

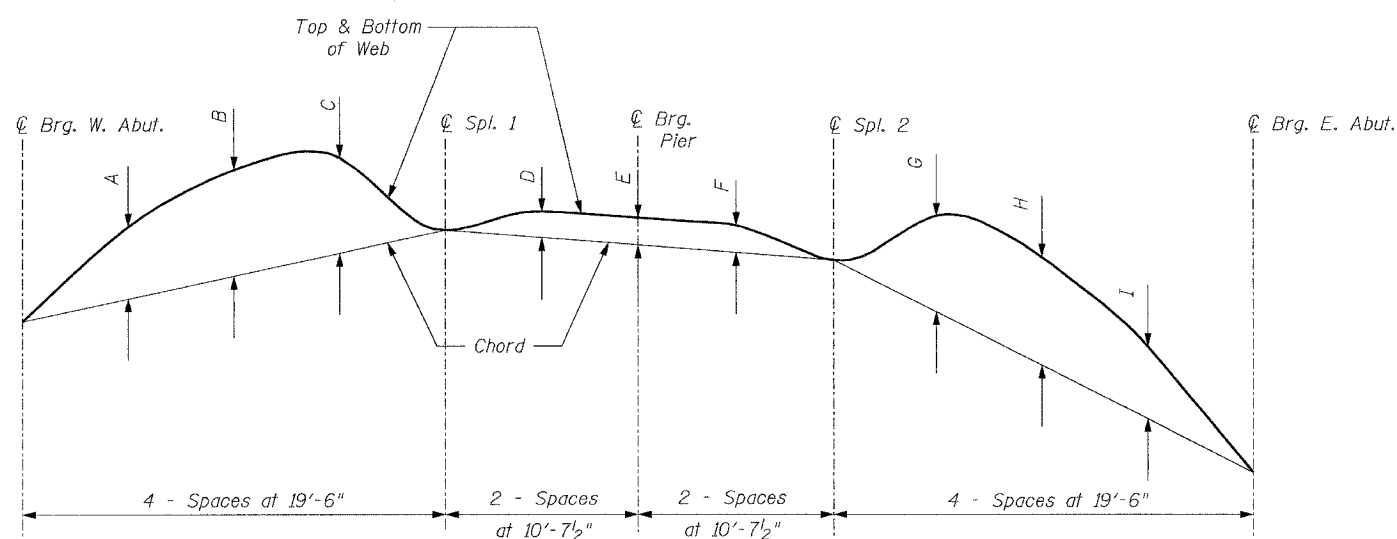
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 3578	1327 B	COOK	108	44
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 16
35 SHEETS

TOP OF WEB ELEVATIONS

(For Fabrication Only)

GIRDER NO.	℄ BRG. W. ABUT.	℄ SPLICE 1	℄ BRG. PIER	℄ SPLICE 2	℄ BRG. E. ABUT.
1	700.976	701.076	701.059	700.965	700.461
2	701.052	701.188	701.190	701.101	700.647
3	701.124	701.301	701.317	701.238	700.830
4	701.191	701.412	701.440	701.373	701.008
5	701.255	701.520	701.560	701.504	701.183
6	701.316	701.623	701.675	701.632	701.354
7	701.372	701.725	701.787	701.757	701.521



CAMBER DIAGRAM

Girder	A	B	C	D	E	F	G	H	I
1	1 ¹³ / ₁₆ "	2 ¹ / ₁₆ "	2 ¹ / ₂ "	1 ¹ / ₂ "	7 ¹ / ₁₆ "	1 ¹ / ₂ "	2 ¹ / ₂ "	2 ¹ / ₁₆ "	1 ¹³ / ₁₆ "
2-7	1 ⁵ / ₈ "	2 ³ / ₈ "	2 ¹ / ₄ "	9 ¹ / ₁₆ "	9 ¹ / ₁₆ "	9 ¹ / ₁₆ "	2 ¹ / ₄ "	2 ³ / ₈ "	1 ⁵ / ₈ "

CAMBER TABLE

	GIRDER MOMENT TABLE			
	GIRDER 1		INTERIOR GIRDER	
	0.4 Sp. 1	Pier	0.4 Sp. 1	Pier
I_s (in ⁴)	17,131	30,344	17,131	30,344
I_c (in ⁴)	48,774	-	42,955	-
I_c (3n) (in ⁴)	37,979	-	30,808	-
S_s (in ³)	741	1190	741	1190
S_c (in ³)	1114	-	1050	-
S_c (3n) (in ³)	1003	-	946	-
Z (in ³)	-	-	-	-
ϕ (K/ft.)	0.98	2.18	0.75	1.24
$M\phi$ (K)	594	2666	455	1615
$s\phi$ (K/ft.)	* 1.20	-	0.49	-
$Ms\phi$ (K)	917	-	365	-
$M\phi$ (K)	658	500	653	522
M (Imp) (K)	145	110	144	115
$\phi_3(M\phi + I)$ (K)	1338	1017	1328	1062
Ma (K)	3704	4788	2792	3480
Mu (K)	4122	-	4079	-
$fs\phi$ non-comp (k.s.i.)	9.6	26.9	7.4	16.3
$fs\phi$ (comp) (k.s.i.)	11.0	-	4.6	-
$fs\phi_3(\phi + I)$ (k.s.i.)	14.4	10.3	15.2	10.7
fs (Overload) (k.s.i.)	35.0	37.2	27.2	27.0
fs (Total) (k.s.i.)	-	48.4	-	35.1
VR (K)	95.7	-	95.9	-

*Bridge designed for an additional $s\phi$ of 1.27 K/Ft from a future decorative north facade, applied along the north edge of deck. Girder 1 designed for 0.7 K/Ft of this load.

	REACTION TABLE			
	GIRDER 1		INTERIOR GIRDER	
	Abut.	Pier	Abut.	Pier
$R\phi$ (K)	81.3	270.1	45.2	155.6
$R\phi$ (K)	33.2	53.6	33.2	53.9
Imp. (K)	7.3	11.8	7.3	11.9
R (Total) (K)	121.8	335.5	85.7	221.4

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

I_c and S_c are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

I_c (3n) and S_c (3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads.

VR is the maximum Live Load + Impact shear range in span.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

Ma (Applied Moment) = $1.3[M\phi + Ms\phi + \phi_3(M\phi + I)]$.

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 $M\phi + Ms\phi + \phi_3(M\phi + I)$.

fs (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\phi + Ms\phi + \phi_3(M\phi + I)]$.

DESIGNED	SRT
CHECKED	JJI
DRAWN	GM
CHECKED	JJI

B Bollinger, Lach & Associates, Inc.

FOR ERECTION ONLY.

GIRDER DETAILS
 IL 7 (SOUTHWEST HIGHWAY) OVER
 US 45 (LA GRANGE ROAD)
 F.A.U. ROUTE 3578 SECTION 1327B
 COOK COUNTY
 STA. 1516+85.79
 STRUCTURE NUMBER 016-2847

I-2-G

10-22-04