I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Reactions - Girder 1

Girder 1 Service Vertical Reactions - k

Supp/Node	Noncomp Dead	Super-Imposed Dead	Max Live+ Impact	Min Live+ Impact	Sidewalk Max	Sidewalk Min
Governing						
1 1	146.01	41.57	75.65	-0.25	0.00	0.00
Steel	38.32					
Concrete	107.69					

DL 187.58 LL 64.84

Global x concurrent LL+I rot. 0.0018 -0.0755 deg
Global y concurrent LL+I rot. 0.0527 -0.0013 deg

Max LL+I Contribution by Lane

1	2	3
62.30	13.35	2.12

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 2 - 87.19 → LL = 74.73

Concurrent at gdr 3 - 52.84

Concurrent at gdr 4 - 14.81

2 17	150.08	43.84	94.11	-9.29	0.00	0.00
Steel	39.28					
Concrete	110.80					

DL 193.92 LL 80.67

Global x concurrent LL+I rot. 0.0310 -0.0101 deg
Global y concurrent LL+I rot. 0.0000 -0.0173 deg

Max LL+I Contribution by Lane

1	2	3
74.23	19.89	0.07

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 2 - 49.38

Concurrent at gdr 3 - 16.08

Concurrent at gdr 4 - 11.40

Truck Loading

1	1	68.29	-0.23
2	17	79.80	-7.64

Lane Loading

1	1	75.65	-0.25
2	17	94.11	-9.29

Fatigue Truck

Support Rotations - Degrees

About global axes used in Girder Geometry table

Supp/Node		Noncomp Dead x-axis	Noncomp Dead y-axis	Superimp Dead x-axis	Superimp Dead y-axis	LL+I+SDWK Range x-axis	LL+I+SDWK Range y-axis
1	1	1.09	0.73	0.25	0.17	(-0.21 to 0.00)	(0.00 to 0.14)
		Concurrent live vertical reaction				36.00 0.14	0.14 36.00
2	17	-1.10	-0.74	-0.25	-0.17	(-0.01 to 0.20)	(-0.15 to 0.00)
		Concurrent live vertical reaction				56.83 59.01	59.01 -2.34

Torsional and flexural rotations - member local axes

Supp/Node		Noncomp Dead tors	Noncomp Dead flex	Superimp Dead tors	Superimp Dead flex	LL+I+SDWK Range tors	LL+I+SDWK Range flex
1	1	1.09	0.73	0.25	0.17	(-0.21 to 0.00)	(0.00 to 0.14)
2	17	-1.10	-0.74	-0.25	-0.17	(-0.01 to 0.20)	(-0.15 to 0.00)

I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Reactions - Girder 2

Girder 2 Service Vertical Reactions - k

Supp/Node	Noncomp Dead	Super-Imposed Dead	Max Live+ Impact	Min Live+ Impact	Sidewalk Max	Sidewalk Min
Governing						
1 2	144.16	41.16	83.72	-0.07	0.00	0.00
Steel	38.14					
Concrete	106.02					

DL 2 LL
185.32 0.17 71.76

Global x concurrent LL+I rot. -0.0193 -0.0631 deg
Global y concurrent LL+I rot. 0.0401 0.0032 deg

Max LL+I Contribution by Lane

1	2	3
43.84	39.88	2.25

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 1 - 44.03

Concurrent at gdr 3 - 49.83

Concurrent at gdr 4 - 0.62

2 25	141.99	39.59	80.51	0.00	0.00	0.00
Steel	37.21					
Concrete	104.78					

Global x concurrent LL+I rot. 0.0752 0.0000 deg
Global y concurrent LL+I rot. -0.0186 -0.0366 deg

Max LL+I Contribution by Lane

1	2	3
29.95	46.98	12.53

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 1 - 65.28

Concurrent at gdr 3 - 53.42

Concurrent at gdr 4 - 37.21

Truck Loading

1	2	78.77	-0.07
2	25	76.41	0.00

Lane Loading

1	2	81.80	-0.06
2	25	78.92	0.00

Fatigue Truck

Support Rotations - Degrees

About global axes used in Girder Geometry table

Supp/Node		Noncomp Dead x-axis	Noncomp Dead y-axis	Superimp Dead x-axis	Superimp Dead y-axis	LL+I+SDWK Range x-axis	LL+I+SDWK Range y-axis
1	2	1.02	0.68	0.24	0.16	(-0.18 to 0.00)	(0.00 to 0.12)
		Concurrent live vertical reaction				34.16	0.00
						0.00	38.27
2	25	-1.02	-0.68	-0.24	-0.16	(0.00 to 0.18)	(-0.12 to 0.00)
		Concurrent live vertical reaction				0.00	38.53
						38.53	0.00

Torsional and flexural rotations - member local axes

Supp/Node		Noncomp Dead tors	Noncomp Dead flex	Superimp Dead tors	Superimp Dead flex	LL+I+SDWK Range tors	LL+I+SDWK Range flex
1	2	1.02	0.68	0.24	0.16	(-0.18 to 0.00)	(0.00 to 0.12)
2	25	-1.02	-0.68	-0.24	-0.16	(0.00 to 0.18)	(-0.12 to 0.00)

I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Reactions - Girder 3

Girder 3 Service Vertical Reactions - k

Supp/Node		Noncomp Dead	Super-Imposed Dead	Max Live+ Impact	Min Live+ Impact	Sidewalk Max	Sidewalk Min
Governing							
1	3	141.82	39.55	80.46	0.00	0.00	0.00
	Steel	37.17					
	Concrete	104.65					

Global x concurrent LL+I rot. -0.0268 -0.0451 deg
Global y concurrent LL+I rot. 0.0500 0.0000 deg

Max LL+I Contribution by Lane

1	2	3
12.50	46.95	29.94

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 1 - 37.26

Concurrent at gdr 2 - 53.52

Concurrent at gdr 4 - 65.31

2	33	143.98	41.12	83.72	-0.07	0.00	0.00
	Steel	38.09					
	Concrete	105.89					

Global x concurrent LL+I rot. 0.0628 0.0036 deg
Global y concurrent LL+I rot. -0.0145 -0.0268 deg

Max LL+I Contribution by Lane

1	2	3
2.24	39.88	43.84

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 1 - 0.63

Concurrent at gdr 2 - 49.83

Concurrent at gdr 4 - 44.00

Truck Loading

1	3	76.36	0.00
2	33	78.79	-0.07

Lane Loading

1	3	78.87	0.00
2	33	81.78	-0.06

Fatigue Truck

Support Rotations - Degrees

About global axes used in Girder Geometry table

Supp/Node		Noncomp Dead x-axis	Noncomp Dead y-axis	Superimp Dead x-axis	Superimp Dead y-axis	LL+I+SDWK Range x-axis	LL+I+SDWK Range y-axis
1	3	1.02	0.68	0.24	0.16	(-0.18 to 0.00)	(0.00 to 0.12)
		Concurrent live vertical reaction				38.50	0.00
						0.00	38.50
2	33	-1.02	-0.68	-0.24	-0.16	(0.00 to 0.18)	(-0.12 to 0.00)
		Concurrent live vertical reaction				0.00	34.14
						38.24	0.00

Torsional and flexural rotations - member local axes

Supp/Node		Noncomp Dead tors	Noncomp Dead flex	Superimp Dead tors	Superimp Dead flex	LL+I+SDWK Range tors	LL+I+SDWK Range flex
1	3	1.02	0.68	0.24	0.16	(-0.18 to 0.00)	(0.00 to 0.12)
2	33	-1.02	-0.68	-0.24	-0.16	(0.00 to 0.18)	(-0.12 to 0.00)

I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Reactions - Girder 4

Girder 4 Service Vertical Reactions - k

Supp/Node	Noncomp Dead	Super-Imposed Dead	Max Live+ Impact	Min Live+ Impact	Sidewalk Max	Sidewalk Min	DL	LL
Governing								
1 4	150.15	43.85	94.11	-9.29	0.00	0.00	194.00	80.67
Steel	39.30							
Concrete	110.85							

Global x concurrent LL+I rot. 0.0101 -0.0291 deg
Global y concurrent LL+I rot. 0.0559 -0.0023 deg

Max LL+I Contribution by Lane

1	2	3
0.06	19.89	74.22

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 1 - 11.40

Concurrent at gdr 2 - 16.14

Concurrent at gdr 3 - 49.44

2 34	146.06	41.59	75.66	-0.24	0.00	0.00
Steel	38.33					
Concrete	107.73					

Global x concurrent LL+I rot. 0.0825 -0.0018 deg
Global y concurrent LL+I rot. 0.0000 -0.0168 deg

Max LL+I Contribution by Lane

1	2	3
2.12	13.36	62.31

Concurrent reactions using same governing loaded lanes as for Max LL+I

Concurrent at gdr 1 - 14.80

Concurrent at gdr 2 - 52.80

Concurrent at gdr 3 - 83.72

Truck Loading

1	4	79.78	-7.63
2	34	68.30	-0.23

Lane Loading

1	4	94.11	-9.29
2	34	75.66	-0.24

Fatigue Truck

Support Rotations - Degrees

About global axes used in Girder Geometry table

Supp/Node		Noncomp Dead x-axis	Noncomp Dead y-axis	Superimp Dead x-axis	Superimp Dead y-axis	LL+I+SDWK Range x-axis		LL+I+SDWK Range y-axis	
1	4	1.10	0.74	0.25	0.17	(-0.20 to	0.01)	(0.00 to	0.15)
		Concurrent live vertical reaction				59.01	56.82	-2.25	59.01
2	34	-1.09	-0.73	-0.25	-0.17	(0.00 to	0.21)	(-0.14 to	0.00)
		Concurrent live vertical reaction				0.15	36.01	36.01	0.15

Torsional and flexural rotations - member local axes

Supp/Node		Noncomp Dead tors	Noncomp Dead flex	Superimp Dead tors	Superimp Dead flex	LL+I+SDWK Range tors		LL+I+SDWK Range flex	
1	4	1.10	0.74	0.25	0.17	(-0.20 to	0.01)	(0.00 to	0.15)
2	34	-1.09	-0.73	-0.25	-0.17	(0.00 to	0.21)	(-0.14 to	0.00)

I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Deflections - Girder 1

Girder 1 Deflections - in

Tenth Pt	Total Noncomp Dead	Steel	Wet Con-crete	Super-imposed Dead	Max LL+I Down	Max LL+I Up	Sidewalk Down	Sidewalk Up
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	3.446	0.919	2.527	0.588	0.597	0.004	0.000	0.000
2	6.410	1.711	4.699	1.094	1.117	0.008	0.000	0.000
3	8.629	2.306	6.323	1.475	1.517	0.012	0.000	0.000
4	10.006	2.676	7.330	1.713	1.780	0.017	0.000	0.000
5	10.495	2.808	7.688	1.799	1.888	0.021	0.000	0.000
6	10.053	2.688	7.365	1.722	1.821	0.023	0.000	0.000
7	8.709	2.327	6.382	1.490	1.584	0.022	0.000	0.000
8	6.482	1.729	4.752	1.108	1.186	0.017	0.000	0.000
9	3.495	0.931	2.564	0.597	0.641	0.010	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Influence surfaces for deflection using AASHTO 10.6.4.

I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Deflections - Girder 2

Girder 2 Deflections - in

Tenth Pt	Total Noncomp Dead	Steel	Wet Con-crete	Super-imposed Dead	Max LL+I Down	Max LL+I Up	Sidewalk Down	Sidewalk Up
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	3.203	0.853	2.350	0.547	0.501	0.000	0.000	0.000
2	5.978	1.594	4.385	1.021	0.938	0.000	0.000	0.000
3	8.072	2.154	5.918	1.381	1.271	0.000	0.000	0.000
4	9.372	2.503	6.869	1.607	1.480	0.000	0.000	0.000
5	9.798	2.618	7.180	1.682	1.548	0.000	0.000	0.000
6	9.338	2.494	6.844	1.603	1.475	0.000	0.000	0.000
7	8.020	2.140	5.880	1.375	1.268	0.000	0.000	0.000
8	5.955	1.587	4.368	1.017	0.941	0.000	0.000	0.000
9	3.193	0.849	2.343	0.544	0.505	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Influence surfaces for deflection using AASHTO 10.6.4.

I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Deflections - Girder 3

Girder 3 Deflections - in

Tenth Pt	Total Noncomp Dead	Steel	Wet Con-crete	Super-imposed Dead	Max LL+I Down	Max LL+I Up	Sidewalk Down	Sidewalk Up
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	3.175	0.845	2.331	0.540	0.502	0.000	0.000	0.000
2	5.906	1.573	4.333	1.009	0.933	0.000	0.000	0.000
3	8.021	2.140	5.881	1.375	1.268	0.000	0.000	0.000
4	9.336	2.493	6.842	1.602	1.475	0.000	0.000	0.000
5	9.794	2.616	7.177	1.681	1.547	0.000	0.000	0.000
6	9.373	2.504	6.870	1.608	1.480	0.000	0.000	0.000
7	8.093	2.160	5.933	1.385	1.275	0.000	0.000	0.000
8	5.997	1.599	4.398	1.024	0.942	0.000	0.000	0.000
9	3.205	0.854	2.351	0.547	0.501	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Influence surfaces for deflection using AASHTO 10.6.4.

I-75/I-575 NORTHWEST CORRIDOR - BRIDGE18
Girder System : Analysis Output : Deflections - Girder 4

Girder 4 Deflections - in

Tenth Pt	Total Noncomp Dead	Steel	Wet Con-crete	Super-imposed Dead	Max LL+I Down	Max LL+I Up	Sidewalk Down	Sidewalk Up
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	3.498	0.932	2.566	0.597	0.641	0.010	0.000	0.000
2	6.485	1.730	4.755	1.108	1.186	0.017	0.000	0.000
3	8.712	2.327	6.384	1.491	1.585	0.021	0.000	0.000
4	10.053	2.688	7.365	1.722	1.821	0.023	0.000	0.000
5	10.498	2.808	7.690	1.799	1.889	0.021	0.000	0.000
6	10.014	2.678	7.336	1.715	1.783	0.017	0.000	0.000
7	8.640	2.309	6.331	1.478	1.521	0.012	0.000	0.000
8	6.412	1.711	4.700	1.095	1.117	0.008	0.000	0.000
9	3.447	0.919	2.528	0.588	0.597	0.004	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Influence surfaces for deflection using AASHTO 10.6.4.