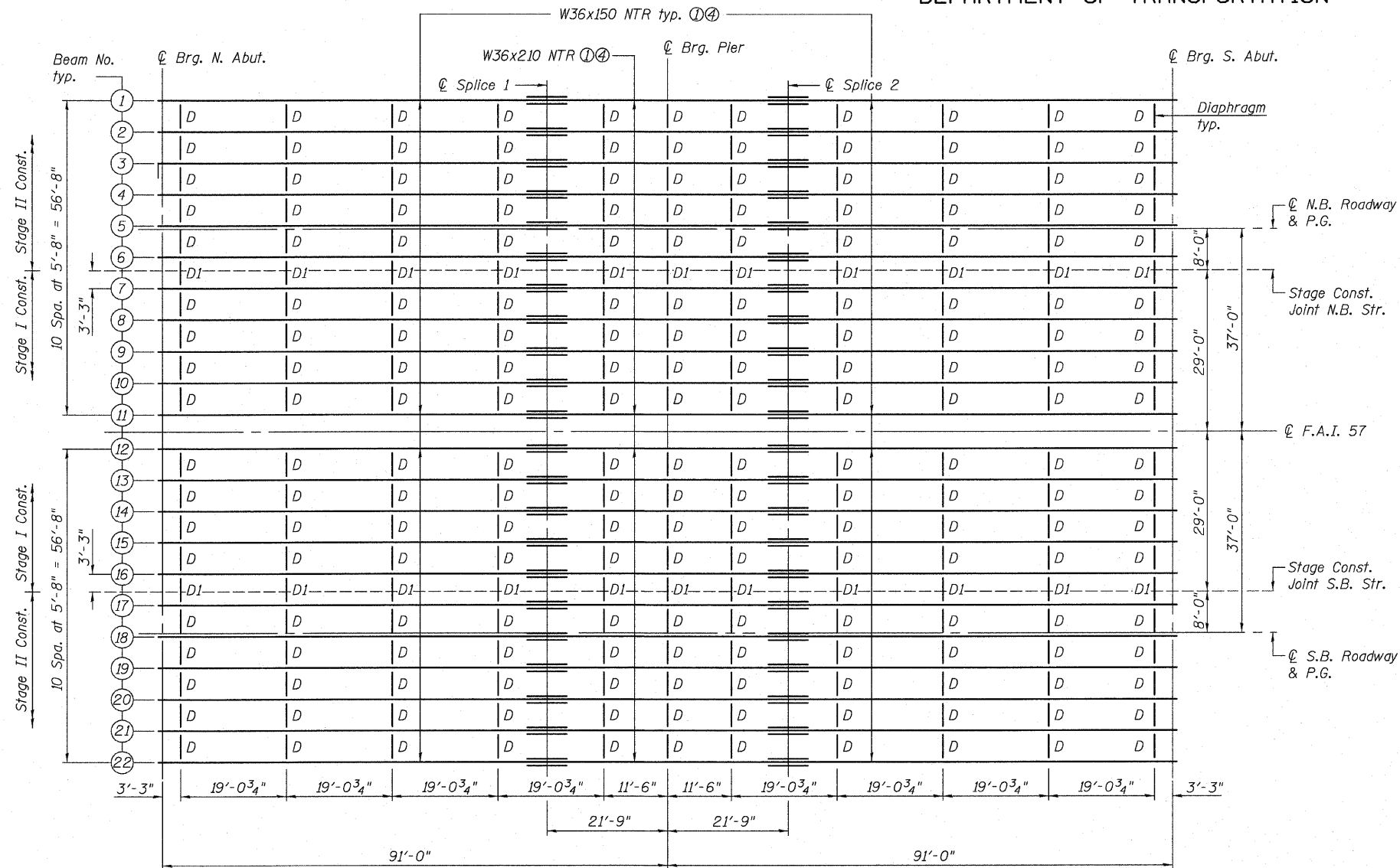


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



PLAN

INTERIOR BEAM MOMENT TABLE		
	0.4 Sp. 1 or 0.6 Sp. 2	Pier
$I_s$	(in <sup>4</sup> )	9040
$I_o(n)$	(in <sup>4</sup> )	21663
$I_o(3n)$	(in <sup>4</sup> )	15815
$S_s$	(in <sup>3</sup> )	504
$S_o(n)$	(in <sup>3</sup> )	707
$S_o(3n)$	(in <sup>3</sup> )	637
$Z$	(in <sup>3</sup> )	833
$\rho$	(k/')	0.753
$M\bar{\rho}$	(k)	399.9
$s\bar{\rho}$	(k/')	0.443
$M_s\bar{\rho}$	(k)	267.1
$M\bar{t}$	(k)	586.9
$M_{IM}$	(k)	135.6
$\bar{\rho}_3 [M\bar{t} + I]$	(k)	1204.1
$M_o$	(k)	2432.4
$M_u$	(k)	3456.1
$f_s \bar{\rho}$ non-comp	(ksi)	9.52
$f_s \bar{\rho}$ (comp)	(ksi)	5.03
$f_s \bar{\rho}_3 [M\bar{t} + M_I]$	(ksi)	20.44
$f_s$ (Overload)	(ksi)	34.99
$f_s$ (Total)	(ksi)	—
VR	(k)	48.8

$I_s, S_s$ : 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.<sup>4</sup> and in.<sup>3</sup>).

$I_o(n), S_o(n)$ : 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.<sup>4</sup> and in.<sup>3</sup>).

$I_o(3n), S_o(3n)$ : 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.<sup>4</sup> and in.<sup>3</sup>).

$Z$ : Plastic Section Modulus of the steel section in non-composite areas (in.<sup>3</sup>).

$\rho$ : Un-factored non-composite dead load (kips/ft.).

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

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

INTERIOR BEAM REACTION TABLE		
	Abut.	Pier
$R\bar{\rho}$	(k)	40.1
$R\bar{t}$	(k)	36.8
$R_I$	(k)	8.5
$R_{Total}$	(k)	85.4

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

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

$M_I$ : Un-factored moment due to impact (kip-ft.).

$M_o$ : Factored design moment (kip-ft.).

$1.3 [M\bar{\rho} + M_s\bar{\rho} + \frac{5}{8} (M\bar{t} + M_I)]$

$M_u$ : 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.).

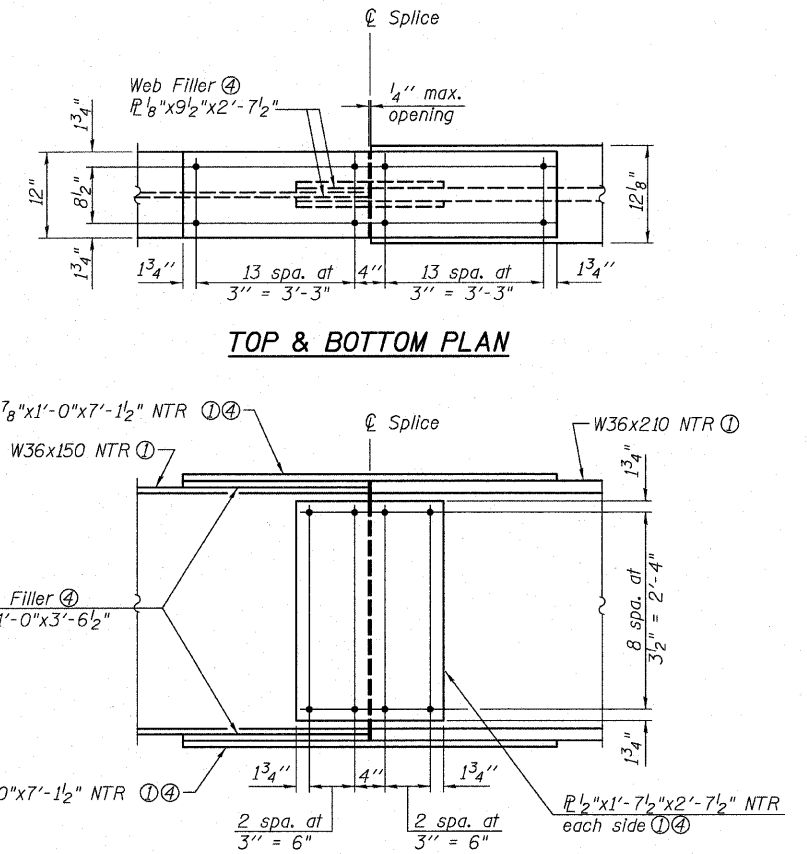
$f_s$  (Overload): Sum of stresses as computed from the moments below (ksi).

$M\bar{\rho} + M_s\bar{\rho} + \frac{5}{8} (M\bar{t} + M_I)$

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

$1.3 [M\bar{\rho} + M_s\bar{\rho} + \frac{5}{8} (M\bar{t} + M_I)]$

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



TOP & BOTTOM PLAN

ELEVATION

SPLICE DETAIL

(22 Required Each Structure)  
(44 Total)

Notes:

- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- For beam elevation and details see sheet 16 of 29.
- All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All beams & splices plates shall be AASHTO M270 Grade 50.
- Diaphragms between beam lines 6 & 7 and 16 & 17 shall be installed during stage II construction.

FRAMING PLAN

STRUCTURE NO. 028-0079 (N.B.)  
STRUCTURE NO. 028-0080 (S.B.)

SHEET NO.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
15	57	(28-5)VB-1	FRANKLIN	81	38
SHEETS 29					
CONTRACT NO. 78157					
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					
			Eastport Business Center 1 100 Lanter Court, Suite 1 Collinsville, Illinois 62234 618-345-2200 Design Firm License No. 184.001115		
			DESIGNED JAD		
			CHECKED MJP		
			DRAWN JAD		
			CHECKED MJP		

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