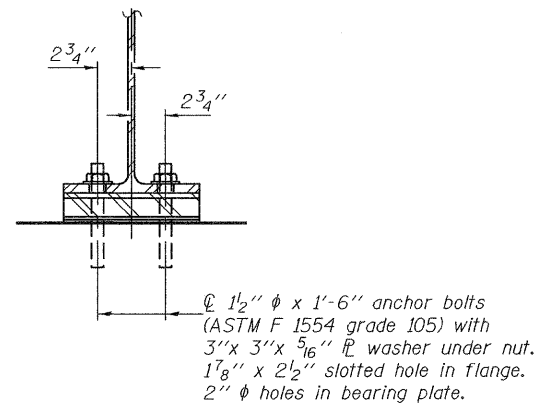
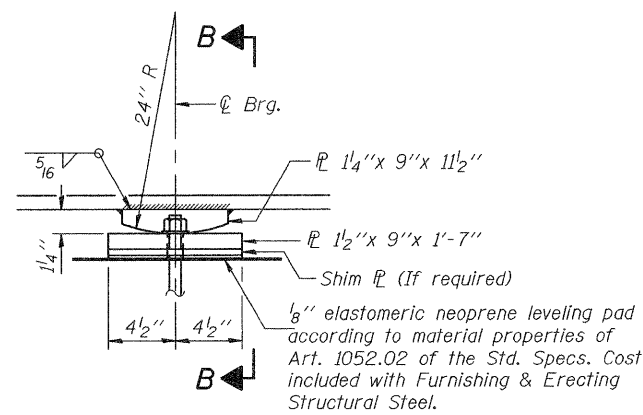


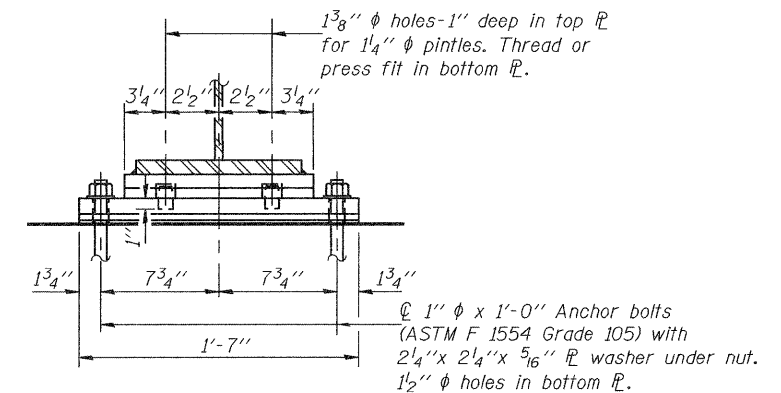
ELEVATION AT ABUTMENTS



SECTION A-A



ELEVATION AT PIERS

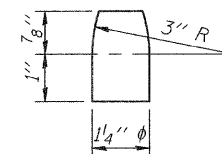


SECTION B-B

FIXED BEARING  
(14 Required)

FIXED BEARING  
(14 Required)

\*TOP OF BEAM ELEVATIONS



PINTLE

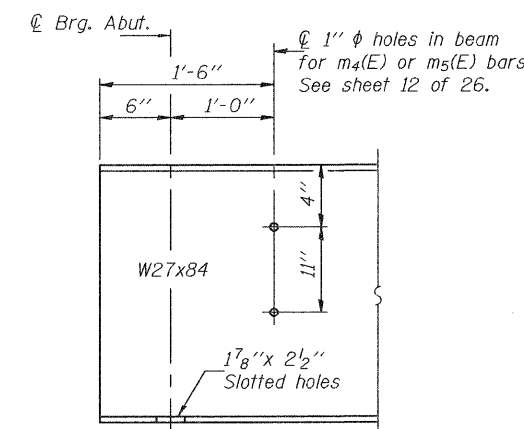
Location	Ø Brg. W. Abut.	Ø Brg. Pier 1	Ø Splice 1	Ø Splice 2	Ø Brg. Pier 2	Ø Brg. E. Abut.
Beam 1	397.25	397.21	397.20	397.20	397.21	397.25
Beam 2	397.36	397.32	397.31	397.31	397.32	397.36
Beam 3	397.45	397.41	397.40	397.40	397.41	397.45
Beam 4	397.54	397.50	397.49	397.49	397.50	397.54
Beam 5	397.45	397.41	397.40	397.40	397.41	397.45
Beam 6	397.36	397.32	397.31	397.31	397.32	397.36
Beam 7	397.25	397.21	397.20	397.20	397.21	397.25

\*For fabrication use only.

	0.4 Sp. 1 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
$I_s$	2850	2850	2850
$I_c(n)$	8775	—	8775
$I_c(3n)$	6500	—	6500
$S_s$	213	213	213
$S_c(n)$	337	—	337
$S_c(3n)$	304	—	304
DC1	0.67	0.67	0.67
$M_{DC1}$	42.5	157.2	109
DC2	0.13	0.13	0.13
$M_{DC2}$	11.3	22.3	28.8
DW	0.28	0.28	0.28
$M_{DW}$	24.8	48.8	63.1
$M_{\xi} + Imp$	300.6	211	424.4
$M_u$ (Strength I)	629.7	668.6	1007.7
$\phi_r M_n$	1850.37	—	1850.37
$f_s$ DC1	2.39	8.86	6.14
$f_s$ DC2	0.45	1.26	1.14
$f_s$ DW	0.98	2.75	2.49
$f_s$ 1.3( $\xi + I$ )	13.92	15.45	19.65
$f_s$ (Service II)	17.74	28.32	29.42
$f_s$ (Total)(Strength I)	—	37.57	—
$V_f$	17.3	—	16.7

- $I_s, S_s$ : 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>).
- 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.).
- $M_{\xi} + Imp$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- $M_u$  (Strength I): Factored design moment (kip-ft.).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\xi} + Imp$
- $\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- $f_s$  (Service II): Sum of stresses as computed from the moments below (ksi).  
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{\xi} + Imp$
- $f_s$  (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\xi} + Imp$
- $V_f$ : Factored shear range computed according to Article 6.10.10.

	Abutments	Piers
$R_{DC1}$	7.8	35.4
$R_{DC2}$	1.7	6.6
$R_{DW}$	3.8	14.4
$R_{\xi} + Imp$	50.9	78.7
$R_{Total}$	64.2	135.1



TYP. END OF BEAM  
ELEVATION

SHIM PLATE TABLE

Location	W. Abut.	E. Abut.
Beam 1	—	—
Beam 2	—	—
Beam 3	3/8"	3/8"
Beam 4	—	—
Beam 5	3/8"	3/8"
Beam 6	—	—
Beam 7	—	—

Notes:  
Anchor bolts shall be ASTM F1554 Grade 105. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
All bearing plates and pintles shall be AASHTO M270 Grade 50W.  
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

DESIGNED - Jessica C. Forrest  
CHECKED - Nicholas R. Barnett  
DRAWN - h.t. duong  
CHECKED - JCF/NRB

EXAMINED - Thomas J. Domagalaki  
PASSED - [Signature]  
ENGINEER OF BRIDGES AND STRUCTURES

DATE - 5/10/2011

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS  
STRUCTURE NO. 073-0038  
SHEET NO. 16 OF 26 SHEETS

F.A.P. RTE. 869  
SECTION 68-2  
COUNTY  
TOTAL SHEETS 299  
SHEET NO. 146  
CONTRACT NO. 98797  
ILLINOIS FED. AID PROJECT

\*PERRY/FRANKLIN