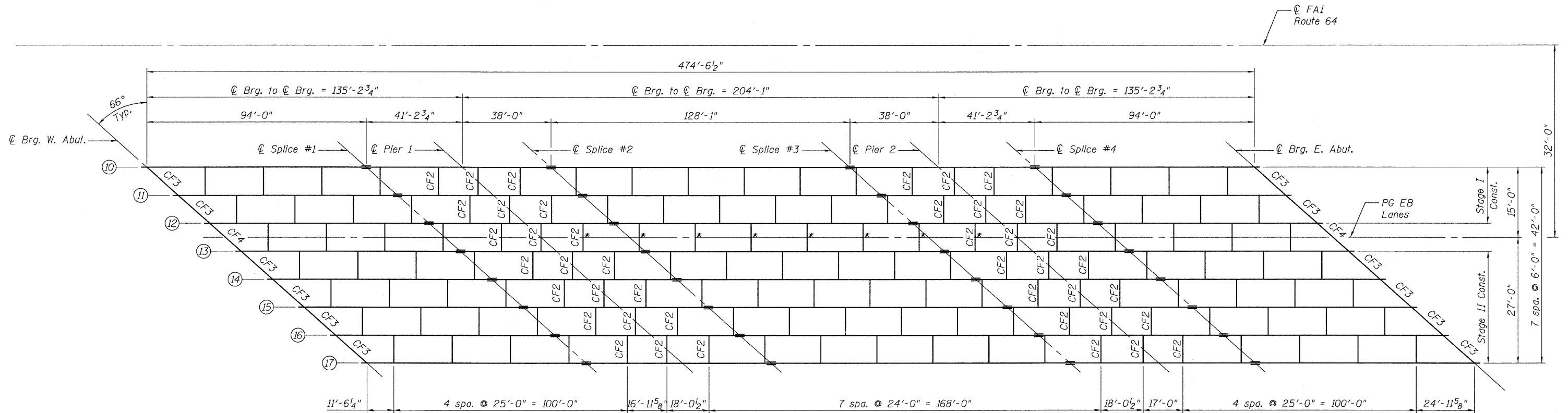


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**EB FRAMING PLAN**

\* Location of temporary articulated bracing see sheet 33 of 59.

- $I_s, S_s$ : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$  (Total-Strength I, and Service II) 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-Strength I, and Service II) 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads ( $in^4$  and  $in^3$ ).
- Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations ( $in^3$ ).
- DC1: Un-factored non-composite dead load (kips/ft.).
- $M_{DC1}$ : Un-factored moment due to non-composite dead load (kip-ft.).
- DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- $M_{DC2}$ : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- $M_{DW}$ : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- $M_L + IM$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- $M_u$  (Strength I): Factored design moment (kip-ft.).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM$
- $\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- $\phi_r M_{nc}$ : Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
- $f_s$  (Service II): Sum of stresses as computed from the moments below (ksi).  
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_L + IM$
- $f_s$  (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM$
- $V_r$ : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	0.5 Sp. 2	Pier 1 & 2
$I_s$	( $in^4$ )	51503	60340	101672
$I_c(n)$	( $in^4$ )	110212	121677	-
$I_c(3n)$	( $in^4$ )	80830	90310	-
$S_s$	( $in^3$ )	1329	1557	2574
$S_c(n)$	( $in^3$ )	1832	2055	-
$S_c(3n)$	( $in^3$ )	1634	1852	-
DC1	( $k/ft$ )	0.87	0.89	1.30
$M_{DC1}$	( $k$ )	687	1581	4490
DC2	( $k/ft$ )	0.30	0.30	-
$M_{DC2}$	( $k$ )	300	666	-
DW	( $k/ft$ )	-	-	-
$M_{DW}$	( $k$ )	-	-	-
$M_L + IM$	( $k$ )	2228	2983	2701
$M_u$ (Strength I)	( $k$ )	5133	8029	10339
$\phi_r M_n, \phi_r M_{nc}$	( $k$ )	9384	10091	-
$f_s$ DC1	(ksi)	6.20	12.18	20.93
$f_s$ DC2	(ksi)	2.20	4.32	-
$f_s$ DW	(ksi)	-	-	-
$f_s$ 1.3( $k+IM$ )	(ksi)	18.97	22.65	16.37
$f_s$ (Service II)	(ksi)	27.37	39.15	37.30
$f_s$ (Total)(Strength I)	(ksi)	-	-	48.20
$V_r$	( $k$ )	30.8	26.5	-

\* Compact sections  
\*\* Non-Compact and slender sections

Note:  
Values in the moment and reaction tables are for the controlling Stage I condition (3 Girders).

**THOUVENOT,  
WADE &  
MOERCHEN, INC.**

SWANSEA • WATERLOO • EDWARDSVILLE • CARBONDALE • ST. CHARLES

CORPORATE OFFICE  
4940 Old Collinsville Road  
Swansea, Illinois 62226  
Tel: 618.624.4488  
Fax: 618.624.6688

SHEET NO. 30  
59 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-2VB-2	ST. CLAIR	153	85
CONTRACT NO. 76867				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

INTERIOR GIRDER REACTION TABLE		
	Abut.	Pier
$R_{DC1}$	( $k$ ) 39.0	251.2
$R_{DC2}$	( $k$ ) 12.5	75.4
$R_{DW}$	( $k$ ) -	-
$R_L + IM$	( $k$ ) 125.0	283.8
$R_{Total}$	( $k$ ) 176.5	610.4

Note:  
All cross frames between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.  
Unless otherwise noted, cross frames shall be designated CF1.  
For cross frame details and splice plate details see sheets 33 and 34 of 59.

**FRAMING PLAN  
EB STRUCTURE  
STRUCTURE NO. 082-0162**

DESIGNED	BWP
CHECKED	MJJ
DRAWN	BWP
CHECKED	MJJ/KPC