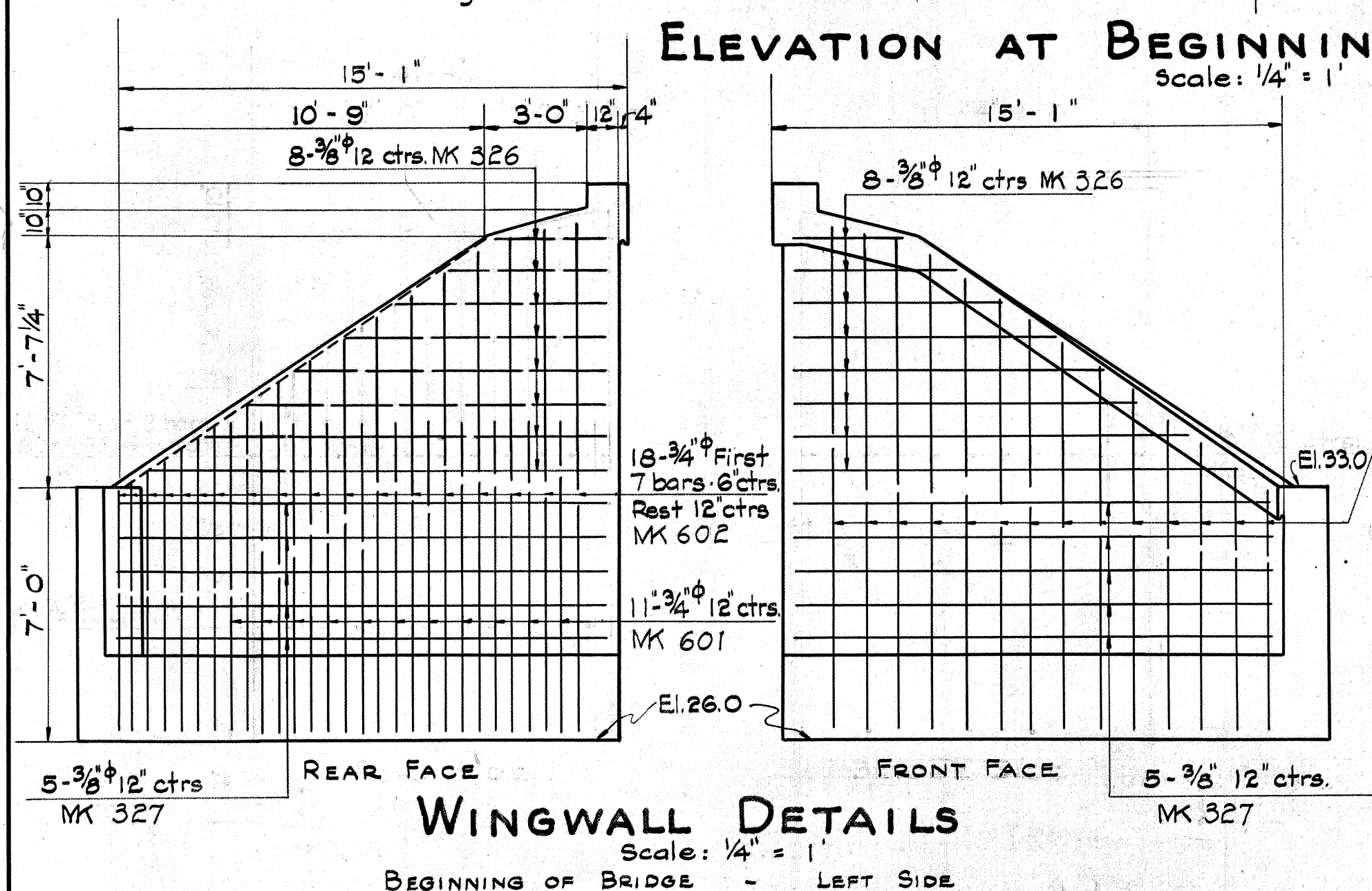
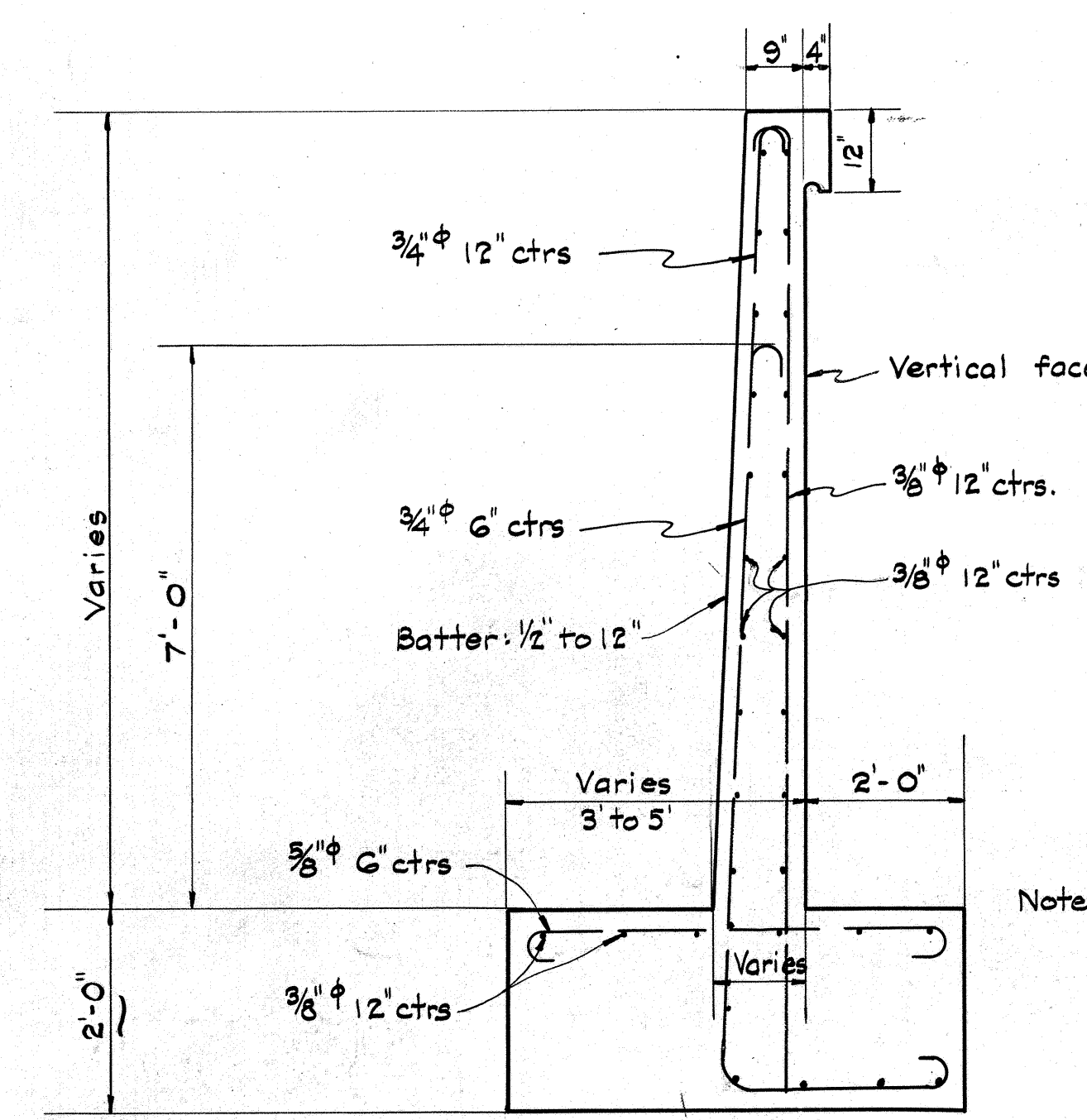
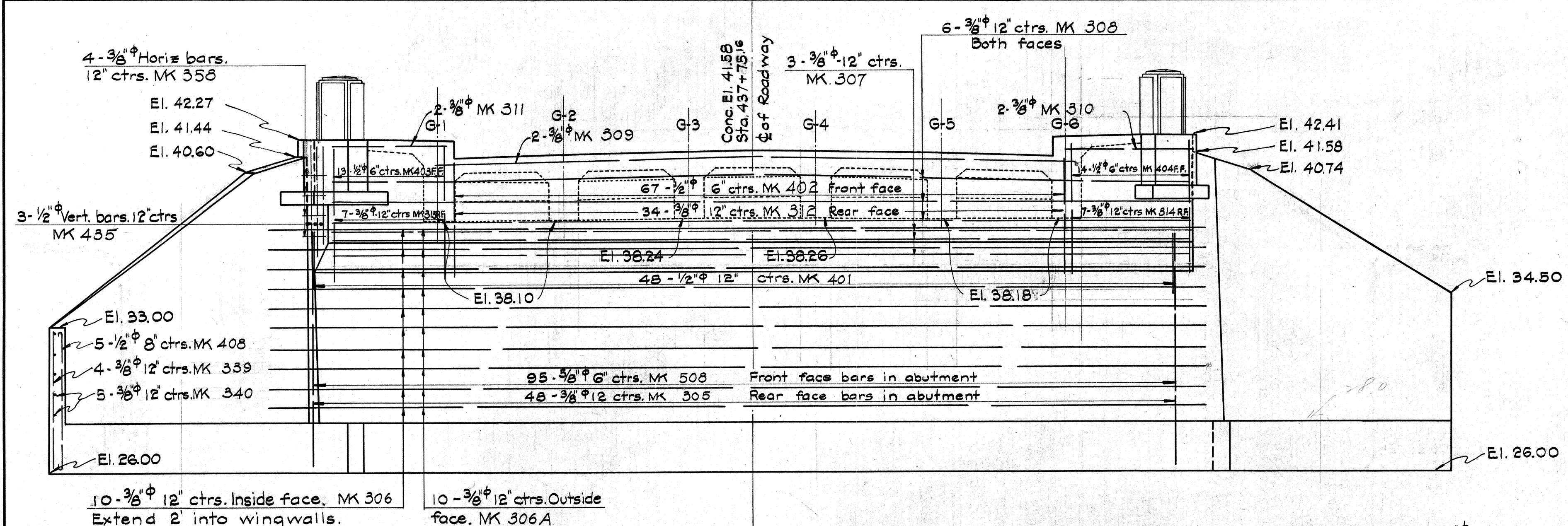
Scale: $\frac{1}{2}'' = 1'$

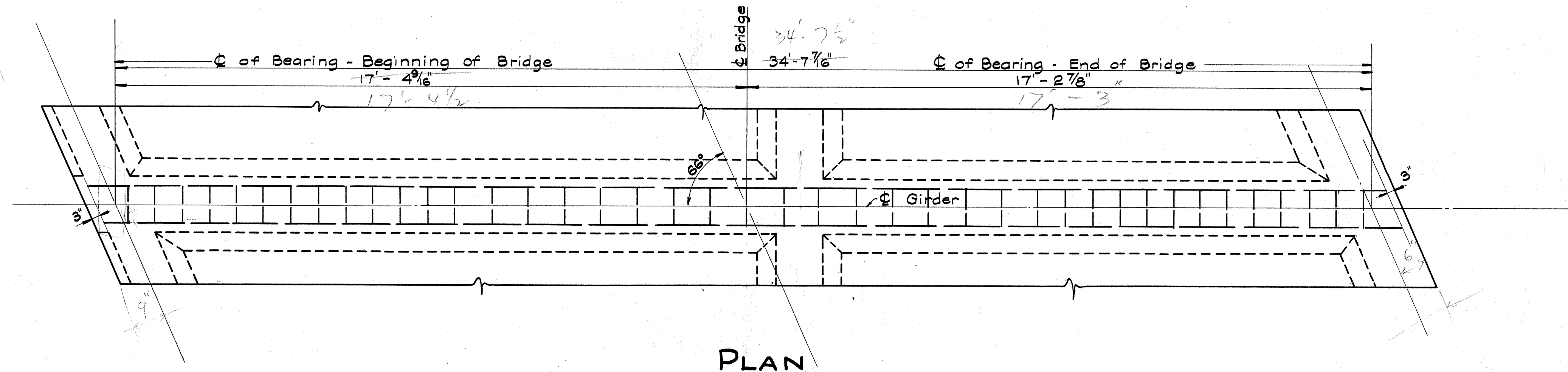
TERRITORIAL HIGHWAY DEPARTMENT.
TERRITORY OF HAWAII
PEARL CITY BRIDGE
No. 9 STA. 437+75¹⁶ TO STA. 438+13⁰⁰
KAMEHAMEHA HIGHWAY F.A.P. 9F
SHEET No. 2 OF 7 SHEETS

4338.18

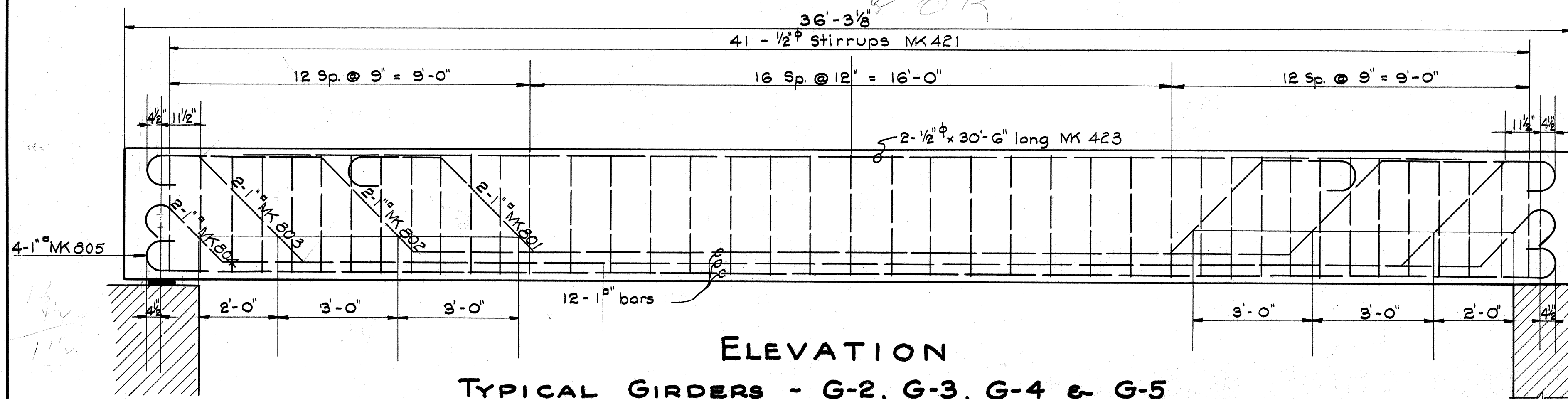
DATE: June 1935
DESIGNED BY: J.C.M.
CHECKED BY: J.C.M.
ORIGINAL PLAN: J.C.M.
NOTED BY: J.C.M.
QUANTITIES BY: J.C.M.
CORRECTED BY: J.C.M.

Rev by J.C.M.

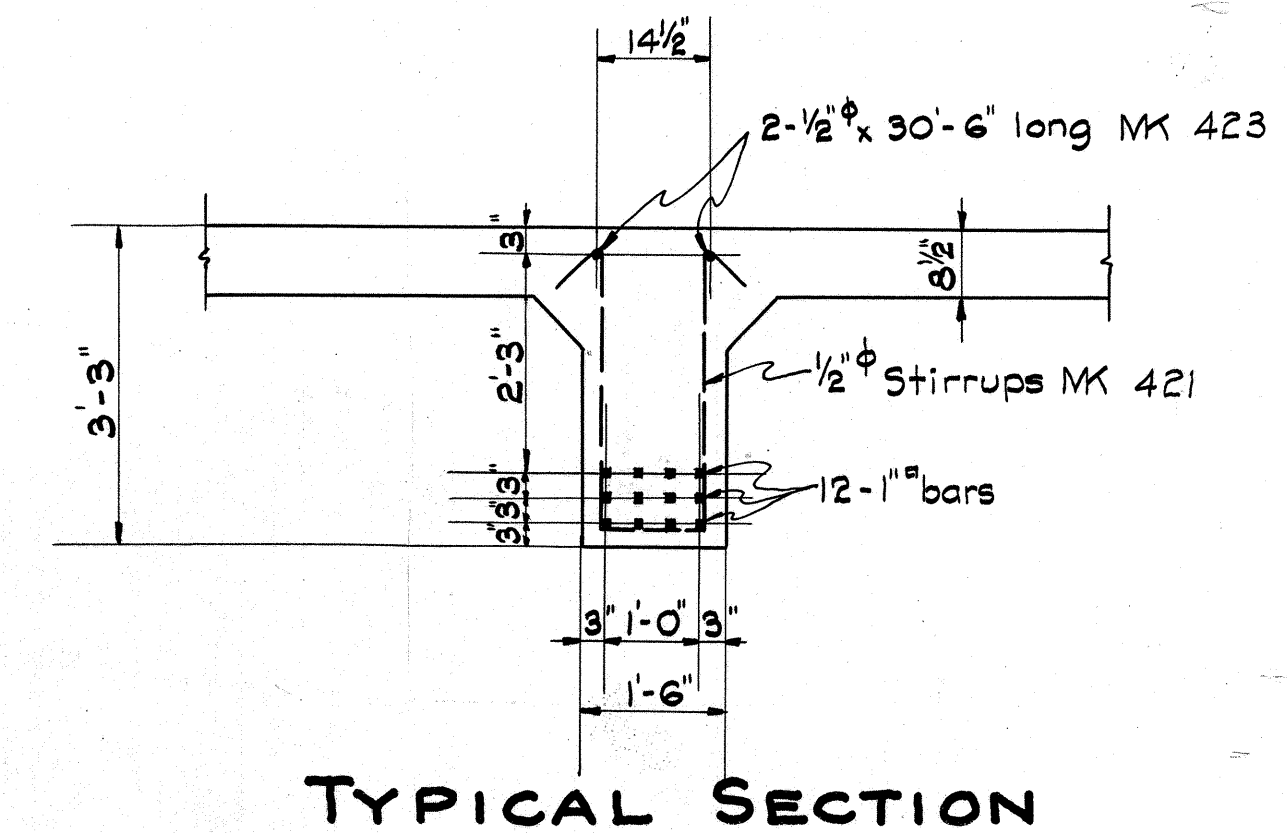




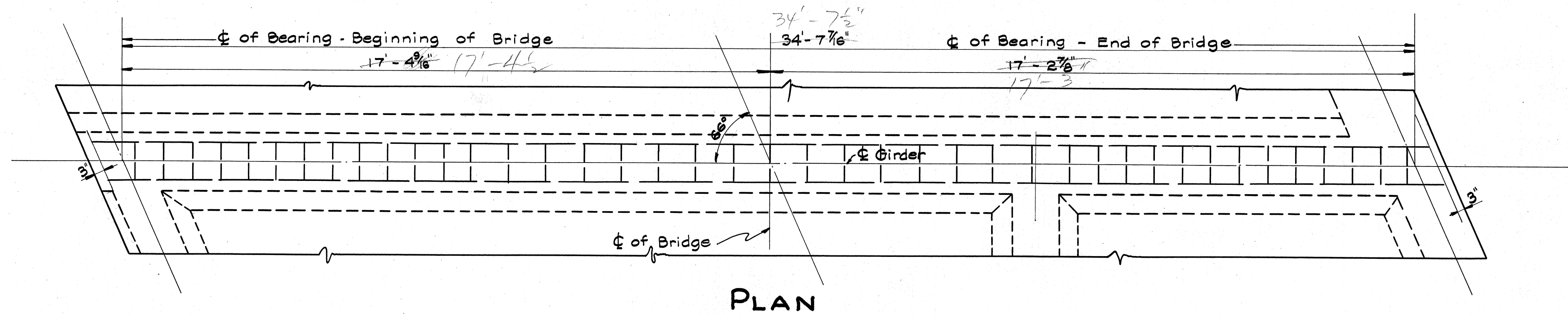
PLAN



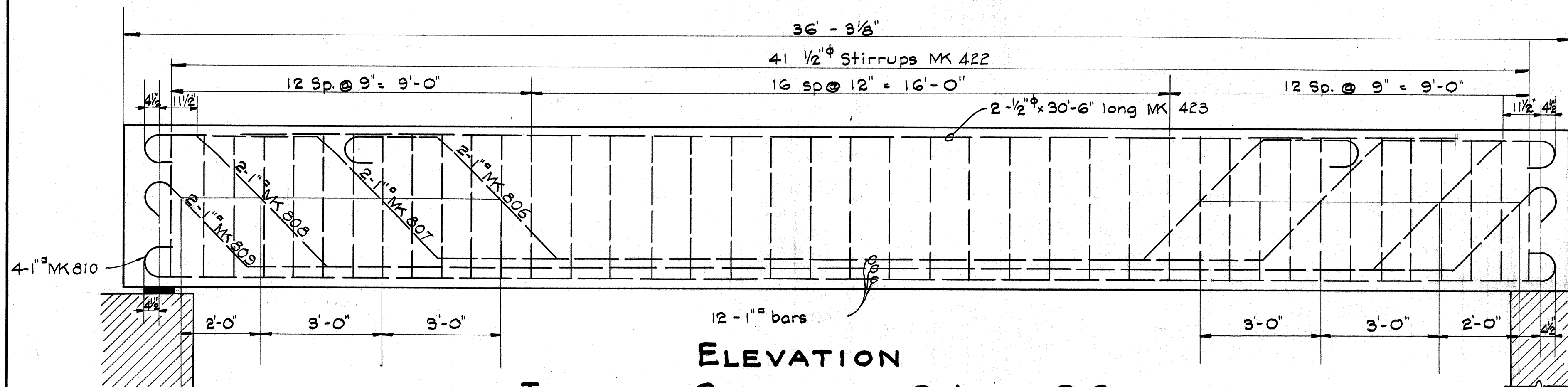
ELEVATION
TYPICAL GIRDERS - G-2, G-3, G-4 & G-5
Scale: 1/2" = 1'



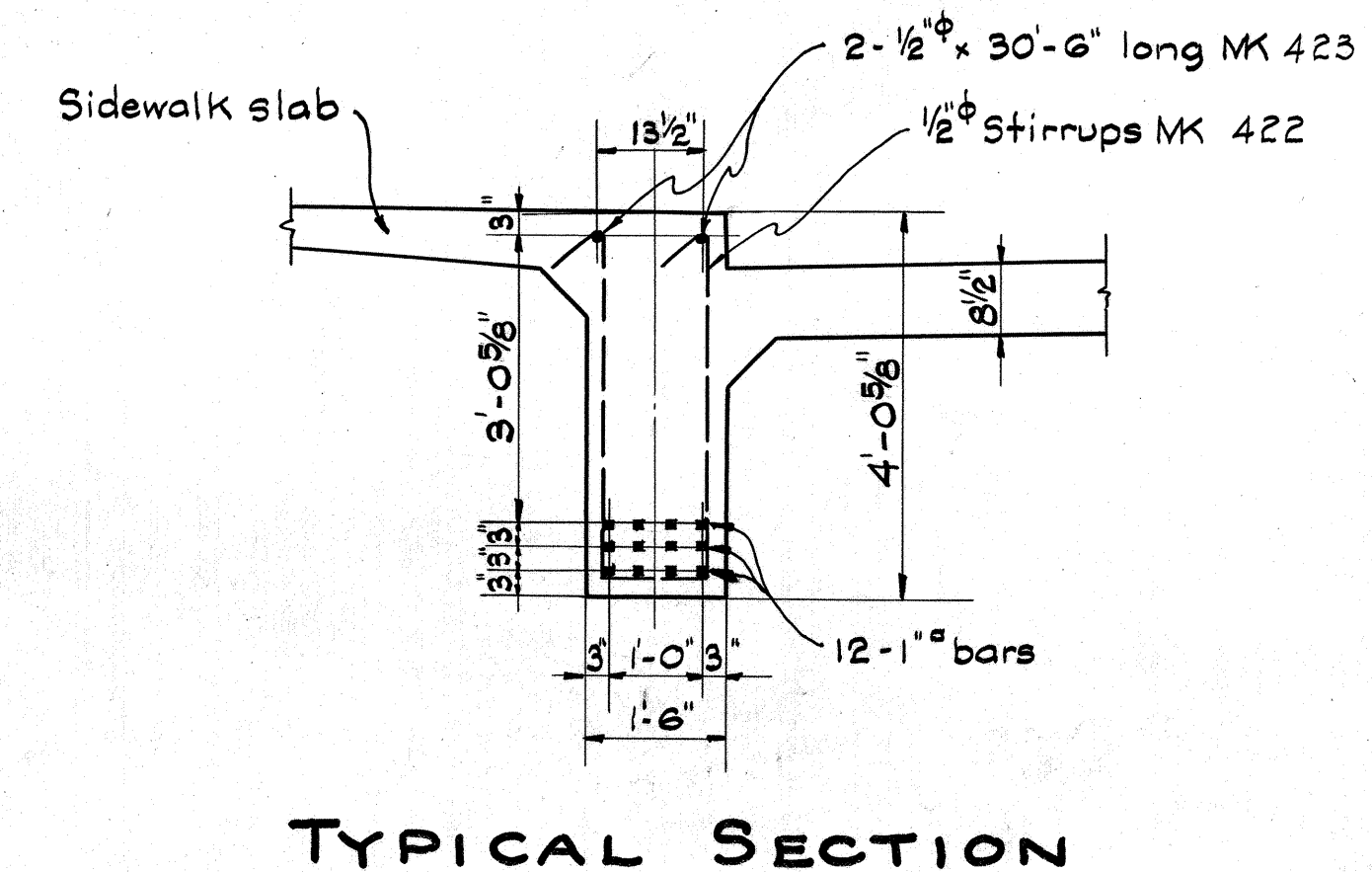
TYPICAL SECTION



PLAN



ELEVATION
TYPICAL GIRDERS - G-1 & G-6
Scale: 1/2" = 1'



TYPICAL SECTION

