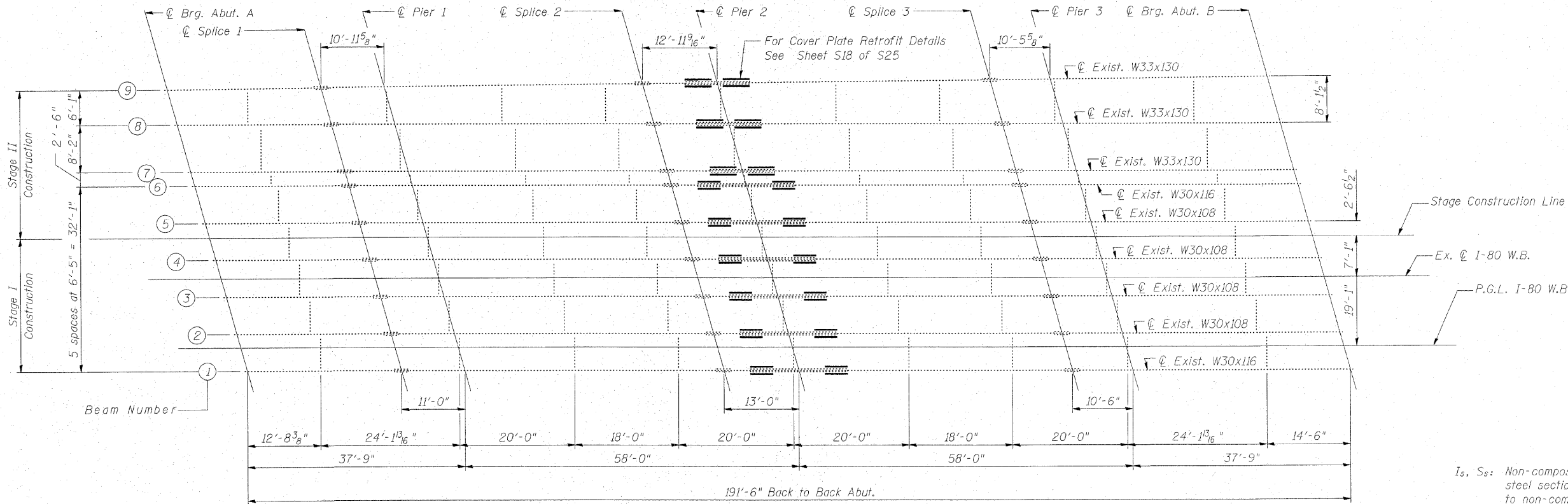


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Sheet S16 of S25

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	81-IHBY-D	ROCK ISLAND	120	45
FED. ROAD DIST. NO. 2		ILLINOIS	FED. AID PROJECT	

Contract # 64C74



FRAMING PLAN
(Westbound bridge is shown. Eastbound bridge is similar.)

INTERIOR GIRDER MOMENT TABLE (FOR BEAMS 1 TO 6)

		0.4 Sp. 1 or 0.6 Sp. 4	Pier 1 or Pier 3	0.5 Sp. 2 or 0.5 Sp. 3	Pier 2
I_s	(in ⁴)	4,470	4,470	4,470	6,373
$I_c(n)$	(in ⁴)	13,204		13,204	
$I_c(3n)$	(in ⁴)	9,729		9,729	
S_s	(in ³)	300	300	300	415
$S_c(n)$	(in ³)	466		466	
$S_c(3n)$	(in ³)	420		420	
Z	(in ³)				
\bar{Q}	(k/')	0.80	0.80	0.80	0.80
$M\bar{Q}$	(k)	64.6	182.0	115.3	265.6
$s\bar{Q}$	(k/')	0.39	0.39	0.39	0.39
$M_s\bar{Q}$	(k)	37.8	73.2	72.9	110.6
$M\bar{L}$	(k)	207.3	140.8	316.7	189.3
M_{imp}	(k)	62.2	40.4	86.5	51.7
$\bar{Q}_s [M\bar{L} + M_{imp}]$	(k)	449.2	302.0	672.2	401.7
M_a	(k)	717.1	724.3	1118.5	1011.3
M_u	(k)	1978.5		1978.5	
$f_s \bar{Q}$ non-comp	(ksi)	2.59	10.21	4.62	10.87
$f_s \bar{Q}$ (comp)	(ksi)	1.08		2.08	
$f_s \bar{Q}_s [M\bar{L} + M_{imp}]$	(ksi)	11.58	12.09	17.32	11.61
f_s (Overload)	(ksi)	15.24	22.30	24.02	22.48
f_s (Total)	(ksi)		28.99		29.22
VR	(k)	49.4		39.4	

INTERIOR GIRDER MOMENT TABLE (FOR BEAMS 7 TO 9)

		0.4 Sp. 1 or 0.6 Sp. 4	Pier 1 or Pier 3	0.5 Sp. 2 or 0.5 Sp. 3	Pier 2
I_s	(in ⁴)	6,710	6,710	6,710	9,293
$I_c(n)$	(in ⁴)	18,480		18,480	
$I_c(3n)$	(in ⁴)	13,852		13,852	
S_s	(in ³)	406	406	406	547
$S_c(n)$	(in ³)	599		599	
$S_c(3n)$	(in ³)	546		546	
Z	(in ³)				
\bar{Q}	(k/')	1.01	1.01	1.01	1.01
$M\bar{Q}$	(k)	79.6	230.8	148.7	318.8
$s\bar{Q}$	(k/')	0.39	0.39	0.39	0.39
$M_s\bar{Q}$	(k)	37.0	75.1	73.8	106.8
$M\bar{L}$	(k)	262.6	183.3	402.0	232.3
M_{imp}	(k)	78.8	52.5	109.8	63.5
$\bar{Q}_s [M\bar{L} + M_{imp}]$	(k)	568.9	393.0	853.1	492.9
M_a	(k)	891.2	908.5	1398.3	1194.2
M_u	(k)	2532.7		2532.7	
$f_s \bar{Q}$ non-comp	(ksi)	2.36	9.05	4.40	9.34
$f_s \bar{Q}$ (comp)	(ksi)	0.81		1.62	
$f_s \bar{Q}_s [M\bar{L} + M_{imp}]$	(ksi)	11.39	11.63	17.03	10.81
f_s (Overload)	(ksi)	14.56	20.68	23.10	20.16
f_s (Total)	(ksi)		26.88		26.19
VR	(k)	61.6		50.1	

INTERIOR GIRDER REACTION TABLE

		Abut.'s	Pier 1, 3, 4 or 6	Pier 2 or 5
R \bar{Q}	(k)	44.3	62.0	73.7
R \bar{L}	(k)	34.8	42.4	42.2
Imp.	(k)	10.4	12.3	11.5
R Total	(k)	89.5	116.7	127.4

INTERIOR GIRDER REACTION TABLE

		Abut.'s	Pier 1, 3, 4 or 6	Pier 2 or 5
R \bar{Q}	(k)	46.8	73.0	85.3
R \bar{L}	(k)	43.2	53.0	52.4
Imp.	(k)	13.0	15.4	14.3
R Total	(k)	102.9	141.4	152.0

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 (in⁴ and in³).

$I_c(n), S_c(n)$: 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 (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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 (in⁴ and in³).

Z: Plastic Section Modulus of the steel section in non-composite areas (in³).

\bar{Q} : Un-factored non-composite dead load (kips/ft.).

$M\bar{Q}$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\bar{Q}$: Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\bar{Q}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\bar{L}$: Un-factored live load moment (kip-ft.).

M_{imp} : Un-factored moment due to impact (kip-ft.).

M_a : Factored design moment (kip-ft.).

M_u : 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).

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).

VR: Maximum $\bar{L} +$ impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

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

Revised: April 8, 2008.

FILES
DATE
TIME



ILLINOIS DEPARTMENT OF TRANSPORTATION
**FRAMING PLAN,
MOMENT AND REACTION TABLES**
INTERSTATE 80 OVER INTERSTATE 88
F.A.I. ROUTE 80 - SECTION 81-IHBY-D
ROCK ISLAND COUNTY
STATION 217+81.50
EB S.N. 081-0012 & WB 081-0013
DRAWN BY: M. Woldezion
CHECKED BY: A. Yargicoglu
DATE: FEBRUARY 27, 2008