TENNESSEE BRIDGE INSPECTION PROGRAM
SUMMARY OF EVALUATION

REV. 03-05-2003

BRIDGE ID NO: 94I00650006

LOCATION NO: 94 - I0065 - 4.79 L

(6A) CROSSING: I65 / SR106 & HARPETH RV

(505) METHOD OF ANALYSIS: LOAD RESISTANCE FACTOR METHOD - RF

(548) RATING BASED ON: VIRTIS ANALYSIS - 6" ASPHALT

LOAD RATINGS IN TONS

INVENTORY (503)	H	18	(518B) HS/HL93	20
OPERATING (504)	H	30	(519) HS/HL93	35
REQ. POSTING:				

(549) EVALUATOR: JB

(522) EVAL. DATE: 3/18/2021

LAST UPDATED BY: PAULSON

(29) ADT: 84,324 (30) ADT YR: 2020

(100) STRAHNET ROUTE: YES

(19) DETOUR LENGTH: 2 KM

(520) VC OVER RDWY: 99.99 METERS

CONDITION RATINGS

(58) DECK RATING:	5
(59) SUPERSTRUCTURE RATING:	7
(60) SUBSTRUCTURE RATING:	5
(61) CHANNEL PROTECTION:	7
(62) CULVERT RATING:	N
(113A) NBIS SCOUR CODE:	8
(113B) TDOT SCOUR CODE:	R

APPRAISAL RATINGS

(67) STRUCTURAL EVALUATION:	4
(68) DECK GEOMETRY:	8
(69) UNDER CLEARANCE:	6
(70) BRIDGE POSTING:	5
(71) WATERWAY ADEQUACY:	6
(72) APPROACH RDWY ALIGNMENT:	8

CODE VALUES

N - NOT APPLICABLE
9 - EXCELLENT CONDITION
8 - VERY GOOD CONDITION
7 - GOOD CONDITION
6 - SATISFACTORY
5 - FAIR CONDITION
4 - POOR CONDITION
3 - SERIOUS CONDITION
2 - CRITICAL CONDITION
1 - FAILURE IS IMMINENT
0 - FAILED CONDITION

OTHER RATING ITEMS

(521) OVERALL CONDITION: F

(513) TEXTURE COAT RATING: G 06

(514) PAINT CONDITION RATING: N

(41) WEIGHT POSTING CODE: A

(36) TRAFFIC SAFETY FEATURES: 0 0 0 0

(525) REPAIR LIST NO: 2

COMMENTS

RATING CALCS CONSIDER STRIPED LANES, VERIFIED ASPHALT

(502) SUFF. RATING: 51.8

(528) STR. DEFICIENT: NO

(529) FUNC. OBSOLETE: NO

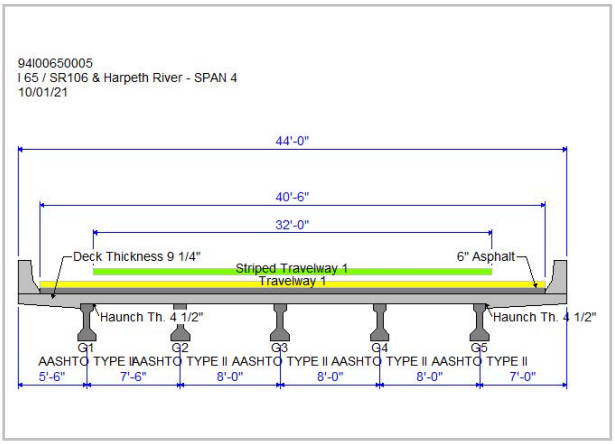
Load Rating Assumptions and QC / QA Checklist - Calculations

Bridge ID 94I00650006 Bridge Location 94-I0065-4.79L

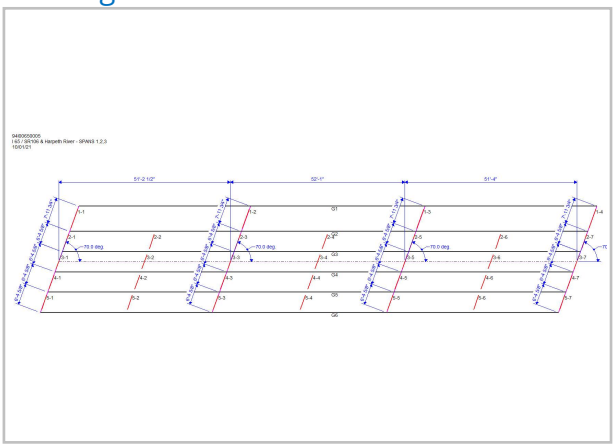
Load Rating Date 12/22/21 Inspection Date 2/3/21 Current ADTT Considered ☐

Plans Set K-8-93 M-60-109

Cross Section



Framing Plan



	Evaluator	QC	QA
Dimensions match plans & field conditions	☑	☑	☐
Condition Assumed for Load rating	Satisfactory (6)	☑	☐
Deterioration/Damage Captured	Yes	☑	☐
Shear Considered	☑	☑	☐
Rails Distribution	Evenly	☑	☐
Asphalt Thickness (inches)	6.00	☑	☐
Asphalt Considered Field Verified	Yes	☑	☐
Distribution Factors Calc Method	AASHTOWare	☑	☐
Impact Factor	33%	☑	☐
AASHTO Trucks & TDOT Trucks Rated	Yes	☑	☐

Digitally signed by Steven Paulson Date: 2021.12.22 10:15:12 -06'00'

Tony Halwani Digitally signed by Tony Halwani Date: 2021.12.22 14:27:02 -06'00'

Comments

Distribution factors based on striped lanes

EV factors: ev2:1.35 and EV3: 1.2 with SU7 adjacent

Bridge Name: I 65 / SR106 & Harpeth

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:43

Structure Definition Name: SPANS 1,2,3

Member Name: G1

Member Alternative Name: G1

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location	
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	2.581	STRENGTH-II Concrete Shear	212.96	3	10.27	20
Annual Permit 2	Permit	2.466	STRENGTH-II Concrete Shear	203.45	3	3.57	7
EV2	Legal	2.98	STRENGTH-I Concrete Shear	85.69	3	10.27	20
EV3	Legal	2.018	STRENGTH-I Concrete Shear	86.77	3	10.27	20
Gravel Truck	Legal	2.164	STRENGTH-I Concrete Shear	80.07	3	10.27	20
H 15-44	Inventory	2.249	SERVICE-III PS Tensile Stress	33.73	3	25.98	50.6
H 15-44	Operating	5.006	STRENGTH-I Concrete Flexure	75.1	3	30.8	60
HL-93 (US)	Inventory	0.981	SERVICE-III PS Tensile Stress	35.32	3	25.98	50.6
HL-93 (US)	Operating	2.059	STRENGTH-I Concrete Shear	74.12	3	10.27	20
HS 20-44	Inventory	1.232	SERVICE-III PS Tensile Stress	44.34	3	25.98	50.6
HS 20-44	Operating	2.489	STRENGTH-I Concrete Shear	89.61	3	10.27	20
Lane-Type Legal Load	Legal	4.972	STRENGTH-I Concrete Flexure	198.9	2	52.08	100
Overweight Permit	Permit	2.198	STRENGTH-II Concrete Shear	280.22	3	3.57	7
Passenger Vehicle - 3 Tons	Legal	24.174	STRENGTH-I Concrete Shear	72.52	3	10.27	20
SU4	Legal	2.851	STRENGTH-I Concrete Shear	76.97	3	10.27	20
SU5	Legal	2.582	STRENGTH-I Concrete Shear	80.05	3	10.27	20
SU6	Legal	2.439	STRENGTH-I Concrete Flexure	84.75	3	30.8	60
SU7	Legal	2.293	STRENGTH-I Concrete Flexure	88.87	3	30.8	60
School Bus - Small	Legal	14.451	STRENGTH-I Concrete Shear	73.7	3	10.27	20
School Bus - Standard	Legal	5.239	STRENGTH-I Concrete Shear	75.96	3	10.27	20
Type 3	Legal	3.167	STRENGTH-I Concrete Shear	79.18	3	10.27	20
Type 3-3	Legal	3.263	STRENGTH-I Concrete Shear	130.51	3	3.57	7
Type 3S2	Legal	3.082	STRENGTH-I Concrete Shear	110.95	3	3.57	7

Note:

"N/A" indicates not applicable

"**" indicates not available

Bridge Name: I 65 / SR106 & Harpeth River

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:43

Structure Definition Name: SPANS 1,2,3

Member Name: G2

Member Alternative Name: G2

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location	
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	2.028	STRENGTH-II Concrete Shear	167.31	3	10.27	20
Annual Permit 2	Permit	1.953	STRENGTH-II Concrete Shear	161.11	3	3.6	7
EV2	Legal	2.81	STRENGTH-I Concrete Shear	80.78	3	10.27	20
EV3	Legal	1.903	STRENGTH-I Concrete Shear	81.81	3	10.27	20
Gravel Truck	Legal	2.04	STRENGTH-I Concrete Shear	75.49	3	10.27	20
H 15-44	Inventory	3.698	STRENGTH-I Concrete Shear	55.48	3	10.27	20
H 15-44	Operating	4.794	STRENGTH-I Concrete Shear	71.91	3	10.27	20
HL-93 (US)	Inventory	1.497	STRENGTH-I Concrete Shear	53.91	3	10.27	20
HL-93 (US)	Operating	1.941	STRENGTH-I Concrete Shear	69.88	3	10.27	20
HS 20-44	Inventory	1.81	STRENGTH-I Concrete Shear	65.17	3	10.27	20
HS 20-44	Operating	2.347	STRENGTH-I Concrete Shear	84.48	3	10.27	20
Lane-Type Legal Load	Legal	4.228	STRENGTH-I Concrete Flexure	169.13	2	52.08	100
Overweight Permit	Permit	2.404	STRENGTH-II Concrete Shear	306.52	3	3.6	7
Passenger Vehicle - 3 Tons	Legal	22.792	STRENGTH-I Concrete Shear	68.37	3	10.27	20
SU4	Legal	2.688	STRENGTH-I Concrete Shear	72.57	3	10.27	20
SU5	Legal	2.434	STRENGTH-I Concrete Shear	75.47	3	10.27	20
SU6	Legal	2.321	STRENGTH-I Concrete Shear	80.67	3	10.27	20
SU7	Legal	2.246	STRENGTH-I Concrete Shear	87.02	3	10.27	20
School Bus - Small	Legal	13.625	STRENGTH-I Concrete Shear	69.49	3	10.27	20
School Bus - Standard	Legal	4.939	STRENGTH-I Concrete Shear	71.62	3	10.27	20
Type 3	Legal	2.986	STRENGTH-I Concrete Shear	74.65	3	10.27	20
Type 3-3	Legal	3.1	STRENGTH-I Concrete Shear	124.02	3	3.6	7
Type 3S2	Legal	2.929	STRENGTH-I Concrete Shear	105.43	3	3.6	7

Note:

"N/A" indicates not applicable

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Bridge Name: I 65 / SR106 & Harpeth River

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:44

Structure Definition Name: SPANS 1,2,3

Member Name: G3

Member Alternative Name: G3

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location	
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	2.2	STRENGTH-II Concrete Shear	181.46	3	10.27	20
Annual Permit 2	Permit	2.133	STRENGTH-II Concrete Shear	176.01	3	3.6	7
EV2	Legal	3.047	STRENGTH-I Concrete Shear	87.61	3	10.27	20
EV3	Legal	2.063	STRENGTH-I Concrete Shear	88.72	3	10.27	20
Gravel Truck	Legal	2.213	STRENGTH-I Concrete Shear	81.87	3	10.27	20
H 15-44	Inventory	4.011	STRENGTH-I Concrete Shear	60.17	3	10.27	20
H 15-44	Operating	5.2	STRENGTH-I Concrete Shear	77.99	3	10.27	20
HL-93 (US)	Inventory	1.624	STRENGTH-I Concrete Shear	58.46	3	10.27	20
HL-93 (US)	Operating	2.105	STRENGTH-I Concrete Shear	75.79	3	10.27	20
HS 20-44	Inventory	1.963	STRENGTH-I Concrete Shear	70.68	3	10.27	20
HS 20-44	Operating	2.545	STRENGTH-I Concrete Shear	91.62	3	10.27	20
Lane-Type Legal Load	Legal	4.591	STRENGTH-I Concrete Flexure	183.66	2	52.08	100
Overweight Permit	Permit	2.532	STRENGTH-II Concrete Shear	322.79	3	10.27	20
Passenger Vehicle - 3 Tons	Legal	24.718	STRENGTH-I Concrete Shear	74.15	3	10.27	20
SU4	Legal	2.915	STRENGTH-I Concrete Shear	78.71	3	10.27	20
SU5	Legal	2.64	STRENGTH-I Concrete Shear	81.85	3	10.27	20
SU6	Legal	2.518	STRENGTH-I Concrete Shear	87.49	3	10.27	20
SU7	Legal	2.435	STRENGTH-I Concrete Shear	94.38	3	10.27	20
School Bus - Small	Legal	14.777	STRENGTH-I Concrete Shear	75.36	3	10.27	20
School Bus - Standard	Legal	5.357	STRENGTH-I Concrete Shear	77.67	3	10.27	20
Type 3	Legal	3.238	STRENGTH-I Concrete Shear	80.96	3	10.27	20
Type 3-3	Legal	3.387	STRENGTH-I Concrete Shear	135.49	3	3.6	7
Type 3S2	Legal	3.2	STRENGTH-I Concrete Shear	115.18	3	3.6	7

Note:

"N/A" indicates not applicable

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Bridge Name: I 65 / SR106 & Harpeth River

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:44

Structure Definition Name: SPANS 1,2,3

Member Name: G6

Member Alternative Name: G6

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location	
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	2.005	STRENGTH-II Concrete Shear	165.42	1	40.97	80
Annual Permit 2	Permit	1.918	STRENGTH-II Concrete Shear	158.23	1	47.65	93
EV2	Legal	2.315	STRENGTH-I Concrete Shear	66.55	1	40.97	80
EV3	Legal	1.567	STRENGTH-I Concrete Shear	67.4	1	40.97	80
Gravel Truck	Legal	1.681	STRENGTH-I Concrete Shear	62.2	1	40.97	80
H 15-44	Inventory	1.274	SERVICE-III PS Tensile Stress	19.11	3	25.98	50.6
H 15-44	Operating	3.798	STRENGTH-I Concrete Flexure	56.98	3	30.8	60
HL-93 (US)	Inventory	0.556	SERVICE-III PS Tensile Stress	20.01	3	25.98	50.6
HL-93 (US)	Operating	1.6	STRENGTH-I Concrete Shear	57.59	1	40.97	80
HS 20-44	Inventory	0.698	SERVICE-III PS Tensile Stress	25.12	3	25.98	50.6
HS 20-44	Operating	1.934	STRENGTH-I Concrete Shear	69.62	1	40.97	80
Lane-Type Legal Load	Legal	4.569	STRENGTH-I Concrete Flexure	182.76	2	52.08	100
Overweight Permit	Permit	1.708	STRENGTH-II Concrete Shear	217.78	1	47.65	93
Passenger Vehicle - 3 Tons	Legal	18.77	STRENGTH-I Concrete Flexure	56.31	3	30.8	60
SU4	Legal	2.214	STRENGTH-I Concrete Shear	59.78	1	40.97	80
SU5	Legal	2.006	STRENGTH-I Concrete Shear	62.18	1	40.97	80
SU6	Legal	1.85	STRENGTH-I Concrete Flexure	64.3	3	30.8	60
SU7	Legal	1.74	STRENGTH-I Concrete Flexure	67.42	3	30.8	60
School Bus - Small	Legal	11.222	STRENGTH-I Concrete Shear	57.23	1	40.97	80
School Bus - Standard	Legal	4.069	STRENGTH-I Concrete Shear	58.99	1	40.97	80
Type 3	Legal	2.46	STRENGTH-I Concrete Shear	61.5	1	40.97	80
Type 3-3	Legal	2.537	STRENGTH-I Concrete Shear	101.46	1	47.65	93
Type 3S2	Legal	2.396	STRENGTH-I Concrete Shear	86.26	1	47.65	93

Note:

"N/A" indicates not applicable

"**" indicates not available

Bridge Name: I 65 / SR106 & Harpeth River

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:45

Structure Definition Name: SPAN 4

Member Name: G1

Member Alternative Name: G1

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location	
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	2.146	STRENGTH-II Concrete Flexure	177.07	1	17.26	50
Annual Permit 2	Permit	2.146	STRENGTH-II Concrete Flexure	177.07	1	17.26	50
EV2	Legal	2.121	STRENGTH-I Concrete Flexure	60.97	1	13.82	40
EV3	Legal	1.376	STRENGTH-I Concrete Flexure	59.15	1	17.26	50
Gravel Truck	Legal	1.479	STRENGTH-I Concrete Flexure	54.71	1	17.26	50
H 15-44	Inventory	2.354	SERVICE-III PS Tensile Stress	35.31	1	17.26	50
H 15-44	Operating	3.055	STRENGTH-I Concrete Flexure	45.82	1	17.26	50
HL-93 (US)	Inventory	1.127	SERVICE-III PS Tensile Stress	40.56	1	17.26	50
HL-93 (US)	Operating	1.462	STRENGTH-I Concrete Flexure	52.64	1	17.26	50
HS 20-44	Inventory	1.492	STRENGTH-I Concrete Flexure	53.7	1	13.82	40
HS 20-44	Operating	1.934	STRENGTH-I Concrete Flexure	69.62	1	13.82	40
Lane-Type Legal Load	Legal	99	STRENGTH-I Concrete Flexure	3960	1	0	0
Overweight Permit	Permit	1.932	STRENGTH-II Concrete Flexure	246.33	1	17.26	50
Passenger Vehicle - 3 Tons	Legal	15.46	STRENGTH-I Concrete Flexure	46.38	1	17.26	50
SU4	Legal	1.858	STRENGTH-I Concrete Flexure	50.17	1	17.26	50
SU5	Legal	1.765	STRENGTH-I Concrete Flexure	54.72	1	17.26	50
SU6	Legal	1.596	STRENGTH-I Concrete Flexure	55.46	1	17.26	50
SU7	Legal	1.514	STRENGTH-I Concrete Flexure	58.65	1	17.26	50
School Bus - Small	Legal	9.572	STRENGTH-I Concrete Flexure	48.82	1	17.26	50
School Bus - Standard	Legal	3.626	STRENGTH-I Concrete Flexure	52.58	1	13.82	40
Type 3	Legal	2.223	STRENGTH-I Concrete Flexure	55.58	1	17.26	50
Type 3-3	Legal	2.758	STRENGTH-I Concrete Flexure	110.3	1	17.26	50
Type 3S2	Legal	2.303	STRENGTH-I Concrete Flexure	82.92	1	17.26	50

Note:

"N/A" indicates not applicable

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Bridge Name: I 65 / SR106 & Harpeth River

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:45

Structure Definition Name: SPAN 4

Member Name: G2

Member Alternative Name: G2

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location	
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	1.615	STRENGTH-II Concrete Flexure	133.21	1	17.26	50
Annual Permit 2	Permit	1.615	STRENGTH-II Concrete Flexure	133.21	1	17.26	50
EV2	Legal	1.897	STRENGTH-I Concrete Flexure	54.54	1	13.82	40
EV3	Legal	1.236	STRENGTH-I Concrete Flexure	53.14	1	17.26	50
Gravel Truck	Legal	1.328	STRENGTH-I Concrete Flexure	49.15	1	17.26	50
H 15-44	Inventory	2.117	STRENGTH-I Concrete Flexure	31.75	1	17.26	50
H 15-44	Operating	2.744	STRENGTH-I Concrete Flexure	41.16	1	17.26	50
HL-93 (US)	Inventory	1.013	STRENGTH-I Concrete Flexure	36.48	1	17.26	50
HL-93 (US)	Operating	1.313	STRENGTH-I Concrete Flexure	47.28	1	17.26	50
HS 20-44	Inventory	1.334	STRENGTH-I Concrete Flexure	48.04	1	13.82	40
HS 20-44	Operating	1.73	STRENGTH-I Concrete Flexure	62.27	1	13.82	40
Lane-Type Legal Load	Legal	99	STRENGTH-I Concrete Flexure	3960	1	0	0
Overweight Permit	Permit	2.25	STRENGTH-II Concrete Flexure	286.9	1	17.26	50
Passenger Vehicle - 3 Tons	Legal	13.887	STRENGTH-I Concrete Flexure	41.66	1	17.26	50
SU4	Legal	1.669	STRENGTH-I Concrete Flexure	45.06	1	17.26	50
SU5	Legal	1.586	STRENGTH-I Concrete Flexure	49.15	1	17.26	50
SU6	Legal	1.434	STRENGTH-I Concrete Flexure	49.82	1	17.26	50
SU7	Legal	1.36	STRENGTH-I Concrete Flexure	52.69	1	17.26	50
School Bus - Small	Legal	8.598	STRENGTH-I Concrete Flexure	43.85	1	17.26	50
School Bus - Standard	Legal	3.244	STRENGTH-I Concrete Flexure	47.04	1	13.82	40
Type 3	Legal	1.997	STRENGTH-I Concrete Flexure	49.92	1	17.26	50
Type 3-3	Legal	2.473	STRENGTH-I Concrete Flexure	98.93	1	13.82	40
Type 3S2	Legal	2.069	STRENGTH-I Concrete Flexure	74.49	1	17.26	50

Note:

"N/A" indicates not applicable

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Bridge Name: I 65 / SR106 & Harpeth River

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:45

Structure Definition Name: SPAN 4

Member Name: G3

Member Alternative Name: G3

Load and Resistance Factor Rating Summary

Girder Summary

		Rating		Capacity		Location	
Live Load		**Factor**	**Controls**	**(Ton)**	**Span**	**(ft)**	**Percent**
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	1.555	STRENGTH-II Concrete Flexure	128.29	1	17.26	50
Annual Permit 2	Permit	1.555	STRENGTH-II Concrete Flexure	128.29	1	17.26	50
EV2	Legal	1.829	STRENGTH-I Concrete Flexure	52.6	1	20.71	60
EV3	Legal	1.19	STRENGTH-I Concrete Flexure	51.17	1	17.26	50
Gravel Truck	Legal	1.279	STRENGTH-I Concrete Flexure	47.33	1	17.26	50
H 15-44	Inventory	2.039	STRENGTH-I Concrete Flexure	30.58	1	17.26	50
H 15-44	Operating	2.643	STRENGTH-I Concrete Flexure	39.64	1	17.26	50
HL-93 (US)	Inventory	0.976	STRENGTH-I Concrete Flexure	35.13	1	17.26	50
HL-93 (US)	Operating	1.265	STRENGTH-I Concrete Flexure	45.54	1	17.26	50
HS 20-44	Inventory	1.287	STRENGTH-I Concrete Flexure	46.32	1	20.71	60
HS 20-44	Operating	1.668	STRENGTH-I Concrete Flexure	60.05	1	20.71	60
Lane-Type Legal Load	Legal	99	STRENGTH-I Concrete Flexure	3960	1	0	0
Overweight Permit	Permit	2.173	STRENGTH-II Concrete Flexure	277.11	1	17.26	50
Passenger Vehicle - 3 Tons	Legal	13.374	STRENGTH-I Concrete Flexure	40.12	1	17.26	50
SU4	Legal	1.607	STRENGTH-I Concrete Flexure	43.4	1	17.26	50
SU5	Legal	1.527	STRENGTH-I Concrete Flexure	47.34	1	17.26	50
SU6	Legal	1.381	STRENGTH-I Concrete Flexure	47.98	1	17.26	50
SU7	Legal	1.309	STRENGTH-I Concrete Flexure	50.74	1	17.26	50
School Bus - Small	Legal	8.28	STRENGTH-I Concrete Flexure	42.23	1	17.26	50
School Bus - Standard	Legal	3.128	STRENGTH-I Concrete Flexure	45.36	1	20.71	60
Type 3	Legal	1.923	STRENGTH-I Concrete Flexure	48.08	1	17.26	50
Type 3-3	Legal	2.385	STRENGTH-I Concrete Flexure	95.42	1	20.71	60
Type 3S2	Legal	1.993	STRENGTH-I Concrete Flexure	71.73	1	17.26	50

Note:

"N/A" indicates not applicable

"**" indicates not available

Bridge Name: I 65 / SR106 & Harpeth River

NBI Structure ID: 94I00650006

Bridge ID: 94I00650006

Analyzed By: bridge_rating

Analyze Date: Monday, December 20, 2021 15:01:52

Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002

Analysis Preference Setting: None

Report By: bridge_rating

Report Date: Monday, December 20, 2021 15:07:46

Structure Definition Name: SPAN 4

Member Name: G5

Member Alternative Name: G5

Load and Resistance Factor Rating Summary

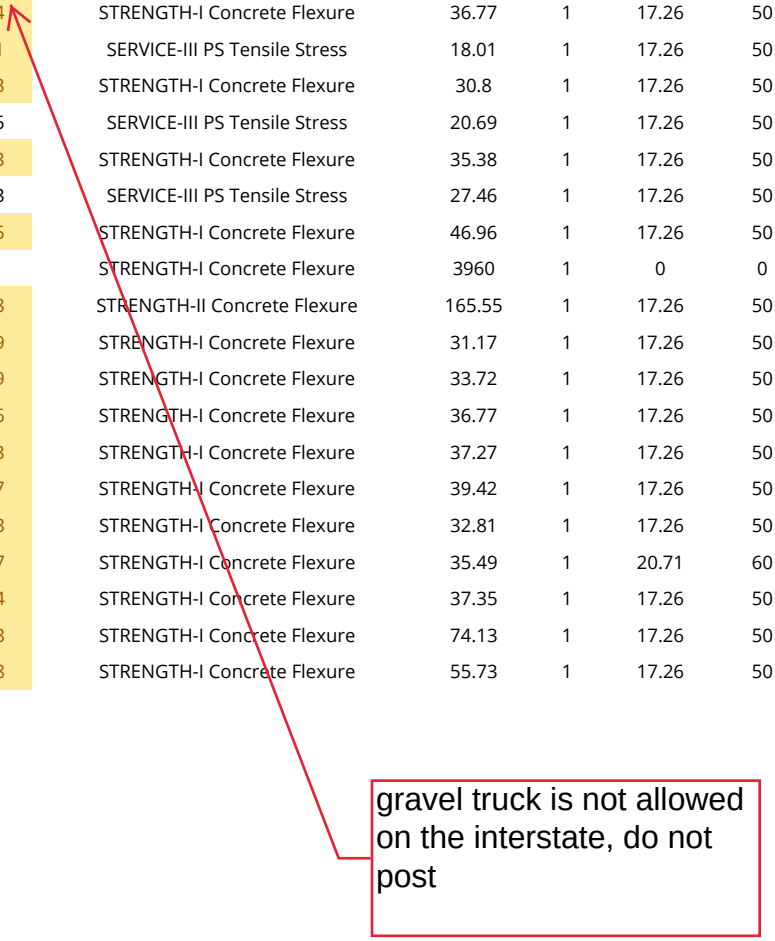
Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
>200' Spans Only: Gravel Truck + Lane	Legal	99	STRENGTH-I Concrete Flexure	2747.25	1	0	0
Annual Permit 1	Permit	1.45	STRENGTH-II Concrete Flexure	119.59	1	17.26	50
Annual Permit 2	Permit	1.45	STRENGTH-II Concrete Flexure	119.59	1	17.26	50
~~EV2~~	~~Legal~~	~~1.431~~	~~STRENGTH-I Concrete Flexure~~	~~41.15~~	~~1~~	~~20.71~~	~~60~~
~~EV3~~	~~Legal~~	~~0.925~~	~~STRENGTH-I Concrete Flexure~~	~~39.76~~	~~1~~	~~17.26~~	~~50~~
Gravel Truck	Legal	0.994	STRENGTH-I Concrete Flexure	36.77	1	17.26	50
H 15-44	Inventory	1.201	SERVICE-III PS Tensile Stress	18.01	1	17.26	50
H 15-44	Operating	2.053	STRENGTH-I Concrete Flexure	30.8	1	17.26	50
HL-93 (US)	Inventory	0.575	SERVICE-III PS Tensile Stress	20.69	1	17.26	50
HL-93 (US)	Operating	0.983	STRENGTH-I Concrete Flexure	35.38	1	17.26	50
HS 20-44	Inventory	0.763	SERVICE-III PS Tensile Stress	27.46	1	17.26	50
HS 20-44	Operating	1.305	STRENGTH-I Concrete Flexure	46.96	1	17.26	50
Lane-Type Legal Load	Legal	99	STRENGTH-I Concrete Flexure	3960	1	0	0
Overweight Permit	Permit	1.298	STRENGTH-II Concrete Flexure	165.55	1	17.26	50
Passenger Vehicle - 3 Tons	Legal	10.39	STRENGTH-I Concrete Flexure	31.17	1	17.26	50
SU4	Legal	1.249	STRENGTH-I Concrete Flexure	33.72	1	17.26	50
SU5	Legal	1.186	STRENGTH-I Concrete Flexure	36.77	1	17.26	50
SU6	Legal	1.073	STRENGTH-I Concrete Flexure	37.27	1	17.26	50
SU7	Legal	1.017	STRENGTH-I Concrete Flexure	39.42	1	17.26	50
School Bus - Small	Legal	6.433	STRENGTH-I Concrete Flexure	32.81	1	17.26	50
School Bus - Standard	Legal	2.447	STRENGTH-I Concrete Flexure	35.49	1	20.71	60
Type 3	Legal	1.494	STRENGTH-I Concrete Flexure	37.35	1	17.26	50
Type 3-3	Legal	1.853	STRENGTH-I Concrete Flexure	74.13	1	17.26	50
Type 3S2	Legal	1.548	STRENGTH-I Concrete Flexure	55.73	1	17.26	50

Note:

"N/A" indicates not applicable

"**" indicates not available



Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:51

Structure Definition Name: SPANS 1,2,3
Member Name: G1
Member Alternative Name: G1

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	3.444	STRENGTH-II Concrete Shear	99.01	3	10.27	20
EV3	Permit	2.623	STRENGTH-II Concrete Shear	112.8	3	10.27	20
HL-93 (US)	Inventory	0.981	SERVICE-III PS Tensile Stress	35.32	3	25.98	50.6
HL-93 (US)	Operating	2.059	STRENGTH-I Concrete Shear	74.12	3	10.27	20

Note:
"N/A" indicates not applicable
"**" indicates not available
Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:51

Structure Definition Name: SPANS 1,2,3
Member Name: G2
Member Alternative Name: G2

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	3.738	STRENGTH-II Concrete Shear	107.47	3	10.27	20
EV3	Permit	2.847	STRENGTH-II Concrete Shear	122.44	3	10.27	20
HL-93 (US)	Inventory	1.497	STRENGTH-I Concrete Shear	53.91	3	10.27	20
HL-93 (US)	Operating	1.941	STRENGTH-I Concrete Shear	69.88	3	10.27	20

Note:
"N/A" indicates not applicable
"**" indicates not available

Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:51

Structure Definition Name: SPANS 1,2,3
Member Name: G3
Member Alternative Name: G3

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	3.936	STRENGTH-II Concrete Shear	113.16	3	10.27	20
EV3	Permit	2.998	STRENGTH-II Concrete Shear	128.92	3	10.27	20
HL-93 (US)	Inventory	1.624	STRENGTH-I Concrete Shear	58.46	3	10.27	20
HL-93 (US)	Operating	2.105	STRENGTH-I Concrete Shear	75.79	3	10.27	20

Note:
"N/A" indicates not applicable
"**" indicates not available
Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:52

Structure Definition Name: SPANS 1,2,3
Member Name: G6
Member Alternative Name: G6

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	2.675	STRENGTH-II Concrete Shear	76.9	1	40.97	80
EV3	Permit	2.038	STRENGTH-II Concrete Shear	87.61	1	40.97	80
HL-93 (US)	Inventory	0.556	SERVICE-III PS Tensile Stress	20.01	3	25.98	50.6
HL-93 (US)	Operating	1.6	STRENGTH-I Concrete Shear	57.59	1	40.97	80

Note:
"N/A" indicates not applicable
"**" indicates not available

Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:52

Structure Definition Name: SPAN 4
Member Name: G1
Member Alternative Name: G1

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	2.451	STRENGTH-II Concrete Flexure	70.46	1	13.82	40
EV3	Permit	1.788	STRENGTH-II Concrete Flexure	76.9	1	17.26	50
HL-93 (US)	Inventory	1.127	SERVICE-III PS Tensile Stress	40.56	1	17.26	50
HL-93 (US)	Operating	1.462	STRENGTH-I Concrete Flexure	52.64	1	17.26	50

Note:
"N/A" indicates not applicable
"**" indicates not available
Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:52

Structure Definition Name: SPAN 4
Member Name: G2
Member Alternative Name: G2

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	2.842	STRENGTH-II Concrete Flexure	81.72	1	13.82	40
EV3	Permit	2.083	STRENGTH-II Concrete Flexure	89.57	1	17.26	50
HL-93 (US)	Inventory	1.013	STRENGTH-I Concrete Flexure	36.48	1	17.26	50
HL-93 (US)	Operating	1.313	STRENGTH-I Concrete Flexure	47.28	1	17.26	50

Note:
"N/A" indicates not applicable
"**" indicates not available

Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:52

Structure Definition Name: SPAN 4
Member Name: G3
Member Alternative Name: G3

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	2.749	STRENGTH-II Concrete Flexure	79.04	1	20.71	60
EV3	Permit	2.012	STRENGTH-II Concrete Flexure	86.51	1	17.26	50
HL-93 (US)	Inventory	0.976	STRENGTH-I Concrete Flexure	35.13	1	17.26	50
HL-93 (US)	Operating	1.265	STRENGTH-I Concrete Flexure	45.54	1	17.26	50

Note:
"N/A" indicates not applicable
"**" indicates not available
Bridge Name: I 65 / SR106 & Harpeth River
NBI Structure ID: 94I00650006
Bridge ID: 94I00650006

Analyzed By: bridge_rating
Analyze Date: Monday, December 20, 2021 15:20:08
Analysis Engine: AASHTO LRFR Engine Version 6.8.4.3002
Analysis Preference Setting: None

Report By: bridge_rating
Report Date: Monday, December 20, 2021 15:37:52

Structure Definition Name: SPAN 4
Member Name: G5
Member Alternative Name: G5

d Resistance Factor Rating Summary

Girder Summary

Live Load		Rating Factor	Controls	Capacity (Ton)	Span	Location (ft)	Percent
EV2	Permit	1.654	STRENGTH-II Concrete Flexure	47.55	1	20.71	60
EV3	Permit	1.202	STRENGTH-II Concrete Flexure	51.68	1	17.26	50
HL-93 (US)	Inventory	0.575	SERVICE-III PS Tensile Stress	20.69	1	17.26	50
HL-93 (US)	Operating	0.983	STRENGTH-I Concrete Flexure	35.38	1	17.26	50

Note:
"N/A" indicates not applicable
"**" indicates not available

Username: bridge_rating
Date: Tuesday, December 21, 2021 07:27:54

Bridge ID 94I00650006 I 65 / SR106 & Harpeth River

NBI Structure ID (8): 94I00650006
Description:

Description
Location:
Total Length: *(ft)*
Facility Carried:
Route Number:
Feature Intersected:
Mi Post: *(mi)*
Units: US Customary
Year Built:
Recent ADTT:
District:
County: Williamson
Owner:
National Highway System:
Functional Class:
Global Reference Point
X Coordinate: 0.000 *(ft)*
Y Coordinate: 0.000 *(ft)*
Elevation: *(ft)*
Longitude: *(Degrees)*
Latitude: *(Degrees)*

Materials

No steel materials.

Concrete

Name: **Class A - f'c is 3 ksi**
Description: Standard 3 ksi Class A concrete

Specified compressive strength at 28 days (f'c):	3.000 *(ksi)*
Initial specified compressive strength (f'ci):	2.500 *(ksi)*
Coefficient of thermal expansion:	0.0000060000 *(1/F)*
Density (for dead loads):	0.150 *(kcf)*
Density (for modulus of elasticity):	0.145 *(kcf)*
Std Modulus of elasticity (Ec):	3155.92 *(ksi)*
LRFD Modulus of elasticity (Ec):	3155.92 *(ksi)*
Poisson's ratio:	0.200
Modulus of rupture:	0.410 *(ksi)*
Shear factor:	1.000
Composition of concrete:	Normal
Std Initial modulus of elasticity (Eci):	2850.00 *(ksi)*
LRFD Initial modulus of elasticity (Eci):	2850.00 *(ksi)*

Splitting tensile strength (fct):	*(ksi)*
Name:	**5 ksi f'c**
Description:	
Specified compressive strength at 28 days (f'c):	5.000 *(ksi)*
Initial specified compressive strength (f'ci):	4.200 *(ksi)*
Coefficient of thermal expansion:	0.0000060000 *(1/F)*
Density (for dead loads):	0.150 *(kcf)*
Density (for modulus of elasticity):	0.150 *(kcf)*
Std Modulus of elasticity (Ec):	4286.83 *(ksi)*
LRFD Modulus of elasticity (Ec):	4286.83 *(ksi)*
Poisson's ratio:	0.200
Modulus of rupture:	0.537 *(ksi)*
Shear factor:	1.000
Composition of concrete:	Normal
Std Initial modulus of elasticity (Eci):	3928.94 *(ksi)*
LRFD Initial modulus of elasticity (Eci):	3928.94 *(ksi)*
Splitting tensile strength (fct):	*(ksi)*

Reinforcing Steel

Name:	**Grade 60**
Description:	60 ksi reinforcing steel
Specified yield strength (Fy):	60.000 *(ksi)*
Modulus of elasticity (Es):	29000.00 *(ksi)*
Ultimate strength (Fu):	90.000 *(ksi)*
Type:	Plain

Prestressing Strand

Name:	**1/2" (7W-270) SR**
Description:	Stress relieved 1/2"/Seven Wire/fpu = 270
Specified yield strength (Fy):	250.000 *(ksi)*
Ultimate Tensile strength (Fu):	280.000 *(ksi)*
Modulus of elasticity (Es):	28500.00 *(ksi)*
Load per unit length:	0.520 *(lb/ft)*
Cross sectional area (A):	0.153 *(in^2)*
Nominal diameter (d):	0.5000 *(in)*
Transfer length (Std):	25.0000 *(in)*
Transfer length (LRFD):	30.0000 *(in)*
Type:	Stress Relieved
Epoxy coated:	TRUE

No timber materials.

Beam Shapes

Steel Shapes

No steel shapes.

Prestressed Shapes

Prestressed I Shapes

Name:	**AASHTO TYPE II**	
Description:	AASHTO TYPE II	
Type:		Narrow Top Flange
Nominal Depth:		36.0000 *(in)*
Depth (d):		36.0000 *(in)*
Top flange width:		12.0000 *(in)*
Bottom flange width:		18.0000 *(in)*
Top flange thickness:		6.0000 *(in)*
Bottom flange thickness:		6.0000 *(in)*
Top flange taper height:		3.0000 *(in)*
Bottom flange taper height:		6.0000 *(in)*
Web thickness:		6.0000 *(in)*
Nominal load:		384.000 *(lb/ft)*
Cross sectional area:		369.000 *(in^2)*
Ixx:		50980.000 *(in^4)*
CG from bottom:		15.8300 *(in)*
Bottom Sxx:		3220.000 *(in^3)*
Top Sxx:		2528.000 *(in^3)*
Volume/Surface Ratio:		*(in)*
Half Depth Area for Positive Flexure:		*(in^2)*
Half Depth Area for Negative Flexure:		*(in^2)*
St. Venant's Torsional Constant:		*(in^4)*

Strand Grid

Row Number	Number of Strands	Vertical Location *(in)*	Horizontal Spacing *(in)*
1	8	2.0000	2.0000
2	8	4.0000	2.0000
3	6	6.0000	2.0000
4	4	8.0000	2.0000
5	2	10.0000	2.0000
6	2	12.0000	2.0000
7	2	14.0000	2.0000
8	2	16.0000	2.0000
9	2	18.0000	2.0000
10	2	20.0000	2.0000
11	2	22.0000	2.0000
12	2	24.0000	2.0000
13	2	26.0000	2.0000
14	2	28.0000	2.0000
15	2	30.0000	2.0000
16	2	32.0000	2.0000
17	2	34.0000	2.0000

No prestressed box shapes.

No prestressed U shapes.

No prestressed tee shapes.

Timber Shapes

No timber shapes.

Appurtenances

Parapets

Name:	**Jersey Barrier**	
Description:	Standard New Jersey Barrier	
X1:		12.0000 *(in)*
X2:		2.0000 *(in)*
X3:		7.0000 *(in)*
Y1:		0.0000 *(in)*
Y2:		19.0000 *(in)*
Y3:		10.0000 *(in)*
Y4:		3.0000 *(in)*
Distance to Center of Gravity of Load:		*(in)*
Additional Load:		*(kip/ft)*
Concrete Density:		0.1500 *(kcf)*

No concrete medians.

No concrete generics.

No steel railings.

Impact

Standard Impact Factor

Type:	Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states:	15.0 *(%)*
All other limit states:	33.0 *(%)*

Factors

No LFD Factors specified.

No LRFD Factors specified.

Bridge Alternatives alt

Reference Line
Reference Line Length: 205.08 *(ft)*
Starting Station: *(ft)*
Bearing: N 90^ 0' 0.00" E
Global Positioning
Distance: 0.000 *(ft)*
Offset: 0.000 *(ft)*
Elevation: *(ft)*

Structures
Name: Superstructure 1
Description:

Structure Alternatives
Name: Superstructure Alt 1
Description:
Superstructure Definition: SPANS 1,2,3

Structures
Name: Superstructure 2
Description:

Structure Alternatives
Name: Superstructure Alt 2
Description:
Superstructure Definition: SPAN 4

Superstructure Definition SPANS 1,2,3

Definition
Units: US Customary
Number of spans: 3
Number of girders: 6

Span	Length *(ft)*
1	51.2083
2	52.0833
3	51.3333

Frame Structure Simplified Definition:

Support	Frame Connection
1	
2	
3	
4	

Girder Spacing Display Type: Perpendicular
Average Humidity: 60.000 *(%)*

Analysis
Default Library Factors
Factor Override
Analysis Module
Analysis Method: ASD
Analysis Module:
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module:
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module:
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module:
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LFD

Impact
Standard Impact Factor
Type: Standard - AASHTO
LRFD Dynamic Load Allowance
Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Structure Framing Plan Details
Layout

Support	Skew *(Degrees)*
1	20.0000
2	20.0000
3	20.0000
4	20.0000

Girder Spacing Orientation: Perpendicular

Girder Bay	Girder Spacing Start	End

	(ft)	(ft)
1	7.5000	7.5000
2	6.0000	6.0000
3	6.0000	6.0000
4	6.0000	6.0000
5	6.0000	6.0000

Diaphragms

Girder Bay 1

Distance Left Girder (ft)	Distance Right Girder (ft)	Diaphragm Spacing (ft)	Number of Spaces	Diaphragm Weight (kip)
0.00	0.00	0.00	1	
51.21	51.21	0.00	1	
103.29	103.29	0.00	1	
154.62	154.62	0.00	1	

Girder Bay 2

Distance Left Girder (ft)	Distance Right Girder (ft)	Diaphragm Spacing (ft)	Number of Spaces	Diaphragm Weight (kip)
0.00	0.00	0.00	1	
0.00	0.00	25.60	1	1.4000
51.21	51.21	0.00	1	
51.21	51.21	26.04	1	1.4000
103.29	103.29	0.00	1	
103.29	103.29	25.67	1	1.4000
154.62	154.62	0.00	1	

Girder Bay 3

Distance Left Girder (ft)	Distance Right Girder (ft)	Diaphragm Spacing (ft)	Number of Spaces	Diaphragm Weight (kip)
0.00	0.00	0.00	1	
0.00	0.00	25.60	1	1.4000
51.21	51.21	0.00	1	
51.21	51.21	26.04	1	1.4000
103.29	103.29	0.00	1	
103.29	103.29	25.67	1	1.4000
154.62	154.62	0.00	1	

Girder Bay 4

Distance Left Girder (ft)	Distance Right Girder (ft)	Diaphragm Spacing (ft)	Number of Spaces	Diaphragm Weight (kip)
0.00	0.00	0.00	1	
0.00	0.00	25.60	1	1.4000
51.21	51.21	0.00	1	
51.21	51.21	26.04	1	1.4000
103.29	103.29	0.00	1	
103.29	103.29	25.67	1	1.4000
154.62	154.62	0.00	1	

Girder Bay 5

Distance	Distance	Diaphragm	Number of	Diaphragm

Left Girder (ft)	Right Girder (ft)	Spacing (ft)	Spaces	Weight (kip)
0.00	0.00	0.00	1	
0.00	0.00	25.60	1	1.4000
51.21	51.21	0.00	1	
51.21	51.21	26.04	1	1.4000
103.29	103.29	0.00	1	
103.29	103.29	25.67	1	1.4000
154.62	154.62	0.00	1	

Structure Typical Section

Deck

Left start width: 22.00 *(ft)*
Left end width: 22.00 *(ft)*
Right start width: 22.00 *(ft)*
Right end width: 22.00 *(ft)*
Left start overhang: 5.50 *(ft)*
Left end overhang: 5.50 *(ft)*

Deck (Cont'd)

Deck concrete: Class A - f'c is 3 ksi
Total deck thickness: 9.2500 *(in)*
Deck crack control parameter: *(kip/in)*
Sustained modular ratio factor: 3.000

Parapet

Name	Load Case	Measure To	Measured From	Distance At Start	Distance At End	Front Face Orientation
Jersey Ba...	DC2	Back	Right E...			Left
Jersey Ba...	DC2	Back	Left Ed...			Right

Lane Position

Offset Left Start: -20.25 *(ft)*
Offset Left End: -20.25 *(ft)*
Offset Right Start: 20.25 *(ft)*
Offset Right End: 20.25 *(ft)*

Wearing Surface

Wearing surface material: Asphalt
Description:
Wearing surface thickness: 6.0000 *(in)*
Wearing surface density: 144.000 *(pcf)*
Load case: DW

Load Case Description

Load Case Name	Description	Stage	Type	Time (Days)
DC1	DC acting on non-comp...	Non-composite (Sta...	D,DC	
DC2	DC acting on long-ter...	Composite (long te...	D,DC	
DW	DW acting on long-ter...	Composite (long te...	D,DW	
SIP Forms	Weight due to stay-in...	Non-composite (Sta...	D,DC	

Superstructure Loads

DL Distribution
Stage 1 Dead Load Distribution: Tributary Area
Stage 2 Dead Load Distribution: Uniformly to All Girders

Stiffener Definitions

Stress Limits

Name: **sl**
Description:
Concrete material: 5 ksi f'c

Initial allowable tension (LFD):	0.194 *(ksi)*	
Initial allowable compression (LFD):	2.520 *(ksi)*	
Final allowable slab compression (LFD):	*(ksi)*	
Final allowable tension (LFD):	0.425 *(ksi)*	
Final allowable DL compression (LFD):	2.000 *(ksi)*	
Final allowable compression (LFD):	3.000 *(ksi)*	
Final allowable compression (LL + 1/2(Pe+DL)) (LFD):		2.000 *(ksi)*
Initial allowable tension (LRFD):	0.194 *(ksi)*	
Initial allowable compression (LRFD):	2.520 *(ksi)*	
Final allowable slab compression (LRFD):	*(ksi)*	
Final allowable tension (LRFD):	0.425 *(ksi)*	
Final allowable DL compression (LRFD):	2.250 *(ksi)*	
Final allowable compression (LRFD):	3.000 *(ksi)*	
Final allowable compression (LL + 1/2(Pe+DL)) (LRFD):		2.000 *(ksi)*

Prestress Properties

Name: **pp**
General Pretress Data

Prestressing Strand:	1/2" (7W-270) SR
Loss Method:	AASHTO Approximate
Jacking stress ratio:	0.750
Transfer stress ratio:	
Transfer time:	24.0 *(Hours)*
AASHTO - Dead load percent:	0.0 *(%)*

Loss Data - PCI

PCI - Maturity coefficient:	
PCI - Ultimate creep loss:	*(ksi)*
PCI - Ultimate shrinkage loss:	*(ksi)*
PCI - Additional time 1:	*(Days)*
PCI - Additional time 2:	*(Days)*
PCI - Additional time 3:	*(Days)*
PCI - Additional time 4:	*(Days)*
PCI - Additional time 5:	*(Days)*
PCI - Additional time 6:	*(Days)*
PCI - Additional time 7:	*(Days)*
PCI - Additional time 8:	*(Days)*
PCI - Additional time 9:	*(Days)*
PCI - Additional time 10:	*(Days)*

Loss Data - Lump-sum

Lump-sum - Composite loss:	*(ksi)*

Lump-sum - Continuous loss: *(ksi)*
Lump-sum - Final loss: *(ksi)*

Shear Reinforcement Definitions - Vertical

Name: **h6**
Vertical Reinforcement: Grade 60
Vertical Rebar: 6
Number of legs (Vertical): 2.00
Inclination angle alpha (Vertical): 90.0 *(Degrees)*

Name: **h4**
Vertical Reinforcement: Grade 60
Vertical Rebar: 4
Number of legs (Vertical): 2.00
Inclination angle alpha (Vertical): 90.0 *(Degrees)*

No horizontal shear reinforcement definitions.

Member G1

Link with: None
Description:

Existing: G1 -
Current: G1 -
Number of Spans: 3

Span Number	Span Length *(ft)*
1	51.208333
2	52.083333
3	51.333333

Support	Frame Connection
1	
2	
3	
4	

Pedestrian load: *(lb/ft)*

Member Loads

Member Loads - Settlement

Support Number	Horizontal *(in)*	Vertical *(in)*	Rotational *(Radians)*	Load Case Name
1				
2				
3				
4				

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation
1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free
3	Roller	Free	Fixed	Free
4	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				
2				
3				
4				

Member Alternative G1

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors
Factor Override
LRFD:
LFD:
ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		
PS Moment Cap.		
Reinforcement		
Bearing Stiffener		
Stirrup		
Timber	NA	

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact
Standard Impact Factor
Type: Standard - AASHTO
LRFD Dynamic Load Allowance
Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution
Standard

	Distribution Factor (Wheels)			
Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	0.933	0.933	0.933	0.333
Multi-Lane	0.933	0.933	0.933	0.667

Shrinkage/Time
Deck curing method:
Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*

Service life:	75.00	*(Years)*
Analysis time:		*(Years)*
Composite time:		*(Days)*
Continuous time:		*(Days)*

Beam Details

Span Details

Span	Prestress Shape Use Projection	Concrete Material n Creep	Prestress Properties	Left Projection *(in)*	Right *(in)*
1	AASHTO TYPE I... FALSE	5 ksi f'c	pp	6.0000	3.0000
2	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	3.0000
3	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	4.5000

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2	7.5000	7.5000
3	7.5000	7.5000
4		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	51.33
sl	2	0.000	51.33
sl	3	0.000	51.33

Slab Interface

Deck interface type:	Monolithic	
Interface width:		*(in)*
Deck cohesion factor:	0.400	*(ksi)*
Deck friction factor:	1.400	

Continuity Diaphragm

Span No.	Material Bar	Left Support Distance Bar *(in)*	Bar Count	Bar Size	Right Support Material *(in)*	Distance Count	 Size

1					Grade 60	3.0000 4.000
	6					
1					Grade 60	13.0000
	2.000	4				
1					Grade 60	19.0000
	2.000	4				
1					Grade 60	25.0000
	2.000	4				
2	Grade 60	3.0000	4.000	6	Grade 60	3.0000 4.000
	6					
2	Grade 60	13.0000	2.000	4	Grade 60	13.0000
	2.000	4				
2	Grade 60	19.0000	2.000	4	Grade 60	19.0000
	2.000	4				
2	Grade 60	25.0000	2.000	4	Grade 60	25.0000
	2.000	4				
3	Grade 60	3.0000	4.000	6		
3	Grade 60	13.0000	2.000	4		
3	Grade 60	19.0000	2.000	4		
3	Grade 60	25.0000	2.000	4		

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance *(ft)*	Debond Distance *(in)*	Harp Curvature *(in)*
1		1	1	Harped			
	Left						0.0000
	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000
1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	14	1		20.67		0.0000
	Right	14	1		20.67		0.0000
1		1	5	Harped			
	Left	14	2		20.67		0.0000
	Right	14	2		20.67		0.0000
1		1	6	Harped			
	Left						0.0000
	Right						0.0000

1		1	7	Harped		
	Left					0.0000
	Right					0.0000
1		1	8	Harped		
	Left					0.0000
	Right					0.0000
1		2	1	Harped		
	Left					0.0000
	Right					0.0000
1		2	2	Harped		
	Left					0.0000
	Right					0.0000
1		2	3	Harped		
	Left					0.0000
	Right					0.0000
1		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
1		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
1		2	6	Harped		
	Left					0.0000
	Right					0.0000
1		2	7	Harped		
	Left					0.0000
	Right					0.0000
1		2	8	Harped		
	Left					0.0000
	Right					0.0000
1		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
1		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000
2		1	1	Harped		
	Left					0.0000
	Right					0.0000
2		1	2	Harped		
	Left					0.0000
	Right					0.0000
2		1	3	Harped		
	Left					0.0000
	Right					0.0000
2		1	4	Harped		
	Left	14	1		20.67	0.0000
	Right	14	1		20.67	0.0000

2		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
2		1	6	Harped		
	Left					0.0000
	Right					0.0000
2		1	7	Harped		
	Left					0.0000
	Right					0.0000
2		1	8	Harped		
	Left					0.0000
	Right					0.0000
2		2	1	Harped		
	Left					0.0000
	Right					0.0000
2		2	2	Harped		
	Left					0.0000
	Right					0.0000
2		2	3	Harped		
	Left					0.0000
	Right					0.0000
2		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
2		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
2		2	6	Harped		
	Left					0.0000
	Right					0.0000
2		2	7	Harped		
	Left					0.0000
	Right					0.0000
2		2	8	Harped		
	Left					0.0000
	Right					0.0000
2		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
2		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000
3		1	1	Harped		
	Left					0.0000
	Right					0.0000
3		1	2	Harped		
	Left					0.0000
	Right					0.0000

3		1	3	Harped		
	Left					0.0000
	Right					0.0000
3		1	4	Harped		
	Left	14	1		20.67	0.0000
	Right	14	1		20.67	0.0000
3		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
3		1	6	Harped		
	Left					0.0000
	Right					0.0000
3		1	7	Harped		
	Left					0.0000
	Right					0.0000
3		1	8	Harped		
	Left					0.0000
	Right					0.0000
3		2	1	Harped		
	Left					0.0000
	Right					0.0000
3		2	2	Harped		
	Left					0.0000
	Right					0.0000
3		2	3	Harped		
	Left					0.0000
	Right					0.0000
3		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
3		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
3		2	6	Harped		
	Left					0.0000
	Right					0.0000
3		2	7	Harped		
	Left					0.0000
	Right					0.0000
3		2	8	Harped		
	Left					0.0000
	Right					0.0000
3		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
3		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n (ft)	Length (ft)	Total Thickness (in)	Structural Thickness (in)	Effective Width (Std) (in)	Effective Width (in)
Class A - f'c...	0.00 9.20...	154.62		8.0000	90.0000	90.0000

Reinforcement

Material	Start Distance (ft)	Length (ft)	Bar Count	Bar Size	Distance (in)	Row
Grade 60	0.00	154.62	9.00	6	3.4375	Top of...
Grade 60	0.00	154.62	10.00	5	1.9375	Bottom...
Grade 60	45.21	12.00	6.00	8	3.6250	Top of...
Grade 60	97.29	12.00	6.00	8	3.6250	Top of...

Haunch Profile

Distance (ft)	Length (ft)	Z1 (in)	Z2 (in)	Z3 (in)	Z4 (in)	Y1 (in)	Y2 (in)	Y3 (in)
0.00	154.62 4.5000	0.0000	0.0000	0.0000	60.0000	0.0000	0.0000	

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance (ft)	Number Spaces	Spacing (in)	Extends into Deck
h6	1	0.25	5	3.0000	TRUE
h6	1	0.25	1	0.0000	TRUE
h4	1	1.50	5	6.0000	TRUE
h4	1	4.00	7	9.0000	TRUE
h4	1	9.25	6	12.0000	TRUE
h4	1	15.25	6	18.0000	TRUE
h4	1	24.25	2	17.0000	TRUE
h4	1	27.08	6	18.0000	TRUE
h4	1	36.08	6	12.0000	TRUE
h4	1	42.08	7	9.0000	TRUE
h4	1	47.33	5	6.0000	TRUE
h6	1	49.83	5	3.0000	TRUE
h6	2	0.25	1	0.0000	TRUE
h6	2	0.25	5	3.0000	TRUE
h4	2	1.50	5	6.0000	TRUE
h4	2	4.00	7	9.0000	TRUE
h4	2	9.25	6	12.0000	TRUE
h4	2	15.25	6	18.0000	TRUE
h4	2	24.25	2	17.0000	TRUE
h4	2	27.08	6	18.0000	TRUE
h4	2	36.08	6	12.0000	TRUE

h4	2	42.08	7	9.0000	TRUE
h4	2	47.33	5	6.0000	TRUE
h6	2	49.83	5	3.0000	TRUE
h6	3	0.25	1	0.0000	TRUE
h6	3	0.25	5	3.0000	TRUE
h4	3	1.50	5	6.0000	TRUE
h4	3	4.00	7	9.0000	TRUE
h4	3	9.25	6	12.0000	TRUE
h4	3	15.25	6	18.0000	TRUE
h4	3	24.25	2	17.0000	TRUE
h4	3	27.08	6	18.0000	TRUE
h4	3	36.08	6	12.0000	TRUE
h4	3	42.08	7	9.0000	TRUE
h4	3	47.33	5	6.0000	TRUE
h6	3	49.83	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length

Member G2

Link with: None
Description:

Existing: G2 -
Current: G2 -
Number of Spans: 3

Span Number	Span Length *(ft)*
1	51.208333
2	52.083333
3	51.333333

Support	Frame Connection
1	
2	
3	
4	

Pedestrian load: 0.000 *(lb/ft)*

Member Loads

Member Loads - Settlement

Support Number	Horizontal *(in)*	Vertical *(in)*	Rotational *(Radians)*	Load Case Name
1				
2				

3
4

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation
1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free
3	Roller	Free	Fixed	Free
4	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				
2				
3				
4				

Member Alternative G2

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors
Factor Override
LRFD:
LFD:
ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		
PS Moment Cap.		
Reinforcement		
Bearing Stiffener		
Stirrup		
Timber	NA	

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact
Standard Impact Factor
Type: Standard - AASHTO
LRFD Dynamic Load Allowance
Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution
Standard

	Distribution Factor (Wheels)			
Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	0.964	1.200	0.964	0.333
Multi-Lane	1.227	1.367	1.227	0.900

Shrinkage/Time
Deck curing method:

Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*
Service life: 75.00 *(Years)*
Analysis time: *(Years)*
Composite time: *(Days)*
Continuous time: *(Days)*

Beam Details

Span Details

Span	Prestress Shape Use Projection	Concrete Material n Creep	Prestress Properties	Left Projection *(in)*	Right *(in)*
1	AASHTO TYPE I... FALSE	5 ksi f'c	pp	6.0000	3.0000
2	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	3.0000
3	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	4.5000

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2	7.5000	7.5000
3	7.5000	7.5000
4		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	51.33
sl	2	0.000	51.33
sl	3	0.000	51.33

Slab Interface

Deck interface type: Monolithic
Interface width: *(in)*
Deck cohesion factor: 0.400 *(ksi)*
Deck friction factor: 1.400

Continuity Diaphragm

	Left Support	Right Support

Span No.	Material Bar	Distance Bar (in)	Bar Count	Bar Size	Material Count	Distance (in)
1					Grade 60	3.0000 4.000
	6					
1					Grade 60	13.0000
	2.000	4				
1					Grade 60	19.0000
	2.000	4				
1					Grade 60	25.0000
	2.000	4				
2	Grade 60	3.0000	4.000	6	Grade 60	3.0000 4.000
	6					
2	Grade 60	13.0000	2.000	4	Grade 60	13.0000
	2.000	4				
2	Grade 60	19.0000	2.000	4	Grade 60	19.0000
	2.000	4				
2	Grade 60	25.0000	2.000	4	Grade 60	25.0000
	2.000	4				
3	Grade 60	3.0000	4.000	6		
3	Grade 60	13.0000	2.000	4		
3	Grade 60	19.0000	2.000	4		
3	Grade 60	25.0000	2.000	4		

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance (ft)	Debond Distance (in)	Harp Curvature (in)
1		1	1	Harped			
	Left						0.0000
	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000
1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	14	1		20.67		0.0000
	Right	14	1		20.67		0.0000
1		1	5	Harped			
	Left	14	2		20.67		0.0000

	Right	14	2		20.67	0.0000
1		1	6	Harped		
	Left					0.0000
	Right					0.0000
1		1	7	Harped		
	Left					0.0000
	Right					0.0000
1		1	8	Harped		
	Left					0.0000
	Right					0.0000
1		2	1	Harped		
	Left					0.0000
	Right					0.0000
1		2	2	Harped		
	Left					0.0000
	Right					0.0000
1		2	3	Harped		
	Left					0.0000
	Right					0.0000
1		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
1		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
1		2	6	Harped		
	Left					0.0000
	Right					0.0000
1		2	7	Harped		
	Left					0.0000
	Right					0.0000
1		2	8	Harped		
	Left					0.0000
	Right					0.0000
1		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
1		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000
2		1	1	Harped		
	Left					0.0000
	Right					0.0000
2		1	2	Harped		
	Left					0.0000
	Right					0.0000
2		1	3	Harped		
	Left					0.0000

	Right					0.0000
2		1	4	Harped		
	Left	14	1		20.67	0.0000
	Right	14	1		20.67	0.0000
2		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
2		1	6	Harped		
	Left					0.0000
	Right					0.0000
2		1	7	Harped		
	Left					0.0000
	Right					0.0000
2		1	8	Harped		
	Left					0.0000
	Right					0.0000
2		2	1	Harped		
	Left					0.0000
	Right					0.0000
2		2	2	Harped		
	Left					0.0000
	Right					0.0000
2		2	3	Harped		
	Left					0.0000
	Right					0.0000
2		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
2		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
2		2	6	Harped		
	Left					0.0000
	Right					0.0000
2		2	7	Harped		
	Left					0.0000
	Right					0.0000
2		2	8	Harped		
	Left					0.0000
	Right					0.0000
2		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
2		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000
3		1	1	Harped		
	Left					0.0000

	Right					0.0000
3		1	2	Harped		
	Left					0.0000
	Right					0.0000
3		1	3	Harped		
	Left					0.0000
	Right					0.0000
3		1	4	Harped		
	Left	14	1		20.67	0.0000
	Right	14	1		20.67	0.0000
3		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
3		1	6	Harped		
	Left					0.0000
	Right					0.0000
3		1	7	Harped		
	Left					0.0000
	Right					0.0000
3		1	8	Harped		
	Left					0.0000
	Right					0.0000
3		2	1	Harped		
	Left					0.0000
	Right					0.0000
3		2	2	Harped		
	Left					0.0000
	Right					0.0000
3		2	3	Harped		
	Left					0.0000
	Right					0.0000
3		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
3		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
3		2	6	Harped		
	Left					0.0000
	Right					0.0000
3		2	7	Harped		
	Left					0.0000
	Right					0.0000
3		2	8	Harped		
	Left					0.0000
	Right					0.0000
3		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
3		3	4	Harped		

Left	16	2	20.67	0.0000
Right	16	2	20.67	0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n	Length	Total Thickness	Structural Thickness	Effective Width (Std)	Effective Width
	(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
Class A - f'c...	0.00 9.20...	154.62		8.0000	81.0000	81.0000

Reinforcement

Material	Start Distance	Length	Bar Count	Bar Size	Distance	Row
	(ft)	*(ft)*			*(in)*	
Grade 60	0.00	154.62	8.00	5	3.4375	Top of...
Grade 60	0.00	154.62	8.00	5	1.9375	Bottom...
Grade 60	45.21	12.00	6.00	8	3.6250	Top of...
Grade 60	97.29	12.00	6.00	8	3.6250	Top of...

Haunch Profile

Distance	Length	Z1	Z2	Y1	Y3
(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
0.00	154.62	0.0000	0.0000	0.0000	0.0000

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Extends into Deck
		(ft)		*(in)*	
h6	1	0.25	1	0.0000	TRUE
h6	1	0.25	5	3.0000	TRUE
h4	1	1.50	5	6.0000	TRUE
h4	1	4.00	7	9.0000	TRUE
h4	1	9.25	6	12.0000	TRUE
h4	1	15.25	6	18.0000	TRUE
h4	1	24.25	2	17.0000	TRUE
h4	1	27.08	6	18.0000	TRUE
h4	1	36.08	6	12.0000	TRUE
h4	1	42.08	7	9.0000	TRUE
h4	1	47.33	5	6.0000	TRUE
h6	1	49.83	5	3.0000	TRUE
h6	2	0.25	1	0.0000	TRUE
h6	2	0.25	5	3.0000	TRUE
h4	2	1.50	5	6.0000	TRUE
h4	2	4.00	7	9.0000	TRUE
h4	2	9.25	6	12.0000	TRUE
h4	2	15.25	6	18.0000	TRUE

h4	2	24.25	2	17.0000	TRUE
h4	2	27.08	6	18.0000	TRUE
h4	2	36.08	6	12.0000	TRUE
h4	2	42.08	7	9.0000	TRUE
h4	2	47.33	5	6.0000	TRUE
h6	2	49.83	5	3.0000	TRUE
h6	3	0.25	1	0.0000	TRUE
h6	3	0.25	5	3.0000	TRUE
h4	3	1.50	5	6.0000	TRUE
h4	3	4.00	7	9.0000	TRUE
h4	3	9.25	6	12.0000	TRUE
h4	3	15.25	6	18.0000	TRUE
h4	3	24.25	2	17.0000	TRUE
h4	3	27.08	6	18.0000	TRUE
h4	3	36.08	6	12.0000	TRUE
h4	3	42.08	7	9.0000	TRUE
h4	3	47.33	5	6.0000	TRUE
h6	3	49.83	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length

Member G3

Link with: None
Description:

Existing: G3 -
Current: G3 -
Number of Spans: 3

Span Number	Span Length *(ft)*
1	51.208333
2	52.083333
3	51.333333

Support	Frame Connection
1	
2	
3	
4	

Pedestrian load: 0.000 *(lb/ft)*

Member Loads

Member Loads - Settlement

Support	Horizontal	Vertical	Rotational	Load Case Name

Number	*(in)*	*(in)*	*(Radians)*
1			
2			
3			
4			

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation
1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free
3	Roller	Free	Fixed	Free
4	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				
2				
3				
4				

Member Alternative G3

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR

Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors
Factor Override
LRFD:
LFD:
ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		
PS Moment Cap.		
Reinforcement		
Bearing Stiffener		
Stirrup		
Timber	NA	

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact
Standard Impact Factor
Type: Standard - AASHTO
LRFD Dynamic Load Allowance
Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution
Standard

	Distribution Factor (Wheels)			
Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	0.857	1.000	0.857	0.333
Multi-Lane	1.091	1.333	1.091	0.900

Shrinkage/Time

Deck curing method:
Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*
Service life: 75.00 *(Years)*
Analysis time: *(Years)*
Composite time: *(Days)*
Continuous time: *(Days)*

Beam Details

Span Details

Span	Prestress Shape Use Projection	Concrete Material n Creep	Prestress Properties	Left Projection *(in)*	Right *(in)*
1	AASHTO TYPE I... FALSE	5 ksi f'c	pp	6.0000	3.0000
2	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	3.0000
3	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	4.5000

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2	7.5000	7.5000
3	7.5000	7.5000
4		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	51.33
sl	2	0.000	51.33
sl	3	0.000	51.33

Slab Interface

Deck interface type: Monolithic
Interface width: *(in)*
Deck cohesion factor: 0.400 *(ksi)*
Deck friction factor: 1.400

Continuity Diaphragm

Span No.	Left Support Material	Left Support Distance	Bar Count	Bar Size	Right Support Material	Right Support Distance
	Bar	Bar				
		(in)			*(in)*	
1					Grade 60	3.0000 4.000
	6					
1					Grade 60	13.0000
	2.000	4				
1					Grade 60	19.0000
	2.000	4				
1					Grade 60	25.0000
	2.000	4				
2	Grade 60	3.0000	4.000	6	Grade 60	3.0000 4.000
	6					
2	Grade 60	13.0000	2.000	4	Grade 60	13.0000
	2.000	4				
2	Grade 60	19.0000	2.000	4	Grade 60	19.0000
	2.000	4				
2	Grade 60	25.0000	2.000	4	Grade 60	25.0000
	2.000	4				
3	Grade 60	3.0000	4.000	6		
3	Grade 60	13.0000	2.000	4		
3	Grade 60	19.0000	2.000	4		
3	Grade 60	25.0000	2.000	4		

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance *(ft)*	Debond Distance *(in)*	Harp Curvature *(in)*
1		1	1	Harped			
	Left						0.0000
	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000
1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	14	1		20.67		0.0000

	Right	14	1		20.67	0.0000
1		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
1		1	6	Harped		
	Left					0.0000
	Right					0.0000
1		1	7	Harped		
	Left					0.0000
	Right					0.0000
1		1	8	Harped		
	Left					0.0000
	Right					0.0000
1		2	1	Harped		
	Left					0.0000
	Right					0.0000
1		2	2	Harped		
	Left					0.0000
	Right					0.0000
1		2	3	Harped		
	Left					0.0000
	Right					0.0000
1		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
1		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
1		2	6	Harped		
	Left					0.0000
	Right					0.0000
1		2	7	Harped		
	Left					0.0000
	Right					0.0000
1		2	8	Harped		
	Left					0.0000
	Right					0.0000
1		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
1		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000
2		1	1	Harped		
	Left					0.0000
	Right					0.0000
2		1	2	Harped		
	Left					0.0000

	Right					0.0000
2		1	3	Harped		
	Left					0.0000
	Right					0.0000
2		1	4	Harped		
	Left	14	1		20.67	0.0000
	Right	14	1		20.67	0.0000
2		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
2		1	6	Harped		
	Left					0.0000
	Right					0.0000
2		1	7	Harped		
	Left					0.0000
	Right					0.0000
2		1	8	Harped		
	Left					0.0000
	Right					0.0000
2		2	1	Harped		
	Left					0.0000
	Right					0.0000
2		2	2	Harped		
	Left					0.0000
	Right					0.0000
2		2	3	Harped		
	Left					0.0000
	Right					0.0000
2		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
2		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
2		2	6	Harped		
	Left					0.0000
	Right					0.0000
2		2	7	Harped		
	Left					0.0000
	Right					0.0000
2		2	8	Harped		
	Left					0.0000
	Right					0.0000
2		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
2		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000

3		1	1	Harped			
	Left						0.0000
	Right						0.0000
3		1	2	Harped			
	Left						0.0000
	Right						0.0000
3		1	3	Harped			
	Left						0.0000
	Right						0.0000
3		1	4	Harped			
	Left	14	1		20.67		0.0000
	Right	14	1		20.67		0.0000
3		1	5	Harped			
	Left	14	2		20.67		0.0000
	Right	14	2		20.67		0.0000
3		1	6	Harped			
	Left						0.0000
	Right						0.0000
3		1	7	Harped			
	Left						0.0000
	Right						0.0000
3		1	8	Harped			
	Left						0.0000
	Right						0.0000
3		2	1	Harped			
	Left						0.0000
	Right						0.0000
3		2	2	Harped			
	Left						0.0000
	Right						0.0000
3		2	3	Harped			
	Left						0.0000
	Right						0.0000
3		2	4	Harped			
	Left	15	1		20.67		0.0000
	Right	15	1		20.67		0.0000
3		2	5	Harped			
	Left	15	2		20.67		0.0000
	Right	15	2		20.67		0.0000
3		2	6	Harped			
	Left						0.0000
	Right						0.0000
3		2	7	Harped			
	Left						0.0000
	Right						0.0000
3		2	8	Harped			
	Left						0.0000
	Right						0.0000
3		3	3	Harped			

	Left	16	1		20.67		0.0000
	Right	16	1		20.67		0.0000
3		3	4	Harped			
	Left	16	2		20.67		0.0000
	Right	16	2		20.67		0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n	Length	Total Thickness	Structural Thickness	Effective Width (Std)	Effective Width
	(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
Class A - f'c...	0.00 9.20...	154.62		8.0000	72.0000	72.0000

Reinforcement

Material	Start Distance	Length	Bar Count	Bar Size	Distance	Row
	(ft)	*(ft)*			*(in)*	
Grade 60	0.00	154.62	8.00	5	1.9375	Bottom...
Grade 60	0.00	154.62	8.00	5	3.4375	Top of...
Grade 60	45.21	12.00	6.00	8	3.6250	Top of...
Grade 60	97.29	12.00	6.00	8	3.6250	Top of...

Haunch Profile

Distance	Length	Z1	Z2	Y1	Y3
(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
0.00	154.62	0.0000	0.0000	0.0000	0.0000

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Extends into Deck
		(ft)		*(in)*	
h6	1	0.25	1	0.0000	TRUE
h6	1	0.25	5	3.0000	TRUE
h4	1	1.50	5	6.0000	TRUE
h4	1	4.00	7	9.0000	TRUE
h4	1	9.25	6	12.0000	TRUE
h4	1	15.25	6	18.0000	TRUE
h4	1	24.25	2	17.0000	TRUE
h4	1	27.08	6	18.0000	TRUE
h4	1	36.08	6	12.0000	TRUE
h4	1	42.08	7	9.0000	TRUE
h4	1	47.33	5	6.0000	TRUE
h4	1	49.83	5	3.0000	TRUE
h6	2	0.25	1	0.0000	TRUE
h6	2	0.25	5	3.0000	TRUE
h4	2	1.50	5	6.0000	TRUE

h4	2	4.00	7	9.0000	TRUE
h4	2	9.25	6	12.0000	TRUE
h4	2	15.25	6	18.0000	TRUE
h4	2	24.25	2	17.0000	TRUE
h4	2	27.08	6	18.0000	TRUE
h4	2	36.08	6	12.0000	TRUE
h4	2	42.08	7	9.0000	TRUE
h4	2	47.33	5	6.0000	TRUE
h4	2	49.83	5	3.0000	TRUE
h6	3	0.25	1	0.0000	TRUE
h6	3	0.25	5	3.0000	TRUE
h4	3	1.50	5	6.0000	TRUE
h4	3	4.00	7	9.0000	TRUE
h4	3	9.25	6	12.0000	TRUE
h4	3	15.25	6	18.0000	TRUE
h4	3	24.25	2	17.0000	TRUE
h4	3	27.08	6	18.0000	TRUE
h4	3	36.08	6	12.0000	TRUE
h4	3	42.08	7	9.0000	TRUE
h4	3	47.33	5	6.0000	TRUE
h4	3	49.83	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length

Member G4

Link with: G3
Description:

Existing:
Current:
Number of Spans: 3

Span Number	Span Length *(ft)*
1	51.208333
2	52.083333
3	51.333333

Support	Frame Connection
1	
2	
3	
4	

Pedestrian load: *(lb/ft)*

Member G5

Link with: G3
Description:

Existing:
Current:
Number of Spans: 3

Span Number	Span Length *(ft)*
1	51.208333
2	52.083333
3	51.333333

Support	Frame Connection
1	
2	
3	
4	

Pedestrian load: *(lb/ft)*

Member G6

Link with: None
Description:

Existing: G6 -
Current: G6 -
Number of Spans: 3

Span Number	Span Length *(ft)*
1	51.208333
2	52.083333
3	51.333333

Support	Frame Connection
1	
2	
3	
4	

Pedestrian load: *(lb/ft)*

Member Loads

Member Loads - Settlement

Support Number	Horizontal *(in)*	Vertical *(in)*	Rotational *(Radians)*	Load Case Name
1				
2				

3
4

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation
1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free
3	Roller	Free	Fixed	Free
4	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				
2				
3				
4				

Member Alternative G6

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors
Factor Override
LRFD:
LFD:
ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		
PS Moment Cap.		
Reinforcement		
Bearing Stiffener		
Stirrup		
Timber	NA	

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact
Standard Impact Factor
Type: Standard - AASHTO
LRFD Dynamic Load Allowance
Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution
Standard

	Distribution Factor (Wheels)			
Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	1.167	1.167	1.167	0.333
Multi-Lane	1.167	1.167	1.167	0.667

Shrinkage/Time
Deck curing method:

Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*
Service life: 75.00 *(Years)*
Analysis time: *(Years)*
Composite time: *(Days)*
Continuous time: *(Days)*

Beam Details

Span Details

Span	Prestress Shape Use Projection	Concrete Material n Creep	Prestress Properties	Left Projection *(in)*	Right *(in)*
1	AASHTO TYPE I... FALSE	5 ksi f'c	pp	6.0000	3.0000
2	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	3.0000
3	AASHTO TYPE I... FALSE	5 ksi f'c	pp	3.0000	4.5000

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2	7.5000	7.5000
3	7.5000	7.5000
4		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	51.33
sl	2	0.000	51.33
sl	3	0.000	51.33

Slab Interface

Deck interface type: Monolithic
Interface width: *(in)*
Deck cohesion factor: 0.400 *(ksi)*
Deck friction factor: 1.400

Continuity Diaphragm

	Left Support	Right Support

Span No.	Material Bar	Distance Bar (in)	Bar Count	Bar Size	Material Count	Distance (in)
1					Grade 60	3.0000 4.000
	6					
1					Grade 60	13.0000
	2.000	4				
1					Grade 60	19.0000
	2.000	4				
1					Grade 60	25.0000
	2.000	4				
2	Grade 60	3.0000	4.000	6	Grade 60	3.0000 4.000
	6					
2	Grade 60	13.0000	2.000	4	Grade 60	13.0000
	2.000	4				
2	Grade 60	19.0000	2.000	4	Grade 60	19.0000
	2.000	4				
2	Grade 60	25.0000	2.000	4	Grade 60	25.0000
	2.000	4				
3	Grade 60	3.0000	4.000	6		
3	Grade 60	13.0000	2.000	4		
3	Grade 60	19.0000	2.000	4		
3	Grade 60	25.0000	2.000	4		

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance (ft)	Debond Distance (in)	Harp Curvature (in)
1		1	1	Harped			
	Left						0.0000
	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000
1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	14	1		20.67		0.0000
	Right	14	1		20.67		0.0000
1		1	5	Harped			
	Left	14	2		20.67		0.0000

	Right	14	2		20.67	0.0000
1		1	6	Harped		
	Left					0.0000
	Right					0.0000
1		1	7	Harped		
	Left					0.0000
	Right					0.0000
1		1	8	Harped		
	Left					0.0000
	Right					0.0000
1		2	1	Harped		
	Left					0.0000
	Right					0.0000
1		2	2	Harped		
	Left					0.0000
	Right					0.0000
1		2	3	Harped		
	Left					0.0000
	Right					0.0000
1		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
1		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
1		2	6	Harped		
	Left					0.0000
	Right					0.0000
1		2	7	Harped		
	Left					0.0000
	Right					0.0000
1		2	8	Harped		
	Left					0.0000
	Right					0.0000
1		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
1		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000
2		1	1	Harped		
	Left					0.0000
	Right					0.0000
2		1	2	Harped		
	Left					0.0000
	Right					0.0000
2		1	3	Harped		
	Left					0.0000

	Right					0.0000
2		1	4	Harped		
	Left	14	1		20.67	0.0000
	Right	14	1		20.67	0.0000
2		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
2		1	6	Harped		
	Left					0.0000
	Right					0.0000
2		1	7	Harped		
	Left					0.0000
	Right					0.0000
2		1	8	Harped		
	Left					0.0000
	Right					0.0000
2		2	1	Harped		
	Left					0.0000
	Right					0.0000
2		2	2	Harped		
	Left					0.0000
	Right					0.0000
2		2	3	Harped		
	Left					0.0000
	Right					0.0000
2		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
2		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
2		2	6	Harped		
	Left					0.0000
	Right					0.0000
2		2	7	Harped		
	Left					0.0000
	Right					0.0000
2		2	8	Harped		
	Left					0.0000
	Right					0.0000
2		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
2		3	4	Harped		
	Left	16	2		20.67	0.0000
	Right	16	2		20.67	0.0000
3		1	1	Harped		
	Left					0.0000

	Right					0.0000
3		1	2	Harped		
	Left					0.0000
	Right					0.0000
3		1	3	Harped		
	Left					0.0000
	Right					0.0000
3		1	4	Harped		
	Left	14	1		20.67	0.0000
	Right	14	1		20.67	0.0000
3		1	5	Harped		
	Left	14	2		20.67	0.0000
	Right	14	2		20.67	0.0000
3		1	6	Harped		
	Left					0.0000
	Right					0.0000
3		1	7	Harped		
	Left					0.0000
	Right					0.0000
3		1	8	Harped		
	Left					0.0000
	Right					0.0000
3		2	1	Harped		
	Left					0.0000
	Right					0.0000
3		2	2	Harped		
	Left					0.0000
	Right					0.0000
3		2	3	Harped		
	Left					0.0000
	Right					0.0000
3		2	4	Harped		
	Left	15	1		20.67	0.0000
	Right	15	1		20.67	0.0000
3		2	5	Harped		
	Left	15	2		20.67	0.0000
	Right	15	2		20.67	0.0000
3		2	6	Harped		
	Left					0.0000
	Right					0.0000
3		2	7	Harped		
	Left					0.0000
	Right					0.0000
3		2	8	Harped		
	Left					0.0000
	Right					0.0000
3		3	3	Harped		
	Left	16	1		20.67	0.0000
	Right	16	1		20.67	0.0000
3		3	4	Harped		

Left	16	2	20.67	0.0000
Right	16	2	20.67	0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n	Length	Total Thickness	Structural Thickness	Effective Width (Std)	Effective Width
	(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
Class A - f'c...	0.00 9.20...	154.62		8.0000	84.0000	84.0000

Reinforcement

Material	Start Distance	Length	Bar Count	Bar Size	Distance	Row
	(ft)	*(ft)*			*(in)*	
Grade 60	0.00	154.62	9.00	6	3.4375	Top of...
Grade 60	0.00	154.62	12.00	6	1.9375	Bottom...
Grade 60	45.21	12.00	6.00	8	3.6250	Top of...
Grade 60	97.29	12.00	6.00	8	3.6250	Top of...

Haunch Profile

Distance	Length	Z1	Z2	Z3	Z4	Y1	Y2	Y3
(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*	*(in)*	*(in)*	*(in)*
0.00	154.62 4.5000	0.0000	0.0000	0.0000	78.0000	0.0000	0.0000	

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Extends into Deck
		(ft)		*(in)*	
h6	1	0.25	1	0.0000	TRUE
h6	1	0.25	5	3.0000	TRUE
h4	1	1.50	5	6.0000	TRUE
h4	1	4.00	7	9.0000	TRUE
h4	1	9.25	6	12.0000	TRUE
h4	1	15.25	6	18.0000	TRUE
h4	1	24.25	2	17.0000	TRUE
h4	1	27.08	6	18.0000	TRUE
h4	1	36.08	6	12.0000	TRUE
h4	1	42.08	7	9.0000	TRUE
h4	1	47.33	5	6.0000	TRUE
h6	1	49.83	5	3.0000	TRUE
h6	2	0.25	1	0.0000	TRUE
h6	2	0.25	5	3.0000	TRUE
h4	2	1.50	5	6.0000	TRUE
h4	2	4.00	7	9.0000	TRUE
h4	2	9.25	6	12.0000	TRUE

h4	2	15.25	6	18.0000	TRUE
h4	2	24.25	2	17.0000	TRUE
h4	2	27.08	6	18.0000	TRUE
h4	2	36.08	6	12.0000	TRUE
h4	2	42.08	7	9.0000	TRUE
h4	2	47.33	5	6.0000	TRUE
h6	2	49.83	5	3.0000	TRUE
h6	3	0.25	1	0.0000	TRUE
h6	3	0.25	5	3.0000	TRUE
h4	3	1.50	5	6.0000	TRUE
h4	3	4.00	7	9.0000	TRUE
h4	3	9.25	6	12.0000	TRUE
h4	3	15.25	6	18.0000	TRUE
h4	3	24.25	2	17.0000	TRUE
h4	3	27.08	6	18.0000	TRUE
h4	3	36.08	6	12.0000	TRUE
h4	3	42.08	7	9.0000	TRUE
h4	3	47.33	5	6.0000	TRUE
h6	3	49.83	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length

Superstructure Definition SPAN 4

Definition

Units: US Customary
Number of spans: 1
Number of girders: 5

Span	Length *(ft)*
1	34.5208

Frame Structure Simplified Definition:

Support	Frame Connection
1	
2	

Girder Spacing Display Type: Perpendicular
Average Humidity: 60.000 *(%)*

Analysis

Default Library Factors
Factor Override
Analysis Module
Analysis Method: ASD
Analysis Module:
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module:

Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module:
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module:
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LFD

Impact

Standard Impact Factor

Type: Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states: 15.0 *(%)*

All other limit states: 33.0 *(%)*

Structure Framing Plan Details

Layout

Support	Skew *(Degrees)*
1	20.0000
2	20.0000

Girder Spacing Orientation: Perpendicular

Girder Bay	Girder Spacing Start *(ft)*	End *(ft)*
1	7.5000	7.5000
2	8.0000	8.0000
3	8.0000	8.0000
4	8.0000	8.0000

Diaphragms

Girder Bay 1

Distance Left Girder *(ft)*	Distance Right Girder *(ft)*	Diaphragm Spacing *(ft)*	Number of Spaces	Diaphragm Weight *(kip)*
0.00	0.00	0.00	1	
34.52	34.52	0.00	1	

Girder Bay 2

Distance Left Girder (ft)	Distance Right Girder (ft)	Diaphragm Spacing (ft)	Number of Spaces	Diaphragm Weight (kip)
0.00	0.00	0.00	1	
0.00	2.91	16.50	1	1.9600
34.52	34.52	0.00	1	

Girder Bay 3

Distance Left Girder (ft)	Distance Right Girder (ft)	Diaphragm Spacing (ft)	Number of Spaces	Diaphragm Weight (kip)
0.00	0.00	0.00	1	
0.00	2.91	16.50	1	1.9600
34.52	34.52	0.00	1	

Girder Bay 4

Distance Left Girder (ft)	Distance Right Girder (ft)	Diaphragm Spacing (ft)	Number of Spaces	Diaphragm Weight (kip)
0.00	0.00	0.00	1	
0.00	2.91	16.50	1	1.9600
34.52	34.52	0.00	1	

Structure Typical Section

Deck

Left start width:	22.00 *(ft)*
Left end width:	22.00 *(ft)*
Right start width:	22.00 *(ft)*
Right end width:	22.00 *(ft)*
Left start overhang:	5.50 *(ft)*
Left end overhang:	5.50 *(ft)*

Deck (Cont'd)

Deck concrete:	Class A - f'c is 3 ksi
Total deck thickness:	9.2500 *(in)*
Deck crack control parameter:	*(kip/in)*
Sustained modular ratio factor:	3.000

Parapet

Name	Load Case	Measure To	Measured From	Distance At Start	Distance At End	Front Face Orientation
Jersey Ba...	DC2	Back	Right E...			Left
Jersey Ba...	DC2	Back	Left Ed...			Right

Lane Position

Offset Left Start:	-20.25 *(ft)*
Offset Left End:	-20.25 *(ft)*
Offset Right Start:	20.25 *(ft)*
Offset Right End:	20.25 *(ft)*

Wearing Surface

Wearing surface material:	Asphalt
Description:	
Wearing surface thickness:	6.0000 *(in)*
Wearing surface density:	144.000 *(pcf)*
Load case:	DW

Load Case Description

Load Case Name	Description	Stage	Type	Time (Days)
DC1	DC acting on non-comp...	Non-composite (Sta...	D,DC	
DC2	DC acting on long-ter...	Composite (long te...	D,DC	
DW	DW acting on long-ter...	Composite (long te...	D,DW	
SIP Forms	Weight due to stay-in...	Non-composite (Sta...	D,DC	

Superstructure Loads

DL Distribution

Stage 1 Dead Load Distribution: Tributary Area

Stage 2 Dead Load Distribution: Uniformly to All Girders

Stiffener Definitions

Stress Limits

Name: **sl**

Description:

Concrete material: 5 ksi f'c

Initial allowable tension (LFD):	0.194 *(ksi)*	
Initial allowable compression (LFD):	2.520 *(ksi)*	
Final allowable slab compression (LFD):	*(ksi)*	
Final allowable tension (LFD):	0.425 *(ksi)*	
Final allowable DL compression (LFD):	2.000 *(ksi)*	
Final allowable compression (LFD):	3.000 *(ksi)*	
Final allowable compression (LL + 1/2(Pe+DL)) (LFD):		2.000 *(ksi)*
Initial allowable tension (LRFD):	0.194 *(ksi)*	
Initial allowable compression (LRFD):	2.520 *(ksi)*	
Final allowable slab compression (LRFD):	*(ksi)*	
Final allowable tension (LRFD):	0.425 *(ksi)*	
Final allowable DL compression (LRFD):	2.250 *(ksi)*	
Final allowable compression (LRFD):	3.000 *(ksi)*	
Final allowable compression (LL + 1/2(Pe+DL)) (LRFD):		2.000 *(ksi)*

Prestress Properties

Name: **pp**

General Pretress Data

Prestressing Strand:	1/2" (7W-270) SR
Loss Method:	AASHTO Approximate
Jacking stress ratio:	0.750
Transfer stress ratio:	
Transfer time:	24.0 *(Hours)*
AASHTO - Dead load percent:	0.0 *(%)*

Loss Data - PCI

PCI - Maturity coefficient:	
PCI - Ultimate creep loss:	*(ksi)*
PCI - Ultimate shrinkage loss:	*(ksi)*
PCI - Additional time 1:	*(Days)*
PCI - Additional time 2:	*(Days)*

PCI - Additional time 3: *(Days)*
PCI - Additional time 4: *(Days)*
PCI - Additional time 5: *(Days)*
PCI - Additional time 6: *(Days)*
PCI - Additional time 7: *(Days)*
PCI - Additional time 8: *(Days)*
PCI - Additional time 9: *(Days)*
PCI - Additional time 10: *(Days)*

Loss Data - Lump-sum

Lump-sum - Composite loss: *(ksi)*
Lump-sum - Continuous loss: *(ksi)*
Lump-sum - Final loss: *(ksi)*

Shear Reinforcement Definitions - Vertical

Name: **h6**
Vertical Reinforcement: Grade 60
Vertical Rebar: 6
Number of legs (Vertical): 2.00
Inclination angle alpha (Vertical): 90.0 *(Degrees)*

Name: **h4**
Vertical Reinforcement: Grade 60
Vertical Rebar: 4
Number of legs (Vertical): 2.00
Inclination angle alpha (Vertical): 90.0 *(Degrees)*

No horizontal shear reinforcement definitions.

Member G1

Link with: None
Description:

Existing: G1 -
Current: G1 -
Number of Spans: 1

Span Number	Span Length *(ft)*
1	34.520833

Support	Frame Connection
1	
2	

Pedestrian load: *(lb/ft)*

Member Loads

Member Loads - Settlement

Support Number	Horizontal *(in)*	Vertical *(in)*	Rotational *(Radians)*	Load Case Name

1
2

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation
1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				
2				

Member Alternative G1

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors
Factor Override
LRFD:
LFD:
ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		
PS Moment Cap.		
Reinforcement		
Bearing Stiffener		
Stirrup		
Timber	NA	

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact
Standard Impact Factor
Type: Standard - AASHTO
LRFD Dynamic Load Allowance
Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution
Standard

	Distribution Factor (Wheels)			
Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	0.933	0.933	0.933	0.400
Multi-Lane	0.933	0.933	0.933	0.800

Shrinkage/Time
Deck curing method:
Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*

Service life:	75.00	*(Years)*
Analysis time:		*(Years)*
Composite time:		*(Days)*
Continuous time:		*(Days)*

Beam Details

Span Details

Span	Prestress Use	Shape	Concrete Material n	Prestress Properties	Left Projection *(in)*	Right Projection *(in)*
1	AASHTO TYPE I... FALSE		5 ksi f'c Creep	pp	4.5000	6.0000

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	35.40

Slab Interface

Deck interface type:	Monolithic
Interface width:	*(in)*
Deck cohesion factor:	0.400 *(ksi)*
Deck friction factor:	1.400

Continuity Diaphragm

Span No.	Material	Left Support Distance	Bar Count	Bar Size	Right Support Material	Right Support Distance	Bar Count	Bar Size

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance	Debond Distance	Harp Curvature

					(ft)	(in)	(in)
1		1	1	Harped			
	Left						0.0000
	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000
1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	17	1		14.20		0.0000
	Right	17	1		14.20		0.0000
1		1	5	Harped			
	Left	17	2		14.20		0.0000
	Right	17	2		14.20		0.0000
1		1	6	Harped			
	Left						0.0000
	Right						0.0000
1		1	7	Harped			
	Left						0.0000
	Right						0.0000
1		1	8	Harped			
	Left						0.0000
	Right						0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n	Length	Total Thickness	Structural Thickness	Effective Width (Std)	Effective Width
	(ft)	(ft)	(in)	(in)	(in)	(in)
Class A - f'c...	0.00 9.20...	34.52		8.0000	99.0000	99.0000

Reinforcement

Material	Start Distance	Length	Bar Count	Bar Size	Distance	Row
	(ft)	(ft)			(in)	
Grade 60	0.00	34.52	10.00	5	1.9375	Bottom...
Grade 60	0.00	34.52	9.00	6	3.4375	Top of...

Haunch Profile

Distance (ft)	Length (ft)	Z1 (in)	Z2 (in)	Z3 (in)	Z4 (in)	Y1 (in)	Y2 (in)	Y3 (in)
0.00	34.52				60.0000			4.5000

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance (ft)	Number Spaces	Spacing (in)	Extends into Deck
h6	1	0.25	1	0.0000	TRUE
h6	1	0.25	5	3.0000	TRUE
h4	1	1.50	2	9.0000	TRUE
h4	1	3.00	6	12.0000	TRUE
h4	1	9.00	4	21.0000	TRUE
h4	1	16.00	2	20.3750	TRUE
h4	1	19.40	4	21.0000	TRUE
h4	1	26.40	6	12.0000	TRUE
h4	1	32.40	1	9.0000	TRUE
h6	1	33.15	1	9.0000	TRUE
h6	1	33.90	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length

Member G2

Link with: None
Description:

Existing: G2 -
Current: G2 -
Number of Spans: 1

Span Number	Span Length (ft)
1	34.520833

Support	Frame Connection
1	
2	

Pedestrian load: *(lb/ft)*

Member Loads

Member Loads - Settlement

Support Number	Horizontal (in)	Vertical (in)	Rotational (Radians)	Load Case Name
1				
2				

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation

1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				
2				

Member Alternative G2

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors

Factor Override

LRFD:

LFD:
ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		
PS Moment Cap.		
Reinforcement		
Bearing Stiffener		
Stirrup		
Timber	NA	

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact

Standard Impact Factor

Type: Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution

Standard

D i s t r i b u t i o n F a c t o r (Wheels)

Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	1.107	1.250	1.107	0.400
Multi-Lane	1.409	1.637	1.409	0.800

Shrinkage/Time

Deck curing method:
Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*
Service life: 75.00 *(Years)*
Analysis time: *(Years)*
Composite time: *(Days)*
Continuous time: *(Days)*

Beam Details

Span Details

Span	Prestress Shape Use Projection	Concrete Material n Creep	Prestress Properties	Left Projection *(in)*	Right *(in)*
1	AASHTO TYPE I... FALSE	5 ksi f'c	pp	4.5000	6.0000

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	35.40

Slab Interface

Deck interface type:	Monolithic
Interface width:	*(in)*
Deck cohesion factor:	0.400 *(ksi)*
Deck friction factor:	1.400

Continuity Diaphragm

Span No.	Material Bar	Left Support Distance Bar	Bar Count	Bar Size	Right Support Material Count	Distance Size

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance *(ft)*	Debond Distance *(in)*	Harp Curvature *(in)*
1		1	1	Harped			
	Left						0.0000
	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000

1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	17	1		14.20		0.0000
	Right	17	1		14.20		0.0000
1		1	5	Harped			
	Left	17	2		14.20		0.0000
	Right	17	2		14.20		0.0000
1		1	6	Harped			
	Left						0.0000
	Right						0.0000
1		1	7	Harped			
	Left						0.0000
	Right						0.0000
1		1	8	Harped			
	Left						0.0000
	Right						0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n	Length	Total Thickness	Structural Thickness	Effective Width (Std)	Effective Width
	(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
Class A - f'c...	0.00 9.20...	34.52		8.0000	93.0000	93.0000

Reinforcement

Material	Start Distance	Length	Bar Count	Bar Size	Distance	Row
	(ft)	*(ft)*			*(in)*	
Grade 60	0.00	34.52	8.00	5	3.4375	Top of...
Grade 60	0.00	34.52	8.00	5	1.9375	Bottom...

Haunch Profile

Distance	Length	Z1	Z2	Y1	Y3
(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
0.00	34.52				0.0000

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Extends into Deck
		(ft)		*(in)*	
h6	1	0.25	1	0.0000	TRUE
h6	1	0.25	5	3.0000	TRUE
h4	1	1.50	2	9.0000	TRUE
h4	1	3.00	6	12.0000	TRUE

h4	1	9.00	4	21.0000	TRUE
h4	1	16.00	2	20.3750	TRUE
h4	1	19.40	4	21.0000	TRUE
h4	1	26.40	6	12.0000	TRUE
h4	1	32.40	1	9.0000	TRUE
h6	1	33.15	1	9.0000	TRUE
h6	1	33.90	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length

Member G3

Link with: None
Description:

Existing: G3 -
Current: G3 -
Number of Spans: 1

Span Number	Span Length *(ft)*
1	34.520833

Support	Frame Connection
1	
2	

Pedestrian load: 0.000 *(lb/ft)*

Member Loads

Member Loads - Settlement

Support Number	Horizontal *(in)*	Vertical *(in)*	Rotational *(Radians)*	Load Case Name
1				
2				

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation
1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				

Member Alternative G3

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors

Factor Override

LRFD:
LFD:

ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		

PS Moment Cap.
Reinforcement
Bearing Stiffener
Stirrup
Timber NA

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact

Standard Impact Factor

Type: Standard - AASHTO

LRFD Dynamic Load Allowance

Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution

Standard

Distribution Factor (Wheels)

Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	1.143	1.250	1.143	0.400
Multi-Lane	1.455	1.750	1.455	0.800

Shrinkage/Time

Deck curing method:
Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*
Service life: 75.00 *(Years)*
Analysis time: *(Years)*
Composite time: *(Days)*
Continuous time: *(Days)*

Beam Details

Span Details

Span	Prestress Use	Shape	Concrete Material n	Prestress Properties	Left Projection *(in)*	Right Projection *(in)*

1	AASHTO TYPE I...	5 ksi f'c	pp	4.5000	6.0000
	FALSE				

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	35.40

Slab Interface

Deck interface type:	Monolithic
Interface width:	*(in)*
Deck cohesion factor:	0.400 *(ksi)*
Deck friction factor:	1.400

Continuity Diaphragm

Span No.	Material	Left Support Distance	Bar Count	Bar Size	Right Support Material	Right Support Distance
	Bar	Bar				

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance *(ft)*	Debond Distance *(in)*	Harp Curvature *(in)*
1		1	1	Harped			
	Left						0.0000
	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000
1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	17	1		14.20		0.0000
	Right	17	1		14.20		0.0000
1		1	5	Harped			

	Left	17	2		14.20		0.0000
	Right	17	2		14.20		0.0000
1		1	6	Harped			
	Left						0.0000
	Right						0.0000
1		1	7	Harped			
	Left						0.0000
	Right						0.0000
1		1	8	Harped			
	Left						0.0000
	Right						0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n	Length	Total Thickness	Structural Thickness	Effective Width (Std)	Effective Width
	(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
Class A - f'c...	0.00 9.20...	34.52		8.0000	96.0000	96.0000

Reinforcement

Material	Start Distance	Length	Bar Count	Bar Size	Distance	Row
	(ft)	*(ft)*			*(in)*	
Grade 60	0.00	34.52	8.00	5	3.4375	Top of...
Grade 60	0.00	34.52	8.00	5	1.9375	Bottom...

Haunch Profile

Distance	Length	Z1	Z2	Y1	Y3
(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
0.00	34.52				0.0000

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Extends into Deck
		(ft)		*(in)*	
h6	1	0.25	1	0.0000	TRUE
h6	1	0.25	5	3.0000	TRUE
h4	1	1.50	2	9.0000	TRUE
h4	1	3.00	6	12.0000	TRUE
h4	1	9.00	4	21.0000	TRUE
h4	1	16.00	2	20.3750	TRUE
h4	1	19.40	4	21.0000	TRUE
h4	1	26.40	6	12.0000	TRUE
h4	1	32.40	1	9.0000	TRUE
h6	1	33.15	1	9.0000	TRUE
h6	1	33.90	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length

Member G4

Link with: G3
Description:

Existing:
Current:
Number of Spans: 1

Span Number	Span Length *(ft)*
1	34.520833

Support	Frame Connection
1	
2	

Pedestrian load: *(lb/ft)*

Member G5

Link with: None
Description:

Existing: G5 -
Current: G5 -
Number of Spans: 1

Span Number	Span Length *(ft)*
1	34.520833

Support	Frame Connection
1	
2	

Pedestrian load: *(lb/ft)*

Member Loads

Member Loads - Settlement

Support Number	Horizontal *(in)*	Vertical *(in)*	Rotational *(Radians)*	Load Case Name
1				
2				

Support Constraints

General

Support Number	Support Type	X Translation	Y Translation	Z Rotation
1	Pinned	Fixed	Fixed	Free
2	Roller	Free	Fixed	Free

Elastic

Support Number	X Translation *(kip/ft)*	Y Translation *(kip/ft)*	Z Rotation *(kip-in/rad)*	Override Computed Z Rotation
1				
2				

Member Alternative G5

Description:

Description

Material Type: Prestressed Concrete
Girder Type: PS Precast I
Member units: US Customary
Girder property input method: Schedule based
Additional Self Load: *(kip/ft)*
Additional Self Load %: *(%)*

Analysis Module

Analysis Method: ASD
Analysis Module: BRASS ASD
Analysis Module Component:
Properties:

Analysis Method: LFD
Analysis Module: Legacy AASHTO LFD
Analysis Module Component:
Properties:

Analysis Method: LRFD
Analysis Module: BRASS LRFD
Analysis Module Component:
Properties:

Analysis Method: LRFR
Analysis Module: AASHTO LRFR
Analysis Module Component:
Properties:

Analysis Method: Distribution Factors
Analysis Module:
Analysis Module Component:
Properties:

Default rating method: LRFR
LRFD shear computation method: General Procedure

Factors
Factor Override
LRFD:
LFD:
ASD Factors

	Inventory	Operating
Structural steel		
Concrete		
PS Concrete Comp.		
PS Concrete Tens.		
PS Moment Cap.		
Reinforcement		
Bearing Stiffener		
Stirrup		
Timber	NA	

Default Materials

Deck concrete:	Class A - f'c is 3 ksi
Deck reinforcement:	Grade 60
Beam concrete:	Class A - f'c is 3 ksi
Beam reinforcement:	Grade 60
Stirrup reinforcemt:	Grade 60
Prestressing strand:	1/2" (7W-270) SR

Impact
Standard Impact Factor
Type: Standard - AASHTO
LRFD Dynamic Load Allowance
Fatigue and fracture limit states: 15.0 *(%)*
All other limit states: 33.0 *(%)*

Live Load Distribution
Standard

	Distribution Factor (Wheels)			
Lanes Loaded	Shear	Shear at Supports	Moment	Deflection
1 Lane	1.375	1.375	1.375	0.400
Multi-Lane	1.375	1.375	1.375	0.800

Shrinkage/Time
Deck curing method:
Deck drying time: *(Days)*
Consider deck differential shrinkage loads:
Beam Curing method:
Curing time: *(Days)*
Service life: 75.00 *(Years)*
Analysis time: *(Years)*
Composite time: *(Days)*

Continuous time: *(Days)*

Beam Details

Span Details

Span	Prestress Shape Use Projection	Concrete Material n Creep	Prestress Properties	Left Projection *(in)*	Right *(in)*
1	AASHTO TYPE I... FALSE	5 ksi f'c	pp	4.5000	6.0000

Continuous Support Details

Support Number	Support Distance on Left, SL *(in)*	Support Distance on Right, SR *(in)*
1		
2		

Stress Limit Ranges

Stress Limit	Span	Start Distance *(ft)*	Length *(ft)*
sl	1	0.000	35.40

Slab Interface

Deck interface type:	Monolithic
Interface width:	*(in)*
Deck cohesion factor:	0.400 *(ksi)*
Deck friction factor:	1.400

Continuity Diaphragm

Span	Material Bar	Left Support Distance Bar	Bar	Bar	Right Support Material	Distance
No.			Count	Size	Count	Size

Prestressing Force Information

Strand Layout

Span	Pos.	Row No.	Col. No.	Config. Type	Harp Distance *(ft)*	Debond Distance *(in)*	Harp Curvature *(in)*
1	Left	1	1	Harped			0.0000

	Right						0.0000
1		1	2	Harped			
	Left						0.0000
	Right						0.0000
1		1	3	Harped			
	Left						0.0000
	Right						0.0000
1		1	4	Harped			
	Left	17	1		14.20		0.0000
	Right	17	1		14.20		0.0000
1		1	5	Harped			
	Left	17	2		14.20		0.0000
	Right	17	2		14.20		0.0000
1		1	6	Harped			
	Left						0.0000
	Right						0.0000
1		1	7	Harped			
	Left						0.0000
	Right						0.0000
1		1	8	Harped			
	Left						0.0000
	Right						0.0000

Deck Profile

Deck Concrete

Material (LRFD)	Distance n	Length	Total Thickness	Structural Thickness	Effective Width (Std)	Effective Width
	(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*
Class A - f'c...	0.00 9.20...	34.52		8.0000	90.0000	90.0000

Reinforcement

Material	Start Distance	Length	Bar Count	Bar Size	Distance	Row
	(ft)	*(ft)*			*(in)*	
Grade 60	0.00	34.52	9.00	6	3.4375	Top of...
Grade 60	0.00	34.52	12.00	6	1.9375	Bottom...

Haunch Profile

Distance	Length	Z1	Z2	Z3	Z4	Y1	Y2	Y3
(ft)	*(ft)*	*(in)*	*(in)*	*(in)*	*(in)*	*(in)*	*(in)*	*(in)*
0.00	34.52				78.0000			4.5000

Shear Reinforcement Ranges - Vertical

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Extends into Deck
		(ft)		*(in)*	

h6	1	0.25	1	0.0000	TRUE
h6	1	0.25	5	3.0000	TRUE
h4	1	1.50	2	9.0000	TRUE
h4	1	3.00	6	12.0000	TRUE
h4	1	9.00	4	21.0000	TRUE
h4	1	16.00	2	20.3750	TRUE
h4	1	19.40	4	21.0000	TRUE
h4	1	26.40	6	12.0000	TRUE
h4	1	32.40	1	9.0000	TRUE
h6	1	33.15	1	9.0000	TRUE
h6	1	33.90	5	3.0000	TRUE

Shear Reinforcement Ranges - Horizontal

Shear Reinforcement	Span No	Start Distance	Number Spaces	Spacing	Composite Length