

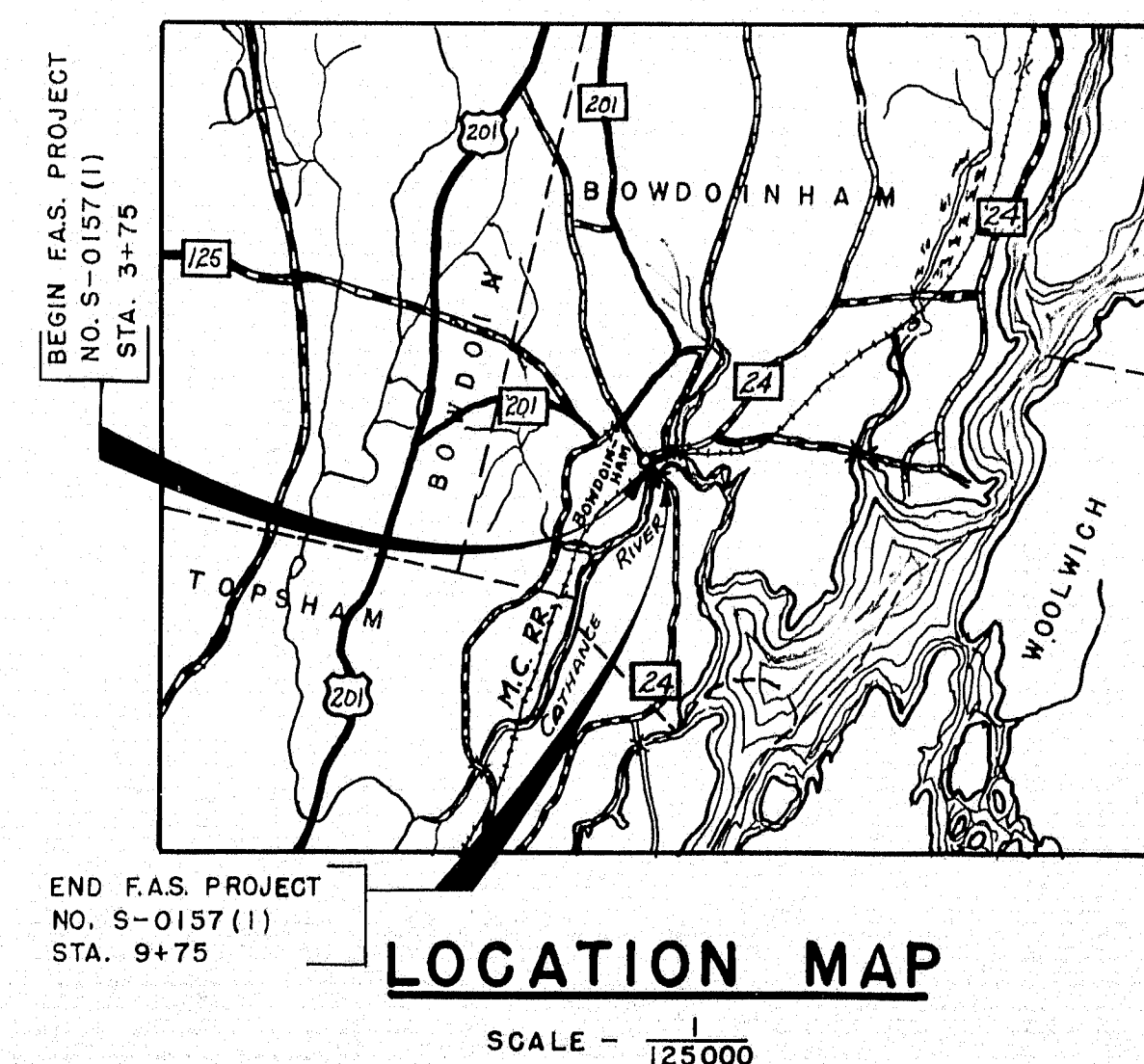
S-0157(1) 1/5

STATE OF MAINE
STATE HIGHWAY COMMISSION

★

BROOKLYN BRIDGE
OVER
CATHANCE RIVER
IN THE TOWN OF
BOWDOINHAM
SAGADAHOC COUNTY

FEDERAL AID SECONDARY
PROJECT NO. S-0157 (1)
CODE NO. 5190
TOTAL LENGTH OF PROJECT .114 MILE



CONCRETE CLASSIFICATION

Superstructure Slabs _____ Class A
Wearing Surface and Abutment Rail Posts _____ Class A-A
Abutments above footings _____ Class X
Abutment footings (Seal) _____ Class S

LOADING H20-44

INDEX OF SHEETS

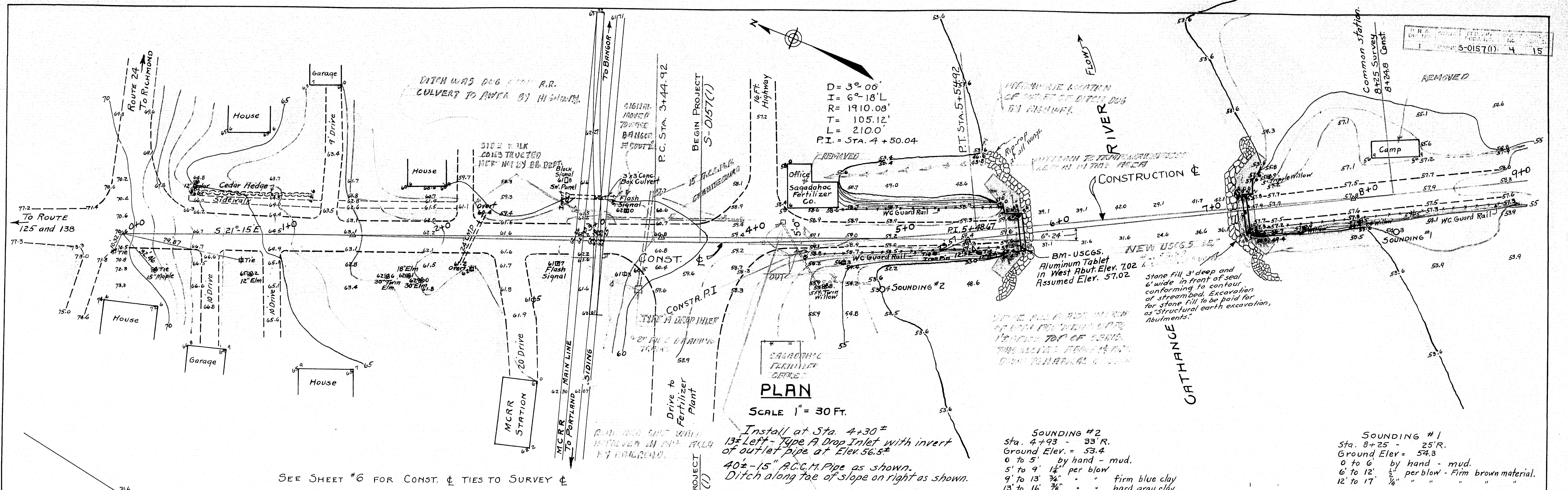
SHEET NO. 1	TITLE SHEET
SHEET NOS. 2-3	STANDARDS
SHEET NO. 4	SURVEY
SHEET NO. 5	FOUNDATION INFORMATION
SHEET NO. 6	APPROACH SECTIONS
SHEET NOS. 7-8	CROSS SECTIONS
SHEET NO. 9	ABUTMENTS
SHEET NO. 10	RAIL POST DETAIL & PILE PLAN
SHEET NOS. 11-12-13-14	STRUCTURAL STEEL
SHEET NO. 15	SUPERSTRUCTURE

APPROVED:
MAINE STATE HIGHWAY COMMISSION

CHAIRMAN
C. J. Rensselle
Harley D. Welch
William S. Thomas
CHIEF ENGINEER

DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	
RECOMMENDED FOR APPROVAL:	
DISTRICT ENGINEER	DATE
APPROVED:	
DIVISION ENGINEER	DATE

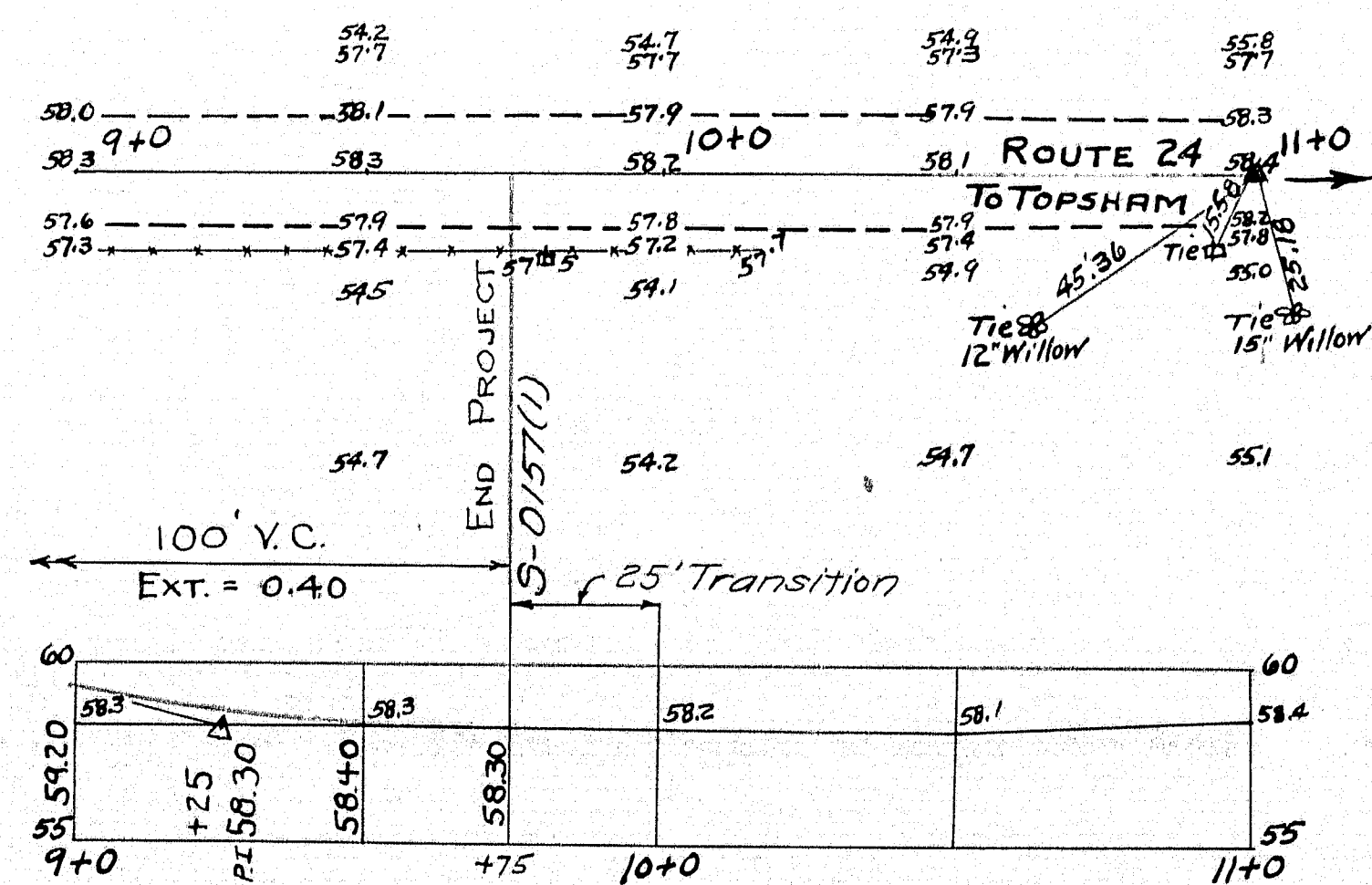
56-141



SEE SHEET #6 FOR CONST. & TIES TO SURVEY &

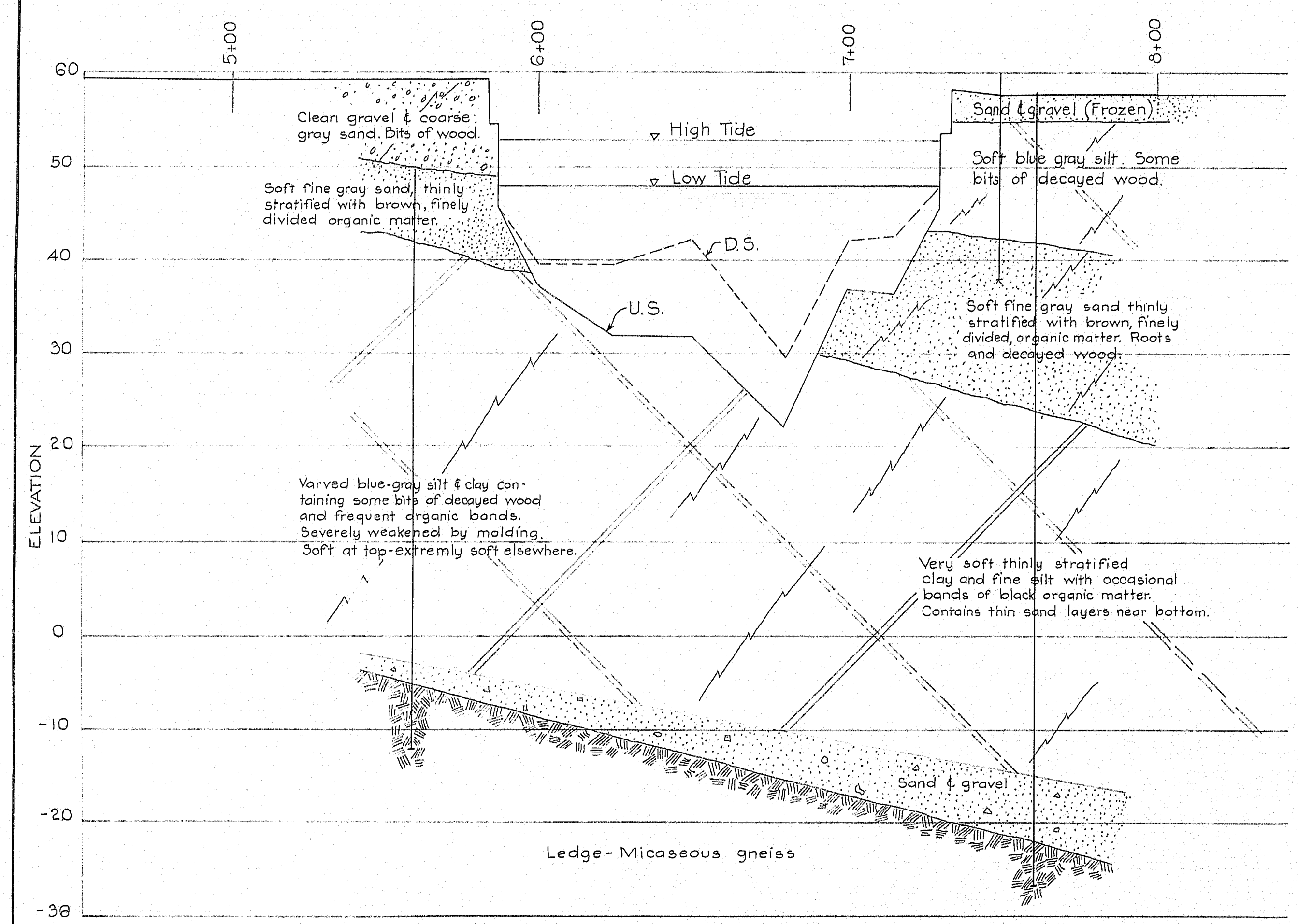
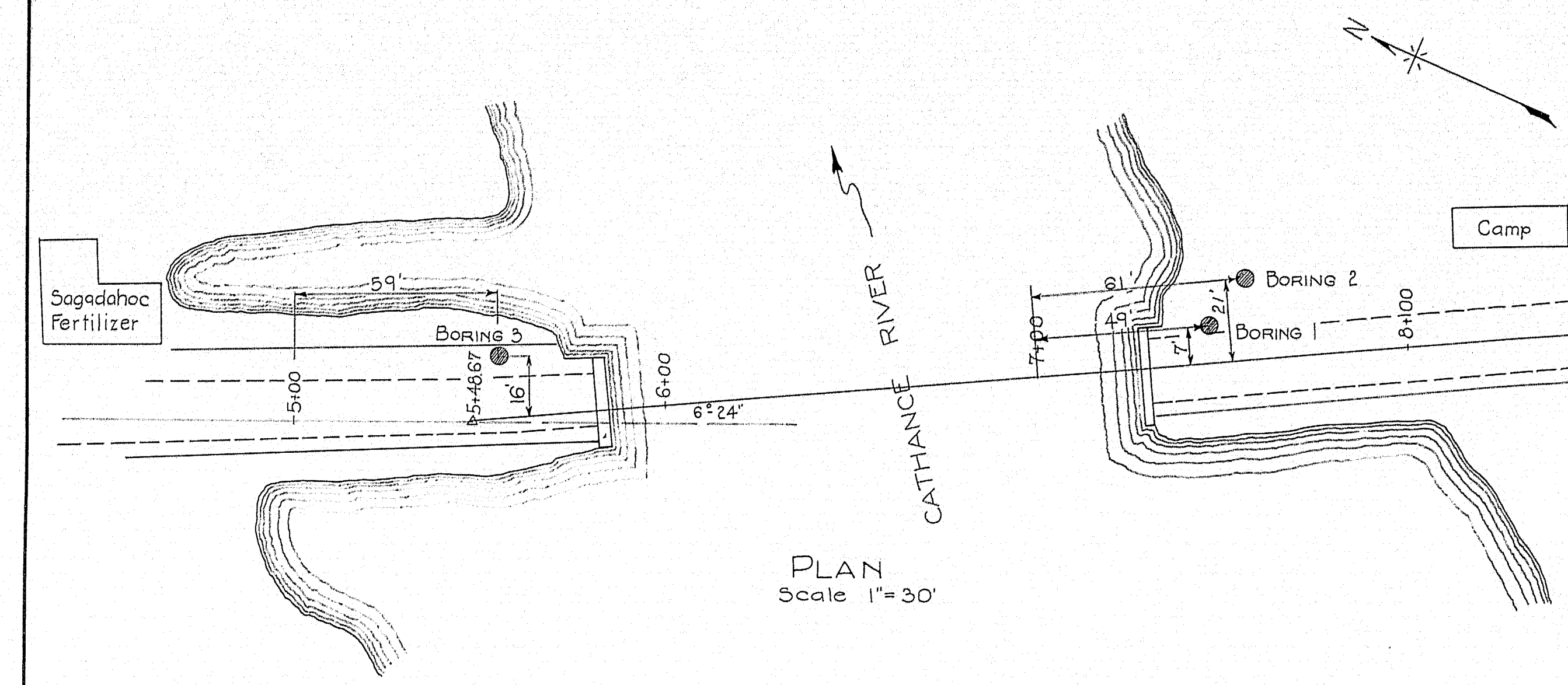
NOTES

- SUBSTRUCTURE:** Abut. #1 coursed split granite on planked log grillage on piles, in good condition. Abut. #2 the same but stone work was badly bulged by flood of 1936.
- * SUPERSTRUCTURE:** Cast iron and tie rod truss. I-beam floor beams badly rusted. Wood stringers and plank floor in poor condition.
- FOUNDATION:** See rod sounding notes. Reported 96 ft. piles under Abut. #2. The settlement of Abut. #2 as indicated by bridge seat elevations reportedly occurred one week after bridge was opened to traffic in 1896.
- STREAM:** Tide water, see elevations. Extreme high water of flood of March 1936 reported elev. 60.00
- APPROACHES:** Surface treated gravel in good condition.
- * Cast iron truss superstructure replaced by Bailey Bridge in 1943 at same location.

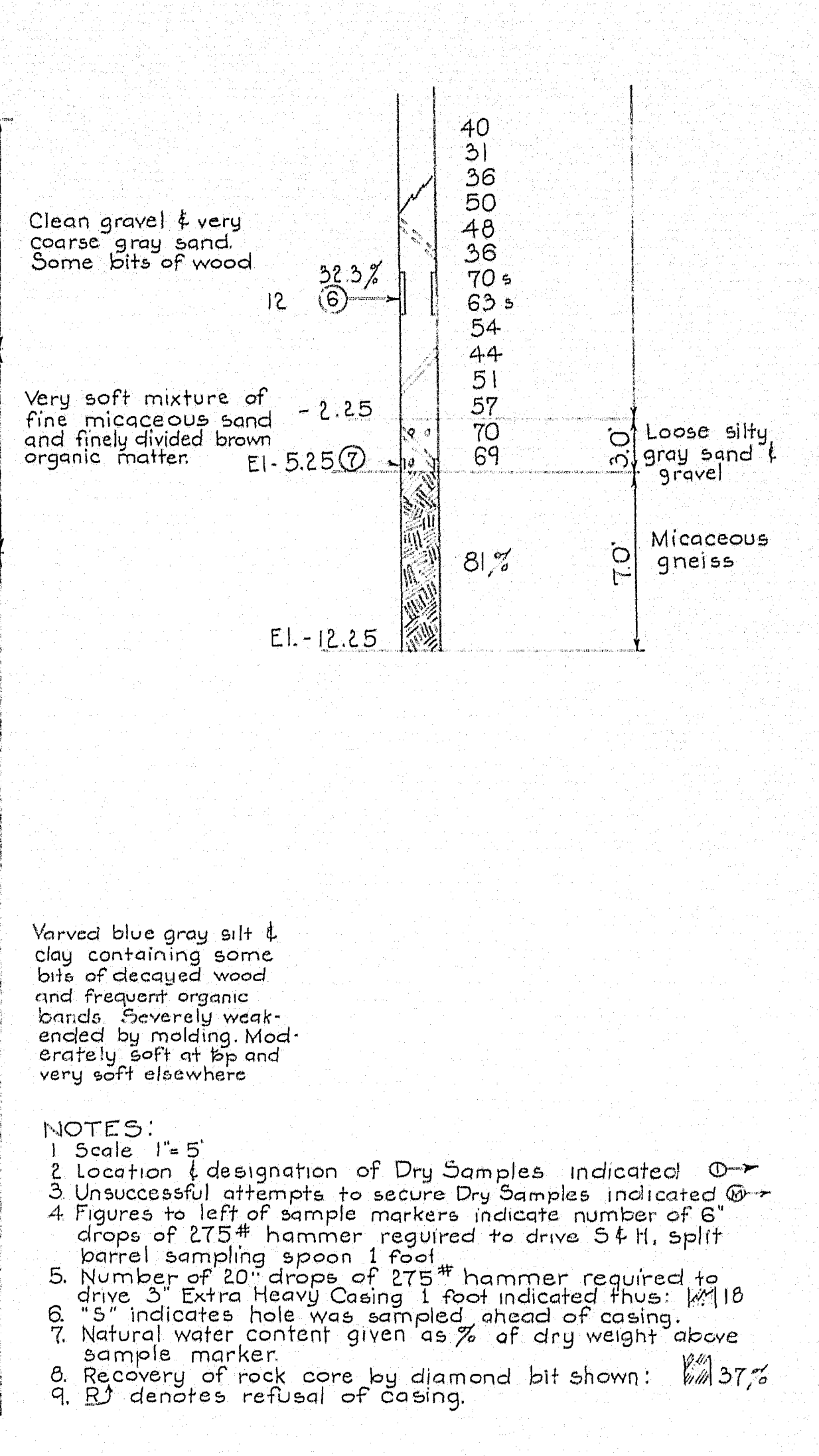
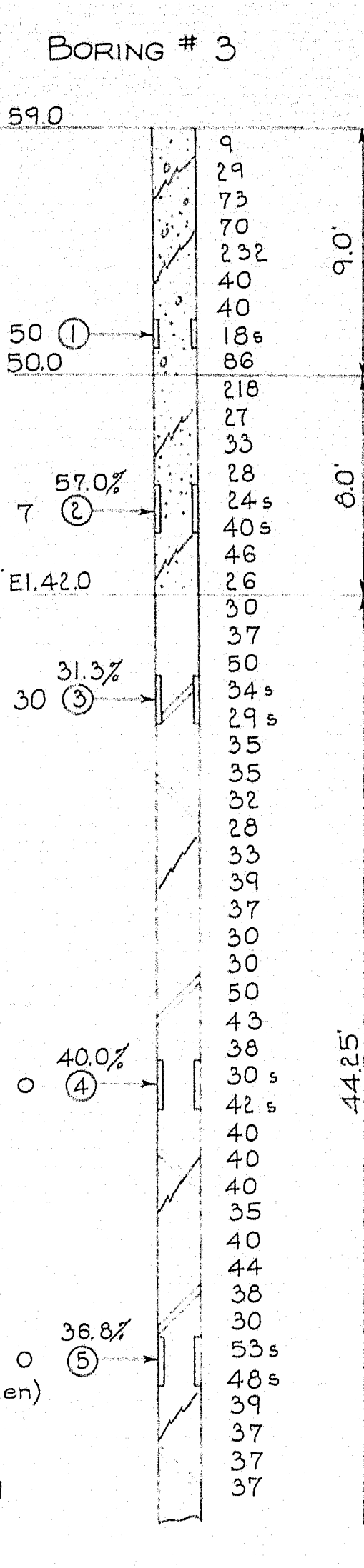
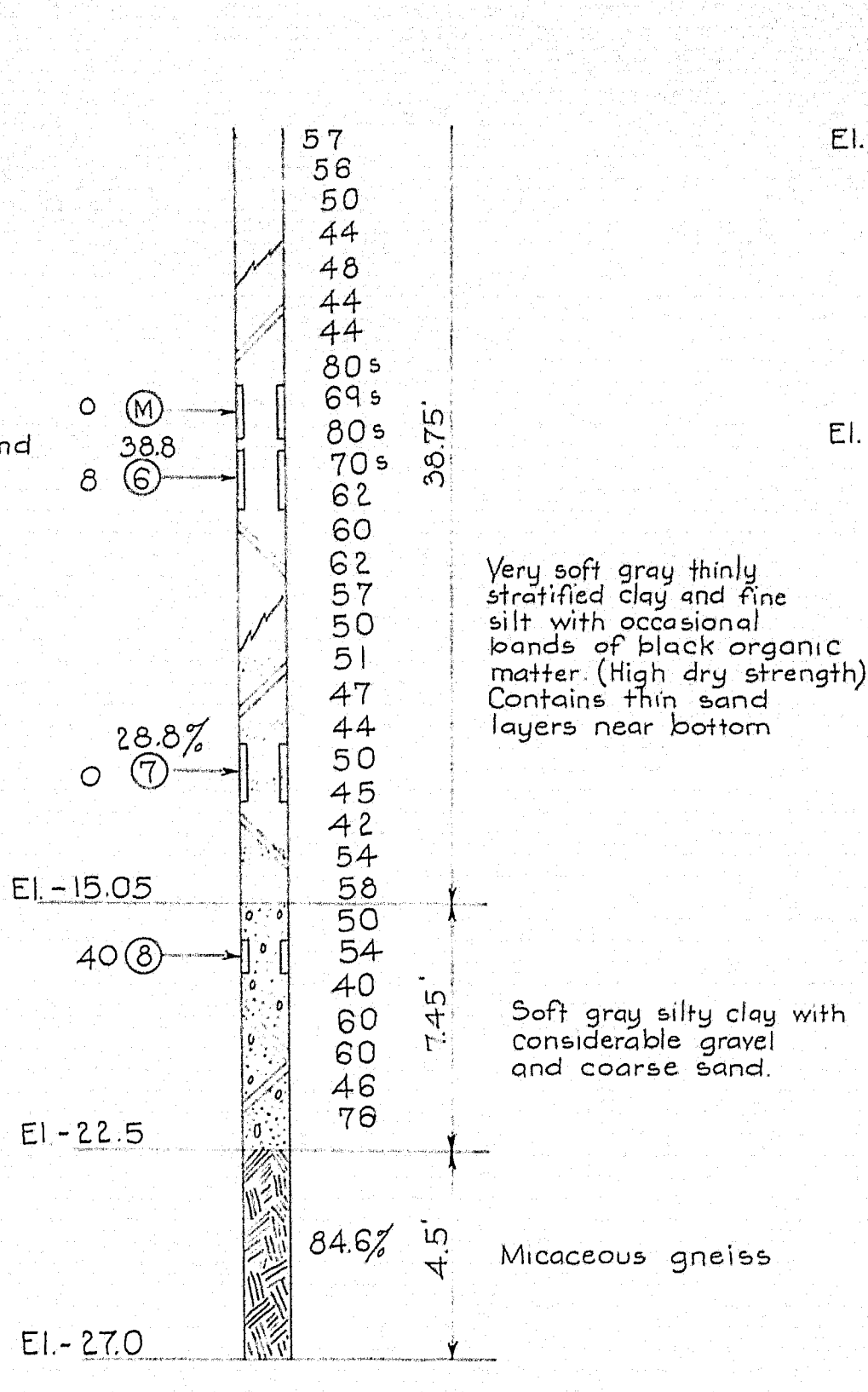
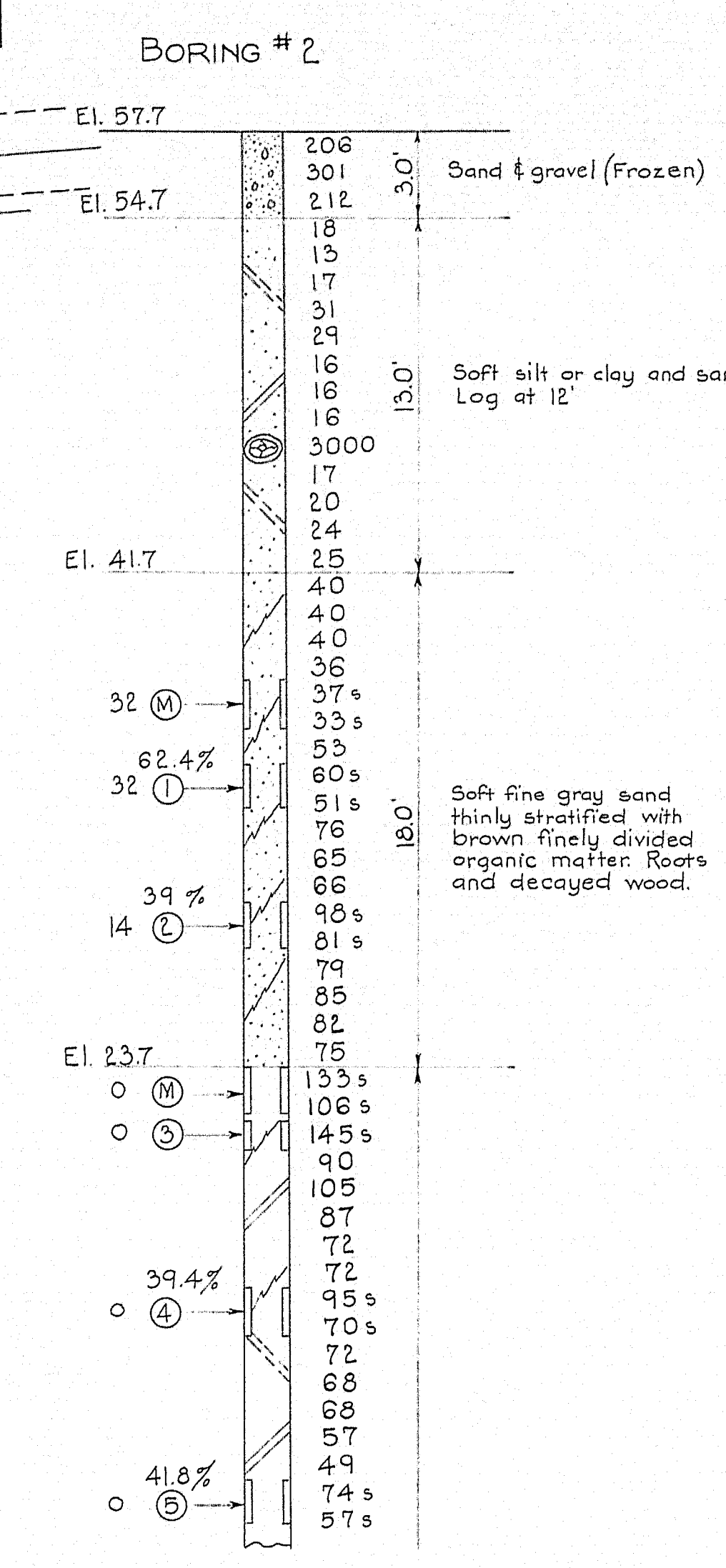


NOTE: FOR FLEX OF PILE THIS SEE BOOK I 1942 TO P. 1

SURVEY BOYD	BRIDGE 5190
PLOT 4 TRICE WELCH	STATE HIGHWAY COMMISSION
	BRIDGE DIVISION
	BROOKLYN BRIDGE
	OVER THE
	CATHANUS RIVER
	IN THE TOWN OF
	BOWDOINHAM
	SAGADAHOC COUNTY
	SURVEY
SHEET 4 OF 15	AUGUSTA, ME, DEC. 1947



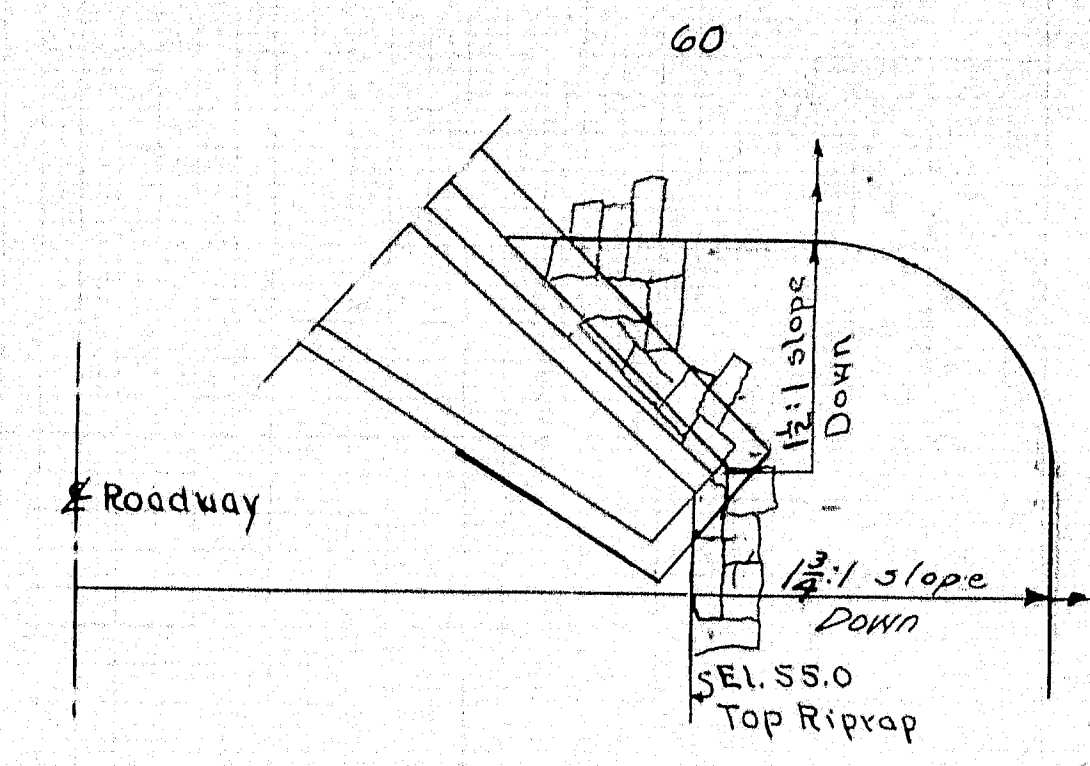
PROFILE
 Scales Hor. 1"=30'
 Vert. 1"=10'



NOTE:
 The soil stratification illustrated on this drawing has been developed by interpretation of, and interpolation between, the various soil borings. It is, therefore, speculative, and no warranty is implied with respect to the continuity of soil layers, or to the elevations of the soil boundaries except at the actual boring locations. Depths and thicknesses at the latter are subject to the inaccuracies inherent in the drilling methods. The descriptions of the various soil layers are based upon the driller's field classification and upon the engineer's inspection of samples and interpretation of the driller's record.

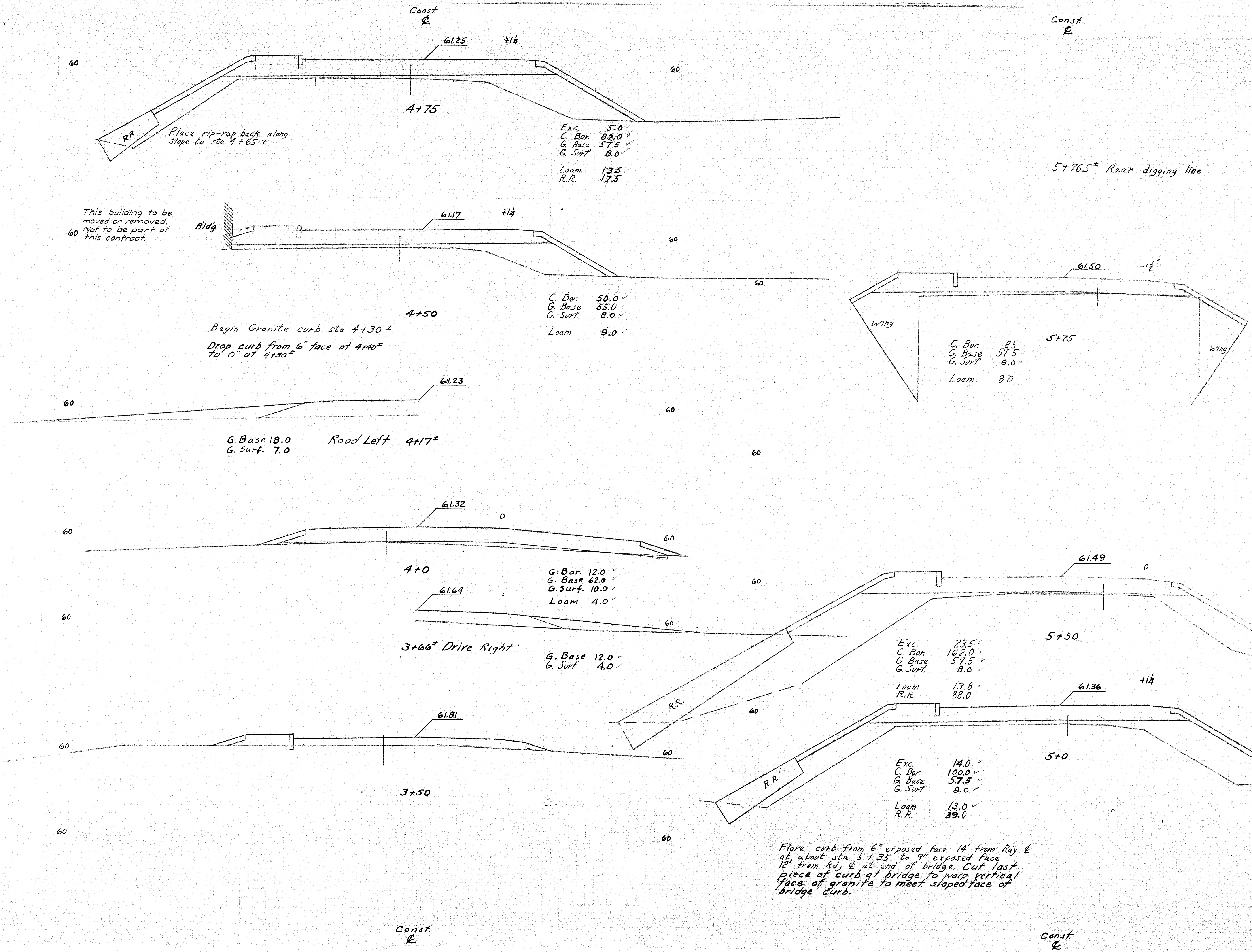
- NOTES:
 1 Scale 1"=5'
 2 Location of designation of Dry Samples indicated by \odot
 3 Unsuccessful attempts to secure Dry Samples indicated by \otimes
 4 Figures to left of sample markers indicate number of 6" drops of 275# hammer required to drive 5" H. split barrel sampling spoon 1 foot
 5 Number of 20" drops of 275# hammer required to drive 3" Extra Heavy Casing 1 foot indicated thus: $\frac{1}{2} \frac{1}{10}$
 6 "5" indicates hole was sampled ahead of casing.
 7 Natural water content given as % of dry weight above sample marker.
 8 Recovery of rock core by diamond bit shown: $\frac{1}{2} \frac{1}{37}$
 9 RJ denotes refusal of casing.

PLAN	Hamilton	BRIDGE	5190
CHECKED	CRS		
STATE HIGHWAY COMMISSION BRIDGE DIVISION			
BROOKLYN BRIDGE			
OVER THE			
CATHANCE RIVER			
IN THE TOWN OF			
BOWDOINHAM			
SAGADAHOC COUNTY			
FOUNDATION INFORMATION			
SHEET 5 OF 15 AUGUSTA, MAINE NOV. 1949			



Vary slope of rip-rap cone at wings from 12:1 normal to roadway & at ends of wings to 12:1 in front of wings as indicated above.

Outer course of rip-rap cone at wings shall be stone salvaged from existing abutments or equivalent.



PLAN - RJ.
CHECK - cas
BRIDGE - 5190

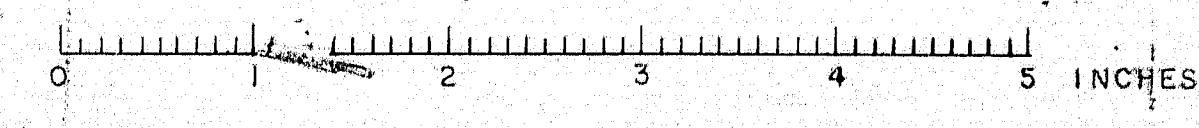
STATE HIGHWAY COMMISSION
BRIDGE DIVISION

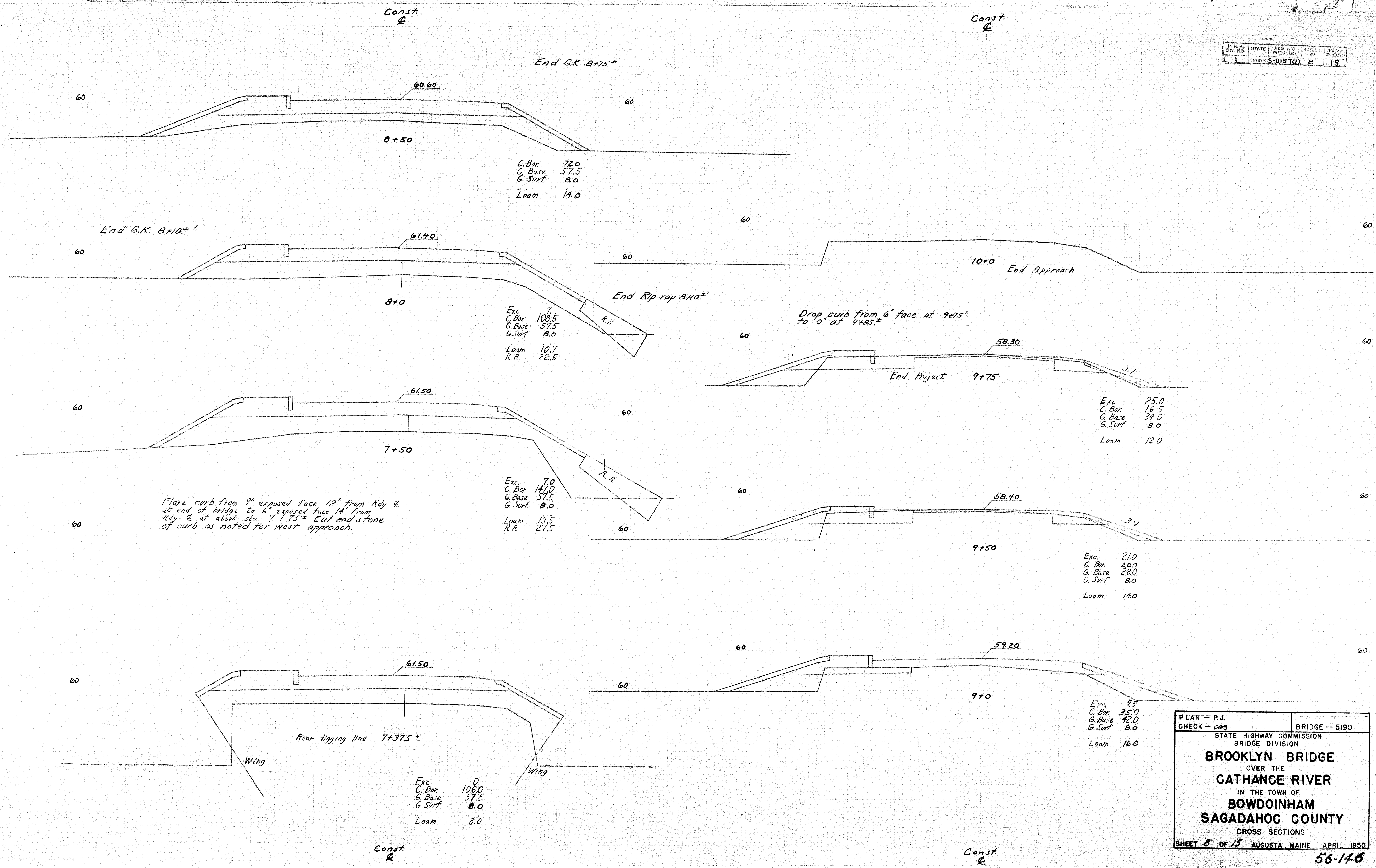
BROOKLYN BRIDGE
OVER THE
CATHANCE RIVER
IN THE TOWN OF
BOWDOINHAM
SAGadahoc COUNTY

CROSS SECTIONS

SHEET 7 OF 15 AUGUSTA, MAINE APRIL 1950

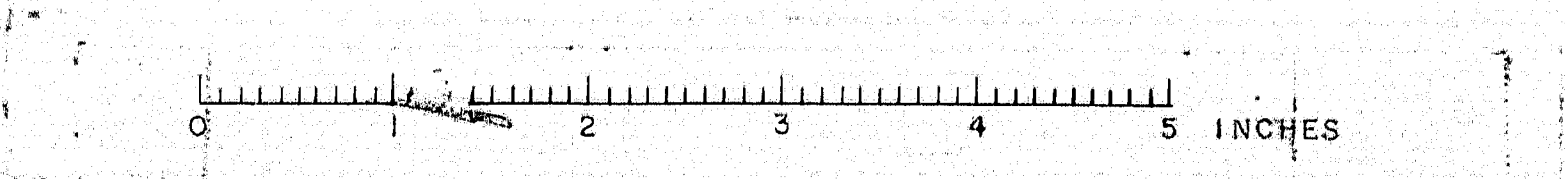
56-145

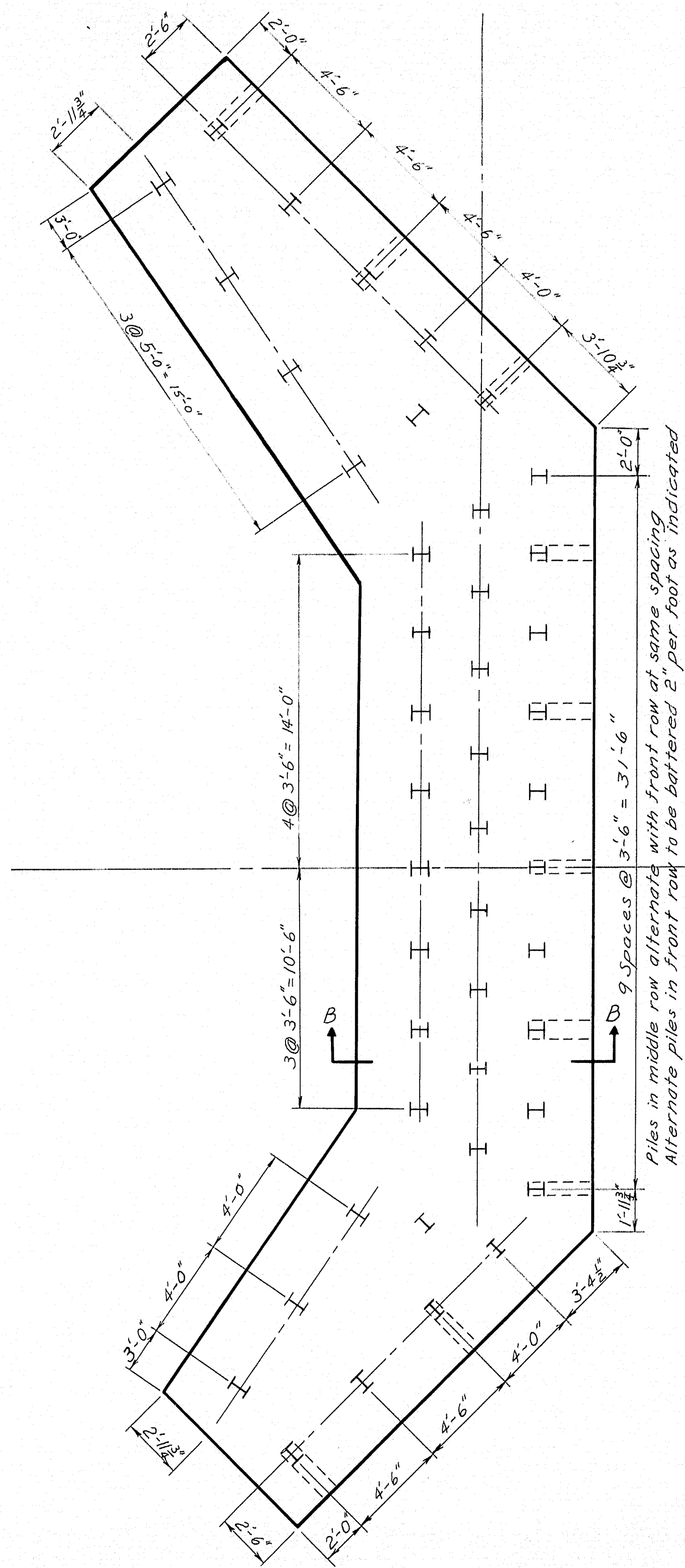




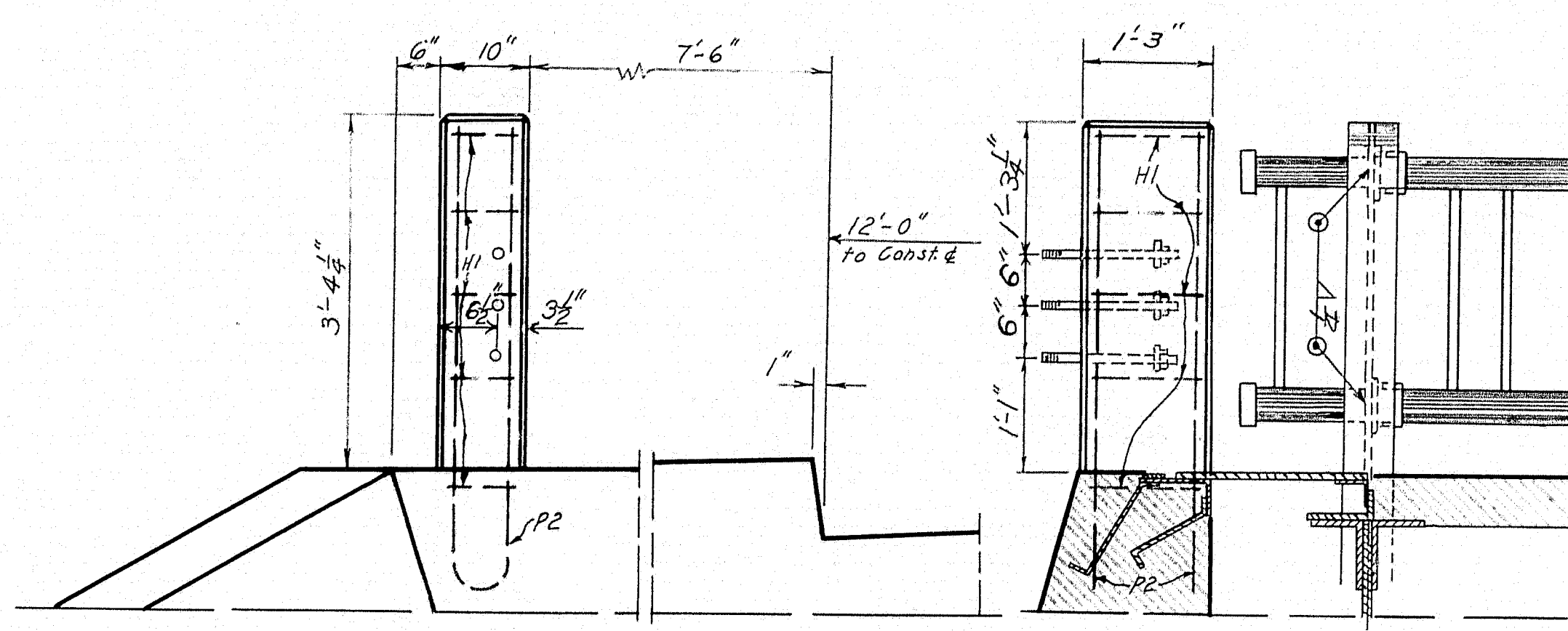
PLAN - P.J.	BRIDGE - 5190
CHECK - C.B.	
STATE HIGHWAY COMMISSION BRIDGE DIVISION	
BROOKLYN BRIDGE	
OVER THE	
CATHANCE RIVER	
IN THE TOWN OF	
BOWDOINHAM	
SAGadahoc COUNTY	
CROSS SECTIONS	
SHEET 8 OF 15 AUGUSTA, MAINE APRIL 1950	

56-146

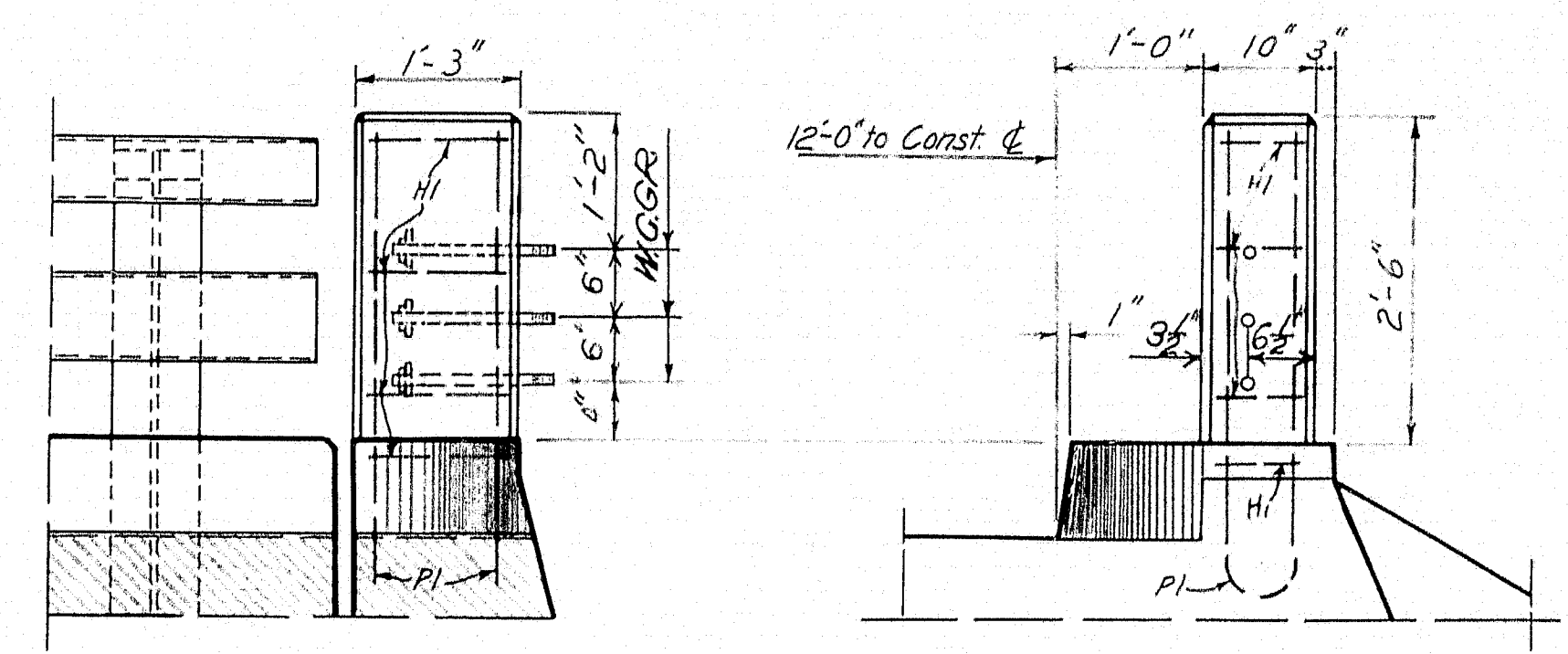




PILE PLAN-ABUTMENT NO. 1
ABUTMENT NO. 2 OPPOSITE HAND



END VIEW
RAIL POST DETAILS-DOWNSTREAM CURB



SIDE VIEW
RAIL POST DETAILS-UPSTREAM CURB

NOTE: ALL PILE ELEVATIONS - LEAVE
SEE BOOK P. 123-124.

PILE NOTES

Piles to be 8" H 36# section driven to ledge.
Front row piles to be capped as shown before driving with cap in seal concrete.
Piles in middle row not to be cut off until details for stone masonry are available. Then those piles that would interfere with headers are to be cut off low enough to clear stone by a minimum of 2". Other piles in middle row are to be cut off 1'-6" above top of seal concrete.

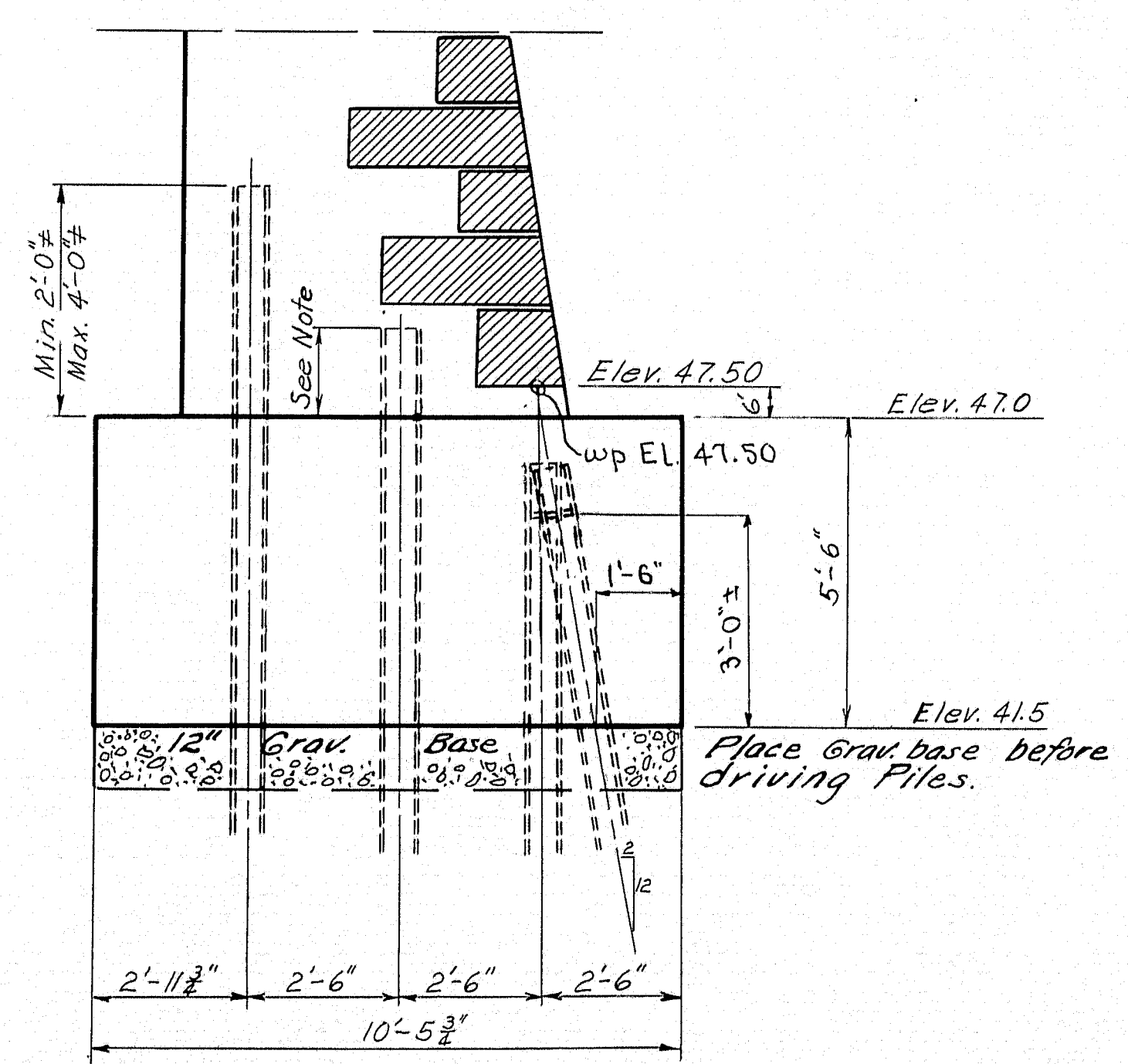
PILE LENGTHS FOR ESTIMATE ONLY

Abut. No. 1 45 @ 60'
Abut. No. 2 45 @ 70'

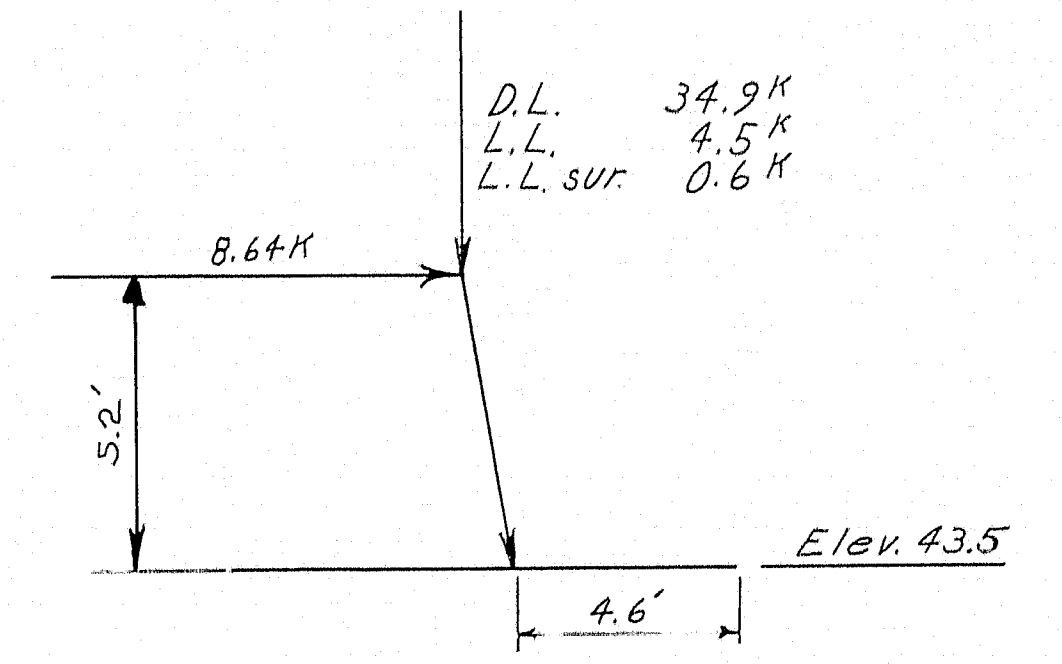
Note - Piles shall be spliced as directed by the Engineer.
The location of splices in adjacent piles, in any row, shall be staggered a minimum of 5 feet. The full section of the pile shall be developed at the splice by butt welding. Welding shall conform to the current Specifications for Welded Highway and Railway Bridges, Design, Construction and Repair, of The American Welding Society.

RAIL NOTES

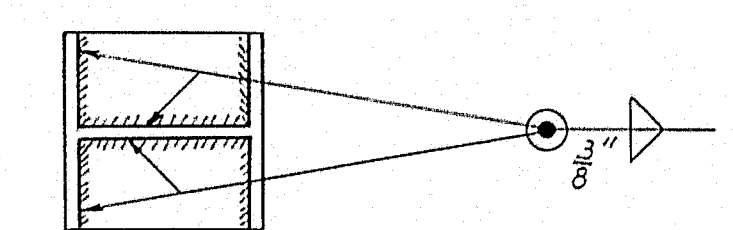
Bars P1+P2 for posts to be in position before concrete in curb is placed.
Payment for concrete in posts will be made under Item #63 - "Concrete in roadway and sidewalk slabs on steel bridges."
Omit chamfer under posts on back wall.



SECTION B-B



Max. Pile Load 30 Tons
ABUTMENT ANALYSIS

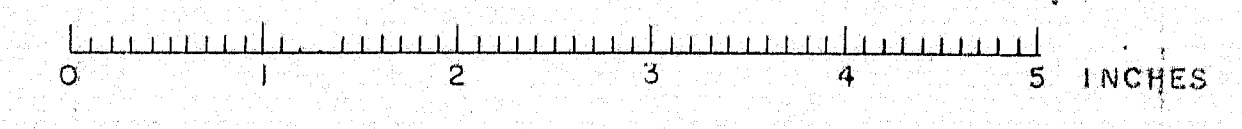


DETAIL - PILE CAP

FRONT ROW PILES ONLY

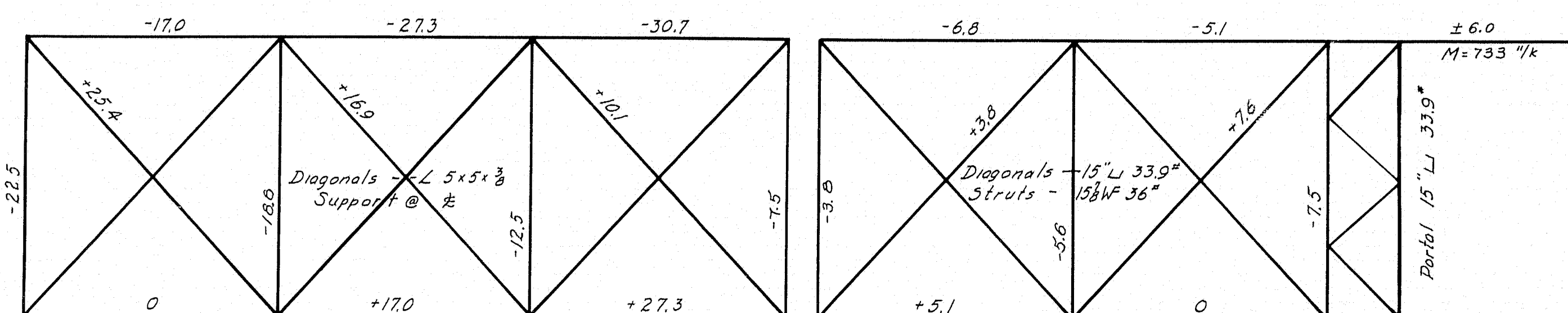
Required 38

DESIGN - P. J.	BRIDGE - 5190
TRACE - BAKER	STATE HIGHWAY COMMISSION
CHECK - CAS	BRIDGE DIVISION
BROOKLYN BRIDGE	
OVER THE	
CATHANCE RIVER	
IN THE TOWN OF	
BOWDOINHAM	
SAGADAHOC COUNTY	
RAIL POST DETAIL & PILE PLAN	
SHEET 10 OF 15 AUGUSTA, MAINE APRIL 1950	



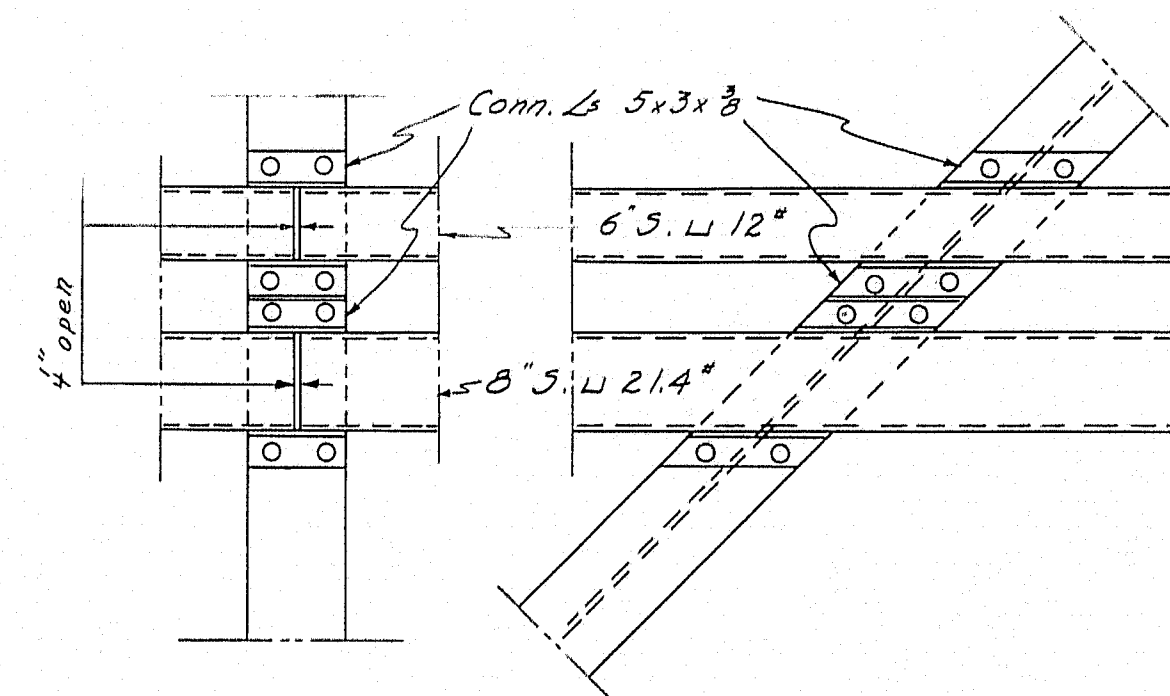
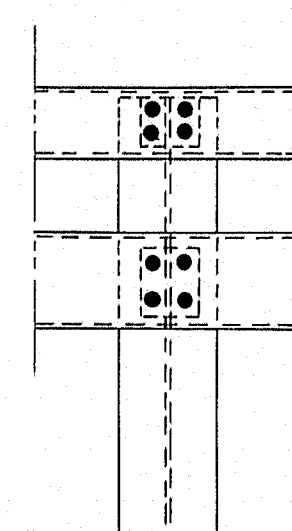
Stresses indicated thus:

- 263.4 = Dead Load
- 135.4 = Live Load + Impact + S.W. - L.L.
- = Compression ; + = Tension



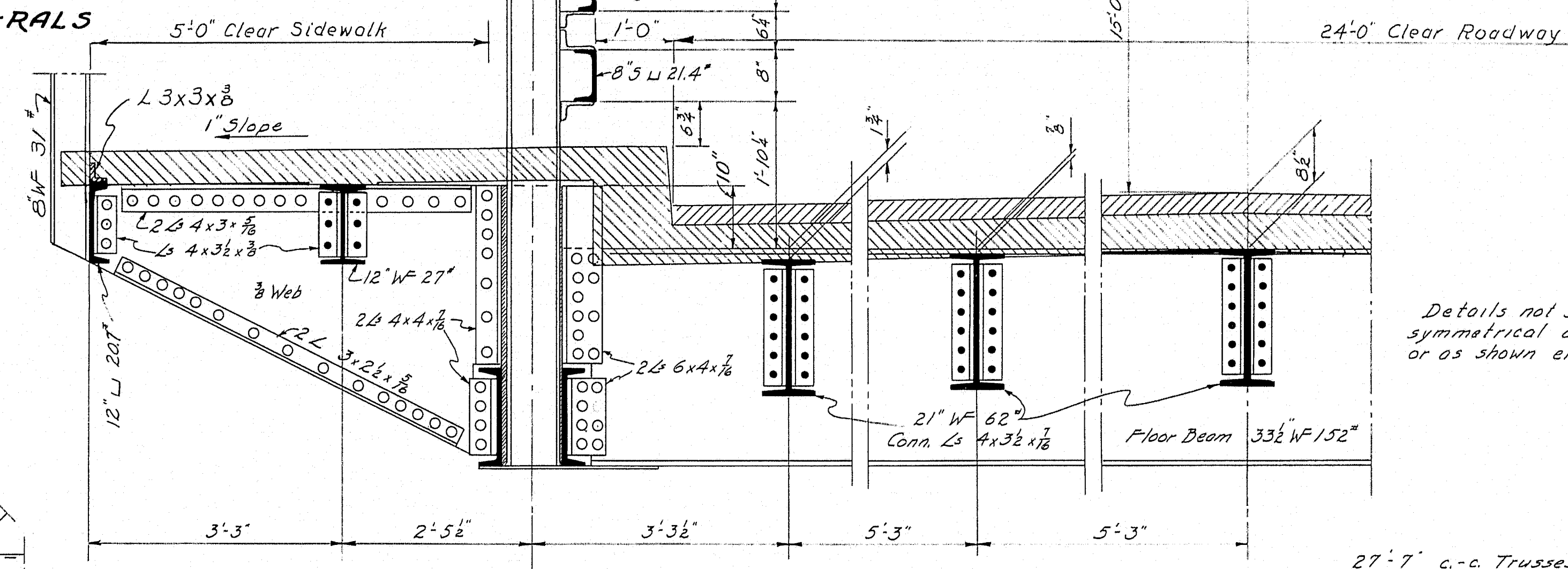
TOP LATERALS

STRINGERS						FLOOR BEAM
	Interior Rdy.	Ext. Rdy. Curb	Ext. Rdy. S.W.	Interior S.W.	Exterior S.W.	
D.L.M.	612.2 ["] _k	7041 ["] _k	8344 ["] _k			3913.8 ["] _k
(L.L.)M	1638.0 ["] _k	1414.4 ["] _k	1414.4 ["] _k	Tot. M = 600 ["] _k	294.4 ["] _k	4848.7 ["] _k
Req. S	125 ["] ₃	117.5 ["] ₃	124.6 ["] ₃	33.3 ["] ₃	16.4 ["] ₃	486.6 ["] ₃
Use	21" W 62 ["] ₃ / 164 ["] ₃	21" W 62 ["] ₃	21" W 62 ["] ₃	12" W 27 ["] ₃ / 341 ["] ₃	12" W 20 ["] ₃ / 214 ["] ₃	33 ["] ₃ W 62 ["] ₃ / 486 ["] ₃

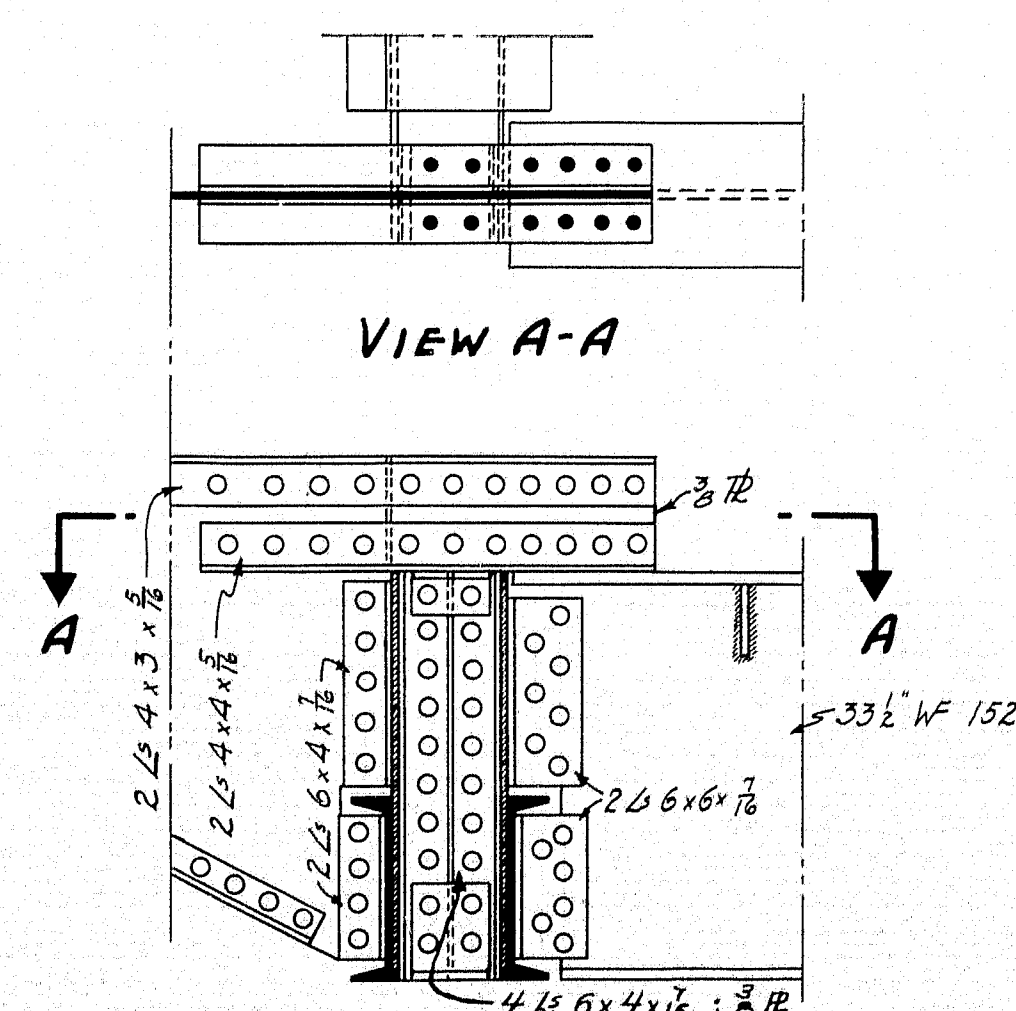


AT
DIAGONALS

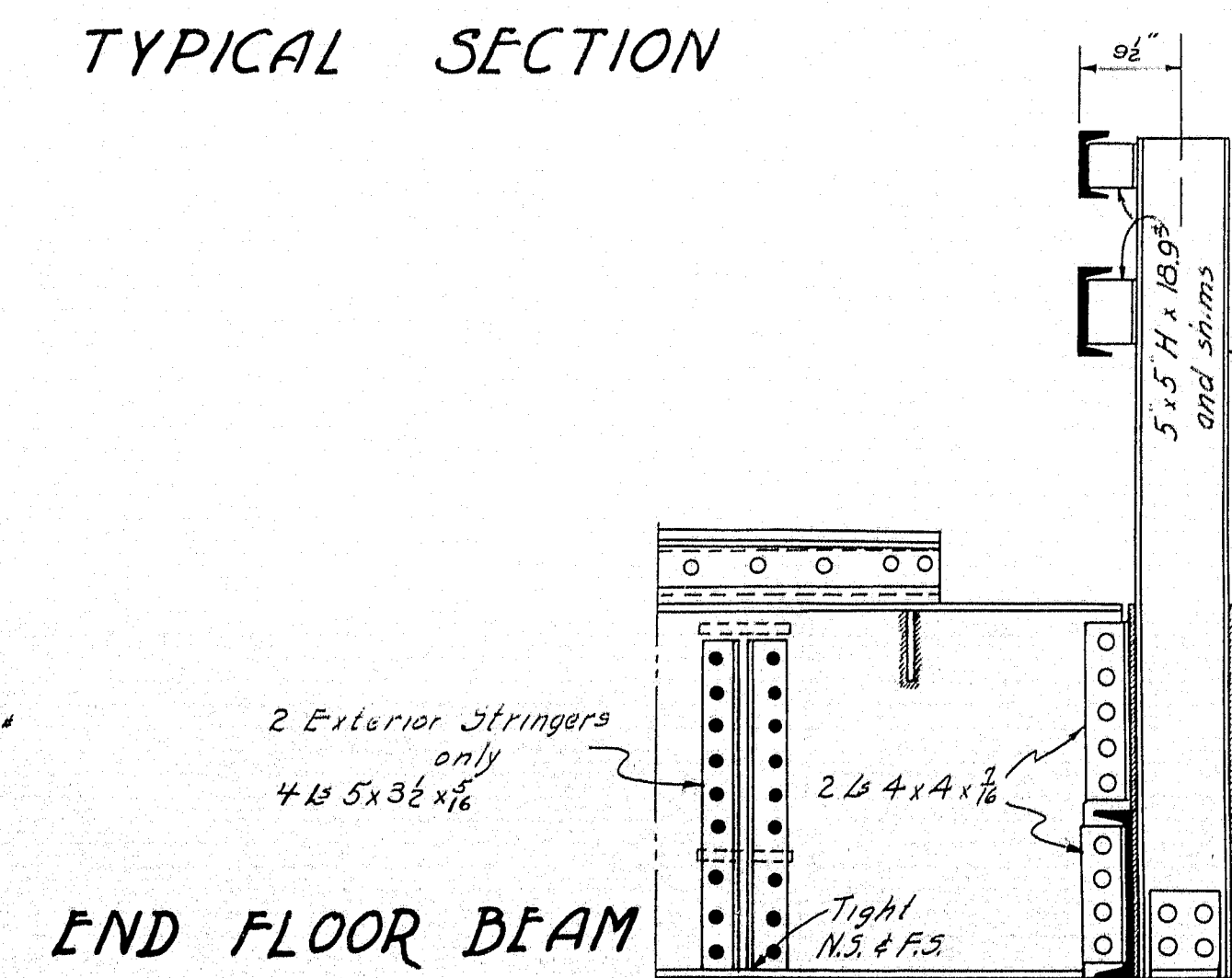
Rail to be fastened with $\frac{5}{8}"$ Bolts, Hex. Hd. and Nut
Holes in Rail bars to be slotted $\frac{11}{16} \times \frac{15}{16}$



TYPICAL SECTION



VIEW A-A



END FLOOR BEAM

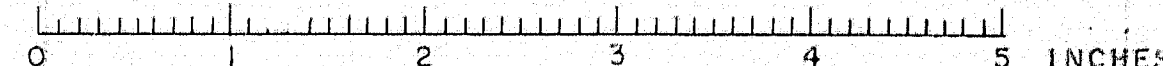
DESIGN — ALLEN
TRACE — FORTIER
CHECK — *CSB*

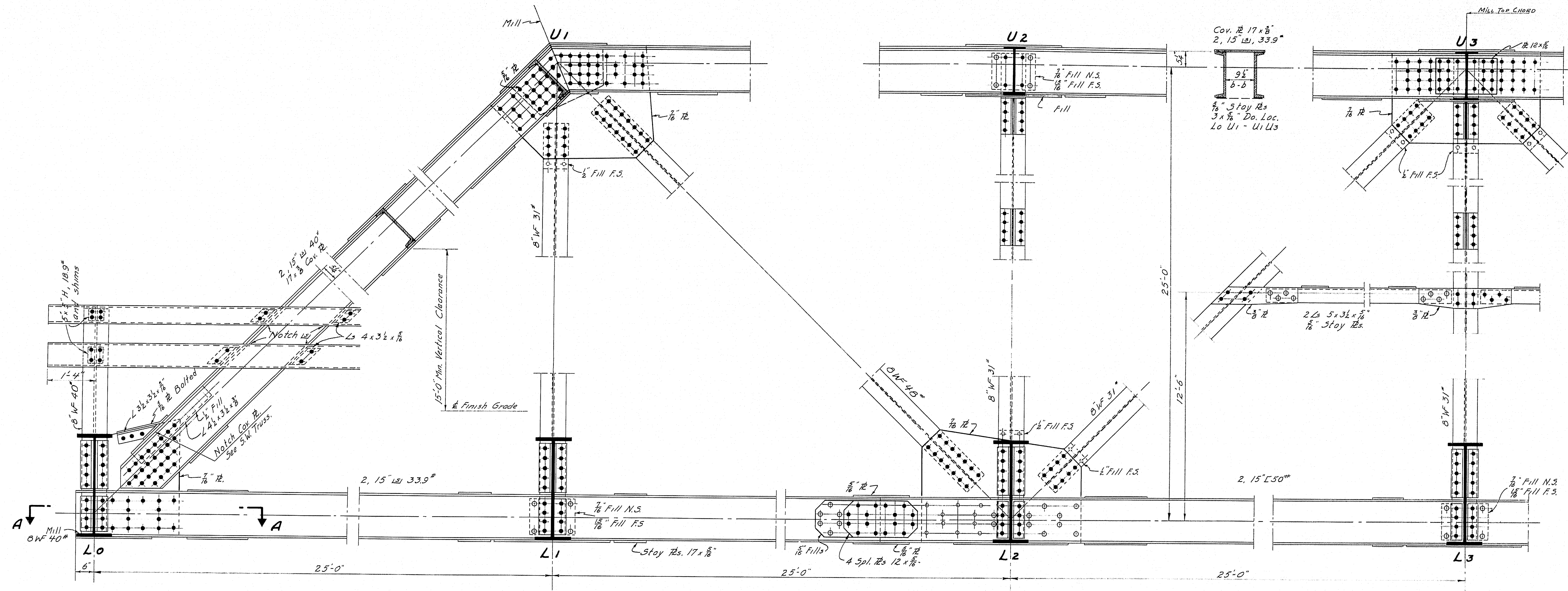
BRIDGE — 5190

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

BROOKLYN BRIDGE
OVER THE
CATHANCE RIVER
IN THE TOWN OF
BOWDOINHAM
SAGADAHOC COUNTY
STRUCTURAL STEEL

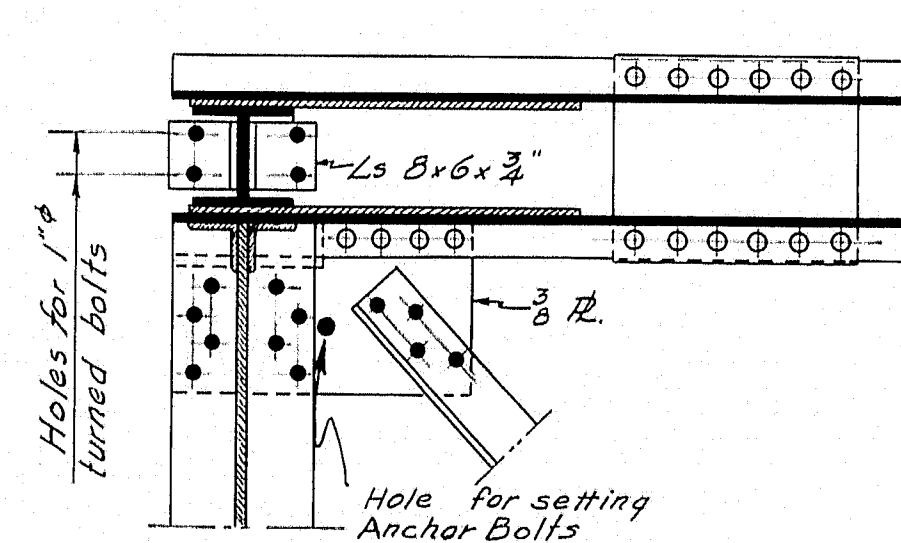
SHEET // OF *15* AUGUSTA, MAINE APRIL 1950





ROADWAY TRUSS

Parts not shown are as shown on Sidewalk Truss.

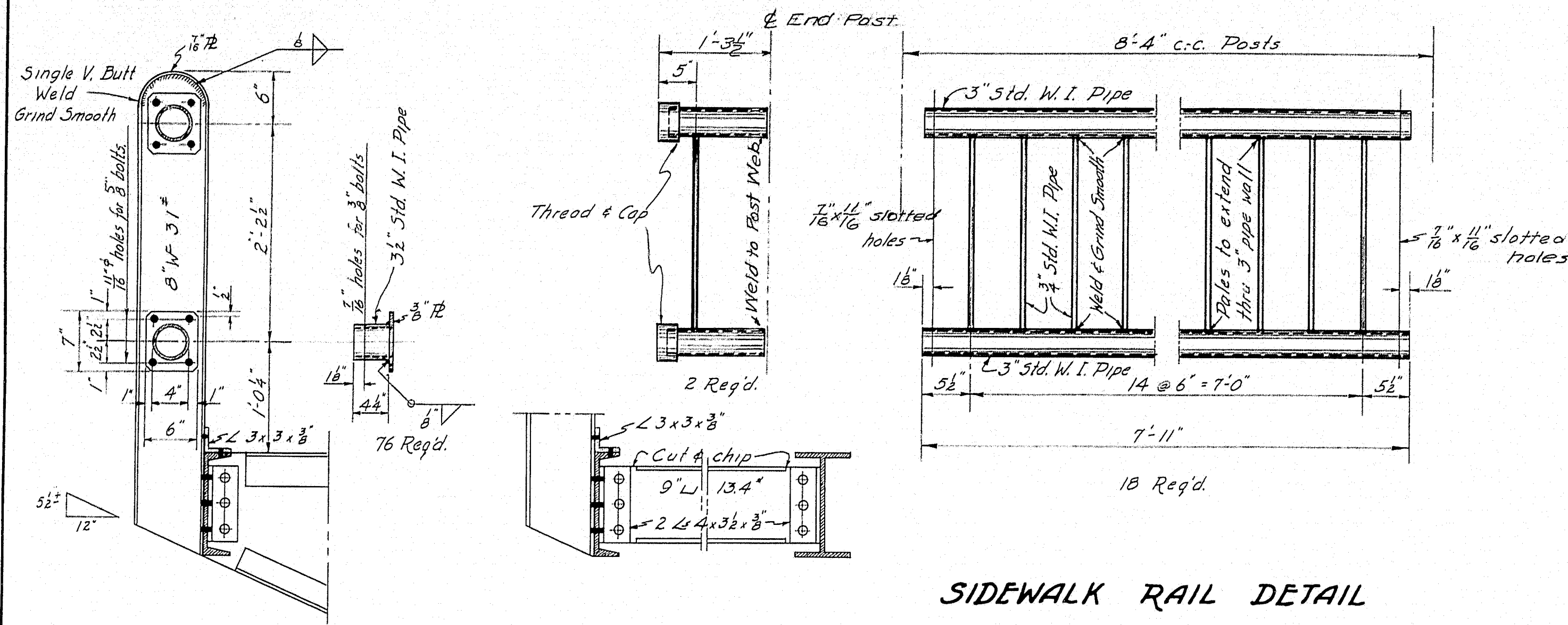


SECT. A-A

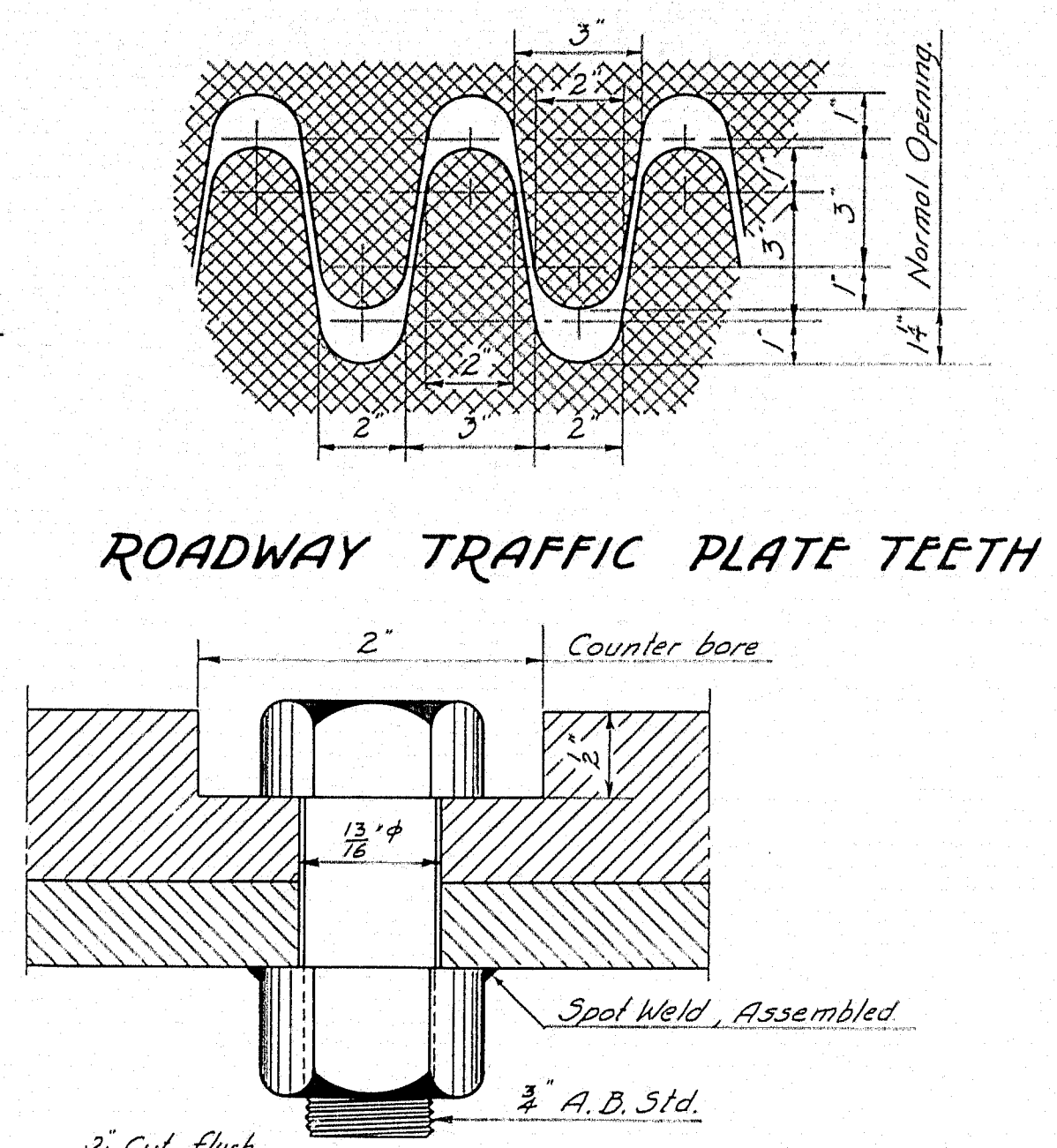
LOADING - H20-44.
 SPECIFICATIONS: - State of Maine, State Highway Commission, Bridge Division, Specifications for Steel Highway Bridges, Nov. 1945.
 Rivets - $\frac{3}{4}$ " unless noted.
 Open holes - $\frac{1}{8}$ " unless noted.
 Structural Carbon Steel shall conform to A.A.S.H.O. Specifications for highway materials, designation M 94, & A.S.T.M. designation A7.
 Holes for field connections & field splices of main members shall be sub-punched & reamed to a steel template or reamed assembled.
 Bottom Chord to have length shown under full dead load.

DESIGN - ALLEN	BRIDGE - 5190
TRACE - FORTIER	
CHECK - C.A.	
STATE HIGHWAY COMMISSION	
BRIDGE DIVISION	
BROOKLYN BRIDGE	
OVER THE	
CATHANCE RIVER	
IN THE TOWN OF	
BOWDOINHAM	
SAGadahoc COUNTY	
STRUCTURAL STEEL	
SHEET 13 OF 15 AUGUSTA, MAINE APRIL 1950	

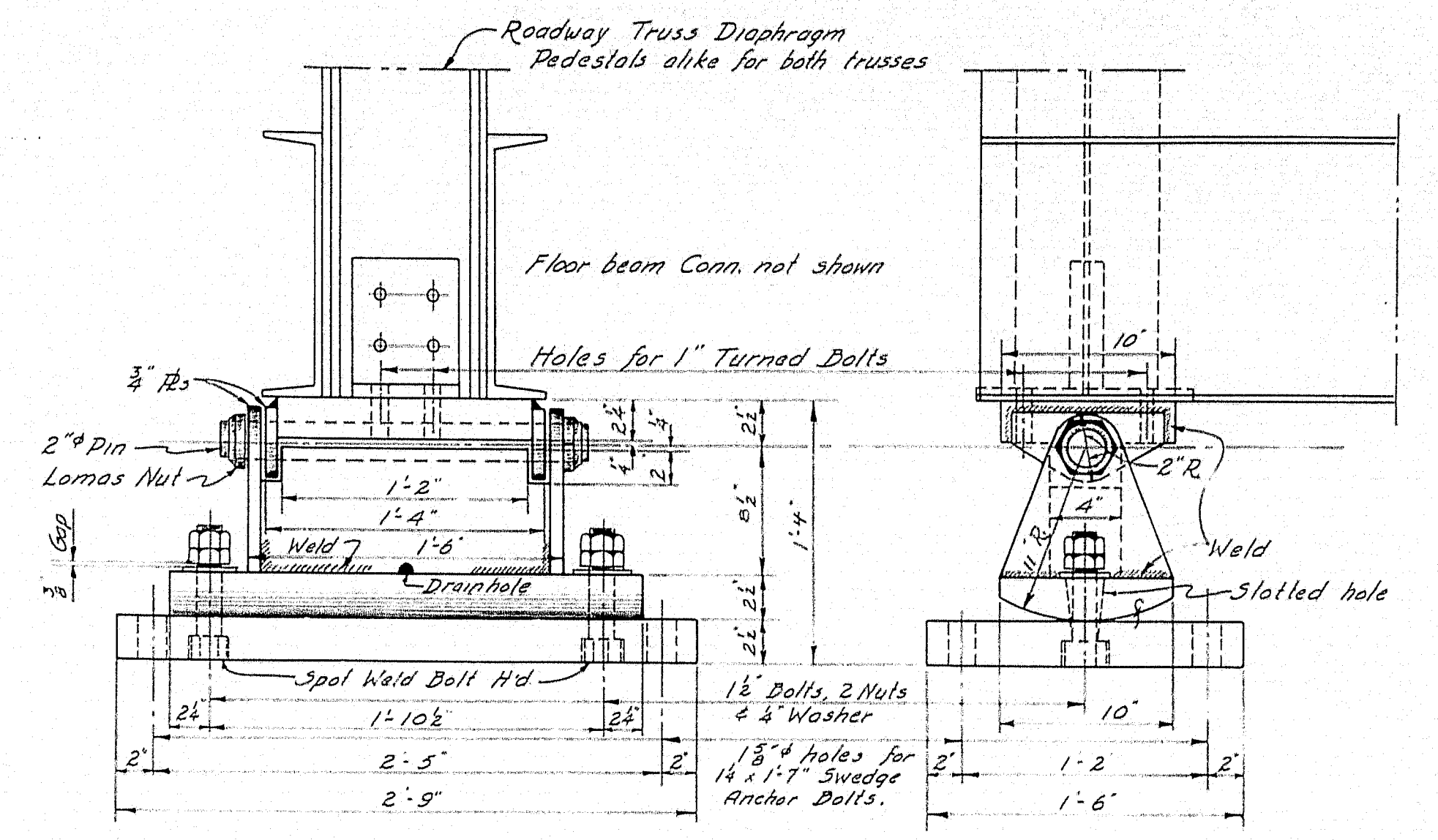
56-151



SIDEWALK RAIL DETAIL

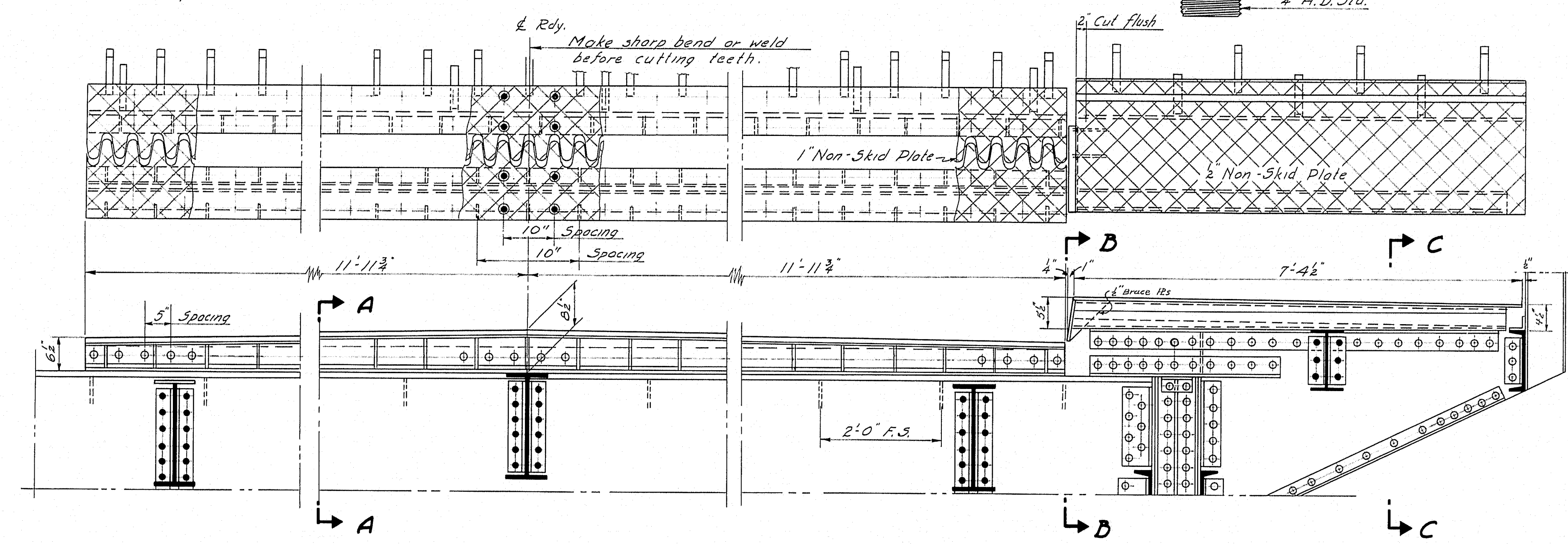


ROADWAY TRAFFIC PLATE TEETH

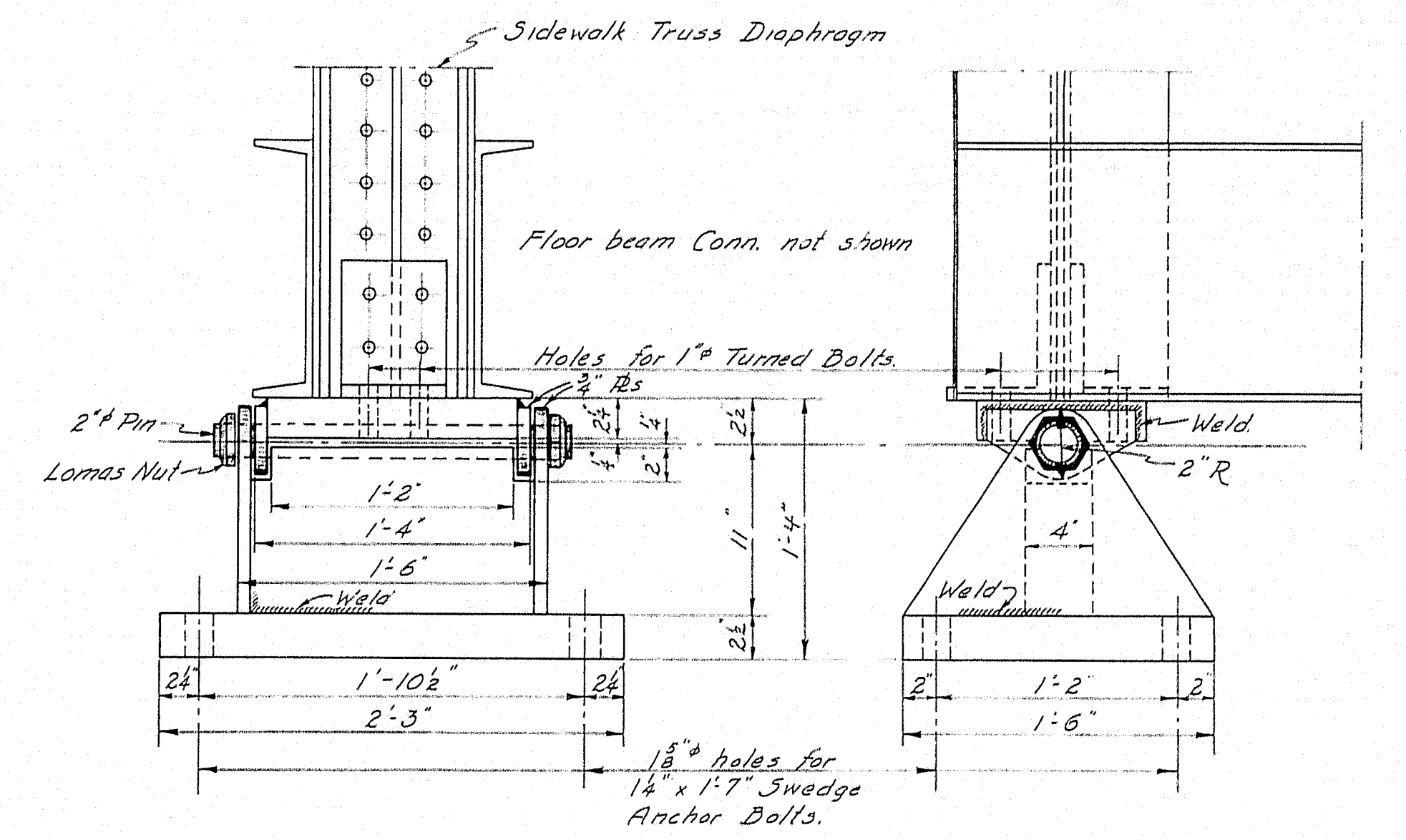


EXPANSION PEDESTAL

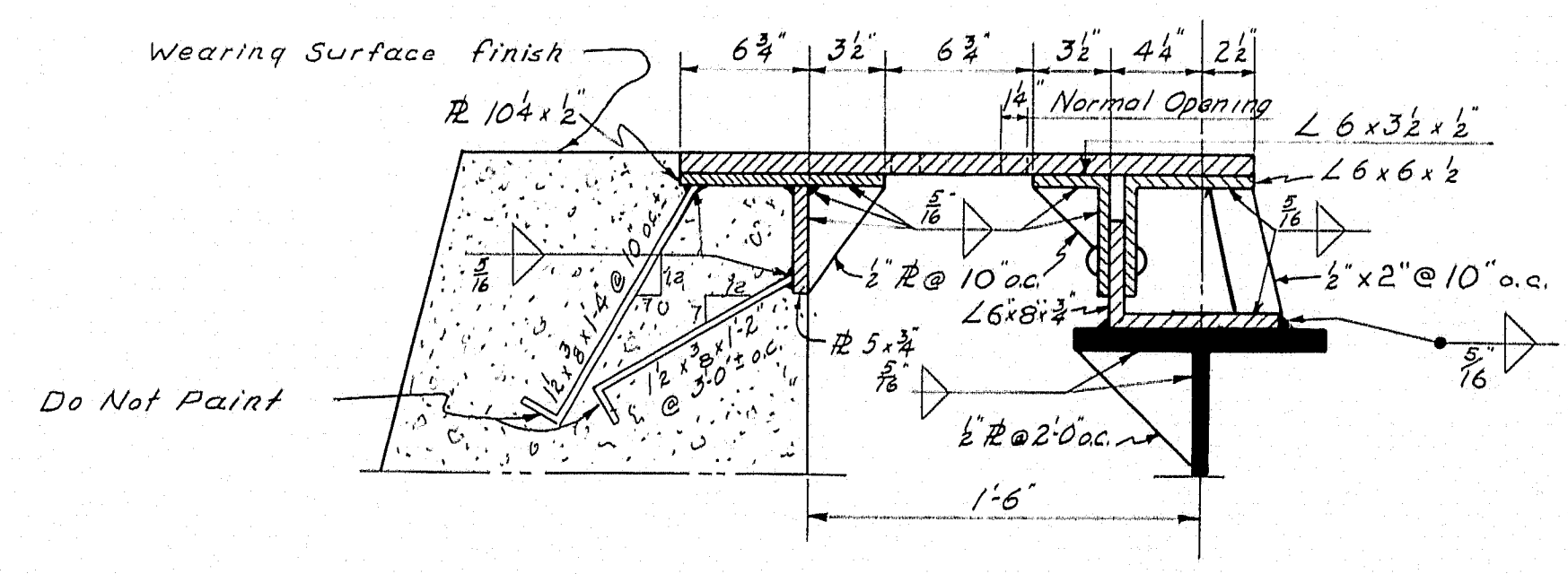
AT BRACKETS RAIL POST 19 Reg'd INTERMEDIATE



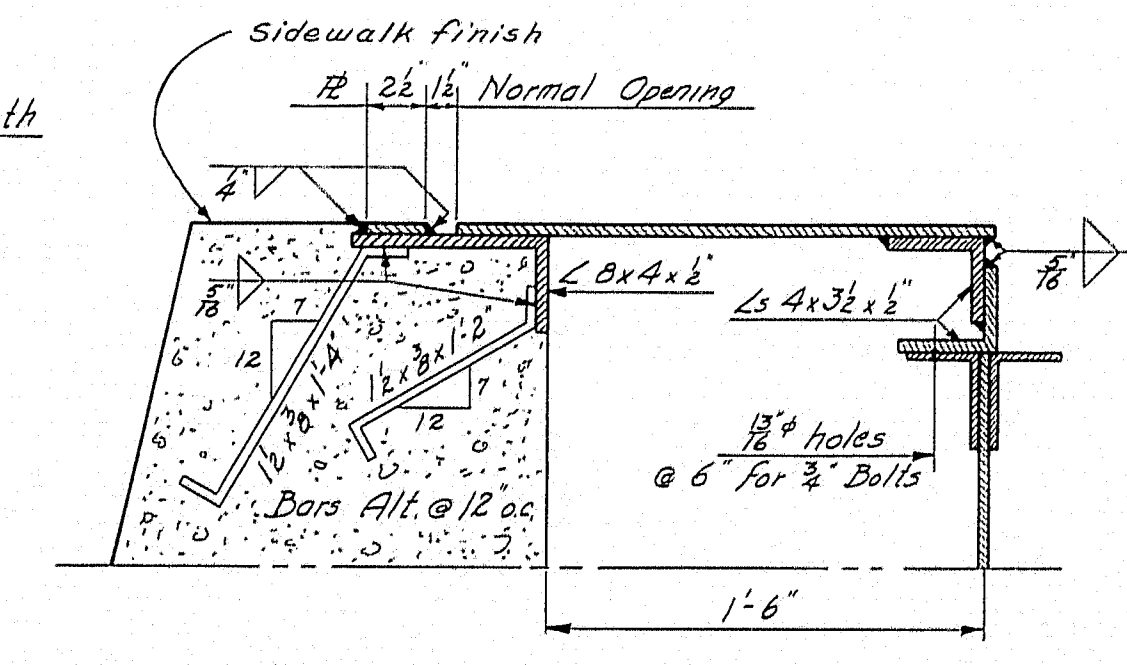
VIEW D-D
EXPANSION DAM DETAIL
2 Units each Reg'd (1 S.W. Unit opp. hand)



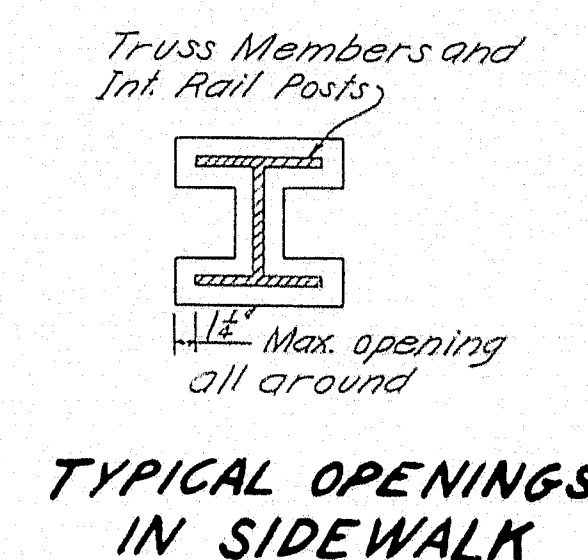
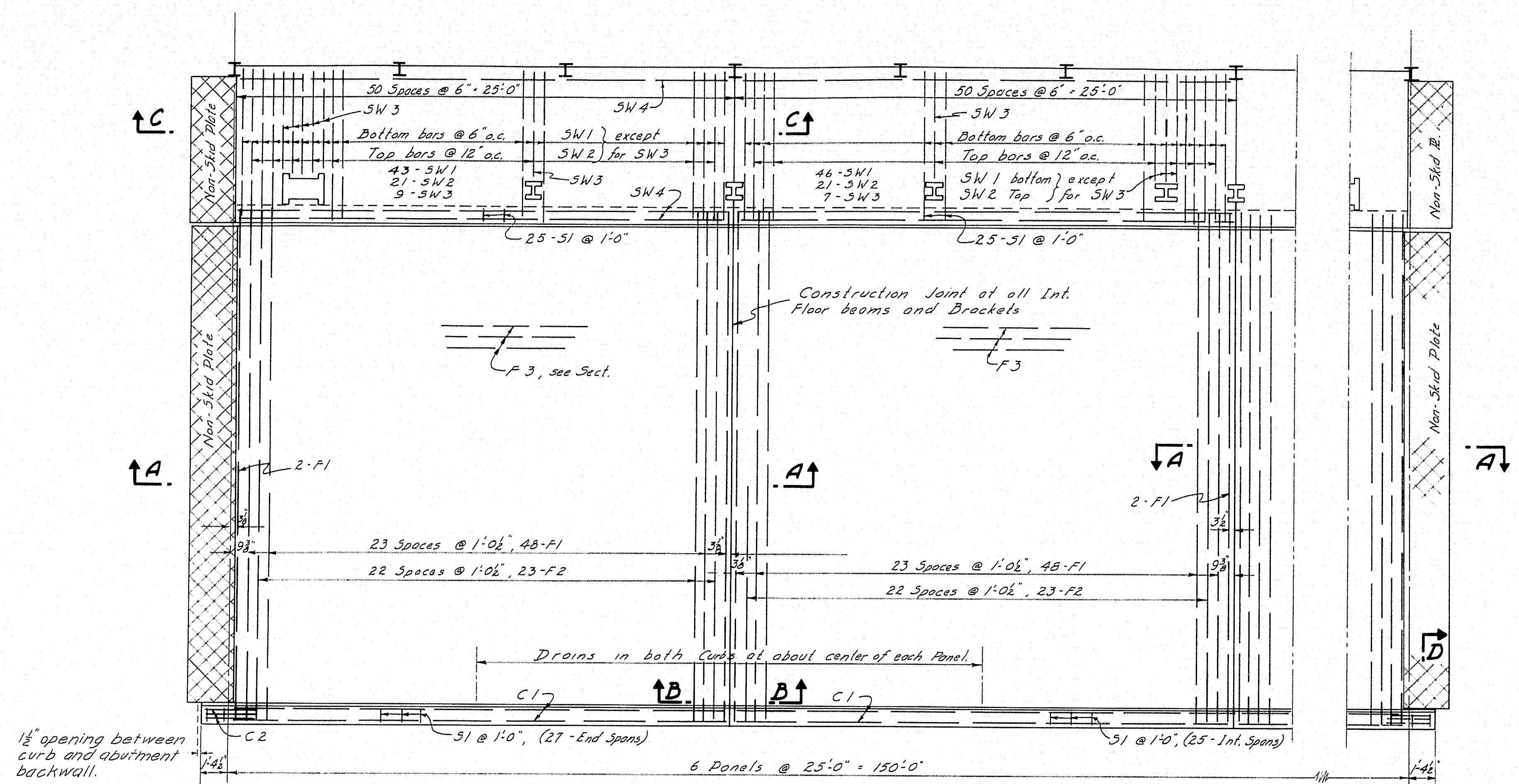
FIXED PEDESTAL



SECT. A-A
Roadway Unit



SECT. C-C
Sidewalk Unit



BENT BARS

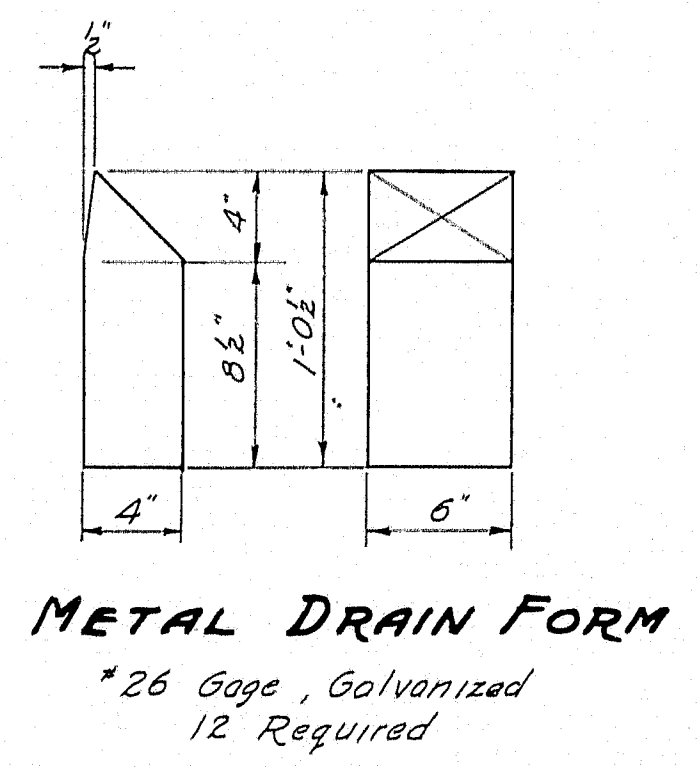
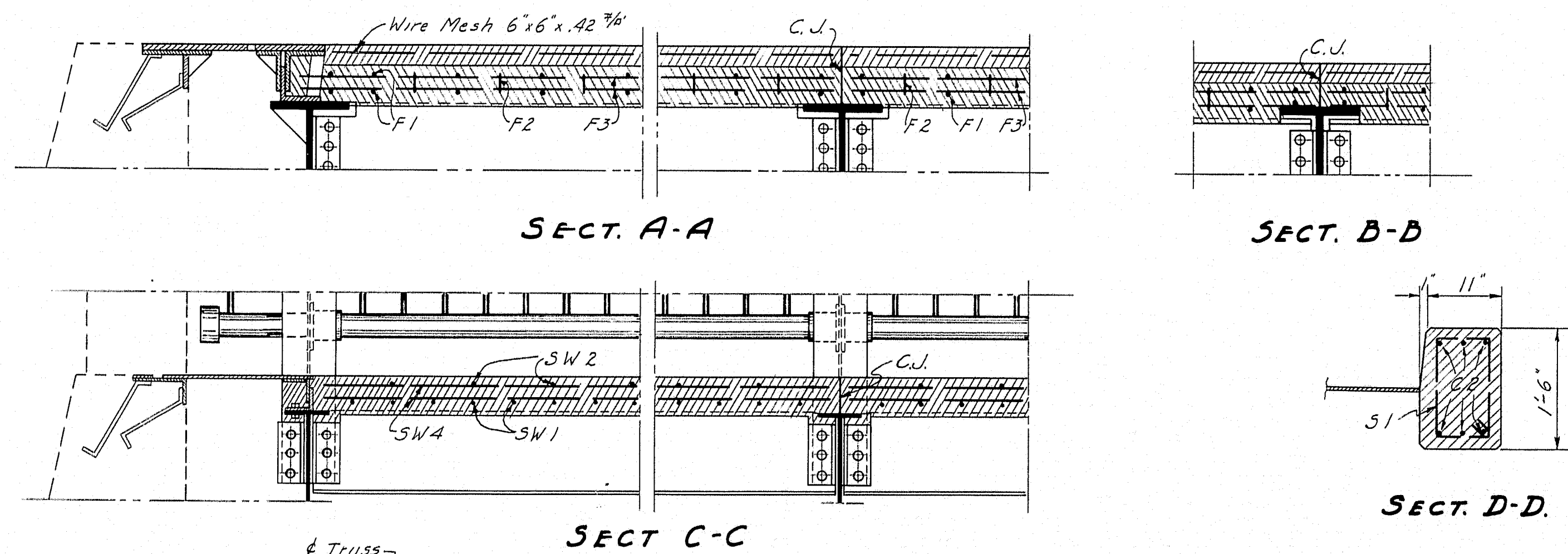
MARK	SIZE	NO.	LENGTH	REMARKS
F1	3/8"	300	27'-4"	Roadway Slab
F2	"	138	28'-3"	"
SW1	1/2"	270	8'-10"	Sidewalk Slab
A1	3/8"	24	22'-9"	Abut. + Bridge Seat
P1	"	4	7'-5"	Abut. Rail Posts Upstream
P2	"	4	9'-1"	" Downstream
H1	3/8"	18	3'-7"	"
S1	"	304	4'-1"	Curbs
A3	3/8"	34	8'-6"	Backwall

STRAIGHT BARS

MARK	SIZE	NO.	LENGTH	REMARKS
A2	3/8"	44	4'-0"	Bridge Seats
A7	3/8"	44	6'-0"	Back of wings at ends
A4	1/2"	6	30'-0"	Splice to H1 + A6
A5	"	12	18'-6"	Below backwall splice
A6	"	6	8'-0"	Dowels at us. backwall joint
H	3/8"	54	8'-0"	Back of Abut. wings
C1	3/8"	12	24'-9"	Roadway Curb
C2	3/8"	12	3'-0"	Curb at Ends
F3	3/8"	270	24'-9"	Roadway Slab
SW2	3/8"	126	7'-8"	Sidewalk Slab
SW3	"	46	5'-5"	"
SW4	"	42	24'-9"	"

Dimensions are to centers of bars

3750 Sq. ft. 6"x6"x.042 #10 Wire Mesh

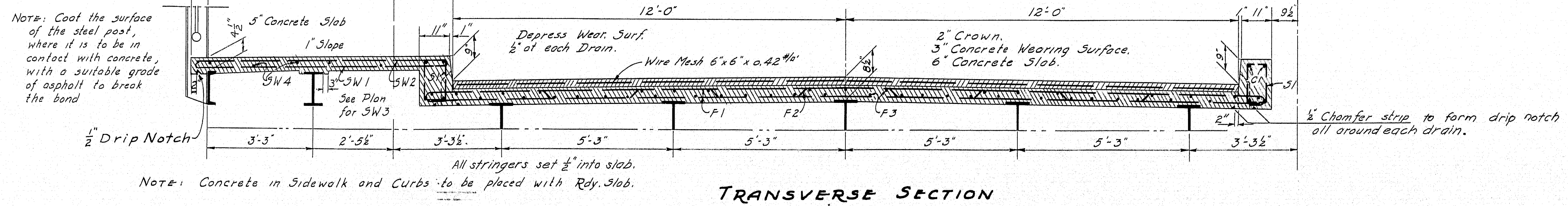


REINFORCING STEEL

LOADING H-20-44
Is=18000 Ic=1000 n=10

CONCRETE CLASSIFICATION

Classification	Class
Superstructure Slabs	Class A
Wearing Surface and Abut. Rail Posts	" A-A
Abutments above footing	" X
Abutment footings (Seal)	" S



DESIGN - ALLEN	BRIDGE - 5190
TRACE - FORTIER	STATE HIGHWAY COMMISSION
CHECK - CAB	BRIDGE DIVISION
BROOKLYN BRIDGE	
OVER THE	
CATHANCE RIVER	
IN THE TOWN OF	
BOWDOINHAM	
SAGadahoc COUNTY	
SUPERSTRUCTURE	
SHEET 15 OF 15 AUGUSTA, MAINE APRIL 1950	