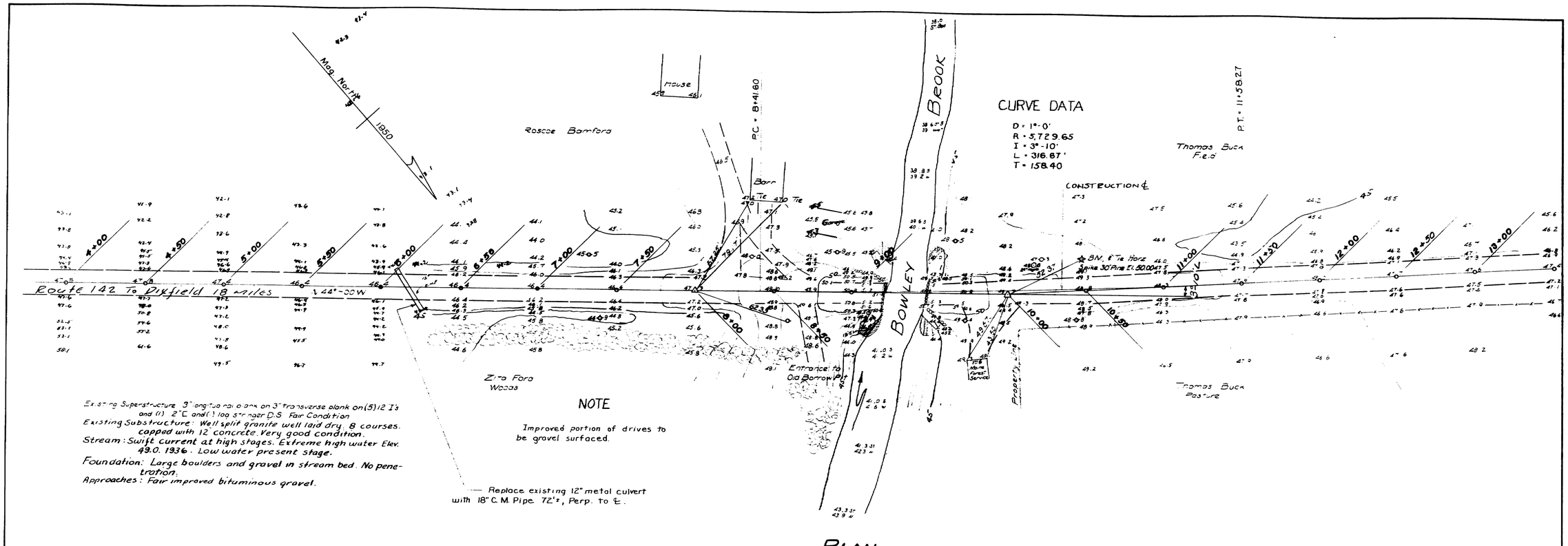
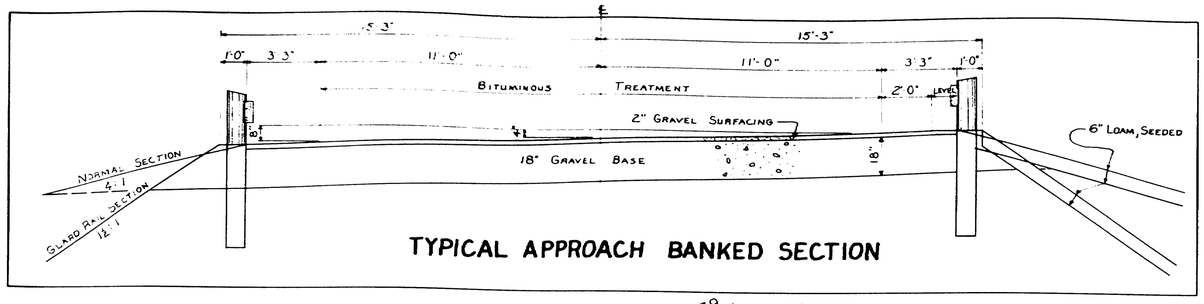
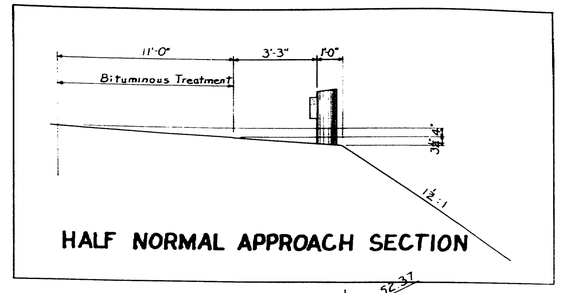


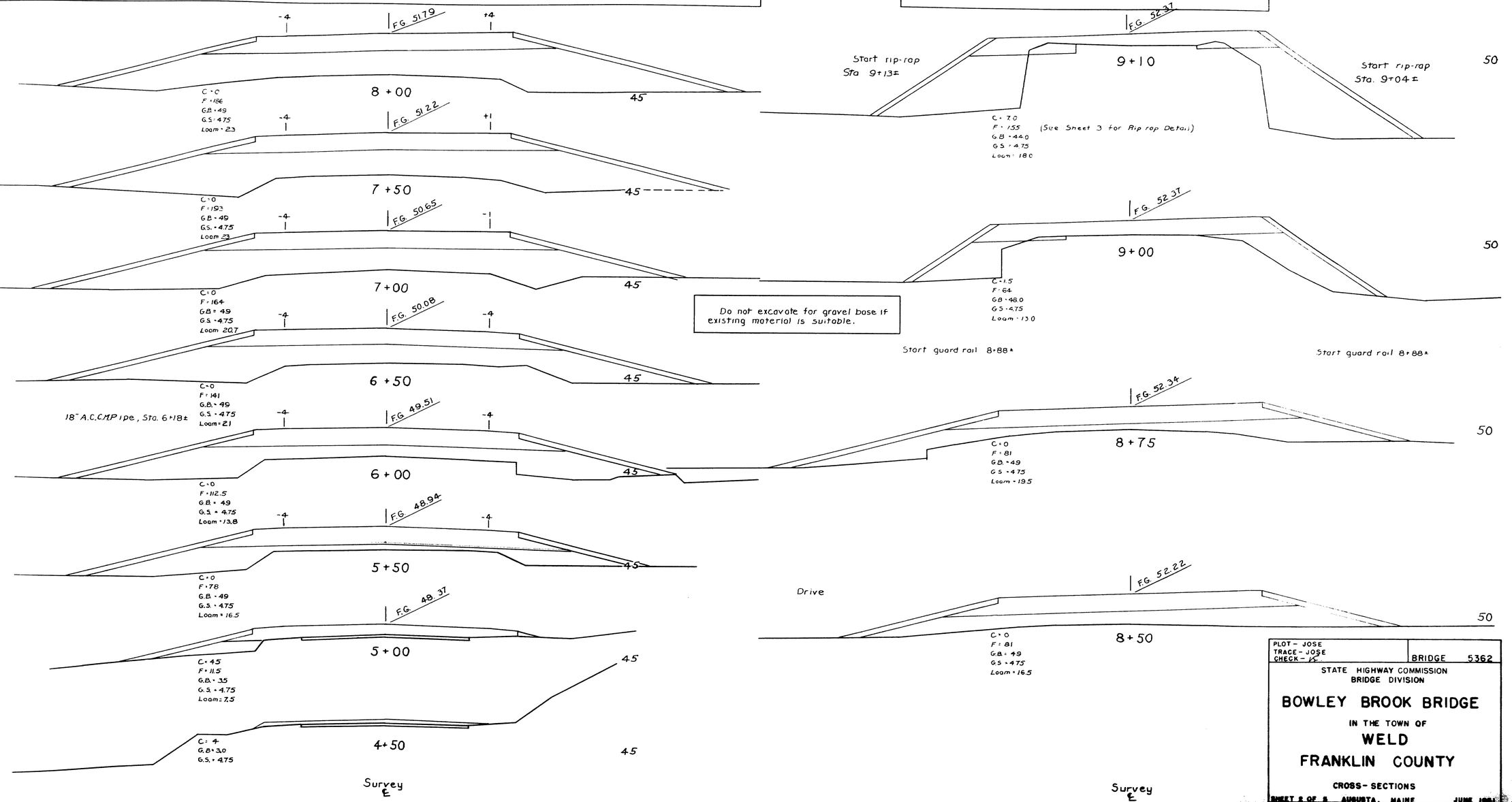
0 1 2 3 4 5 INCHES



TYPICAL APPROACH BANKED SECTION



HALF NORMAL APPROACH SECTION



Do not excavate for gravel base if existing material is suitable.

0 1 2 3 4 5 INCHES

PLOT - JOSE TRACE - JOSE CHECK - VC	BRIDGE 5362

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

BOWLEY BROOK BRIDGE

IN THE TOWN OF

WELD

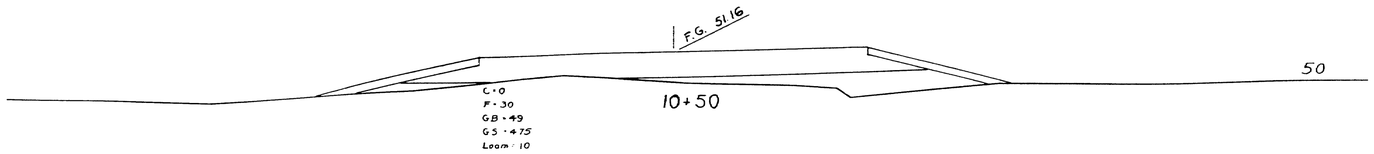
FRANKLIN COUNTY

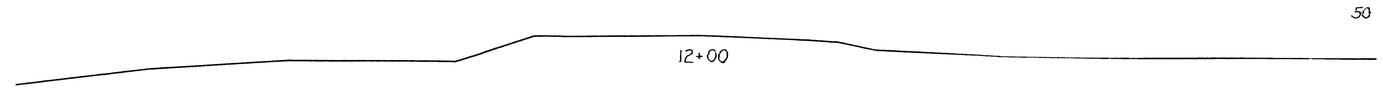
CROSS-SECTIONS

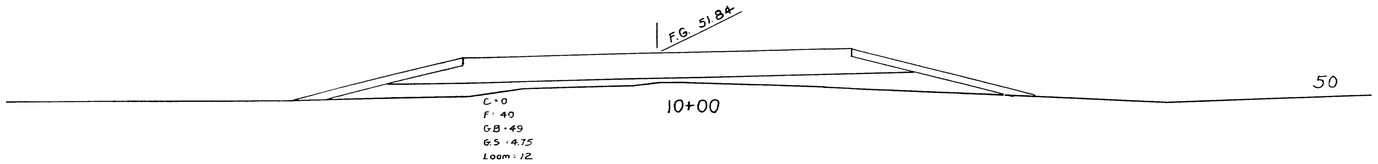
SHEET 2 OF 2 AUGUSTA, MAINE JUNE 1951

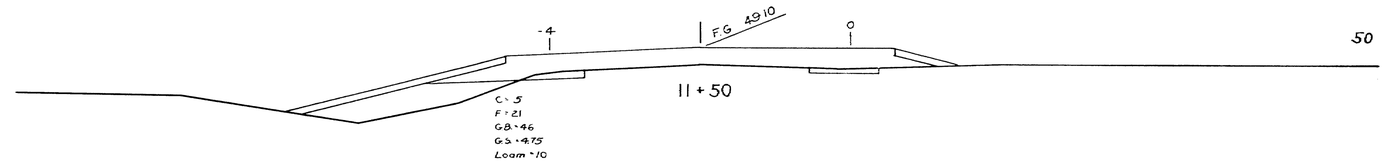
53—59

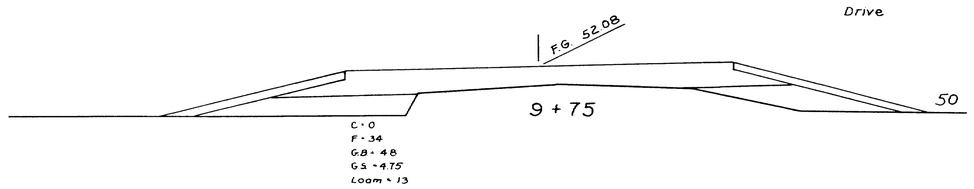
Do not excavate for gravel base if existing material is suitable

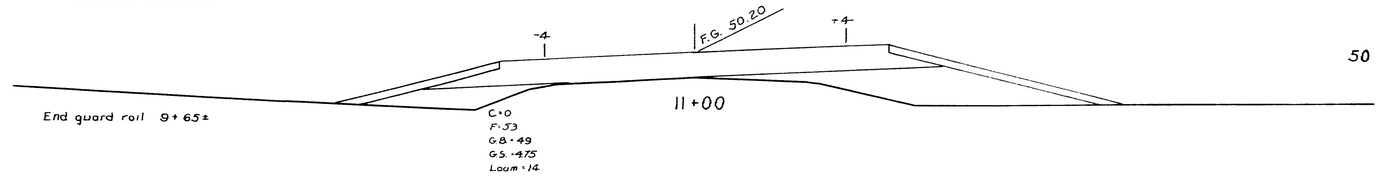


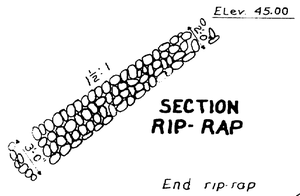


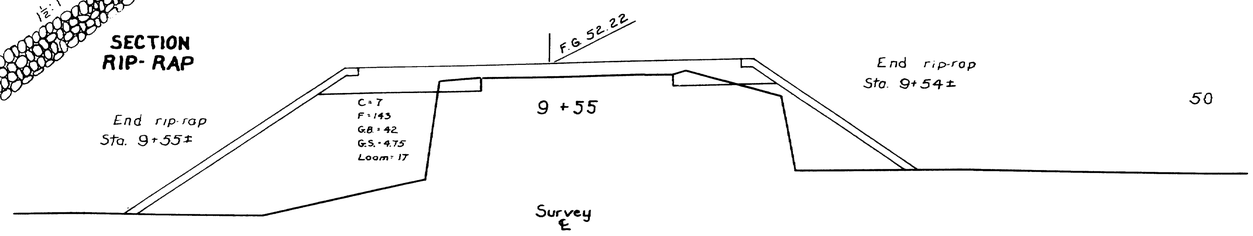












Survey ℄

0 1 2 3 4 5 INCHES

PLOT - JOSE TRACE - JOSE CHECK -	BRIDGE 5362

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

BOWLEY BROOK BRIDGE

IN THE TOWN OF

WELD

FRANKLIN COUNTY

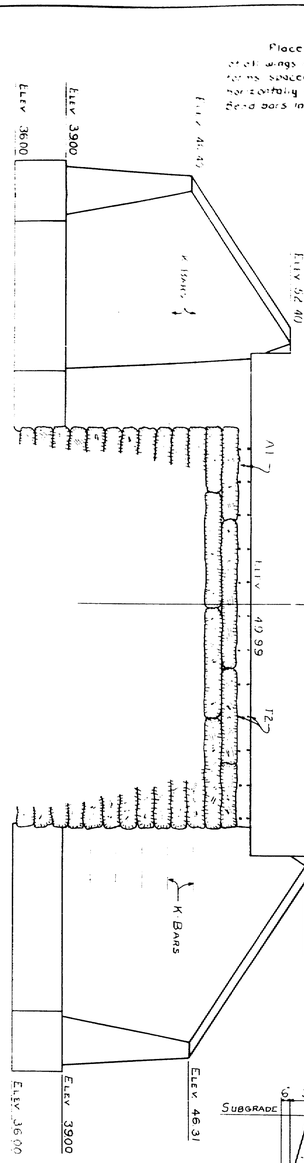
CROSS - SECTIONS

SHEET 3 OF 5 AUGUSTA, MAINE JUNE 1960

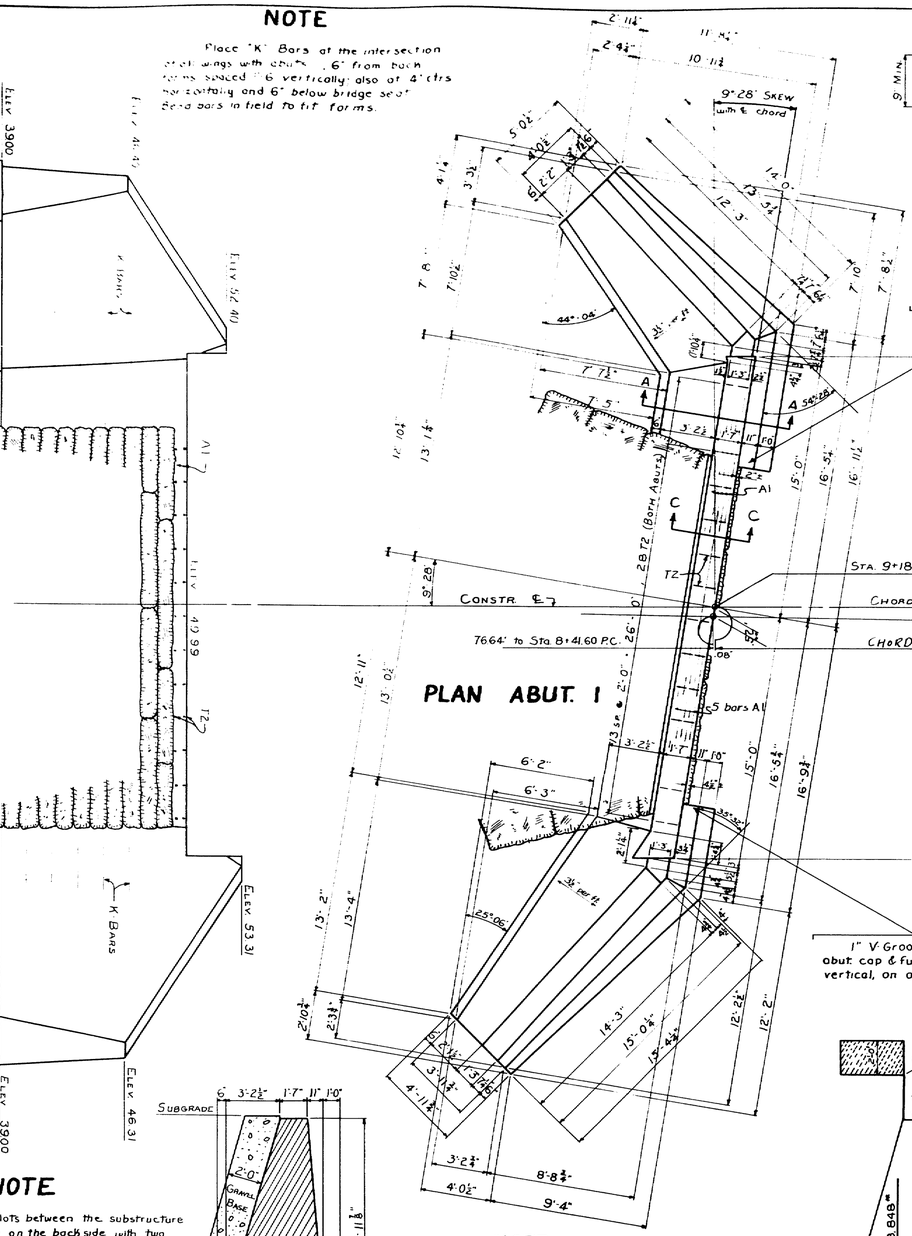
53—60

NOTE

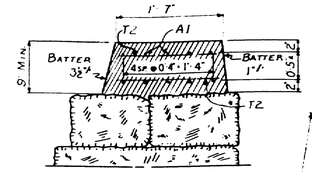
Place "K" Bars at the intersection of all wings with abutments, 6" from back forms spaced 6" vertically; also at 4" ctrs horizontally and 6" below bridge seat. Bend bars in field to fit forms.



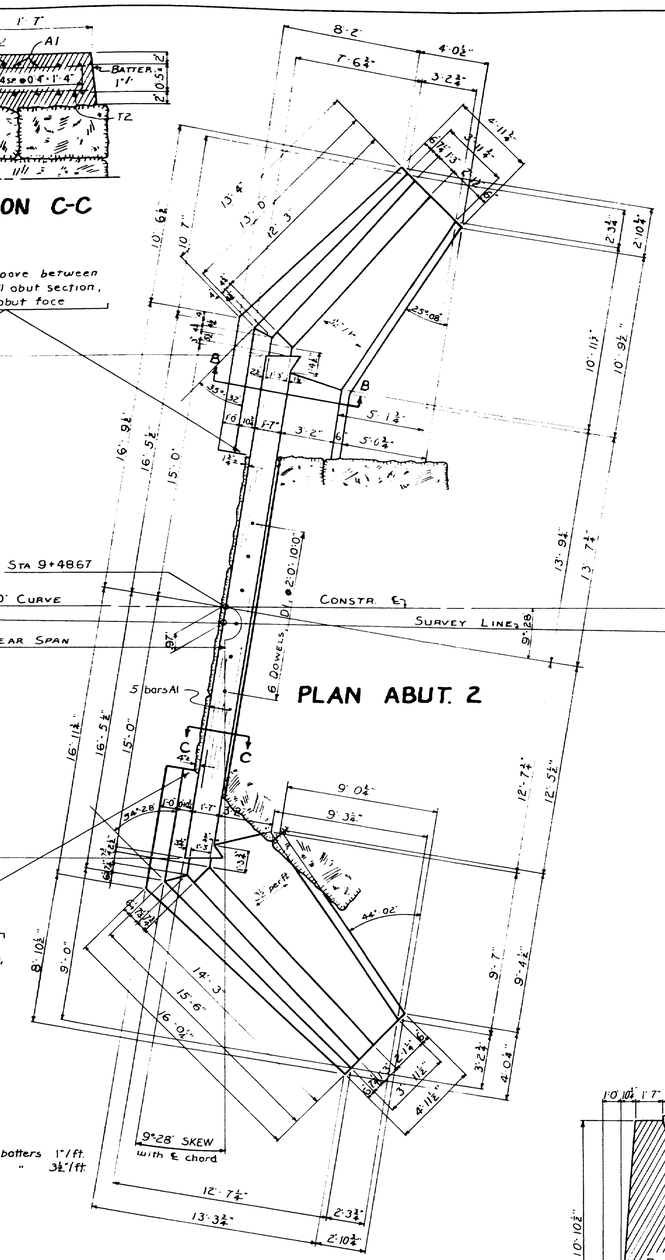
REAR ELEVATION ABUT. 1



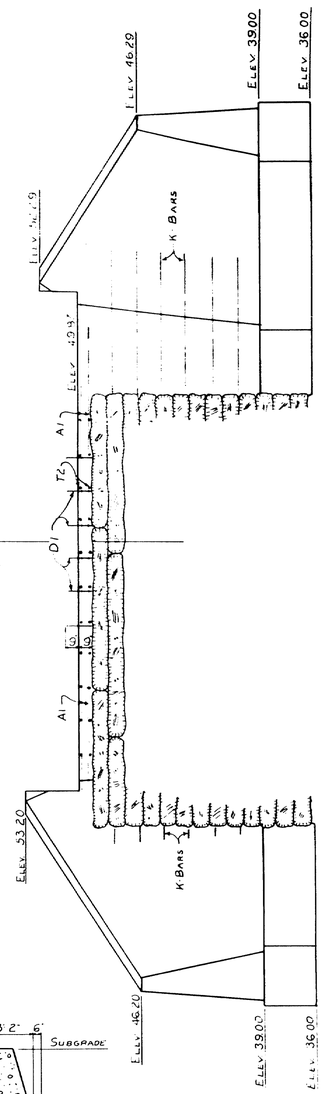
PLAN ABUT. 1



SECTION C-C



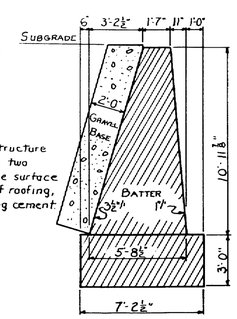
PLAN ABUT. 2



REAR ELEVATION ABUT. 2

NOTE

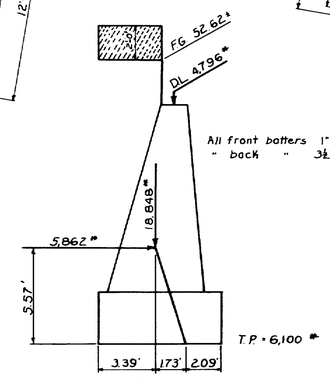
Cover the ½" slots between the substructure and superstructure on the back side with two layers of heavy roofing 10" wide. Coat the surface of the concrete and back of first layer of roofing, as applied, with a suitable grade of roofing cement. Recess the area to be covered 4".



SECTION A-A

NOTE

Gravel base 2'-0" wide in rear of abut. extensions as shown, also in rear of wingwalls extending to within 1'-0" ± of top of walls.



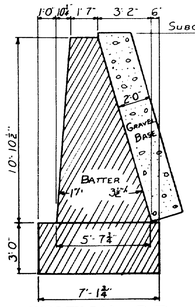
ABUTMENT ANALYSIS

1" V-Groove between abut. cap & full abut. section, vertical, on abut. face.

All front batters 1"/ft.
" back " 3½"/ft.

CONCRETE CLASSIFICATION

Abutments	Class B
Rail Posts & Bars	Y
Slab	A
Wearing Surface	A-A



SECTION B-B

DESIGN - JOSE
TRACE - JOSE
CHECK - JZ

BRIDGE 5362

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

BOWLEY BROOK BRIDGE

IN THE TOWN OF

WELD

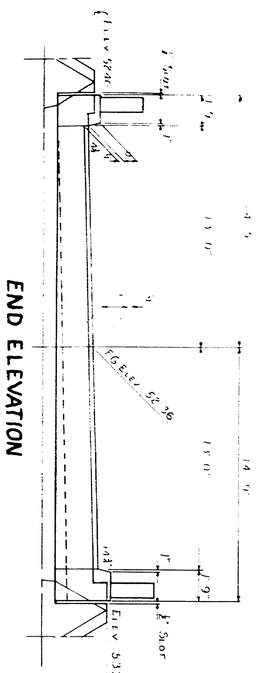
FRANKLIN COUNTY

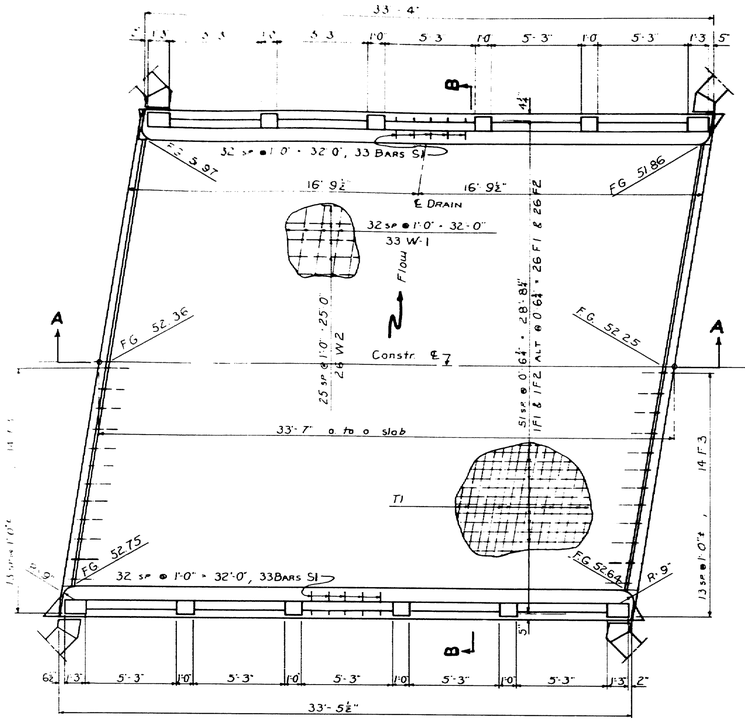
SUBSTRUCTURE

SHEET 4 OF 8 AUGUSTA, MAINE JUNE 1961

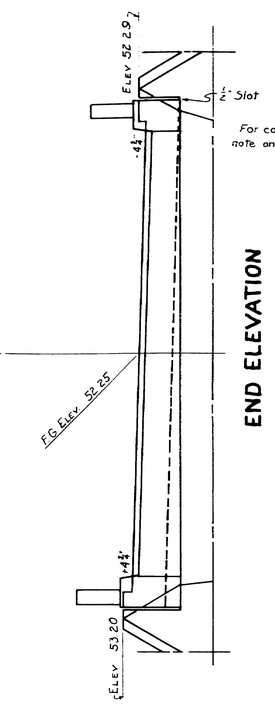
53—61

0 1 2 3 4 5 INCHES

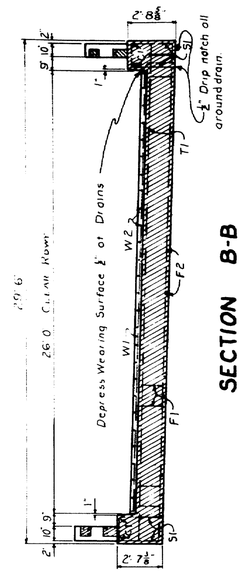




PLAN

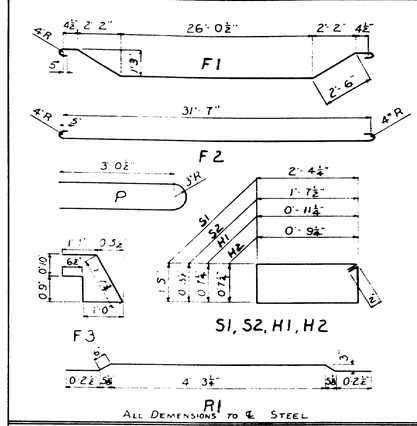


END ELEVATION



SECTION B-B

REINFORCING STEEL SCHEDULE



Mark	Size		No.	Length	Location
				BENT BARS	
F1	#11	(1¼")	26	34' 8½"	Slab
F2	11	(1¼")	26	34'-6"	Slab
P	6	(¾")	24	6'-10½"	Posts
S1	3	(⅜")	66	7'-10½"	Curbs
S2	3	(⅜")	50	4'-2"	Curbs & Bottom Rail Bar
H1	3	(⅜")	12	3'-5"	End Rail Posts
H2	3	(⅜")	24	3'-1"	Intermediate Rail Posts
F3	6	(½")	28	5'-0½"	Ends of Slab
R1	4	(½")	20	5'-8½"	Rail Bars
				STRAIGHT BARS	
A1	6	(½")	20	30'-0"	Abutment Caps
C1	4	(½")	4	33'-0"	Curbs
D1	8	(1")	6	1'-6"	Abutment 2
K	6	(⅝")	44	8'-0"	Abutments
R2	4	(½")	20	5'-6½"	Top Rail Bars
R3	4	(½")	20	5'-1"	Bottom Rail Bars
T1	5	(⅝")	52	29'-9"	Slab
T2	4	(½")	56	1'-5"	Abutments
W1	3	(⅜")	33	26'-2"	Wearing Surface
W2	3	(⅜")	26	31'-11"	" "

All Reinf. Steel Bars Shall Conform to A.S.T.M. Specifications A 305-49

RAIL NOTES

All exposed edges of concrete to be chamferred ½" unless otherwise noted.

Curb to be cast with slab. Stirrups S2 and bars P to be placed before slab is cast.

DESIGN

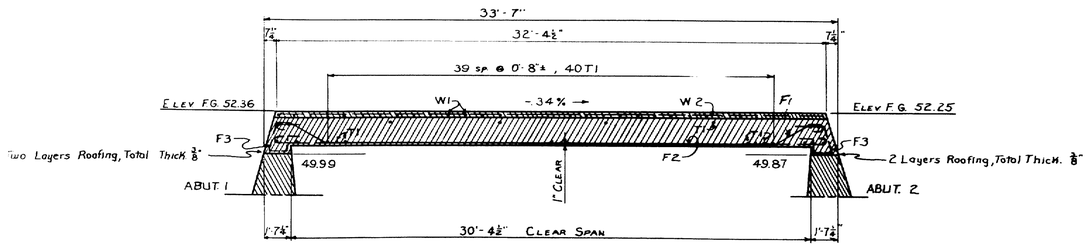
Loading H-15-44
f_s = 18,000
f_c = 1,200
n = 10

RAIL NOTES

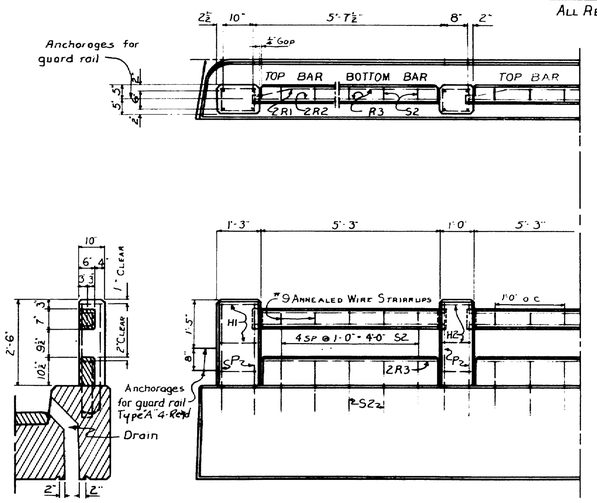
The bottom bar is to be cast in place. The top bar is to be precast and set in position so that the ends project into the post forms 2½". Wrap the tongue ends with 2 layers of heavy roofing.

1" min. clearance for all steel in rail bars & posts unless otherwise noted.

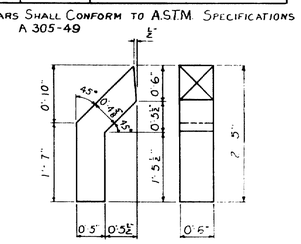
Wire stirrups for rail bars shall be constructed in the field from a single strand of #9 annealed wire. In forming the stirrups make a complete turn around each reinforcing bar.



SECTION A-A



RAIL POST & BAR DETAIL



METAL DRAIN FORM

24 Gage Galv. Iron - 1 Reqd.

DESIGN - JOSE TRACE - JOSE CHECK -	BRIDGE 5362

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

BOWLEY BROOK BRIDGE

IN THE TOWN OF

WELD

FRANKLIN COUNTY

SUPERSTRUCTURE

SHEET 5 OF 8 AUGUSTA, MAINE JUNE 1961

53—62

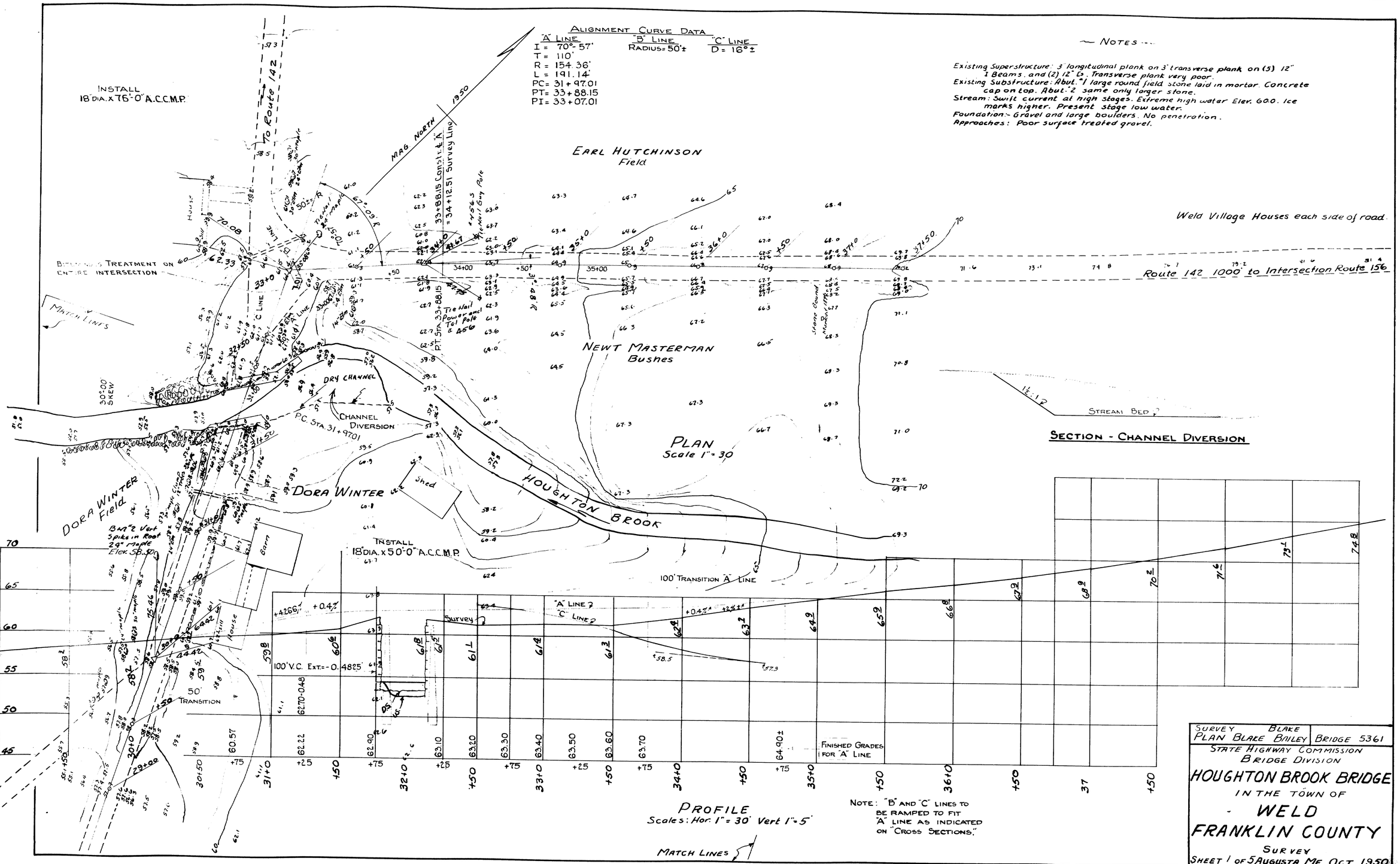
0 1 2 3 4 5 INCHES

ALIGNMENT CURVE DATA

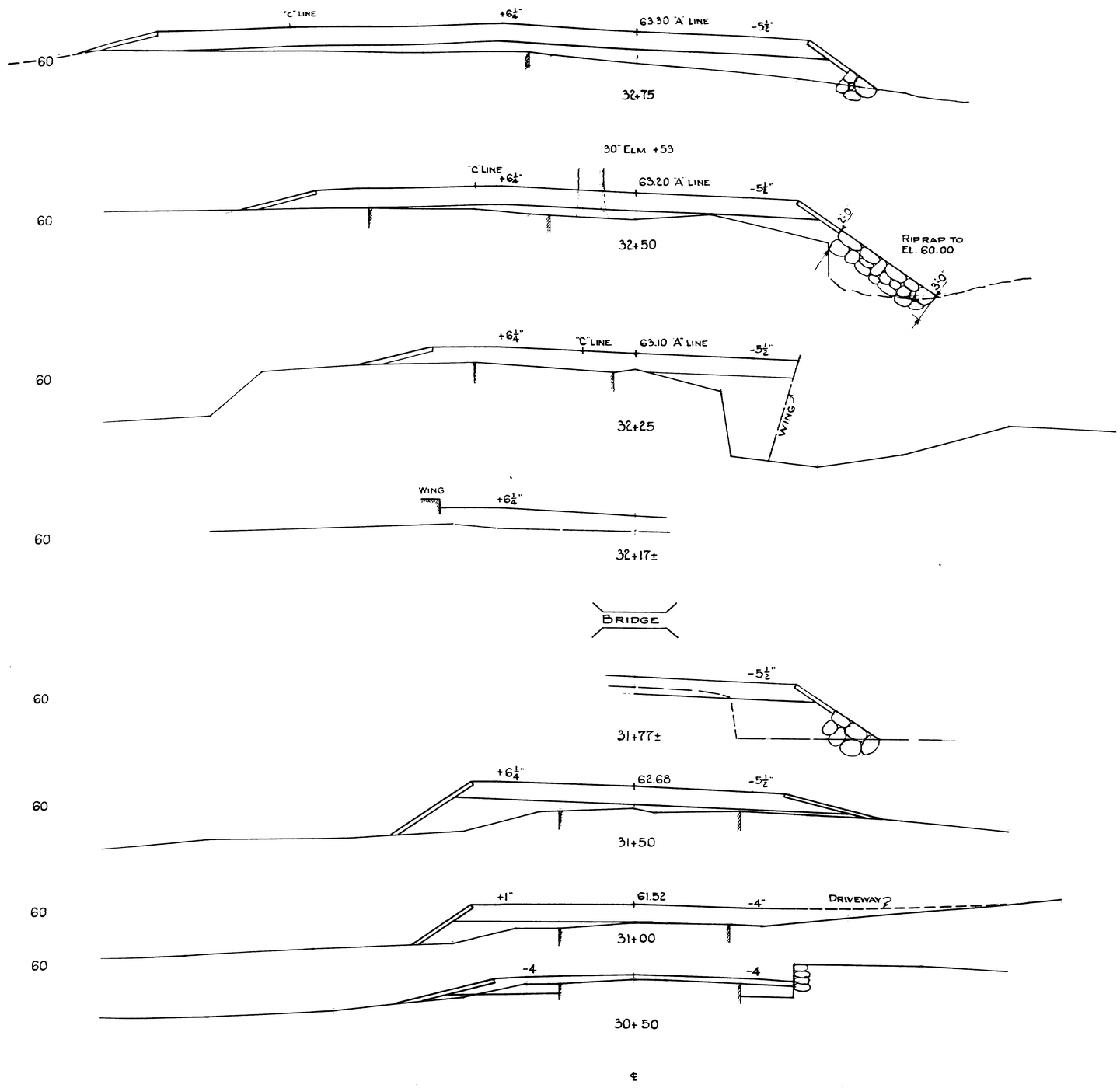
"A" LINE	"B" LINE	"C" LINE
I = 70°-57'	RADIUS = 50'±	D = 16°±
T = 110'		
R = 154.36'		
L = 191.14'		
PC = 31+97.01		
PT = 33+88.15		
PI = 33+07.01		

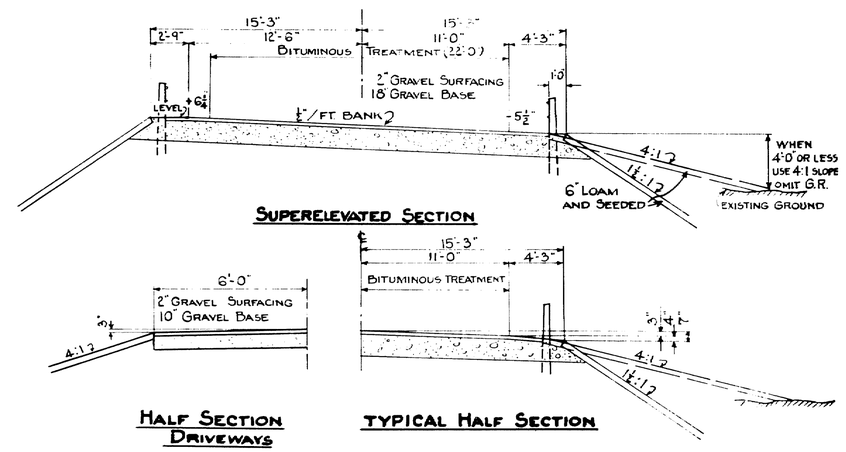
NOTES ---

Existing Superstructure: 3" longitudinal plank on 3" transverse plank on (5) 12" I Beams, and (2) 12" ⊏s. Transverse plank very poor.
Existing Substructure: Abut. #1 large round field stone laid in mortar. Concrete cap on top. Abut. #2 same only larger stone.
Stream: Swift current at high stages. Extreme high water Elev. 600. Ice marks higher. Present stage low water.
Foundation:- Gravel and large boulders. No penetration.
Approaches: Poor surface treated gravel.



0 1 2 3 4 5 INCHES





DO NOT EXCAVATE FOR GRAVEL BASE WHERE EXISTING MATERIAL IS SUITABLE.

0 1 2 3 4 5 INCHES

PLAN - Hamilton CHECK - G.W.S.	BRIDGE 5361

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

HOUGHTON BROOK BRIDGE

IN THE TOWN OF

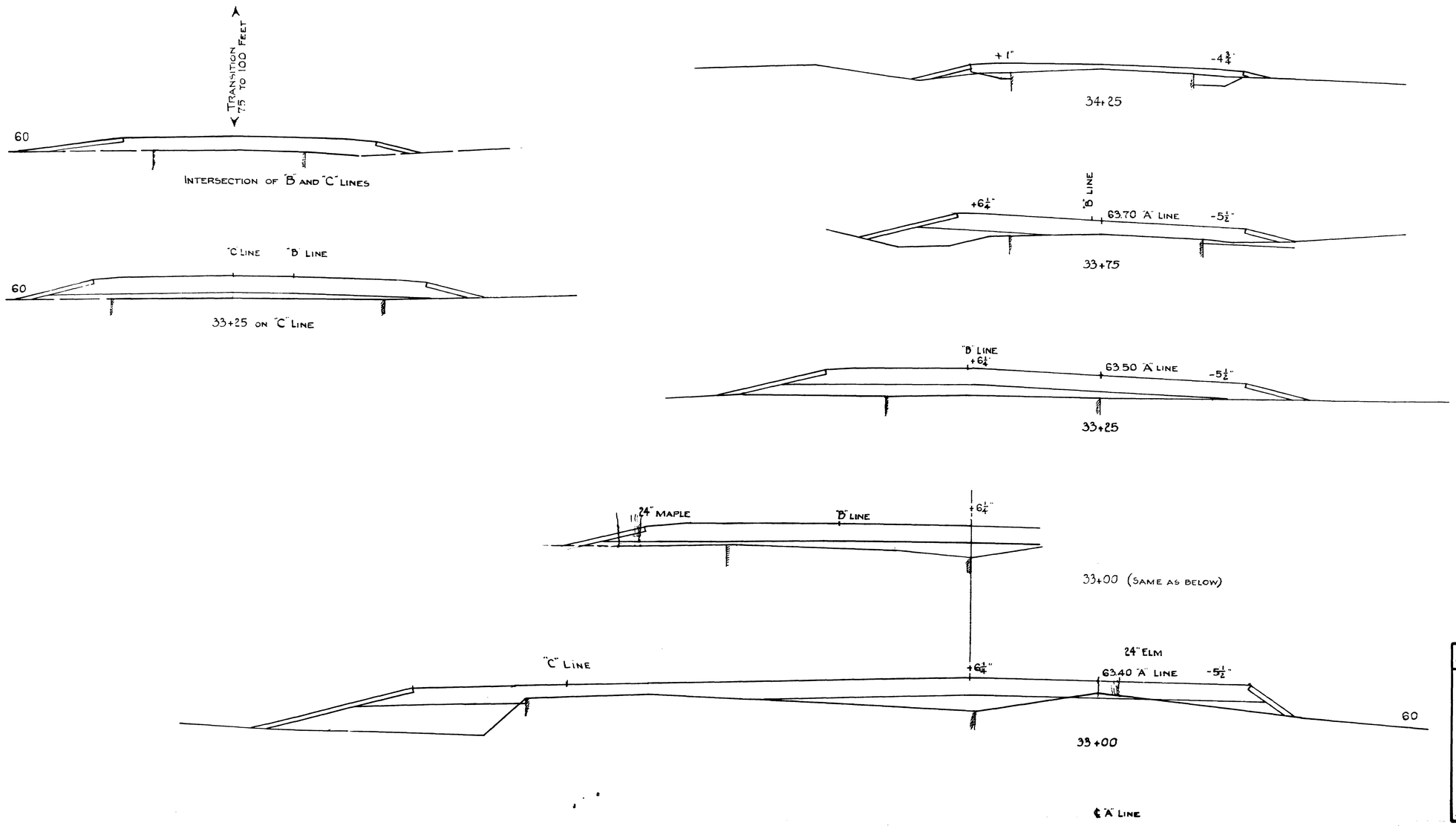
WELD

FRANKLIN COUNTY

CROSS SECTIONS

SHEET 2 OF 5 AUGUSTA, ME. JULY 1951.

53-54



PLAN - Hamilton
CHECK -
BRIDGE 5361

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

HOUGHTON BROOK BRIDGE

IN THE TOWN OF

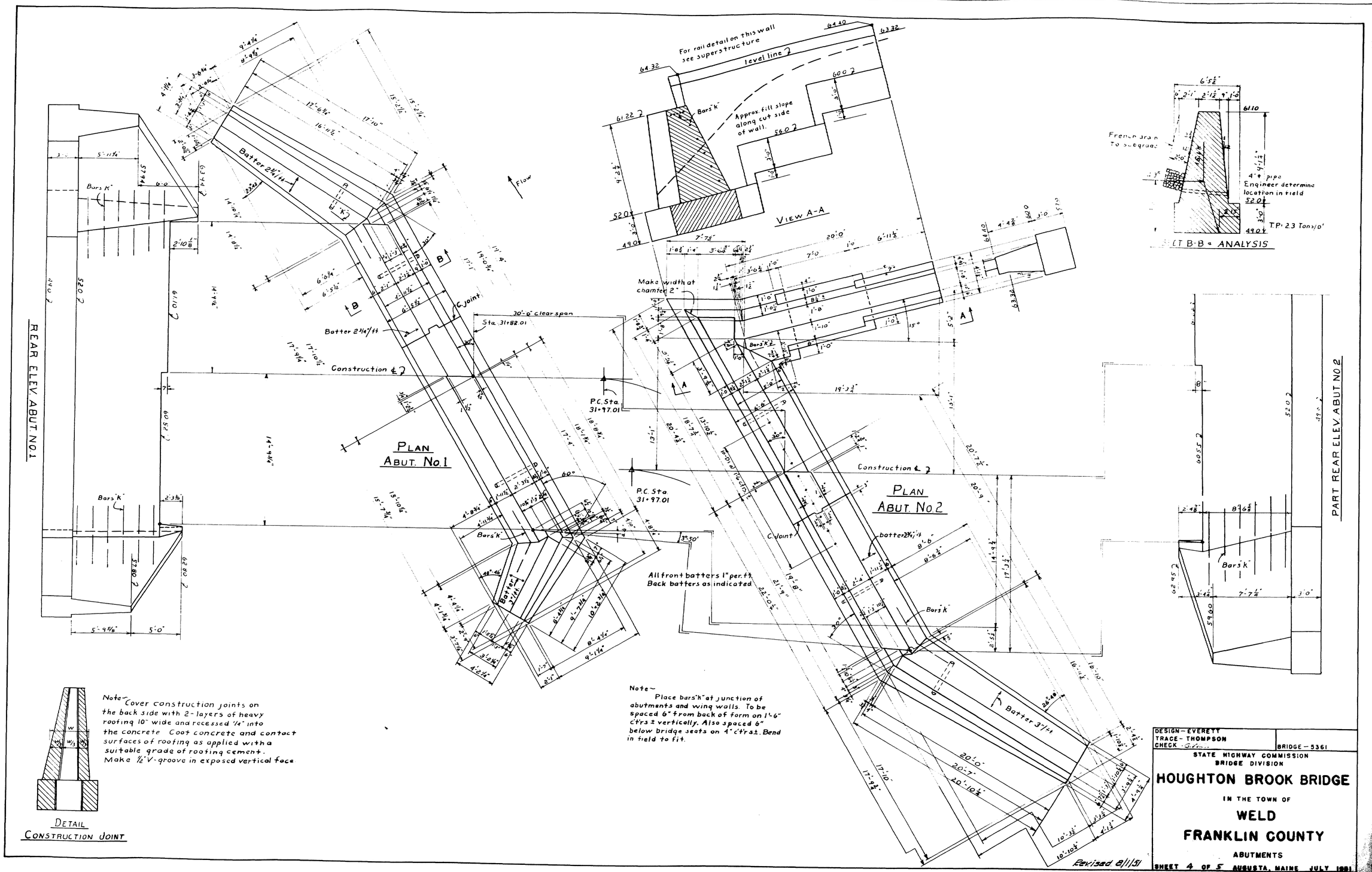
WELD

FRANKLIN COUNTY

CROSS SECTIONS

SHEET 3 OF 5 AUGUSTA, ME. JULY 1951.

53 — 55



DESIGN – EVERETT
TRACE – THOMPSON
CHECK – G.W.

BRIDGE – 5361

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

HOUGHTON BROOK BRIDGE

IN THE TOWN OF

WELD

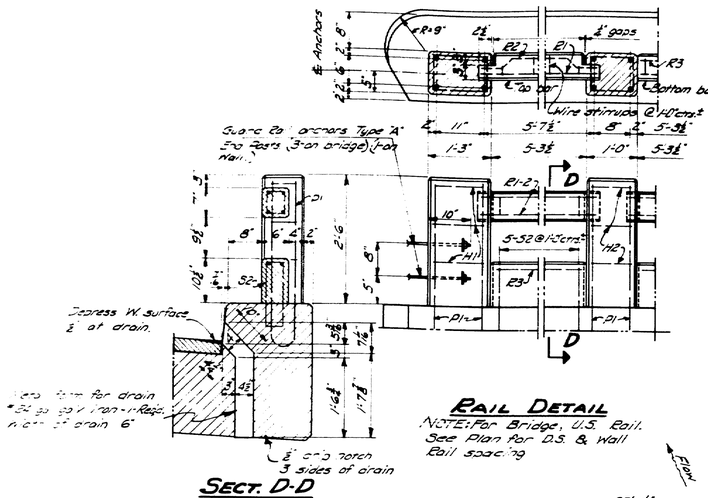
FRANKLIN COUNTY

ABUTMENTS

SHEET 4 OF 5 AUGUSTA, MAINE JULY 1951

53—56

0 1 2 3 4 5 INCHES



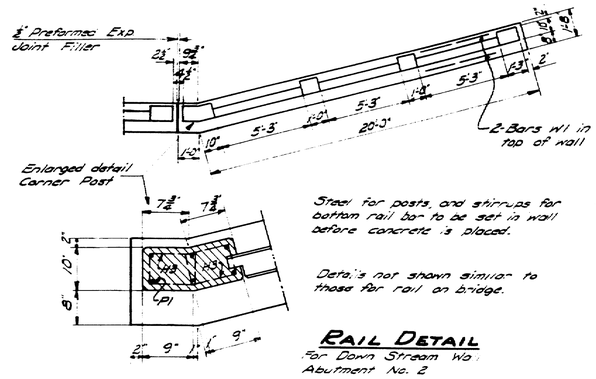
RAIL DETAIL

NOTE: For Bridge, U.S. Rail. See Plan for D.S. & Wall Rail spacing

SECT. D-D

RAIL NOTE

Curb to be cast with slab. Place bars S2 & P1 before curb is placed. Cast bottom bar in place. Precast top bars and set in position so that ends project into post forms 2½". Wrap tongue ends with 2 layers of heavy roofing. Make wire stirrups in the field from a single strand of #9 annealed wire. In forming the stirrups make a complete turn around each reinforcing bar. Chamfer exposed edges of concrete ¾" unless otherwise indicated. All rail posts to be vertical.



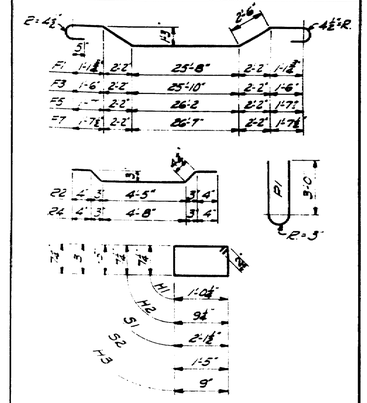
Steel for posts, and stirrups for bottom rail bar to be set in wall before concrete is placed.

Details not shown similar to those for rail on bridge.

RAIL DETAIL

For Down Stream Wall Abutment No. 2

REINFORCING STEEL

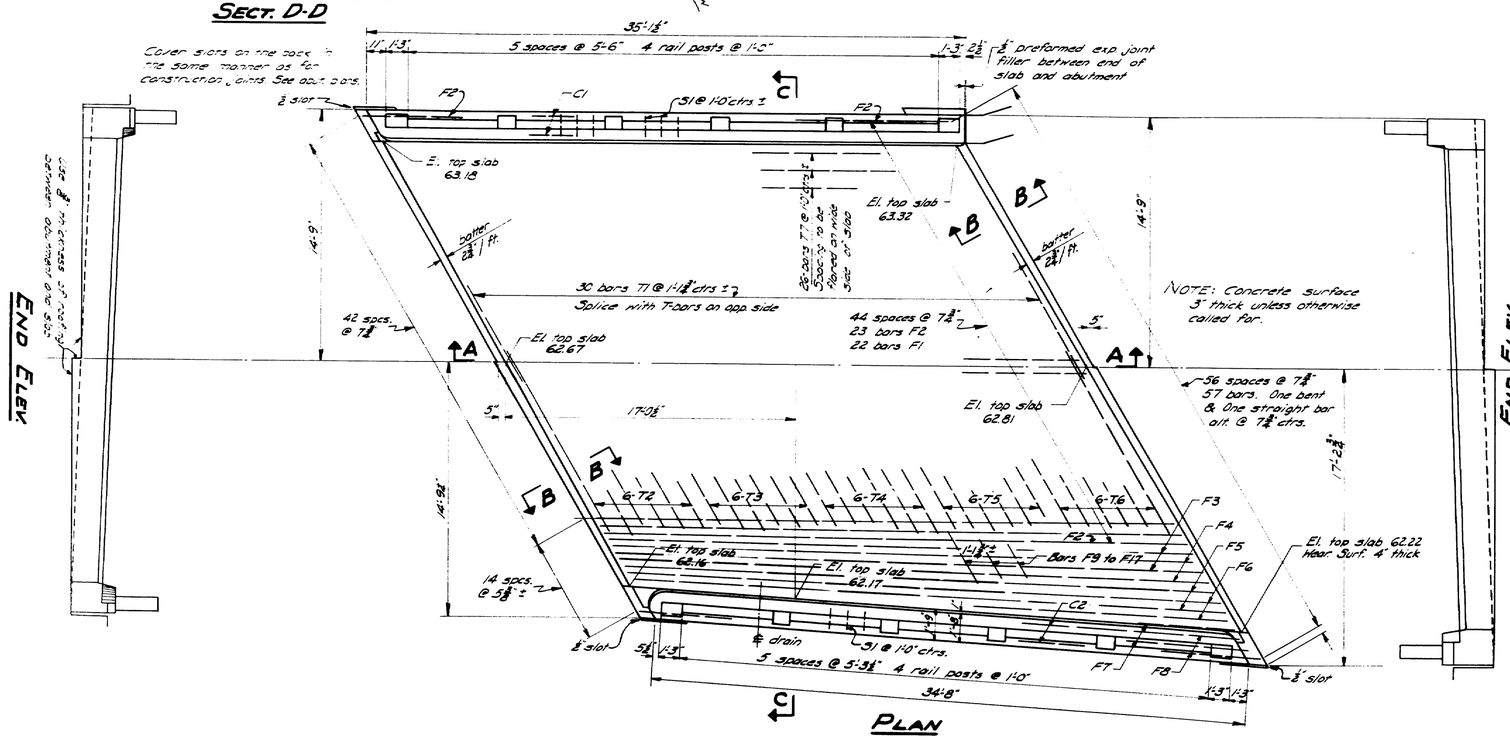


Dimensions to ℄ bars. All reinforcing steel to conform to ASTM Specifications A305-49.

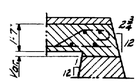
Mark	Bar Size	Reqd.	Length	Location
F1	#11 (1'-4")	22	36'-2"	Slab
F3	#11 (1'-4")	2	37'-1"	"
F5	#11 (1'-4")	2	37'-7"	"
F7	#11 (1'-4")	2	38'-1"	Slab
R2	#4 (1'-9")	16	5'-9½"	Top rail-U.S. Br. & Wall
P1	#6 (2'-9")	33	6'-10"	Rail Posts
H1	#3 (1'-8")	15	3'-7"	End rail posts
H2	#3 (1'-8")	30	3'-1"	Int rail posts
S1	#4 (1'-9")	67	7'-5"	Curbs
S2	#3 (1'-8")	65	3'-8"	Bottom rail bars
R4	#4 (1'-9")	10	6'-0½"	Top rail-D.S. Br.
H3	#3 (1'-8")	6	3'-1"	Corner rail post
F9	#6 (3'-9")	5	34'-1"	Slab
F10	#6 (3'-9")	4	34'-2"	"
F11	#6 (3'-9")	3	34'-6"	"
T1	#3 (1'-8")	30	15'-6"	Wearing Surface
T2		6	15'-5"	" "
T3		6	16'-0"	" "
T4		6	16'-8"	" "
T5		6	17'-3"	" "
T6		6	17'-9"	" "
T7	#3 (1'-8")	26	34'-0"	Wearing Surface
F2	#11 (1'-4")	23	33'-10"	Slab
F4	#11 (1'-4")	2	35'-1"	"
F6	#11 (1'-4")	2	35'-6"	"
F8	#11 (1'-4")	2	36'-0"	Slab
R1	#4 (1'-9")	16	5'-7"	Top rail-U.S. Br. & Wall
R3	#4 (1'-9")	16	5'-1"	Bottom rail-U.S. Br. & Wall
C1	#4 (1'-9")	2	33'-9"	D.S. Curb
C2	#4 (1'-9")	2	34'-0"	U.S. Curb
W1	#4 (1'-9")	2	20'-0"	D.S. Wall abut. #2
R5	#4 (1'-9")	10	5'-4"	Bottom rail-D.S. Br.
E6	#4 (1'-9")	10	5'-10"	Top rail-D.S. Br.
D1	#8 (1'-2")	10	1'-6"	Br. Seat abut. #2
K	#6 (2'-9")	40	8'-0"	Abuts. & Walls
F12	#6 (3'-9")	4	34'-9"	Slab
F13		3	35'-1"	"
F14		4	34'-6"	"
F15		3	35'-3"	"
F16		4	35'-11"	"
F17	#6 (3'-9")	5	36'-3"	Slab

Bent Bars

Straight Bars

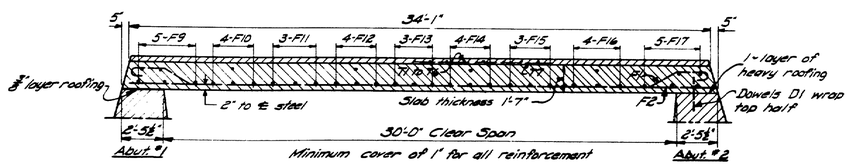


PLAN



SECT. B-B

Typical



SECT. A-A

CONCRETE CLASSIFICATION

Abutments	Class B
Rail	Class Y
Slab	Class A
Wearing Surface	Class A-A

DESIGN

Loading = H 15-44
f_s = 18,000 #/□"
f_c = 1200 #/□"
n = 10

Revised 8/1/51

DESIGN — EVERETT
TRACE — CLARK
CHECK — G.R.S.

BRIDGE — 5361

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

HOUGHTON BROOK BRIDGE

IN THE TOWN OF

WELD

FRANKLIN COUNTY

SUPERSTRUCTURE

SHEET 5 OF 5 AUGUSTA, MAINE JULY 1951

53—57

0 1 2 3 4 5 INCHES