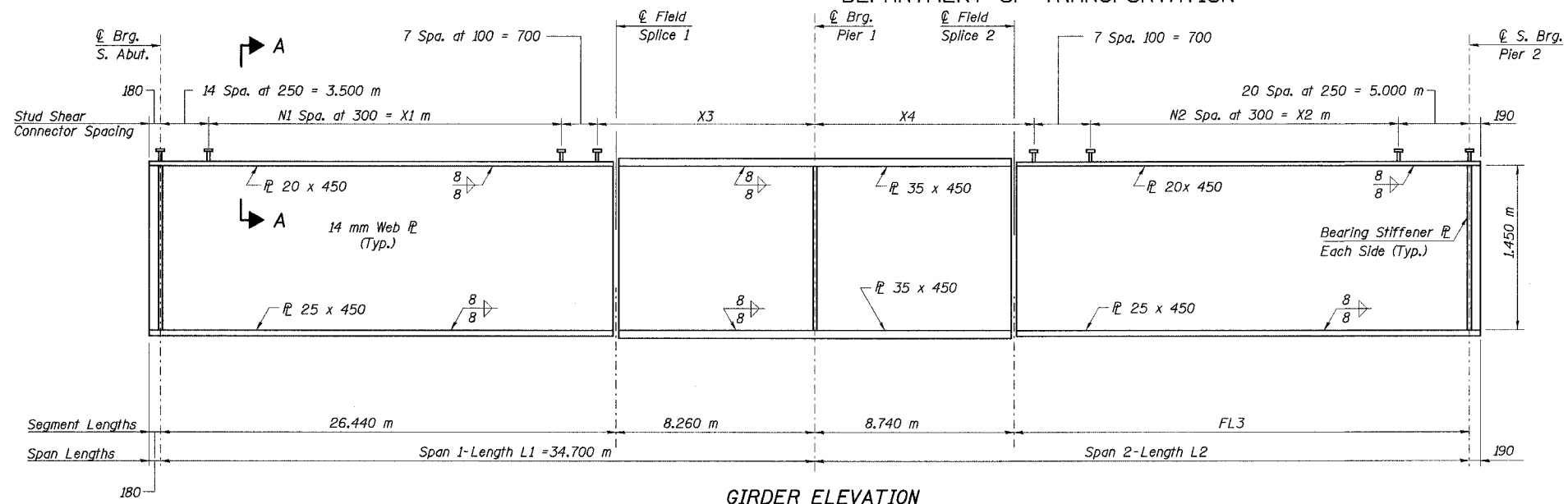


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 50
F. A. I. 80/94	.	COOK	870	564	91 SHEETS
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT-			
102033.1 & 0312-708W R-3		CONTRACT NO. 62108			



**GIRDER ELEVATION**

(All Plates AASHTO M270M Grade 345, N.T.R.)  
"N.T.R." denotes notch toughness requirements are applicable

**INTERIOR GIRDER MOMENT TABLE**

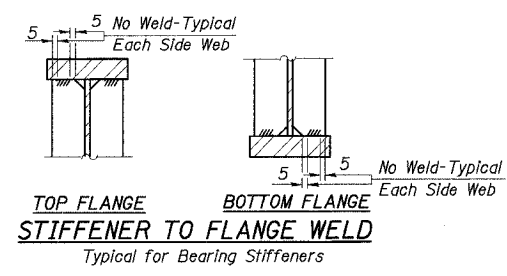
		0.4 Sp.1	Pier	0.6 Sp.2
$I_s$	(10 <sup>6</sup> mm <sup>4</sup> )	14,469	20,926	14,469
$I_c(n)$	(10 <sup>6</sup> mm <sup>4</sup> )	33,450	---	33,450
$I_c(3n)$	(10 <sup>6</sup> mm <sup>4</sup> )	24,487	---	24,487
$S_s$	(10 <sup>3</sup> mm <sup>3</sup> )	20,421	27,534	20,421
$S_c(n)$	(10 <sup>3</sup> mm <sup>3</sup> )	27,501	---	27,501
$S_c(3n)$	(10 <sup>3</sup> mm <sup>3</sup> )	25,053	---	25,053
$Z$	(10 <sup>3</sup> mm <sup>3</sup> )	---	30,747	---
$D$	(kN·m)	17.51	27.42	17.51
$M_Q$	(kN·m)	1,215	4,183	1,503
$s_Q$	(kN·m)	8.91	---	8.91
$M_S$	(kN·m)	687	---	848
$M_L$	(kN·m)	1,652	1,435	1,769
$M(Imp)$	(kN·m)	347	301	371
$F_3[M_L + M(Imp)]$	(kN·m)	3,332	2,893	3,567
$M_a$	(kN·m)	6,804	9,199	7,693
$M_u$	(kN·m)	8,544	---	8,544
$f_s(Q, non-comp)$	(MPa)	59	152	74
$f_s(Q, comp)$	(MPa)	27	---	34
$f_s(F_3, [M_L + M(Imp)])$	(MPa)	121	105	130
$f_s(Overload)$	(MPa)	207	257	238
$f_s(Total)$	(MPa)	---	334	---
$VR$	(kN)	295	---	302

**SHEAR CONNECTOR NUMBERS**

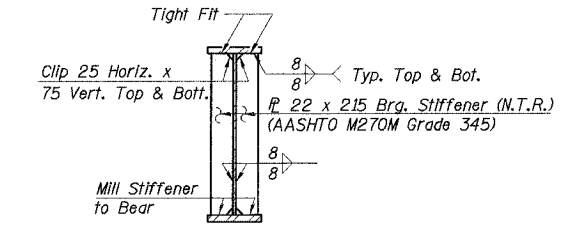
Girder	N1	N2
1	69	76
2	69	72
3	69	69
4	71	66
5	71	62
6	71	59

**SHEAR CONNECTOR LOCATIONS (Meters)**

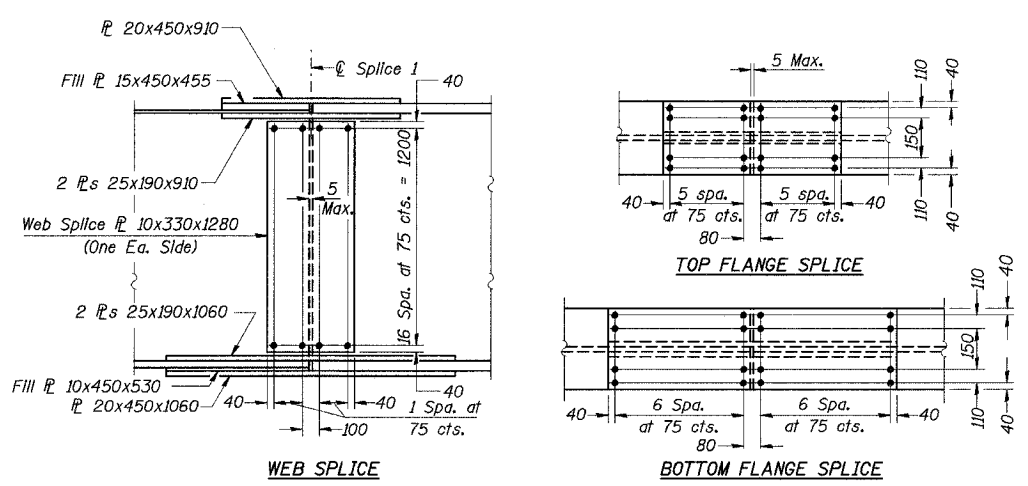
Girder	X1	X2	X3	X4
1	20.700	22.800	9.800	9.344
2	20.700	21.600	9.800	9.543
3	20.700	20.700	9.800	9.442
4	21.300	19.800	9.200	9.341
5	21.300	18.600	9.200	9.540
6	21.300	17.700	9.200	9.439



**TOP FLANGE STIFFENER TO FLANGE WELD**  
Typical for Bearing Stiffeners



**BEARING STIFFENERS**  
(At Piers 1 & 2 & S. Abut.)



**FIELD SPLICE 1 & 2**  
(Splice 1 shown, Splice 2 opposite hand)

- Notes:
- For Dimensions L2 & FL3, see Sheet No. 49 of 91.
  - 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 REACTION TABLE**

	S. Abut.	Pier 1	Pier 2	
$R_Q$	(kN)	310	1,124	353
$R_L$	(kN)	247	453	251
$Imp.$	(kN)	52	63	53
$R(Total)$	(kN)	609	1,640	657

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

$I_c(n)$  and  $S_c(n)$  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 load (see AASHTO 10.38).

$VR$  is the maximum  $L + Impact$  shear range within the composite portion of the span.

$Z$  is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.

The Plastic Moment capacity ( $M_u$ ) is computed according to AASHTO 10.48.1 & 10.50.1.1.

$f_s(Total)$  is the sum of stresses due to  $1.3 [M_Q + M_S + 5/3 (M_L + M(Imp))]$

$f_s(Overload)$  is the sum of the stressed due to  $M_Q + M_S + 5/3 (M_L + M(Imp))$

$M_Q$  - Moment due to dead loads on non-composite section.

$M_S$  - Moment due to dead loads on composite section

$M_L$  - 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

$M_a$  (Applied Moment) =  $1.3 [M_Q + M_S + 5/3 (M_L + M(Imp))]$

Forces in Moment Table are taken from the Girder producing the maximum forces. (Girder 2).

DESIGNED	MEA
CHECKED	JY
DRAWN	LK
CHECKED	JY

ILLINOIS DEPARTMENT OF TRANSPORTATION  
I-94 EAST BOUND / IL 394 SOUTH BOUND  
GIRDER ELEVATION & DETAILS  
SPANS 1 & 2 - UNIT 2  
SB IL ROUTE 394 OVER THORN CREEK  
F.A.P. 332 SECTION (02033.1 & 0312-708W) R-3  
COOK COUNTY  
STA. 440+704.350 STRUCTURE NO. 016-2800  
DATE JUL 18, 2005  
SCALE ---  
**HNTB**

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