STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 9
FAS 1360	65-BR	WOODFORD	39	22	19 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract # 68530

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. 1 0.6 Sp. 3	Pier	0.5 Sp. 2
I_s	(in.^{4})	2850	2850	2850
I_c (n)	(in.^{4})	8265	-	8265
I_c (3n)	(in.^{4})	6183	-	6183
S_s	(in.^{3})	213	213	213
S_c (n)	(in.^{3})	6599	-	6599
S_c (3n)	(in.^{3})	1081	-	1081
ℓ	(k/ft.)	0.676	0.676	0.676
$M\ell$	('k)	112.4	180.3	79.9
$s\ell$	(k/ft.)	0.417	0.417	0.417
$Ms\ell$	('k)	763	94.2	67.0
$M\ell$ (Imp)	('k)	268.6	154.7	274.3
M (Imp)	('k)	77.7	43.8	75.9
$\frac{5}{3}[M\ell+M(Imp)]$	('k)	577.2	330.8	583.7
Ma	('k)	995.7	786.9	949.8
* Mu	('k)	1565.7	-	1832.4
$fs\ell$ non-comp	(k.s.i.)	6.33	10.16	4.50
$fs\ell$ (comp)	(k.s.i.)	3.11	5.30	2.73
$fs\frac{5}{3}(\ell+Imp)$	(k.s.i.)	21.38	18.64	21.62
fs (Overload)	(k.s.i.)	30.82	34.10	28.85
** fs (Total)	(k.s.i.)	40.07	44.33	37.51
VR	(k)	37.1	-	37.1

INTERIOR GIRDER REACTION TABLE

		Abut.	Pier
$R\ell$	(k)	20.4	62.2
$R\ell$	(k)	35.5	43.0
Imp.	(k)	10.3	12.4
R Total	(k)	66.2	117.6

* Compact section
** Braced non-compact and partially braced section

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in.^{4} and in.^{3}).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in.^{4} and in.^{3}).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in.^{4} and in.^{3}).

ℓ: Un-factored non-composite dead load (kips/ft.).
$M\ell$: Un-factored moment due to non-composite dead load (kip-ft.).
$s\ell$: Un-factored long-term composite (superimposed) dead load (kips/ft.)
$Ms\ell$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
$M\ell$: Un-factored live load moment (kip-ft.).
M_{Imp}: Un-factored moment due to impact (kip-ft.).
Ma: Factored design moment (kip-ft.).
   $1.3 [M\ell + Ms\ell + \frac{5}{3} (M\ell + M_{Imp})]$
Mu: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
f_s (Overload): Sum of stresses as computed from the moments below (ksi).
   $M\ell + Ms\ell + \frac{5}{3} (M\ell + M_{Imp})$
f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
   $1.3 [M\ell + Ms\ell + \frac{5}{3} (M\ell + M_{Imp})]$
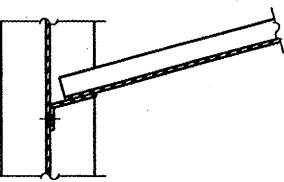VR: Maximum ℓ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

*TOP OF BEAM ELEVATIONS

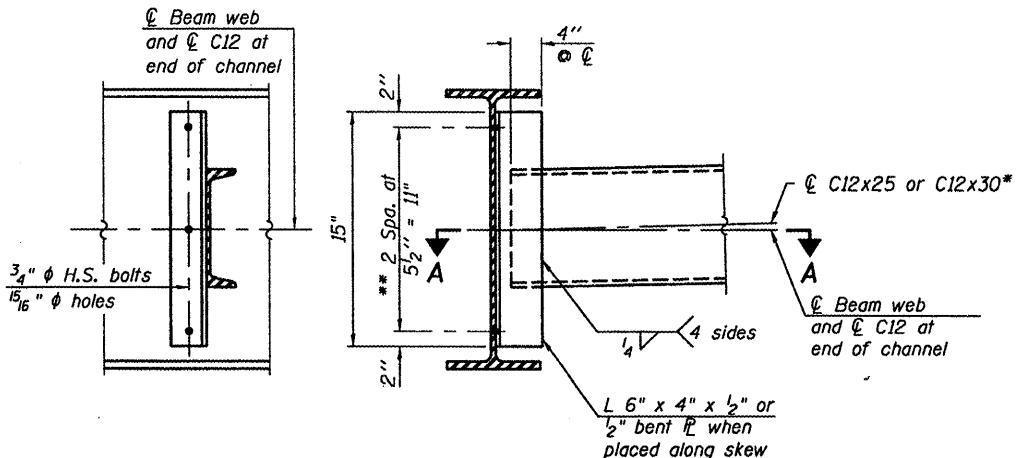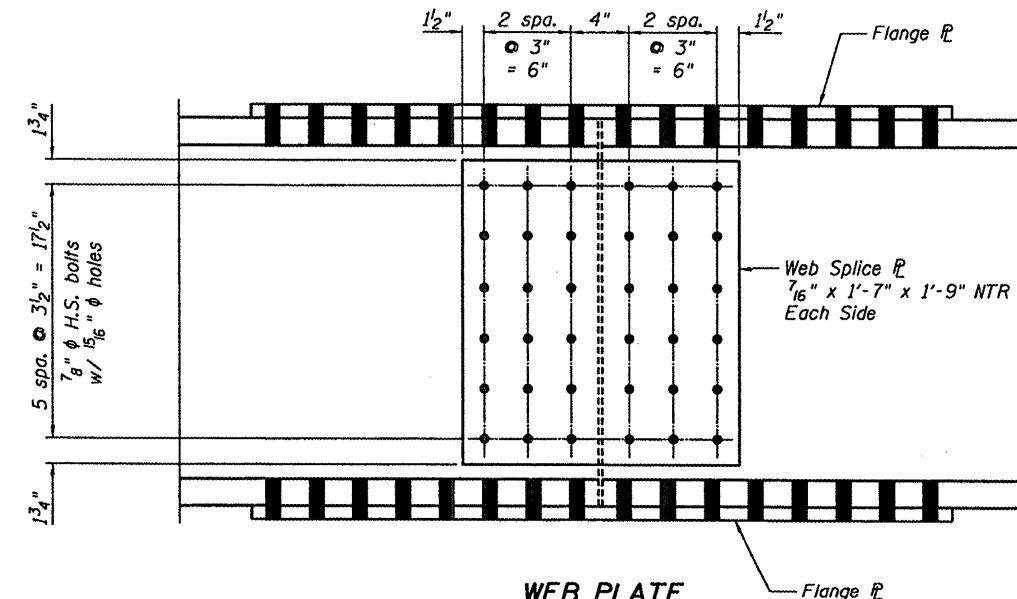| Location	℄ Brg. S. Abut.	℄ Brg. Pier 1	℄ Splice 1	℄ Splice 2	℄ Brg. Pier 2	℄ Brg. N. Abut.
Beam 1 & 6	692.954	692.907	692.898	692.898	692.907	692.954
Beam 2 & 5	963.063	693.016	693.007	693.007	693.016	693.063
Beam 3 & 4	693.156	693.110	693.101	693.101	693.110	693.156

* For fabrication only

SECTION A-A

INTERIOR DIAPHRAGM

Note:
   Two hardened washers required for each set of oversized holes.

* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
** $\frac{3}{4}$" ϕ HS bolts, $\frac{15}{16}$" ϕ holes

Flange Splice
ℝ $\frac{5}{8}$"x10"x4'-0$\frac{1}{4}$" NTR

7 spa. @ 3" = 21"   3$\frac{1}{4}$"   7 spa. @ 3" = 21"
$\frac{7}{8}$" ϕ H.S. bolts w/ $\frac{15}{16}$" ϕ holes

TOP & BOTTOM FLANGE PLATE

Flange ℝ
Web Splice ℝ $\frac{7}{16}$" x 1'-7" x 1'-9" NTR Each Side
Flange ℝ

1$\frac{1}{2}$"   2 spa. @ 3" = 6"   4"   2 spa. @ 3" = 6"   1$\frac{1}{2}$"
5 spa. @ 3$\frac{1}{2}$" = 17$\frac{1}{2}$"
$\frac{7}{8}$" ϕ H.S. bolts w/ $\frac{15}{16}$" ϕ holes

WEB PLATE

DETAIL OF SPLICE

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

All structural steel for splice plates shall be AASHTO M270 Grade 50W.

STRUCTURAL STEEL DETAILS
F.A.S. ROUTE 1360   SEC. 65-BR
IL ROUTE 251 OVER PANTHER CREEK
WOODFORD COUNTY
STATION 1116+87.00
STRUCTURE NO. 102-0081

EFK•Moen, LLC
Civil Engineering Design

DESIGNED	CTW
CHECKED	CDL
DRAWN	DP
CHECKED	CTW