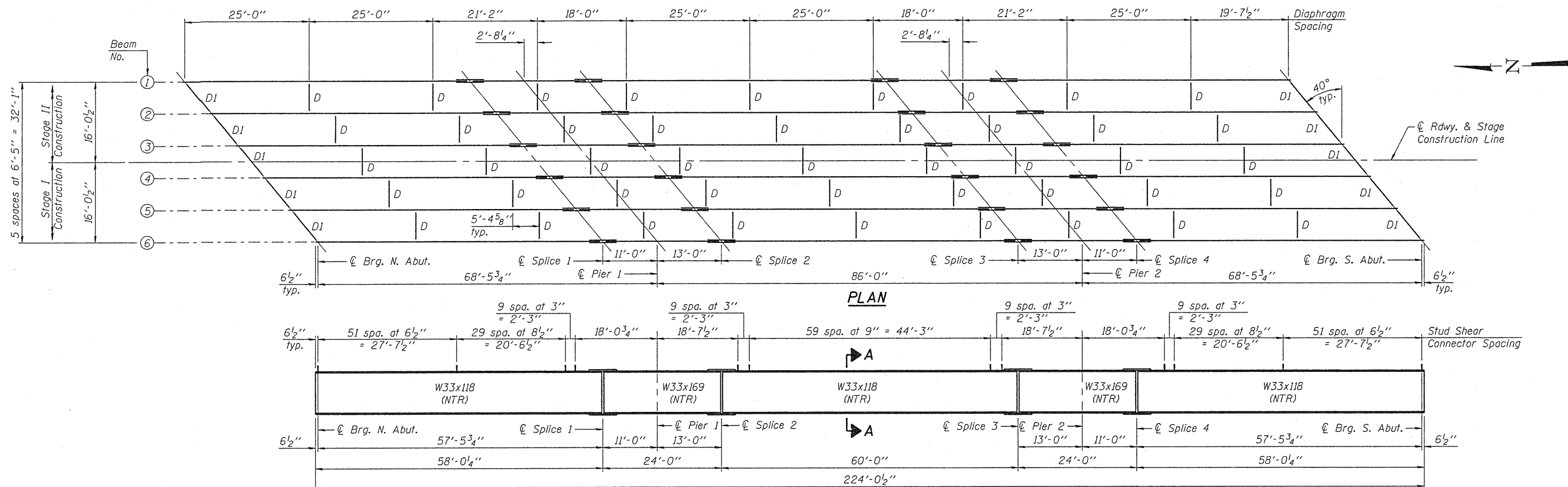


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



PLAN

ELEVATION

		0.4 Span 1 or 0.6 Span 3	Pier 1 & 2	0.5 Span 2
$I_s$	(in <sup>4</sup> )	5900	9290	5900
$I_c(n)$	(in <sup>4</sup> )	15895	--	15895
$I_c(3n)$	(in <sup>4</sup> )	11779	--	11779
$S_s$	(in <sup>3</sup> )	359	549	359
$S_c(n)$	(in <sup>3</sup> )	530	--	530
$S_c(3n)$	(in <sup>3</sup> )	480	--	480
$Z$	(in <sup>3</sup> )	--	629	--
$DC1$	(k/')	0.798	0.849	0.798
$M_{DC1}$	(k)	238.1	530.5	211.6
$DC2$	(k/')	0.033	0.033	0.033
$M_{DC2}$	(k)	11.5	17.6	12.9
$DW$	(k/')	0.300	0.300	0.300
$M_{DW}$	(k)	104.8	160.0	117.3
$M_{\ell} + 1M$	(k)	797.5	691.7	848.2
$M_u$ (Strength I)	(k)	1865	2136	1941
$\phi_r M_n$ , $\phi_r M_{nc}$	(k)	2661	2621	2679
$f_s$ DC1	(ksi)	7.96	11.60	7.07
$f_s$ DC2	(ksi)	0.29	0.38	0.32
$f_s$ DW	(ksi)	2.62	3.50	2.93
$f_s$ 1.3(4+1M)	(ksi)	23.47	19.65	24.97
$f_s$ (Service II)	(ksi)	34.34	35.13	35.29
$f_s$ (Total)(Strength I)	(ksi)	--	--	--
$V_r$	(k)	28.8	--	20.9

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

		Abut.	Pier
$R_{DC1}$	(k)	19.6	70.6
$R_{DC2}$	(k)	0.9	2.8
$R_{DW}$	(k)	7.9	25.5
$R_{\ell} + 1M$	(k)	82.4	109.4
$R_{Total}$	(k)	110.8	208.3

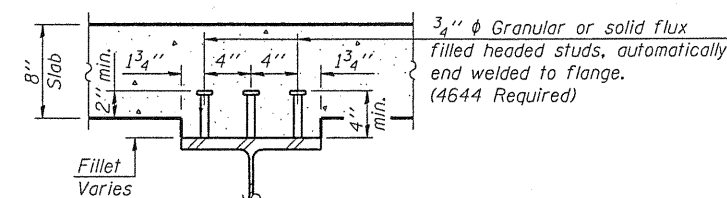
Notes:  
All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.  
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.  
Structural steel beams and splice plates shall conform to the requirements of AASHTO M 270 Grade 50.  
All new structural steel shall be hot dip galvanized in accordance with the Special Provision for "Hot Dip Galvanizing for Structural Steel."  
For details of diaphragms and beam splices, see Sheet 16 of 27.  
For bearing details, see sheet 17 of 27.

Note:  
Exterior girder moments control the beam design.



DESIGNED - BAS
CHECKED - KEF
DRAWN - SGM
CHECKED - BAS

$I_s$ ,  $S_s$ : 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<sup>4</sup> and in<sup>3</sup>).  
 $I_c(n)$ ,  $S_c(n)$ : 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<sup>4</sup> and in<sup>3</sup>).  
 $I_c(3n)$ ,  $S_c(3n)$ : 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<sup>4</sup> and in<sup>3</sup>).  
 $Z$ : Plastic Section Modulus of the steel section in non-composite areas. (in<sup>3</sup>).  
 $DC1$ : 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.).  
 $M_{\ell} + 1M$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).  
 $M_u$  (Strength I): Factored design moment (kip-ft.).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\ell} + 1M$   
 $\phi_r M_n$ : 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).  
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{\ell} + 1M$   
 $f_s$  (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\ell} + 1M$   
 $V_r$ : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.



SECTION A-A

TOP OF BEAM ELEVATIONS  
(For Fabrication Only)

	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
☉ Brg. N. Abut.	665.801	665.861	665.921	665.861	665.721	665.561
*** ☉ Splice 1	665.325	665.440	665.535	665.535	665.433	665.308
☉ Pier 1	665.318	665.438	665.538	665.538	665.438	665.308
*** ☉ Splice 2	665.308	665.434	665.540	665.540	665.442	665.307
*** ☉ Splice 3	665.412	665.560	665.688	665.737	665.692	665.620
☉ Pier 2	665.508	665.668	665.808	665.868	665.828	665.768
*** ☉ Splice 4	665.588	665.758	665.908	665.978	665.942	665.892
☉ Brg. S. Abut.	666.461	666.681	666.891	667.001	667.001	667.001

\*\*\* Elevations are given at top of W33x169.

STRUCTURAL STEEL  
STRUCTURE NO. 094-0051

SHEET NO. 15 27 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	310	(28B)BR-1	WARREN	71	39
FED. ROAD DIST. NO. _			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 68661		