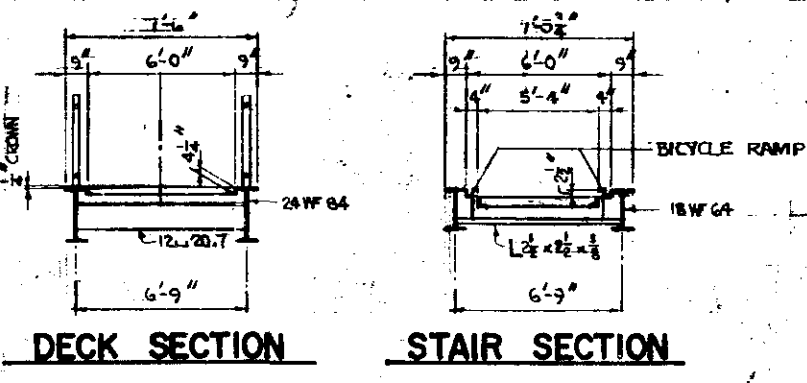
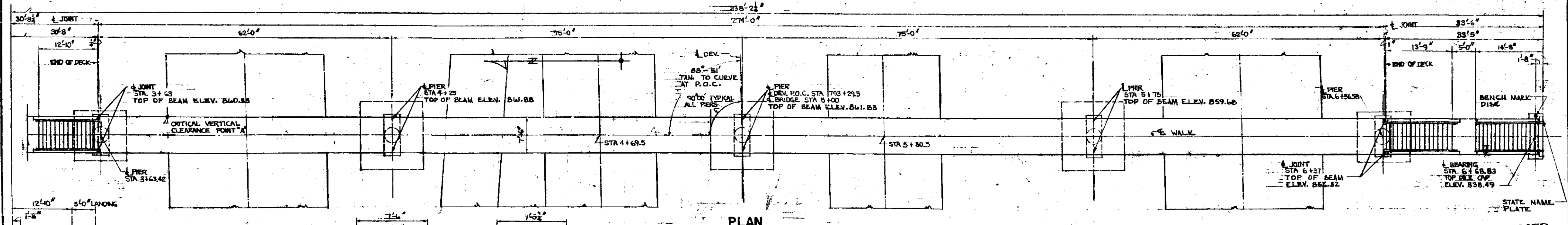
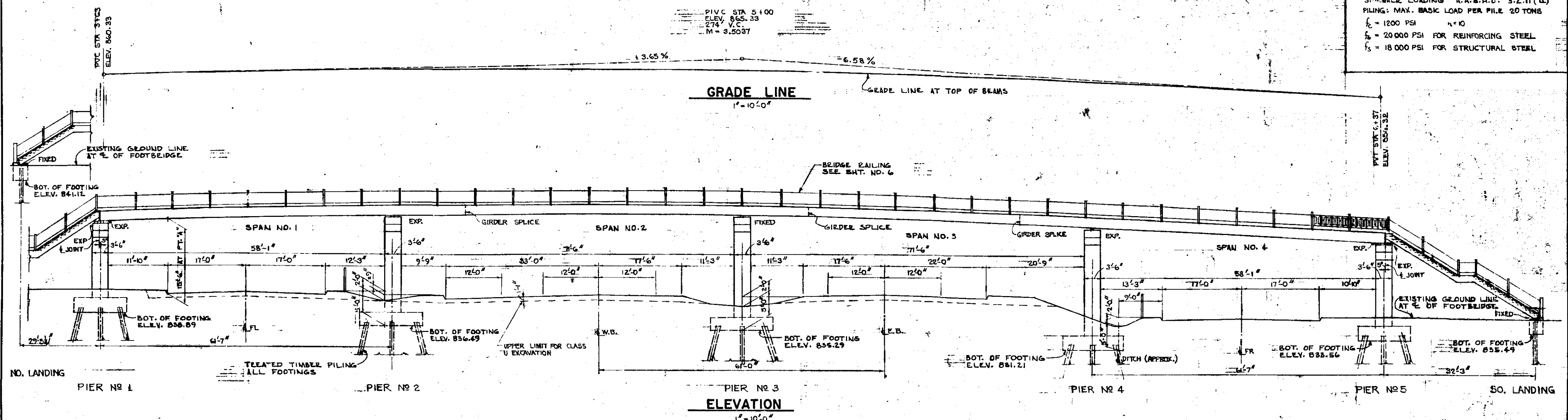


**DESIGN DATA**

1957 A.A.S.O. DESIGN SPECIFICATIONS  
 SIDEWALK LOADING A.A.S.H.O. 3.2.11 (A)  
 PILING: MAX. BASIC LOAD PER PILE 20 TONS  
 $f_c = 12000$  PSI  $n = 10$   
 $f_s = 20000$  PSI FOR REINFORCING STEEL  
 $f_s = 18000$  PSI FOR STRUCTURAL STEEL



**SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE**

ITEM NO.	2401.525	2401.501	2401.501	2401.501	2401.541	2402.521	2402.577	2402.583	2452.503	2452.504	2452.517	2402.593	2402.594
ITEM	CLASS U EXCAVATION	CONCRETE MIX NO. W6	CONCRETE MIX NO. 3Y6	CONCRETE MIX NO. 3Y4	REINFORCEMENT BARS	STRUCTURAL STEEL	STANDARD NAME PLATES	ORNAMENTAL METAL RAILING	TREATED TIMBER PILING DELIVERED	TREATED TIMBER PILING DRIVER	TREATED TIMBER TEST PILES IN PLACE 40 FT. LG.	BEARING ASSEMBLIES FIXED TYPE I	BEARING ASSEMBLIES EXPANSION TYPE I
UNIT	CU. YD.	CU. YD.	CU. YD.	CU. YD.	POUND	POUND	UNIT	LIN. FT.	LIN. FT.	LIN. FT.	PILE	UNIT	UNIT
QUANTITY	250	108.4	44.4	25.9	32540	72385	2	690.14	1063	989	5	10	5

B.M. ELEV. 845.12  
 MSL 1929 ADJ.  
 TOP NE COR. OF LOWER STRIP  
 309 E 78th STREET

**CONSTRUCTION NOTES**

THE MINNESOTA SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JULY 1, 1947 AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON OCTOBER 15, 1947 AS MODIFIED BY SUPPLEMENT NO. 1 THEREOF DATED APRIL 15, 1953 AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON MARCH 25, 1953 SHALL GOVERN.

ALL REINFORCEMENT SHALL BE INTERMEDIATE GRADE DEFORMED BARS.

STRUCTURAL STEEL AS PER MND 3305

EDGES OF CONCRETE ON ALL EXPOSED CONSTRUCTION OR EXPANSION JOINTS TO BE FORMED WITH 1/2" V-STRIPS UNLESS OTHERWISE NOTED.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNED *Stanley Bann*  
 DATE 8-7-58 REG. NO. 5623

**SHEET INDEX**

NO.	TITLE
1	GENERAL PLAN & ELEVATION
2	PIER DETAILS - STAIR FTE. DETAILS
3	SUPERSTRUCTURE DETAILS
4	STAIR DETAILS
5	BEARING ASSEMBLIES
6	RAILING DETAILS
7	SURVEY SHEET
8	SURVEY SHEET

DESIGNED BY  
**WALTER BUTLER CO.**  
 CONSULTING ENGINEERS  
 ST. PAUL, MINN.

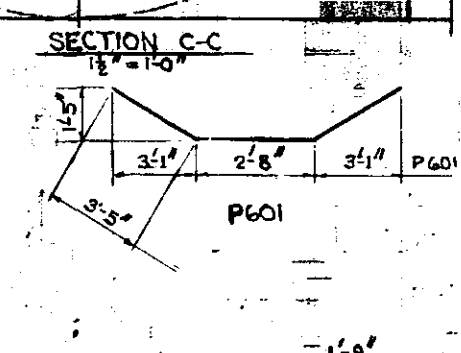
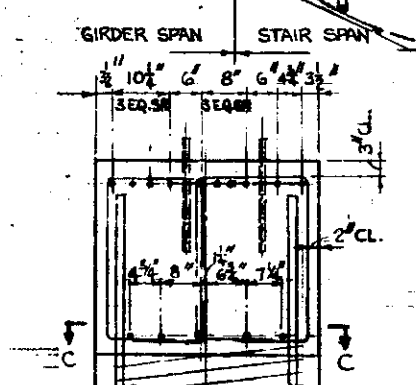
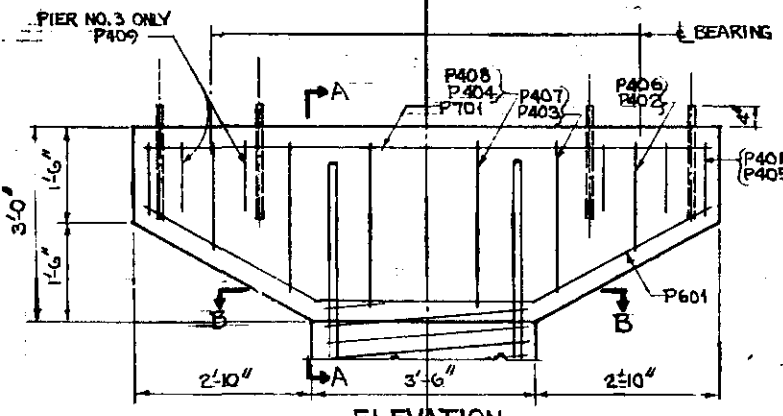
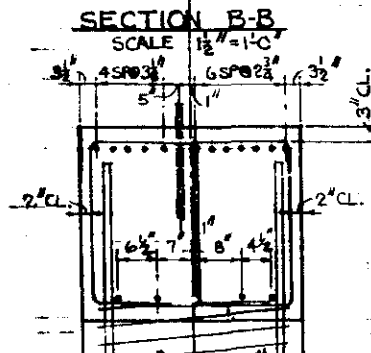
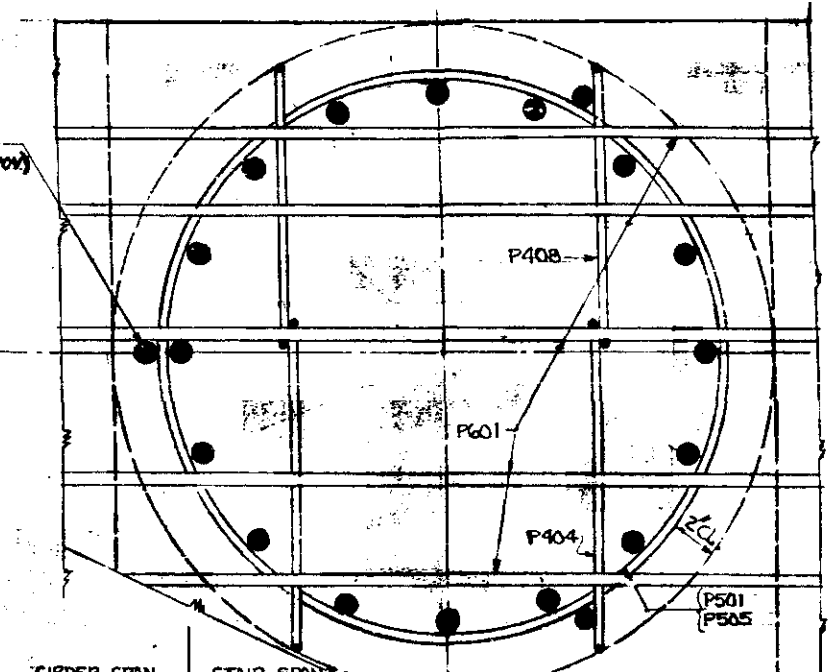
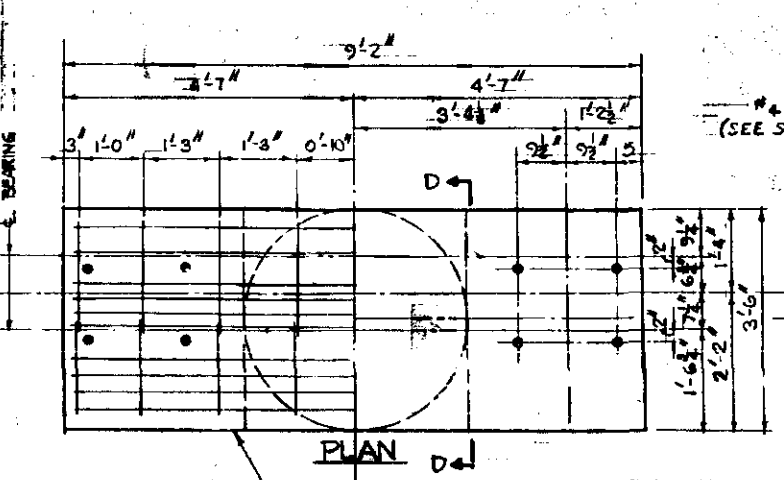
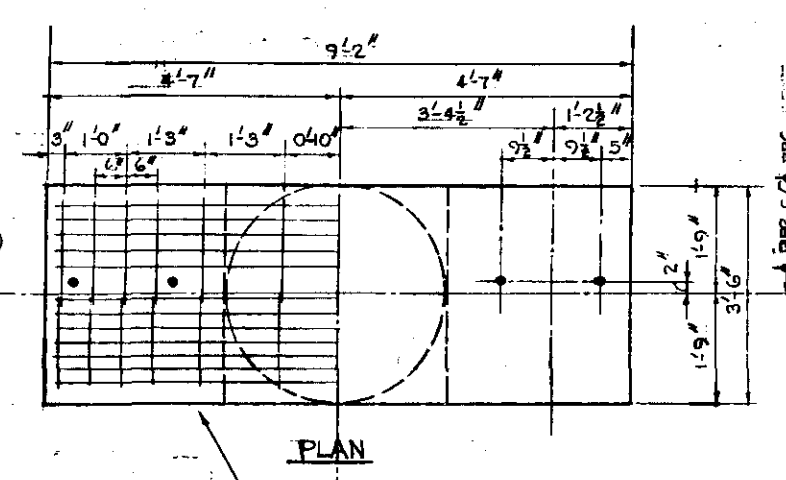
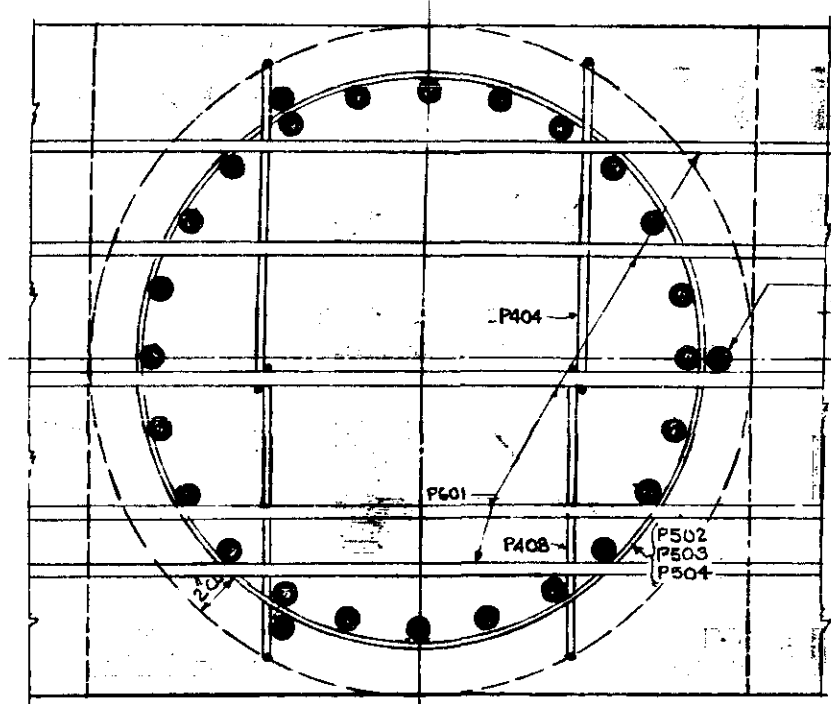
TRUNK HIGHWAY NO. C94  
 STATE OF MINNESOTA  
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9078  
 T.H. C94 UNDER FOOTBRIDGE AT 2ND AVE.  
 BETWEEN BLOOMINGTON & RICHFIELD

6'-0" WALKWAY 5'-4" STAIRWAY  
 62'-75'-62 SPANS (CONT)

**GENERAL PLAN & ELEVATION**  
 SEC 3 T27N R24W  
 HENNEPIN COUNTY

APPROVED 8-11-58  
*Stanley Bann* BRIDGE ENGINEER ASSY. *Stanley Bann* CHIEF ENGINEER



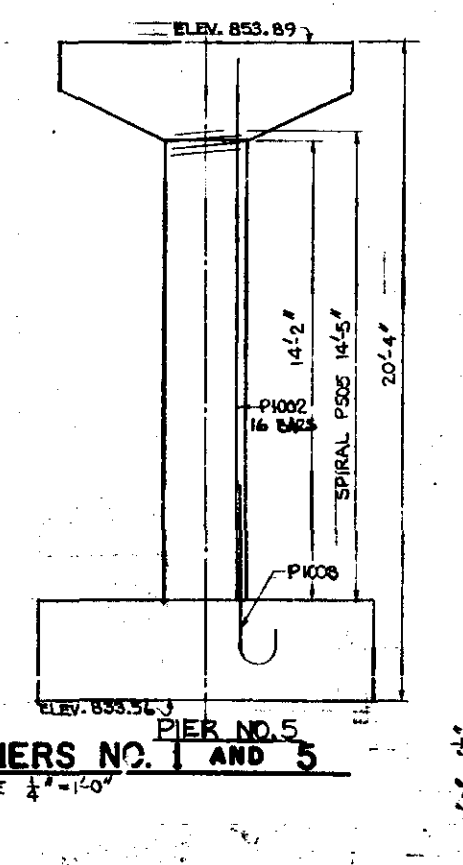
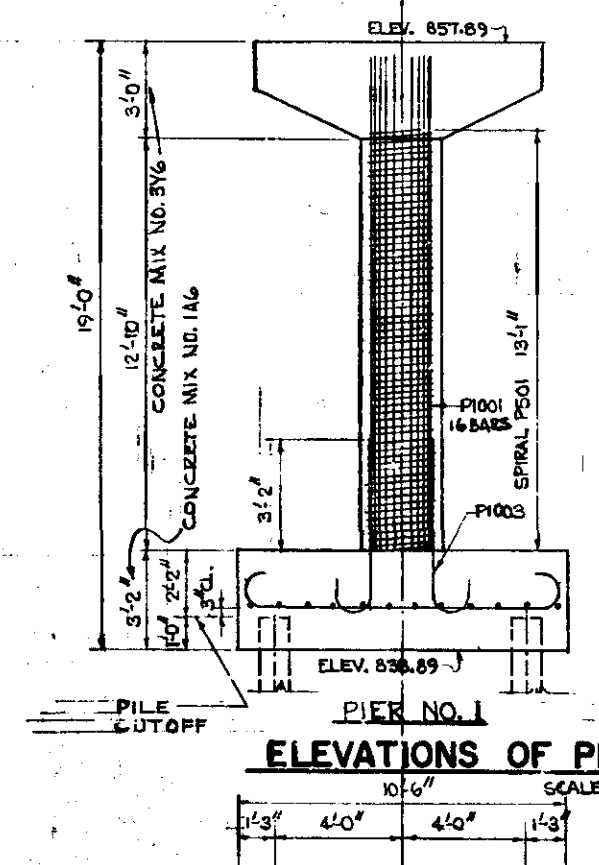
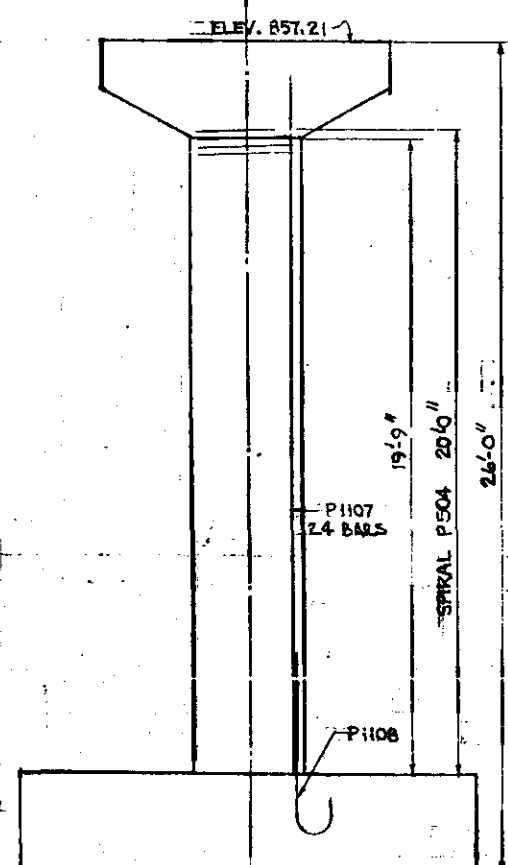
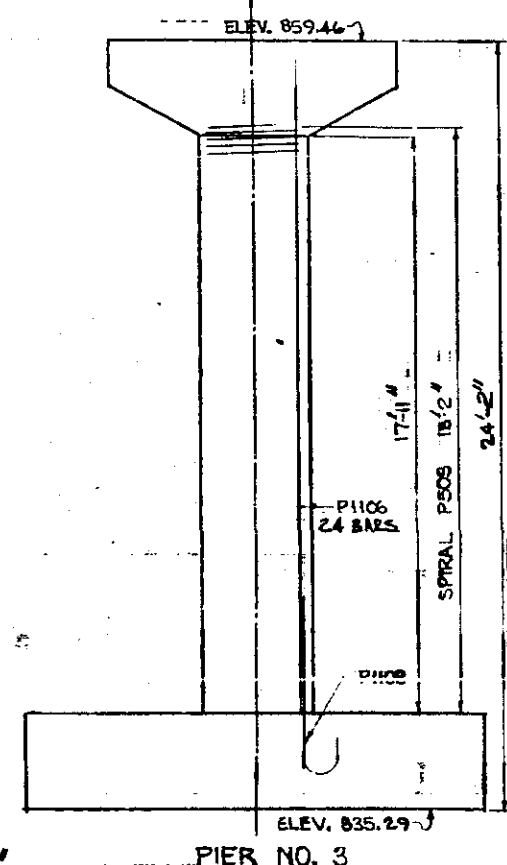
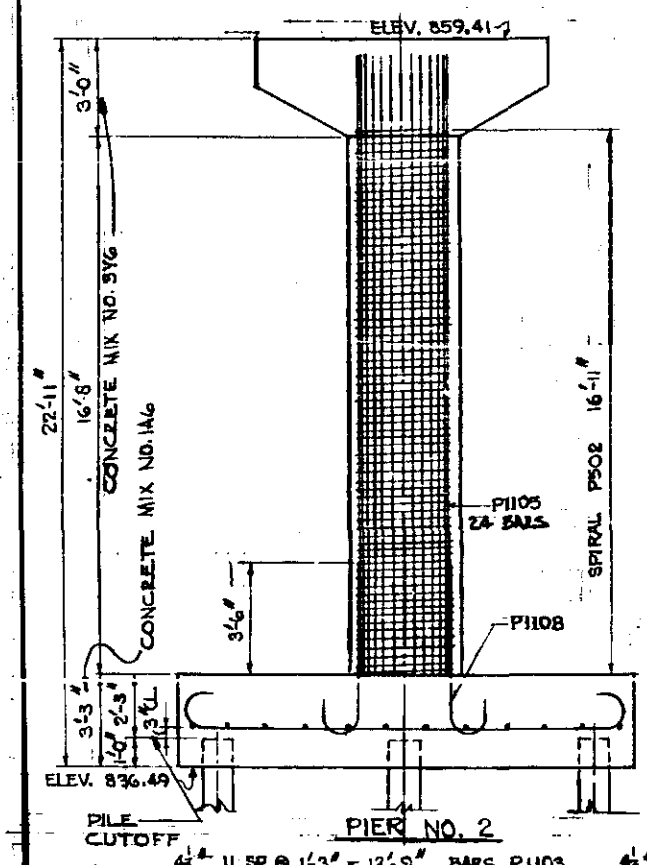
**TOP OF PIER DETAILS - PIERS NO. 2-3-4**  
SCALE 1/2" = 1'-0" EXCEPT AS NOTED

**TOP OF PIER DETAILS - PIERS NO. 1 AND 5**  
SCALE 1/2" = 1'-0" EXCEPT AS NOTED

**BILL OF REINFORCEMENT FOR 5 PIERS & 2 STAIR FTGS**

MARK	NO.	LENGTH	SHAPE	LOCATION
P501	ONE	86'-0"	SPRAL	PIER NO.1
P502	ONE	72'-0"	SPRAL	PIER NO.2
P503	ONE	77'-0"	SPRAL	PIER NO.3
P504	ONE	85'-0"	SPRAL	PIER NO.4
P505	ONE	61'-0"	SPRAL	PIER NO.5
P400	16	3'-0"	STAIR LANDING-DOWELS	
P401	10	6'-11"	STIRRUPS	
P402	10	8'-0"	STIRRUPS	
P403	10	9'-4"	STIRRUPS	
P404	10	9'-8"	STIRRUPS	
P405	10	6'-7"	STIRRUPS	
P406	10	7'-8"	STIRRUPS	
P407	10	9'-0"	STIRRUPS	
P408	10	9'-4"	STIRRUPS	
P409	4	5'-2"	BRIDGE SEAT PIER 3	
P410	8	9'-0"	STAIR FTG.	
P411	14	11'-1"	STAIR FTG.	
P412	4	7'-8"	STAIR FTG.	
P413	14	4'-6"	STAIR FTG.	
P414	7	8'-10"	TOP PIERS 1-5 TOUCH	
P415	16	15'-4"	COLUMN PIER NO.1	
P416	16	16'-8"	COLUMN PIER NO.5	
P417	32	6'-8"	FOOTING DOWELS 1&5	
P418	25	9'-6"	TOP PIER	
P419	24	17'-2"	FOOTING PIERS 1&5	
P420	24	13'-2"	FOOTING PIERS 1&5	
P421	36	14'-8"	FOOTING PIERS 2-3-4	
P422	48	17'-2"	FOOTING PIERS 2-3-4	
P423	24	19'-2"	COLUMN PIER NO.2	
P424	24	20'-5"	COLUMN PIER NO.3	
P425	24	22'-3"	COLUMN PIER NO.4	
P426	72	7'-2"	FOOTING DOWELS 2-3-4	

HOOKS SHALL CONFORM TO ACI 318-51. DIMENSIONS OF BAR ENDS ARE OUT-TO-OUT.

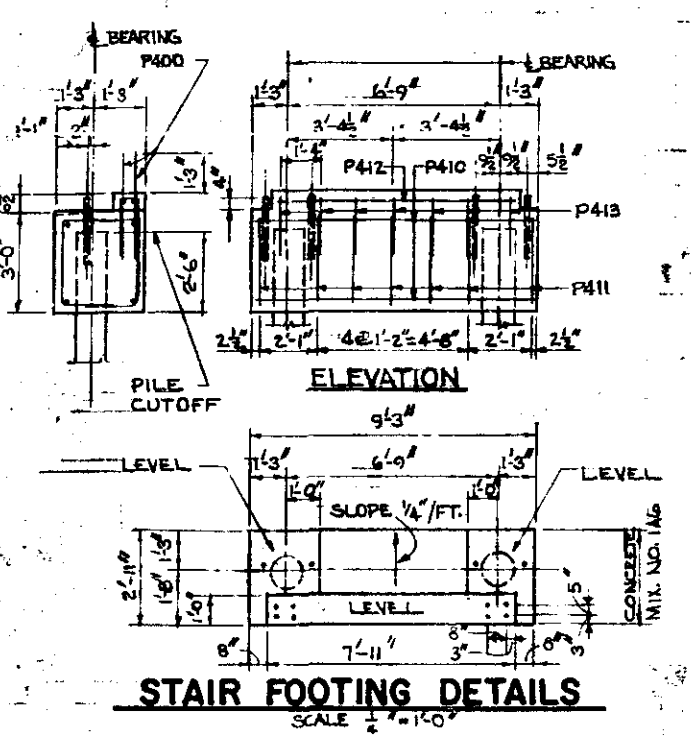
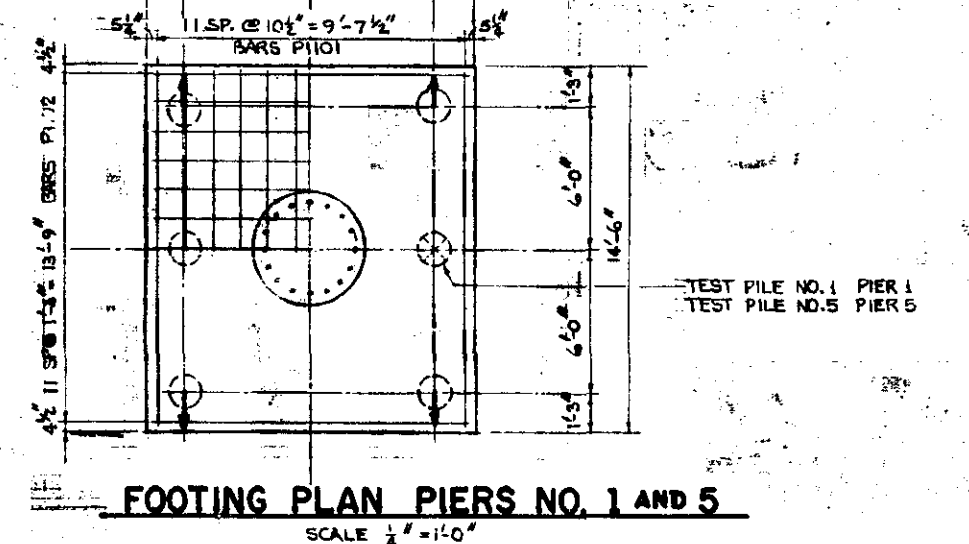
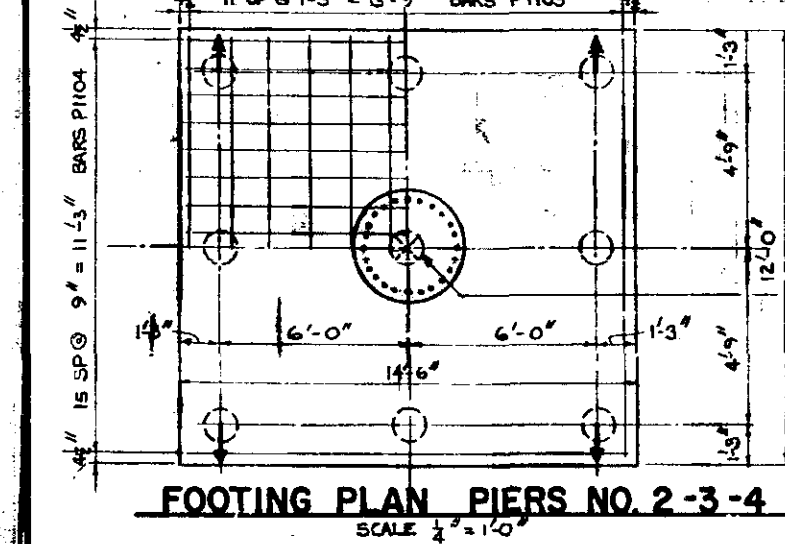


**ELEVATIONS OF PIERS NO. 1 AND 5**  
SCALE 1/2" = 1'-0"

**ELEVATIONS OF PIERS NO. 2-3-4**  
SCALE 1/2" = 1'-0"

**PILING NOTES**

PILES SHALL BE DRIVEN TO A COMPUTED MINIMUM BEARING OF 20 TONS EACH. MAX. DESIGN LOAD (25%) - 25 TONS. PILES SHALL BE DRIVEN AS PER MHD 2452. PILES SHALL CONFORM TO MHD 3471. PILES SHALL BE TREATED AS PER MHD 3491. ARROW ON PILES INDICATED DIRECTION OF BATTER. BATTER SPACING IS AT BOTTOM OF FOOTING. ESTIMATED PENETRATION IS TWO (2) FEET LESS THAN GIVEN. LENGTH OF PILE. COMPUTED LOAD ON PILE: D.L. MAX. LOAD. PIERS NO. 2-3-4 10.5 TONS 24.6 TONS. PIERS NO. 1 & 5 10.5 TONS 24.3 TONS. STAIR FOOTING 3.6 TONS. REQUIRED PILING: NO. STAIR OF PIERS NO. 1-2-3 EST. LG. 30 FT. (23 ELEV. D) 50 STAIR OF PIERS NO. 4-5 EST. LG. 25 FT. (15 ELEV. D) ONE TEST PILE EACH PIER EST. LG. 40 FT (5 REAR. D)



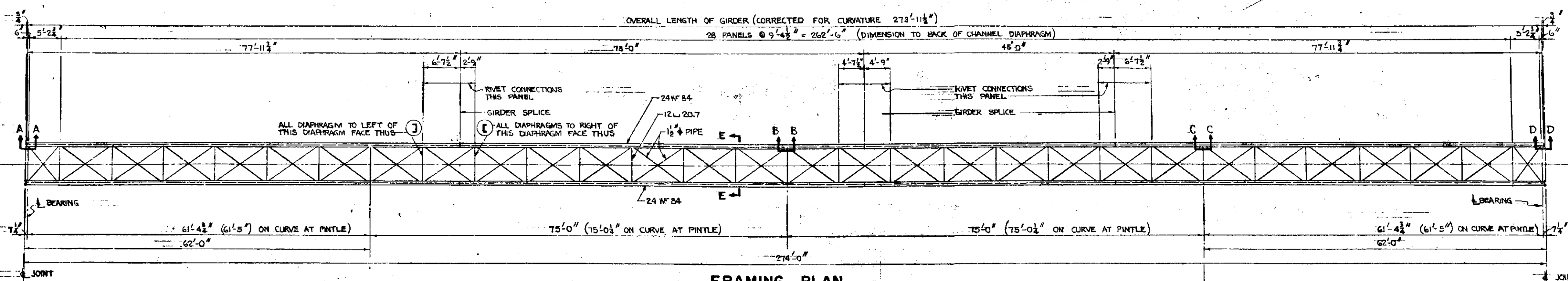
**QUANTITIES FOR 5 PIERS & 2 STAIR FTGS**

ITEM	UNIT	QUANTITY
CLASS U EXCAVATION	C.Y.	250
CONCRETE MIX NO. 1A6	C.Y.	103.4
CONCRETE MIX NO. 3Y6	C.Y.	43.9
REINFORCING STEEL	POUND	30540
TREATED TIMBER PILING DELIVERED	L.F.	1065
TREATED TIMBER PILING DRIVEN	L.F.	989
TREATED TEST PILES IN PLACE 40' LG	PILE	5

DOES NOT INCLUDE TEST PILES

**MICRO-FILMED**  
SCALE AS NOTED

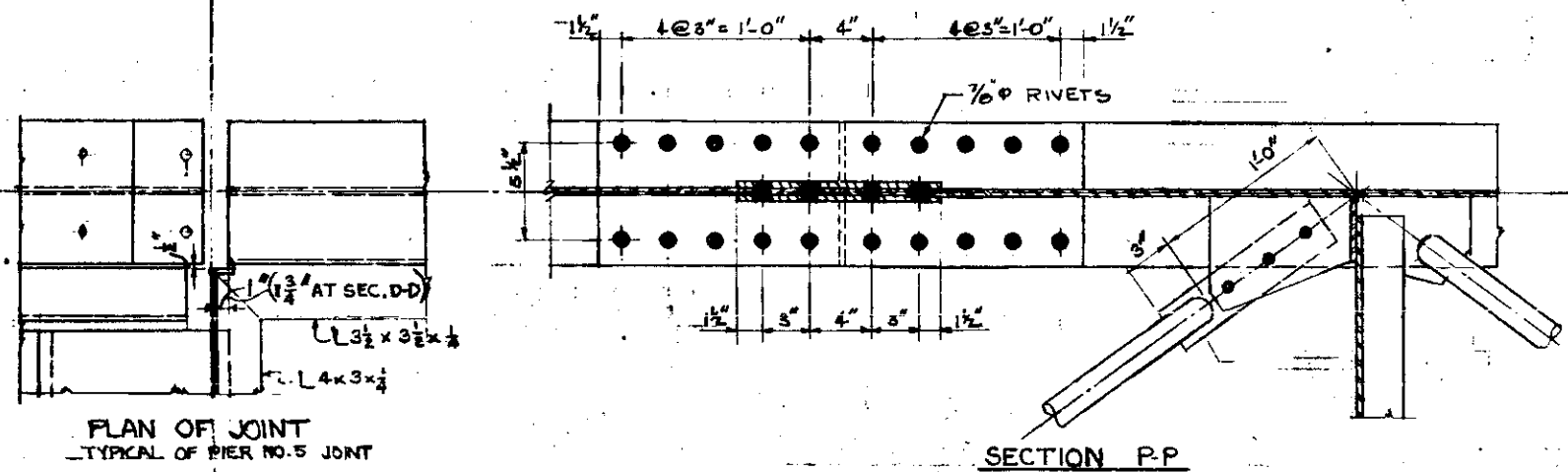
TRUNK HIGHWAY NO. C94  
STATE OF MINNESOTA  
DEPARTMENT OF HIGHWAYS  
**BRIDGE NO. 9078**  
6'-0" FT. WALKWAY 5'-4" STAIRWAY  
62-75-75-62 SPANS (CONT)  
**PIER DETAILS**  
**STAIR FOOTING DETAILS**  
APPROVED 8-19-58



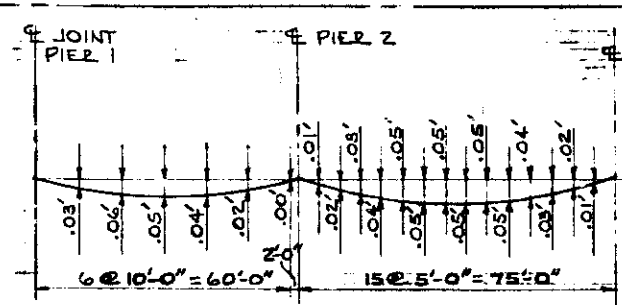
**FRAMING PLAN**

SCALE 1" = 10'-0"  
 2 SECTIONS 77'-11 1/2" LG.  
 ONE SECTION 75'-0" LG.  
 ONE SECTION 43'-0" LG.

PAINT ALL STRUCTURAL STEEL EXCEPT GALV. STEEL.  
 SHOP COAT RED LEAD AS PER MHD 3506  
 1ST FIELD COAT GRAY AS PER MHD 3522  
 2ND FIELD COAT ALUMINUM - MHD 3527

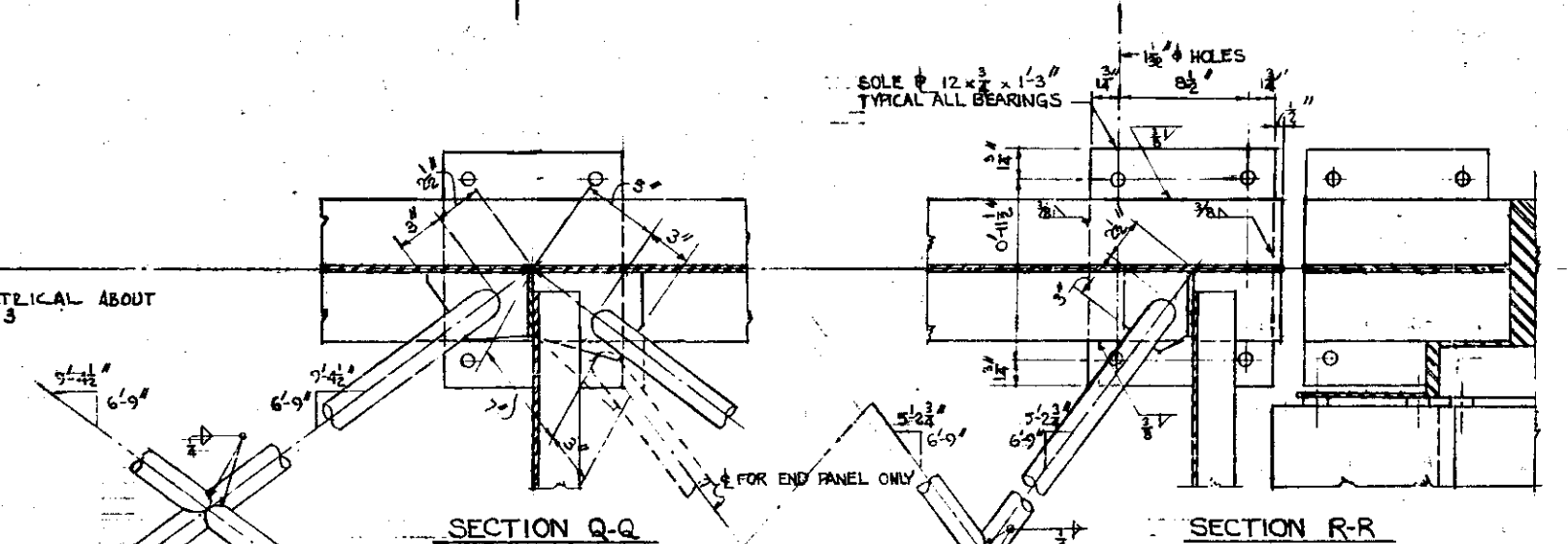


SECTION P-P



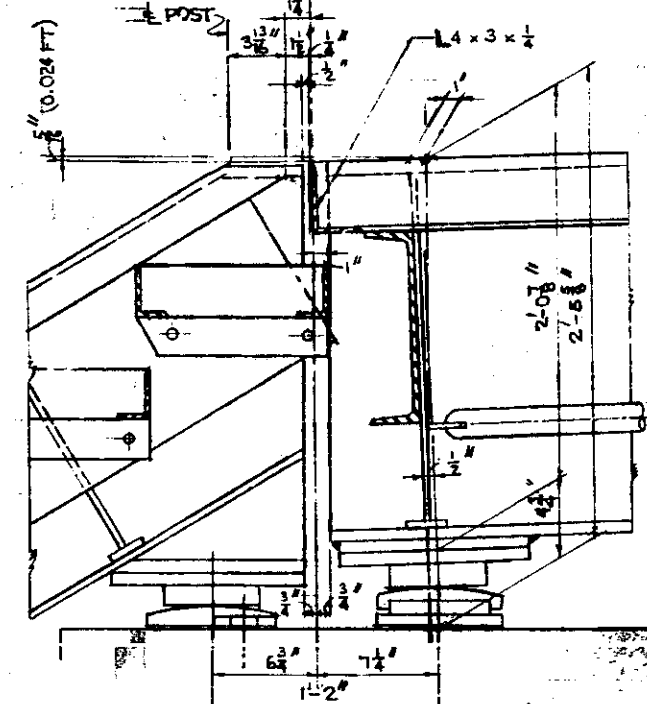
**DEFLECTION DIAGRAM**

FOR CAMBER DIAGRAM SEE SHEET # 5.  
 DEFLECTIONS SHOWN ARE FOR WEIGHT OF CONCRETE SLAB ONLY.

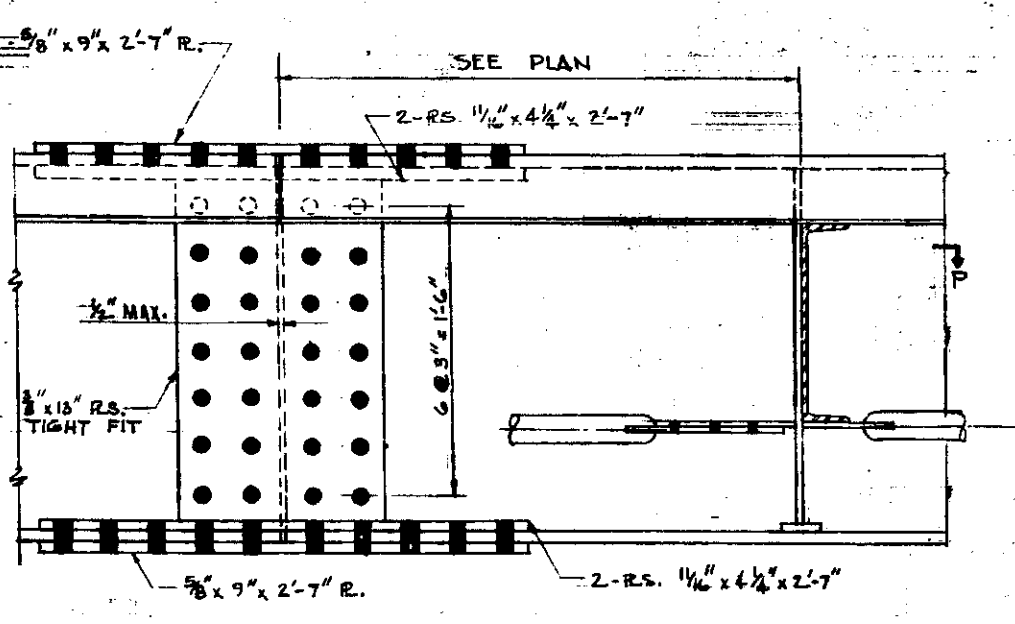


SECTION Q-Q

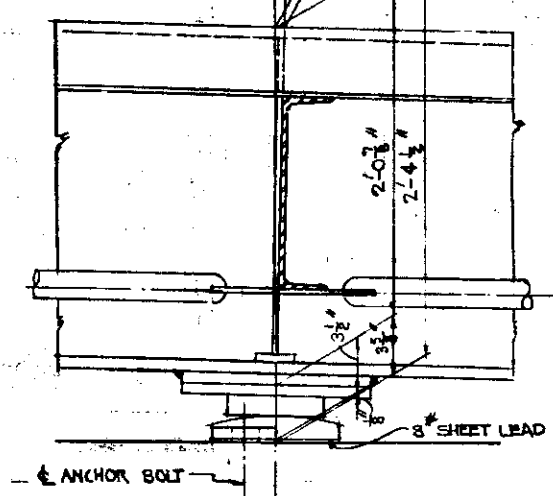
SECTION R-R



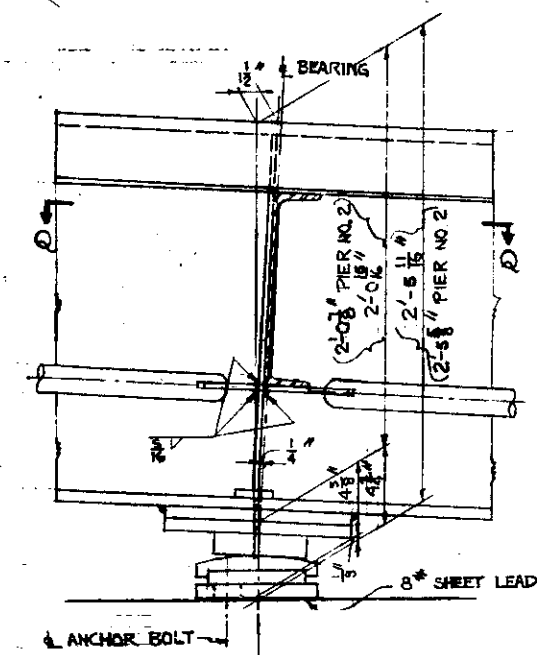
SECTION A-A



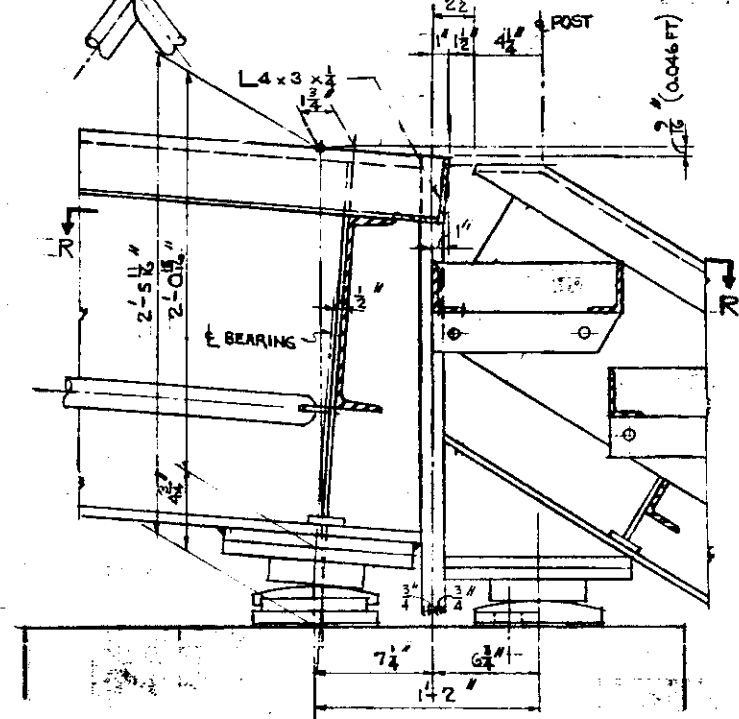
GIRDER SPLICE DETAILS



SECTION B-B



SECTION C-C



SECTION D-D

**BILL OF REINFORCEMENT FOR SUPERSTRUCTURE & STAIRS**

MARK	SIZE	NO.	LENGTH	SHAPE	LOCATION
S401	#4	275	5'-10"		SUPERSTRUCTURE
S402	#4	34	30'-0"		"
S403	#4	4	15'-0"		"
S451	#	10	5'-10"		STAIR LANDING
S452	#	8	4'-10"		"
S468	#	20	3'-3"		STAIR POST
S454	#	16	4'-2"		"

**QUANTITIES FOR SUPERSTRUCTURE**

ITEM	UNIT	QUANTITY
CONCRETE MIX NO. 3X4	C.Y.	22.2
REINFORCING STEEL	POUND	1840
STRUCTURAL STEEL	POUND	59360
BEARING ASSEMBLIES, FIXED	UNIT	2
BEARING ASSEMBLIES, EXPANSION	UNIT	8
ORNAMENTAL METAL RAILING	L.F.	550.06
8" SHEET LEAD	10 PCS.	
12 L.F. NON-SKID STAIR NOSING		
634 L.F. 1 1/2" STD. BLACK PIPE		

SCALE 1 1/2" = 1'-0" EXCEPT AS NOTED

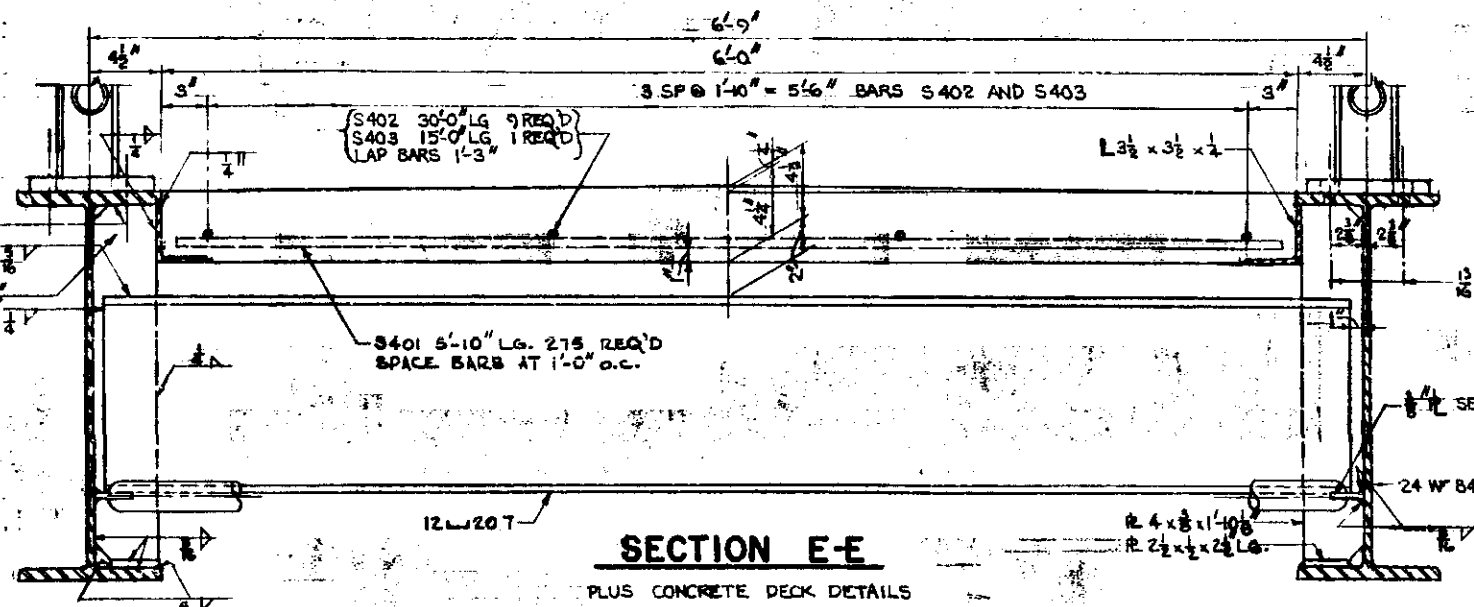
TRUNK HIGHWAY NO. 694  
 STATE OF MINNESOTA  
 DEPARTMENT OF HIGHWAYS

**BRIDGE NO. 9078**

6'-0" FT WALKWAY      5'-4" STAIRWAY  
 62-75-75 62 SPANS (CONT.)

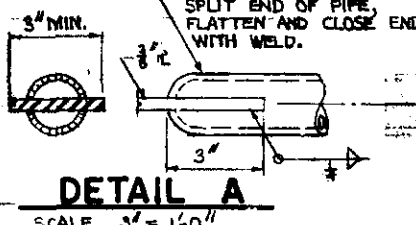
**SUPERSTRUCTURE DETAILS**

APPROVED 8-19-58



SECTION E-E

PLUS CONCRETE DECK DETAILS



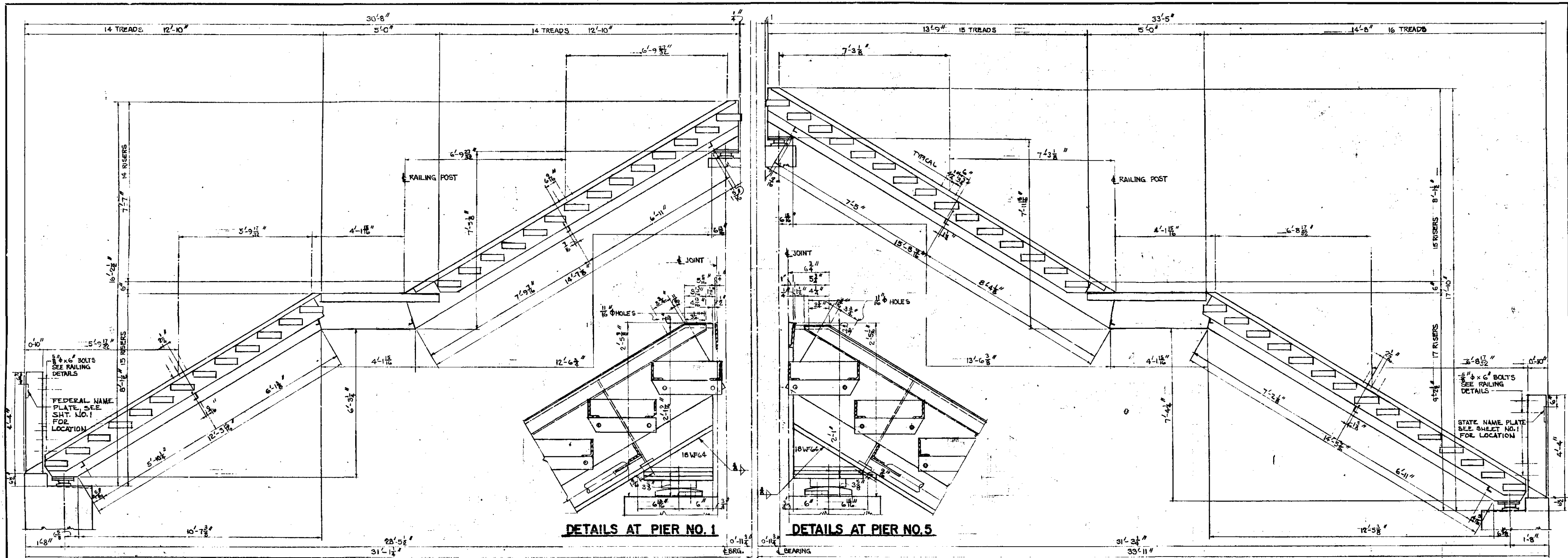
DETAIL A

1 1/2" STD. BLACK PIPE  
 SPLIT END OF PIPE  
 FLATTEN AND CLOSE END  
 WITH WELD.

3" MIN.

MEASURED TO POST ON STAIR  
 \* INCLUDED IN PRICE BID FOR CONCRETE MIX NO. 3X4  
 Δ INCLUDED IN WEIGHT OF STRUCTURAL STEEL  
 @ INCLUDED AS PART OF BEARING ASSEMBLY  
 USE 3/4" RIVETS UNLESS NOTED OTHERWISE





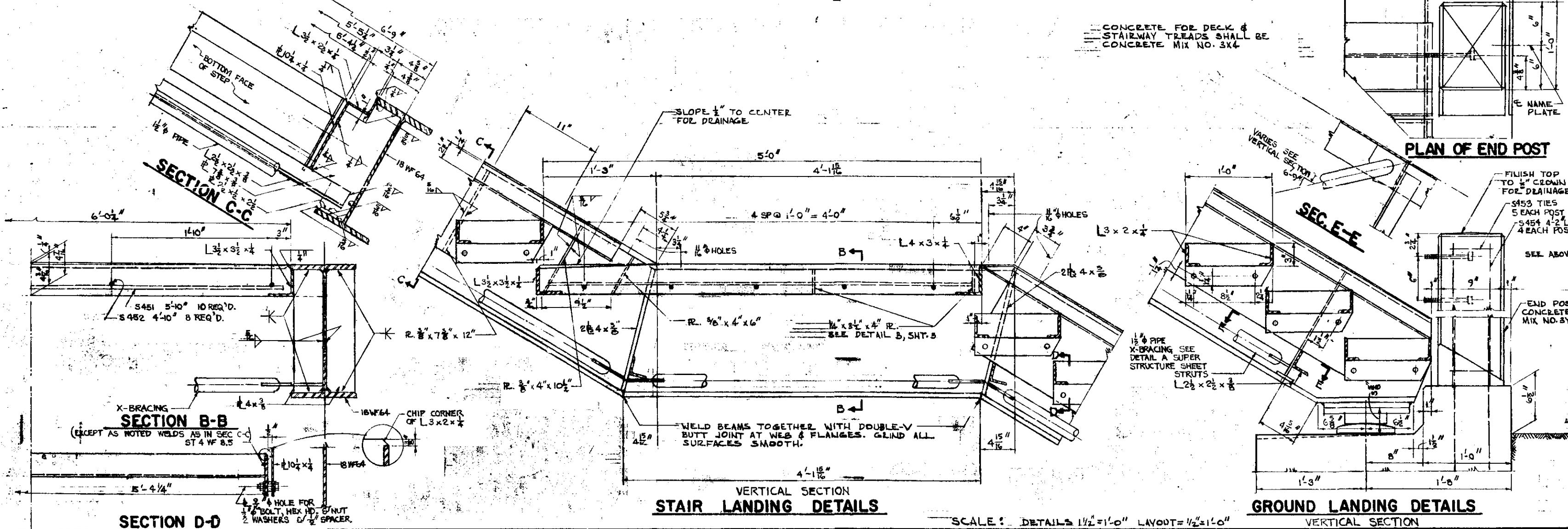
DETAILS AT PIER NO. 1

DETAILS AT PIER NO. 5

VERTICAL SECTION THRU NORTH STAIRWAY

VERTICAL SECTION THRU SOUTH STAIRWAY

CONCRETE FOR DECK & STAIRWAY TREADS SHALL BE CONCRETE MIX NO. 3X4



STAIR LANDING DETAILS

GROUND LANDING DETAILS

SCALE: DETAILS 1/2"=1'-0" LAYOUT=1/2"=1'-0"

QUANTITIES FOR 2 STAIRWAYS

ITEM	UNIT	QUANTITY
CONCRETE MIX NO. 3X4	C.Y.	3.7
CONCRETE MIX NO. 3Y6	C.Y.	.5
REINFORCING STEEL	POUND	160
BEARING ASSEMBLIES, FIXED	UNIT	8
ORNAMENTAL METAL RAILING	L.F.	140.18
8 PCS 8" SHEET LEAD		
328 L.F. NON-SKID STAIR NOSING		
162 L.F. 1 1/2" STD. BLACK PIPE		
STRUCTURAL STEEL	POUND	13025
ONE STATE NAME PLATE STD. R. B220		
ONE FEDERAL NAME PLATE STD. R. B223 (BENZ) EXPIRES 1978		
BENCH MARK DISK		

TRUNK HIGHWAY NO. C94  
STATE OF MINNESOTA  
DEPARTMENT OF HIGHWAYS

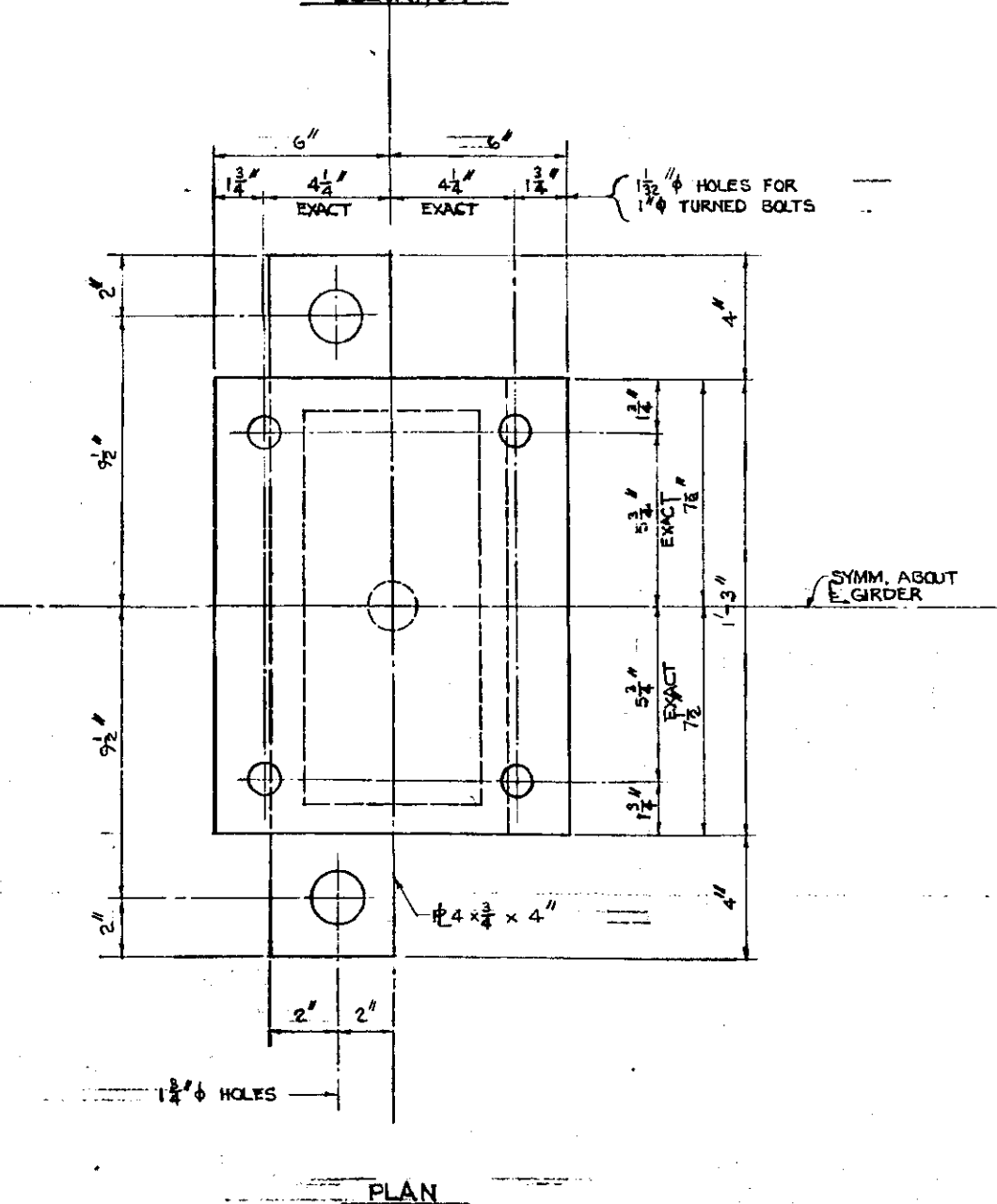
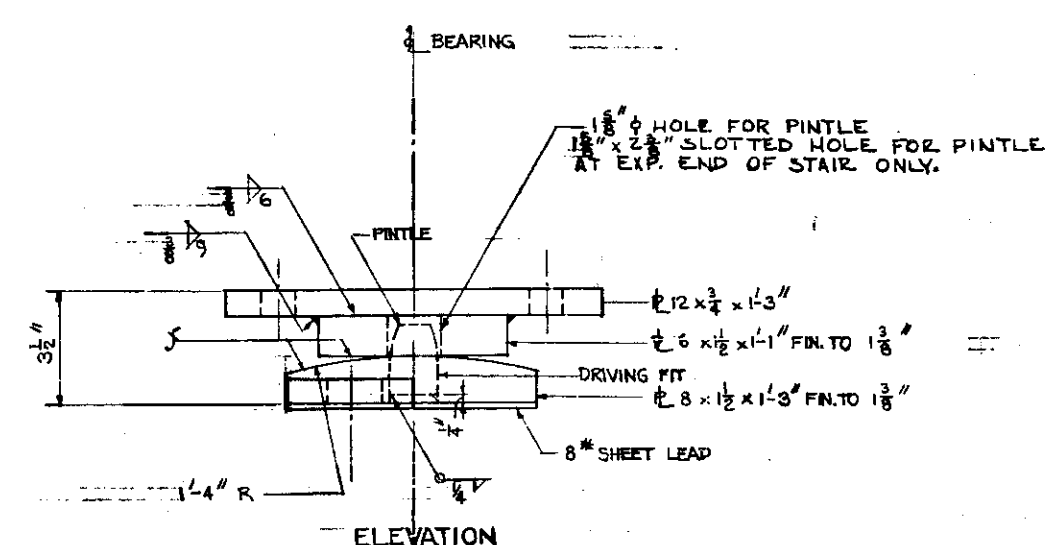
BRIDGE NO. 9078

6'-0" FT. WALKWAY 5'-4" STAIRWAY  
62-75-75-62 SPANS (CONT.)

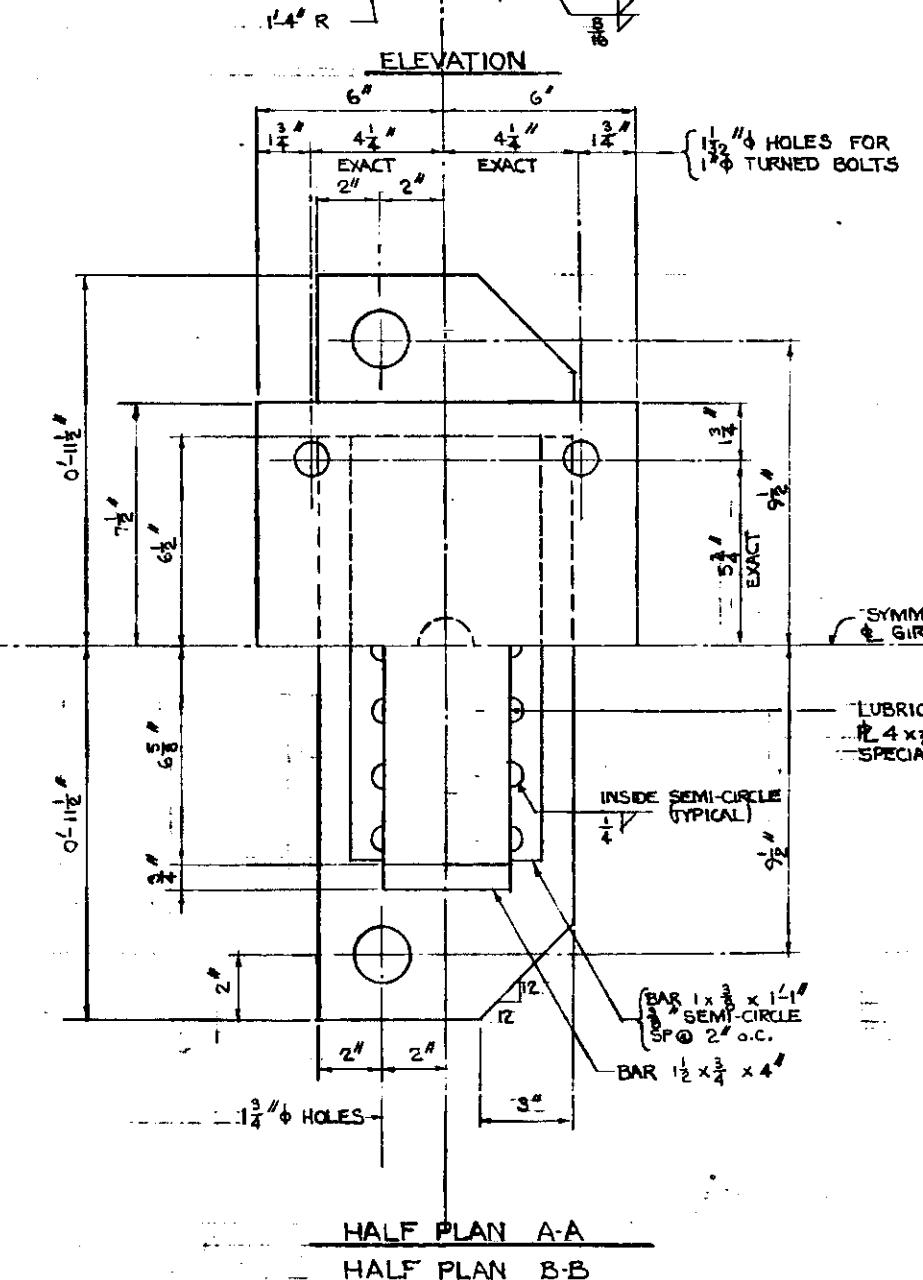
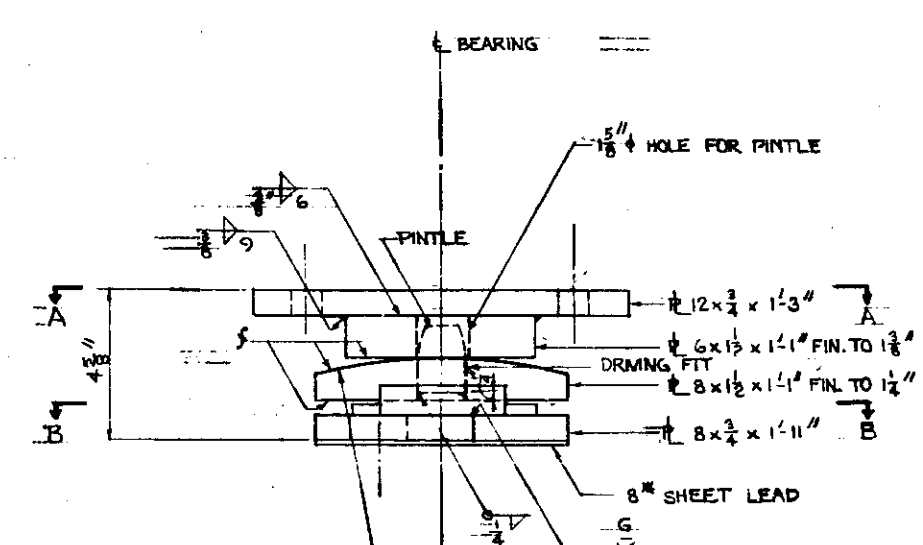
STAIR DETAILS

APPROVED 8-19-58

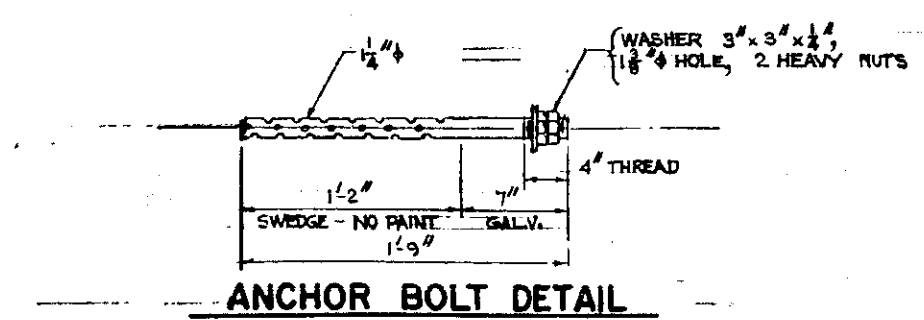
MICRO-FILMED



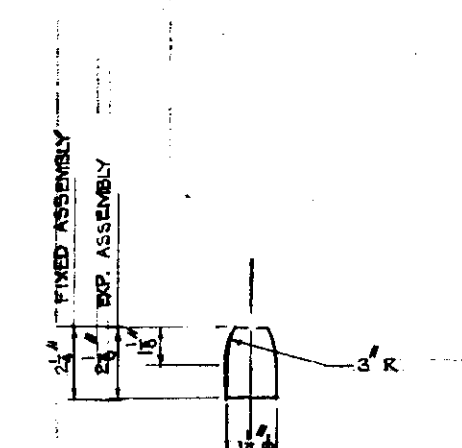
**FIXED BEARING ASSEMBLY**  
TYPE I



**EXPANSION BEARING ASSEMBLY**  
TYPE I



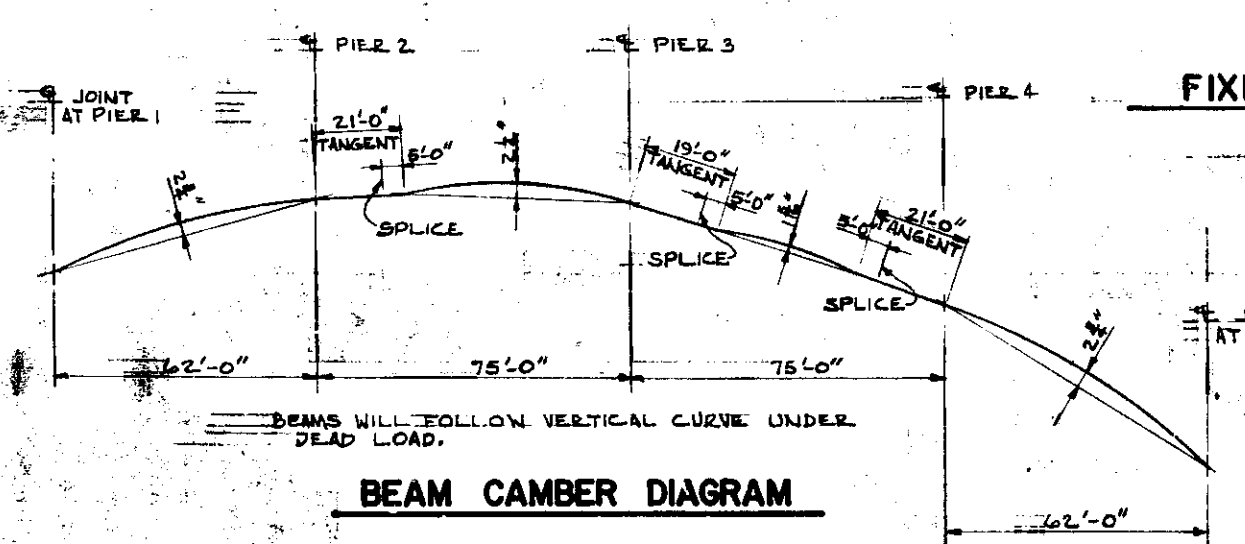
**ANCHOR BOLT DETAIL**



**PINTLE DETAIL**

**NOTES**

- PAYMENT FOR ONE BEARING ASSEMBLY INCLUDES STRUCTURAL STEEL PLATES, PINTLES, SHEET LEAD, ANCHOR BOLTS, FOUR 1\"/>
- PINTLES SHALL COMPLY WITH ASTM DESIGNATION A331 GRADE A1SI 4440 COLD FINISH.
- STRUCTURAL STEEL AS PER MHD 3905.
- BEARING ASSEMBLIES TO BE GALVANIZED AFTER FABRICATION AS PER MHD 3894. NO PAINT.
- S = FINISH AS PER MHD 2471.3 D1b AFTER WELDING.



**BEAM CAMBER DIAGRAM**

**MICRO-FILMED**

TRUNK HIGHWAY NO. C94  
STATE OF MINNESOTA  
DEPARTMENT OF HIGHWAYS

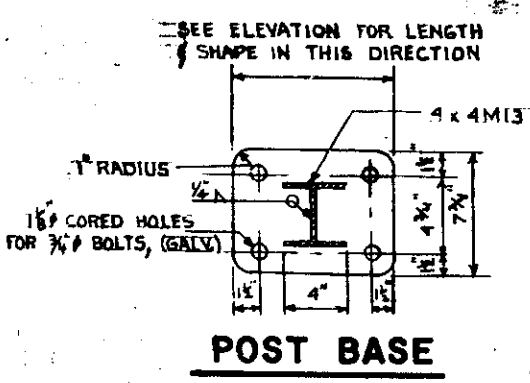
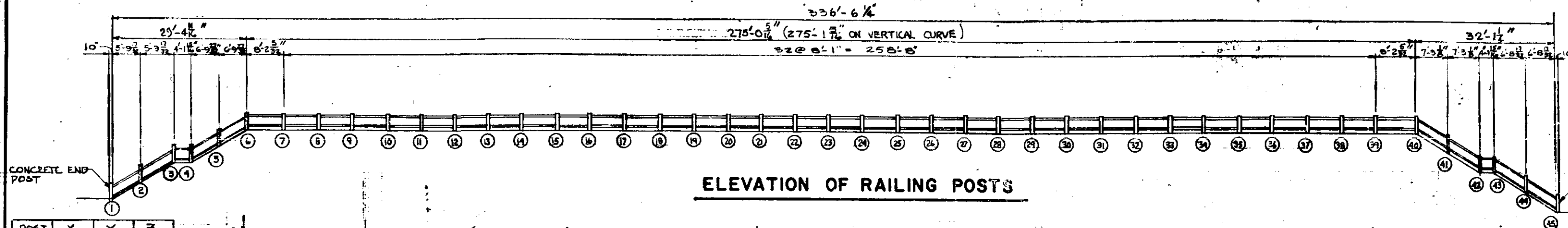
**BRIDGE NO. 9078**

6'-0" FT. WALKWAY 5'-4" STAIRWAY  
62-75-75-62 SPANS (CONT.)

**BEARING ASSEMBLIES**

APPROVED 8-19-58

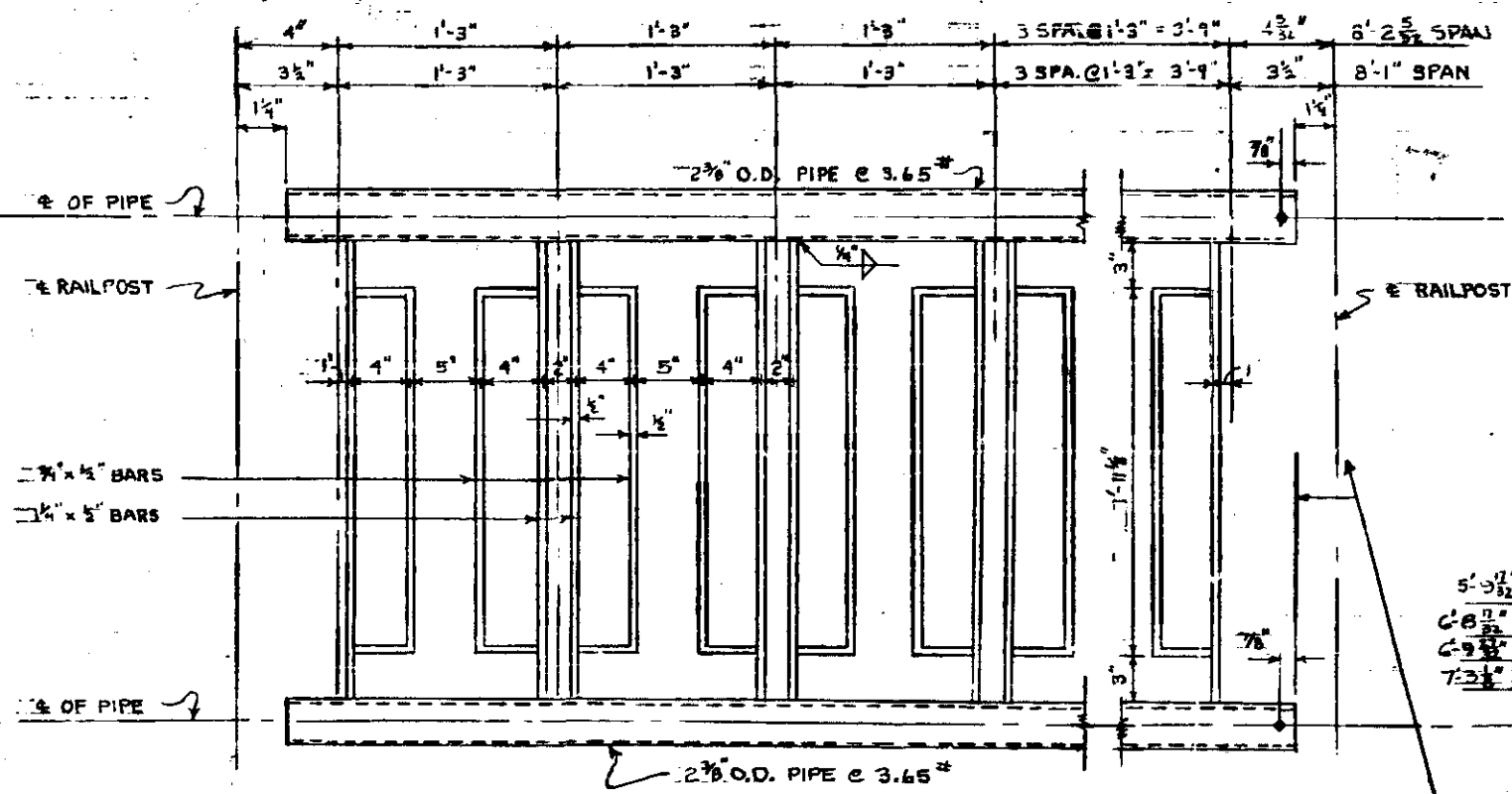
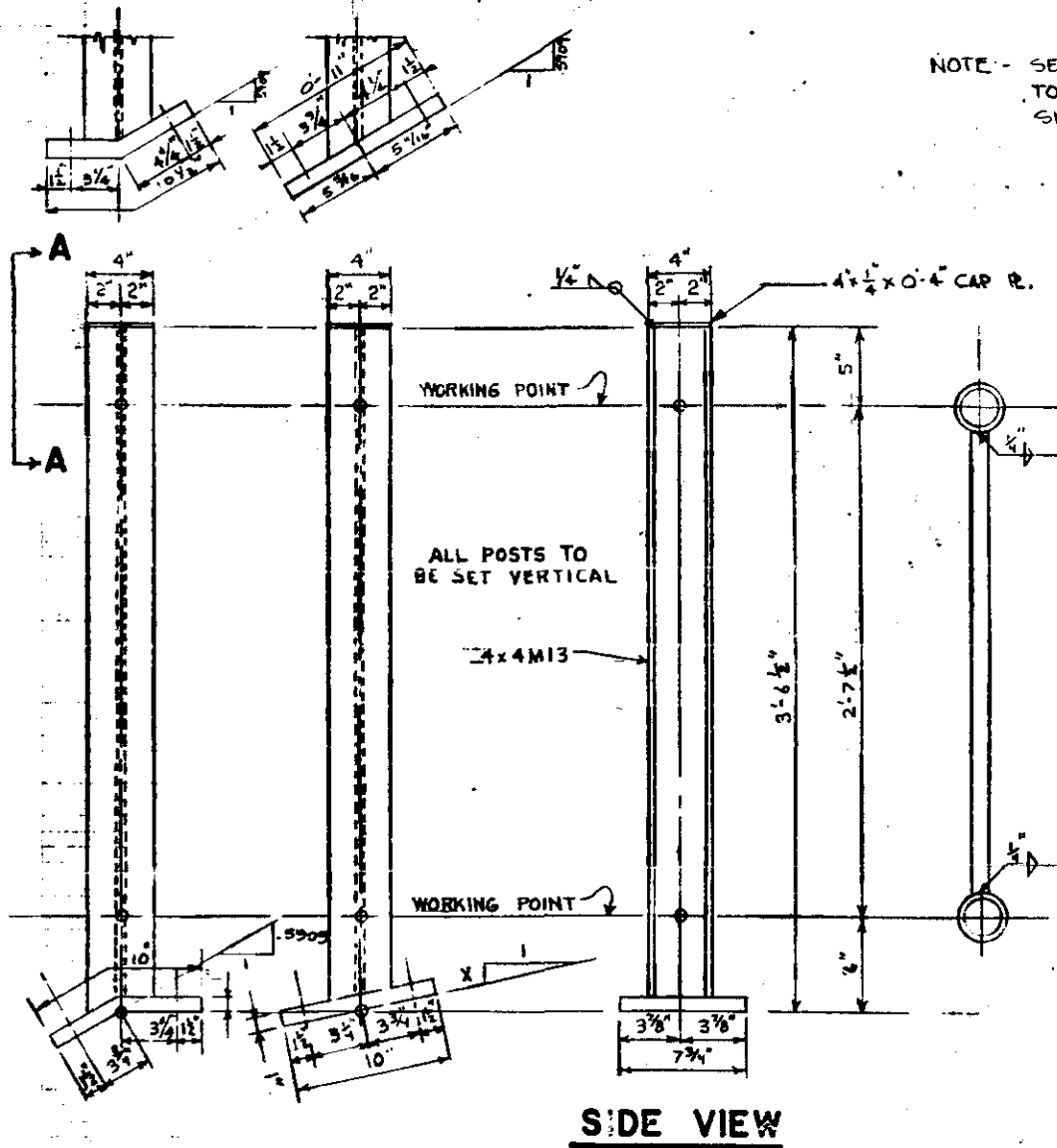
DES	SH
DR	WHE
C-CR	M.S.
E-CK	



**NOTES**  
 ALL STRUCTURAL STEEL AS PER M.H.D. 5305.  
 ALL MATERIAL DETAILED ON THIS SHEET TO BE INCLUDED IN PRICE BID FOR ORNAMENTAL METAL RAILING.  
 ALL MATERIAL DETAILED ON THIS SHEET, EXCEPT THE SHEET LEAD SHIMS, TO BE SAND BLASTED AFTER FABRICATION AND GALVANIZED AS PER M.H.D. 3394.  
 NO PAINT REQUIRED.  
 POSTS TO BE VERTICAL. RAILS PARALLEL TO GRADE.  
 LENGTH OF RAILING FOR ENTIRE BRIDGE IS 690.24 FT.

POST	X	Y	Z
6	0	5909	0351
7	0336	0351	0321
8	0306	0321	0291
9	0276	0291	0261
10	0246	0261	0230
11	0215	0230	0200
12	0185	0200	0170
13	0155	0170	0140
14	0125	0140	0110
15	0095	0110	0080
16	0065	0080	0050
17	0035	0050	0020
18	0005	0020	0011
19	0026	0011	0041
20	0056	0041	0071
21	0086	0071	0101
22	0116	0101	0131
23	0146	0131	0161
24	0176	0161	0191
25	0207	0191	0222
26	0237	0222	0252
27	0267	0252	0282
28	0297	0282	0312
29	0327	0312	0342
30	0357	0342	0372
31	0387	0372	0403
32	0418	0403	0433
33	0448	0433	0463
34	0478	0463	0493
35	0508	0493	0523
36	0538	0523	0553
37	0568	0553	0583
38	0598	0583	0614
39	0629	0614	0645
40	0	0645	5909

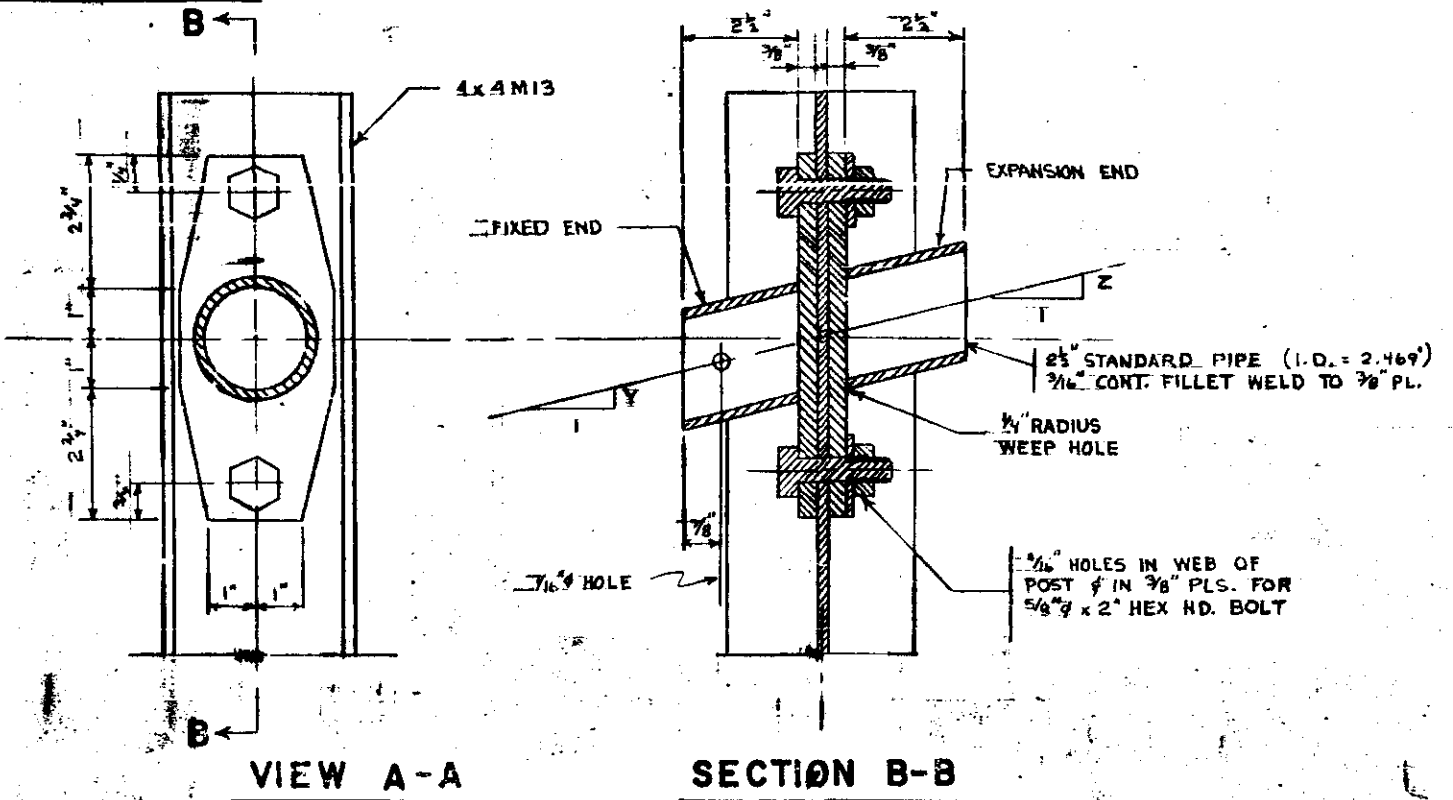
NOTE - SEE ELEVATION OF RAILING POSTS TO DETERMINE DIRECTION OF SLOPE FOR BASE PLATES & PIPES.



SPAN	1'-1 1/2"	1'-1 1/2"	1'-1 1/2"	1'-1 1/2"	2 SPA. @ 1'-1 1/2" = 2'-3"	6 1/2" 5'-9 1/2" SPAN
6 1/2"	1'-1 1/2"	1'-1 1/2"	1'-1 1/2"	1'-1 1/2"	2 SPA. @ 1'-1 1/2" = 2'-3"	6 1/2" 6'-0 1/2" SPAN
5 1/4"	1'-2 1/4"	1'-2 1/4"	1'-2 1/4"	1'-2 1/4"	2 SPA. @ 1'-2 1/4" = 2'-5"	5 1/4" 6'-9 1/2" SPAN
4 1/2"	1'-1"	1'-1"	1'-1"	1'-1"	3 SPA. @ 1'-1" = 3'-3"	4 1/2" 7'-3 1/2" SPAN

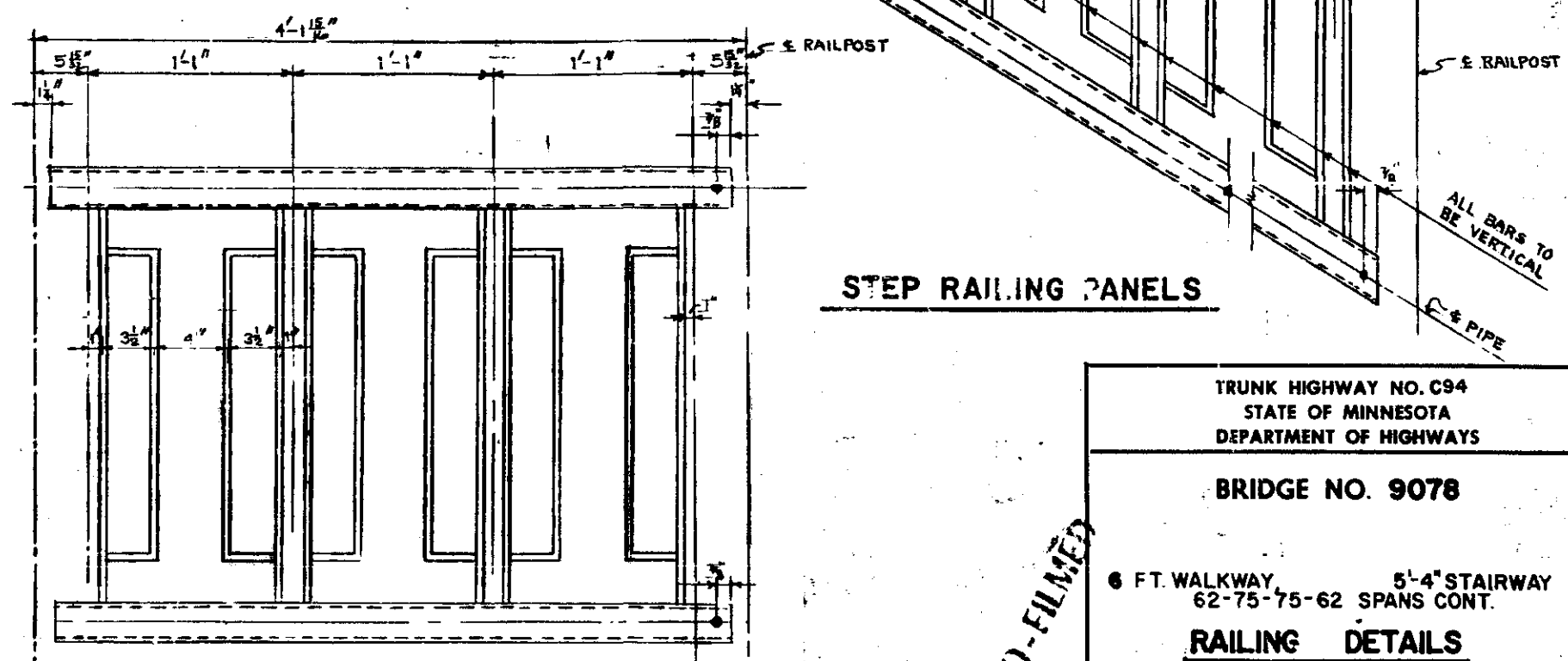
ELEVATION OF BRIDGE RAILING PANELS

1/4" HOLE IN TOP & BOTTOM PIPES FOR 3/8" x 3/8" BUTTON HEAD BOLT WITH HEX JAM NUT. CHECK NUT WITH COLD CHISEL.



VIEW A-A SECTION B-B

(CONNECTION OF BOTTOM RAIL TO POST THE SAME AS THE TOP RAIL TO POST)



STEP RAILING PANELS

TRUNK HIGHWAY NO. C94  
 STATE OF MINNESOTA  
 DEPARTMENT OF HIGHWAYS  
**BRIDGE NO. 9078**  
 6 FT. WALKWAY 5'-4" STAIRWAY  
 62-75-75-62 SPANS CONT.  
**RAILING DETAILS**  
 APPROVED 8-19-58

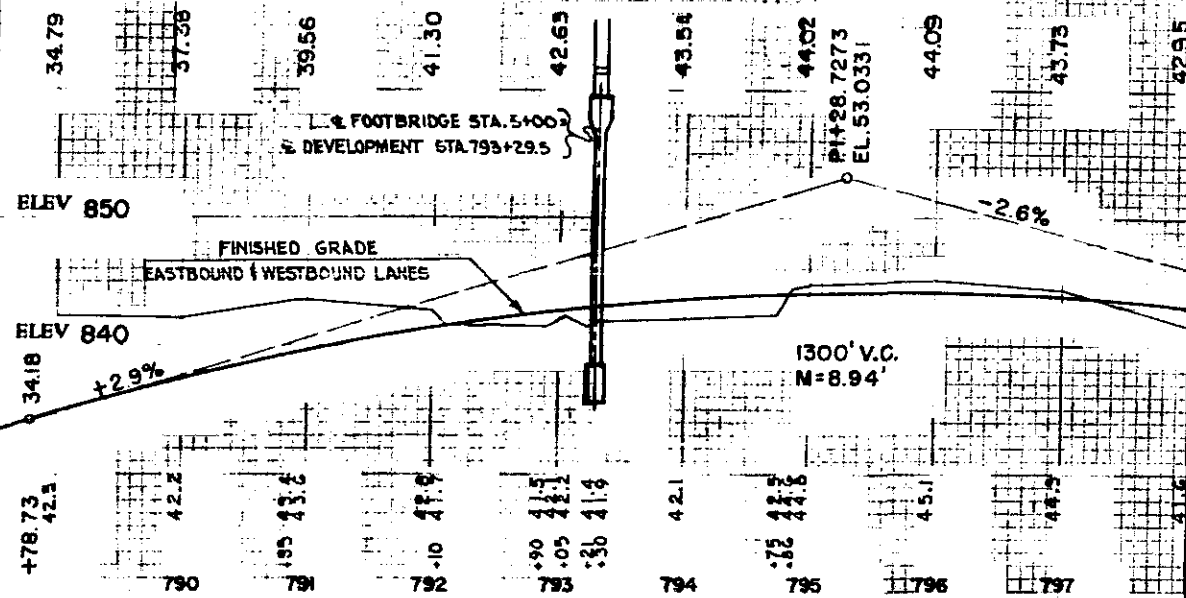
MICRO-FILMED



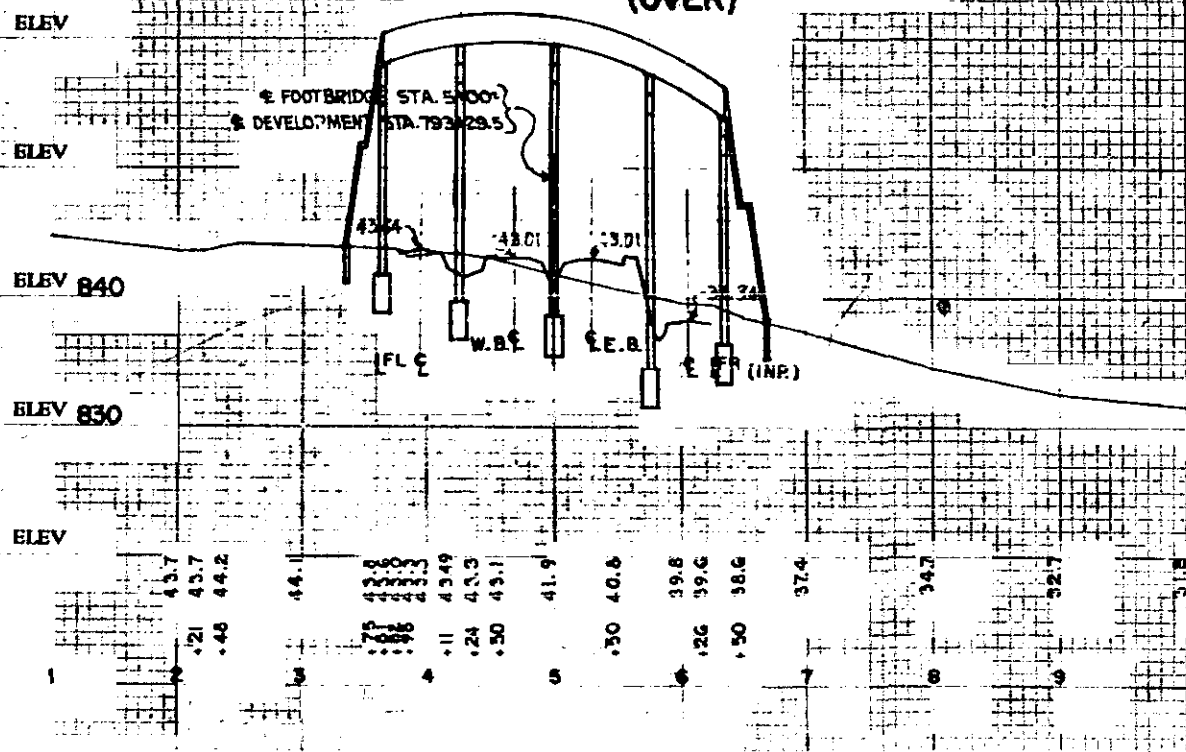
**CONTRACTED PROFILE**

SCALE: HOR. 1" = 100'. VER. 1" = 10'

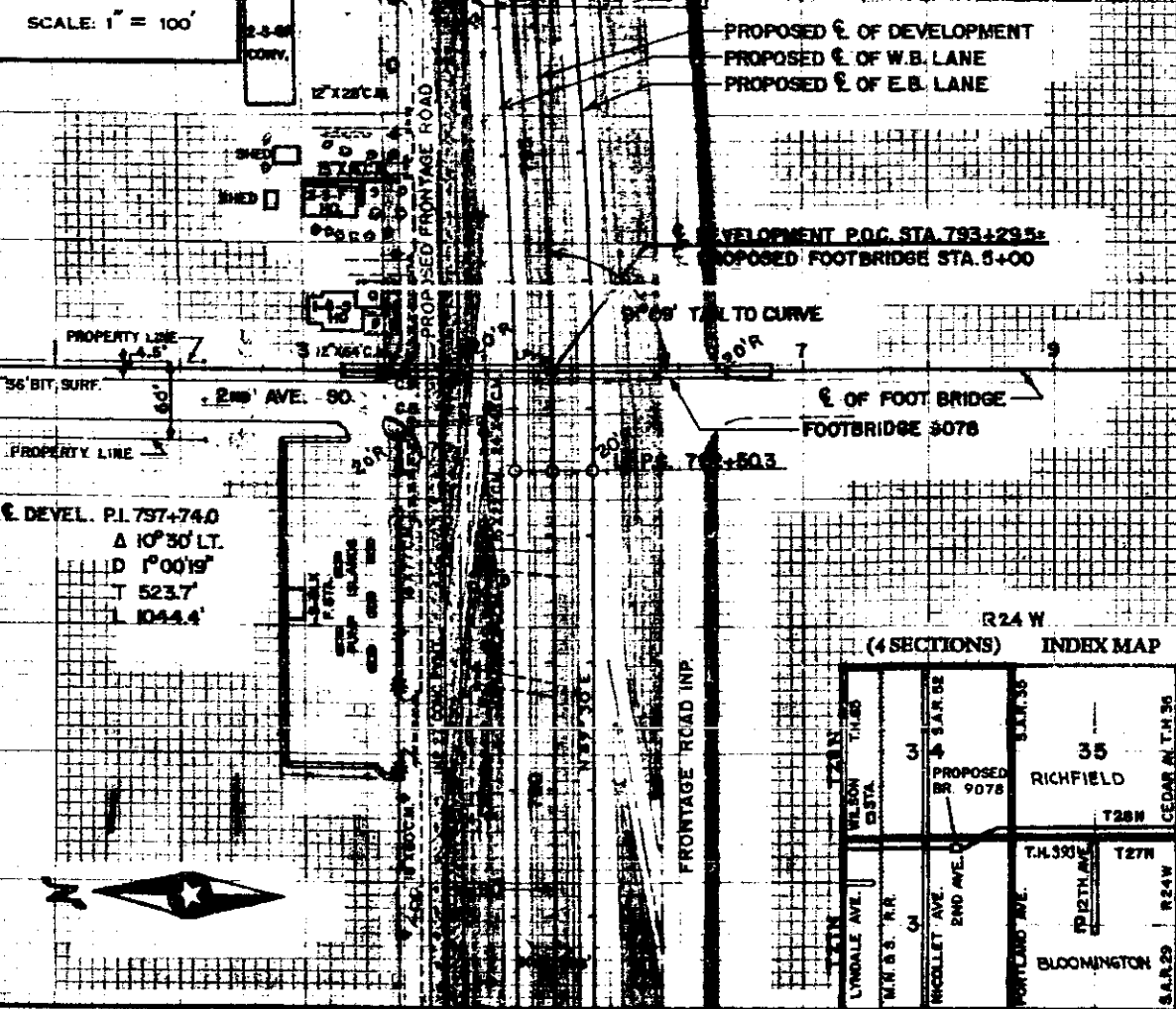
**PROFILE OF T.H. C94 AT  $\bar{C}$  OF DEVELOPMENT (UNDER)**



**PROFILE AT  $\bar{C}$  OF FOOT BRIDGE (OVER)**

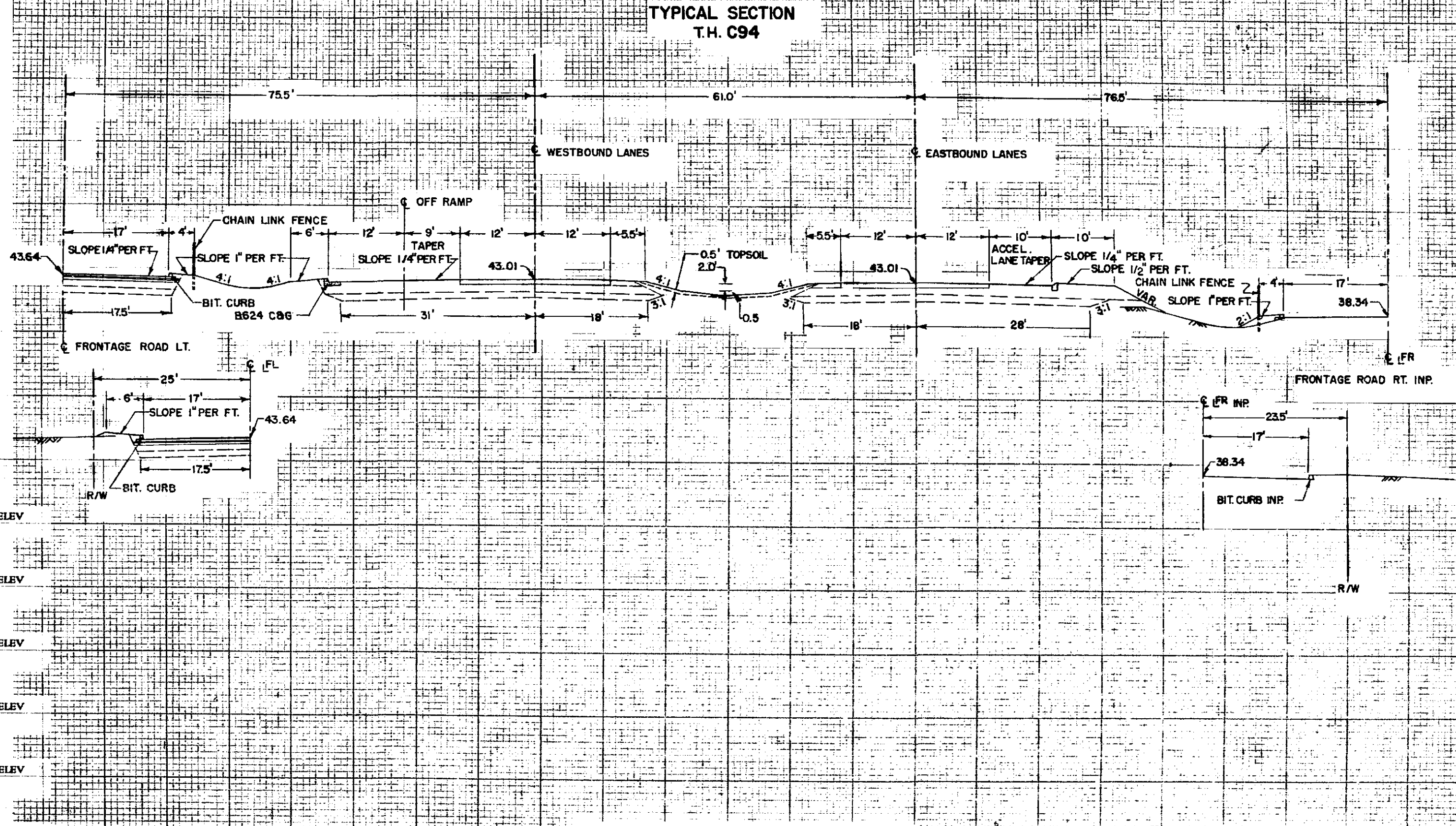


**PLAT**



**PLAN AND PROFILE**

SCALE: 1" = 10'



SEE SHEET NO. 8 FOR PLAN AND PROFILE

MICRO-FILMED

FOLLOW SEPARATE "INSTRUCTIONS FOR PREPARATION OF BRIDGE SURVEYS" WHEN MAKING BRIDGE SURVEYS.

**DATA**

- Preliminary recommendations of Engineer in charge of Bridge Survey:
  - Net span length and type of bridge.
  - Width of roadway on bridge.
  - Number and width of sidewalks, if any.
  - Locate center of bridge at station  $\bar{C}$  DEVELOPMENT STA. 793+29.5
  - If a skew bridge is recommended, the angle of skew should be NONE
  - Is piling required? YES
- Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.
- Changes: In height or length from that of old bridge, and reasons why.

**DATA (Contd.)**

- Other bridges in vicinity:
  - Over same stream (particularly structures which carry high water without overflow of roadway); give location, length, height above water, net cross-sectional area at high water stage and estimated age.
  - Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age.
  - Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be.
- If structure is over a drainage ditch, is ditch gradient liable to be altered?
- Navigation clearances required, if any.
- Information and evidence in regard to high water stages was obtained as follows.
- Must contractor provide for traffic during construction of proposed bridge? If so, by what means?

**HIGH AND LOW WATER ELEVATIONS**

Data obtained from \_\_\_\_\_ reflects highest water elevation in the area of this construction to be \_\_\_\_\_ and the lowest water elevation to be \_\_\_\_\_. The above figures are for informational purposes only. The state neither warrants nor represents that these figures for high water and low water are in any way indicative of the high water or low water to be expected or encountered during this construction.

**SHIPPING POINT**

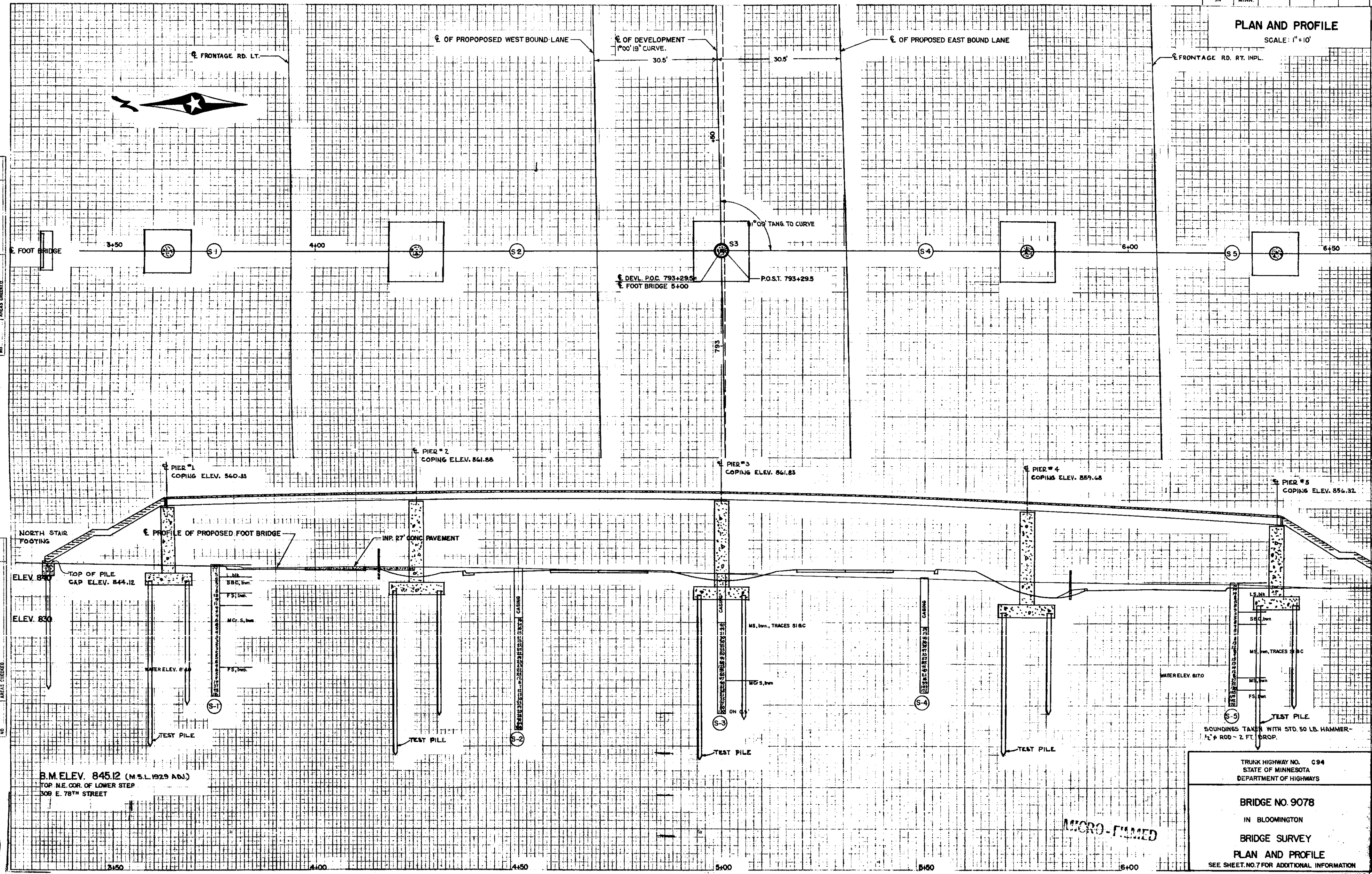
Proposed Bridge is 0.40 miles EAST of \_\_\_\_\_ WILSON STATION which is the nearest Railroad shipping point.  
 \*(Give name of town, station or siding)  
 Date \_\_\_\_\_ Project or County Engineer  
 Date \_\_\_\_\_ District Engineer

STATE OF MINNESOTA  
 DEPARTMENT OF HIGHWAYS  
**BRIDGE SURVEY**  
 FOR  
 PROPOSED BRIDGE LOCATED BETWEEN \_\_\_\_\_  
**BLOOMINGTON & RICHFIELD ON T.H. C94**  
 (TOWN OR CITY) (T.H. S.A.R. OR C.A.R. NUMBER)  
 SEC. 3 TWP. 27N R. 24W  
 TOWNSHIP \_\_\_\_\_ COUNTY HENNEPIN  
 SURVEY MADE DURING MONTH OF SEPT. 1955  
 SURVEY MADE BY P.H. KRAMER  
 BRIDGE No. 9078  
 SURVEY O.L.C.





**PLAN AND PROFILE**  
SCALE: 1"=10'



DATE  
BY  
SURVEYED  
PLOTTED  
REPLA  
AREAS CHECKED

DATE  
BY  
SURVEYED  
PLOTTED  
REPLA  
AREAS CHECKED

B.M. ELEV. 845.12 (M.S.L. 1929 ADJ.)  
TOP N.E. COR. OF LOWER STEP  
309 E. 78<sup>TH</sup> STREET

TRUNK HIGHWAY NO. C94  
STATE OF MINNESOTA  
DEPARTMENT OF HIGHWAYS

**BRIDGE NO. 9078**  
IN BLOOMINGTON  
BRIDGE SURVEY  
PLAN AND PROFILE  
SEE SHEET NO. 7 FOR ADDITIONAL INFORMATION

MICRO-FILMED

