

APPENDIX A



PB - Orange

Sheet # DS-1

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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File Name: BR01.csl

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PROJECT DATA

Project: LRFD Design Example, 3 Span PCI Girder

Designer: PB

Date: Jan/5/2011

Checked By:

Date Checked:

User job
number: CN1234

State: NMDOT, State Job #:CN1234

State
Specification: None

Design Mode: AASHTO LRFD - US Units [4th Edition, including 2009 Interims]

Flared Girder: No

Comments: LRFD Design Example, 3 Span PCI Girder

File Name: G:\Bridge On-Call\LRFD Design Examples\Report\Design Example Rpt March 2011- Substr
Update\LRFD Example 3 Span PC Girder Final with LL Def\BR01.csl



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Sheet # DS-2

Job # CN1234

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GEOMETRY DATA**BRIDGE LAYOUT**

Overall Width (ft)	50.000
Left curb (ft)	1.500
Right curb (ft)	1.500
curb-to-curb width (ft)	47.000
Number of spans	3
Number of lanes	3
Lane width (ft)	12.000
Eff Deck thick (in)	9.000
Sacrificial thick (in)	0.000
Haunch thickness (in)	0.000
Haunch width (in)	16.000

SPAN DATA

Span	Pier-to-pier ft	Precast ft	Brg-to-brg ft	Pier CL ft	Release ft	StartSkew	EndSkew	Bridge c/s in4	M.I.
1	43.750	43.917	42.917	-0.500	43.917	0.00	0.00	2241480.50	
2	88.000	87.333	86.333	0.333	87.333	0.00	0.00	2241480.50	
3	43.750	43.917	42.917	0.333	43.917	0.00	0.00	2241480.50	

BEAM DATA**Span: 1**

No	ID	Loc-prev ft	Area in2	MI(Ixx) in4	Height in	Yb in	B-topg in	B-trib ft
1	AASHTO-III	3.125	560.0	125390.0	45.00	20.27	16.00	7.500
2	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
3	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
4	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
5	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
6	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	7.500

Span: 2

No	ID	Loc-prev ft	Area in2	MI(Ixx) in4	Height in	Yb in	B-topg in	B-trib ft
1	AASHTO-III	3.125	560.0	125390.0	45.00	20.27	16.00	7.500
2	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
3	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
4	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
5	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
6	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	7.500

Span: 3



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No	ID	Loc-prev ft	Area in2	MI(Ixx) in4	Height in	Yb in	B-topg in	B-trib ft
1	AASHTO-III	3.125	560.0	125390.0	45.00	20.27	16.00	7.500
2	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
3	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
4	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
5	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	8.750
6	AASHTO-III	8.750	560.0	125390.0	45.00	20.27	16.00	7.500

MATERIAL DATA - Project Level

As defined in Material Tab. For beam level properties look at Beam Specific output.

CONCRETE PROPERTIES

	Precast	C.I.P
f'c (ksi)	9.500	4.000
Wc (pcf)	150.000	150.000
Ec (ksi)	5908.980	3834.250
K1	1.000	1.000
f'ci (ksi)	7.000	
Eci (ksi)	5072.240	
K1	1.000	

STRAND AND REBAR PROPERTIES**PRESTRESSED STEEL:**

1/2-270K-LL, Low relaxation strands

Depressed at 0.40L

Strand Diameter = 0.500 in

Tensile Strength(fpu) = 270.0 ksi

Use transformed strand and rebar: No

REINFORCING STEEL:

Tension/Shear steel: fy = 60.0 ksi Es = 29000 ksi fs = 24.0 ksi



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LOADS DATA**Loads generated using Permanent Load Wizard: YES**

Left Barrier Weight, klf	0.605
Right Barrier Weight, klf	0.605
Left Curb Weight, klf	0.000
Right Curb Weight, klf	0.000
Left Sidewalk, klf	0.000
Right Sidewalk, klf	0.605
Future Wearing Surface, ksf	0.030
Sacrificial Wearing Surface, in	0.000
Stay in Place Deck Forms, klf	0.145

LOADS ON PRECAST

UNITS: (Point: kips, Location: ft, Line: klf, Trapez: klf)

Span	Beam	DC/DW	Type	Mag.1	Loc.1	Mag.2	Loc.2	Description
1	1	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
1	2	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
1	3	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
1	4	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
1	5	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
1	6	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
2	1	DC	Line	0.145	0.000	0.145	86.333	Stay-in-Place Deck Forms
2	2	DC	Line	0.145	0.000	0.145	86.333	Stay-in-Place Deck Forms
2	3	DC	Line	0.145	0.000	0.145	86.333	Stay-in-Place Deck Forms
2	4	DC	Line	0.145	0.000	0.145	86.333	Stay-in-Place Deck Forms
2	5	DC	Line	0.145	0.000	0.145	86.333	Stay-in-Place Deck Forms
2	6	DC	Line	0.145	0.000	0.145	86.333	Stay-in-Place Deck Forms
3	1	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
3	2	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
3	3	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
3	4	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
3	5	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms
3	6	DC	Line	0.145	0.000	0.145	42.917	Stay-in-Place Deck Forms

DIAPHRAGM LOADS - using Wizard

Span	Magnitude (plf)	Location (ft)	Skew (deg)
1	32.000	21.958	0.000
2	32.000	43.667	0.000
3	32.000	21.958	0.000



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Span	Beam	Load (kips)	Location (ft)
1	1	0.131	21.958
1	2	0.261	21.958
1	3	0.261	21.958
1	4	0.261	21.958
1	5	0.261	21.958
1	6	0.131	21.958
2	1	0.131	43.667
2	2	0.261	43.667
2	3	0.261	43.667
2	4	0.261	43.667
2	5	0.261	43.667
2	6	0.131	43.667
3	1	0.131	21.958
3	2	0.261	21.958
3	3	0.261	21.958
3	4	0.261	21.958
3	5	0.261	21.958
3	6	0.131	21.958

LOADS ON COMPOSITE

UNITS: (Point: kips, Location: ft, Line: klf, Trapez: klf, Area: ksf, Width: ft)

Span	DC/DW	Type	Mag.1	Loc.1/Width	Mag.2	Loc.2	Description
1	DC	Line	0.605	0.000	0.605	42.917	Right Barrier Weight
1	DC	Line	0.605	0.000	0.605	42.917	Right Sidewalk
1	DW	Area	0.030	47.000	-	-	Future Wearing Surface
1	DC	Line	0.605	0.000	0.605	42.917	Left Barrier Weight
2	DC	Line	0.605	0.000	0.605	86.333	Left Barrier Weight
2	DC	Line	0.605	0.000	0.605	86.333	Right Barrier Weight
2	DC	Line	0.605	0.000	0.605	86.333	Right Sidewalk
2	DW	Area	0.030	47.000	-	-	Future Wearing Surface
3	DC	Line	0.605	0.000	0.605	42.917	Left Barrier Weight
3	DC	Line	0.605	0.000	0.605	42.917	Right Barrier Weight
3	DC	Line	0.605	0.000	0.605	42.917	Right Sidewalk
3	DW	Area	0.030	47.000	-	-	Future Wearing Surface

LIVE LOADS

Live load deflection: included.

ID	Type
Design Lane	Design Lane
Design Tandem	Design Tandem
Design Truck	Design Truck

Units: U.S. Units

Design Code: AASHTO LRFD



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ID

Type

Double Truck Double Truck

User Defined Truck:

ID: P327-13 Width, ft: 10.00 Wheel Spg., ft: 6.00

Description: NMDOT PERMIT VEHICLE



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LIVE LOADS USED**LIVE LOAD LIBRARY: default.cs3****1 ID: Design Lane**

Description: Design Lane as in AASHTO-LRFD

Type: Design Lane

Lane Load: Intensity = 0.64 klf, Width = 10.00 ft

2 ID: Design Tandem

Description: Design Tandem as in AASHTO-LRFD

Type: Design Tandem

First Axle Magnitude = 25.00 k, Wheel Spacing = 6.00 ft, Truck Width = 10.00 ft

#	Magnitude, k	Max Spacing, ft	Min Spacing, ft	Increment, ft
1	25.00	4.00	4.00	0.00

3 ID: Design Truck

Description: Design Truck as in AASHTO-LRFD

Type: Design Truck

First Axle Magnitude = 8.00 k, Wheel Spacing = 6.00 ft, Truck Width = 10.00 ft

#	Magnitude, k	Max Spacing, ft	Min Spacing, ft	Increment, ft
1	32.00	14.00	14.00	0.00
2	32.00	30.00	14.00	2.00

4 ID: Double Truck

Description: Double Truck as in AASHTO-LRFD

Type: Double Truck

First Axle Magnitude = 8.00 k, Wheel Spacing = 6.00 ft, Truck Width = 10.00 ft

#	Magnitude, k	Max Spacing, ft	Min Spacing, ft	Increment, ft
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Job # CN1234

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#	Magnitude, k	Max Spacing, ft	Min Spacing, ft	Increment, ft
1	32.00	14.00	14.00	0.00
2	32.00	14.00	14.00	0.00
3	8.00	300.00	50.00	14.00
4	32.00	14.00	14.00	0.00
5	32.00	14.00	14.00	0.00

5 ID: P327-13

Description: NMDOT PERMIT VEHICLE

Type: Permit Vehicle

Uniform Load	Intensity, klf	Location, ft	Length, ft
Preceding	0.00	0.00	0.00
Trailing	0.00	0.00	0.00

First Axle Magnitude = 27.00 k, Wheel Spacing = 6.00 ft, Truck Width = 10.00 ft

#	Magnitude, k	Max Spacing, ft	Min Spacing, ft	Increment, ft
1	25.00	16.00	16.00	0.00
2	25.00	4.00	4.00	0.00
3	25.00	14.00	14.00	0.00
4	25.00	4.00	4.00	0.00
5	25.00	14.00	14.00	0.00
6	25.00	4.00	4.00	0.00
7	25.00	14.00	14.00	0.00
8	25.00	4.00	4.00	0.00
9	25.00	14.00	14.00	0.00
10	25.00	4.00	4.00	0.00
11	25.00	14.00	14.00	0.00
12	25.00	4.00	4.00	0.00

6 ID: Fatigue Truck

Description: Fatigue Truck as in AASHTO-LRFD

Type: Fatigue Truck

First Axle Magnitude = 8.00 k, Wheel Spacing = 6.00 ft, Truck Width = 10.00 ft

#	Magnitude, k	Max Spacing, ft	Min Spacing, ft	Increment, ft
1	32.00	14.00	14.00	0.00
2	32.00	30.00	30.00	0.00



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ANALYSIS DATA**ANALYSIS PARAMETERS DATA**

Truck impact:	1.330
Lane impact:	1.000
Strength II impact:	1.330
Fatigue impact:	1.150

DISTRIBUTION FACTORS (Art. 4.6.2.2):

Is Span Post-tensioned:	NO
Include Rigid Cross Section Assumption (Art. 4.6.2.2.d):	YES
ADTT (Average Daily Truck Traffic) :	5000
Percent of the specified force effect :	1.00

NOTE: Beam specific dead and live load DFs are printed in beam level reports.

LOAD FACTORS: (Table 3.4.1-1 & 3.4.1-2)

	Live	DC(max)	DC(min)	DW(max)	DW(min)
Service I:	1.00	1.00	-	1.00	-
Service III:	0.80	1.00	-	1.00	-
Strength I:	1.75	1.25	0.90	1.50	0.65
Strength II:	1.35	1.25	0.90	1.50	0.65
Fatigue I:	1.50	-	-	-	-

Permit Vehicle Side by Side with Design Loads (Art. 4.6.2.2.4): Yes

Ductility Factor:	1.00
Redundancy Factor:	1.00
Importance Factor:	1.05



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PROJECT PARAMETERS**MULTIPLIERS:**

Trans len mult:	Bonded	1.00
	Debonded	1.00
Dev len mult:	Bonded	1.60
	Debonded	2.00

Camber & Deflection Multiplier (PCI ref.)

Erection Final		
Prestress:	1.80	2.20
Self. Wt:	1.85	2.40
Deck + Haunch:	2.30	
Diaphragm:	3.00	
DL-Prec.:	3.00	
DL-Comp.:	3.00	

MOMENT AND SHEAR PROVISIONS:

Ultimate Moment Capacity, Mr-prvd computed:	AASHTO equations
Horizontal Shear, Beam and Slab effects in Vu:	EXCLUDED
Negative Moment Design, Non-composite Moment effects in Mu:	EXCLUDED

STRESS LIMITS (Art. 5.9.4):**STRESS LIMITS AT RELEASE BEFORE LOSSES:**

PRECAST		
Strength	7.00	ksi
Elasticity	5072.2	ksi
Max comp	4.20	ksi
Max tens	-0.20	ksi
Max tens, w/reinf	-0.63	ksi

STRESS LIMITS AT FINAL AFTER LOSSES:

	PRECAST	DECK
Strength	9.50 ksi	4.00 ksi
Elasticity	5908.98 ksi	3834.25 ksi



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STRESS LIMITS AT FINAL 1 (P/S + DL + LL):

	PRECAST	DECK
Max comp	5.70 ksi	2.40 ksi

STRESS LIMITS AT FINAL 2 (P/S + DL):

	PRECAST	DECK
Max comp	4.28 ksi	1.80 ksi

FATIGUE I STRESS LIMITS AT FINAL 3 (50% P/S + 50% DL + F_LL):

	PRECAST	DECK
Max comp	3.80 ksi	- ksi

SERVICE III (Tension):

	PRECAST	DECK
Max tens	-0.59 ksi	-0.38 ksi

RESISTANCE FACTORS (Art. 5.5.4.2):

Flexure Reinforced	
Compression controlled sections	0.75
Tension controlled sections	0.90
Flexure Prestressed	
Compression controlled sections	0.75
Tension controlled sections	1.00
Shear	0.90

PRESTRESS LOSSES:

Time Dependent Losses, Approximate Method (Art.5.9.5.3)
Days to release = 0.75
Rel. Humid.(RH) = 25.0 %



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PROPERTIES**Span: 1, Beam: 2****PRECAST DATA:**

Section Id	AASHTO-III
Type	I-Girder
Fling width	Top 16.000 in Bot 22.000 in
thick	Top 7.000 in Bot 7.000 in
Stems	No 1
	Top 7.000 in
	Bot 7.000 in
Shear width	7.000 in

GENERAL BRIDGE DATA:

Bridge Width	50.00 ft
Curb-to-curb	47.00 ft
Beam Spac. Lt./Rt	8.75/ 8.75 ft
Lane width	12.00 ft
Number of lanes	3
Interior/Exterior	Interior
Start Skew Angle	0.00 degrees
End Skew Angle	0.00 degrees

TOPPING DATA:

Deck Thickness	9.000 in
Haunch:	
Thickness	0.000 in
Width	16.000 in
Effective width	105.000 in (Art. 4.6.2.6.1)

GENERAL LOAD DATA:

Dead loads on precast:

UNITS: (Point: kips, Location: ft, Line: klf, Trapez: klf)

DC/DW Type	Mag.1	Loc.1	Mag.2	Loc.2
DC	Line	0.145	0.00	0.145 42.917



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Diaphragm loads - using Wizard:
(kips, ft)

Mag. Loc.

0.26 21.96

Dead loads on composite: See Project info for composite loads

GENERAL SPAN DATA:

Overall length 43.917 ft

Release length 43.917 ft

Design length 42.917 ft

KERN POINTS:

Upper 31.32 in

Lower 11.22 in

DISTRIBUTION FACTORS (Art. 4.6.2.2):

Live Negative Moment Left Side (2+ lanes loaded) 0.828 (Calculated)

Live Negative Moment Right Side (2+ lanes loaded) 0.741 (Calculated)

Live Negative Moment Left Side (1 lane loaded) 0.617 (Calculated)

Live Negative Moment Right Side (1 lane loaded) 0.533 (Calculated)

Live Positive Moment (2+ lanes loaded) 0.827 (Calculated)

Live Positive Moment (1 lane loaded) 0.616 (Calculated)

Live Shear (2+ lanes loaded) 0.879 (Calculated)

Live Shear (1 lane loaded) 0.711 (Calculated)

Dead Loads and Pedestrian Load distributed equally to all beams (Art. 4.6.2.2.1)

Pedestrian 0.167 (Calculated)

Comp. DC 0.167 (Calculated)

Comp. DW 0.167 (Calculated)

RESISTANCE FACTORS (Art. 5.5.4.2):

Flexure Reinforced

Compression controlled sections 0.75

Tension controlled sections 0.90



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Date

Flexure Prestressed

Compression controlled sections 0.75

Tension controlled sections 1.00

Shear 0.90

Span: 1, Beam: 2

SECTION PROPERTIES:

	PRECAST	COMPOSITE
Area	560.0 in ²	1173.2 in ² #
Total Height	45.00 in	54.00 in
Mom. of Inertia (I _{xx})	125390 in ⁴	379607 in ⁴ #
Ht. of c.g.	20.27 in	35.55 in #
Density	150.00 pcf	150.00 pcf
Self-weight	583.3 plf	1567.7 plf
Mom. of Inertia (I _{yy})	12216.6 in ⁴	
Poisson's Ratio	0.2	

(#) Of Total Section using $E_c/E_c = 0.6489$

Use transformed strand and rebar: No

Span: 1, Beam: 2

STRESS LIMITS (Art. 5.9.4):

STRESS LIMITS AT RELEASE BEFORE LOSSES:

	PRECAST	
Strength	7.00	ksi
Elasticity	5072.2	ksi
Max comp	4.20	ksi
Max tens	-0.20	ksi
Max tens, w/reinf	-0.63	ksi

STRESS LIMITS AT FINAL AFTER LOSSES:

	PRECAST	DECK
Strength	9.50 ksi	4.00 ksi
Elasticity	5908.98 ksi	3834.25 ksi



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STRESS LIMITS AT FINAL 1 (P/S + DL + LL):

	PRECAST	DECK
Max comp	5.70 ksi	2.40 ksi

STRESS LIMITS AT FINAL 2 (P/S + DL):

	PRECAST	DECK
Max comp	4.28 ksi	1.80 ksi

FATIGUE I STRESS LIMITS AT FINAL 3 (50% P/S + 50% DL + F_LL):

	PRECAST	DECK
Max comp	3.80 ksi	- ksi

SERVICE III (Tension):

	PRECAST	DECK
Max tens	-0.59 ksi	-0.38 ksi

Span: 1, Beam: 2**PRESTRESSED STEEL:**

14 strands, 1/2-270K-LL, Low relaxation strands
Depressed at 0.40L (17.57 ft from member end)

END PATTERN (Ycg = 8.29 in):

8 @ 2.000 in 4 @ 4.000 in 2 @ 42.000 in

MID PATTERN (Ycg = 2.86 in):**(A) Draped:**

2 @ 4.000 in

(B) Straight:



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Job # CN1234

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8 @ 2.000 in 4 @ 4.000 in

Strand Diameter	0.500 in
Strand Area	0.153 in ²
Total Strand Area	2.142 in ²
Trans. Len,bonded	2.500 ft
Trans. Len,debonded	2.500 ft
Dev. Len, bonded	9.909 ft
Dev. Len, debonded	12.387 ft
Holddown Force	10.993 kips
Tensile Strength(fpu)	270.0 ksi
Initial Prestress = 0.75fpu	202.5 ksi
Initial Pull	433.8 kips
Beam Shrtng (PL/AE)	0.077 in

REINFORCING STEEL:**Tension steel:**

f _y	60.0 ksi
E _s	29000 ksi
f _s	24.0 ksi

Stirrups:

# legs	Size	f _y (ksi)	Area (in ²)	Spacing (in)	Start (ft)	End (ft)
2	unknown	60.0	0.40	3.00	0.0000	1.0000
2	unknown	60.0	0.40	6.00	1.0000	9.0000
2	unknown	60.0	0.40	12.00	9.0000	14.0000
2	unknown	60.0	0.40	18.00	14.0000	29.9166
2	unknown	60.0	0.40	12.00	29.9166	34.9166
2	unknown	60.0	0.40	6.00	34.9166	42.9166
2	unknown	60.0	0.40	3.00	42.9166	43.9166

LOSSES

Note: Values are calculated at Midspan

Str. area	2.1420 in ²
Y _{cg}	2.86 in
P _{init}	433.8 kips
E _{cc}	17.41 in
Days to release	0.75
Rel. Humid.(RH)	25.0 %



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Es 28500.0 ksi

Eci 5072 ksi

AASHTO LOSSES

Elastic Shortening 8.55 ksi (Eq 5.9.5.2.3a-1), (fcgp= 1.522 ksi)

Elastic Gains	Gains	Adjustment
due to Precast Loads	-2.11 ksi	0.08 ksi
due to Composite Loads	-0.00 ksi	0.00 ksi
due to Live Loads	-2.31 ksi	0.11 ksi

Time Dependent Losses (Approximate Method (Art.5.9.5.3))

	Initial		Final	
Steel relaxation	0.00	ksi	2.40 ksi	(Eq 5.9.5.3-1)
Concrete shrinkage	0.00	ksi	10.88 ksi	(Eq 5.9.5.3-1)
Concrete creep	0.00	ksi	7.02 ksi	(Eq 5.9.5.3-1)
Sub-total	8.55	ksi (4.22 %)	16.06 ksi	(7.93 %)
Total Prestress Losses			24.61 ksi	(12.15 %)

Prestressing Stress Limit Check (Table 5.9.3.1)

initial fpi = 202.5 ksi < 0.75 fpu, OK

initial fpe = 177.9 ksi < 0.80 fpy, OK



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Job # CN1234

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SHEAR/MOMENT ENVELOPE (&REACTIONS)**SHEAR AND MOMENT ENVELOPE : Span : 1, Beam : 2, SERVICE I****Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Self wt. :	M	0.0	23.9	26.7	44.3	83.7	111.8	128.7	134.3
(Max)	V	12.5	11.4	11.2	10.2	7.7	5.1	2.6	0.0
DL-Prec. :	M	-0.0	5.9	6.6	11.0	20.8	27.8	32.0	33.4
DC(Max)	V	3.1	2.8	2.8	2.5	1.9	1.3	0.6	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	40.3	45.0	74.7	141.2	188.7	217.1	226.6
Haunch (Max)	V	21.1	19.2	18.9	17.3	13.0	8.6	4.3	0.0
Diaphragm :	M	-0.0	0.3	0.3	0.5	1.1	1.6	2.2	2.7
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	0.0	5.1	5.7	8.8	13.3	11.9	4.7	-8.4
DC(Max)	V	2.9	2.2	2.2	1.7	0.3	1.0	2.3	3.6
DL-Comp :	M	0.0	4.0	4.4	6.8	10.3	9.2	3.6	-6.5
DW(Max)	V	2.2	1.7	1.7	1.3	0.3	0.8	1.8	2.8
LL + I :	M+	0.0	129.9	144.9	236.5	422.3	532.5	581.5	578.6
	V	75.1	69.1	68.3	63.4	51.8	4.9	10.4	1.2
LL + I :	M-	-0.0	-42.6	-47.9	-82.8	-176.2	-269.7	-363.1	-424.0
	V	75.1	48.1	44.7	22.6	22.6	22.6	22.6	21.0
LL + I :	Vmx	75.1	69.1	68.3	63.4	52.1	43.5	36.8	37.2
	M	0.0	131.6	146.5	236.5	406.7	387.5	402.2	357.1
Total :	M+	0.0	209.3	233.6	382.7	692.6	883.5	969.7	960.7
	V	117.0	106.5	105.2	96.6	75.1	21.8	22.1	7.8
Total :	M-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-41.8
	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.4
Total :	Vmx	117.0	106.5	105.2	96.6	75.4	60.4	48.6	43.8
	M	0.0	211.0	235.2	382.7	677.0	738.5	790.4	739.2

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	25.85	30.24	34.63	39.02	40.67	40.92	42.92
Self wt. :	M	128.7	111.8	83.7	44.3	26.7	23.9	0.0
(Max)	V	2.6	5.1	7.7	10.2	11.2	11.4	12.5
DL-Prec. :	M	32.0	27.8	20.8	11.0	6.6	5.9	-0.0
DC(Max)	V	0.6	1.3	1.9	2.5	2.8	2.8	3.1
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	217.1	188.7	141.2	74.7	45.0	40.3	0.0
Haunch (Max)	V	4.3	8.6	13.0	17.3	18.9	19.2	21.1
Diaphragm :	M	2.3	1.7	1.1	0.5	0.3	0.3	0.0
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-27.3	-52.0	-82.6	-119.0	-134.1	-136.4	-156.1
DC(Max)	V	5.0	6.3	7.6	9.0	9.4	9.5	10.1
DL-Comp :	M	-21.2	-40.4	-64.1	-92.4	-104.2	-106.0	-121.3
DW(Max)	V	3.9	4.9	5.9	7.0	7.3	7.4	7.9
LL + I :	M+	547.5	455.0	316.5	151.3	114.9	110.5	87.3



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Job # CN1234

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		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
	V	3.5	13.9	55.1	57.3	38.1	35.2	11.8
LL + I :	M-	-457.1	-534.7	-612.4	-706.3	-758.9	-767.7	-846.3
	V	21.0	21.0	21.0	36.1	43.2	44.2	52.9
LL + I :	Vmx	46.9	56.5	65.6	76.1	79.9	80.5	85.2
	M	329.2	234.6	73.9	-170.5	-254.4	-266.9	-362.8
Total :	M+	879.1	692.6	416.6	70.5	0.0	0.0	0.0
	V	20.0	40.3	91.3	103.4	0.0	0.0	0.0
Total :	M-	-125.5	-297.2	-512.3	-787.1	-918.4	-939.8	-1123.7
	V	38.5	48.7	58.9	84.2	95.1	96.7	110.0
Total :	Vmx	63.4	82.9	101.9	122.2	129.7	130.9	140.1
	M	660.8	472.1	173.9	-251.3	-414.0	-438.9	-640.2

REACTIONS (kips), SERVICE I

Load Type	Left Support	Right Support
Self Wt.	12.5	12.5
Deck+Haunch	21.1	21.1
Diaphragm	0.1	0.1
DL-Prec.(DC)	3.1	3.1
DL-Prec.(DW)	0.0	0.0
DL-Comp.(DC)	17.1	142.1
DL-Comp.(DW)	13.3	110.4
Live (Max)	67.5	123.9
Live (Min)	-21.1	-5.5
Pedestrian (Max)	-0.0	-0.0
Pedestrian (Min)	-0.0	-0.0

Upward reactions are positive.

Live Load reactions are per lane with no distribution factor and no impact.

Non-composite load types are per beam.

Composite and Pedestrian load types are per total bridge width.

Live Load reaction reported at intermediate supports is full reaction at support.

SHEAR AND MOMENT ENVELOPE : Span : 1, Beam : 2, SERVICE III**Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Self wt. :	M	0.0	23.9	26.7	44.3	83.7	111.8	128.7	134.3
(Max)	V	12.5	11.4	11.2	10.2	7.7	5.1	2.6	0.0
DL-Prec. :	M	-0.0	5.9	6.6	11.0	20.8	27.8	32.0	33.4
DC(Max)	V	3.1	2.8	2.8	2.5	1.9	1.3	0.6	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	40.3	45.0	74.7	141.2	188.7	217.1	226.6
Haunch (Max)	V	21.1	19.2	18.9	17.3	13.0	8.6	4.3	0.0

Units: U.S. Units

Design Code: AASHTO LRFD



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Sheet # DS-20

Job # CN1234

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Bearing Trans H/2 0.10L 0.20L 0.30L 0.40L Midspan

Diaphragm :	M	-0.0	0.3	0.3	0.5	1.1	1.6	2.2	2.7
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	0.0	5.1	5.7	8.8	13.3	11.9	4.7	-8.4
DC(Max)	V	2.9	2.2	2.2	1.7	0.3	1.0	2.3	3.6
DL-Comp :	M	0.0	4.0	4.4	6.8	10.3	9.2	3.6	-6.5
DW(Max)	V	2.2	1.7	1.7	1.3	0.3	0.8	1.8	2.8
LL + I :	M+	0.0	104.0	115.9	189.2	337.9	426.0	465.2	462.8
	V	60.0	55.3	54.7	50.7	41.5	3.9	8.3	1.0
LL + I :	M-	-0.0	-34.0	-38.3	-66.2	-141.0	-215.7	-290.5	-339.2
	V	60.0	38.5	35.8	18.1	18.1	18.1	18.1	16.8
LL + I :	Vmx	60.0	55.3	54.7	50.7	41.7	34.8	29.5	29.7
	M	0.0	105.3	117.2	189.2	325.3	310.0	321.7	285.6
Total :	M+	0.0	183.4	204.6	335.4	608.2	777.0	853.4	845.0
	V	102.0	92.7	91.6	83.9	64.8	20.8	20.0	7.6
Total :	M-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total :	Vmx	102.0	92.7	91.6	83.9	65.0	51.7	41.2	36.3
	M	0.0	184.7	205.9	335.4	595.6	661.0	710.0	667.8

0.60L 0.70L 0.80L 0.90L H/2 Trans Bearing

Location,	ft	25.85	30.24	34.63	39.02	40.67	40.92	42.92
Self wt. :	M	128.7	111.8	83.7	44.3	26.7	23.9	0.0
(Max)	V	2.6	5.1	7.7	10.2	11.2	11.4	12.5
DL-Prec. :	M	32.0	27.8	20.8	11.0	6.6	5.9	-0.0
DC(Max)	V	0.6	1.3	1.9	2.5	2.8	2.8	3.1
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	217.1	188.7	141.2	74.7	45.0	40.3	0.0
Haunch (Max)	V	4.3	8.6	13.0	17.3	18.9	19.2	21.1
Diaphragm :	M	2.3	1.7	1.1	0.5	0.3	0.3	0.0
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-27.3	-52.0	-82.6	-119.0	-134.1	-136.4	-156.1
DC(Max)	V	5.0	6.3	7.6	9.0	9.4	9.5	10.1
DL-Comp :	M	-21.2	-40.4	-64.1	-92.4	-104.2	-106.0	-121.3
DW(Max)	V	3.9	4.9	5.9	7.0	7.3	7.4	7.9
LL + I :	M+	438.0	364.0	253.2	121.0	91.9	88.4	69.8
	V	2.8	11.1	44.1	45.8	30.5	28.1	9.4
LL + I :	M-	-365.6	-427.8	-489.9	-565.0	-607.1	-614.2	-677.1
	V	16.8	16.8	16.8	28.9	34.5	35.4	42.3
LL + I :	Vmx	37.5	45.2	52.5	60.9	63.9	64.4	68.2
	M	263.4	187.7	59.1	-136.4	-203.6	-213.5	-290.3
Total :	M+	769.6	601.6	353.3	40.2	0.0	0.0	0.0
	V	19.3	37.5	80.3	92.0	0.0	0.0	0.0
Total :	M-	-34.1	-190.2	-389.8	-645.8	-766.7	-786.2	-954.4
	V	34.4	44.5	54.7	77.0	86.5	87.9	99.4
Total :	Vmx	54.0	71.6	88.7	107.0	113.8	114.8	123.0
	M	595.0	425.2	159.1	-217.2	-363.1	-385.6	-567.6



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Sheet # DS-21

Job # CN1234

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SHEAR AND MOMENT ENVELOPE : Span : 1, Beam : 2, STRENGTH I**Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Self wt. :	M	0.0	29.8	33.4	55.4	104.6	139.7	160.8	167.9
(Max)	V	15.6	14.2	14.0	12.8	9.6	6.4	3.2	0.0
Self wt. :	M	0.0	21.5	24.0	39.9	75.3	100.6	115.8	120.9
(Min)	V	11.3	10.2	10.1	9.2	6.9	4.6	2.3	0.0
DL-Prec. :	M	-0.0	7.4	8.3	13.8	26.0	34.7	40.0	41.7
DC(Max)	V	3.9	3.5	3.5	3.2	2.4	1.6	0.8	0.0
DL-Prec. :	M	-0.0	5.3	6.0	9.9	18.7	25.0	28.8	30.0
DC(Min)	V	2.8	2.5	2.5	2.3	1.7	1.1	0.6	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	50.3	56.3	93.4	176.5	235.8	271.4	283.3
Haunch (Max)	V	26.4	23.9	23.6	21.6	16.2	10.8	5.4	0.0
Deck + :	M	0.0	36.2	40.5	67.3	127.1	169.8	195.4	204.0
Haunch (Min)	V	19.0	17.2	17.0	15.6	11.7	7.8	3.9	0.0
Diaphragm :	M	-0.0	0.3	0.4	0.6	1.3	2.0	2.7	3.4
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	-0.0	0.2	0.3	0.4	1.0	1.5	2.0	2.5
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	0.0	6.4	7.1	11.0	16.6	14.8	5.8	-10.5
DC(Max)	V	3.6	2.8	2.7	2.1	0.4	1.2	2.9	4.5
DL-Comp :	M	0.0	4.6	5.1	7.9	11.9	10.7	4.2	-7.6
DC(Min)	V	2.6	2.0	2.0	1.5	0.3	0.9	2.1	3.3
DL-Comp :	M	0.0	5.9	6.6	10.3	15.5	13.8	5.4	-9.8
DW(Max)	V	3.3	2.6	2.5	2.0	0.4	1.1	2.7	4.2
DL-Comp :	M	0.0	2.6	2.9	4.5	6.7	6.0	2.4	-4.2
DW(Min)	V	1.4	1.1	1.1	0.8	0.2	0.5	1.2	1.8
LL + I :	M+	0.0	227.4	253.6	413.8	739.1	931.9	1017.6	1012.5
	V	131.4	120.9	119.6	111.0	90.7	8.6	18.1	2.2
LL + I :	M-	-0.0	-74.5	-83.8	-144.9	-308.4	-471.9	-635.5	-741.9
	V	131.4	84.2	78.3	39.5	39.5	39.5	39.5	36.7
LL + I :	Vmx	131.4	120.9	119.6	111.0	91.2	76.1	64.4	65.1
	M	0.0	230.3	256.4	413.8	711.7	678.1	703.8	624.9
Total :	M+	0.0	344.0	383.9	628.2	1133.5	1441.6	1579.0	1571.8
	V	193.6	176.6	174.4	160.5	125.9	31.4	34.9	11.6
Total :	M-	0.0	-4.2	-5.3	-15.8	-71.1	-166.3	-301.3	-425.1
	V	0.0	123.7	116.9	72.8	63.5	57.4	52.5	44.6
Total :	Vmx	193.6	176.6	174.4	160.5	126.5	102.3	83.5	77.7
	M	0.0	347.0	386.8	628.2	1104.7	1175.1	1249.5	1155.9

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	25.85	30.24	34.63	39.02	40.67	40.92	42.92
Self wt. :	M	160.8	139.7	104.6	55.4	33.4	29.8	0.0
(Max)	V	3.2	6.4	9.6	12.8	14.0	14.2	15.6
Self wt. :	M	115.8	100.6	75.3	39.9	24.0	21.5	0.0



PB - Orange

Sheet # DS-22

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
(Min)	V	2.3	4.6	6.9	9.2	10.1	10.2	11.3
DL-Prec. :	M	40.0	34.7	26.0	13.8	8.3	7.4	-0.0
DC(Max)	V	0.8	1.6	2.4	3.2	3.5	3.5	3.9
DL-Prec. :	M	28.8	25.0	18.7	9.9	6.0	5.3	-0.0
DC(Min)	V	0.6	1.1	1.7	2.3	2.5	2.5	2.8
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	271.4	235.8	176.5	93.4	56.3	50.3	0.0
Haunch (Max)	V	5.4	10.8	16.2	21.6	23.6	23.9	26.4
Deck + :	M	195.4	169.8	127.1	67.3	40.5	36.2	0.0
Haunch (Min)	V	3.9	7.8	11.7	15.6	17.0	17.2	19.0
Diaphragm :	M	2.9	2.1	1.4	0.7	0.4	0.3	0.0
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	2.1	1.5	1.0	0.5	0.3	0.2	0.0
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-34.1	-65.0	-103.2	-148.7	-167.6	-170.5	-195.1
DC(Max)	V	6.2	7.9	9.5	11.2	11.8	11.9	12.7
DL-Comp :	M	-24.6	-46.8	-74.3	-107.1	-120.7	-122.8	-140.5
DC(Min)	V	4.5	5.7	6.9	8.1	8.5	8.6	9.1
DL-Comp :	M	-31.8	-60.6	-96.2	-138.6	-156.2	-159.0	-181.9
DW(Max)	V	5.8	7.3	8.9	10.4	11.0	11.1	11.8
DL-Comp :	M	-13.8	-26.3	-41.7	-60.1	-67.7	-68.9	-78.8
DW(Min)	V	2.5	3.2	3.8	4.5	4.8	4.8	5.1
LL + I :	M+	958.1	796.3	553.9	264.8	201.0	193.4	152.8
	V	6.1	24.3	96.4	100.3	66.7	61.5	20.6
LL + I :	M-	-799.9	-935.7	-1071.6	-1236.0	-1328.0	-1343.5	-1481.1
	V	36.7	36.7	36.7	63.1	75.5	77.4	92.5
LL + I :	Vmx	82.1	98.9	114.8	133.1	139.9	140.9	149.1
	M	576.1	410.6	129.2	-298.4	-445.3	-467.0	-635.0
Total :	M+	1464.6	1192.4	783.6	273.9	116.5	94.1	0.0
	V	29.1	61.4	150.3	167.6	137.3	132.7	0.0
Total :	M-	-549.9	-802.6	-1101.4	-1476.1	-1660.1	-1690.2	-1951.0
	V	53.8	63.1	72.4	109.4	125.9	128.4	148.5
Total :	Vmx	108.8	139.8	169.7	202.2	214.2	216.0	230.7
	M	1034.6	732.2	250.2	-443.7	-704.3	-744.0	-1062.6

REACTIONS (kips), STRENGTH I

Load Type	Left Support	Right Support
Self Wt.	15.6	15.6
Deck+Haunch	26.4	26.4
Diaphragm	0.2	0.2
DL-Prec.(DC)	3.9	3.9
DL-Prec.(DW)	0.0	0.0
DL-Comp.(DC)	21.4	177.7
DL-Comp.(DW)	20.0	165.6
Live (Max)	118.1	216.8

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-23

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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Load Type	Left Support	Right Support
Live (Min)	-36.9	-9.6
Pedestrian (Max)	-0.0	-0.0
Pedestrian (Min)	-0.0	-0.0

Upward reactions are positive.

Live Load reactions are per lane with no distribution factor and no impact.

Non-composite load types are per beam.

Composite and Pedestrian load types are per total bridge width.

Live Load reaction reported at intermediate supports is full reaction at support.

SHEAR AND MOMENT ENVELOPE : Span : 1, Beam : 2, STRENGTH II**Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Self wt. :	M	0.0	29.8	33.4	55.4	104.6	139.7	160.8	167.9
(Max)	V	15.6	14.2	14.0	12.8	9.6	6.4	3.2	0.0
Self wt. :	M	0.0	21.5	24.0	39.9	75.3	100.6	115.8	120.9
(Min)	V	11.3	10.2	10.1	9.2	6.9	4.6	2.3	0.0
DL-Prec. :	M	-0.0	7.4	8.3	13.8	26.0	34.7	40.0	41.7
DC(Max)	V	3.9	3.5	3.5	3.2	2.4	1.6	0.8	0.0
DL-Prec. :	M	-0.0	5.3	6.0	9.9	18.7	25.0	28.8	30.0
DC(Min)	V	2.8	2.5	2.5	2.3	1.7	1.1	0.6	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	50.3	56.3	93.4	176.5	235.8	271.4	283.3
Haunch (Max)	V	26.4	23.9	23.6	21.6	16.2	10.8	5.4	0.0
Deck + :	M	0.0	36.2	40.5	67.3	127.1	169.8	195.4	204.0
Haunch (Min)	V	19.0	17.2	17.0	15.6	11.7	7.8	3.9	0.0
Diaphragm :	M	-0.0	0.3	0.4	0.6	1.3	2.0	2.7	3.4
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	-0.0	0.2	0.3	0.4	1.0	1.5	2.0	2.5
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	0.0	6.4	7.1	11.0	16.6	14.8	5.8	-10.5
DC(Max)	V	3.6	2.8	2.7	2.1	0.4	1.2	2.9	4.5
DL-Comp :	M	0.0	4.6	5.1	7.9	11.9	10.7	4.2	-7.6
DC(Min)	V	2.6	2.0	2.0	1.5	0.3	0.9	2.1	3.3
DL-Comp :	M	0.0	5.9	6.6	10.3	15.5	13.8	5.4	-9.8
DW(Max)	V	3.3	2.6	2.5	2.0	0.4	1.1	2.7	4.2
DL-Comp :	M	0.0	2.6	2.9	4.5	6.7	6.0	2.4	-4.2
DW(Min)	V	1.4	1.1	1.1	0.8	0.2	0.5	1.2	1.8
LL + I :	M+	0.0	191.7	213.6	345.8	601.0	758.0	821.6	825.5
	V	101.5	79.2	76.4	58.0	41.9	31.0	14.1	13.6
LL + I :	M-	-0.0	-79.5	-89.5	-154.7	-329.3	-504.0	-678.6	-837.1
	V	101.5	69.3	65.2	40.0	40.0	40.0	40.0	40.0
LL + I :	Vmx	113.5	103.4	102.1	93.8	75.7	65.6	69.9	76.7

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-24

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
	M	0.0	166.1	185.0	298.5	513.5	-24.6	-123.9	-234.9
Total :	M+	0.0	306.6	341.9	556.8	988.5	1259.0	1373.2	1375.5
	V	162.3	132.7	129.0	104.8	74.7	54.9	30.7	23.7
Total :	M-	0.0	-9.5	-11.3	-26.1	-93.1	-199.9	-346.5	-525.1
	V	0.0	108.0	103.2	73.2	64.0	57.9	52.9	48.0
Total :	Vmx	174.9	158.2	156.1	142.4	110.1	91.2	89.3	90.0
	M	0.0	279.6	311.8	507.1	896.7	437.3	380.5	253.2

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	25.85	30.24	34.63	39.02	40.67	40.92	42.92
Self wt. :	M	160.8	139.7	104.6	55.4	33.4	29.8	0.0
(Max)	V	3.2	6.4	9.6	12.8	14.0	14.2	15.6
Self wt. :	M	115.8	100.6	75.3	39.9	24.0	21.5	0.0
(Min)	V	2.3	4.6	6.9	9.2	10.1	10.2	11.3
DL-Prec. :	M	40.0	34.7	26.0	13.8	8.3	7.4	-0.0
DC(Max)	V	0.8	1.6	2.4	3.2	3.5	3.5	3.9
DL-Prec. :	M	28.8	25.0	18.7	9.9	6.0	5.3	-0.0
DC(Min)	V	0.6	1.1	1.7	2.3	2.5	2.5	2.8
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	271.4	235.8	176.5	93.4	56.3	50.3	0.0
Haunch (Max)	V	5.4	10.8	16.2	21.6	23.6	23.9	26.4
Deck + :	M	195.4	169.8	127.1	67.3	40.5	36.2	0.0
Haunch (Min)	V	3.9	7.8	11.7	15.6	17.0	17.2	19.0
Diaphragm :	M	2.9	2.1	1.4	0.7	0.4	0.3	0.0
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	2.1	1.5	1.0	0.5	0.3	0.2	0.0
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-34.1	-65.0	-103.2	-148.7	-167.6	-170.5	-195.1
DC(Max)	V	6.2	7.9	9.5	11.2	11.8	11.9	12.7
DL-Comp :	M	-24.6	-46.8	-74.3	-107.1	-120.7	-122.8	-140.5
DC(Min)	V	4.5	5.7	6.9	8.1	8.5	8.6	9.1
DL-Comp :	M	-31.8	-60.6	-96.2	-138.6	-156.2	-159.0	-181.9
DW(Max)	V	5.8	7.3	8.9	10.4	11.0	11.1	11.8
DL-Comp :	M	-13.8	-26.3	-41.7	-60.1	-67.7	-68.9	-78.8
DW(Min)	V	2.5	3.2	3.8	4.5	4.8	4.8	5.1
LL + I :	M+	767.5	640.2	430.7	204.2	156.5	151.0	123.8
	V	29.8	43.0	79.2	63.9	42.6	39.3	13.4
LL + I :	M-	-902.5	-1055.8	-1209.1	-1383.5	-1494.0	-1513.0	-1685.7
	V	40.0	40.0	40.0	53.7	77.9	81.6	111.1
LL + I :	Vmx	91.6	107.2	124.9	140.4	147.5	148.6	157.2
	M	-276.4	-514.1	-846.4	-1211.3	-1354.6	-1376.7	-1557.0
Total :	M+	1264.4	1028.6	654.3	210.3	69.8	49.6	0.0
	V	53.9	81.1	132.3	129.4	112.0	109.4	0.0
Total :	M-	-657.6	-928.7	-1245.8	-1631.0	-1834.4	-1868.2	-2165.8
	V	57.3	66.5	75.8	99.5	128.4	132.8	168.0
Total :	Vmx	118.8	148.4	180.3	209.7	222.2	224.1	239.2
	M	139.4	-238.6	-774.3	-1402.2	-1659.1	-1699.3	-2030.7



PB - Orange

Sheet # DS-25

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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REACTIONS (kips), STRENGTH II

Load Type	Left Support	Right Support
Live (Max)	91.1	167.3
Live (Min)	-28.5	-7.4

Upward reactions are positive.

Live Load reactions are for permit vehicles with no distribution factor and no impact.

Live Load reaction reported at intermediate supports is full reaction at support.

SHEAR AND MOMENT ENVELOPE : Span : 1, Beam : 2, FATIGUE I**Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Self wt. :	M	0.0	23.9	26.7	44.3	83.7	111.8	128.7	134.3
(Max)	V	12.5	11.4	11.2	10.2	7.7	5.1	2.6	0.0
Self wt. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	-0.0	5.9	6.6	11.0	20.8	27.8	32.0	33.4
DC(Max)	V	3.1	2.8	2.8	2.5	1.9	1.3	0.6	0.0
DL-Prec. :	M	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	40.3	45.0	74.7	141.2	188.7	217.1	226.6
Haunch (Max)	V	21.1	19.2	18.9	17.3	13.0	8.6	4.3	0.0
Deck + :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haunch (Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diaphragm :	M	-0.0	0.3	0.3	0.5	1.1	1.6	2.2	2.7
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Diaphragm :	M	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	0.0	5.1	5.7	8.8	13.3	11.9	4.7	-8.4
DC(Max)	V	2.9	2.2	2.2	1.7	0.3	1.0	2.3	3.6
DL-Comp :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	0.0	4.0	4.4	6.8	10.3	9.2	3.6	-6.5
DW(Max)	V	2.2	1.7	1.7	1.3	0.3	0.8	1.8	2.8
DL-Comp :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LL + I :	M+	0.0	63.2	70.4	114.7	203.4	260.9	286.2	285.0
	V	40.8	37.3	36.8	34.0	28.3	23.7	12.5	12.3
LL + I :	M-	0.0	-21.3	-24.0	-41.5	-88.3	-135.1	-181.9	-229.0
	V	40.8	26.1	24.3	12.3	12.3	12.3	12.3	12.3



PB - Orange

Sheet # DS-26

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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Bearing Trans H/2 0.10L 0.20L 0.30L 0.40L Midspan

LL + I :	Vmx	40.8	37.3	36.8	34.0	28.3	23.7	19.3	18.8
	M	0.0	63.2	70.4	114.7	203.4	260.9	285.9	202.8
Total :	M+	0.0	142.6	159.1	260.9	473.7	611.9	674.5	667.1
	V	82.7	74.7	73.7	67.2	51.6	40.7	24.3	18.9
Total :	M-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total :	Vmx	82.7	74.7	73.7	67.2	51.6	40.7	31.1	25.4
	M	0.0	142.6	159.1	260.9	473.7	611.9	674.2	584.9

0.60L 0.70L 0.80L 0.90L H/2 Trans Bearing

Location,	ft	25.85	30.24	34.63	39.02	40.67	40.92	42.92
Self wt. :	M	128.7	111.8	83.7	44.3	26.7	23.9	0.0
(Max)	V	2.6	5.1	7.7	10.2	11.2	11.4	12.5
Self wt. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	32.0	27.8	20.8	11.0	6.6	5.9	-0.0
DC(Max)	V	0.6	1.3	1.9	2.5	2.8	2.8	3.1
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	-0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	217.1	188.7	141.2	74.7	45.0	40.3	0.0
Haunch (Max)	V	4.3	8.6	13.0	17.3	18.9	19.2	21.1
Deck + :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haunch (Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diaphragm :	M	2.3	1.7	1.1	0.5	0.3	0.3	0.0
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Diaphragm :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	-27.3	-52.0	-82.6	-119.0	-134.1	-136.4	-156.1
DC(Max)	V	5.0	6.3	7.6	9.0	9.4	9.5	10.1
DL-Comp :	M	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	-21.2	-40.4	-64.1	-92.4	-104.2	-106.0	-121.3
DW(Max)	V	3.9	4.9	5.9	7.0	7.3	7.4	7.9
DL-Comp :	M	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LL + I :	M+	267.2	223.3	157.6	79.2	59.1	56.4	39.6
	V	8.1	4.0	0.3	30.1	20.0	18.4	6.1
LL + I :	M-	-238.2	-278.7	-319.2	-359.7	-374.8	-377.1	-395.5
	V	12.3	12.3	12.3	12.3	12.3	12.3	12.3
LL + I :	Vmx	24.7	30.1	35.0	39.3	41.6	42.0	44.7
	M	152.9	71.8	-34.1	-157.8	-162.7	-161.5	-133.0
Total :	M+	598.8	460.9	257.6	0.0	0.0	0.0	0.0
	V	24.5	30.4	36.5	0.0	0.0	0.0	0.0
Total :	M-	0.0	-41.2	-219.1	-440.5	-534.4	-549.2	-672.9
	V	0.0	40.1	50.2	60.4	64.2	64.8	69.4
Total :	Vmx	41.2	56.5	71.3	85.4	91.4	92.3	99.6
	M	484.5	309.3	66.0	-238.6	-322.3	-333.6	-410.3



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Sheet #	DS-27
Job #	CN1234
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Sheet # DS-28

Job # CN1234

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By PB

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POSITIVE ENVELOPE STRESSES**Span : 1, Beam : 2, SERVICE I****RELEASE STRESSES, (ksi) (LOSS = 4.22 %)**

	Trans	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	2.50	4.39	8.78	13.17	17.57	21.96
Beam-Self						
Precast-top	0.071	0.120	0.213	0.280	0.320	0.333
Bottom	-0.059	-0.098	-0.175	-0.229	-0.262	-0.273
Prestress						
Precast-top	-0.303	-0.351	-0.462	-0.574	-0.685	-0.685
Bottom	1.599	1.638	1.729	1.820	1.911	1.911
Total						
Precast-top	-0.232	-0.231	-0.249	-0.294	-0.365	-0.352
Bottom	1.540	1.540	1.554	1.591	1.649	1.638

SERVICE I**POSITIVE ENVELOPE STRESSES, (ksi) (LOSS = 12.15 %)**

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Prestress								
Precast-top	-0.046	-0.278	-0.284	-0.322	-0.424	-0.526	-0.628	-0.628
Bottom	0.286	1.466	1.471	1.502	1.586	1.669	1.753	1.753
Self wt.								
Precast-top	0.000	0.056	0.063	0.105	0.198	0.265	0.305	0.318
Bottom	-0.000	-0.046	-0.052	-0.086	-0.162	-0.217	-0.250	-0.261
DL-Prec (DC)								
Precast-top	-0.000	0.014	0.016	0.026	0.049	0.066	0.076	0.079
Bottom	0.000	-0.012	-0.013	-0.021	-0.040	-0.054	-0.062	-0.065
DL-Prec (DW)								
Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000



PB - Orange

Sheet # DS-29

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Diaphragm

Precast-top	-0.000	0.001	0.001	0.001	0.003	0.004	0.005	0.006
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.000	-0.001	-0.001	-0.002	-0.003	-0.004	-0.005
--------	--------	--------	--------	--------	--------	--------	--------	--------

Deck + Haunch

Precast-top	0.000	0.095	0.107	0.177	0.334	0.447	0.514	0.536
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.078	-0.087	-0.145	-0.274	-0.366	-0.421	-0.440
--------	--------	--------	--------	--------	--------	--------	--------	--------

DL-Comp (DC)

Precast-top	-0.000	0.002	0.002	0.003	0.004	0.004	0.001	-0.003
-------------	--------	-------	-------	-------	-------	-------	-------	--------

Bottom	-0.000	-0.006	-0.006	-0.010	-0.015	-0.013	-0.005	0.009
--------	--------	--------	--------	--------	--------	--------	--------	-------

DL-Comp (DW)

Precast-top	-0.000	0.001	0.001	0.002	0.003	0.003	0.001	-0.002
-------------	--------	-------	-------	-------	-------	-------	-------	--------

Bottom	-0.000	-0.004	-0.005	-0.008	-0.012	-0.010	-0.004	0.007
--------	--------	--------	--------	--------	--------	--------	--------	-------

LL+I(+)

Precast-top	-0.000	0.039	0.043	0.071	0.126	0.159	0.174	0.173
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.146	-0.163	-0.266	-0.475	-0.598	-0.653	-0.650
--------	--------	--------	--------	--------	--------	--------	--------	--------

Final 1 (P/S + DL + LL)

Precast-top	-0.046	-0.070	-0.052	0.062	0.293	0.420	0.447	0.480
-------------	--------	--------	--------	-------	-------	-------	-------	-------

Bottom	0.286	1.174	1.144	0.966	0.606	0.407	0.353	0.349
--------	-------	-------	-------	-------	-------	-------	-------	-------

Final 2 (P/S + DL)

Precast-top	-0.046	-0.109	-0.095	-0.009	0.167	0.261	0.274	0.307
-------------	--------	--------	--------	--------	-------	-------	-------	-------

Bottom	0.286	1.320	1.307	1.231	1.081	1.006	1.007	1.000
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 1, Beam : 2, SERVICE III

RELEASE STRESSES, (ksi) (LOSS = 4.22 %)

	Trans	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	2.50	4.39	8.78	13.17	17.57	21.96
Beam-Self						
Precast-top	0.071	0.120	0.213	0.280	0.320	0.333
Bottom	-0.059	-0.098	-0.175	-0.229	-0.262	-0.273
Prestress						
Precast-top	-0.303	-0.351	-0.462	-0.574	-0.685	-0.685
Bottom	1.599	1.638	1.729	1.820	1.911	1.911
Total						

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-30

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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	Trans	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Precast-top	-0.232	-0.231	-0.249	-0.294	-0.365	-0.352
Bottom	1.540	1.540	1.554	1.591	1.649	1.638
As_top (in2)	0.364	0.363	0.414	0.551	0.794	0.746

SERVICE III**POSITIVE ENVELOPE STRESSES, (ksi) (LOSS = 12.15 %)**

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Prestress								
Precast-top	-0.046	-0.278	-0.284	-0.322	-0.424	-0.526	-0.628	-0.628
Bottom	0.286	1.466	1.471	1.502	1.586	1.669	1.753	1.753
Self wt.								
Precast-top	0.000	0.056	0.063	0.105	0.198	0.265	0.305	0.318
Bottom	-0.000	-0.046	-0.052	-0.086	-0.162	-0.217	-0.250	-0.261
DL-Prec (DC)								
Precast-top	-0.000	0.014	0.016	0.026	0.049	0.066	0.076	0.079
Bottom	0.000	-0.012	-0.013	-0.021	-0.040	-0.054	-0.062	-0.065
DL-Prec (DW)								
Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Diaphragm								
Precast-top	-0.000	0.001	0.001	0.001	0.003	0.004	0.005	0.006
Bottom	-0.000	-0.000	-0.001	-0.001	-0.002	-0.003	-0.004	-0.005
Deck + Haunch								
Precast-top	0.000	0.095	0.107	0.177	0.334	0.447	0.514	0.536
Bottom	-0.000	-0.078	-0.087	-0.145	-0.274	-0.366	-0.421	-0.440
DL-Comp (DC)								
Precast-top	-0.000	0.002	0.002	0.003	0.004	0.004	0.001	-0.003
Bottom	-0.000	-0.006	-0.006	-0.010	-0.015	-0.013	-0.005	0.009
DL-Comp (DW)								
Precast-top	-0.000	0.001	0.001	0.002	0.003	0.003	0.001	-0.002
Bottom	-0.000	-0.004	-0.005	-0.008	-0.012	-0.010	-0.004	0.007
LL+I(+)								
Precast-top	-0.000	0.031	0.035	0.057	0.101	0.127	0.139	0.138



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Sheet # DS-31

Job # CN1234

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Bottom	-0.000	-0.117	-0.130	-0.213	-0.380	-0.479	-0.523	-0.520
--------	--------	--------	--------	--------	--------	--------	--------	--------

Final 1 (P/S + DL + LL)

Precast-top	-0.046	-0.078	-0.060	0.048	0.268	0.388	0.413	0.445
-------------	--------	--------	--------	-------	-------	-------	-------	-------

Bottom	0.286	1.203	1.177	1.019	0.701	0.527	0.484	0.479
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 1, Beam : 2, FATIGUE I
POSITIVE ENVELOPE STRESSES, (ksi)

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Location, ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
--------------	------	------	------	------	------	-------	-------	-------

F_LL+I(+)

Precast-top	-0.000	0.019	0.021	0.034	0.061	0.078	0.086	0.085
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.071	-0.079	-0.129	-0.229	-0.293	-0.322	-0.320
--------	--------	--------	--------	--------	--------	--------	--------	--------

Final 3 (50%% P/S + 50%% DL + F_LL)

Precast-top	-0.023	-0.036	-0.026	0.030	0.144	0.208	0.222	0.240
-------------	--------	--------	--------	-------	-------	-------	-------	-------

Bottom	0.143	0.589	0.574	0.487	0.312	0.210	0.182	0.175
--------	-------	-------	-------	-------	-------	-------	-------	-------



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Sheet # DS-32

Job # CN1234

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VERTICAL/HORIZONTAL SHEAR**VERTICAL SHEAR (Art. 5.8) - Span : 1, Beam : 2, STRENGTH I**

Using Simplified procedure - Art.5.8.3.4.3

Location (ft)								
Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	
Bearing : 0.50								
41.951	0.000	193.568	0.000	0.000	151.618	0.286	0.000	802.750
50.548	698.484	65.436	698.484	0.023	1.931	69.848	69.848	145.228
0.562	0.136	0.562	1.600	2.248	24.000	1.373	0.244	
Transfer : 2.50								
37.450	79.401	176.557	347.026	267.625	139.106	1.466	70.346	1731.909
50.548	959.476	65.436	959.476	0.191	9.657	95.368	95.368	100.806
0.336	0.136	0.336	0.800	1.708	24.000	0.000	1.222	
Critical : 2.75								
32.440	158.801	157.618	677.465	518.664	125.178	1.607	141.813	1733.744
50.718	472.760	65.656	472.760	0.272	9.657	104.238	104.238	70.893
0.221	0.136	0.221	0.800	2.060	24.000	0.000	1.407	
0.1L : 4.39								
33.194	146.218	160.467	628.219	482.001	127.273	1.502	130.576	1659.977
51.232	493.620	66.321	493.620	0.252	9.657	103.080	103.080	75.216
0.236	0.136	0.236	0.800	2.009	24.000	0.000	1.379	
0.2L : 8.78								
23.312	270.294	126.470	1104.731	834.437	103.158	1.586	246.777	1533.773
47.668	233.495	61.707	233.495	0.359	9.657	107.277	107.277	33.245
0.103	0.136	0.136	0.800	2.594	24.000	0.000	2.033	
0.3L : 13.17								
16.912	350.971	102.266	1175.102	824.130	85.354	1.669	329.946	1464.592
48.984	189.735	63.412	189.735	0.417	9.657	115.997	115.997	0.000
0.000	0.136	0.136	0.400	2.233	24.000	0.000	2.142	
0.4L : 17.57								
11.751	388.249	83.538	1249.524	861.275	71.786	1.753	380.081	1452.435
50.341	154.533	65.168	154.533	0.428	0.000	110.370	110.370	0.000
0.000	0.136	0.136	0.267	2.213	24.000	0.000	2.142	



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Sheet # DS-33

Job # CN1234

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**Location
(ft)**

Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	
0.5L : 21.96								
6.590	382.128	77.710	1155.927	773.799	71.120	1.753	397.054	1423.135
50.341	159.113	65.168	159.113	0.453	0.000	113.010	113.010	0.000
0.000	0.136	0.136	0.267	2.429	24.000	0.000	2.142	
0.6L : 26.35								
16.478	331.591	108.839	1034.589	702.998	92.361	1.753	380.081	1452.435
50.341	229.024	65.168	229.024	0.428	0.000	110.386	110.386	10.546
0.030	0.136	0.136	0.267	1.699	24.000	0.000	2.142	
0.7L : 30.74								
26.361	237.524	139.759	732.245	494.721	113.398	1.669	329.946	1464.592
48.984	383.206	63.412	383.206	0.417	9.657	116.008	116.008	39.279
0.114	0.136	0.136	0.400	1.634	24.000	0.000	2.142	
0.8L : 35.13								
36.243	100.058	169.691	250.197	150.138	133.449	1.586	246.777	1533.773
47.668	1420.087	61.707	1420.087	0.359	9.657	107.285	107.285	81.261
0.253	0.136	0.253	0.800	1.933	24.000	0.000	2.033	
0.9L : 39.52								
46.125	-80.807	202.167	-443.682	-362.875	156.042	1.502	130.576	1659.977
49.932	781.486	64.638	781.486	0.252	9.657	100.714	100.714	123.916
0.399	0.136	0.399	0.800	1.556	24.000	3.819	0.230	
Critical : 41.17								
45.647	-70.081	200.612	-409.968	-339.887	154.965	1.569	137.702	1706.756
49.248	845.059	63.753	845.059	0.264	9.657	100.757	100.757	122.145
0.395	0.136	0.395	0.800	1.563	24.000	3.692	0.233	
Transfer : 41.42								
50.381	-172.085	216.017	-744.039	-571.954	165.635	1.466	70.346	1731.909
49.248	573.186	63.753	573.186	0.191	9.657	93.166	93.166	146.852
0.503	0.136	0.503	0.800	1.362	24.000	5.185	0.204	
Bearing : 43.42								
54.882	-277.348	230.660	-1062.566	-785.218	175.779	0.286	0.000	802.750
49.248	255.836	63.753	255.836	0.023	1.931	68.102	68.102	188.187
0.747	0.136	0.747	1.600	1.838	24.000	6.961	0.041	



PB - Orange

Sheet # DS-34

Job # CN1234

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ANCHORAGE ZONE REINFORCEMENT (Art. 5.10.10)**Span : 1, Beam : 2**

Fpi (kips)	fs (ksi)	h/4 (in)	Abrst_rqrd (in2)
433.76	20.00	11.25	0.87

HORIZONTAL SHEAR (Art. 5.8.4) - Span : 1, Beam : 2

(Beam and Slab effects are EXCLUDED from Vu).

Location (ft)									
Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)	
Bearing : 0.00									
147.5	3.24	51.33	1.57	50.55	24.00	0.160	0.057	0.000	
Transfer : 2.00									
134.7	2.96	51.33	1.57	50.55	24.00	0.160	0.049	0.000	
Critical : 4.23									
120.6	2.64	51.33	1.23	50.72	24.00	0.160	0.040	0.000	
0.1L : 3.89									
122.7	2.66	51.33	0.20	51.23	24.00	0.160	0.041	0.000	
0.2L : 8.28									
98.1	2.29	48.43	1.52	47.67	24.00	0.160	0.030	0.000	
0.3L : 12.67									
83.3	1.89	49.79	1.60	48.98	24.00	0.160	0.019	0.000	
0.4L : 17.07									
74.0	1.63	51.14	1.60	50.34	24.00	0.160	0.012	0.000	
0.5L : 21.46									
77.6	1.71	51.14	1.60	50.34	24.00	0.160	0.014	0.000	
0.6L : 25.85									
99.3	2.19	51.14	1.60	50.34	24.00	0.160	0.028	0.000	
0.7L : 30.24									
120.8	2.74	49.79	1.60	48.98	24.00	0.160	0.043	0.000	
0.8L : 34.63									
141.3	3.29	48.43	1.52	47.67	24.00	0.160	0.058	0.000	
0.9L : 39.02									



PB - Orange

Sheet # DS-35

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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Location (ft)

Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)
164.4	3.66	50.03	0.20	49.93	24.00	0.160	0.068	0.000
Critical : 38.81								
163.3	3.68	50.03	1.57	49.25	24.00	0.160	0.069	0.000
Transfer : 40.92								
174.2	3.93	50.03	1.57	49.25	24.00	0.160	0.076	0.000
Bearing : 42.92								
184.6	4.16	50.03	1.57	49.25	24.00	0.160	0.082	0.000

VERTICAL SHEAR (Art. 5.8) - Span : 1, Beam : 2, STRENGTH II

Using Simplified procedure - Art.5.8.3.4.3

**Location
(ft)**

Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	
Bearing : 0.50								
41.951	0.000	174.867	0.000	0.000	132.916	0.286	0.000	802.750
49.729	687.482	64.376	687.482	0.023	1.931	68.748	68.748	125.548
0.494	0.136	0.494	1.600	2.448	24.000	1.186	0.244	
Transfer : 2.50								
37.450	79.401	158.161	279.637	200.236	120.710	1.466	70.346	1731.909
49.729	1102.973	64.376	1102.973	0.191	9.657	93.980	93.980	81.754
0.277	0.136	0.277	0.800	1.877	24.000	0.000	1.222	
Critical : 2.75								
32.440	158.809	139.561	547.020	388.211	107.121	1.607	141.820	1733.789
50.718	532.737	65.656	532.737	0.272	9.657	104.240	104.240	50.828
0.159	0.136	0.159	0.800	2.326	24.000	0.000	1.407	
0.1L : 4.39								
33.194	146.218	142.360	507.141	360.922	109.166	1.502	130.576	1659.977
51.224	557.380	66.311	557.380	0.252	9.657	103.066	103.066	55.111
0.173	0.136	0.173	0.800	2.265	24.000	0.000	1.379	

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-36

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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**Location
(ft)**

Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	

0.2L : 8.78

23.312	270.294	110.102	896.672	626.378	86.791	1.586	246.777	1533.773
48.188	256.625	62.380	256.625	0.359	9.657	108.342	108.342	13.994
0.043	0.136	0.136	0.800	3.011	24.000	0.000	2.033	

0.3L : 13.17

16.912	350.971	91.242	437.252	86.280	74.329	1.669	329.946	1464.592
49.405	1299.954	63.956	1299.954	0.417	9.657	116.910	116.910	0.000
0.000	0.136	0.136	0.400	2.524	24.000	0.000	2.142	

0.4L : 17.57

11.751	388.249	89.304	380.452	-7.797	77.553	1.753	380.081	1452.435
50.341	14480.317	65.168	14480.317	0.428	0.000	110.370	110.370	0.000
0.000	0.136	0.136	0.267	2.070	24.000	0.000	2.142	

0.5L : 21.96

6.590	382.128	89.954	253.218	-128.910	83.364	1.753	397.054	1423.135
50.341	948.631	65.168	948.631	0.453	0.000	113.010	113.010	0.000
0.000	0.136	0.136	0.267	2.098	24.000	0.000	2.142	

0.6L : 26.35

16.478	331.591	118.828	139.437	-192.154	102.349	1.753	380.081	1452.435
50.341	811.829	65.168	811.829	0.428	0.000	110.386	110.386	21.645
0.061	0.136	0.136	0.267	1.556	24.000	0.000	2.142	

0.7L : 30.74

26.361	237.524	148.396	-238.617	-476.142	122.035	1.669	329.946	1464.592
48.937	422.853	63.351	422.853	0.417	9.657	115.906	115.906	48.978
0.142	0.136	0.142	0.400	1.538	24.000	0.000	0.000	

0.8L : 35.13

36.243	100.058	180.285	-774.278	-874.336	144.042	1.586	246.777	1533.773
49.793	310.409	64.458	310.409	0.359	9.657	111.637	111.637	88.680
0.264	0.136	0.264	0.800	1.899	24.000	0.000	0.000	

0.9L : 39.52

46.125	-80.807	209.742	-1402.231	-1321.424	163.618	1.502	130.576	1659.977
49.924	273.204	64.628	273.204	0.252	9.657	100.699	100.699	132.348
0.426	0.136	0.426	0.800	1.499	24.000	7.698	0.230	

Critical : 41.17



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Sheet # DS-37

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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**Location
(ft)**

Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	
45.800	-73.528	208.652	-1379.680	-1306.153	162.851	1.547	135.412	1691.725
48.429	277.623	62.693	277.623	0.260	9.657	98.835	98.835	133.000
0.438	0.136	0.438	0.800	1.474	24.000	7.748	0.232	
Transfer : 41.42								
50.381	-172.085	224.059	-1699.262	-1527.177	173.677	1.466	70.346	1731.909
48.429	268.240	62.693	268.240	0.191	9.657	91.778	91.778	157.177
0.547	0.136	0.547	0.800	1.291	24.000	9.201	0.204	
Bearing : 43.42								
54.882	-277.348	239.195	-2030.689	-1753.340	184.313	0.286	0.000	802.750
48.429	160.166	62.693	160.166	0.023	1.931	67.002	67.002	198.771
0.803	0.136	0.803	1.600	1.743	24.000	11.076	0.041	

ANCHORAGE ZONE REINFORCEMENT (Art. 5.10.10)

Span : 1, Beam : 2

Fpi (kips)	fs (ksi)	h/4 (in)	Abrst_rqrd (in2)
433.76	20.00	11.25	0.87

HORIZONTAL SHEAR (Art. 5.8.4) - Span : 1, Beam : 2

(Beam and Slab effects are EXCLUDED from Vu).

Location (ft)

Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)
Bearing : 0.00								
128.8	2.88	51.33	3.21	49.73	24.00	0.160	0.047	0.000
Transfer : 2.00								
116.3	2.60	51.33	3.21	49.73	24.00	0.160	0.039	0.000
Critical : 4.23								
102.5	2.25	51.33	1.23	50.72	24.00	0.160	0.029	0.000



PB - Orange

Sheet # DS-38

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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Location (ft)

Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)
0.1L :	3.89							
104.6	2.27	51.33	0.22	51.22	24.00	0.160	0.030	0.000
0.2L :	8.28							
81.7	1.88	48.43	0.48	48.19	24.00	0.160	0.019	0.000
0.3L :	12.67							
72.3	1.63	49.79	0.76	49.40	24.00	0.160	0.012	0.000
0.4L :	17.07							
79.7	1.76	51.14	1.60	50.34	24.00	0.160	0.016	0.000
0.5L :	21.46							
89.8	1.98	51.14	1.60	50.34	24.00	0.160	0.022	0.000
0.6L :	25.85							
109.3	2.41	51.14	1.60	50.34	24.00	0.160	0.034	0.000
0.7L :	30.24							
129.4	2.94	49.32	0.76	48.94	24.00	0.160	0.048	0.000
0.8L :	34.63							
151.9	3.39	50.03	0.48	49.79	24.00	0.160	0.061	0.000
0.9L :	39.02							
172.0	3.83	50.03	0.22	49.92	24.00	0.160	0.073	0.000
Critical :	38.88							
171.2	3.93	50.03	3.21	48.43	24.00	0.160	0.076	0.000
Transfer :	40.92							
182.2	4.18	50.03	3.21	48.43	24.00	0.160	0.083	0.000
Bearing :	42.92							
193.1	4.43	50.03	3.21	48.43	24.00	0.160	0.090	0.000



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Sheet # DS-39

Job # CN1234

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CAMBER/DEFLECTION**CAMBER AND DEFLECTIONS: SERVICE I**
(Span : 1, Beam : 2; Units: in)

Release Mult Erection Mult Final					
At 0.1 x L = 3.89 ft					
Prestress	0.125	1.80	0.226	2.20	0.276
Self Wt.	-0.024	1.85	-0.045	2.40	-0.058
Deck + Haunch			-0.029	2.30	-0.067
DL-Prec. (DC)			-0.004	3.00	-0.013
Diaphragm			-0.000	3.00	-0.001
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.000	3.00	0.001
DL-Comp. (DW)			0.000	3.00	0.001
Live Load					-0.019
Total	0.101		0.148		0.121

Release Mult Erection Mult Final					
At 0.2 x L = 8.28 ft					
Prestress	0.228	1.80	0.410	2.20	0.501
Self Wt.	-0.046	1.85	-0.084	2.40	-0.109
Deck + Haunch			-0.058	2.30	-0.134
DL-Prec. (DC)			-0.009	3.00	-0.026
Diaphragm			-0.001	3.00	-0.002
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.001	3.00	0.003
DL-Comp. (DW)			0.001	3.00	0.003
Live Load					-0.039
Total	0.182		0.260		0.197

Release Mult Erection Mult Final					
At 0.3 x L = 12.67 ft					
Prestress	0.304	1.80	0.547	2.20	0.668
Self Wt.	-0.062	1.85	-0.115	2.40	-0.150
Deck + Haunch			-0.082	2.30	-0.188
DL-Prec. (DC)			-0.012	3.00	-0.036
Diaphragm			-0.001	3.00	-0.002
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.002	3.00	0.006
DL-Comp. (DW)			0.001	3.00	0.004
Live Load					-0.054
Total	0.241		0.340		0.249

Release Mult Erection Mult Final					
At 0.4 x L = 17.07 ft					
Prestress	0.351	1.80	0.631	2.20	0.772



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Sheet # DS-40

Job # CN1234

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Release Mult Erection Mult Final

Self Wt.	-0.073	1.85	-0.135	2.40	-0.175
Deck + Haunch			-0.096	2.30	-0.222
DL-Prec. (DC)			-0.014	3.00	-0.043
Diaphragm			-0.001	3.00	-0.003
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.003	3.00	0.009
DL-Comp. (DW)			0.002	3.00	0.007
Live Load					-0.063
Total	0.278		0.390		0.282

Release Mult Erection Mult Final

At 0.5 x L = 21.46 ft

Prestress	0.367	1.80	0.660	2.20	0.806
Self Wt.	-0.077	1.85	-0.142	2.40	-0.184
Deck + Haunch			-0.101	2.30	-0.233
DL-Prec. (DC)			-0.015	3.00	-0.045
Diaphragm			-0.001	3.00	-0.003
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.004	3.00	0.012
DL-Comp. (DW)			0.003	3.00	0.009
Live Load					-0.065
Total	0.290		0.407		0.297

Release Mult Erection Mult Final

At 0.6 x L = 25.85 ft

Prestress	0.351	1.80	0.631	2.20	0.772
Self Wt.	-0.073	1.85	-0.135	2.40	-0.175
Deck + Haunch			-0.096	2.30	-0.222
DL-Prec. (DC)			-0.014	3.00	-0.043
Diaphragm			-0.001	3.00	-0.003
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.005	3.00	0.015
DL-Comp. (DW)			0.004	3.00	0.011
Live Load					-0.061
Total	0.278		0.393		0.294

Release Mult Erection Mult Final

At 0.7 x L = 30.24 ft

Prestress	0.304	1.80	0.547	2.20	0.668
Self Wt.	-0.062	1.85	-0.115	2.40	-0.150
Deck + Haunch			-0.082	2.30	-0.188
DL-Prec. (DC)			-0.012	3.00	-0.036
Diaphragm			-0.001	3.00	-0.002
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.005	3.00	0.016
DL-Comp. (DW)			0.004	3.00	0.013
Live Load					-0.052



PB - Orange

Sheet # DS-41

Job # CN1234

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Release Mult Erection Mult Final

Total	0.241	0.347	0.270
-------	-------	-------	-------

Release Mult Erection Mult Final

At 0.8 x L = 34.63 ft

Prestress	0.228	1.80	0.410	2.20	0.501
-----------	-------	------	-------	------	-------

Self Wt.	-0.046	1.85	-0.084	2.40	-0.109
----------	--------	------	--------	------	--------

Deck + Haunch			-0.058	2.30	-0.134
---------------	--	--	--------	------	--------

DL-Prec. (DC)			-0.009	3.00	-0.026
---------------	--	--	--------	------	--------

Diaphragm			-0.001	3.00	-0.002
-----------	--	--	--------	------	--------

DL-Prec. (DW)			0.000	3.00	0.000
---------------	--	--	-------	------	-------

DL-Comp. (DC)			0.005	3.00	0.015
---------------	--	--	-------	------	-------

DL-Comp. (DW)			0.004	3.00	0.012
---------------	--	--	-------	------	-------

Live Load					-0.037
-----------	--	--	--	--	--------

Total	0.182	0.267	0.220
-------	-------	-------	-------

Release Mult Erection Mult Final

At 0.9 x L = 39.02 ft

Prestress	0.125	1.80	0.226	2.20	0.276
-----------	-------	------	-------	------	-------

Self Wt.	-0.024	1.85	-0.045	2.40	-0.058
----------	--------	------	--------	------	--------

Deck + Haunch			-0.029	2.30	-0.067
---------------	--	--	--------	------	--------

DL-Prec. (DC)			-0.004	3.00	-0.013
---------------	--	--	--------	------	--------

Diaphragm			-0.000	3.00	-0.001
-----------	--	--	--------	------	--------

DL-Prec. (DW)			0.000	3.00	0.000
---------------	--	--	-------	------	-------

DL-Comp. (DC)			0.004	3.00	0.011
---------------	--	--	-------	------	-------

DL-Comp. (DW)			0.003	3.00	0.008
---------------	--	--	-------	------	-------

Live Load					-0.019
-----------	--	--	--	--	--------

Total	0.101	0.154	0.138
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Sheet # DS-42

Job # CN1234

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ULTIMATE MOMENT**ULTIMATE - Span : 1, Beam : 2, STRENGTH I**
(Mr-prvd computed by AASHTO equations, Art. 5.7.3.2/5.7.3.3)

Location (ft) Mu k.ft	dp in	Aps in ²	fps ksi	c in	a in	Mr-prvd k.ft	c/dt	Phi	1.2 Mcr k.ft	min Mr k.ft	Crkg Ratio	Mu-p/r Ratio
Transfer	2.00											
344.0	46.5	1.426	268.0	1.3	1.1	1463.2	0.024T	1.00	-	-	-	-
H/2	2.25											
383.9	46.6	1.450	267.9	1.3	1.1	1490.0	0.025T	1.00	-	-	-	-
0.1L	3.89											
628.2	47.1	1.609	267.7	1.4	1.2	1667.8	0.027T	1.00	-	-	-	-
0.2L	8.28											
1133.5	48.4	2.033	267.2	1.8	1.5	2158.1	0.034T	1.00	-	-	-	-
0.3L	12.67											
1441.6	49.8	2.142	267.1	1.9	1.6	2335.8	0.036T	1.00	2713.1	1917.3	1.0	1.62
0.4L	17.07											
1579.0	51.1	2.142	267.2	1.9	1.6	2401.1	0.036T	1.00	2758.7	2100.0	1.0	1.52
0.5L	21.46											
1571.8	51.1	2.142	267.2	1.9	1.6	2401.1	0.036T	1.00	2743.8	2090.5	1.1	1.53
0.6L	25.85											
1464.6	51.1	2.142	267.2	1.9	1.6	2401.1	0.036T	1.00	2758.6	1947.9	1.0	1.64
0.7L	30.24											
1192.4	49.8	2.142	267.1	1.9	1.6	2335.8	0.036T	1.00	2713.0	1586.0	1.0	1.96
0.8L	34.63											
783.6	48.4	2.033	267.2	1.8	1.5	2158.1	0.034T	1.00	-	-	-	-
0.9L	39.02											
273.9	47.1	1.609	267.7	1.4	1.2	1667.8	0.027T	1.00	-	-	-	-
H/2	40.67											
116.5	46.6	1.450	267.9	1.3	1.1	1490.0	0.025T	1.00	-	-	-	-
Transfer	40.92											
94.1	46.5	1.426	268.0	1.3	1.1	1463.2	0.024T	1.00	-	-	-	-

Legend: C = Compression-Controlled ($c/dt > 0.600$)I = In-Transition ($0.60 \geq c/dt > 0.375$)T = Tension-Controlled ($c/dt \leq 0.375$)

Note : fr used for calculating Mcr is computed using AASHTO method (Art.5.4.2.6.)

ULTIMATE - Span : 1, Beam : 2, STRENGTH II
(Mr-prvd computed by AASHTO equations, Art. 5.7.3.2/5.7.3.3)

Location (ft) Mu k.ft	dp in	Aps in ²	fps ksi	c in	a in	Mr-prvd k.ft	c/dt	Phi	1.2 Mcr k.ft	min Mr k.ft	Crkg Ratio	Mu-p/r Ratio
Transfer	2.00											
306.6	46.5	1.426	268.0	1.3	1.1	1463.2	0.024T	1.00	-	-	-	-



PB - Orange

Sheet # DS-43

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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Location (ft) Mu k.ft	dp in	Aps in ²	fps ksi	c in	a in	Mr-prvd k.ft	c/dt	Phi	1.2 Mcr k.ft	min Mr k.ft	Crkg Ratio	Mu-p/r Ratio
H/2	2.25											
341.9	46.6	1.450	267.9	1.3	1.1	1490.0	0.025T	1.00	-	-	-	-
0.1L	3.89											
556.8	47.1	1.609	267.7	1.4	1.2	1667.8	0.027T	1.00	-	-	-	-
0.2L	8.28											
988.5	48.4	2.033	267.2	1.8	1.5	2158.1	0.034T	1.00	-	-	-	-
0.3L	12.67											
1259.0	49.8	2.142	267.1	1.9	1.6	2335.8	0.036T	1.00	2713.1	1674.4	1.0	1.86
0.4L	17.07											
1373.2	51.1	2.142	267.2	1.9	1.6	2401.1	0.036T	1.00	2758.7	1826.4	1.0	1.75
0.5L	21.46											
1375.5	51.1	2.142	267.2	1.9	1.6	2401.1	0.036T	1.00	2743.8	1829.5	1.1	1.75
0.6L	25.85											
1264.4	51.1	2.142	267.2	1.9	1.6	2401.1	0.036T	1.00	2758.6	1681.7	1.0	1.90
0.7L	30.24											
1028.6	49.8	2.142	267.1	1.9	1.6	2335.8	0.036T	1.00	2713.0	1368.0	1.0	2.27
0.8L	34.63											
654.3	48.4	2.033	267.2	1.8	1.5	2158.1	0.034T	1.00	-	-	-	-
0.9L	39.02											
210.3	47.1	1.609	267.7	1.4	1.2	1667.8	0.027T	1.00	-	-	-	-
H/2	40.67											
69.8	46.6	1.450	267.9	1.3	1.1	1490.0	0.025T	1.00	-	-	-	-
Transfer	40.92											
49.6	46.5	1.426	268.0	1.3	1.1	1463.2	0.024T	1.00	-	-	-	-

Legend: C = Compression-Controlled (c/dt > 0.600)

I = In-Transition (0.60 >= c/dt > 0.375)

T = Tension-Controlled (c/dt <= 0.375)

Note : fr used for calculating Mcr is computed using AASHTO method (Art.5.4.2.6.)



PB - Orange

Sheet # DS-44

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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DETENSIONING**Span : 1, Beam : 2; Groups 1-7; Units: ksi**

Grp	Str	Ys,in	2.50ft
1	2 E	2.00 Ft	-0.036
	M	2.00 Fb	0.223
2	2 E	42.00 Ft	0.261
	M	4.00 Fb	0.172
3	2 E	4.00 Ft	0.176
	M	4.00 Fb	0.434
4	2 E	4.00 Ft	0.092
	M	4.00 Fb	0.696
5	2 E	2.00 Ft	-0.016
	M	2.00 Fb	0.977
6	2 E	2.00 Ft	-0.124
	M	2.00 Fb	1.259
7	2 E	2.00 Ft	-0.232
	M	2.00 Fb	1.540



PB - Orange

Sheet # DS-45

Job # CN1234

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NEGATIVE ENVELOPE STRESSES**Span : 1, Beam : 2, SERVICE I****NEGATIVE ENVELOPE STRESSES, (ksi) (LOSS = 12.15 %)**

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
Prestress								
Precast-top	-0.046	-0.278	-0.284	-0.322	-0.424	-0.526	-0.628	-0.628
Bottom	0.286	1.466	1.471	1.502	1.586	1.669	1.753	1.753
Self wt.								
Precast-top	0.000	0.056	0.063	0.105	0.198	0.265	0.305	0.318
Bottom	-0.000	-0.046	-0.052	-0.086	-0.162	-0.217	-0.250	-0.261
DL-Prec (DC)								
Precast-top	-0.000	0.014	0.016	0.026	0.049	0.066	0.076	0.079
Bottom	0.000	-0.012	-0.013	-0.021	-0.040	-0.054	-0.062	-0.065
DL-Prec (DW)								
Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Diaphragm								
Precast-top	0.000	0.001	0.001	0.001	0.003	0.004	0.005	0.006
Bottom	-0.000	-0.001	-0.001	-0.001	-0.002	-0.003	-0.004	-0.005
Deck + Haunch								
Precast-top	0.000	0.095	0.107	0.177	0.334	0.447	0.514	0.536
Bottom	-0.000	-0.078	-0.087	-0.145	-0.274	-0.366	-0.421	-0.440
DL-Comp (DC)								
Precast-top	-0.047	-0.041	-0.040	-0.036	-0.025	-0.016	-0.008	-0.003
Bottom	0.175	0.153	0.151	0.134	0.093	0.058	0.031	0.009
DL-Comp (DW)								
Precast-top	-0.036	-0.032	-0.031	-0.028	-0.019	-0.012	-0.006	-0.002
Bottom	0.136	0.119	0.117	0.104	0.072	0.045	0.024	0.007
LL+I(-)								
Precast-top	-0.253	-0.229	-0.227	-0.211	-0.183	-0.160	-0.137	-0.127
Bottom	0.951	0.863	0.853	0.794	0.688	0.601	0.514	0.476
Final 1 (P/S + DL + LL)								
Precast-top	-0.382	-0.414	-0.396	-0.287	-0.067	0.067	0.120	0.180
Bottom	1.548	2.465	2.439	2.280	1.960	1.734	1.584	1.476
Final 2 (P/S + DL)								
Precast-top	-0.129	-0.184	-0.169	-0.076	0.116	0.227	0.257	0.307



PB - Orange

Sheet # DS-46

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Bottom	0.597	1.602	1.586	1.486	1.272	1.133	1.070	1.000
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 1, Beam : 2, SERVICE III

NEGATIVE ENVELOPE STRESSES, (ksi) (LOSS = 12.15 %)

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Location, ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
--------------	------	------	------	------	------	-------	-------	-------

Prestress

Precast-top	-0.046	-0.278	-0.284	-0.322	-0.424	-0.526	-0.628	-0.628
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.286	1.466	1.471	1.502	1.586	1.669	1.753	1.753
--------	-------	-------	-------	-------	-------	-------	-------	-------

Self wt.

Precast-top	0.000	0.056	0.063	0.105	0.198	0.265	0.305	0.318
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.046	-0.052	-0.086	-0.162	-0.217	-0.250	-0.261
--------	--------	--------	--------	--------	--------	--------	--------	--------

DL-Prec (DC)

Precast-top	-0.000	0.014	0.016	0.026	0.049	0.066	0.076	0.079
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	0.000	-0.012	-0.013	-0.021	-0.040	-0.054	-0.062	-0.065
--------	-------	--------	--------	--------	--------	--------	--------	--------

DL-Prec (DW)

Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
--------	--------	--------	--------	--------	--------	--------	--------	--------

Diaphragm

Precast-top	0.000	0.001	0.001	0.001	0.003	0.004	0.005	0.006
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.001	-0.001	-0.001	-0.002	-0.003	-0.004	-0.005
--------	--------	--------	--------	--------	--------	--------	--------	--------

Deck + Haunch

Precast-top	0.000	0.095	0.107	0.177	0.334	0.447	0.514	0.536
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.078	-0.087	-0.145	-0.274	-0.366	-0.421	-0.440
--------	--------	--------	--------	--------	--------	--------	--------	--------

DL-Comp (DC)

Precast-top	-0.047	-0.041	-0.040	-0.036	-0.025	-0.016	-0.008	-0.003
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.175	0.153	0.151	0.134	0.093	0.058	0.031	0.009
--------	-------	-------	-------	-------	-------	-------	-------	-------

DL-Comp (DW)

Precast-top	-0.036	-0.032	-0.031	-0.028	-0.019	-0.012	-0.006	-0.002
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.136	0.119	0.117	0.104	0.072	0.045	0.024	0.007
--------	-------	-------	-------	-------	-------	-------	-------	-------

LL+I(-)

Precast-top	-0.202	-0.184	-0.181	-0.169	-0.146	-0.128	-0.109	-0.101
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.761	0.690	0.682	0.635	0.550	0.481	0.411	0.381
--------	-------	-------	-------	-------	-------	-------	-------	-------

Final 1 (P/S + DL + LL)



PB - Orange

Sheet # DS-47

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Precast-top	-0.332	-0.368	-0.350	-0.245	-0.030	0.099	0.148	0.206
-------------	--------	--------	--------	--------	--------	-------	-------	-------

Bottom	1.358	2.292	2.268	2.121	1.822	1.614	1.481	1.381
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 1, Beam : 2, FATIGUE I
NEGATIVE ENVELOPE STRESSES, (ksi)

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Location, ft	0.00	2.00	2.25	3.89	8.28	12.67	17.07	21.46
--------------	------	------	------	------	------	-------	-------	-------

F_LL+I(-)

Precast-top	-0.118	-0.113	-0.112	-0.107	-0.095	-0.083	-0.071	-0.068
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.444	0.424	0.421	0.404	0.359	0.313	0.268	0.257
--------	-------	-------	-------	-------	-------	-------	-------	-------

Final 3 (50%% P/S + 50%% DL + F_LL)

Precast-top	-0.183	-0.205	-0.197	-0.146	-0.037	0.030	0.057	0.085
-------------	--------	--------	--------	--------	--------	-------	-------	-------

Bottom	0.743	1.225	1.214	1.147	0.995	0.880	0.803	0.757
--------	-------	-------	-------	-------	-------	-------	-------	-------



PB - Orange

Sheet # DS-48

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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REINFORCED DESIGN**REINFORCED DESIGN - Span : 1, Beam : 2, STRENGTH I (fy = 60.00 ksi)****(a) NEGATIVE MOMENTS ALONG SPAN (Non-composite Moment effects are EXCLUDED from Mu)****Negative Moment Continuity Steel:**

#bars	Size	Dist. from Top (in)	Area (in ²)	Start (ft)	End (ft)
17	4	3.13	3.40	0.0000	43.7500
12	4	6.88	2.40	0.0000	43.7500
16	5	3.13	4.96	33.7500	43.7500

f'c (ksi)	b (in)	bw (in)
9.50	22.00	7.00

Sec	Dist (ft)	Mu-reqd (k.ft)	hf (in)	d (in)	d' (in)	Phi	Phi*Mn-r (k.ft)	c/dt	Asb (in ²)	Ast-r (in ²)	Ast-p (in ²)	Phi*Mn-p (k.ft)
1	0.00	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	0.000	5.800	-1261.6
2	3.89	-133.3	7.00	49.32	2.00	0.9	-133.3	0.0063	0.000	0.602	5.800	-1261.6
3	8.28	-293.2	7.00	49.32	2.00	0.9	-293.2	0.0140	0.000	1.327	5.800	-1261.6
4	12.67	-463.2	7.00	49.32	2.00	0.9	-463.2	0.0221	0.000	2.102	5.800	-1261.6
5	17.07	-643.3	7.00	49.32	2.00	0.9	-643.3	0.0308	0.000	2.928	5.800	-1261.6
6	21.46	-782.5	7.00	49.32	2.00	0.9	-782.5	0.0376	0.000	3.569	5.800	-1261.6
7	25.85	-892.0	7.00	49.32	2.00	0.9	-892.0	0.0429	0.000	4.076	5.800	-1261.6
8	30.24	-1099.6	7.00	49.32	2.00	0.9	-1099.6	0.0531	0.000	5.042	5.800	-1261.6
9	34.63	-1323.5	7.00	50.03	2.00	0.9	-1323.5	0.0623	0.000	6.000	10.760	-2334.6
10	39.02	-1593.6	7.00	50.03	2.00	0.9	-1593.6	0.0754	0.000	7.256	10.760	-2334.6
11	43.75	-2070.1	7.00	50.03	2.00	0.9	-2070.1	0.0986	0.000	9.499	10.760	-2334.6

(b) POSITIVE MOMENTS AT PIERS

NONE

REINFORCED DESIGN - Span : 1, Beam : 2, STRENGTH II (fy = 60.00 ksi)**(a) NEGATIVE MOMENTS ALONG SPAN (Non-composite Moment effects are EXCLUDED from Mu)****Negative Moment Continuity Steel:**



PB - Orange

Sheet # DS-49

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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#bars	Size	Dist. from Top (in)	Area (in2)	Start (ft)	End (ft)
17	4	3.13	3.40	0.0000	43.7500
12	4	6.88	2.40	0.0000	43.7500
16	5	3.13	4.96	33.7500	43.7500

f'c (ksi)	b (in)	bw (in)
9.50	22.00	7.00

Sec	Dist (ft)	Mu-reqd (k.ft)	hf (in)	d (in)	d' (in)	Phi	Phi*Mn-r (k.ft)	c/dt	Asb (in2)	Ast-r (in2)	Ast-p (in2)	Phi*Mn-p (k.ft)
1	0.00	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	0.000	5.800	-1261.6
2	3.89	-143.6	7.00	49.32	2.00	0.9	-143.6	0.0068	0.000	0.648	5.800	-1261.6
3	8.28	-315.1	7.00	49.32	2.00	0.9	-315.1	0.0150	0.000	1.427	5.800	-1261.6
4	12.67	-496.8	7.00	49.32	2.00	0.9	-496.8	0.0238	0.000	2.256	5.800	-1261.6
5	17.07	-688.5	7.00	49.32	2.00	0.9	-688.5	0.0330	0.000	3.136	5.800	-1261.6
6	21.46	-882.4	7.00	49.32	2.00	0.9	-882.4	0.0425	0.000	4.032	5.800	-1261.6
7	25.85	-999.7	7.00	49.32	2.00	0.9	-999.7	0.0482	0.000	4.576	5.800	-1261.6
8	30.24	-1225.6	7.00	49.32	2.00	0.9	-1225.6	0.0593	0.000	5.631	5.800	-1261.6
9	34.63	-1467.9	7.00	50.03	2.00	0.9	-1467.9	0.0693	0.000	6.670	10.760	-2334.6
10	39.02	-1748.5	7.00	50.03	2.00	0.9	-1748.5	0.0829	0.000	7.981	10.760	-2334.6
11	43.75	-2304.0	7.00	50.03	2.00	0.9	-2304.0	0.1102	0.000	10.613	10.760	-2334.6

(b) POSITIVE MOMENTS AT PIERS

NONE



PB - Orange

Sheet # DS-50

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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DESIGN SUMMARY**Span: 1, Beam: 2, Interior beam**

Beam type:		
	I-Girder,	AASHTO-III
Precast Length,	ft	43.92
Release Length,	ft	43.92
Strand Pattern:	Straight/Draped Depr. Point: 0.40 L	
Strand:	1/2-270K-LL	
Strand Es,	ksi:	28500.0
No. of strands:	14	
	Draped:	2
	Straight:	12
Concrete Strength:		
	f'ci:	7.0 ksi
	f'c:	9.5 ksi
	f'ct:	4.0 ksi
Initial losses:	4.22 %%	
Final losses:	12.15 %%	

Specification	Allowable	Computed	Location	Status
Release Stresses (ksi) (Art. 5.9.4.1)				
Precast Bot (compression)	4.200	1.649	0.4L/0.6L	OK
Precast Top w/ no reinf. (tension)	-0.200	-0.365	0.4L/0.6L	
Precast Top w/ reinf. (tension)	-0.635			
Strength I (Art. 3.4.1, 5.7.3.1.1)	Provided	Required	Location	Status
Ult. Moment (k.ft)	2401.14	1578.96	0.6L/0.4L	OK
Strength II (Art. 3.4.1, 5.7.2.9.1)	Provided	Required	Location	Status
Ult. Moment (k.ft)	2401.14	1375.53	Midspan	OK
Debonding Limits (Art. 5.11.4.3)	Allowable	Computed		Status
Max. Debond per Row	40.00 %	0.00 %		OK
Max. Debond Total	25.00 %	0.00 %		OK

Positive Moment Envelope Stresses (ksi) (Art. 3.4.1 and 5.9.4.2)



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Sheet # DS-51

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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Specification	Allow	Final 1 Comp	Loc.	Allow	Final 2 Comp	Loc.	Allow	Final 3 Comp	Loc.
Service I Limit State - Compressive Stresses Only									
Precast Top	5.700	0.480	Midspan	4.275	0.307	Midspan			
Precast Bot	5.700	1.174	Transfer	4.275	1.320	Transfer			
Service III Limit State - Tensile Stresses Only									
Precast Top	-0.586	-0.078	Transfer						
Precast Bot	-0.586	0.286	Bearing						
Fatigue I Limit State - Compressive Stresses Only									
Precast Top							3.800	0.240	Midspan
Precast Bot							3.800	0.589	Transfer

Negative Moment Envelope Stresses (ksi) (Art. 3.4.1 and 5.9.4.2)

Specification	Allow	Final 1 Comp	Loc.	Allow	Final 2 Comp	Loc.	Allow	Final 3 Comp	Loc.
Service I Limit State - Compressive Stresses Only									
Precast Top	5.700	0.180	Midspan	4.275	0.307	Midspan			
Precast Bot	5.700	2.465	Transfer	4.275	1.602	Transfer			
Service III Limit State - Tensile Stresses Only									
Precast Top	-0.586	-0.368	Transfer						
Precast Bot	-0.586	1.358	Bearing						
Fatigue I Limit State - Compressive Stresses Only									
Precast Top							3.800	0.085	Midspan
Precast Bot							3.800	1.225	Transfer

CAMBER / DEFLECTION: (PCI Design Handbook - 4th Ed.- Table 4.6.2)

0.5 x L = 21.46 ft

	Release	Mult	Erection	Mult	Final
Prestress	0.367	1.80	0.660	2.20	0.806
Self Wt.	-0.077	1.85	-0.142	2.40	-0.184
Deck + Haunch			-0.101	2.30	-0.233
DL-Prec. (DC)			-0.015	3.00	-0.045
Diaphragm			-0.001	3.00	-0.003
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			0.004	3.00	0.012
DL-Comp. (DW)			0.003	3.00	0.009
Live Load					-0.065
Total	0.290		0.407		0.297

Positive values indicate upward deflection.



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Sheet # DS-1

Job # CN1234

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PROPERTIES**Span: 2, Beam: 2****PRECAST DATA:**

Section Id	AASHTO-III
Type	I-Girder
Fling width	Top 16.000 in Bot 22.000 in
thick	Top 7.000 in Bot 7.000 in
Stems	No 1
	Top 7.000 in
	Bot 7.000 in
Shear width	7.000 in

GENERAL BRIDGE DATA:

Bridge Width	50.00 ft
Curb-to-curb	47.00 ft
Beam Spac. Lt./Rt	8.75/ 8.75 ft
Lane width	12.00 ft
Number of lanes	3
Interior/Exterior	Interior
Start Skew Angle	0.00 degrees
End Skew Angle	0.00 degrees

TOPPING DATA:

Deck Thickness	9.000 in
Haunch:	
Thickness	0.000 in
Width	16.000 in
Effective width	105.000 in (Art. 4.6.2.6.1)

GENERAL LOAD DATA:

Dead loads on precast:

UNITS: (Point: kips, Location: ft, Line: klf, Trapez: klf)

DC/DW Type	Mag.1	Loc.1	Mag.2	Loc.2
DC Line	0.145	0.00	0.145	86.333



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Sheet # DS-2

Job # CN1234

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Diaphragm loads - using Wizard:
(kips, ft)

Mag. Loc.

0.26 43.67

Dead loads on composite: See Project info for composite loads

GENERAL SPAN DATA:

Overall length 87.333 ft

Release length 87.333 ft

Design length 86.333 ft

KERN POINTS:

Upper 31.32 in

Lower 11.22 in

DISTRIBUTION FACTORS (Art. 4.6.2.2):

Live Negative Moment Left Side (2+ lanes loaded) 0.741 (Calculated)

Live Negative Moment Right Side (2+ lanes loaded) 0.741 (Calculated)

Live Negative Moment Left Side (1 lane loaded) 0.533 (Calculated)

Live Negative Moment Right Side (1 lane loaded) 0.533 (Calculated)

Live Positive Moment (2+ lanes loaded) 0.687 (Calculated)

Live Positive Moment (1 lane loaded) 0.483 (Calculated)

Live Shear (2+ lanes loaded) 0.879 (Calculated)

Live Shear (1 lane loaded) 0.711 (Calculated)

Dead Loads and Pedestrian Load distributed equally to all beams (Art. 4.6.2.2.1)

Pedestrian 0.167 (Calculated)

Comp. DC 0.167 (Calculated)

Comp. DW 0.167 (Calculated)

RESISTANCE FACTORS (Art. 5.5.4.2):

Flexure Reinforced

Compression controlled sections 0.75

Tension controlled sections 0.90



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Sheet # DS-3

Job # CN1234

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Flexure Prestressed

Compression controlled sections 0.75

Tension controlled sections 1.00

Shear 0.90

Span: 2, Beam: 2

SECTION PROPERTIES:

	PRECAST	COMPOSITE
Area	560.0 in2	1173.2 in2 #
Total Height	45.00 in	54.00 in
Mom. of Inertia (Ixx)	125390 in4	379607 in4 #
Ht. of c.g.	20.27 in	35.55 in #
Density	150.00 pcf	150.00 pcf
Self-weight	583.3 plf	1567.7 plf
Mom. of Inertia (Iyy)	12216.6 in4	
Poisson's Ratio	0.2	

(#) Of Total Section using $E_{ct}/E_c = 0.6489$

Use transformed strand and rebar: No

Span: 2, Beam: 2

STRESS LIMITS (Art. 5.9.4):

STRESS LIMITS AT RELEASE BEFORE LOSSES:

	PRECAST	
Strength	7.00	ksi
Elasticity	5072.2	ksi
Max comp	4.20	ksi
Max tens	-0.20	ksi
Max tens, w/reinf	-0.63	ksi

STRESS LIMITS AT FINAL AFTER LOSSES:

	PRECAST	DECK
Strength	9.50 ksi	4.00 ksi
Elasticity	5908.98 ksi	3834.25 ksi



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Sheet # DS-4

Job # CN1234

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STRESS LIMITS AT FINAL 1 (P/S + DL + LL):

	PRECAST	DECK
Max comp	5.70 ksi	2.40 ksi

STRESS LIMITS AT FINAL 2 (P/S + DL):

	PRECAST	DECK
Max comp	4.28 ksi	1.80 ksi

FATIGUE I STRESS LIMITS AT FINAL 3 (50% P/S + 50% DL + F_LL):

	PRECAST	DECK
Max comp	3.80 ksi	- ksi

SERVICE III (Tension):

	PRECAST	DECK
Max tens	-0.59 ksi	-0.38 ksi

Span: 2, Beam: 2**PRESTRESSED STEEL:**

44 strands, 1/2-270K-LL, Low relaxation strands
Depressed at 0.40L (34.93 ft from member end)

END PATTERN (Ycg = 10.09 in):

8 @ 2.000 in	10 @ 4.000 in	10 @ 6.000 in	6 @ 8.000 in
4 @ 10.000 in	2 @ 38.000 in	2 @ 40.000 in	2 @ 42.000 in

MID PATTERN (Ycg = 6.00 in):**(A) Draped:**

2 @ 8.000 in	2 @ 10.000 in	2 @ 12.000 in
--------------	---------------	---------------

(B) Straight:



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8 @ 2.000 in 10 @ 4.000 in 10 @ 6.000 in 6 @ 8.000 in
4 @ 10.000 in

Strand Diameter	0.500 in
Strand Area	0.153 in ²
Total Strand Area	6.732 in ²
Trans. Len,bonded	2.500 ft
Trans. Len,debonded	2.500 ft
Dev. Len, bonded	10.394 ft
Dev. Len, debonded	12.992 ft
Holddown Force	13.270 kips
Tensile Strength(fpu)	270.0 ksi
Initial Prestress = 0.75fpu	202.5 ksi
Initial Pull	1363.2 kips
Beam Shrtng (PL/AE)	0.455 in

REINFORCING STEEL:

Tension steel:		
f _y	60.0	ksi
E _s	29000	ksi
f _s	24.0	ksi

Stirrups:

# legs	Size	f _y (ksi)	Area (in ²)	Spacing (in)	Start (ft)	End (ft)
2	unknown	60.0	0.40	3.00	0.0000	3.0000
2	unknown	60.0	0.40	6.00	3.0000	8.0000
2	unknown	60.0	0.40	12.00	8.0000	15.0000
2	unknown	60.0	0.40	24.00	15.0000	72.3333
2	unknown	60.0	0.40	12.00	72.3333	79.3333
2	unknown	60.0	0.40	6.00	79.3333	84.3333
2	unknown	60.0	0.40	3.00	84.3333	87.3333

LOSSES

Note: Values are calculated at Midspan

Str. area	6.7320 in ²
Y _{cg}	6.00 in
P _{init}	1363.2 kips
Ecc	14.27 in
Days to release	0.75



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Rel. Humid.(RH) 25.0 %

Es 28500.0 ksi

Eci 5072 ksi

AASHTO LOSSES

Elastic Shortening 19.44 ksi (Eq 5.9.5.2.3a-1), (fcgp= 3.459 ksi)

Elastic Gains	Gains	Adjustment
due to Precast Loads	-6.97 ksi	0.65 ksi
due to Composite Loads	-1.03 ksi	0.10 ksi
due to Live Loads	-3.21 ksi	0.37 ksi

Time Dependent Losses (Approximate Method (Art.5.9.5.3))

	Initial		Final	
Steel relaxation	0.00	ksi	2.40 ksi	(Eq 5.9.5.3-1)
Concrete shrinkage	0.00	ksi	10.88 ksi	(Eq 5.9.5.3-1)
Concrete creep	0.00	ksi	22.06 ksi	(Eq 5.9.5.3-1)
Sub-total	19.44	ksi	(9.60 %)	25.25 ksi (12.47 %)
Total Prestress Losses			44.68 ksi	(22.06 %)

Prestressing Stress Limit Check (Table 5.9.3.1)

initial fpi = 202.5 ksi < 0.75 fpu, OK

initial fpe = 157.8 ksi < 0.80 fpy, OK



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Sheet # DS-7

Job # CN1234

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SHEAR/MOMENT ENVELOPE (&REACTIONS)**SHEAR AND MOMENT ENVELOPE : Span : 2, Beam : 2, SERVICE I****Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Self wt. :	M	0.0	49.2	55.2	187.5	343.3	454.5	521.2	543.5
(Max)	V	25.2	24.0	23.9	20.4	15.3	10.2	5.1	0.0
DL-Prec. :	M	-0.0	12.2	13.7	46.6	85.3	113.0	129.6	135.1
DC(Max)	V	6.3	6.0	5.9	5.1	3.8	2.5	1.3	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	83.0	93.1	316.5	579.3	767.0	879.6	917.1
Haunch (Max)	V	42.5	40.5	40.3	34.4	25.8	17.2	8.6	0.0
Diaphragm :	M	-0.0	0.3	0.3	1.1	2.2	3.3	4.4	5.6
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-152.6	-125.4	-122.1	-56.4	24.4	82.0	116.6	128.2
DC(Max)	V	13.1	12.5	12.4	10.6	7.9	5.3	2.6	0.0
DL-Comp :	M	-118.5	-97.4	-94.9	-43.8	18.9	63.7	90.6	99.6
DW(Max)	V	10.1	9.7	9.6	8.2	6.2	4.1	2.1	0.0
LL + I :	M+	70.6	78.8	80.4	153.5	382.9	663.4	840.5	891.3
	V	6.2	11.4	12.1	27.8	30.0	19.9	5.0	27.3
LL + I :	M-	-837.2	-731.8	-719.2	-449.1	-157.2	-127.0	-104.7	-82.4
	V	62.8	59.4	58.9	48.5	7.3	3.3	3.3	3.3
LL + I :	Vmx	100.6	97.5	97.1	87.9	74.5	60.8	47.3	37.5
	M	-481.3	-387.3	-375.6	-98.2	275.0	530.5	661.7	739.1
Total :	M+	0.0	0.8	25.7	605.0	1436.2	2146.9	2582.6	2720.4
	V	0.0	104.2	104.3	106.5	89.1	59.3	24.8	27.4
Total :	M-	-1108.3	-809.9	-773.9	0.0	0.0	0.0	0.0	0.0
	V	160.1	152.1	151.1	0.0	0.0	0.0	0.0	0.0
Total :	Vmx	197.9	190.3	189.3	166.7	133.6	100.2	67.1	37.7
	M	-752.4	-465.3	-430.3	353.3	1328.4	2014.0	2403.8	2568.1

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	51.90	60.63	69.37	78.10	84.08	84.33	86.33
Self wt. :	M	521.2	454.5	343.3	187.5	55.2	49.2	0.0
(Max)	V	5.1	10.2	15.3	20.4	23.9	24.0	25.2
DL-Prec. :	M	129.6	113.0	85.3	46.6	13.7	12.2	-0.0
DC(Max)	V	1.3	2.5	3.8	5.1	5.9	6.0	6.3
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	879.6	767.0	579.3	316.5	93.1	83.0	0.0
Haunch (Max)	V	8.6	17.2	25.8	34.4	40.3	40.5	42.5
Diaphragm :	M	4.6	3.4	2.2	1.1	0.3	0.3	0.0
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	116.6	82.0	24.4	-56.4	-122.1	-125.4	-152.6
DC(Max)	V	2.6	5.3	7.9	10.6	12.4	12.5	13.1
DL-Comp :	M	90.6	63.7	18.9	-43.8	-94.9	-97.4	-118.5
DW(Max)	V	2.1	4.1	6.2	8.2	9.6	9.7	10.1
LL + I :	M+	840.5	663.4	382.9	153.5	80.4	78.8	70.6

Units: U.S. Units

Design Code: AASHTO LRFD



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Sheet # DS-8

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
	V	5.0	19.9	30.0	27.8	12.1	11.4	6.2
LL + I :	M-	-104.7	-127.0	-157.2	-449.1	-719.2	-731.8	-837.2
	V	3.3	3.3	7.3	48.5	58.9	59.4	62.8
LL + I :	Vmx	47.3	60.8	74.5	87.9	97.1	97.5	100.6
	M	661.7	530.5	275.0	-98.2	-375.6	-387.3	-481.3
Total :	M+	2582.7	2147.0	1436.3	605.0	25.7	0.8	0.0
	V	24.8	59.3	89.1	106.5	104.3	104.2	0.0
Total :	M-	0.0	0.0	0.0	0.0	-773.9	-809.9	-1108.3
	V	0.0	0.0	0.0	0.0	151.1	152.1	160.1
Total :	Vmx	67.1	100.2	133.6	166.7	189.3	190.3	197.9
	M	2403.9	2014.1	1328.4	353.3	-430.3	-465.3	-752.4

REACTIONS (kips), SERVICE I

Load Type	Left Support	Right Support
Self Wt.	25.2	25.2
Deck+Haunch	42.5	42.5
Diaphragm	0.1	0.1
DL-Prec.(DC)	6.3	6.3
DL-Prec.(DW)	0.0	0.0
DL-Comp.(DC)	142.1	142.1
DL-Comp.(DW)	110.4	110.4
Live (Max)	123.9	123.9
Live (Min)	-5.5	-5.5
Pedestrian (Max)	-0.0	-0.0
Pedestrian (Min)	-0.0	-0.0

Upward reactions are positive.

Live Load reactions are per lane with no distribution factor and no impact.

Non-composite load types are per beam.

Composite and Pedestrian load types are per total bridge width.

Live Load reaction reported at intermediate supports is full reaction at support.

SHEAR AND MOMENT ENVELOPE : Span : 2, Beam : 2, SERVICE III**Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Self wt. :	M	0.0	49.2	55.2	187.5	343.3	454.5	521.2	543.5
(Max)	V	25.2	24.0	23.9	20.4	15.3	10.2	5.1	0.0
DL-Prec. :	M	-0.0	12.2	13.7	46.6	85.3	113.0	129.6	135.1
DC(Max)	V	6.3	6.0	5.9	5.1	3.8	2.5	1.3	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	83.0	93.1	316.5	579.3	767.0	879.6	917.1
Haunch (Max)	V	42.5	40.5	40.3	34.4	25.8	17.2	8.6	0.0

Units: U.S. Units

Design Code: AASHTO LRFD



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Sheet #

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Job #

CN1234

By

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		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Diaphragm :	M	-0.0	0.3	0.3	1.1	2.2	3.3	4.4	5.6
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-152.6	-125.4	-122.1	-56.4	24.4	82.0	116.6	128.2
DC(Max)	V	13.1	12.5	12.4	10.6	7.9	5.3	2.6	0.0
DL-Comp :	M	-118.5	-97.4	-94.9	-43.8	18.9	63.7	90.6	99.6
DW(Max)	V	10.1	9.7	9.6	8.2	6.2	4.1	2.1	0.0
LL + I :	M+	56.5	63.1	64.3	122.8	306.3	530.7	672.4	713.1
	V	5.0	9.2	9.7	22.2	24.0	15.9	4.0	21.8
LL + I :	M-	-669.8	-585.5	-575.3	-359.3	-125.7	-101.6	-83.8	-65.9
	V	50.3	47.5	47.1	38.8	5.8	2.6	2.6	2.6
LL + I :	Vmx	80.5	78.0	77.7	70.3	59.6	48.6	37.8	30.0
	M	-385.0	-309.8	-300.4	-78.6	220.0	424.4	529.4	591.3
Total :	M+	0.0	0.0	9.6	574.3	1359.6	2014.2	2414.5	2542.1
	V	0.0	0.0	101.9	100.9	83.1	55.3	23.8	21.9
Total :	M-	-940.9	-663.5	-630.1	0.0	0.0	0.0	0.0	0.0
	V	147.5	140.2	139.3	0.0	0.0	0.0	0.0	0.0
Total :	Vmx	177.8	170.8	169.9	149.1	118.7	88.1	57.6	30.2
	M	-656.1	-387.9	-355.2	372.9	1273.3	1907.9	2271.5	2420.3

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	51.90	60.63	69.37	78.10	84.08	84.33	86.33
Self wt. :	M	521.2	454.5	343.3	187.5	55.2	49.2	0.0
(Max)	V	5.1	10.2	15.3	20.4	23.9	24.0	25.2
DL-Prec. :	M	129.6	113.0	85.3	46.6	13.7	12.2	-0.0
DC(Max)	V	1.3	2.5	3.8	5.1	5.9	6.0	6.3
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	879.6	767.0	579.3	316.5	93.1	83.0	0.0
Haunch (Max)	V	8.6	17.2	25.8	34.4	40.3	40.5	42.5
Diaphragm :	M	4.6	3.4	2.2	1.1	0.3	0.3	0.0
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	116.6	82.0	24.4	-56.4	-122.1	-125.4	-152.6
DC(Max)	V	2.6	5.3	7.9	10.6	12.4	12.5	13.1
DL-Comp :	M	90.6	63.7	18.9	-43.8	-94.9	-97.4	-118.5
DW(Max)	V	2.1	4.1	6.2	8.2	9.6	9.7	10.1
LL + I :	M+	672.4	530.7	306.3	122.8	64.3	63.1	56.5
	V	4.0	15.9	24.0	22.2	9.7	9.2	5.0
LL + I :	M-	-83.8	-101.6	-125.7	-359.3	-575.3	-585.5	-669.8
	V	2.6	2.6	5.8	38.8	47.1	47.5	50.3
LL + I :	Vmx	37.8	48.6	59.6	70.3	77.7	78.0	80.5
	M	529.4	424.4	220.0	-78.6	-300.4	-309.8	-385.0
Total :	M+	2414.6	2014.3	1359.7	574.3	9.6	0.0	0.0
	V	23.8	55.3	83.1	100.9	101.9	0.0	0.0
Total :	M-	0.0	0.0	0.0	0.0	-630.1	-663.5	-940.9
	V	0.0	0.0	0.0	0.0	139.3	140.2	147.5
Total :	Vmx	57.6	88.1	118.7	149.1	169.9	170.8	177.8
	M	2271.6	1908.0	1273.4	373.0	-355.2	-387.9	-656.1



PB - Orange

Sheet # DS-10

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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SHEAR AND MOMENT ENVELOPE : Span : 2, Beam : 2, STRENGTH I**Shears: kips, Moments: kft**

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Self wt. :	M	0.0	61.5	69.0	234.4	429.1	568.1	651.5	679.3
(Max)	V	31.5	30.0	29.8	25.5	19.1	12.7	6.4	0.0
Self wt. :	M	0.0	44.3	49.7	168.8	308.9	409.0	469.1	489.1
(Min)	V	22.7	21.6	21.5	18.3	13.8	9.2	4.6	0.0
DL-Prec. :	M	-0.0	15.3	17.1	58.3	106.7	141.2	162.0	168.9
DC(Max)	V	7.8	7.5	7.4	6.3	4.7	3.2	1.6	0.0
DL-Prec. :	M	-0.0	11.0	12.3	42.0	76.8	101.7	116.6	121.6
DC(Min)	V	5.6	5.4	5.3	4.6	3.4	2.3	1.1	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	103.8	116.4	395.6	724.1	958.7	1099.5	1146.4
Haunch (Max)	V	53.1	50.7	50.3	43.0	32.2	21.5	10.7	0.0
Deck + :	M	0.0	74.7	83.8	284.8	521.3	690.3	791.6	825.4
Haunch (Min)	V	38.2	36.5	36.2	30.9	23.2	15.5	7.7	0.0
Diaphragm :	M	-0.0	0.3	0.4	1.3	2.7	4.1	5.6	7.0
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	-0.0	0.2	0.3	1.0	2.0	3.0	4.0	5.0
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-190.7	-156.7	-152.7	-70.5	30.5	102.6	145.8	160.2
DC(Max)	V	16.3	15.6	15.5	13.2	9.9	6.6	3.3	0.0
DL-Comp :	M	-137.3	-112.8	-109.9	-50.8	21.9	73.8	105.0	115.4
DC(Min)	V	11.8	11.2	11.1	9.5	7.1	4.8	2.4	0.0
DL-Comp :	M	-177.8	-146.1	-142.3	-65.7	28.4	95.6	135.9	149.4
DW(Max)	V	15.2	14.5	14.4	12.3	9.2	6.2	3.1	0.0
DL-Comp :	M	-77.0	-63.3	-61.7	-28.5	12.3	41.4	58.9	64.7
DW(Min)	V	6.6	6.3	6.3	5.3	4.0	2.7	1.3	0.0
LL + I :	M+	123.6	138.0	140.7	268.5	670.0	1160.9	1470.9	1559.8
	V	10.9	20.0	21.2	48.6	52.5	34.8	8.7	47.7
LL + I :	M-	-1465.2	-1280.7	-1258.5	-785.9	-275.0	-222.3	-183.2	-144.2
	V	110.0	103.9	103.1	84.8	12.7	5.7	5.7	5.7
LL + I :	Vmx	176.1	170.7	170.0	153.9	130.4	106.4	82.8	65.7
	M	-842.2	-677.7	-657.2	-171.9	481.3	928.3	1158.0	1293.4
Total :	M+	0.0	149.8	180.6	922.9	2091.0	3182.8	3854.8	4064.6
	V	0.0	132.1	132.6	156.5	134.3	89.4	35.7	50.3
Total :	M-	-1925.4	-1526.0	-1477.9	-446.9	0.0	0.0	0.0	0.0
	V	218.6	207.4	206.0	162.9	0.0	0.0	0.0	0.0
Total :	Vmx	315.2	303.5	302.0	267.1	216.1	164.5	113.4	69.1
	M	-1271.3	-839.6	-786.8	400.6	1892.8	2938.6	3526.2	3784.8

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	51.90	60.63	69.37	78.10	84.08	84.33	86.33
Self wt. :	M	651.5	568.1	429.1	234.4	69.0	61.5	0.0
(Max)	V	6.4	12.7	19.1	25.5	29.8	30.0	31.5
Self wt. :	M	469.1	409.0	308.9	168.8	49.7	44.3	0.0

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-11

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
(Min)	V	4.6	9.2	13.8	18.3	21.5	21.6	22.7
DL-Prec. :	M	162.0	141.2	106.7	58.3	17.1	15.3	-0.0
DC(Max)	V	1.6	3.2	4.7	6.3	7.4	7.5	7.8
DL-Prec. :	M	116.6	101.7	76.8	42.0	12.3	11.0	-0.0
DC(Min)	V	1.1	2.3	3.4	4.6	5.3	5.4	5.6
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	1099.5	958.7	724.1	395.6	116.4	103.8	0.0
Haunch (Max)	V	10.7	21.5	32.2	43.0	50.3	50.7	53.1
Deck + :	M	791.6	690.3	521.3	284.8	83.8	74.7	0.0
Haunch (Min)	V	7.7	15.5	23.2	30.9	36.2	36.5	38.2
Diaphragm :	M	5.7	4.2	2.8	1.4	0.4	0.3	0.0
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	4.1	3.1	2.0	1.0	0.3	0.2	0.0
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	145.8	102.6	30.5	-70.5	-152.7	-156.7	-190.7
DC(Max)	V	3.3	6.6	9.9	13.2	15.5	15.6	16.3
DL-Comp :	M	105.0	73.8	21.9	-50.8	-109.9	-112.8	-137.3
DC(Min)	V	2.4	4.8	7.1	9.5	11.1	11.2	11.8
DL-Comp :	M	135.9	95.6	28.4	-65.7	-142.3	-146.1	-177.8
DW(Max)	V	3.1	6.2	9.2	12.3	14.4	14.5	15.2
DL-Comp :	M	58.9	41.4	12.3	-28.5	-61.7	-63.3	-77.0
DW(Min)	V	1.3	2.7	4.0	5.3	6.3	6.3	6.6
LL + I :	M+	1470.9	1160.9	670.0	268.5	140.7	138.0	123.6
	V	8.7	34.8	52.5	48.6	21.2	20.0	10.9
LL + I :	M-	-183.2	-222.3	-275.0	-785.9	-1258.5	-1280.7	-1465.2
	V	5.7	5.7	12.7	84.8	103.1	103.9	110.0
LL + I :	Vmx	82.8	106.4	130.4	153.9	170.0	170.7	176.1
	M	1158.0	928.3	481.3	-171.9	-657.2	-677.7	-842.2
Total :	M+	3854.9	3182.9	2091.1	923.0	180.6	149.8	0.0
	V	35.7	89.4	134.3	156.5	132.6	132.1	0.0
Total :	M-	0.0	0.0	0.0	-446.8	-1477.8	-1526.0	-1925.4
	V	0.0	0.0	0.0	162.9	206.0	207.4	218.6
Total :	Vmx	113.4	164.5	216.1	267.1	302.0	303.5	315.2
	M	3526.4	2938.7	1892.9	400.7	-786.8	-839.6	-1271.3

REACTIONS (kips), STRENGTH I

Load Type	Left Support	Right Support
Self Wt.	31.5	31.5
Deck+Haunch	53.1	53.1
Diaphragm	0.2	0.2
DL-Prec.(DC)	7.8	7.8
DL-Prec.(DW)	0.0	0.0
DL-Comp.(DC)	177.7	177.7
DL-Comp.(DW)	165.6	165.6
Live (Max)	216.8	216.8

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-12

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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Load Type	Left Support	Right Support
Live (Min)	-9.6	-9.6
Pedestrian (Max)	-0.0	-0.0
Pedestrian (Min)	-0.0	-0.0

Upward reactions are positive.

Live Load reactions are per lane with no distribution factor and no impact.

Non-composite load types are per beam.

Composite and Pedestrian load types are per total bridge width.

Live Load reaction reported at intermediate supports is full reaction at support.

SHEAR AND MOMENT ENVELOPE : Span : 2, Beam : 2, STRENGTH II

Shears: kips, Moments: kft

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Self wt. :	M	0.0	61.5	69.0	234.4	429.1	568.1	651.5	679.3
(Max)	V	31.5	30.0	29.8	25.5	19.1	12.7	6.4	0.0
Self wt. :	M	0.0	44.3	49.7	168.8	308.9	409.0	469.1	489.1
(Min)	V	22.7	21.6	21.5	18.3	13.8	9.2	4.6	0.0
DL-Prec. :	M	-0.0	15.3	17.1	58.3	106.7	141.2	162.0	168.9
DC(Max)	V	7.8	7.5	7.4	6.3	4.7	3.2	1.6	0.0
DL-Prec. :	M	-0.0	11.0	12.3	42.0	76.8	101.7	116.6	121.6
DC(Min)	V	5.6	5.4	5.3	4.6	3.4	2.3	1.1	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	103.8	116.4	395.6	724.1	958.7	1099.5	1146.4
Haunch (Max)	V	53.1	50.7	50.3	43.0	32.2	21.5	10.7	0.0
Deck + :	M	0.0	74.7	83.8	284.8	521.3	690.3	791.6	825.4
Haunch (Min)	V	38.2	36.5	36.2	30.9	23.2	15.5	7.7	0.0
Diaphragm :	M	-0.0	0.3	0.4	1.3	2.7	4.1	5.6	7.0
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	-0.0	0.2	0.3	1.0	2.0	3.0	4.0	5.0
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	-190.7	-156.7	-152.7	-70.5	30.5	102.6	145.8	160.2
DC(Max)	V	16.3	15.6	15.5	13.2	9.9	6.6	3.3	0.0
DL-Comp :	M	-137.3	-112.8	-109.9	-50.8	21.9	73.8	105.0	115.4
DC(Min)	V	11.8	11.2	11.1	9.5	7.1	4.8	2.4	0.0
DL-Comp :	M	-177.8	-146.1	-142.3	-65.7	28.4	95.6	135.9	149.4
DW(Max)	V	15.2	14.5	14.4	12.3	9.2	6.2	3.1	0.0
DL-Comp :	M	-77.0	-63.3	-61.7	-28.5	12.3	41.4	58.9	64.7
DW(Min)	V	6.6	6.3	6.3	5.3	4.0	2.7	1.3	0.0
LL + I :	M+	101.7	112.9	115.1	218.5	546.7	1065.8	1385.0	1498.7
	V	7.2	12.0	12.6	27.0	42.3	55.1	6.3	29.6
LL + I :	M-	-1626.6	-1381.5	-1352.4	-762.1	-244.1	-181.0	-144.2	-107.3
	V	152.3	140.4	138.9	103.3	24.4	5.2	5.2	5.2
LL + I :	Vmx	195.9	188.4	187.4	164.9	134.5	105.5	79.7	58.9

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-13

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
	M	-1328.6	-1102.9	-1075.5	-473.8	281.1	659.0	864.6	919.2
Total :	M+	0.0	123.5	153.6	870.4	1961.5	3083.0	3764.5	4000.4
	V	0.0	123.7	123.6	133.9	123.5	110.7	33.1	31.2
Total :	M-	-2094.9	-1631.7	-1576.4	-421.9	0.0	0.0	0.0	0.0
	V	263.0	245.7	243.6	182.3	0.0	0.0	0.0	0.0
Total :	Vmx	336.0	322.1	320.3	278.7	220.4	163.6	110.2	62.0
	M	-1782.0	-1286.0	-1226.0	83.6	1682.6	2655.8	3218.2	3391.9

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	51.90	60.63	69.37	78.10	84.08	84.33	86.33
Self wt. :	M	651.5	568.1	429.1	234.4	69.0	61.5	0.0
(Max)	V	6.4	12.7	19.1	25.5	29.8	30.0	31.5
Self wt. :	M	469.1	409.0	308.9	168.8	49.7	44.3	0.0
(Min)	V	4.6	9.2	13.8	18.3	21.5	21.6	22.7
DL-Prec. :	M	162.0	141.2	106.7	58.3	17.1	15.3	-0.0
DC(Max)	V	1.6	3.2	4.7	6.3	7.4	7.5	7.8
DL-Prec. :	M	116.6	101.7	76.8	42.0	12.3	11.0	-0.0
DC(Min)	V	1.1	2.3	3.4	4.6	5.3	5.4	5.6
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	1099.5	958.7	724.1	395.6	116.4	103.8	0.0
Haunch (Max)	V	10.7	21.5	32.2	43.0	50.3	50.7	53.1
Deck + :	M	791.6	690.3	521.3	284.8	83.8	74.7	0.0
Haunch (Min)	V	7.7	15.5	23.2	30.9	36.2	36.5	38.2
Diaphragm :	M	5.7	4.2	2.8	1.4	0.4	0.3	0.0
(Max)	V	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Diaphragm :	M	4.1	3.1	2.0	1.0	0.3	0.2	0.0
(Min)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DL-Comp :	M	145.8	102.6	30.5	-70.5	-152.7	-156.7	-190.7
DC(Max)	V	3.3	6.6	9.9	13.2	15.5	15.6	16.3
DL-Comp :	M	105.0	73.8	21.9	-50.8	-109.9	-112.8	-137.3
DC(Min)	V	2.4	4.8	7.1	9.5	11.1	11.2	11.8
DL-Comp :	M	135.9	95.6	28.4	-65.7	-142.3	-146.1	-177.8
DW(Max)	V	3.1	6.2	9.2	12.3	14.4	14.5	15.2
DL-Comp :	M	58.9	41.4	12.3	-28.5	-61.7	-63.3	-77.0
DW(Min)	V	1.3	2.7	4.0	5.3	6.3	6.3	6.6
LL + I :	M+	1385.0	1065.8	546.7	218.5	115.1	112.9	101.7
	V	6.3	55.1	42.3	27.0	12.6	12.0	7.2
LL + I :	M-	-144.2	-181.0	-244.1	-762.1	-1352.4	-1381.4	-1626.6
	V	5.2	5.2	24.4	103.3	138.9	140.4	152.3
LL + I :	Vmx	79.7	105.5	134.5	164.9	187.4	188.4	195.9
	M	864.6	659.0	281.1	-473.8	-1075.5	-1102.9	-1328.6
Total :	M+	3764.7	3083.1	1961.6	870.4	153.7	123.5	0.0
	V	33.1	110.7	123.5	133.9	123.6	123.7	0.0
Total :	M-	0.0	0.0	0.0	-421.9	-1576.4	-1631.7	-2094.9
	V	0.0	0.0	0.0	182.3	243.6	245.7	263.0
Total :	Vmx	110.2	163.6	220.4	278.7	320.3	322.1	336.0
	M	3218.3	2655.9	1682.7	83.7	-1226.0	-1286.0	-1782.0



PB - Orange

Sheet # DS-14

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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REACTIONS (kips), STRENGTH II

Load Type	Left Support	Right Support
Live (Max)	167.3	167.3
Live (Min)	-7.4	-7.4

Upward reactions are positive.

Live Load reactions are for permit vehicles with no distribution factor and no impact.

Live Load reaction reported at intermediate supports is full reaction at support.

SHEAR AND MOMENT ENVELOPE : Span : 2, Beam : 2, FATIGUE I

Shears: kips, Moments: kft

		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
Location,	ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Self wt. :	M	0.0	49.2	55.2	187.5	343.3	454.5	521.2	543.5
(Max)	V	25.2	24.0	23.9	20.4	15.3	10.2	5.1	0.0
Self wt. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	-0.0	12.2	13.7	46.6	85.3	113.0	129.6	135.1
DC(Max)	V	6.3	6.0	5.9	5.1	3.8	2.5	1.3	0.0
DL-Prec. :	M	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	0.0	83.0	93.1	316.5	579.3	767.0	879.6	917.1
Haunch (Max)	V	42.5	40.5	40.3	34.4	25.8	17.2	8.6	0.0
Deck + :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haunch (Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diaphragm :	M	-0.0	0.3	0.3	1.1	2.2	3.3	4.4	5.6
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Diaphragm :	M	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	-152.6	-125.4	-122.1	-56.4	24.4	82.0	116.6	128.2
DC(Max)	V	13.1	12.5	12.4	10.6	7.9	5.3	2.6	0.0
DL-Comp :	M	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	-118.5	-97.4	-94.9	-43.8	18.9	63.7	90.6	99.6
DW(Max)	V	10.1	9.7	9.6	8.2	6.2	4.1	2.1	0.0
DL-Comp :	M	-0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LL + I :	M+	30.4	39.7	41.0	83.4	182.6	315.8	393.1	404.2
	V	1.9	1.9	1.9	2.1	0.5	1.5	6.9	17.6
LL + I :	M-	-372.3	-304.1	-296.2	-146.6	-59.6	-48.8	-38.0	-27.2
	V	41.3	38.9	38.6	31.3	1.8	1.8	1.8	1.8

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-15

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

Version: Version: 09.00.03.01

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		Bearing	Trans	H/2	0.10L	0.20L	0.30L	0.40L	Midspan
LL + I :	Vmx	58.5	56.2	55.9	48.9	39.6	31.3	23.2	20.1
	M	-242.4	-177.0	-169.2	-9.9	118.1	237.8	289.5	362.2
Total :	M+	0.0	0.0	0.0	535.0	1236.0	1799.4	2135.2	2233.2
	V	0.0	0.0	0.0	80.9	59.6	40.9	26.7	17.7
Total :	M-	-643.4	-382.2	-350.9	0.0	0.0	0.0	0.0	0.0
	V	138.6	131.6	130.8	0.0	0.0	0.0	0.0	0.0
Total :	Vmx	155.8	149.0	148.1	127.7	98.7	70.7	43.0	20.2
	M	-513.5	-255.1	-224.0	441.6	1171.4	1721.3	2031.6	2191.2

		0.60L	0.70L	0.80L	0.90L	H/2	Trans	Bearing
Location,	ft	51.90	60.63	69.37	78.10	84.08	84.33	86.33
Self wt. :	M	521.2	454.5	343.3	187.5	55.2	49.2	0.0
(Max)	V	5.1	10.2	15.3	20.4	23.9	24.0	25.2
Self wt. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	129.6	113.0	85.3	46.6	13.7	12.2	-0.0
DC(Max)	V	1.3	2.5	3.8	5.1	5.9	6.0	6.3
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	-0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Max)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Prec. :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deck + :	M	879.6	767.0	579.3	316.5	93.1	83.0	0.0
Haunch (Max)	V	8.6	17.2	25.8	34.4	40.3	40.5	42.5
Deck + :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haunch (Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diaphragm :	M	4.6	3.4	2.2	1.1	0.3	0.3	0.0
(Max)	V	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Diaphragm :	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	116.6	82.0	24.4	-56.4	-122.1	-125.4	-152.6
DC(Max)	V	2.6	5.3	7.9	10.6	12.4	12.5	13.1
DL-Comp :	M	0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.0
DC(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DL-Comp :	M	90.6	63.7	18.9	-43.8	-94.9	-97.4	-118.5
DW(Max)	V	2.1	4.1	6.2	8.2	9.6	9.7	10.1
DL-Comp :	M	0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.0
DW(Min)	V	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LL + I :	M+	393.1	315.8	182.6	83.4	41.0	39.7	30.4
	V	6.9	1.5	0.5	2.1	1.9	1.9	1.9
LL + I :	M-	-38.0	-48.8	-59.6	-146.6	-296.2	-304.1	-372.3
	V	1.8	1.8	1.8	31.3	38.6	38.9	41.3
LL + I :	Vmx	23.2	31.3	39.6	48.9	55.9	56.2	58.5
	M	289.5	237.8	118.1	-9.9	-169.2	-177.0	-242.4
Total :	M+	2135.3	1799.4	1236.0	535.0	0.0	0.0	0.0
	V	26.7	40.9	59.6	80.9	0.0	0.0	0.0
Total :	M-	0.0	0.0	0.0	0.0	-350.9	-382.2	-643.4
	V	0.0	0.0	0.0	0.0	130.8	131.6	138.6
Total :	Vmx	43.0	70.7	98.7	127.7	148.1	149.0	155.8
	M	2031.7	1721.4	1171.5	441.6	-224.0	-255.1	-513.5



PB - Orange

Sheet #	DS-16
Job #	CN1234
By	PB
Date	Jan/5/2011
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Date	

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

Version: Version: 09.00.03.01

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PB - Orange

Sheet # DS-17

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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File Name: BR01.csl

Date

POSITIVE ENVELOPE STRESSES**Span : 2, Beam : 2, SERVICE I****RELEASE STRESSES, (ksi) (LOSS = 9.60 %)**

	Trans	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	2.50	8.73	17.47	26.20	34.93	43.67
Beam-Self						
Precast-top	0.146	0.474	0.842	1.106	1.264	1.316
Bottom	-0.120	-0.388	-0.690	-0.906	-1.036	-1.079
Prestress						
Precast-top	-0.345	-0.522	-0.771	-1.019	-1.268	-1.268
Bottom	4.287	4.432	4.636	4.840	5.044	5.044
Total						
Precast-top	-0.198	-0.048	0.072	0.086	-0.004	0.048
Bottom	4.167	4.044	3.946	3.934	4.008	3.965

SERVICE I**POSITIVE ENVELOPE STRESSES, (ksi) (LOSS = 22.06 %)**

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Prestress								
Precast-top	-0.050	-0.297	-0.303	-0.450	-0.664	-0.879	-1.093	-1.093
Bottom	0.731	3.696	3.701	3.821	3.997	4.172	4.348	4.348
Self wt.								
Precast-top	0.000	0.116	0.131	0.444	0.812	1.076	1.234	1.286
Bottom	-0.000	-0.095	-0.107	-0.364	-0.666	-0.882	-1.011	-1.054
DL-Prec (DC)								
Precast-top	-0.000	0.029	0.032	0.110	0.202	0.267	0.307	0.320
Bottom	0.000	-0.024	-0.027	-0.090	-0.166	-0.219	-0.251	-0.262
DL-Prec (DW)								
Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000



PB - Orange

Sheet # DS-18

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
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Diaphragm

Precast-top	-0.000	0.001	0.001	0.003	0.005	0.008	0.011	0.013
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.001	-0.001	-0.002	-0.004	-0.007	-0.009	-0.011
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Deck + Haunch

Precast-top	0.000	0.196	0.220	0.749	1.371	1.815	2.082	2.171
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Bottom	-0.000	-0.161	-0.181	-0.614	-1.124	-1.488	-1.706	-1.779
--------	--------	--------	--------	--------	--------	--------	--------	--------

DL-Comp (DC)

Precast-top	-0.046	-0.037	-0.036	-0.017	0.007	0.025	0.035	0.038
-------------	--------	--------	--------	--------	-------	-------	-------	-------

Bottom	0.171	0.141	0.137	0.063	-0.027	-0.092	-0.131	-0.144
--------	-------	-------	-------	-------	--------	--------	--------	--------

DL-Comp (DW)

Precast-top	-0.035	-0.029	-0.028	-0.013	0.006	0.019	0.027	0.030
-------------	--------	--------	--------	--------	-------	-------	-------	-------

Bottom	0.133	0.109	0.107	0.049	-0.021	-0.072	-0.102	-0.112
--------	-------	-------	-------	-------	--------	--------	--------	--------

LL+I(+)

Precast-top	0.021	0.024	0.024	0.046	0.114	0.198	0.251	0.266
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.079	-0.089	-0.090	-0.172	-0.430	-0.745	-0.945	-1.002
--------	--------	--------	--------	--------	--------	--------	--------	--------

Final 1 (P/S + DL + LL)

Precast-top	-0.109	0.002	0.040	0.872	1.854	2.529	2.853	3.031
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Bottom	0.956	3.577	3.539	2.691	1.558	0.668	0.193	-0.016
--------	-------	-------	-------	-------	-------	-------	-------	--------

Final 2 (P/S + DL)

Precast-top	-0.131	-0.021	0.016	0.826	1.739	2.331	2.602	2.765
-------------	--------	--------	-------	-------	-------	-------	-------	-------

Bottom	1.036	3.665	3.630	2.863	1.989	1.413	1.138	0.986
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 2, Beam : 2, SERVICE III

RELEASE STRESSES, (ksi) (LOSS = 9.60 %)

	Trans	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	2.50	8.73	17.47	26.20	34.93	43.67
Beam-Self						
Precast-top	0.146	0.474	0.842	1.106	1.264	1.316
Bottom	-0.120	-0.388	-0.690	-0.906	-1.036	-1.079
Prestress						
Precast-top	-0.345	-0.522	-0.771	-1.019	-1.268	-1.268
Bottom	4.287	4.432	4.636	4.840	5.044	5.044
Total						



PB - Orange

Sheet # DS-19

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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	Trans	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Precast-top	-0.198	-0.048	0.072	0.086	-0.004	0.048
Bottom	4.167	4.044	3.946	3.934	4.008	3.965
As_top (in2)	0.000	0.000	0.000	0.000	0.000	0.000

SERVICE III**POSITIVE ENVELOPE STRESSES, (ksi) (LOSS = 22.06 %)**

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Prestress								
Precast-top	-0.050	-0.297	-0.303	-0.450	-0.664	-0.879	-1.093	-1.093
Bottom	0.731	3.696	3.701	3.821	3.997	4.172	4.348	4.348
Self wt.								
Precast-top	0.000	0.116	0.131	0.444	0.812	1.076	1.234	1.286
Bottom	-0.000	-0.095	-0.107	-0.364	-0.666	-0.882	-1.011	-1.054
DL-Prec (DC)								
Precast-top	-0.000	0.029	0.032	0.110	0.202	0.267	0.307	0.320
Bottom	0.000	-0.024	-0.027	-0.090	-0.166	-0.219	-0.251	-0.262
DL-Prec (DW)								
Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Diaphragm								
Precast-top	-0.000	0.001	0.001	0.003	0.005	0.008	0.011	0.013
Bottom	-0.000	-0.001	-0.001	-0.002	-0.004	-0.007	-0.009	-0.011
Deck + Haunch								
Precast-top	0.000	0.196	0.220	0.749	1.371	1.815	2.082	2.171
Bottom	-0.000	-0.161	-0.181	-0.614	-1.124	-1.488	-1.706	-1.779
DL-Comp (DC)								
Precast-top	-0.046	-0.037	-0.036	-0.017	0.007	0.025	0.035	0.038
Bottom	0.171	0.141	0.137	0.063	-0.027	-0.092	-0.131	-0.144
DL-Comp (DW)								
Precast-top	-0.035	-0.029	-0.028	-0.013	0.006	0.019	0.027	0.030
Bottom	0.133	0.109	0.107	0.049	-0.021	-0.072	-0.102	-0.112
LL+I(+)								
Precast-top	0.017	0.019	0.019	0.037	0.092	0.159	0.201	0.213



PB - Orange

Sheet # DS-20

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Bottom	-0.063	-0.071	-0.072	-0.138	-0.344	-0.596	-0.756	-0.801
--------	--------	--------	--------	--------	--------	--------	--------	--------

Final 1 (P/S + DL + LL)

Precast-top	-0.114	-0.002	0.035	0.863	1.831	2.490	2.803	2.978
-------------	--------	--------	-------	-------	-------	-------	-------	-------

Bottom	0.972	3.594	3.558	2.725	1.644	0.817	0.382	0.185
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 2, Beam : 2, FATIGUE I
POSITIVE ENVELOPE STRESSES, (ksi)

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Location, ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
--------------	------	------	------	------	-------	-------	-------	-------

F_LL+I(+)

Precast-top	0.009	0.012	0.012	0.025	0.055	0.094	0.117	0.121
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.034	-0.045	-0.046	-0.094	-0.205	-0.355	-0.442	-0.454
--------	--------	--------	--------	--------	--------	--------	--------	--------

Final 3 (50%% P/S + 50%% DL + F_LL)

Precast-top	-0.034	0.020	0.038	0.446	0.924	1.260	1.418	1.503
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	0.399	1.719	1.702	1.306	0.789	0.352	0.127	0.039
--------	-------	-------	-------	-------	-------	-------	-------	-------



PB - Orange

Sheet # DS-21

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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VERTICAL/HORIZONTAL SHEAR**VERTICAL SHEAR (Art. 5.8) - Span : 2, Beam : 2, STRENGTH I**

Using Simplified procedure - Art.5.8.3.4.3

Location (ft)								
Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	
Bearing : 0.50								
97.263	-271.101	315.195	-1271.284	-1000.183	217.932	0.731	0.000	1199.181
48.406	379.442	62.663	379.442	0.114	2.068	76.359	76.359	273.857
1.018	0.136	1.018	1.600	1.447	24.000	8.641	0.111	
Transfer : 2.50								
92.763	-78.068	303.504	-839.639	-761.571	210.742	3.696	144.703	3587.620
48.406	1106.416	62.663	1106.416	0.753	10.342	149.570	149.570	187.658
0.447	0.136	0.447	1.600	2.434	24.000	6.841	0.555	
Critical : 2.75								
88.186	82.939	291.617	-432.816	-515.755	203.430	2.245	270.321	2079.767
48.406	929.401	62.663	929.401	0.673	10.342	141.380	141.380	182.638
0.456	0.136	0.456	1.600	2.414	24.000	4.289	0.649	
0.1L : 8.73								
78.736	451.519	267.070	400.615	-50.904	188.334	3.821	551.744	2996.517
46.375	11185.147	60.033	11185.147	1.254	10.342	192.480	192.480	104.265
0.250	0.136	0.250	0.400	1.211	24.000	0.000	5.331	
0.2L : 17.47								
59.085	1053.338	216.121	1892.813	839.476	157.037	3.997	1010.103	2361.570
43.498	519.622	56.310	519.622	1.792	10.342	230.304	230.304	9.831
0.025	0.136	0.136	0.200	1.285	24.000	0.000	6.732	
0.3L : 26.20								
39.433	1483.530	164.542	2938.604	1455.074	125.109	4.172	1337.833	1952.127
44.519	226.489	57.631	226.489	2.138	10.342	267.883	226.489	0.000
0.000	0.136	0.136	0.200	1.482	24.000	0.000	6.732	
0.4L : 34.93								
19.781	1742.097	113.398	3526.225	1784.128	93.617	4.348	1534.932	1768.190
45.540	132.212	58.953	132.212	2.294	0.000	278.343	132.212	0.000
0.000	0.136	0.136	0.200	1.411	24.000	0.000	6.732	



PB - Orange

Sheet # DS-22

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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**Location
(ft)****Vd
(kips)****Md
(k.ft)****Vu
(kips)****Mu
(k.ft)****Mmax
(k.ft)****Vi
(kips)****fcpe
(ksi)****Mdnc
(k.ft)****Mcre
(k.ft)****dv
(in)****Vci-com
(kips)****Vci-min
(kips)****Vci
(kips)****fpc
(ksi)****Vp
(kips)****Vcw
(kips)****Vc
(kips)****Vs-rqrd
(kips)****Av-com
(in2/ft)****Av-min
(in2/ft)****Av
(in2/ft)****Av-prvd
(in2/ft)****pVn/Vu****Max.spc.
(in)****Al-reqd
(in2)****Aps*
(in2)**

0.5L : 43.67

0.129 1829.038 69.143 3784.849 1955.812 69.014 4.348 1601.271 1653.671

45.540 78.132 58.953 78.132 2.391 0.000 287.633 78.132 0.000

0.000 0.136 0.136 0.200 1.610 24.000 0.000 6.732

0.6L : 52.40

19.784 1742.202 113.402 3526.365 1784.163 93.618 4.348 1534.932 1768.190

45.540 132.214 58.953 132.214 2.294 0.000 278.357 132.214 0.000

0.000 0.136 0.136 0.200 1.411 24.000 0.000 6.732

0.7L : 61.13

39.436 1483.609 164.545 2938.709 1455.101 125.110 4.172 1337.833 1952.127

44.519 226.490 57.631 226.490 2.138 10.342 267.894 226.490 0.000

0.000 0.136 0.136 0.200 1.482 24.000 0.000 6.732

0.8L : 69.87

59.088 1053.390 216.125 1892.886 839.496 157.038 3.997 1010.103 2361.570

43.498 519.617 56.310 519.617 1.792 10.342 230.311 230.311 9.828

0.025 0.136 0.136 0.200 1.285 24.000 0.000 6.732

0.9L : 78.60

78.739 451.546 267.074 400.654 -50.892 188.335 3.821 551.744 2996.517

46.375 11187.947 60.033 11187.947 1.254 10.342 192.484 192.484 104.265

0.250 0.136 0.250 0.400 1.211 24.000 0.000 5.331

Critical : 84.58

88.189 82.953 291.620 -432.793 -515.746 203.431 2.245 270.321 2079.767

48.406 929.422 62.663 929.422 0.673 10.342 141.382 141.382 182.641

0.456 0.136 0.456 1.600 2.414 24.000 4.289 0.649

Transfer : 84.83

92.766 -78.061 303.508 -839.624 -761.563 210.743 3.696 144.703 3587.620

48.406 1106.432 62.663 1106.432 0.753 10.342 149.570 149.570 187.661

0.447 0.136 0.447 1.600 2.434 24.000 6.841 0.555

Bearing : 86.83

97.266 -271.100 315.198 -1271.278 -1000.178 217.932 0.731 0.000 1199.181

48.406 379.448 62.663 379.448 0.114 2.068 76.359 76.359 273.861

1.018 0.136 1.018 1.600 1.447 24.000 8.641 0.111



PB - Orange

Sheet # DS-23

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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ANCHORAGE ZONE REINFORCEMENT (Art. 5.10.10)**Span : 2, Beam : 2**

Fpi (kips)	fs (ksi)	h/4 (in)	Abrst_rqrd (in2)
1363.23	20.00	11.25	2.73

HORIZONTAL SHEAR (Art. 5.8.4) - Span : 2, Beam : 2

(Beam and Slab effects are EXCLUDED from Vu).

Location (ft)									
Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)	
Bearing :									
222.6	5.11	50.03	3.26	48.41	24.00	0.160	0.109	0.011	
Transfer :									
215.2	4.94	50.03	3.26	48.41	24.00	0.160	0.104	0.008	
Critical :									
207.7	4.77	50.03	3.26	48.41	24.00	0.160	0.099	0.005	
0.1L :									
192.1	4.60	48.63	4.51	46.37	24.00	0.160	0.095	0.002	
0.2L :									
159.9	4.08	45.95	4.91	43.50	24.00	0.160	0.080	0.000	
0.3L :									
127.0	3.17	46.98	4.92	44.52	24.00	0.160	0.055	0.000	
0.4L :									
94.5	2.31	48.00	4.92	45.54	24.00	0.160	0.031	0.000	
0.5L :									
69.0	1.68	48.00	4.92	45.54	24.00	0.160	0.013	0.000	
0.6L :									
94.5	2.31	48.00	4.92	45.54	24.00	0.160	0.031	0.000	
0.7L :									
127.0	3.17	46.98	4.92	44.52	24.00	0.160	0.055	0.000	
0.8L :									
159.9	4.08	45.95	4.91	43.50	24.00	0.160	0.080	0.000	
0.9L :									
78.10									



PB - Orange

Sheet # DS-24

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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Location (ft)

Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)
192.1	4.60	48.63	4.51	46.37	24.00	0.160	0.095	0.002
Critical : 82.30								
207.7	4.77	50.03	3.26	48.41	24.00	0.160	0.099	0.005
Transfer : 84.33								
215.2	4.94	50.03	3.26	48.41	24.00	0.160	0.104	0.008
Bearing : 86.33								
222.6	5.11	50.03	3.26	48.41	24.00	0.160	0.109	0.011

VERTICAL SHEAR (Art. 5.8) - Span : 2, Beam : 2, STRENGTH II

Using Simplified procedure - Art.5.8.3.4.3

**Location
(ft)**

Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps*	(in2)
Bearing : 0.50								
97.263	-271.101	335.987	-1781.992	-1510.891	238.724	0.731	0.000	1199.181
48.246	307.554	62.455	307.554	0.114	2.068	76.113	76.113	297.205
1.109	0.136	1.109	1.600	1.353	24.000	10.983	0.111	
Transfer : 2.50								
92.763	-78.068	322.060	-1286.050	-1207.982	229.298	3.696	144.703	3587.620
48.246	794.579	62.455	794.579	0.753	10.342	149.108	149.108	208.737
0.499	0.136	0.499	1.600	2.286	24.000	8.987	0.555	
Critical : 2.75								
88.216	81.766	307.991	-838.467	-920.233	219.775	2.240	269.426	2076.849
48.246	605.039	62.455	605.039	0.671	10.342	140.759	140.759	201.454
0.505	0.136	0.505	1.600	2.276	24.000	6.206	0.648	
0.1L : 8.73								
78.736	451.519	278.656	83.641	-367.879	199.920	3.821	551.744	2996.517
46.375	1727.174	60.033	1727.174	1.254	10.342	192.480	192.480	117.138
0.281	0.136	0.281	0.400	1.161	24.000	0.000	5.331	

Units: U.S. Units

Design Code: AASHTO LRFD



PB - Orange

Sheet # DS-25

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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**Location
(ft)**

Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	

0.2L : 17.47

59.085	1053.338	220.358	1682.605	629.267	161.273	3.997	1010.103	2361.570
43.498	683.094	56.310	683.094	1.792	10.342	230.304	230.304	14.538
0.037	0.136	0.136	0.200	1.260	24.000	0.000	6.732	

0.3L : 26.20

39.433	1483.530	163.609	2655.779	1172.248	124.176	4.172	1337.833	1952.127
44.519	265.432	57.631	265.432	2.138	10.342	267.883	265.432	0.000
0.000	0.136	0.136	0.200	1.705	24.000	0.000	6.732	

0.4L : 34.93

19.781	1742.097	110.193	3218.155	1476.058	90.412	4.348	1534.932	1768.190
45.540	147.737	58.953	147.737	2.294	0.000	278.343	147.737	0.000
0.000	0.136	0.136	0.200	1.579	24.000	0.000	6.732	

0.5L : 43.67

0.129	1829.038	61.987	3391.914	1562.876	61.857	4.348	1601.271	1653.671
45.540	85.231	58.953	85.231	2.391	0.000	287.633	85.231	0.000
0.000	0.136	0.136	0.200	1.899	24.000	0.000	6.732	

0.6L : 52.40

19.784	1742.202	110.197	3218.294	1476.092	90.413	4.348	1534.932	1768.190
45.540	147.739	58.953	147.739	2.294	0.000	278.357	147.739	0.000
0.000	0.136	0.136	0.200	1.579	24.000	0.000	6.732	

0.7L : 61.13

39.436	1483.609	163.613	2655.884	1172.275	124.177	4.172	1337.833	1952.127
44.519	265.432	57.631	265.432	2.138	10.342	267.894	265.432	0.000
0.000	0.136	0.136	0.200	1.705	24.000	0.000	6.732	

0.8L : 69.87

59.088	1053.390	220.362	1682.677	629.287	161.274	3.997	1010.103	2361.570
43.498	683.082	56.310	683.082	1.792	10.342	230.311	230.311	14.535
0.037	0.136	0.136	0.200	1.260	24.000	0.000	6.732	

0.9L : 78.60

78.739	451.546	278.660	83.679	-367.867	199.921	3.821	551.744	2996.517
46.375	1727.237	60.033	1727.237	1.254	10.342	192.484	192.484	117.139
0.281	0.136	0.281	0.400	1.161	24.000	0.000	5.331	

Critical : 84.58



PB - Orange

Sheet # DS-26

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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**Location
(ft)**

Vd (kips)	Md (k.ft)	Vu (kips)	Mu (k.ft)	Mmax (k.ft)	Vi (kips)	fcpe (ksi)	Mdnc (k.ft)	Mcre (k.ft)
dv (in)	Vci-com (kips)	Vci-min (kips)	Vci (kips)	fpc (ksi)	Vp (kips)	Vcw (kips)	Vc (kips)	Vs-rqrd (kips)
Av-com (in2/ft)	Av-min (in2/ft)	Av (in2/ft)	Av-prvd (in2/ft)	pVn/Vu	Max.spc. (in)	Al-reqd (in2)	Aps* (in2)	
88.219	81.779	307.995	-838.446	-920.225	219.776	2.240	269.426	2076.849
48.246	605.048	62.455	605.048	0.671	10.342	140.761	140.761	201.456
0.505	0.136	0.505	1.600	2.276	24.000	6.206	0.648	
Transfer : 84.83								
92.766	-78.061	322.064	-1286.036	-1207.975	229.298	3.696	144.703	3587.620
48.246	794.588	62.455	794.588	0.753	10.342	149.109	149.109	208.740
0.499	0.136	0.499	1.600	2.286	24.000	8.987	0.555	
Bearing : 86.83								
97.266	-271.100	335.991	-1781.986	-1510.886	238.724	0.731	0.000	1199.181
48.246	307.559	62.455	307.559	0.114	2.068	76.113	76.113	297.209
1.109	0.136	1.109	1.600	1.353	24.000	10.983	0.111	

ANCHORAGE ZONE REINFORCEMENT (Art. 5.10.10)

Span : 2, Beam : 2

Fpi (kips)	fs (ksi)	h/4 (in)	Abrst_rqrd (in2)
1363.23	20.00	11.25	2.73

HORIZONTAL SHEAR (Art. 5.8.4) - Span : 2, Beam : 2

(Beam and Slab effects are EXCLUDED from Vu).

Location (ft)

Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)
Bearing : 0.00								
243.4	5.61	50.03	3.58	48.25	24.00	0.160	0.122	0.019
Transfer : 2.00								
233.8	5.38	50.03	3.58	48.25	24.00	0.160	0.116	0.015
Critical : 4.02								
224.0	5.16	50.03	3.58	48.25	24.00	0.160	0.110	0.011



PB - Orange

Sheet # DS-27

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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Location (ft)

Vu (kips)	Vnh-req (kips)	de (in)	a (in)	dv (in)	s_max (in)	Avh-min (in2/ft)	Avh-sm (in2/ft)	Avh-rg (in2/ft)
0.1L :								
203.7	4.88	48.63	4.51	46.37	24.00	0.160	0.102	0.007
0.2L :								
164.1	4.19	45.95	4.91	43.50	24.00	0.160	0.083	0.000
0.3L :								
126.1	3.15	46.98	4.92	44.52	24.00	0.160	0.054	0.000
0.4L :								
91.3	2.23	48.00	4.92	45.54	24.00	0.160	0.029	0.000
0.5L :								
61.8	1.51	48.00	4.92	45.54	24.00	0.160	0.009	0.000
0.6L :								
91.3	2.23	48.00	4.92	45.54	24.00	0.160	0.029	0.000
0.7L :								
126.1	3.15	46.98	4.92	44.52	24.00	0.160	0.054	0.000
0.8L :								
164.1	4.19	45.95	4.91	43.50	24.00	0.160	0.083	0.000
0.9L :								
203.7	4.88	48.63	4.51	46.37	24.00	0.160	0.102	0.007
Critical :								
224.0	5.16	50.03	3.58	48.25	24.00	0.160	0.110	0.011
Transfer :								
233.8	5.38	50.03	3.58	48.25	24.00	0.160	0.116	0.015
Bearing :								
243.4	5.61	50.03	3.58	48.25	24.00	0.160	0.122	0.019



PB - Orange

Sheet # DS-28

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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CAMBER/DEFLECTION**CAMBER AND DEFLECTIONS: SERVICE I**
(Span : 2, Beam : 2; Units: in)

	Release	Mult	Erection	Mult	Final
At 0.1 x L = 8.23 ft					
Prestress	1.227	1.80	2.209	2.20	2.700
Self Wt.	-0.377	1.85	-0.697	2.40	-0.904
Deck + Haunch			-0.498	2.30	-1.145
DL-Prec. (DC)			-0.073	3.00	-0.220
Diaphragm			-0.002	3.00	-0.007
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.013	3.00	-0.040
DL-Comp. (DW)			-0.010	3.00	-0.031
Live Load					-0.071
Total	0.851		0.915		0.281

	Release	Mult	Erection	Mult	Final
At 0.2 x L = 16.97 ft					
Prestress	2.220	1.80	3.997	2.20	4.885
Self Wt.	-0.713	1.85	-1.319	2.40	-1.711
Deck + Haunch			-0.972	2.30	-2.235
DL-Prec. (DC)			-0.143	3.00	-0.429
Diaphragm			-0.005	3.00	-0.014
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.030	3.00	-0.090
DL-Comp. (DW)			-0.023	3.00	-0.070
Live Load					-0.151
Total	1.507		1.505		0.186

	Release	Mult	Erection	Mult	Final
At 0.3 x L = 25.70 ft					
Prestress	2.954	1.80	5.317	2.20	6.498
Self Wt.	-0.976	1.85	-1.806	2.40	-2.343
Deck + Haunch			-1.343	2.30	-3.090
DL-Prec. (DC)			-0.198	3.00	-0.594
Diaphragm			-0.006	3.00	-0.019
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.045	3.00	-0.135
DL-Comp. (DW)			-0.035	3.00	-0.105
Live Load					-0.223
Total	1.978		1.883		-0.010

	Release	Mult	Erection	Mult	Final
At 0.4 x L = 34.43 ft					
Prestress	3.406	1.80	6.130	2.20	7.492



PB - Orange

Sheet # DS-29

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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Release Mult Erection Mult Final

Self Wt.	-1.143	1.85	-2.115	2.40	-2.744
Deck + Haunch			-1.580	2.30	-3.633
DL-Prec. (DC)			-0.233	3.00	-0.698
Diaphragm			-0.008	3.00	-0.023
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.055	3.00	-0.166
DL-Comp. (DW)			-0.043	3.00	-0.129
Live Load					-0.271
Total	2.262		2.096		-0.173

Release Mult Erection Mult Final

At 0.5 x L = 43.17 ft

Prestress	3.557	1.80	6.403	2.20	7.826
Self Wt.	-1.200	1.85	-2.221	2.40	-2.881
Deck + Haunch			-1.661	2.30	-3.820
DL-Prec. (DC)			-0.245	3.00	-0.734
Diaphragm			-0.008	3.00	-0.025
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.059	3.00	-0.178
DL-Comp. (DW)			-0.046	3.00	-0.138
Live Load					-0.289
Total	2.357		2.164		-0.237

Release Mult Erection Mult Final

At 0.6 x L = 51.90 ft

Prestress	3.406	1.80	6.130	2.20	7.492
Self Wt.	-1.143	1.85	-2.115	2.40	-2.744
Deck + Haunch			-1.580	2.30	-3.633
DL-Prec. (DC)			-0.233	3.00	-0.698
Diaphragm			-0.008	3.00	-0.023
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.055	3.00	-0.166
DL-Comp. (DW)			-0.043	3.00	-0.129
Live Load					-0.271
Total	2.262		2.096		-0.173

Release Mult Erection Mult Final

At 0.7 x L = 60.63 ft

Prestress	2.954	1.80	5.317	2.20	6.498
Self Wt.	-0.976	1.85	-1.806	2.40	-2.343
Deck + Haunch			-1.343	2.30	-3.090
DL-Prec. (DC)			-0.198	3.00	-0.594
Diaphragm			-0.006	3.00	-0.019
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.045	3.00	-0.135
DL-Comp. (DW)			-0.035	3.00	-0.105
Live Load					-0.223



PB - Orange

Sheet # DS-30

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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Release Mult Erection Mult Final

Total	1.978	1.883	-0.010
-------	-------	-------	--------

Release Mult Erection Mult Final

At 0.8 x L = 69.37 ft

Prestress	2.220	1.80	3.997	2.20	4.885
-----------	-------	------	-------	------	-------

Self Wt.	-0.713	1.85	-1.319	2.40	-1.711
----------	--------	------	--------	------	--------

Deck + Haunch			-0.972	2.30	-2.235
---------------	--	--	--------	------	--------

DL-Prec. (DC)			-0.143	3.00	-0.429
---------------	--	--	--------	------	--------

Diaphragm			-0.005	3.00	-0.014
-----------	--	--	--------	------	--------

DL-Prec. (DW)			0.000	3.00	0.000
---------------	--	--	-------	------	-------

DL-Comp. (DC)			-0.030	3.00	-0.090
---------------	--	--	--------	------	--------

DL-Comp. (DW)			-0.023	3.00	-0.070
---------------	--	--	--------	------	--------

Live Load					-0.151
-----------	--	--	--	--	--------

Total	1.507	1.505	0.186
-------	-------	-------	-------

Release Mult Erection Mult Final

At 0.9 x L = 78.10 ft

Prestress	1.227	1.80	2.209	2.20	2.700
-----------	-------	------	-------	------	-------

Self Wt.	-0.377	1.85	-0.697	2.40	-0.904
----------	--------	------	--------	------	--------

Deck + Haunch			-0.498	2.30	-1.145
---------------	--	--	--------	------	--------

DL-Prec. (DC)			-0.073	3.00	-0.220
---------------	--	--	--------	------	--------

Diaphragm			-0.002	3.00	-0.007
-----------	--	--	--------	------	--------

DL-Prec. (DW)			0.000	3.00	0.000
---------------	--	--	-------	------	-------

DL-Comp. (DC)			-0.013	3.00	-0.040
---------------	--	--	--------	------	--------

DL-Comp. (DW)			-0.010	3.00	-0.031
---------------	--	--	--------	------	--------

Live Load					-0.071
-----------	--	--	--	--	--------

Total	0.851	0.915	0.281
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Sheet # DS-31

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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ULTIMATE MOMENT**ULTIMATE - Span : 2, Beam : 2, STRENGTH I**
(Mr-prvd computed by AASHTO equations, Art. 5.7.3.2/5.7.3.3)

Location (ft) Mu k.ft	dp in	Aps in ²	fps ksi	c in	a in	Mr-prvd k.ft	c/dt	Phi	1.2 Mcr k.ft	min Mr k.ft	Crkg Ratio	Mu-p/r Ratio
Transfer	2.00											
149.8	44.2	4.072	263.9	3.5	3.0	3824.5	0.068T	1.00	-	-	-	-
H/2	2.25											
180.6	44.2	4.157	263.8	3.6	3.1	3901.7	0.069T	1.00	-	-	-	-
0.1L	8.23											
922.9	44.9	6.173	261.1	5.3	4.5	5730.7	0.102T	1.00	-	-	-	-
0.2L	16.97											
2091.0	46.0	6.732	260.5	5.8	4.9	6356.7	0.111T	1.00	4605.6	2781.0	1.7	-
0.3L	25.70											
3182.8	47.0	6.732	260.7	5.8	4.9	6510.9	0.111T	1.00	4507.6	4233.1	1.7	-
0.4L	34.43											
3854.8	48.0	6.732	260.9	5.8	4.9	6665.1	0.111T	1.00	4523.4	4523.4	1.8	-
0.5L	43.17											
4064.6	48.0	6.732	260.9	5.8	4.9	6665.1	0.111T	1.00	4465.5	4465.5	1.8	-
0.6L	51.90											
3854.9	48.0	6.732	260.9	5.8	4.9	6665.1	0.111T	1.00	4523.3	4523.3	1.8	-
0.7L	60.63											
3182.9	47.0	6.732	260.7	5.8	4.9	6510.9	0.111T	1.00	4507.5	4233.3	1.7	-
0.8L	69.37											
2091.1	46.0	6.732	260.5	5.8	4.9	6356.7	0.111T	1.00	4605.6	2781.1	1.7	-
0.9L	78.10											
923.0	44.9	6.173	261.1	5.3	4.5	5730.7	0.102T	1.00	-	-	-	-
H/2	84.08											
180.6	44.2	4.157	263.8	3.6	3.1	3901.7	0.069T	1.00	-	-	-	-
Transfer	84.33											
149.8	44.2	4.072	263.9	3.5	3.0	3824.5	0.068T	1.00	-	-	-	-

Legend: C = Compression-Controlled (c/dt > 0.600)

I = In-Transition (0.60 >= c/dt > 0.375)

T = Tension-Controlled (c/dt <= 0.375)

Note : fr used for calculating Mcr is computed using AASHTO method (Art.5.4.2.6.)

ULTIMATE - Span : 2, Beam : 2, STRENGTH II
(Mr-prvd computed by AASHTO equations, Art. 5.7.3.2/5.7.3.3)

Location (ft) Mu k.ft	dp in	Aps in ²	fps ksi	c in	a in	Mr-prvd k.ft	c/dt	Phi	1.2 Mcr k.ft	min Mr k.ft	Crkg Ratio	Mu-p/r Ratio
Transfer	2.00											
123.5	44.2	4.072	263.9	3.5	3.0	3824.5	0.068T	1.00	-	-	-	-



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Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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Location (ft) Mu k.ft	dp in	Aps in ²	fps ksi	c in	a in	Mr-prvd k.ft	c/dt	Phi	1.2 Mcr k.ft	min Mr k.ft	Crkg Ratio	Mu-p/r Ratio
H/2	2.25											
153.6	44.2	4.157	263.8	3.6	3.1	3901.7	0.069T	1.00	-	-	-	-
0.1L	8.23											
870.4	44.9	6.173	261.1	5.3	4.5	5730.7	0.102T	1.00	-	-	-	-
0.2L	16.97											
1961.5	46.0	6.732	260.5	5.8	4.9	6356.7	0.111T	1.00	4605.6	2608.8	1.7	-
0.3L	25.70											
3083.0	47.0	6.732	260.7	5.8	4.9	6510.9	0.111T	1.00	4507.6	4100.4	1.7	-
0.4L	34.43											
3764.5	48.0	6.732	260.9	5.8	4.9	6665.1	0.111T	1.00	4523.4	4523.4	1.8	-
0.5L	43.17											
4000.4	48.0	6.732	260.9	5.8	4.9	6665.1	0.111T	1.00	4465.5	4465.5	1.8	-
0.6L	51.90											
3764.7	48.0	6.732	260.9	5.8	4.9	6665.1	0.111T	1.00	4523.3	4523.3	1.8	-
0.7L	60.63											
3083.1	47.0	6.732	260.7	5.8	4.9	6510.9	0.111T	1.00	4507.5	4100.5	1.7	-
0.8L	69.37											
1961.6	46.0	6.732	260.5	5.8	4.9	6356.7	0.111T	1.00	4605.6	2608.9	1.7	-
0.9L	78.10											
870.4	44.9	6.173	261.1	5.3	4.5	5730.7	0.102T	1.00	-	-	-	-
H/2	84.08											
153.7	44.2	4.157	263.8	3.6	3.1	3901.7	0.069T	1.00	-	-	-	-
Transfer	84.33											
123.5	44.2	4.072	263.9	3.5	3.0	3824.5	0.068T	1.00	-	-	-	-

Legend: C = Compression-Controlled (c/dt > 0.600)

I = In-Transition (0.60 >= c/dt > 0.375)

T = Tension-Controlled (c/dt <= 0.375)

Note : fr used for calculating Mcr is computed using AASHTO method (Art.5.4.2.6.)



PB - Orange

Sheet # DS-33

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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DETENSIONING**Span : 2, Beam : 2; Groups 1-22; Units: ksi**

Grp	Str	Ys,in	2.50ft
1	2 E	2.00 Ft	0.045
	M	2.00 Fb	0.145
2	2 E	42.00 Ft	0.361
	M	12.00 Fb	0.068
3	2 E	40.00 Ft	0.655
	M	10.00 Fb	0.009
4	2 E	38.00 Ft	0.928
	M	8.00 Fb	-0.032
5	2 E	10.00 Ft	0.914
	M	10.00 Fb	0.161
6	2 E	10.00 Ft	0.901
	M	10.00 Fb	0.354
7	2 E	8.00 Ft	0.865
	M	8.00 Fb	0.565
8	2 E	8.00 Ft	0.830
	M	8.00 Fb	0.776
9	2 E	8.00 Ft	0.794
	M	8.00 Fb	0.987
10	2 E	6.00 Ft	0.737
	M	6.00 Fb	1.217
11	2 E	6.00 Ft	0.679
	M	6.00 Fb	1.446
12	2 E	6.00 Ft	0.621
	M	6.00 Fb	1.675
13	2 E	6.00 Ft	0.564
	M	6.00 Fb	1.904
14	2 E	6.00 Ft	0.506
	M	6.00 Fb	2.134
15	2 E	4.00 Ft	0.426
	M	4.00 Fb	2.381
16	2 E	4.00 Ft	0.347
	M	4.00 Fb	2.628
17	2 E	4.00 Ft	0.267
	M	4.00 Fb	2.876
18	2 E	4.00 Ft	0.187
	M	4.00 Fb	3.123
19	2 E	4.00 Ft	0.107
	M	4.00 Fb	3.370
20	2 E	2.00 Ft	0.006
	M	2.00 Fb	3.636
21	2 E	2.00 Ft	-0.096
	M	2.00 Fb	3.901
22	2 E	2.00 Ft	-0.198
	M	2.00 Fb	4.167



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Job # CN1234

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NEGATIVE ENVELOPE STRESSES**Span : 2, Beam : 2, SERVICE I****NEGATIVE ENVELOPE STRESSES, (ksi) (LOSS = 22.06 %)**

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
Location, ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
Prestress								
Precast-top	-0.050	-0.297	-0.303	-0.450	-0.664	-0.879	-1.093	-1.093
Bottom	0.731	3.696	3.701	3.821	3.997	4.172	4.348	4.348
Self wt.								
Precast-top	0.000	0.116	0.131	0.444	0.812	1.076	1.234	1.286
Bottom	-0.000	-0.095	-0.107	-0.364	-0.666	-0.882	-1.011	-1.054
DL-Prec (DC)								
Precast-top	-0.000	0.029	0.032	0.110	0.202	0.267	0.307	0.320
Bottom	0.000	-0.024	-0.027	-0.090	-0.166	-0.219	-0.251	-0.262
DL-Prec (DW)								
Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Diaphragm								
Precast-top	-0.000	0.001	0.001	0.003	0.005	0.008	0.011	0.013
Bottom	-0.000	-0.001	-0.001	-0.002	-0.004	-0.006	-0.009	-0.011
Deck + Haunch								
Precast-top	0.000	0.196	0.220	0.749	1.371	1.815	2.082	2.171
Bottom	-0.000	-0.161	-0.181	-0.614	-1.124	-1.488	-1.706	-1.779
DL-Comp (DC)								
Precast-top	-0.046	-0.038	-0.037	-0.017	0.007	0.025	0.035	0.038
Bottom	0.173	0.144	0.141	0.063	-0.027	-0.092	-0.131	-0.144
DL-Comp (DW)								
Precast-top	-0.036	-0.030	-0.029	-0.013	0.006	0.019	0.027	0.030
Bottom	0.134	0.112	0.109	0.049	-0.021	-0.072	-0.102	-0.112
LL+I(-)								
Precast-top	-0.250	-0.219	-0.215	-0.134	-0.047	-0.038	-0.031	-0.025
Bottom	0.941	0.822	0.808	0.505	0.177	0.143	0.118	0.093
Final 1 (P/S + DL + LL)								
Precast-top	-0.381	-0.241	-0.200	0.692	1.692	2.293	2.570	2.740
Bottom	1.979	4.493	4.444	3.368	2.165	1.556	1.255	1.078
Final 2 (P/S + DL)								
Precast-top	-0.131	-0.023	0.015	0.826	1.739	2.331	2.601	2.765



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Sheet # DS-35

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Bottom	1.038	3.671	3.636	2.863	1.989	1.414	1.138	0.986
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 2, Beam : 2, SERVICE III
NEGATIVE ENVELOPE STRESSES, (ksi) (LOSS = 22.06 %)

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Location, ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
--------------	------	------	------	------	-------	-------	-------	-------

Prestress

Precast-top	-0.050	-0.297	-0.303	-0.450	-0.664	-0.879	-1.093	-1.093
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.731	3.696	3.701	3.821	3.997	4.172	4.348	4.348
--------	-------	-------	-------	-------	-------	-------	-------	-------

Self wt.

Precast-top	0.000	0.116	0.131	0.444	0.812	1.076	1.234	1.286
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.095	-0.107	-0.364	-0.666	-0.882	-1.011	-1.054
--------	--------	--------	--------	--------	--------	--------	--------	--------

DL-Prec (DC)

Precast-top	-0.000	0.029	0.032	0.110	0.202	0.267	0.307	0.320
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	0.000	-0.024	-0.027	-0.090	-0.166	-0.219	-0.251	-0.262
--------	-------	--------	--------	--------	--------	--------	--------	--------

DL-Prec (DW)

Precast-top	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
--------	--------	--------	--------	--------	--------	--------	--------	--------

Diaphragm

Precast-top	-0.000	0.001	0.001	0.003	0.005	0.008	0.011	0.013
-------------	--------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.001	-0.001	-0.002	-0.004	-0.006	-0.009	-0.011
--------	--------	--------	--------	--------	--------	--------	--------	--------

Deck + Haunch

Precast-top	0.000	0.196	0.220	0.749	1.371	1.815	2.082	2.171
-------------	-------	-------	-------	-------	-------	-------	-------	-------

Bottom	-0.000	-0.161	-0.181	-0.614	-1.124	-1.488	-1.706	-1.779
--------	--------	--------	--------	--------	--------	--------	--------	--------

DL-Comp (DC)

Precast-top	-0.046	-0.038	-0.037	-0.017	0.007	0.025	0.035	0.038
-------------	--------	--------	--------	--------	-------	-------	-------	-------

Bottom	0.173	0.144	0.141	0.063	-0.027	-0.092	-0.131	-0.144
--------	-------	-------	-------	-------	--------	--------	--------	--------

DL-Comp (DW)

Precast-top	-0.036	-0.030	-0.029	-0.013	0.006	0.019	0.027	0.030
-------------	--------	--------	--------	--------	-------	-------	-------	-------

Bottom	0.134	0.112	0.109	0.049	-0.021	-0.072	-0.102	-0.112
--------	-------	-------	-------	-------	--------	--------	--------	--------

LL+I(-)

Precast-top	-0.200	-0.175	-0.172	-0.107	-0.038	-0.030	-0.025	-0.020
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.753	0.658	0.647	0.404	0.141	0.114	0.094	0.074
--------	-------	-------	-------	-------	-------	-------	-------	-------

Final 1 (P/S + DL + LL)



PB - Orange

Sheet # DS-36

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Precast-top	-0.331	-0.198	-0.157	0.718	1.702	2.301	2.576	2.745
-------------	--------	--------	--------	-------	-------	-------	-------	-------

Bottom	1.791	4.329	4.282	3.267	2.130	1.528	1.232	1.060
--------	-------	-------	-------	-------	-------	-------	-------	-------

Span : 2, Beam : 2, FATIGUE I
NEGATIVE ENVELOPE STRESSES, (ksi)

	Bearing	Trans	H/2	0.10L /0.90L	0.20L /0.80L	0.30L /0.70L	0.40L /0.60L	Midspan
--	---------	-------	-----	-----------------	-----------------	-----------------	-----------------	---------

Location, ft	0.00	2.00	2.25	8.23	16.97	25.70	34.43	43.17
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F_LL+I(-)

Precast-top	-0.111	-0.091	-0.089	-0.044	-0.018	-0.015	-0.011	-0.008
-------------	--------	--------	--------	--------	--------	--------	--------	--------

Bottom	0.418	0.342	0.333	0.165	0.067	0.055	0.043	0.031
--------	-------	-------	-------	-------	-------	-------	-------	-------

Final 3 (50%% P/S + 50%% DL + F_LL)

Precast-top	-0.177	-0.102	-0.081	0.369	0.852	1.151	1.289	1.374
-------------	--------	--------	--------	-------	-------	-------	-------	-------

Bottom	0.937	2.177	2.151	1.596	1.061	0.762	0.612	0.523
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PB - Orange

Sheet # DS-37

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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REINFORCED DESIGN**REINFORCED DESIGN - Span : 2, Beam : 2, STRENGTH I (fy = 60.00 ksi)****(a) NEGATIVE MOMENTS ALONG SPAN (Non-composite Moment effects are EXCLUDED from Mu)****Negative Moment Continuity Steel:**

#bars	Size	Dist. from Top (in)	Area (in2)	Start (ft)	End (ft)
17	4	3.13	3.40	0.0000	88.0000
12	4	6.88	2.40	0.0000	88.0000
16	5	3.13	4.96	0.0000	10.0000
16	5	3.13	4.96	78.0000	88.0000

f'c (ksi)	b (in)	bw (in)
9.50	22.00	7.00

Sec	Dist (ft)	Mu-reqd (k.ft)	hf (in)	d (in)	d' (in)	Phi	Phi*Mn-r (k.ft)	c/dt	Asb (in2)	Ast-r (in2)	Ast-p (in2)	Phi*Mn-p (k.ft)
1	0.00	-2099.4	7.00	50.03	2.00	0.9	-2099.4	0.1001	0.000	9.638	10.760	-2334.6
2	9.07	-943.4	7.00	50.03	2.00	0.9	-943.4	0.0441	0.000	4.251	10.760	-2334.6
3	17.80	-207.4	7.00	49.32	2.00	0.9	-207.4	0.0099	0.000	3.213	5.800	-1261.6
4	26.53	-52.2	7.00	49.32	2.00	0.9	-52.2	0.0025	0.000	3.213	5.800	-1261.6
5	35.27	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	3.213	5.800	-1261.6
6	44.00	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	0.000	5.800	-1261.6
7	52.73	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	3.213	5.800	-1261.6
8	61.47	-52.2	7.00	49.32	2.00	0.9	-52.2	0.0025	0.000	3.213	5.800	-1261.6
9	70.20	-207.4	7.00	49.32	2.00	0.9	-207.4	0.0099	0.000	3.213	5.800	-1261.6
10	78.93	-943.4	7.00	50.03	2.00	0.9	-943.4	0.0441	0.000	4.251	10.760	-2334.6
11	88.00	-2099.4	7.00	50.03	2.00	0.9	-2099.4	0.1001	0.000	9.638	10.760	-2334.6

(b) POSITIVE MOMENTS AT PIERS

NONE

REINFORCED DESIGN - Span : 2, Beam : 2, STRENGTH II (fy = 60.00 ksi)**(a) NEGATIVE MOMENTS ALONG SPAN (Non-composite Moment effects are EXCLUDED from Mu)****Negative Moment Continuity Steel:**



PB - Orange

Sheet # DS-38

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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#bars	Size	Dist. from Top (in)	Area (in2)	Start (ft)	End (ft)
17	4	3.13	3.40	0.0000	88.0000
12	4	6.88	2.40	0.0000	88.0000
16	5	3.13	4.96	0.0000	10.0000
16	5	3.13	4.96	78.0000	88.0000

f'c (ksi)	b (in)	bw (in)
9.50	22.00	7.00

Sec	Dist (ft)	Mu-reqd (k.ft)	hf (in)	d (in)	d' (in)	Phi	Phi*Mn-r (k.ft)	c/dt	Asb (in2)	Ast-r (in2)	Ast-p (in2)	Phi*Mn-p (k.ft)
1	0.00	-2298.6	7.00	50.03	2.00	0.9	-2298.6	0.1100	0.000	10.588	10.760	-2334.6
2	9.07	-918.4	7.00	50.03	2.00	0.9	-918.4	0.0430	0.000	4.137	10.760	-2334.6
3	17.80	-174.9	7.00	49.32	2.00	0.9	-174.9	0.0083	0.000	3.529	5.800	-1261.6
4	26.53	-8.9	7.00	49.32	2.00	0.9	-8.8	0.0004	0.000	3.529	5.800	-1261.6
5	35.27	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	3.529	5.800	-1261.6
6	44.00	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	0.000	5.800	-1261.6
7	52.73	0.0	7.00	49.32	2.00	0.9	-0.0	0.0000	0.000	3.529	5.800	-1261.6
8	61.47	-8.8	7.00	49.32	2.00	0.9	-8.8	0.0004	0.000	3.529	5.800	-1261.6
9	70.20	-174.9	7.00	49.32	2.00	0.9	-174.9	0.0083	0.000	3.529	5.800	-1261.6
10	78.93	-918.4	7.00	50.03	2.00	0.9	-918.4	0.0430	0.000	4.137	10.760	-2334.6
11	88.00	-2298.6	7.00	50.03	2.00	0.9	-2298.6	0.1100	0.000	10.588	10.760	-2334.6

(b) POSITIVE MOMENTS AT PIERS

NONE



PB - Orange

Sheet # DS-39

Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

By PB

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DESIGN SUMMARY**Span: 2, Beam: 2, Interior beam**

Beam type:

I-Girder, AASHTO-III

Precast Length, ft 87.33

Release Length, ft 87.33

Strand Pattern: Straight/Draped Depr. Point: 0.40 L

Strand: 1/2-270K-LL

Strand Es, ksi: 28500.0

No. of strands: 44

Draped: 6

Straight: 38

Concrete Strength:

f'ci: 7.0 ksi

f'c: 9.5 ksi

f'ct: 4.0 ksi

Initial losses: 9.60 %%

Final losses: 22.06 %%

Specification**Allowable Computed Location Status**

Release Stresses (ksi) (Art. 5.9.4.1)

Precast Bot (compression) 4.200 4.167 Trans OK

Precast Top w/ no reinf. (tension) -0.200 -0.198 Trans

Precast Top w/ reinf. (tension) -0.635

Strength I (Art. 3.4.1, 5.7.3.1.1)

Provided Required Location Status

Ult. Moment (k.ft) 6665.10 4064.55 Midspan OK

Strength II (Art. 3.4.1, 5.7.2.9.1)

Provided Required Location Status

Ult. Moment (k.ft) 6665.10 4000.43 Midspan OK

Debonding Limits (Art. 5.11.4.3)

Allowable Computed Status

Max. Debond per Row 40.00 % 0.00 % OK

Max. Debond Total 25.00 % 0.00 % OK

Positive Moment Envelope Stresses (ksi) (Art. 3.4.1 and 5.9.4.2)



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Job # CN1234

Program: LEAP® CONSPAN® V8i (SELECTseries 1)

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Specification	Allow	Final 1 Comp	Loc.	Allow	Final 2 Comp	Loc.	Allow	Final 3 Comp	Loc.
Service I Limit State - Compressive Stresses Only									
Precast Top	5.700	3.031	Midspan	4.275	2.765	Midspan			
Precast Bot	5.700	3.577	Transfer	4.275	3.665	Transfer			
Service III Limit State - Tensile Stresses Only									
Precast Top	-0.586	-0.114	Bearing						
Precast Bot	-0.586	0.185	Midspan						
Fatigue I Limit State - Compressive Stresses Only									
Precast Top							3.800	1.503	Midspan
Precast Bot							3.800	1.719	Transfer

Negative Moment Envelope Stresses (ksi) (Art. 3.4.1 and 5.9.4.2)

Specification	Allow	Final 1 Comp	Loc.	Allow	Final 2 Comp	Loc.	Allow	Final 3 Comp	Loc.
Service I Limit State - Compressive Stresses Only									
Precast Top	5.700	2.740	Midspan	4.275	2.765	Midspan			
Precast Bot	5.700	4.493	Transfer	4.275	3.671	Transfer			
Service III Limit State - Tensile Stresses Only									
Precast Top	-0.586	-0.331	Bearing						
Precast Bot	-0.586	1.060	Midspan						
Fatigue I Limit State - Compressive Stresses Only									
Precast Top							3.800	1.374	Midspan
Precast Bot							3.800	2.177	Transfer

CAMBER / DEFLECTION: (PCI Design Handbook - 4th Ed.- Table 4.6.2)**0.5 x L = 43.17 ft**

	Release	Mult	Erection	Mult	Final
Prestress	3.557	1.80	6.403	2.20	7.826
Self Wt.	-1.200	1.85	-2.221	2.40	-2.881
Deck + Haunch			-1.661	2.30	-3.820
DL-Prec. (DC)			-0.245	3.00	-0.734
Diaphragm			-0.008	3.00	-0.025
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.059	3.00	-0.178
DL-Comp. (DW)			-0.046	3.00	-0.138
Live Load					-0.289
Total	2.357		2.164		-0.237

Positive values indicate upward deflection.