December 10, 1981

IN REPLY PLEASE REFER TO OUR FILE
C-80092154

MONITOR: Commissioner Taliaferro

Mr. J. T. Sullivan, P.E., Chief Engineer
Consolidated Rail Corporation
15 North 32nd Street
Philadelphia, PA 19104

Glenfield Borough
v.
Consolidated Rail Corporation, Penn Central Transportation Company, Allegheny County and Pennsylvania Department of Transportation

Dear Mr. Sullivan:

The Commission adopted an order on May 29, 1981 (entered July 20, 1981), which directed, among other things, that Conrail complete a structure inventory and appraisal sheet and advise the Commission of its recommendation for appropriate weight restriction for the Glenfield Viaduct bridge within ninety (90) days of the date the order became final.

The order also directed that Conrail perform an engineering evaluation of the subject structure for the purpose of evaluating the structure for either rehabilitation or replacement within one hundred and eighty (180) days of the date the order became final.

We note that ninety (90) days have elapsed and no recommendation for appropriate weight restriction has been received. Please advise the Commission as to your recommendation for the maximum posted weight limit, keeping in mind that the bridge is currently posted for a maximum weight limit of sixteen (16) tons.

We also note that the report of your engineering evaluation will be due in mid-January of 1982. If you will meet the due date, no additional action is necessary at this time. If you project a completion date after the due date by more than a reasonable length of time, a petition for an extension of time in which to complete the work should be filed. Any such petition should give reasons why an extension of time is required to complete work which the Commission has directed to be performed.

Your prompt attention to these matters is urged and will be greatly appreciated.

Very truly yours,

R. A. Peteritas, P.E., Director
Bureau of Rail Transportation

CONRAIL

ORIGINAL

January 4, 1982

SUBJECT: Glenfield, Allegheny County, PA - PUC Docket No. C-80092154 - O.H. Bridge No. 9.22, Glenfield Viaduct over Main Line Tracks, LC 2202, MP 9.22, WO #46588, Pittsburgh Division, Central Region (File: Bridge #9.22 - WWP)

Mr. Jerry Rich, Secretary
Pennsylvania PUC
P.O. Box 3265
Harrisburg, PA 17120

Dear Mr. Rich:

We refer to the Commission's Order entered July 20, 1981 in connection with the subject structure requiring Conrail, at its initial cost and expense, to perform an engineering evaluation of the bridge in order to recommend an appropriate weight restriction for vehicles passing over the structure.

Conrail has completed the inspection and recommends that the present 16 ton posting is adequate for now. Conrail will inspect the structure at frequent intervals for any distress signs which may develop since the condition of the structure is such, that any further deterioration may necessitate additional restrictions.

Conrail is expected to complete an engineering evaluation, as further required by the above mentioned order, for either rehabilitation or reconstruction of the bridge by January 20, 1982.

A copy of this letter is being furnished all parties to this proceeding.

Very truly yours,

J. T. Sullivan

J. T. Sullivan, P.E.
Chief Engineer
Design and Construction

Room 1200

(215) 596-3845

CC:

Mr. R. A. Peteritas, Director
Bureau of Rail Transportation
Pennsylvania PUC
P.O. Box 3265
Harrisburg, PA 17120

Mr. Albert G. Feczko, Jr. Solicitor
Glenfield Borough
800 Lawyers Building
Pittsburgh, PA 15219

Mr. James H. McLean, Solicitor
County of Allegheny
919 Jones Law Building
Pittsburgh, PA 15219

Mr. Kenneth W. Walker, P.E.
Chief Utility Engineer
Pennsylvania DOT
1120 T & S Building
Harrisburg, PA 17120

CONRAIL

ORIGINAL

JAN 22 8 34 AM '82

RECEIVED
SECRETARY'S OFFICE
PUBLIC UTILITY
COMMISSION

January 20, 1982

Subject: Glenfield, Allegheny Co., Pennsylvania
PUC Docket No. C-80092154 - O.H. Bridge 9.22,
Glenfield Viaduct over Main Line Tracks,
LC 2202, MP 9.22, WO# 46588, Pittsburgh Division,
Central Region. (File: BR. 9.22 - WWP)

Mr. Jerry Rich, Secretary
Pennsylvania Public Utility Commission
P. O. Box 3265
Harrisburg, PA 17120

Dear Mr. Rich:

We refer to the Commission's Order entered July 20, 1981 in connection with the subject structure requiring Conrail, at its initial cost and expense, to complete an engineering evaluation of the physical condition of the bridge and recommend whether it should be rehabilitated or reconstructed.

We attach three copies of Conrail's Inspection Report and Evaluation for the Glenfield Viaduct dated January 19, 1982.

A copy of the above report is being furnished to all parties to the proceeding.

Very truly yours,

DOCUMENT
FOLDER

J. T. Sullivan

J. T. Sullivan
Chief Engineer
Design and Construction

12th Floor

(215) 596- 3845

CC:

Mr. R. A. Peteritas, Director
Bureau of Rail Transportation
Pennsylvania Public Utility Commission
P. O. Box 3265
Harrisburg, PA 17120

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Mr. Kenneth W. Walker, P.E.
Chief Utility Engineer
Pennsylvania Department of Transportation
1120 Transportation and Services Building
Harrisburg, PA 17120

A-800922/59

ORIGINAL

JAN 22 8 35 AM '82

RECEIVED
SECRETARY'S OFFICE
PUBLIC UTILITY
COMMISSION

Inspection Report and Evaluation
O.H. Bridge No. 9.22
Glenfield, PA.

Inspection Report and Evaluation

For

O.H. Bridge No. 9.22

At

Glenfield, PA.

Office of the Chief Engineer - D&C
Consolidated Rail Corporation
1200 - 15 N. 32nd Street
Philadelphia, PA 19104

January 19, 1982

TABLE OF CONTENTS

Glenfield, PA

O.H. Bridge No. 9.22
Glenfield Viaduct

Detailed Inspection

On November 16, 17 and 18, 1981 a detailed inspection of this structure was made by R. A. Check, Sr. Structural Engineer, A. Bross, Engineer Bridges and Buildings, W. Parker, Bridge Inspector, and J. Howser.

The structure as built in 1926 was a 17-span viaduct. In 1953 the spans north of the span over the tracks were rebuilt to accommodate changes to the Ohio River Blvd. (LR 652, TR 65) by the Pa. Dept. of Highways. The existing bridge today consists of two (2) spans north of the tracks having a total length of about 69', one (1) span over the four (4) railroad tracks having two (2) steel girders, 16'-6" on centers, coated with gunite, about 97' in length and the south approach consisting of thirteen (13) spans having reinforced concrete T-girders, 16'-6" on centers, totaling about 512' in length. The entire length of the viaduct, abutment to abutment, is about 678' in length. The bridge supports a 20' roadway between curbs with a 5' sidewalk on the west side of the bridge. The bridge deck consists of a reinforced concrete slab varying in thickness from 12" to 15" with a roadway surface consisting of brick paving.

Reinforced concrete piers and abutments support the spans.

The inspection revealed the following conditions:

The concrete deterioration is divided into two types:

Type A - where reinforcing bars are partially exposed - generally 1" to 2" depth of concrete destroyed (spalling).

Type B - where reinforcing bars are fully exposed - generally a minimum of 4" depth of concrete destroyed (spalling).

Note: Numbers in brackets [ ] represent photograph numbers showing typical conditions.

Approaches

Both the north and south roadway approaches are in good condition.

Bridge Surface

The roadway surface consists of brick paving.[1] The roadway surface is in fair condition except for an area at Pier 2 where there is a noticeable dip in the roadway surface. The roadway curbs are in very poor condition[2] and in many places they are non-existent. Since the roadway surface consists of brick and there is no sealant between them or at the curbs water along with deicing agents is allowed to drain down to the concrete deck and other members below.

Sidewalk

New on span 14, spalling and pitted elsewhere.[3]

Piers

Pier 1 - Both columns have Type A deterioration. The column caps have Type A deterioration, are soft and hollow in spots. The pier cross-strut has Type B deterioration across the top of the member. The reinforcing bars in this area are loose and broken, with the concrete soft, hollow and disintegrating.

Pier 2 - Both columns have Type A deterioration. The column caps have Type A deterioration, are soft and hollow in spots.[4] The pier cross-strut has Type A deterioration across the top of the member.

Pier 3, and 4 - East column Type A deterioration in area of column cap. West column Type A deterioration from mid height to column cap. The column caps are soft and hollow in many spots with Type A deterioration. The pier cross-strut has Type B deterioration across the top of the member.[5] The top one-third of the strut is soft and hollow.

Pier 5 - Both columns have Type A deterioration for the top one half of their height. The column caps have Type A deterioration and in spots are soft and disintegrating. The pier cross-strut has Type B deterioration across the top of the member. The top one-quarter of the strut is soft and hollow.

Pier 6 - Both columns have Type A deterioration for the top one-fourth of their height. The column caps are soft and disintegrating with Type B deterioration. The pier cross-strut has Type A deterioration at the bottom of the strut.

Pier 7 - Both columns have Type B deterioration for the top one-half of their height.[6] No measurable reduction to the exposed reinforcing bars. The column caps are soft and disintegrating with Type B deterioration. The pier cross-strut has Type B deterioration at the west end along the top and bottom of the strut. The top reinforcing bars are exposed and broken in two. There is a crack through the strut at the west end running diagonally from mid depth, at the west end, to the bottom, at mid span.[7] The remainder of the strut is soft and disintegrating.

Pier 8 - Same as Pier 7 except for pier cross-strut where the crack is located at the east end.

Pier 9 - West column is soft, hollow, disintegrating with Type B deterioration for the top three-quarters of its height. The west column cap is soft and disintegrating with Type B deterioration. The east column cap has Type A deterioration in spots. The pier cross-strut has Type A deterioration at the west end on top. The remainder of the strut is soft and hollow.

Pier 10 - East column has Type B deterioration at top with 1" reinforcing bars reduced to 3/4" and 7/8" diameter. The west column has Type B deterioration for the top one-half of its height.[8] The concrete is soft and disintegrating with the reinforcing bars reduced to 3/4" diameter. The east side column cap has Type B deterioration with one half the bearing area disintegrated and the rest soft and hollow. The west side column cap is soft, hollow and disintegrating with Type B deterioration. The reinforcing tie bars in the cap are exposed with one half of them broken in two. The pier cross-strut has a diagonal crack running from the west column to mid span from the top to the bottom of the strut. The strut is soft and hollow with Type A deterioration.

Pier 11 - Both columns have Type B deterioration.[9] The deterioration is mainly on the outside face of the columns for the top one-half of their height. The concrete in this area is soft and hollow. The column caps are soft, hollow and disintegrating with Type B deterioration.[10] The pier cross-strut is soft along the top half of the member with Type A deterioration.

Pier 12 - Same as Pier 11.

Pier 13 - Columns, column caps and pier cross-strut are in good condition.

Pier 14 - Same as Pier 13.

Girders, Girder Cross-Struts and Deck Slab

Span 1 - Both girders showing signs of wear and age with hairline flexure cracks throughout the span. The deck slab showed signs of water seepage from above. The construction joint between span 1 and 2 is not sealed allowing water to drain from above on the members below. The girder cross-struts have Type B deterioration at the bottom of the strut. The strut also has a crack located 5' from the east girder running vertically from the top to the bottom of the strut. The reinforcing bars in the bottom of the strut are loose with many cut in two.

Span 2 - Both girders same as span 1. The deck slab has a few areas with Type A deterioration. The slab also showed signs of water seepage from above. The expansion joint between span 2 and 3 is not sealed allowing water to drain from above on the members below. The girder cross-struts have Type B deterioration along the bottom.[11]

Span 3, 4, 5, 6 and 7 - Same as above.

Span 8, 9, 10 and 13 - Both girders showing signs of wear and age with hairline flexure cracks throughout the span. Both girders in the area of the bearings are soft and showing signs of crushing. Both girders have spots throughout the span where they are hollow sounding. The deck slab is soft and hollow in many spots with water seepage from above very evident. The girder cross-struts are soft and disintegrating with Type B deterioration along the bottom of the struts.

Span 11 - Both girders showing signs of wear and age with hairline flexure cracks throughout the span.[12] Both girders in the area of the bearings are soft and showing signs of crushing. The east girder at Pier 10 is bearing on one-half of its original bearing area. The girder stirrups are exposed (no reduction) in four (4) locations between both the girders with several others beginning to become exposed. The girders were hollow sounding in spots throughout the span. The deck slab is soft and hollow throughout the span with water seepage very evident. A hole (15" x 18" x 6" deep) was located 18" from the west girder at mid span, exposing the reinforcing bars.[13] The girder cross-struts have Type B deterioration across the bottom of the struts.

Span 12 - Both girders showing signs of wear and age with hairline flexure cracks throughout the span. Both girders in the area of the bearing are soft and showing signs of crushing. The west girder for a length of 6' from the north end has Type B deterioration along the bottom. The adjacent 6' has Type A deterioration along the bottom. The east girder has two (2) small areas along its bottom with Type A deterioration. The deck slab is soft and hollow throughout the span with some Type A deterioration. Water seepage through the slab was evident. The girder cross-struts have Type B deterioration along the bottom.

Span 14 - Girders, cross and lateral bracing (all gunite coated) are in good condition.[14] In the areas where the steel members were exposed, no appreciable reduction was found. The deck slab had areas with Type A deterioration, especially at the construction and expansion joints in the slab. Water seepage evident particularly at these joints.

South Abutment

The abutment and bridge seat are in good condition. The outside support bracket on the west side has a diagonal crack in it, running from the outside towards the girder from top to bottom. This west portion of the abutment (outside the bearing area of the west girder) is not seated on the ground.

Miscellaneous

Most sidewalk support brackets located at every pier have Type B deterioration along the sloping face of the member.[15] At every joint (both construction and expansion) in the deck slab there is a separation allowing water to drain to the members below. The walkway stairs are in good condition.

Conclusions

The above described deterioration of the sidewalk, deck slab, girders, cross-struts, pier columns and caps is for the most part caused by water (along with deicing agents) draining on them. This deterioration was accelerated when water on the roadway surface was allowed to drain through the mortar joints in the brick paving and be caught in the layer of sand below. This water eventually made its way to the various structural members below causing their deterioration. Along with the above described causes are the age of

the bridge, wear and lack of maintenance. The overall condition of the bridge is poor to fair.

Recommendations

Based on our computations the inventory rating of the bridge is H-16 and since the bridge has been carrying normal traffic (posted vehicle load limit - 16 ton at 10 M.P.H. max. speed) for an appreciable length of time there is no need to restrict the posted loading. However, the bridge should be inspected at frequent intervals for any signs of distress which may develop. With the bridge being nearly 60 years old and to repair the deteriorated members described above would be expensive, it is recommended that studies be done (by others) for the replacement of this structure.

31 29 27 25 23 21 19 17
32 30 28 26 24 22 20 18

G98 Top Derrick stone.

G99.5

G99.7

G92 Pool

G82 Limit of Dredging ?

PROFILE
Scale Horz 1"=40'
Vert 1"=20'

OLD BEAVER ROAD

Dept of Public Works - All
Specifications for Bridge
of Oct 1, 1924.

Loading -
Slab - 18 ton trucks
Girders - Train of 18
in both directions
Axles spaced 14'0"
Wheels " 6'3"
26,000# on rear ax.

LEGEND
○ INDICATES PIER No's
△ INDICATES SPAN No's

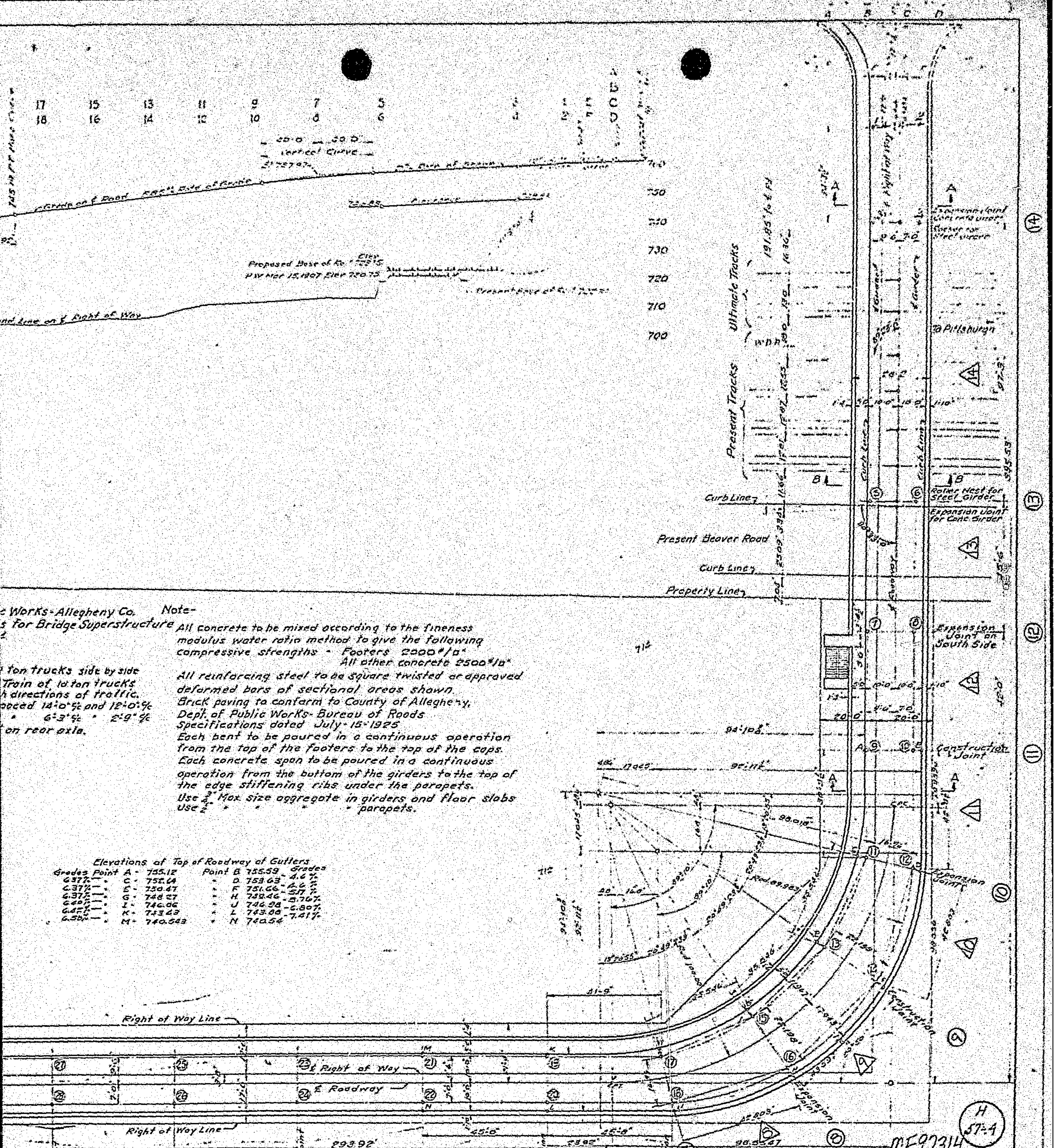
U.S. HARBOR LINE

DERRICK STONE

RIPRAP.

45'-0"

45'-0"



c Works - Allegheny Co.
s for Bridge Superstructure

ton trucks side by side
Train of 10 ton trucks
h directions of traffic.
paced 14'-0" c/c and 12'-0" c/c
" 6'-3" c/c " 2'-9" c/c
on rear axle.

Note-

All concrete to be mixed according to the fineness modulus water ratio method to give the following compressive strengths - Footers 2000#/□"
All other concrete 2500#/□"

All reinforcing steel to be square twisted or approved deformed bars of sectional areas shown.

Brick paving to conform to County of Allegheny, Dept. of Public Works - Bureau of Roads Specifications dated July - 15 - 1925

Each bent to be poured in a continuous operation from the top of the footers to the top of the caps.

Each concrete span to be poured in a continuous operation from the bottom of the girders to the top of the edge stiffening ribs under the parapets.

Use 3/4" Max size aggregate in girders and floor slabs
Use 1/2" " " " " parapets.

Elevations of Top of Roadway at Gutters

Grades	Point	Elevation	Point	Elevation	Grades
	A	755.12	B	755.59	
6.37%	C	752.64	D	753.63	4.6%
6.37%	E	750.47	F	751.66	4.6%
6.37%	G	748.27	H	749.46	5.17%
6.40%	I	746.06	J	746.98	5.76%
6.47%	K	743.43	L	743.86	6.80%
6.50%	M	740.543	N	740.54	7.41%

LOCATION PLAN

Correct as built
[signature]
Engineer in charge

Approved June 21st 1926
[signature]
Engineer of Bridges and Buildings

REVISIONS
This sheet takes the place of Sheet-1 7-13-26
Change of Grade 6-20-26
Expansion Joint at Bent 7-8 11-19-26
Retaining wall added & N. End of Viaduct extended.
Revised as built Nov. 1927

PENNSYLVANIA RAILROAD
CENTRAL REGION EASTERN DIVN
DIXMONT-GLENFIELD, PA.
GRADE CROSSING ELIMINATION
GLENFIELD VIADUCT
Scale 1" = 20' Unless Noted June 15, 1926
Office of Asst. Chief Engr. Pittsburgh, Pa
Nº 21453
Sheet 1 of 11

7

BY JHL DATE [illegible] SUBJECT [illegible] SHEET NO. [illegible] OF
CHKD. BY [illegible] DATE 1/19/92 [illegible] JOB NO.
RATING W.O. [illegible]

STEEL GIRDERS

$d = 118.25$ (EAST GIRDER B)

	G1		AREA	Y	I_o
1	T/COV. PL	20 × 5/8	12.5	58.8125	0.407
2	T/COV. PL	20 × 5/8	12.5	58.1875	0.407
3	T/COV. PL	20 × 5/8	12.5	57.5625	0.407
4	T/FLG L's	2 - 8 × 6 × 3/4	19.9	55.69	61.4
5	T/L's	3½ × 3½ × ½	5.5	36.925	6.48
6	WEB PL	114 × ½	57.0	0.00	61731
7	B/FLG L's	2 - 8 × 6 × 3/4	19.9	- 55.69	61.4
	B/COV. PL	20 × 5/8	12.5	- 57.5625	0.407
	B/COV. PL	20 × 5/8	12.5	- 58.1875	0.407
	B/COV. PL	20 × 5/8	12.5	- 58.8125	0.407
	RIVET HOLE	15/16 φ × ½	-0.469	-4.875	-0.034
	"	"	-0.469	-9.750	-0.034
	"	"	-0.469	-14.25	-0.034
	"	"	-0.469	-18.75	-0.034
	"	"	-0.469	-23.25	-0.034
	"	"	-0.469	-26.75	-0.034
	"	"	-0.469	-30.25	-0.034
	"	"	-0.469	-34.25	-0.034
	"	"	-0.469	-38.25	-0.034
	"	"	-0.469	-42.25	-0.034
	"	"	-0.469	-46.25	-0.034
22	"	15/16 φ × ½	-0.469	-49.50	-0.034
23	"	15/16 φ × 2	-1.875	-54.875	-0.137
24	"	2×[15/16 φ × 2 5/8]	-4.922	-57.8125	-2.826

AREA (TOTAL) = 164.88 □"
$y_{c.g.}$ = 4.54"
I = 415684.97 IN^4

S_T $(FT\text{-}IN^2)$ = 634.66
S_B $(FT\text{-}IN^2)$ = 514.07

$WT/FT = \frac{164.88}{144}(490) = 560 \#/'$

BY ..... DATE ..... SUBJECT ..... SHEET NO. ..... OF .....

CHKD. BY ..... DATE ..... JOB NO. .....

STEEL GIRDERS

(WEST GIRDER-A)

$d = 119.00$

	G2	Area	Y	I_o
1	T/Cov PL 20 × 3/4	15.0	59.125	0.703
2	T/Cov PL 20 × 3/4	15.0	58.375	0.703
3	T/Cov PL 20 × 3/4	15.0	57.625	0.703
4	T/Flg L's 2 - 8×6×3/4	19.9	55.69	61.4
5	T/2L's 3½×2½×½	5.5	36.925	6.48
6	WEB PL 114×½	57.0	0.00	61731
7	B/Flg L's 2 - 8×6×3/4	19.9	- 55.69	61.4
8	B/Cov PL 20 × 3/4	15.0	- 57.625	0.703
9	B/Cov PL 20 × 3/4	15.0	- 58.375	0.703
10	B/Cov PL 20 × 3/4	15.0	- 59.125	0.703
11	RIVET HOLE 15/16ϕ × ½	- 0.469	- 4.875	- 0.039
12	" "	- 0.469	- 9.75	- 0.039
13	" "	- 0.469	- 14.25	- 0.039
14	" "	- 0.469	- 18.75	- 0.039
15	" "	- 0.469	- 23.25	- 0.039
16	" "	- 0.469	- 26.75	- 0.039
17	" "	- 0.469	- 30.25	- 0.039
18	" "	- 0.469	- 34.25	- 0.039
19	" "	- 0.469	- 38.25	- 0.039
20	" "	- 0.469	- 42.25	- 0.039
21	" "	- 0.469	- 46.25	- 0.039
22	" "	- 0.469	- 49.50	- 0.039
23	" 15/16ϕ × 2	- 1.875	- 54.875	- 0.137
24	" 2 [15/16 × 3]	- 5.625	- 58.00	- 4.219

AREA (TOTAL) = 179.17 □"

$\bar{y}$ C.G = 4.41"

I = 465894.82 IN⁴

S_T (FT-IN²) = 704.80

S_B (FT-IN²) = 607.45

$WT/FT = \frac{179.17}{144}(490) = 610\ \#/'$

BY ..... DATE ..... SUBJECT ..... SHEET NO. ..... OF .....

CHKD. BY ..... DATE .....

DEAD LOAD REACTIONS ON GIRDERS FROM DECKING

MOMENTS ARE TAKEN ABOUT ℄ BETWEEN ℄'s DECKS

ITEM	WT	ARM	MOM
2 RAILINGS — $2 \times 3.5\square \times {}^{8}/_{12} \times 150$	712#	+1.00'	+712 FT-#
ROADWAY SLAB FROM TOP TO TOP OF SLAB — $20 \times 1.374 \times 150$	4122#	−1.25'	−5153
BASE OF RAILING (RIGHT) $1.83 \times 2.10 \times 150$	576	−12.17'	−7015
BASE OF RAILING (LEFT) $1.59 \times 2.10 \times 150$	473	+14.33'	+6771
SIDEWALK SLAB ${}^{4}/_{12} \times 3.83 \times 150$	192	+11.66'	+2233
SLAB UNDER SIDEWALK ${}^{12}/_{12} \times 3.83 \times 150$	575	+11.66'	+6700
CURB (LEFT) TO BOT OF SLAB $2.06 \times 1 \times 150$	309	+9.75'	+2758
	6959#	+1.02'	+7106 FT-#

∴ LOAD ON GIRDERS

$= {}^{6959}/_{2} = 3480\#$ ± ALONG ℄

GIRDERS 16.5' ON CTRS.

$7106 / 16.5 = 430\#$

∴ GIRDER (WEST) $= 3480 + 430 = 3910\#/'$

GIRDER (EAST) $= 3480 - 430 = 3050\#/'$

CONCRETE GIRDER DEAD LOADS

GIRDER A (WEST) $= 2.5' \times 4.6' \times 150 = 1725\#/'$

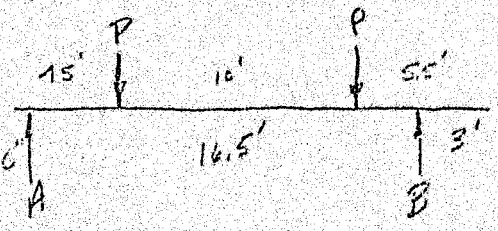
GIRDER B (EAST) $= 2.75' \times 5.6' \times 150 = 2310\#/'$

BY ..... DATE ..... SUBJECT ..... SHEET NO. ..... OF .....

CHKD. BY ..... DATE ..... JOB NO. .....

LIVE LOAD DISTRIBUTION ON GIRDER

✳ LOADS POSITIONED FOR MAX ON GIRDER A (WEST) ✳



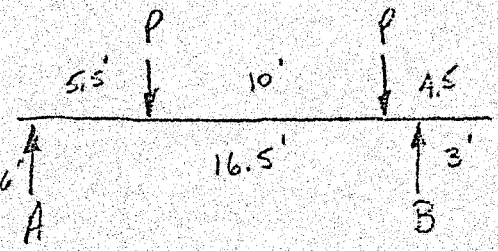
$\Sigma M_A = 0$

$$40P + 14.0P = 16.5B$$

$$\frac{18}{16.5}P = B = 1.09P$$

$$\therefore A = 0.91P \quad \text{MAX.} \longleftarrow$$

✳ LOADS POSITIONED FOR MAX ON GIRDER B (EAST) ✳



$\Sigma M_A = 0$

$$5.0P + 15.0P = 16.5B$$

$$\frac{20}{16.5}P = B = 1.21P \quad \text{MAX.} \longleftarrow$$

$$\therefore A = 0.79P$$

RATING

MOMENTS & SHEARS

DEAD LOAD ON GIRDERS (CONCRETE)

GIRDER A (WEST)

3910 #/'
1725 #/'
5635 #/' = w_{DL}

GIRDER B (EAST)

3050 #/'
2310 #/'
5360 #/' = w_{DL}

SPAN LENGTH = 45'-0"

GIRDER A (WEST)

$M_{DL} = \frac{5.635(45)^2}{8} = 1427$ FT-K

$V_{DL} = 5.635(45)/2 = 127^K$

GIRDER B (EAST)

$M_{DL} = 5.360(45)^2/8 = 1357$ FT-K

$V_{DL} = 5.360(45)/2 = 121^K$

IMPACT

$I.F. = \frac{50}{L+125} = \frac{50}{45+125} = 29.4\%$

LIVE LOAD ON GIRDERS (CONCRETE)

GIRDER A (WEST)

MOMENTS & SHEARS FROM AASHTO APP. A FOR H15 LOADING

$M_{LL} = 296.8 \times 1.294 \times 0.91 = 349.5$ FT-K

$V_{LL} = 30.3 \times 1.294 \times 0.91 = 35.7^K$

GIRDER B (EAST)

$M_{LL} = 296.8 \times 1.294 \times 1.21 = 464.7$ FT-K

$V_{LL} = 30.3 \times 1.294 \times 1.21 = 47.4^K$

BY ..... DATE ..... SUBJECT ..... SHEET NO. ..... OF .....
CHKD. BY ..... DATE ..... JOB NO. .....

GIRDERS (CONCRETE) CAPACITIES

MOMENT

$n = 15$
$f_c = 1300$ psi
$f_s = 18000$ psi

EFFECTIVE FLANGE WIDTH
WEST GIRDER = 11.25'
EAST GIRDER = 5.625' + 4.833' = 10.46'

STEEL AREAS
WEST GIRDER = $18 \cdot (1.175)^2 = 22.7813\square''$ $d = 62.25'$
EAST GIRDER = $20 \cdot (1.125)^2 = 25.3125\square''$ $d = 62.25'$

FIND NEUTRAL AXIS:

WEST GIRDER

$$\frac{2.5x^2}{2} + 8.75\left(\frac{11.5}{12}\right)(x - 0.48) = \frac{15}{144}(22.7813)\left(\frac{62.25}{12} - x\right)$$

$$1.25x^2 + 8.40x - 4.03 = -2.37x + 12.31$$

$$1.25x^2 + 10.77x = 16.34$$

$$x = 1.32' = 15.84''$$

$$I_t = 8.75\,(.96)^3/12 + 8.75(.96)(1.32 - .48)^2$$

$$0.645 + 5.93 = \underline{6.575\ ft^4}$$

$$I_{RECT} = 2.5\,(1.32)^3/12 + 2.5(1.32)\left(\frac{1.32}{2}\right)^2$$

$$0.48 + 1.44 = \underline{1.92\ ft^4}$$

$$I_{STEEL} = 15\,(22.7813)/144\left(\frac{62.25}{12} - 1.32\right)^2 = \underline{35.5\ ft^4}$$

$I_{TOTAL} = 6.575 + 1.92 + 35.5 = 44.0\ FT^4$

$\therefore S_{TOP} = \frac{44.0}{1.32} = 33.33\ FT^3$

$S_{BOT} = \frac{44.0}{\left(\frac{67.25}{12} - 1.32\right)} = 11.38\ FT^3$

$\therefore M_{TOP} = 33.33 \times 1.3 \times 144 = 6240\ FT\text{-}K$

$M_{BOT} = 11.38 \times 1.3 \times 144 = 2130\ FT\text{-}K$

$\therefore M_{CAP} = 2130\ FT\text{-}K \quad (WEST\ GIRDER)$

EAST GIRDER

$$\frac{2.5x^2}{2} + 7.96(.96)(x - .48) = \frac{15}{144}(25.3125)\left[\frac{67.25}{12} - x\right]$$

$$1.25x^2 + 7.64x - 3.67 = -2.64x + 13.68$$

$$1.25x^2 + 10.28x = 17.35$$

$$x = 1.44' = 17.28''$$

$I_F = 7.96(.96)^3/12 + 7.96(.96)(1.44 - .48)^2 = 7.63\ FT^4$

$I_{RECT} = 2.5(1.44)^3/12 + 2.5(1.44)\left(\frac{1.44}{2}\right)^2 = 2.49\ FT^4$

$I_{STEEL} = \frac{15}{144}(25.3125)\left(\frac{67.25}{12} - 1.44\right)^2 = 37.03\ FT^4$

$I_{TOTAL} = 7.63 + 2.49 + 37.03 = 47.15\ FT^4$

$\therefore S_{TOP} = \frac{47.15}{1.44} = 32.74 \text{ FT}^3$

$S_{BOT} = \frac{47.15}{\left(\frac{(23.5)^3}{12} - 1.44\right)} = 12.58 \text{ FT}^3$

$\therefore M_{TOP} = 32.74 \times 1.3 \times 144 = 6129 \text{ FT-K}$

$M_{BOT} = 12.58 \times 1.3 \times 144 = 2355 \text{ FT-K}$ ←

$\therefore M_{CAP} = 2355 \text{ FT-K}$ (EAST GIRDER)

WEST GIRDER

$M_{LL_{AVAIL}} = M_{CAP} - M_{DL}$

$= 2130 - 1427$

$= 703 \text{ FT-K}$

EAST GIRDER

$= 2355 - 1357$

$= 998 \text{ FT-K}$

FROM SHEET 5 M_{LL} (H-15)

$\therefore$ RATING

$\frac{703}{349.5}(15) = \underline{H30}$

$\frac{998}{464.7}(15) = \underline{H32}$

$\therefore$ THE CONCRETE GIRDERS RATE IN EXCESS OF THE 16TH POSTED LIMIT IN MOMENT

SHEAR

THE MAX. SHEAR STRESS IS TAKEN AT A DISTANCE EQUAL TO THE EFFECTIVE DEPTH FROM THE FACE OF THE SUPPORT.

$\therefore$ DISTANCE $(X) = 62.25 + 18 = 80.25'' = \underline{6.69'}$

$\therefore$ THE DEAD LOAD SHEAR AT THIS POINT IS

WEST GIRDER

$V_x = w\left(\frac{L}{2} - x\right)$

$= 5.635\left[\frac{45}{2} - 6.69\right]$

$V_x = 89.1^K$

EAST GIRDER

$V_x = w\left(\frac{L}{2} - x\right)$

$= 5.36\left[\frac{45}{2} - 6.69\right]$

$V_x = 84.8^K$

$V_{CAPACITY} = \frac{A_v f_y d}{s} = \frac{[10 \times 0.20]\ 18 \times 62.25}{14} = 160^K$

$V_{LL_{AVAIL}} = V_{CAP} - V_{DL}$

$= 160 - 89.1$

$V_{LL_{AVAIL}} = 70.9^K$

$V_{LL_{AVAIL}} = V_{CAP} - V_{DL}$

$= 160 - 84.8$

$V_{LL_{AVAIL}} = 75.2^K$

SHEAR$_{LL}$ FOR H15 LOADING FROM SHEET 5

$\therefore$ RATING

$\frac{70.9}{35.7}(H15) = \underline{H29}$

$\frac{75.2}{47.4}(15) = \underline{H23}$

$\therefore$ THE CONCRETE GIRDERS RATE IN EXCESS OF THE 16TON POSTED LOAD LIMIT.

BY ..... DATE ..... SUBJECT ..... SHEET NO. 1 OF .....
CHKD. BY ..... DATE ..... JOB NO. .....

STEEL GIRDERS

97'-3" c-c BRGS.
16'-6" c-c GIRDERS

IMPACT - I.F. $= \frac{50}{L+125} = \frac{50}{97.25+125} = 22.5\%$

LIVE LOAD DISTRIBUTIONS AND DEAD LOADS ON GIRDER SAME AS PREVIOUSLY CALCULATED.

UNIFORM DEAD LOADS

GIRDER A (WEST)

$w = 3.910^{K}/_{L}$
$w = 0.610^{K}/_{L}$
$\} w_{DL} = 4.520^{K}/_{L}$

$M_{DL} = \frac{4.52(97.25)^2}{8} = 5394 FT-K$

$V_{DL} = \frac{4.52(97.25)}{2} = 220^{K}$

GIRDER B (EAST)

$w = 3.050^{K}/_{L}$
$w = 0.560^{K}/_{L}$
$\} w_{DL} = 3.610^{K}/_{L}$

$M_{DL} = \frac{3.61(97.25)^2}{8} = 4268 FT-K$

$V_{DL} = \frac{3.61(97.25)}{2} = 176.^{K}$

LIVE LOADS

FROM AASHTO ART. A FOR H15 LOADING

MOMENT (LL) = 896 FT-K
SHEAR (LL) = 42.84 K

$M_{LL} = 896 \times 1.225 \times 0.91 = 999 FT-K$

$V_{LL} = 42.84 \times 1.225 \times 0.91 = 47.8^{K}$

$M_{LL} = 896 \times 1.225 \times 1.21 = 1328 FT-K$

$V_{LL} = 42.84 \times 1.225 \times 1.21 = 63.5^{K}$

BY ..... DATE ..... SUBJECT ..... SHEET NO. ..... OF .....

CHKD. BY MS DATE .... JOB NO. .....

RATING

FROM SHEETS 1 & 2

GIRDER A (WEST)

$S_{PROVIDED} = 607.95 \times 12 = 7291.4\ IN^3$

$M_{CAPACITY} = 7287.4 \times 16/12 = 9719.2\ FT\text{-}K$

$M_{DL} = 5394\ FT\text{-}K$

$M_{AVAIL_{LL}} = 4375.2\ FT\text{-}K$

$M_{LL_{HIS}} = 999\ FT\text{-}K$

GIRDER B (EAST)

$S_{PROV} = 544.07 \times 12 = 6528.84\ IN^3$

$M_{CAP} = 6528.84 \times 16/12 = 8705.12\ FT\text{-}K$

$M_{DL} = 4268\ FT\text{-}K$

$M_{AVAIL_{LL}} = 4437.12\ FT\text{-}K$

$M_{LL_{HIS}} = 1328\ FT\text{-}K$

∴ RATING

$\frac{4375.2}{999}(HIS) = H65$

$\frac{4437.12}{1328}(HIS) = H50$ ←

∴ STEEL GIRDERS IN MOMENT RATE IN EXCESS OF POSTED LOAD LIMIT (16 TONS)

FROM SHEETS 1 & 2

$A_{WEB_{PROV}} = 57.0 - 27(0.469)\ (\text{RIVET HOLES}) = 44.337\ \square''$ $\quad f_{v_{ALLOW}} = 9.5\ KSI$

GIRDER A (WEST)

$V_{PROV(CAP)} = 44.337 \times 9.5 = 421.2^K$

$V_{DL} = 220^K$

$V_{AVAIL_{LL}} = 201.2^K$

$V_{LL_{HIS}} = 47.8^K$

GIRDER B (EAST)

$V_{CAP} = 421.2^K$

$V_{DL} = 176^K$

$V_{AVAIL_{LL}} = 245.2^K$

$V_{LL_{HIS}} = 63.5^K$

∴ RATING

$\frac{201.2}{47.8}(HIS) = H63$

$\frac{245.2}{63.5}(HIS) = H58$ ←

∴ THE STEEL GIRDERS IN SHEAR RATE IN EXCESS OF THE POSTED LOAD LIMIT (16 TONS)

BY ... DATE ... SUBJECT ... SHEET NO. ... OF ...
CHKD. BY ... DATE ... JOB NO. ...

CONCRETE DECK

* FOR DECK BETWEEN CONCRETE GIRDERS *

SPAN LENGTH = CLEAR SPAN

$= 16.5 - 2.5 = 14.0'$

∴ SPAN LENGTH = 14.0'

$IMPACT - I.F. = \frac{50}{L+125} = \frac{50}{14+125} = 36\% > 30\%$ ∴ USE 30%

MAIN REINFORCEMENT PERPENDICULAR TO TRAFFIC

FROM MANUAL FOR MAINTENANCE INSPECTION OF BRIDGES (1978) ART. 5.3.3 (p. 34)

$E = 0.45 + 3.75 \Rightarrow 0.4(14) + 3.75 = 9.35$

$M_{HS} = 0.25\left[\frac{P}{E}\right]S = 0.25\left[\frac{(12 \times 1.8)}{9.35}\right](14) = 5.84$ FT-K

$w_{DL} = \frac{11.5}{12}(150)_{CONC.} + \frac{3/4}{12}(120)_{A.C.} + \frac{4}{12}(120)_{BRICK} = 190\#/\square' = 0.190^K/\square'$

$M_{DL} = \frac{w\ell^2}{8} = \frac{.190(14)^2}{8} = 4.655$ FT-K/FT. WIDTH

$A_{S_{PROV}}$ = #5 REBAR @ 4½" $A_{S/FOOT}$ = 0.3068 □"

$A_{S_{PROV'D\ STEEL}} = 0.3068\left[\frac{12}{4.5}\right] = 0.8181\square''$

$A_{S_{REQ'D}} = \frac{M}{Ad}$ $\begin{cases} M = \text{FT-K} \\ a = 1.29 \text{ ... } f_c = 2500 \\ d = 12 - 1.5 = 10.5'' \end{cases}$

RATING:

$$A_{s_{DL\ REQ'D}} = \frac{M_{DL}}{a\,d} = \frac{4.655}{(1.29)(10.5)} = 0.344\ \square''$$

$$A_{s_{AVAIL_{LL}}} = 0.8181 - 0.344 = 0.4741\ \square''$$

$$A_{s_{LL_{HS}\ REQ'D}} = \frac{M_{LL_{HS}}}{a\,d} = \frac{5.84}{(1.29)(10.5)} = 0.431\ \square''$$

∴ RATING

$$\frac{0.4741}{0.431}(HS) = \underline{HS16.5}$$

* FOR DECK BETWEEN STEEL GIRDERS * HAUNCHES

SPAN LENGTH (S) = $16.5' - 2(1.54) = 13.42' < 14'$ USE

IMPACT = 30%

$$M_{DL} = .19(14')^2/8 = 4.655\ \text{FT-K}$$

$$A_{s_{REQ}} = 0.8181\ \square''$$

$$M_{LL_{HS}} = 0.25\left[\frac{(12+1.3)}{104(14)+.375}\right]14 = 5.84\ \text{FT-K}$$

$$A_{s_{DL\ REQ'D}} = \frac{4.655}{1.29(10.5)} = 0.344\ \square''$$

$$A_{s_{AVAIL_{LL}}} = 0.8181 - 0.344 = 0.4741\ \square''$$

$$A_{s_{LL_{HS}}} = \frac{5.84}{1.29(10.5)} = 0.431\ \square''$$

∴ RATING $= \frac{0.4741}{0.431}(HS) = \underline{HS16.5}$

BY KAL DATE 11-21-71 SUBJECT [illegible] SHEET NO. 1 OF [illegible]

CHKD. BY MF DATE [illegible] JOB NO. [illegible]

SUMMARY

	RATING	
	MOMENT	SHEAR
GIRDERS:		
REINFORCED CONCRETE	H 30	H 23
STEEL	H 50	H 58
DECK	H 16	—

O.H. Bridge No. 9.22
Glenfield Viaduct

List of Photographs

Number	Description
1	Span 14 - over tracks - looking north
2	Span 11 - looking north
3	South end
4	Pier 2 - east side
5	Pier 3 - looking east
6	Span 7 - west side
7	Pier 7 - looking north
8	Pier 10 - west column - looking north
9	Pier 11 - looking north
10	Pier 11 - looking east
11	Pier 3 - looking north
12	Span 11 - west side
13	Span 11 - looking south
14	Span 14 - west side
15	Piers 3,4 and 5 - east side

OVERSIZE DOCUMENT(S)

O.H. Bridge No. 9.22
Glenfield Viaduct

List of Photographs

NUMBER #1 TO 15

OA-501 12-67

COMMONWEALTH OF PENNSYLVANIA

February 17, 1982

MONITOR: Commissioner Taliaferro

SUBJECT: C-80092154

TO: Barry Grossman
Law Bureau, Rail Division

FROM: R. A. Peteritas, Director
Bureau of Rail Transportation

Glenfield Borough
v.
Consolidated Rail Corporation, et al.

Conrail should be asked to supply additional information and perhaps modify, or at least improve the language in its recent report, unless the descriptions of conditions are entirely accurate, in which case its conclusions and recommendations are suspect.

Note the following suggested inquiries:

1. Please complete a structure inventory and appraisal form as required by Paragraph No. 1 in the order adopted May 29, 1981. Contact County of Allegheny for guidance in this endeavor.

2. Please expand your load capacity rating analysis calculations to show the maximum rated loading using an HS-type vehicle.

3. Please supply an estimate of the cost of repairs to rehabilitate the existing structure.

4. Please review the terms such as "soft and hollow", "soft and disintegrating", "bars are loose and broken", "bars ***** broken in two", and "bars ***** cut in two" used in the report and determine whether these are true descriptions of the conditions of the structure and whether these conditions materially affect the strength of that component of the structure.

5. Please explain the difference of the effect of Types A and B concrete deterioration on the strength of structure components.

6. Please explain the effect of Type B deterioration for considerable portion of the height of Piers 7, 8 and 9.

7. Please explain the effect of Type B deterioration and reinforcing bar reduction in Pier 10.

8. Please explain the effect of crack through the strut at Piers 7, 8 and 10.

C-80092154

Borough of Glenfield

105 RIVER ROAD, GLENFIELD, SEWICKLEY, PA 15143

April 27, 1982

Mr. Jerry Rich, Secretary
Pennsylvania PUC
PO Box 3265
Harrisburg, PA 17120

Dear Mr. Rich:

THE WELFARE OF OUR COMMUNITY IS IN YOUR HANDS! Last year a hearing was held before the Pennsylvania Public Utility Commission concerning the Glenfield Viaduct in my community of Glenfield Pennsylvania. It was determined by the commission that the viaduct needed either repaired or replaced, and that Allegheny County and the Conrail System would be responsible for this action. Since then, we have been quietly, patiently waiting for the PUC to move forward; to stand firm in its ruling; to do its job and help us in our desparate situation.

BUT, NO ACTION HAS BEEN TAKEN! Once again, it seems that the wheels of government cease to turn when it comes time to help a small community, a small community with little political power. I'm asking you not only as the mayor of the Borough of Glenfield, but also as a citizen of this commonwealth, to review our situation, the PUC ruling, and to then press onward to achieve some definitive action immediately. We have lived on promises to long. NOW IS THE TIME FOR ACTION.

Please help us,

Paul F. Hauser
Mayor
Borough of Glenfield

Borough of Glenfield

105 RIVER ROAD, GLENFIELD, SEWICKLEY, PA 15143

June 26, 1982

Commission Chairperson
Pennsylvania Public
Utilities Commission
PO Box 3265
Harrisburg, PA 17120

Dear chairperson:

On April 15, 1981 a copy of the initial decision of Administrative Law Judge Michael A Nemec was mailed to the Glenfield Borough Solicitor from William P. Thierfelder, secretary for the Pennslyvania Public Utilities Commission. Judge Nemec ruled that Consolidated Rail Corporation and the County of Allegheny are to repair or replace a decaying viaduct in our community. But, no aciton has followed. Numerous attempts to obtain any information into the delays, by contacting the PUC, have received no reply. Surely, something vital to the reconstruction of a borough devasted by the construction of major state and federal highways through its heart merits a response to at least one inquiry.

As each day slips away, no action is forthcoming. Each day the monument of shedding concrete slabs and rusting steel support beams comes closer to its collapse. We cannot afford delay in solving this problem.

The Borough of Glenfield, like all other communities, is facing hard times; our tax base is declining severely. Unlike other communities, inquiries abound as to the possibility of locating various businesses in our borough. But, all inquiries must be turned away, for our viaduct cannot accomadate them.

Definite action is needed immediately. Please refer to your file C-80092154 and review our case. Please try your best to help us. Thank you.

Sincerely,

Paul F. Hauser

Paul F. Hauser
Mayor
Borough of Glenfield

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P. O. BOX 3265, HARRISBURG, Pa. 17120

July 7, 1982

IN REPLY PLEASE REFER TO OUR FILE

Monitor - Commissioner Taliaferro

C-80092154

see attached list

Glenfield Borough
v.
Consolidated Rail Corporation, Penn Central Transportation Company, Allegheny County and Pennsylvania Department of Transportation

N O T I C E

By order adopted May 29, 1981, Consolidated Rail Corporation was directed to perform an engineering evaluation of the subject structure, the Glenfield Viaduct, for the purpose of either rehabilitation or replacement.

A further hearing to receive this report and to determine what work should be done will be held Tuesday, August 24, 1982, at 10:00 a.m., in the Sixth Floor Hearing Room, Buhl Building, 204 Fifth Avenue, Pittsburgh.

We are enclosing herewith, a list of questions prepared by our Bureau of Transportation, indicating information to be developed at the hearing, along with other relevant testimony.

If any party intends to offer prepared written testimony, such testimony must be served upon each participant of record no less than seven (7) days prior to this hearing.

You are advised that if you fail to appear at the hearing, the hearing will proceed without you. In that event, it is possible that you or your client will have issues determined against you and that you might be assigned positive duties or be required to pay money and will have waived any objection thereto.

The presiding officer in this proceeding is Administrative Law Judge Michael A. Nemec, Third Floor, Buhl Building, 204 Fifth Avenue, Pittsburgh, Pennsylvania 15222; telephone (412) 565-3550.

If you intend to file exhibits, please be advised that three copies of all hearing exhibits to be presented into evidence must be submitted to the reporter and an additional copy should be furnished to the presiding officer and each party of record.

William R. Shane
Chief Administrative Law Judge

ccs: Judge Nemec, Law Bureau, Bureau Rail Transportation, Mr. Bramson, Ms. Lawrence, Ms. Crouse, File

Enclosure

C-80092154 - Parties of Record:

Albert G. Feczko, Jr., Esquire
Feczko and Seymour
800 Lawyers Building
Pittsburgh, Pennsylvania 15219
(for Borough of Glenfield)

Ward T. Williams, Chief Counsel
Pennsylvania Department of Transportation
521 Transportation & Safety Building
Harrisburg, Pennsylvania 17120

Sheldon L. Keyser, Assistant Solicitor
County of Allegheny
1200 Allegheny Building
429 Forbes Avenue
Pittsburgh, Pennsylvania 15219

Joel E. Mazor, Commerce Counsel
Consolidated Rail Corporation
1138 Six Penn Center Plaza
Philadelphia, Pennsylvania 19104

Carl Helmetag, Jr., General Counsel
The Penn Central Transportation Company
Suite 3100, IVB Building
1700 Market Street
Philadelphia, Pennsylvania 19103

Barry Grossman, Assistant Counsel
Pa. P.U.C., Law Bureau
P. O. Box 3265
Harrisburg, Pennsylvania 17120

Parties in Interest:

Michael F. Marmo, Municipal
Services Representative
County of Allegheny
100 Fort Pitt Commons
445 Fort Pitt Boulevard
Pittsburgh, Pennsylvania 15219

Honorable Paul F. Hauser, Mayor
Borough of Glenfield
105 River Road
Sewickley, Pennsylvania 15143

DOCKET NO. C-80092154

CASE NAME Glenfield Borough vs.
Consolidated Rail Corporation, et al.

HEARING LOCATION Pittsburgh, PA.

HEARING DATE August 24, 1982

ALJ Nemec

HEARING REPORT

CHECK THOSE BLOCKS WHICH APPLY:

Hearing concluded ✓

Record Closed

Briefs to be filed

Further hearing Undetermined

Estimated add'l days

BENCH DECISION

REMARKS:

Names and addresses of parties or counsel of record
Please Print Clearly
Incomplete Information May Result in Delay of Process

NAME	ADDRESS	APPEARING FOR
Barry J. Grossman	P.O. Box 3265 City: Harrisburg State: Pa Zip: 17120	PUC Trial Staff
Joel E. Mazor	1138 - 6 Penn Center City: Philadelphia State: Pa Zip: 19104	Consolidated Rail Corp.
Herbert G. Zahn	1/2 T&S Bldg City: Hbg State: PA Zip: 17120	Penn DOT
Allan J. Opsitnick	11th Floor Allegheny Bldg City: Pgh State: Pa Zip: 15219	Alleg. Co.

Check this box if additional parties or counsel of record appear on back. ☐

Monkbach & Marshall
By [signature]
Reporter

ALBERT G. FECZKO JR

City	State	Zip
Pgh.	PA.	15219

Glenfield

Address		
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CONRAIL

ORIGINAL

RECEIVED

SEP 1 3 1982

SECRETARY'S OFFICE
Public Utility Commission

September 3, 1982

SUBJECT: Glenfield, Allegheny County, Pennsylvania
PUC Docket No. C-80092154 - O.H. Bridge
No. 9.22, Glenfield Viaduct over Main Line
Tracks, LC 2202, MP 9.22, WO# 46588, Pittsburgh
Division, Central Region (File: Br. 9.22-WWP)

Mr. Jerry Rich
Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, Pennsylvania 17120

Dear Mr. Rich:

We refer to the hearing held August 24, 1982 in Pittsburgh in connection with the subject proceeding.

Conrail was requested by the Administrative Law Judge presiding to file as a late exhibit a copy of the inspection report for the subject bridge to be made periodically every 6 months, the current report due about July, 1982; and a description of the maintenance work done by Conrail as ordered on an interim basis under the Commission's Order entered July 20, 1981.

Attached are three copies each of inspection reports prepared by Conrail for the bridge dated December 9, 1981 and August 24, 1982. Conrail does not recommend reducing the 16 ton limit as a result of the latest inspection.

Conrail repaired with concrete the sidewalk of the bridge from Ohio River Boulevard to the stairway which exists to the street passing under the bridge. This work was completed November 6, 1981.

Very truly yours,

J. T. Sullivan

J. T. Sullivan, P.E.
Chief Engineer
Design and Construction

Room 1200

(215) 596-3845

DOCUMENT FOLDER

CC:

The Honorable Michael A. Nemec
Administrative Law Judge
Third Floor, Buhl Building
204 Fifth Avenue
Pittsburgh, Pennsylvania 15222

Mr. R. A. Peteritas, Director
Bureau of Rail Transportation
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, Pennsylvania 17120

Mr. Kenneth W. Walker, P.E.
Chief Utility Engineer
Pennsylvania Department of Transportation
Room 1120 - T&S Building
Harrisburg, Pennsylvania 17120

Mr. John B. Drake
Chief Bridge Engineer
County of Allegheny
517 County Office Building
Forbes & Ross Streets
Pittsburgh, Pennsylvania 15219

Mr. Albert G. Feczko, Jr., Solicitor
Glenfield Borough
800 Lawyers Building
Pittsburgh, Pennsylvania 15219

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C-8009 2154

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SEP 13 1982
SECRETARY'S OFFICE
Public Utility Commission

CONSOLIDATED RAIL CORPORATION

BRIDGE INSPECTION REPORT

DIV. PGH BRANCH EML BRIDGE NO. 9-22

LOCATION GLENFIELD PA. O.H. V U.G.

TYPE OF BRIDGE DG CONC NO. SPANS 17 SPAN NO. 1-17 LENGTH 68'

NO. TRACKS 3 TRACK NO.

WATERWAY (TANGENT

ROADWAY TRACK ALIGNMENT (CURVE

OTHER

DATE LAST INSPECTION 12-27-80 DATE THIS INSPECTION 12-9-81

NOTE: USE SEPARATE SHEET FOR EACH SPAN FOR SPECIAL CONDITIONS.

RECEIVED
SEP 13 1982

ITEM NO.	GENERAL	A	B	R
1	Paint ( ) yr			
2	Clearance Signs			
3	Highway minimum clearance ( )			
4	PC Insignia			
5	Load Limit Signs (16) Tons	A		
6	Fire Protection			
7	Action under trains			
8	Approach track			
9	Track on bridge			
	STREAM CONDITIONS	A	B	R
10	Paving through bridges			
11	Sheet piling protection			
12	Scour (Distance top of rail to bed of stream)			
13	Rip rap			
14	Fender System			
	MASONRY	A	B	R
15	Abutment N or ●	A		
16	Abutment S or W		B	
17	Backwalls		B	
18	Wingwalls		B	
19	Timber back walls			
20	Piers			R
21	Pedestals			
22	Arches			
23	Parapet Walls			
24	Pointing			R

ITEM NO.	MASONRY (CONT.)	A	B	R
25	Previous Gunite			
26	Slab			R
27	Cleanliness			R
	GIRDERS, BEAMS OR TRUSSES	A	B	R
28	Top Flg or Chord		B	
29	Bot Flg or Chord		B	
30	Bearing Stiffs			
31	Web or Diagnls			R
32	Hangers			
33	Counters			
34	Rivets *		B	
35	Pins			
36	Cols or bents			
37	Sole plates			R
38	Masonry plates			R
39	Shoes			
40	Rollers			
41	Shims			
42	Anchor bolts			R
43	Wood blocking			
44	Cleanliness			R
	STEEL BRACING	A	B	R
45	Top Lat		B	
46	Top Lat Pls			R
47	Bot Lat		B	
48	Bot Lat Pls			R
49	Sway Frames			
50	Portals			
51	Towers			
	FLOOR SYSTEM	A	B	R
52	Flr Bm Web		B	

ITEM NO.	FLOOR SYSTEM (CONT.)	A	B	R
53	Flr Bm Top Flg			R
54	Flr Bm Bot Flg			R
55	Flr Bm Conn			R
56	Str web			
57	Str Top Flg			
58	Str Bot Flg			
59	Str Conn			
60	Steel Floor			
61	Conc Floor			R
62	Wood Floor			
63	Waterproofing			
64	Ties			
65	Tie Sealing			
66	Timber or bar Spacer			
67	Guard rails			
68	Deck hardware			
69	Footwalks	A		
70	Handrails STEP		B	
71	Drainage			
72	Cleanliness		B	
	TRESTLES	A	B	R
73	Bulkheads			
74	Piles			
75	Sills			
76	Posts			
77	Caps			
78	Corbels			
79	Stringers			
80	Cross Brace			
81	Long Brace			
82	Foundations		B	
83	Welds			

FOR IMMEDIATE ATTENTION:

REMARKS OVER

ENDORSEMENT
NONE

NOTE: *DESCRIBE UNDER REMARKS LOCATION OF LOOSE RIVETS. USE BACK OF THIS FORM FOR SKETCHES OR NOTES.

A – GOOD CONDITION
B – NOT HAZARDOUS – NOTE ANY CHANGE NEXT INSPECTION.
R – PUT ON REPAIR PROGRAM

SIGNED M.A. Sabatucci INSPECTOR
REVIEWED S.P. Duty Asst SUPVR. B. & B.
NOTED DIVN. ENGR.

(1) FOOTWALK OVER TRACK TO STEPS GOOD. FROM STEPS TO WEST ABUT FOOTWALK POOR AND CURBING POOR

(2) ENCASED CONC OVER TRACKS FALLING OFF.

(3) CLEAN & OIL BEARING

(4) ALL PEIR & PEIRCAP SPALLED HEAVY

(5) SPANS 3 TO 17 REBARS EXPOSED ON FLOOR BEAMS, PEIRS, PEIRCAPS SLAB.

(6) SPANS 6, 6, 7, 8 CRACKS FLOOR BEAMS & PEIRS

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RECEIVED
SEP 13 1982
SECRETARY'S OFFICE
Public Utility Commission

DOCKETED
SEP 13 1982

CONSOLIDATED RAIL CORPORATION

BRIDGE INSPECTION REPORT

DIV. PGH BRANCH EML BRIDGE NO. 9-22

LOCATION GLENFIELD PA O.H. V U.G.

TYPE OF BRIDGE CONC (SOLID)(TG) NO. SPANS 17 SPAN NO. 1-17

NO. TRACKS 3 TRACK NO.

WATERWAY

ROADWAY TRACK ALIGNMENT (TANGENT (CURVE

OTHER

DATE LAST INSPECTION 12-9-81 DATE THIS INSPECTION 8-24-82

NOTE: USE SEPARATE SHEET FOR EACH SPAN FOR SPECIAL CONDITIONS.

ITEM NO.	GENERAL	A	B	R
1	Paint ( ) yr			
2	Clearance Signs			
3	Highway minimum clearance ( )			
4	PC Insignia			
5	Load Limit Signs (16) Tons	A		
6	Fire Protection			
7	Action under trains			
8	Approach track			
9	Track on bridge			
	STREAM CONDITIONS	A	B	R
10	Paving through bridges			
11	Sheet piling protection			
12	Scour (Distance top of rail to bed of stream)			
13	Rip rap			
14	Fender System			
	MASONRY	A	B	R
15	Abutment N or E	A		
16	Abutment S or W		B	
17	Backwalls		B	
18	Wingwalls		B	
19	Timber back walls			
20	Piers			R
21	Pedestals			
22	Arches			
23	Parapet Walls			
24	Pointing			R

ITEM NO.	MASONRY (CONT.)	A	B	R
25	Previous Gunite			
26	Slab			R
27	Cleanliness			R
	GIRDERS, BEAMS OR TRUSSES	A	B	R
28	Top Flg or Chord		B	
29	Bot Flg or Chord		B	
30	Bearing Stiffs			
31	Web or Diagnls			R
32	Hangers			
33	Counters			
34	Rivets*		B	
35	Pins			
36	Cols or bents			
37	Sole plates			R
38	Masonry plates			R
39	Shoes			
40	Rollers			
41	Shims			
42	Anchor bolts			R
43	Wood blocking			
44	Cleanliness			R
	STEEL BRACING	A	B	R
45	Top Lat		B	
46	Top Lat Pls			R
47	Bot Lat		B	
48	Bot Lat Pls			R
49	Sway Frames			
50	Portals			
51	Towers			
	FLOOR SYSTEM	A	B	R
52	Flr Bm Web Conc		B	

ITEM NO.	FLOOR SYSTEM (CONT.)	A	B	R
53	Flr Bm Top Flg			R
54	Flr Bm Bot Flg			R
55	Flr Bm Conn			R
56	Str web			
57	Str Top Flg			
58	Str Bot Flg			
59	Str Conn			
60	Steel Floor			
61	Conc Floor			R
62	Wood Floor			
63	Waterproofing			
64	Ties			
65	Tie Sealing			
66	Timber or bar Spacer			
67	Guard rails			
68	Deck hardware			
69	Footwalks	A		
70	Handrails (STEEL)		B	
71	Drainage			
72	Cleanliness		B	
	TRESTLES	A	B	R
73	Bulkheads			
74	Piles			
75	Sills			
76	Posts			
77	Caps			
78	Corbels			
79	Stringers			
80	Cross Brace			
81	Long Brace			
82	Foundations		B	
83	Welds			

FOR IMMEDIATE ATTENTION:

REMARKS OVER

NOTE: *DESCRIBE UNDER REMARKS LOCATION OF LOOSE RIVETS. USE BACK OF THIS FORM FOR SKETCHES OR NOTES.

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SIGNED [signature] INSPECTOR
REVIEWED [signature] SUPVR. B. & B.
NOTED DIVN. ENGR.

① SPANS 5, 6, 7, 8. CRACK[redacted] ON FLOOR BEAMS & PEIRS. C[redacted]

② SPANS 3 TO 17 REBARS EXPOSED CONC FLOOR BEAMS & PEIR & PEIRCAP & SLAB

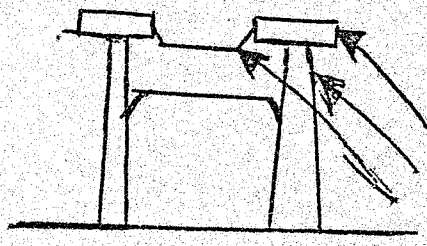
③ FOOTWAIK BAD FROM SPAN 3 TO 17 TOP & BOTTOM REBARS EXPOSED

④ HEAVY SPALLING AT BRIDGE EXPANTION JOINTS ON ALL PEIRS & FLOORBEAMS

⑤ KNEE BRACE UNDER FOOTWALK DETERIORATION

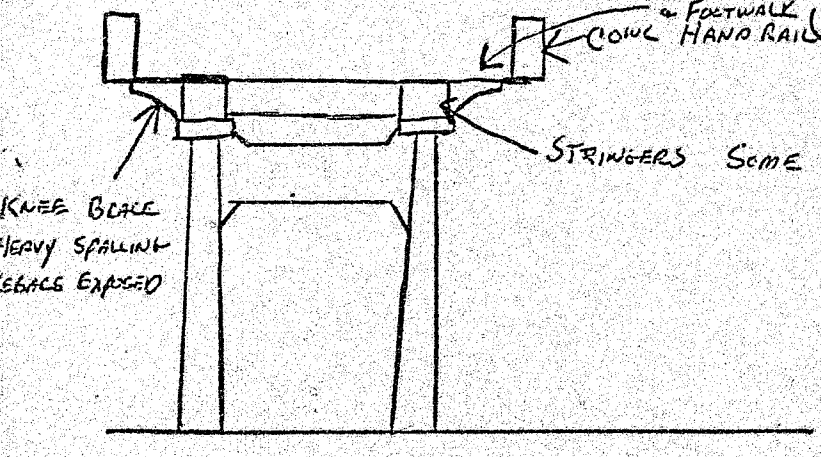
⑥ BRICK DECK FROM SPANS 2 & 17 FAIR

⑦ CLEAN & OIL BEARINGS



HEAVY SPALLING & DETERIORATION
REBALS EXPOSED

SPAN 3 TO 17



POOR SPANS 13 TO 17 BOTH SIDES