

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO.
F.A.I. 39	50-4B	LASALLE	233		208
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	

Contract # 66586

313 SHEETS

Properties	0.3 Span 42	Pier 42	0.6 Span 43
Is	(in4) 78987	263312	153548
Ic(n)	(in4) 198046	-----	351654
Ic(3n)	(in4) 144525	-----	249871
Ss	(in3) 1620	5240	3600
Sc(n)	(in3) 2433	-----	4876
Sc(3n)	(in3) 2165	-----	4384
$\bar{D}$	(k/ft) 1.267	1.950	1.417
M $\bar{D}$	(k-ft) 1018	9313	5092
S $\bar{D}$	(k/ft) 0.380	-----	0.380
Ms $\bar{D}$	(k-ft) 408	-----	1445
M $\bar{L}$	(k-ft) 1556	2825	3192
M (Imp)	(k-ft) 279	454	466
$^5_3(M \bar{L} + M (Imp))$	(k-ft) 3064	5477	6108
* Mu	(k-ft) 8641	-----	20237
Ma	(k-ft) 5837	19227	16440
fs $\bar{D}$ (non-composite)	(ksi) 7.5	21.3	17.0
fs $\bar{D}$ (composite)	(ksi) 2.3	-----	4.0
fs $^5_3(M \bar{L} + M (Imp))$	(ksi) 15.1	12.5	15.0
fs (Overload)	(ksi) 24.9	33.9	36.0
** fs (Total)	(ksi) -----	44.0	-----
VR	(k) 79.7	-----	91.5

Properties	0.3 Span 42	Pier 42	0.6 Span 43
Is	(in4) 82482	263312	153548
Ic(n)	(in4) 207906	-----	351654
Ic(3n)	(in4) 151120	-----	249871
Ss	(in3) 1726	5240	3600
Sc(n)	(in3) 2574	-----	4876
Sc(3n)	(in3) 2294	-----	4384
$\bar{D}$	(k/ft) 1.273	1.950	1.417
M $\bar{D}$	(k-ft) 1223	9473	5040
S $\bar{D}$	(k/ft) 0.380	-----	0.380
Ms $\bar{D}$	(k-ft) 467	-----	1434
M $\bar{L}$	(k-ft) 1623	2866	3197
M (Imp)	(k-ft) 285	457	466
$^5_3(M \bar{L} + M (Imp))$	(k-ft) 3187	5549	6117
* Mu	(k-ft) 8891	-----	20175
Ma	(k-ft) 6340	19528	16368
fs $\bar{D}$ (non-composite)	(ksi) 8.5	21.7	16.8
fs $\bar{D}$ (composite)	(ksi) 2.4	-----	3.9
fs $^5_3(M \bar{L} + M (Imp))$	(ksi) 14.9	12.7	15.1
fs (Overload)	(ksi) 25.8	34.4	35.8
** fs (Total)	(ksi) -----	44.7	-----
VR	(k) 79.2	-----	91.8

Properties	0.4 Span 42	Pier 42	0.6 Span 43
Is	(in4) 85842	263312	153548
Ic(n)	(in4) 217617	-----	351654
Ic(3n)	(in4) 157544	-----	249871
Ss	(in3) 1831	5240	3600
Sc(n)	(in3) 2715	-----	4876
Sc(3n)	(in3) 2423	-----	4384
$\bar{D}$	(k/ft) 1.278	1.950	1.417
M $\bar{D}$	(k-ft) 1219	9644	4984
S $\bar{D}$	(k/ft) 0.380	-----	0.380
Ms $\bar{D}$	(k-ft) 498	-----	1421
M $\bar{L}$	(k-ft) 1871	2903	3206
M (Imp)	(k-ft) 323	459	468
$^5_3(M \bar{L} + M (Imp))$	(k-ft) 3664	5615	6136
* Mu	(k-ft) 9161	-----	20116
Ma	(k-ft) 6995	19837	16303
fs $\bar{D}$ (non-composite)	(ksi) 8.0	22.1	16.6
fs $\bar{D}$ (composite)	(ksi) 2.5	-----	3.9
fs $^5_3(M \bar{L} + M (Imp))$	(ksi) 16.2	12.9	15.1
fs (Overload)	(ksi) 26.6	34.9	35.6
** fs (Total)	(ksi) -----	45.4	-----
VR	(k) 78.8	-----	92.3

Properties	Pier 41	Pier 42	Pier 43
R $\bar{D}$	(k) 68.9	442.4	152.2
R $\bar{L}$	(k) 59.7	147.3	74.0
Imp.	(k) 10.7	14.8	10.8
R (Total)	(k) 139.3	604.5	237.0

Properties	Pier 41	Pier 42	Pier 43
R $\bar{D}$	(k) 74.9	447.0	151.5
R $\bar{L}$	(k) 59.9	148.6	74.0
Imp.	(k) 10.5	14.8	10.8
R (Total)	(k) 145.3	610.5	236.3

Properties	Pier 41	Pier 42	Pier 43
R $\bar{D}$	(k) 80.7	451.9	150.7
R $\bar{L}$	(k) 60.3	150.0	74.1
Imp.	(k) 10.4	14.8	10.8
R (Total)	(k) 151.3	616.7	235.6

**NOTES:**

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. See AASHTO 10.38.

VR is the maximum live load + impact shear range within the composite portion of the span.

Ma (Applied Moment) =  $1.3[M \bar{D} + Ms \bar{D} + ^5_3(M \bar{L} + M (Imp))]$ .

The plastic moment capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.

fs (Overload) is the sum of the stresses due to  $M \bar{D} + Ms \bar{D} + ^5_3(M \bar{L} + M (Imp))$ .

fs (Total) is the sum of the stresses due to  $1.3[M \bar{D} + Ms \bar{D} + ^5_3(M \bar{L} + M (Imp))]$ .

M  $\bar{D}$  - Moment due to dead loads on non-composite section.

Ms  $\bar{D}$  - Moment due to dead loads on composite section.

M  $\bar{L}$  - Moment due to live load on non-composite or composite section.

M (Imp) - Moment due to live load impact on non-composite or composite section.

\* Compact, Braced section.

\*\* Non-Compact section.

DESIGNED -	KWS
CHECKED -	AJK
DRAWN -	VH
CHECKED -	MRB

**benesch**

alfred benesch & company  
Engineers • Surveyors • Planners  
205 North Michigan Avenue, Suite 2400  
Chicago, Illinois 60601  
312-665-0450  
Job # 3856

**STEEL PLATE GIRDER TABLES - 8 OF 9**  
**ABRAHAM LINCOLN MEMORIAL BRIDGE OVER**  
**THE ILLINOIS RIVER (PUBLIC WATERS)**

**F.A.I. ROUTE 39 SEC. (50-4B) BR**

**LASALLE COUNTY**

**STATION 863+16.00**

**STRUCTURE NO. 050-0191 (SB & NB)**

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