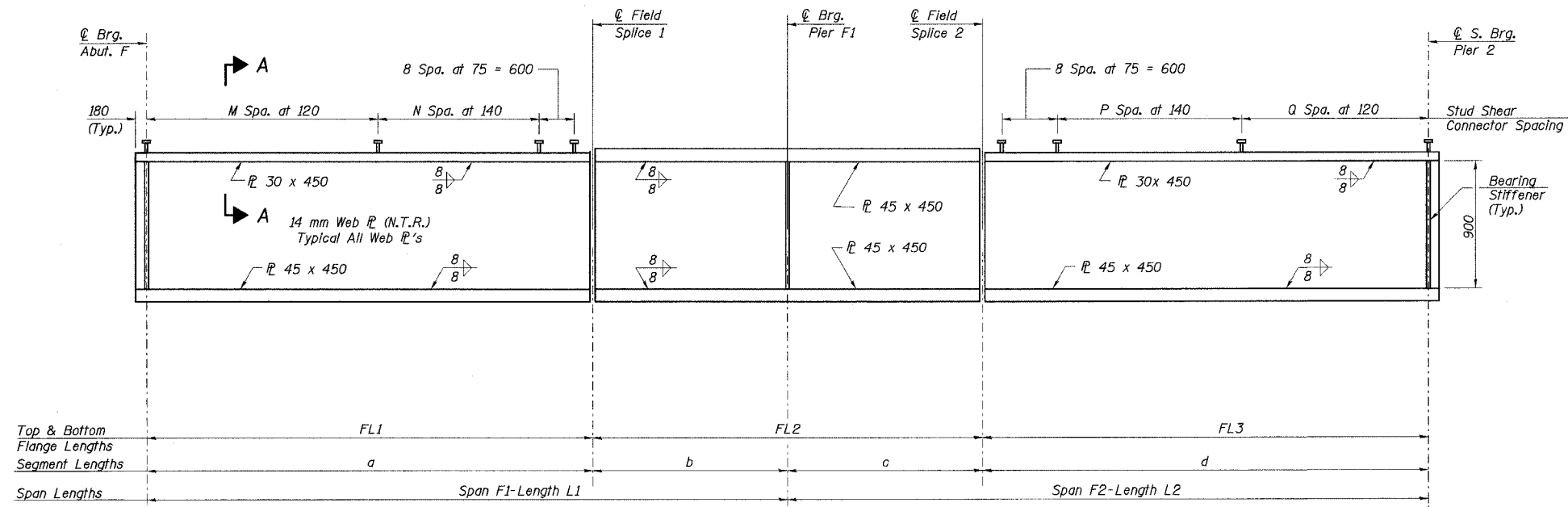


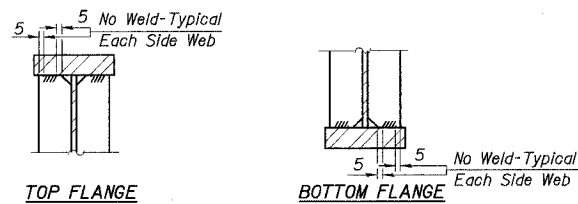
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 53 91 SHEETS
F. A. I. 80/94	.	COOK	870	567	
ILLINOIS FED. AID PROJECT-					



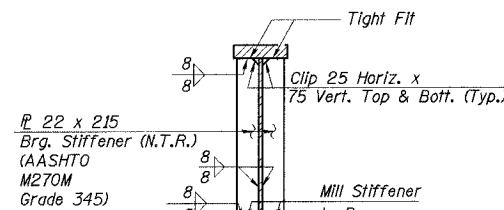
**GIRDER ELEVATION**

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



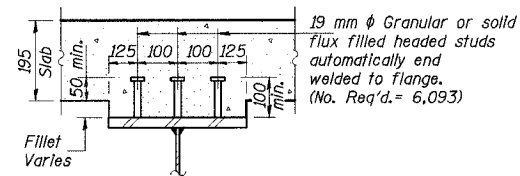
**STIFFENER TO FLANGE WELD**

Typical for Bearing Stiffeners



**AT PIERS F1 & 2 & ABUTMENT F**

**BEARING STIFFENERS**



Notes:

- For Span Lengths L1, L2 & Segment Lengths a thru d, see Sheet No. 52 of 91.
- All Flange Plates & Web Plates shall be AASHTO M270M Grade 345.
- All Field Splice Plates, except Fill Plates, shall be AASHTO M270M Grade 345 and shall meet the Notch Toughness Requirements (N.T.R.).
- All dimensions are in millimeters (mm) except noted otherwise.

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp.F1	Pier	0.6 Sp.F2
Is	(10 <sup>6</sup> mm <sup>4</sup> )	8,116	9,885	8,116
Ic (n)	(10 <sup>6</sup> mm <sup>4</sup> )	19,602	-	19,602
Ic (3n)	(10 <sup>6</sup> mm <sup>4</sup> )	13,621	-	13,621
Ss	(10 <sup>3</sup> mm <sup>3</sup> )	19,075	19,976	19,075
Sc (n)	(10 <sup>3</sup> mm <sup>3</sup> )	25,859	-	25,859
Sc (3n)	(10 <sup>3</sup> mm <sup>3</sup> )	23,270	-	23,270
Sbi	(10 <sup>3</sup> mm <sup>3</sup> )	1,516	-	1,516
Q	(kN/m)	12.6	17.4	12.6
M <sub>l</sub>	(kN-m)	701	1,751	730
s <sub>l</sub>	(kN/m)	5.3	-	5.3
M <sub>s</sub>	(kN-m)	309	-	346
M <sub>t</sub>	(kN-m)	1,153	911	1,114
M (Imp)	(kN-m)	289	228	279
S <sub>2</sub> [M <sub>t</sub> +M(Imp)]	(kN-m)	2,403	1,897	2,322
Ma	(kN-m)	4,436	4,742	4,417
Mbi	(kN-m)	3	-	-
fs <sub>l</sub> (non-comp)	(MPa)	37	88	38
fs <sub>l</sub> (comp)	(MPa)	13	-	15
fs <sub>2</sub> [M <sub>t</sub> +M(Imp)]	(MPa)	93	95	90
fi	(MPa)	1.8	-	-
fs (Overload)	(MPa)	143	183	143
fs (Total)	(MPa)	186	238	186
For (Overload)	(MPa)	327	223	327
VR	(kN)	498	-	498
For	(MPa)	345	305	345

INTERIOR GIRDER REACTION TABLE

	Ramp F Abut.	Pier F1	Pier 2	
R <sub>l</sub>	(kN)	180	605	198
R <sub>t</sub>	(kN)	225	285	208
Imp.	(kN)	67	86	62
R (Total)	(kN)	472	976	468

For - Critical average flange stress (smaller of For1 or For2 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).

For (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 impact shear range in span.

Ma (Applied Moment) = 1.3 [M<sub>l</sub> + Ms<sub>l</sub> + 5/3 (M<sub>t</sub> + M (Imp))]

fs (Overload) is the sum of stresses due to M<sub>l</sub> + Ms<sub>l</sub> + 5/3 (M<sub>t</sub> + M (Imp))

fs (Total) is the sum of stresses due to 1.3 [M<sub>l</sub> + Ms<sub>l</sub> + 5/3 (M<sub>t</sub> + M (Imp))]

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

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

f<sub>l</sub> is the calculated normal stress at the edge of flange due to lateral bending (factored).

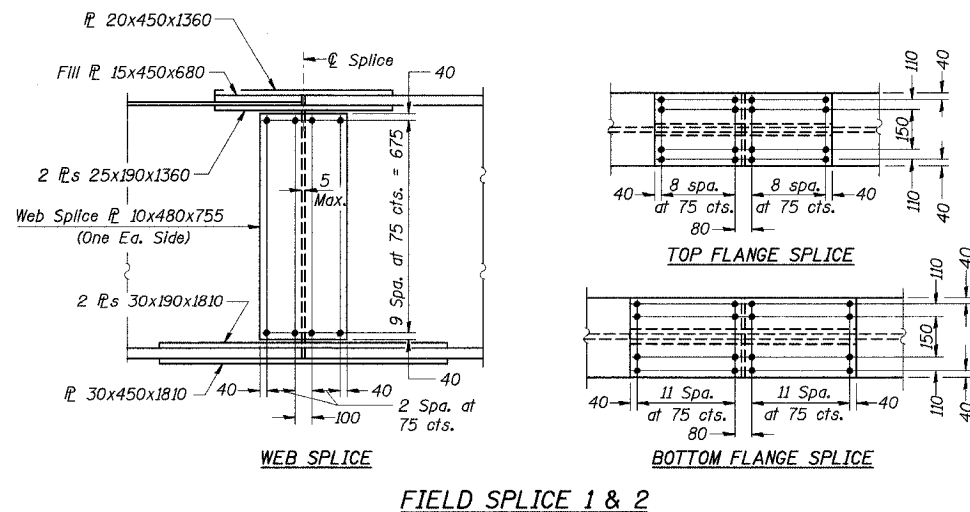
M<sub>t</sub> and R<sub>t</sub> include the effects of centrifugal force and superelevation.

**SHEAR CONNECTOR NUMBERS**

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
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



DESIGNED	ML
CHECKED	MAS
DRAWN	LK
CHECKED	MAS

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ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-94 EAST BOUND / IL 394 SOUTH BOUND  
**GIRDER ELEVATION & DETAILS**  
SPAN F1 & F2 - UNIT 3  
RAMP F OVER THORN CREEK  
F.A.P. 332 SECTION (0203.1 & 0312-708W) R-3  
COOK COUNTY  
STA. 440+704.350 STRUCTURE NO. 016-2845  
DATE JUL 18, 2005  
SCALE ---  
**HNTB**