

- LIST OF DRAWINGS
- 51. General Drawing
  - 52. Glass Sheet
  - 53. Masonry Plan
  - 54. Latticage and Anchor Bolts
  - 55. Trunnion Posts and Load Supports
  - 56. Bracing Between Trunnion Posts
  - 57. Scupper Over Pier and Approach Design
  - 58. Machinery Beams & Bracing Between LL Supports
  - 59. Bascule Truss - Front End
  - 60. Bascule Truss - Infram Part
  - 61. Bascule Truss - Trunnion End
  - 62. Floorbeams
  - 63. Floorbeams
  - 64. Stringers and the Laterals
  - 65. Bottom Laterals
  - 66. Civil Frame of Steel Line
  - 67. Concrete CWT (Arch Approach Design)
  - 68. Floor Deck & Concrete Slab
  - 69. Break in Floor Castings
  - 70. Rail Castings, LL Supports, Castings & Handrail
  - 71. Center Lock Platform & Floor Details
  - 72. Machinery House
  - 73. Stairways, Ladders & Platforms
  - 74. Trolley Posts
  - 75. Main Trunnions & Bearings
  - 76. CWT Trunnions & Bearings
  - 77. Operating Machinery - Elevation
  - 78. Operating Machinery - Plan
  - 79. Operating Pack & Equalizer
  - 80. Machinery Bed & Bearings
  - 81. Center Lock - Elevation
  - 82. Center Lock - Plan
  - 83. Air-Burner Details
  - 84. Roadway Gates - Layout
  - 85. Roadway Gates - Details
  - 86. Lights & Signals
  - 87. PG Girders & Conc CWT (Arch Approach Design)

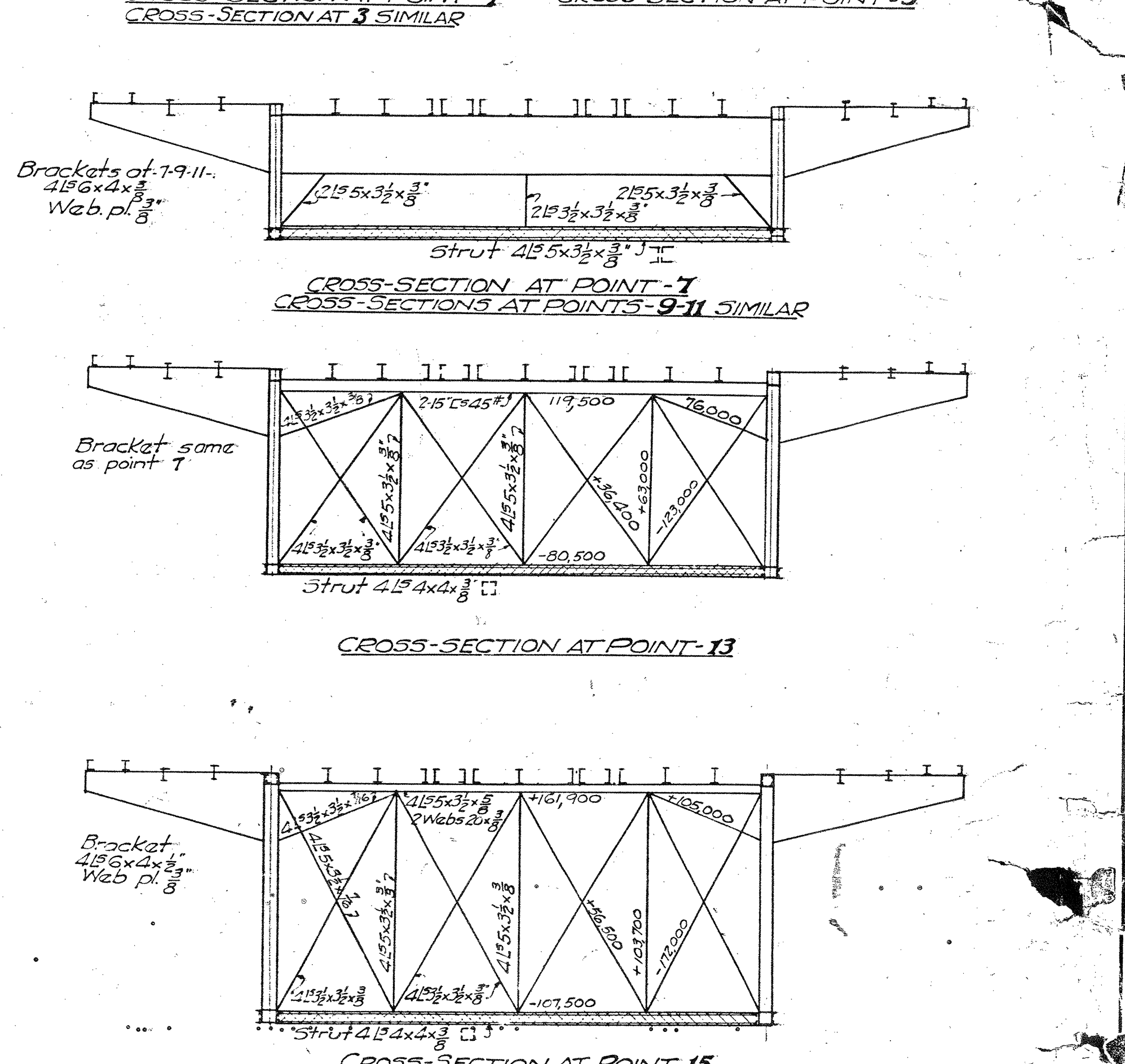
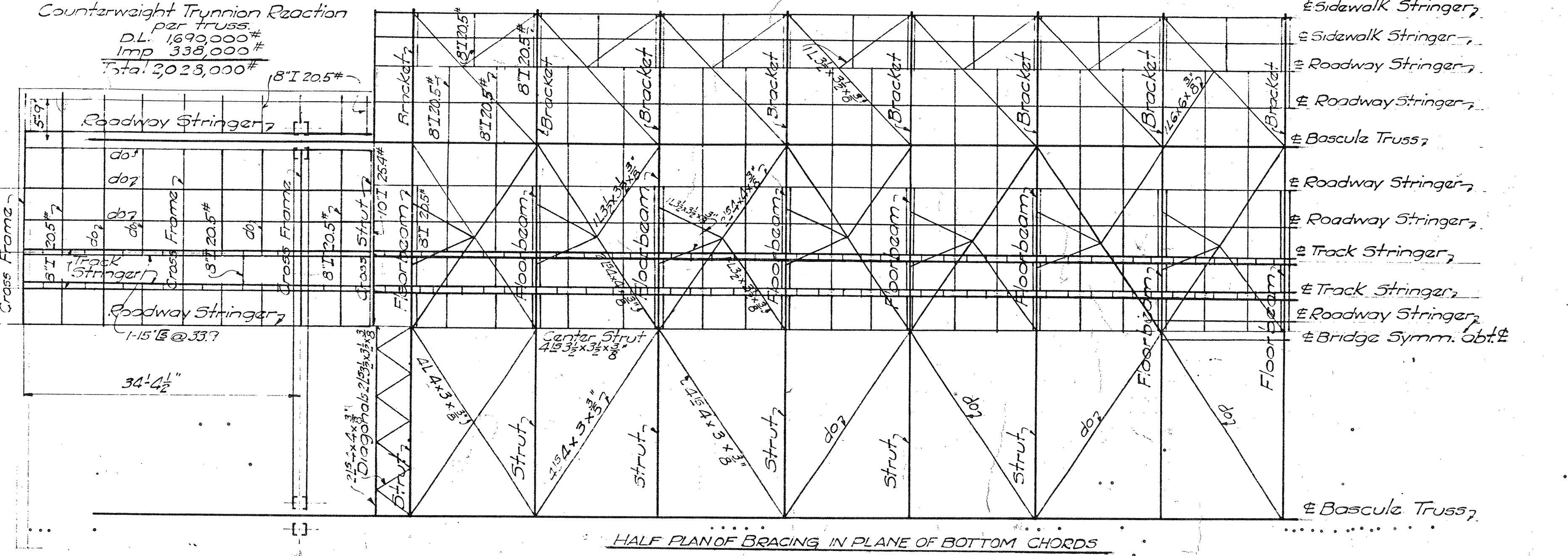
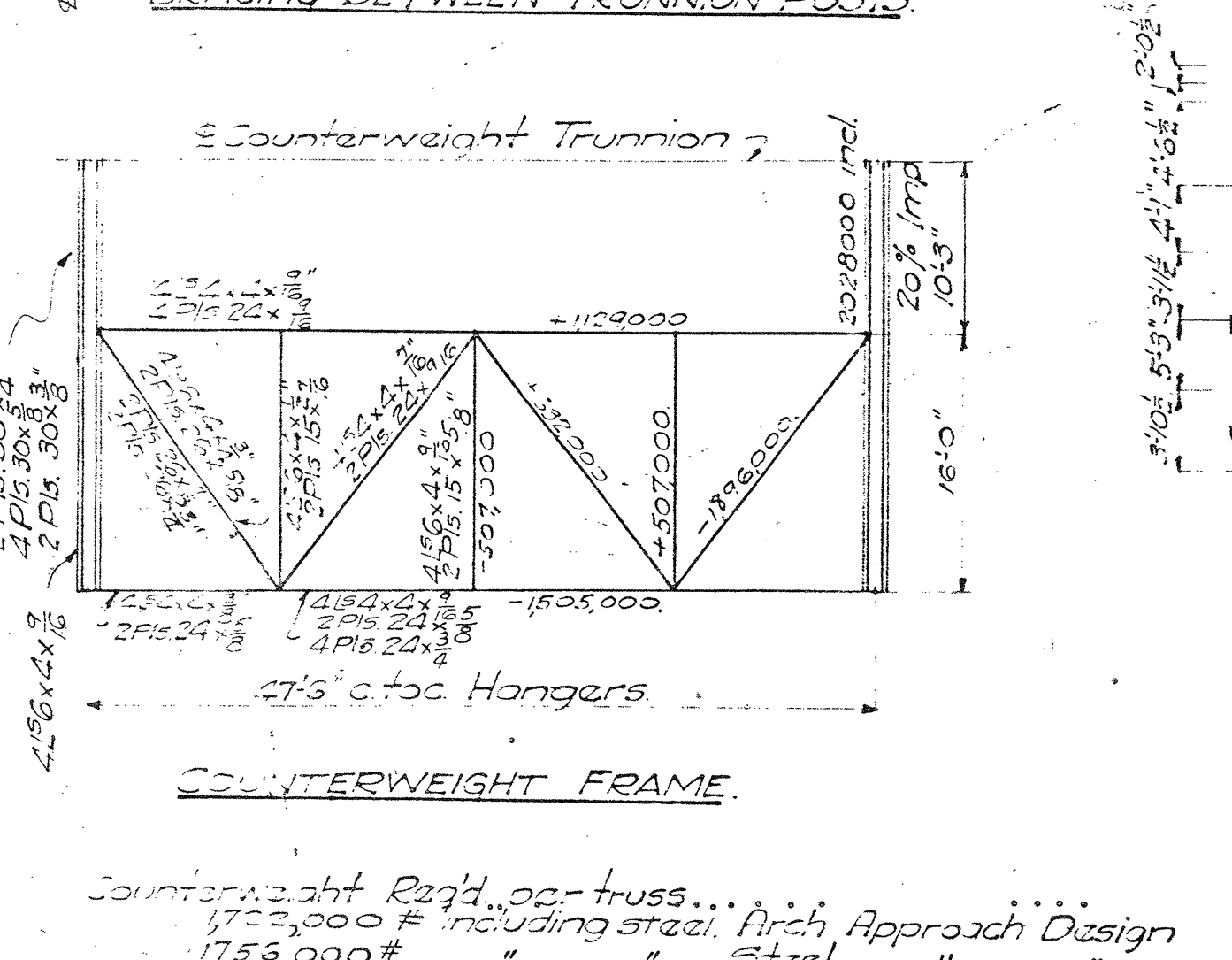
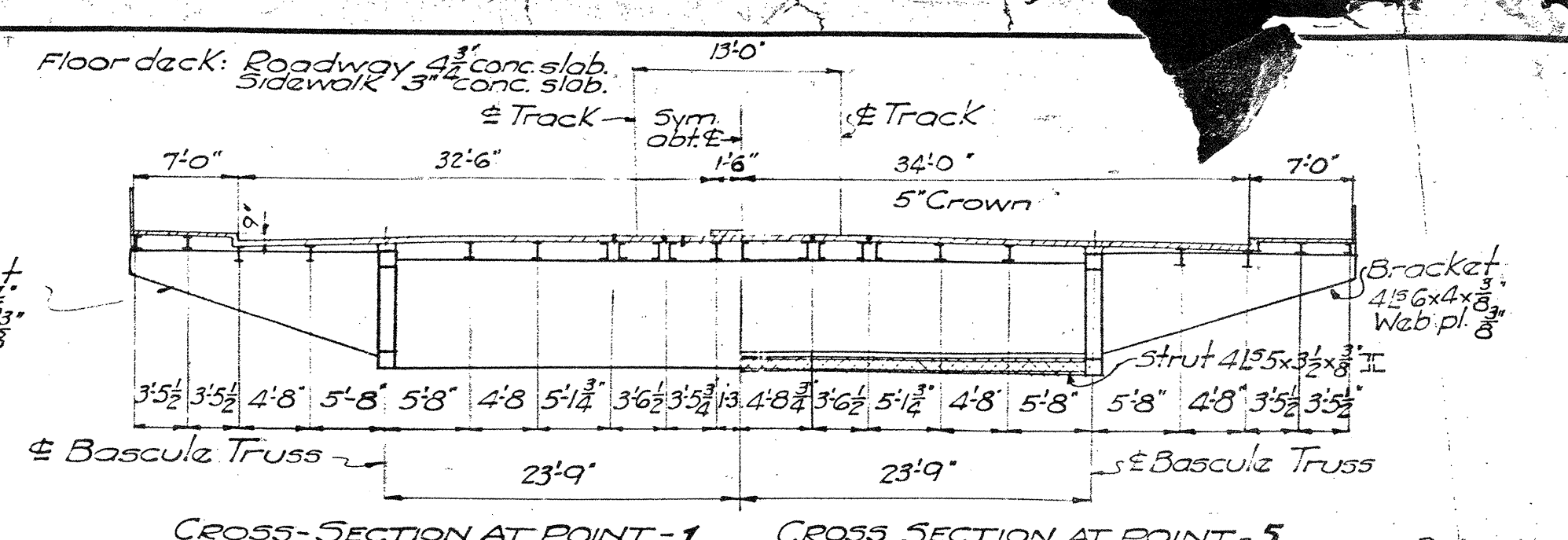
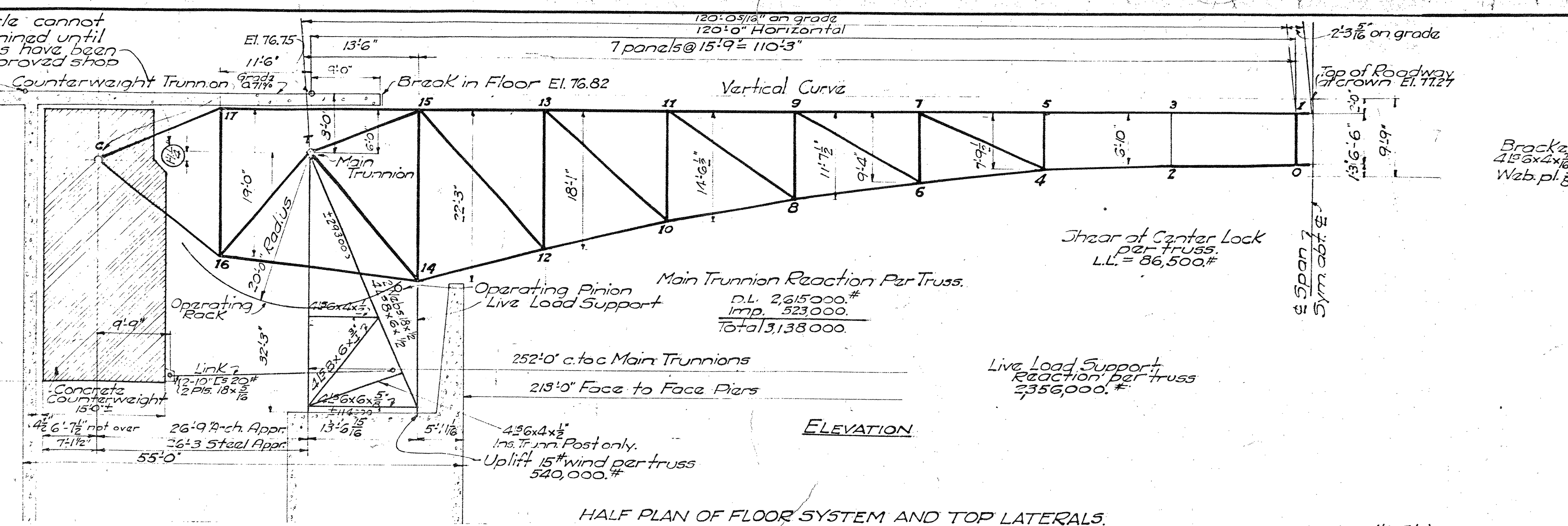
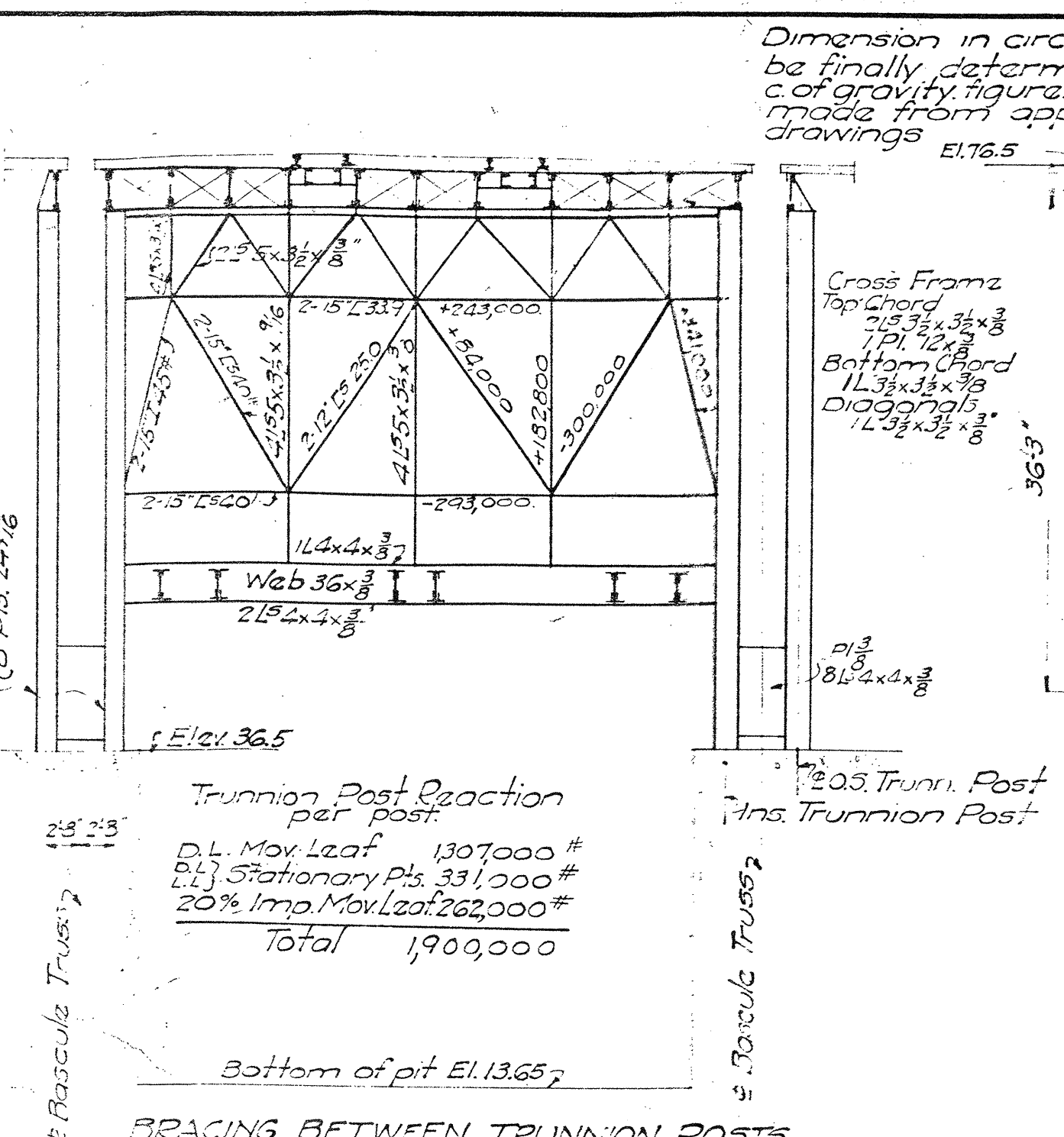
MULTNOMAH COUNTY, OREGON

**BURNSIDE BRIDGE**  
PORTLAND, OREGON

DATE 12-22-23  
SCALE 1/4" = 1'-0"

GENERAL DRAWING

SHEET NO 6-1



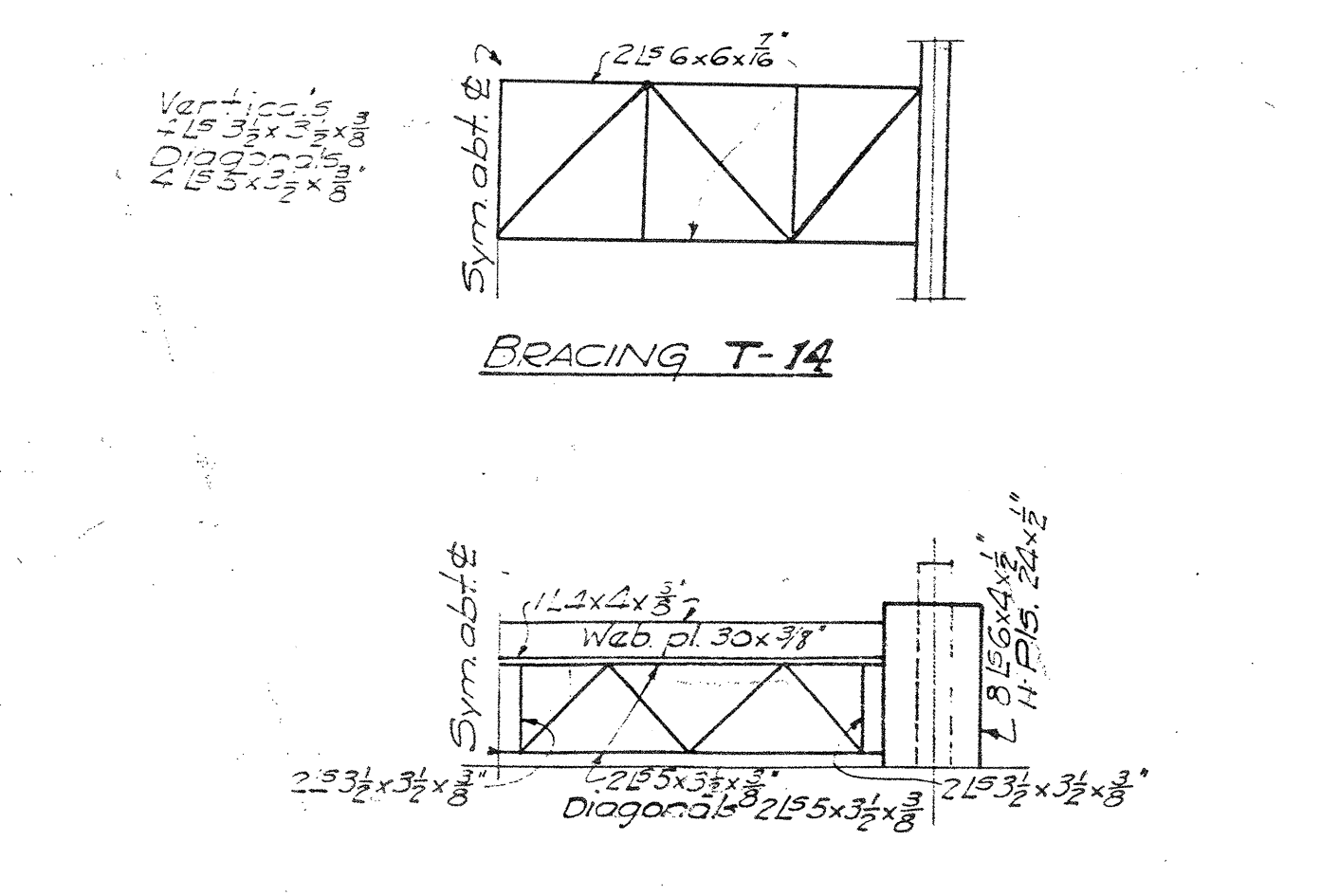
STRESSES AND SECTIONS IN BASCULE TRUSS

Panel	D.L.	20% Live	20% Imp.	Total	Unit Stress	Area Reqd	Area Used	Section
5-7	-41'	-382	892	150	557	77.74	62.24	10 cov. pl. 20x 3/8, 4 1/2" x 6 1/2" x 3/8, 2 Pls. 30x 3/4
7-9	-71'	-656	973	160	860	119.94	102.25	do do do do do do do do do do
9-11	-98'	-805	1773	160	1120	144.69	121.90	do do do do do do do do do do
11-13	-124'	-932	2172	160	1355	172.19	144.01	do do do do do do do do do do
13-15	-125'	-1058	2478	160	1560	192.69	163.65	do do do do do do do do do do
15-17	-176'	-353	2118	160	1320	172.19	142.01	do do do do do do do do do do
17-19	-193'	-387	2322	160	1455	174.69	147.13	do do do do do do do do do do
19-21	-193'	858	1388	140	970	139.18	99.20	4 1/2" x 4 1/2" x 3/8, 2 Pls. 30x 3/4, 2 Pls. 30x 1/2
21-23	-193'	812	1812	140	920	132.14	101.50	do do do do do do do do do do
23-25	-193'	930	2210	140	1060	158.49	125.39	do do do do do do do do do do
25-27	-149'	1078	2565	140	1235	185.79	145.79	do do do do do do do do do do
27-29	-168'	1182	2864	140	1350	205.93	162.93	do do do do do do do do do do
29-31	-267'	1535	3210	140	1690	229.38	182.38	do do do do do do do do do do
31-33	-172'	1348	2059	140	1490	190.63	150.63	do do do do do do do do do do
33-35	-169'	1041	140	125	78.24	118.24	92.24	4 1/2" x 4 1/2" x 3/8, 2 Pls. 24x 3/4, 2 Pls. 24x 1/2
35-37	-172'	1385	2310	160	1442	173.44	144.28	4 1/2" x 4 1/2" x 3/8, 1 Pl. 22x 3/4, 2 Pls. 30x 3/8, 2 Pls. 30x 1/2, 4 Pls. 30x 3/8
37-39	-182'	1525	2120	160	1615	192.52	152.52	4 1/2" x 4 1/2" x 3/8, 1 Pl. 22x 3/4, 2 Pls. 30x 3/8, 2 Pls. 30x 1/2, 1 Pl. 22x 3/4
39-41	-182'	1525	2245	140	1620	192.00	152.00	4 1/2" x 4 1/2" x 3/8, 2 Pls. 30x 3/8, 2 Pls. 30x 1/2, 2 Pls. 30x 3/8, do
41-43	-340'	286	626	160	392	50.26	39.93	4 1/2" x 4 1/2" x 3/8, 2 Pls. 15x 3/8
43-45	-310'	246	556	160	348	42.06	35.37	4 1/2" x 4 1/2" x 3/8, 2 Pls. 15x 3/8
45-47	-310'	220	530	160	330	42.19	33.74	4 1/2" x 4 1/2" x 3/8, 2 Pls. 15x 3/8
47-49	-293'	213	476	160	310	40.31	32.16	4 1/2" x 4 1/2" x 3/8, 2 Pls. 15x 3/8
49-51	-272'	204	476	160	298	38.44	30.57	4 1/2" x 4 1/2" x 3/8, 2 Pls. 15x 3/8
51-53	-272'	186	409	137	295	38.66	33.66	4 1/2" x 3 1/2" x 3/8, 1 Pl. 24x 3/8
53-55	-270'	1920	421	123	370	53.38	37.0	do do do do do do do do do do
55-57	-270'	1920	462	125	370	53.38	37.0	do do do do do do do do do do
57-59	-290'	2100	490	135	362	53.38	36.26	4 1/2" x 4 1/2" x 3/8, 2 Pls. 17x 3/8
59-61	-410'	+690	1100	135	814	81.3	81.3	4 1/2" x 4 1/2" x 3/8, 4 1/2" x 4 1/2" x 1/2, 1 Pl. 22x 3/8, 2 Pls. 24x 3/4

Areas in sq. inches.  
 Stresses in 1000#  
 + indicates compression  
 - indicates tension

STRESSES AND SECTIONS IN FLOOR SYSTEM

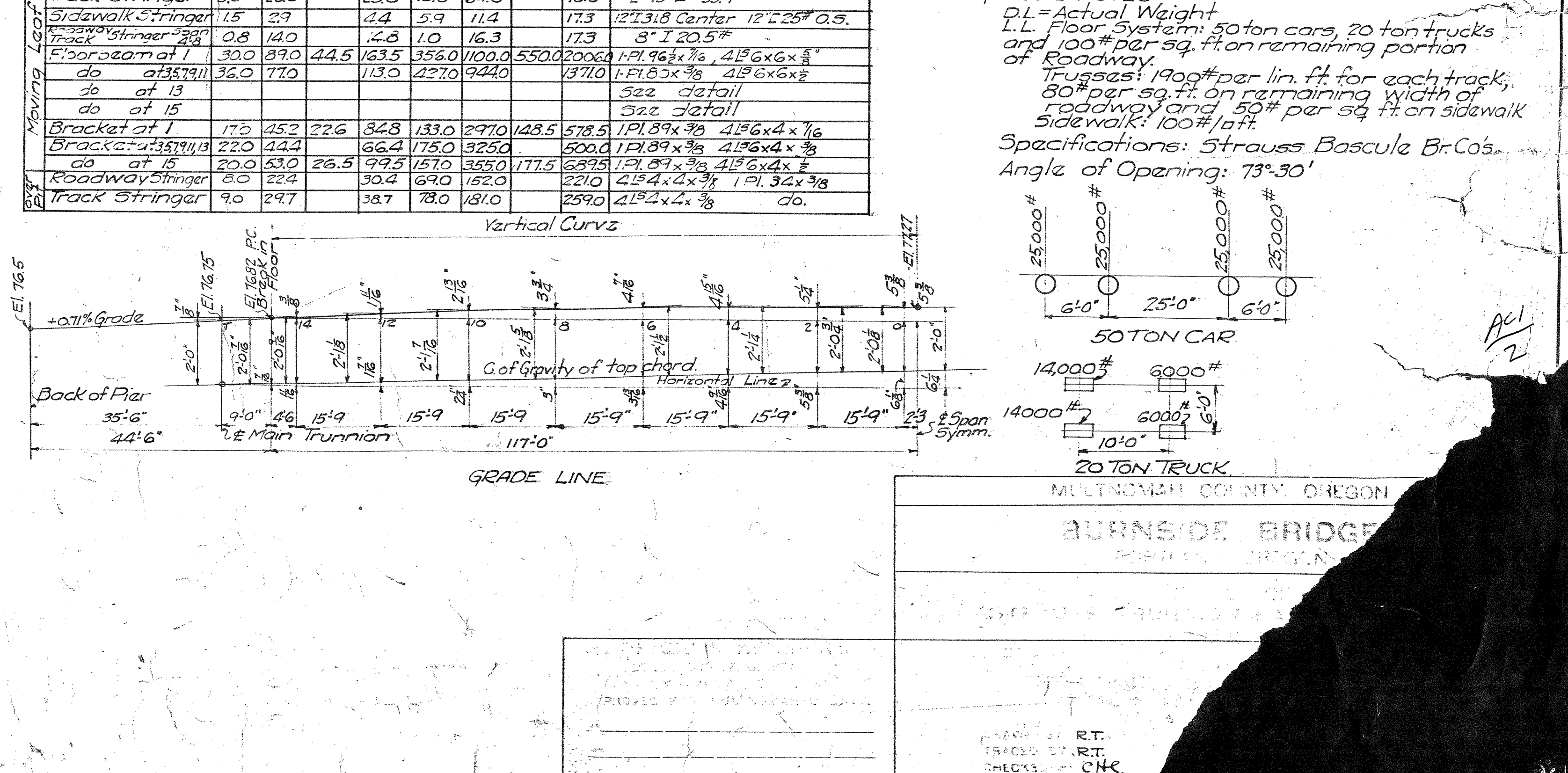
Item	Shears in 1000#	Moments in 1000#	Section	
Roadway Stringer	2.8	162	19.0 10.9 55.1 66.0 15" I 24.9#	
Track Stringer	3.5	203	23.8 13.8 24.8 78.6 2" 15" I 33.9#	
Sidewalk Stringer	1.5	27	4.4 5.9 11.4 77.3 12" I 31.8 Center 12" I 25" 0.5	
Track Stringer	0.8	140	1.8 1.0 16.3 17.3 8" I 20.5#	
Floorbeam at 1	30.0	89.0	44.5 163.5 356.0 1100.0 550.0 2006.0 1 Pl. 9 1/2" x 3/8, 4 1/2" x 6" x 3/8	
do at 13	36.0	77.0	113.0 227.0 924.0 1371.0 1 Pl. 8 1/2" x 3/8, 4 1/2" x 6" x 3/8	
do at 15				See detail
Bracket at 1	170	452	226 348 133.0 2970 148.5 578.5 1 Pl. 8 1/2" x 3/8, 4 1/2" x 6" x 1/8	
Bracket at 15	220	444	66.4 175.0 325.0 500.0 1 Pl. 8 1/2" x 3/8, 4 1/2" x 6" x 1/8	
do at 15	20.0	63.0	26.5 99.5 157.0 355.0 177.5 689.5 1 Pl. 8 1/2" x 3/8, 4 1/2" x 6" x 1/8	
Roadway Stringer	8.0	224	30.4 69.0 152.0 221.0 4 1/2" x 4 1/2" x 3/8, 1 Pl. 3 1/2" x 3/8	
Track Stringer	9.0	297	38.7 78.0 181.0 259.0 4 1/2" x 4 1/2" x 3/8 do.	

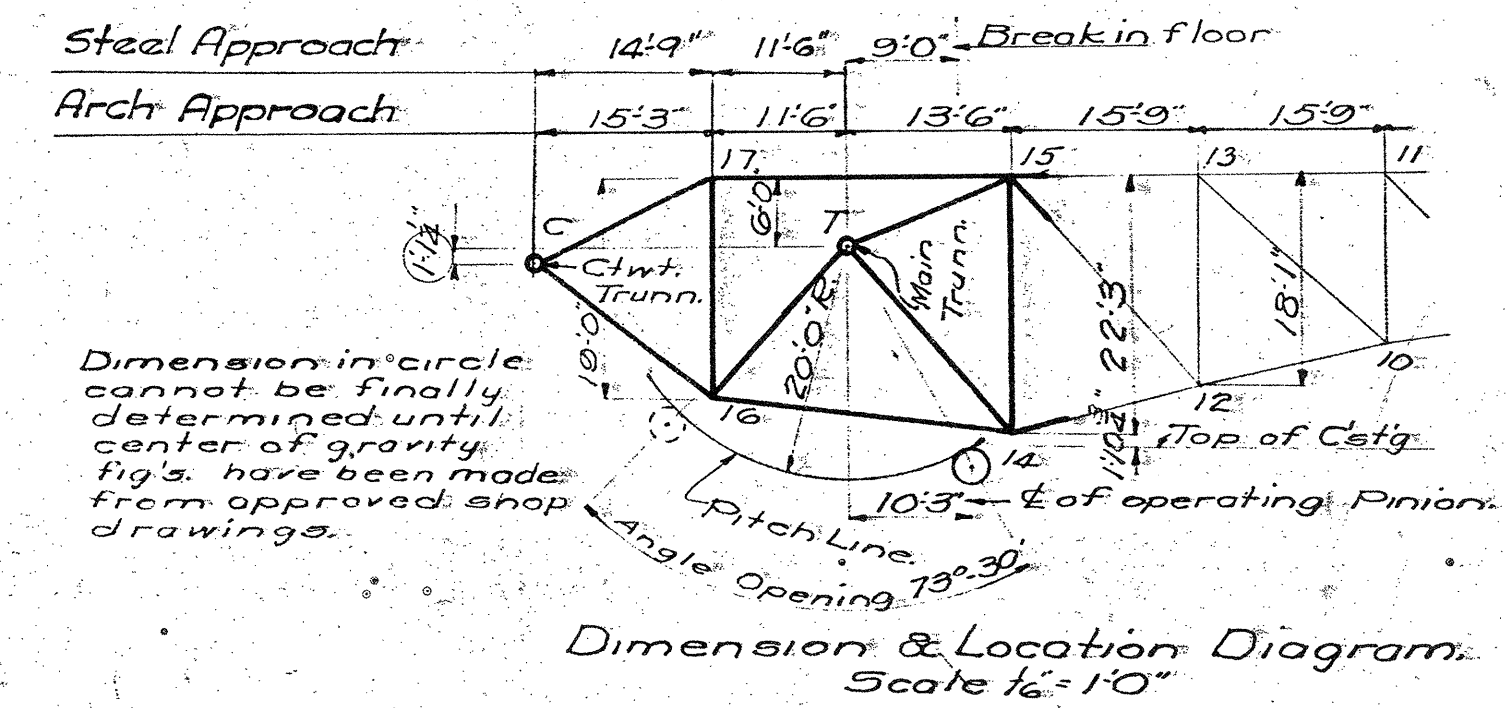
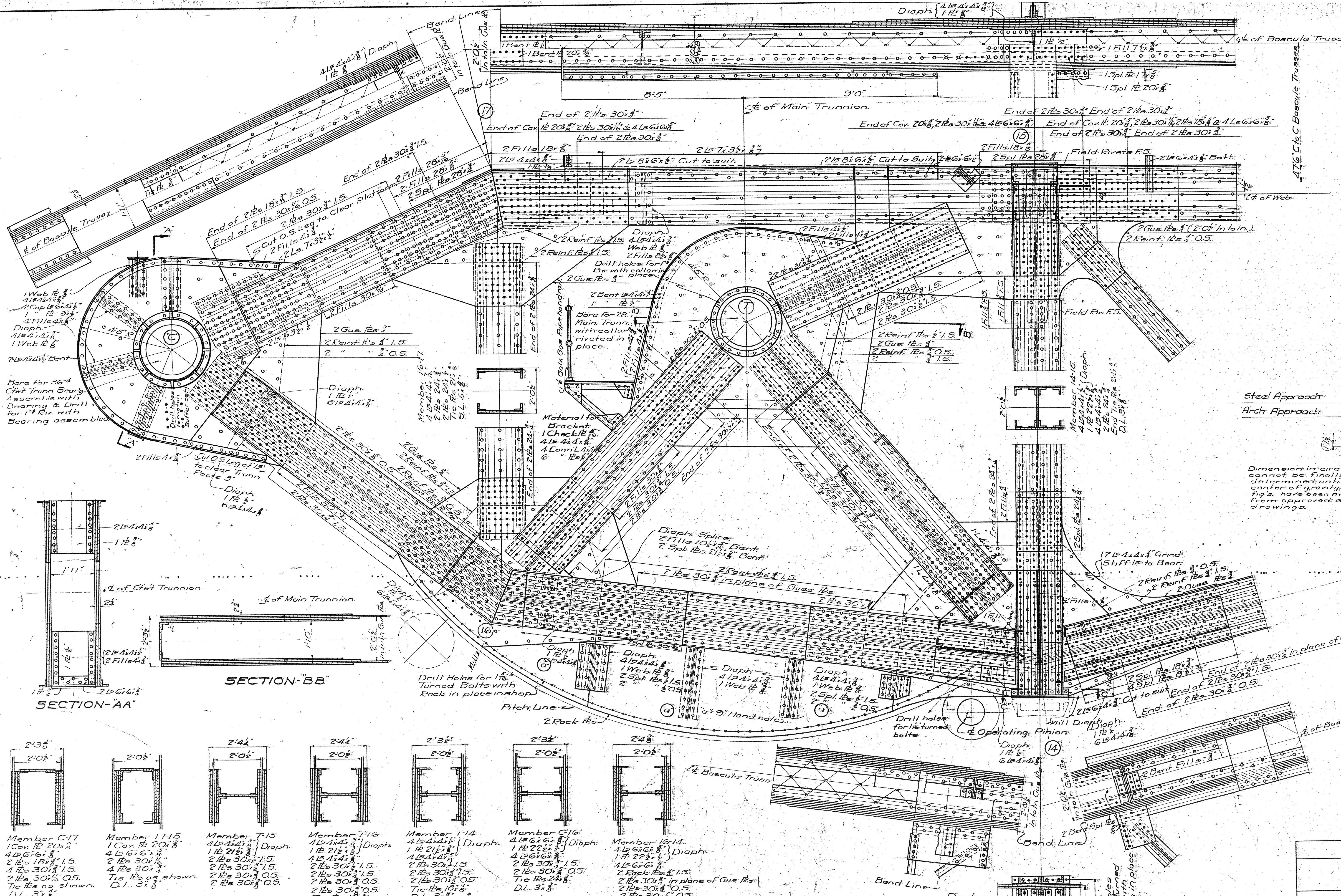


STRESSES AND SECTION IN BASCULE TRUSS - FRONT END

Panel	Shear in 1000#	Unit Stress	Area Reqd	Area Used	Section
1-3	630	1072	170.2	10.0	170.2 108.0 2 Pls. 108 x 1/2
3-5	1390	1466	285.6	10.0	285.6 112.0 2 Pls. 112 x 1/2

Point	Moments in 1000#	Top Chord	Bottom Chord	Section
3	9910	15360	28270	16.0 20.3 35.93 31.15 1-cov. pl. 23x 3/8, 2 1/2" x 6 1/2" x 3/8
5	31800	37070	68870	16.0 25.3 54.60 46.16 4 1/2" x 4 1/2" x 3/8, 2 Pls. 11x 3/8





SECTION "BB"

SECTION "AA"

SECTION "CC"

- Member C-17  
1 Cov. 12 20 $\frac{1}{8}$ "  
4 Ls 6 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
2 Rs 18 $\frac{1}{2}$  x 1.5"  
4 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 0.5"  
Tie Rs as shown  
D.L. 3 $\frac{1}{2}$ "
- Member 17-15  
1 Cov. 12 20 $\frac{1}{8}$ "  
4 Ls 6 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
4 Rs 30 $\frac{1}{2}$  x 1.5"  
Tie Rs as shown  
D.L. 3 $\frac{1}{2}$ "
- Member T-15  
1 Ls 4 $\frac{1}{2}$  x 4 $\frac{1}{2}$  x 8 $\frac{1}{2}$ " Diaph.  
1 R 21 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 0.5"  
2 Rs 30 $\frac{1}{2}$  x 0.5"  
Tie Rs 18 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
D.L. 3 $\frac{1}{2}$ "
- Member T-16  
4 Ls 4 $\frac{1}{2}$  x 4 $\frac{1}{2}$  x 8 $\frac{1}{2}$ " Diaph.  
1 R 21 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 0.5"  
Tie Rs 18 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
D.L. 3 $\frac{1}{2}$ "
- Member T-14  
4 Ls 4 $\frac{1}{2}$  x 4 $\frac{1}{2}$  x 8 $\frac{1}{2}$ " Diaph.  
1 R 21 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
4 Ls 4 $\frac{1}{2}$  x 4 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 0.5"  
Tie Rs 18 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
D.L. 3 $\frac{1}{2}$ "
- Member C-16  
4 Ls 6 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 8 $\frac{1}{2}$ " Diaph.  
1 R 22 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
4 Ls 6 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 0.5"  
Tie Rs 24 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
D.L. 3 $\frac{1}{2}$ "
- Member 16-14  
4 Ls 6 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 8 $\frac{1}{2}$ " Diaph.  
1 R 22 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
4 Ls 6 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
2 Rck Rs 1 $\frac{1}{2}$ "  
2 Rs 30 $\frac{1}{2}$  x 1.5"  
2 Rs 30 $\frac{1}{2}$  x 0.5"  
Tie Rs 24 $\frac{1}{2}$  x 8 $\frac{1}{2}$ "  
D.L. 3 $\frac{1}{2}$ "

General Notes:  
Rivets 1 $\frac{1}{2}$ " for Trusses  
" 3 $\frac{1}{2}$ " for Lateral  
Open holes 1 $\frac{1}{2}$ " for 1" Rivets  
And as noted.

MULTNOMAH COUNTY, OREGON

**BURNSIDE BRIDGE**  
PORTLAND, OREGON

DETAILS OF  
**STRAUSS TRUNNION BASCULE BRIDGE**  
PATENTED

DESIGNED BY  
**THE STRAUSS BASCULE BRIDGE CO.**  
CONSULTING ENGINEERS  
CHICAGO, ILL.

HEDRICK & KREMERS  
CONSULTING ENGINEERS  
PORTLAND, OREGON.  
APPROVED FOR MULTNOMAH COUNTY.

DRAWN BY V.B.  
TRACED BY M.P.  
CHECKED BY J.C.  
REVISED 2-26-22

SCALE 1/2"=1'-0"  
DATE 12-22-23  
GEN. FILE 1370  
**SHEET NO. 5-11**