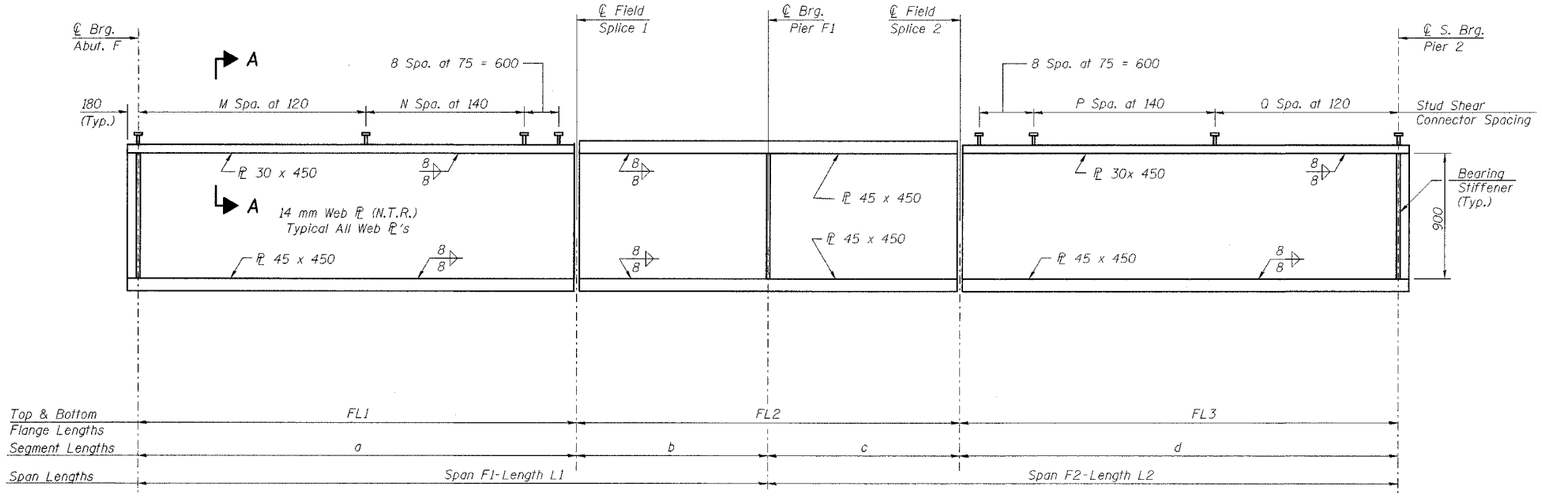
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 80/94	*	COOK	90	50
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 35
42 SHEETS

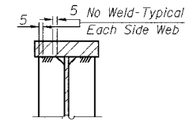
* 2004-133F
CONTRACT NO. 62898

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

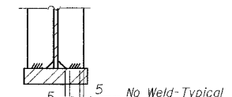


GIRDER ELEVATION

(All PLates shall be N.T.R.)
"N.T.R." denotes notch toughness requirements are applicable



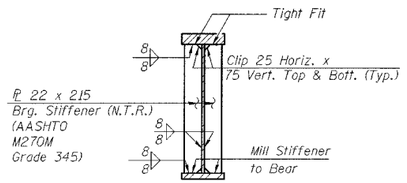
TOP FLANGE



BOTTOM FLANGE

STIFFENER TO FLANGE WELD

Typical for Bearing Stiffeners



AT PIERS F1 & 2 & ABUTMENT F

BEARING STIFFENERS

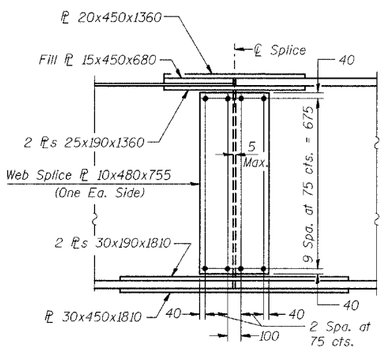
SHEAR CONNECTOR NUMBERS

"NOT IN CONTRACT"

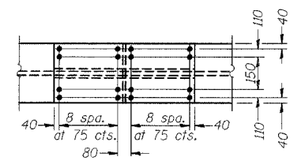
Girder	Span F1		Span F2	
	M	N	P	Q
1	64	93	100	69
2	65	94	98	68
3	65	94	95	66
4	66	95	93	65
5	67	97	90	64
6	67	97	88	63

GIRDER TOP AND BOTTOM FLANGE LENGTHS (Meters)

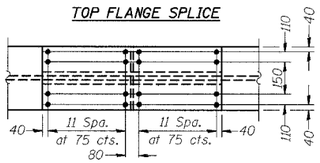
Girder	FL1	FL2	FL3
1	22.431	8.072	23.945
2	22.590	8.129	23.475
3	22.749	8.186	23.006
4	22.908	8.243	22.538
5	23.067	8.301	22.068
6	23.226	8.358	21.599



WEB SPLICE

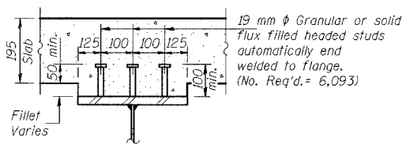


TOP FLANGE SPLICE



BOTTOM FLANGE SPLICE

FIELD SPLICE 1 & 2



SECTION A-A

"NOT IN CONTRACT"

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp.F1	Pier	0.6 Sp.F2
Is	(10^6 mm⁴)	8,116	9,885	8,116
Ic (n)	(10^6 mm⁴)	19,602	-	19,602
Ic (3n)	(10^6 mm⁴)	13,621	-	13,621
Ss	(10^3 mm³)	19,075	19,976	19,075
Sc (n)	(10^3 mm³)	25,859	-	25,859
Sc (3n)	(10^3 mm³)	23,270	-	23,270
Sbf	(10^3 mm³)	1,516	-	1,516
wℓ	(kN/m)	12.6	17.4	12.6
Mℓ	(kN·m)	701	1,751	730
sℓ	(kN/m)	5.3	-	5.3
Msℓ	(kN·m)	309	-	346
M4	(kN·m)	1,153	911	1,114
M (Imp)	(kN·m)	289	228	279
5/3[M4+M(Imp)]	(kN·m)	2,403	1,897	2,322
Ma	(kN·m)	4,436	4,742	4,417
Mbf	(kN·m)	3	-	-
fsℓ (non-comp)	(MPa)	37	88	38
fsℓ (comp)	(MPa)	13	-	15
fs 5/3[M4+M(Imp)]	(MPa)	93	95	90
ft	(MPa)	1.8	-	-
fs(Overload)	(MPa)	143	183	143
fs (Total)	(MPa)	186	238	186
Fcr(Overload)	(MPa)	327	223	327
VR	(kN)	498	-	498
Fcr	(MPa)	345	305	345

INTERIOR GIRDER REACTION TABLE

		Ramp F Abut.	Pier F1	Pier 2
Rℓ	(kN)	180	605	198
R4	(kN)	225	285	208
Imp.	(kN)	67	86	62
R (Total)	(kN)	472	976	468

Fcr - Critical average flange stress (smaller of Fcr1 or Fcr2 for partially braced flanges and Fy for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4).

Fcr (Overload) - Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and 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 load (see AASHTO 10.38).

VR is the maximum 4 + impact shear range in span.

Ma (Applied Moment) = 1.3 [Mℓ + Msℓ + 5/3 (M4 + M (Imp))]

fs (Overload) is the sum of stresses due to Mℓ + Msℓ + 5/3 (M4 + M (Imp))

fs (Total) is the sum of stresses due to 1.3 [Mℓ + Msℓ + 5/3 (M4 + M (Imp))]

Sbf is the section modulus for one flange plate for lateral flange bending.

Mbf is the lateral bending moment for flange plate (factored).

f_f is the calculated normal stress at the edge of flange due to lateral bending (factored).

M4 and R4 include the effects of centrifugal force and superelevation.

Notes:

1. For Span Lengths L1, L2 & Segment Lengths a thru d, see Sheet No. 34 of 42.
2. All Flange Plates & Web Plates shall be AASHTO M270M Grade 345.
3. All Field Splice Plates, except Fill Plates, shall be AASHTO M270M Grade 345 and shall meet the Notch Toughness Requirements (N.T.R.).
4. All dimensions are in millimeters (mm) except noted otherwise.

DESIGNED	ML
CHECKED	MAS
DRAWN	LK
CHECKED	MAS

ILLINOIS DEPARTMENT OF TRANSPORTATION
I-94 EAST BOUND / IL 394 SOUTH BOUND
GIRDER ELEVATION & DETAILS
SPAN 1F & 2F - UNIT 3
RAMP F OVER THORN CREEK
F.A.P. 332 SECTION 2004-133F
COOK COUNTY
STA. 440+704.350 STRUCTURE NO. 016-2845
DATE 05/16/05
SCALE ---

HNTB

Ikelitz
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