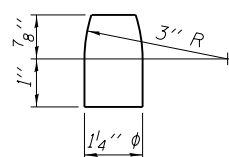
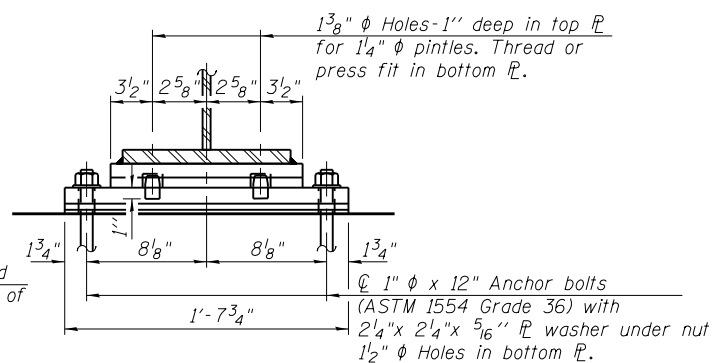


ELEVATION AT PIER

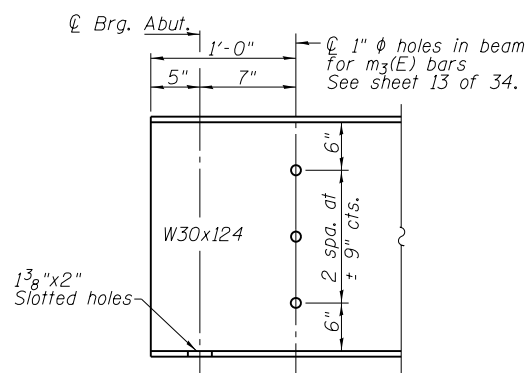
FIXED BEARING



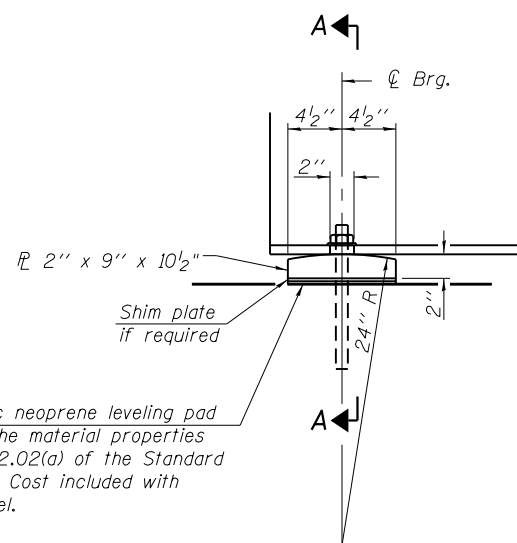
PINTLE



SECTION B-B

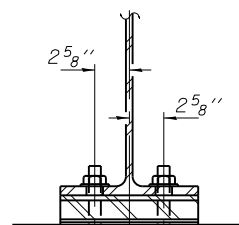


TYP. END OF BEAM ELEVATION



ELEVATION AT ABUTMENT

1/8" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.



SECTION A-A

	0.4 Sp. 1 or 0.6 Sp. 5	Pier 1 or Pier 4	0.5 Sp. 2 or 0.5 Sp. 4	Pier 2 or Pier 3	0.5 Sp. 3
$I_s$	(in <sup>4</sup> )	5360	5360	5360	5360
$I_c(n)$	(in <sup>4</sup> )	13933	13933	13933	13933
$I_c(3n)$	(in <sup>4</sup> )	10157	10157	10157	10157
$I_c(cr)$	(in <sup>4</sup> )	-----	7204	-----	7204
$S_s$	(in <sup>3</sup> )	355	355	355	355
$S_c(n)$	(in <sup>3</sup> )	517	1238	517	1238
$S_c(3n)$	(in <sup>3</sup> )	465	620	465	620
$S_c(cr)$	(in <sup>3</sup> )	-----	405	-----	405
DC1	(k/')	0.779	0.779	0.779	0.779
M <sub>DC1</sub>	(k)	32.3	419	125	300
DC2	(k/')	0.15	0.15	0.15	0.15
M <sub>DC2</sub>	(k)	62	81	23	58
DW	(k/')	0.267	0.267	0.267	0.267
M <sub>DW</sub>	(k)	110	145	42	104
M <sub>4 + 1M</sub>	(k)	733	678	571	588
M <sub>u</sub> (Strength I)	(k)	1929	2029	1247	1633
$\phi_r M_n$	(k)	2526.4	2109.2	2576.7	1924.5
$f_s$ DC1	(ksi)	10.9	14.2	4.2	10.1
$f_s$ DC2	(ksi)	1.6	2.4	0.6	1.7
$f_s$ DW	(ksi)	2.8	4.3	1.1	3.1
$f_s$ (4+1M)	(ksi)	17.0	20.1	13.3	17.4
$f_s$ (Service II)	(ksi)	37.5	47.0	23.1	37.6
0.95R <sub>n</sub> F <sub>yr</sub>	(ksi)	47.5	47.5	47.5	47.5
$f_s$ (Total)(Strength I)	(ksi)	-----	-----	-----	-----
$\phi_r F_n$	(ksi)	-----	-----	-----	-----
V <sub>r</sub>	(k)	21.2	-----	22.3	-----

	Abut.	Piers 1 & 4	Piers 2 & 3
R <sub>DC1</sub>	(k)	22.3	60.8
R <sub>DC2</sub>	(k)	4.3	12.2
R <sub>DW</sub>	(k)	7.7	18.2
R <sub>4 + 1M</sub>	(k)	67.1	99.6
R <sub>Total</sub>	(k)	101.4	194.3

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. 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.

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.

All bearing plates and pintles shall be AASHTO M270 Grade 50.

\*TOP OF BEAM ELEVATIONS

Location	Cent. Brg. W. Abut.	Cent. Splice 1	Cent. Brg. Pier 1	Cent. Splice 2	Cent. Brg. Pier 2	Cent. Splice 3	Cent. Splice 4	Cent. Brg. Pier 3	Cent. Splice 5	Cent. Brg. Pier 4	Cent. Splice 6	Cent. Brg. E. Abut.
Beam 1	513.14	513.62	513.70	513.79	513.97	514.02	514.02	513.97	513.79	513.70	513.62	513.14
Beam 2	513.24	513.73	513.81	513.90	514.08	514.12	514.12	514.08	513.90	513.81	513.73	513.24
Beam 3	513.34	513.82	513.90	513.99	514.17	514.22	514.22	514.17	513.99	513.90	513.82	513.34
Beam 4	513.34	513.82	513.90	513.99	514.17	514.22	514.22	514.17	513.99	513.90	513.82	513.34
Beam 5	513.24	513.73	513.81	513.90	514.08	514.12	514.12	514.08	513.90	513.81	513.73	513.24
Beam 6	513.14	513.62	513.70	513.79	513.97	514.02	514.02	513.97	513.79	513.70	513.62	513.14

\*For fabrication use only.

- $I_s, S_s$ : 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) in uncracked sections 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) in uncracked sections, due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).
- $I_c(cr), S_c(cr)$ : Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing  $f_s$  (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and 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<sub>DC1</sub>: 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<sub>DC2</sub>: 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<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- M<sub>4 + 1M</sub>: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M<sub>u</sub> (Strength I): Factored design moment (kip-ft.).
- 1.25 (M<sub>DC1</sub> + M<sub>DC2</sub>) + 1.5 M<sub>DW</sub> + 1.75 M<sub>4 + 1M</sub>
- $\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).
- $f_s$  DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
- M<sub>DC1</sub> / S<sub>nc</sub>
- $f_s$  DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
- M<sub>DC2</sub> / S<sub>c(3n)</sub> or M<sub>DC2</sub> / S<sub>c(cr)</sub> as applicable.
- $f_s$  DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
- M<sub>DW</sub> / S<sub>c(3n)</sub> or M<sub>DW</sub> / S<sub>c(cr)</sub> as applicable.
- $f_s$  (4+1M): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
- M<sub>4 + 1M</sub> / S<sub>c(n)</sub> or M<sub>4 + 1M</sub> / S<sub>c(cr)</sub> as applicable.
- $f_s$  (Service II): Sum of stresses as computed below (ksi).
- $f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3 f_s(4 + 1M)$
- 0.95R<sub>n</sub>F<sub>yr</sub>: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
- $f_s$  (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
- 1.25 (f<sub>sDC1</sub> + f<sub>sDC2</sub>) + 1.5 f<sub>sDW</sub> + 1.75 f<sub>s(4 + 1M)</sub>
- $\phi_r F_n$ : Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
- V<sub>r</sub>: Maximum factored shear range in span computed according to Article 6.10.10.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1" $\phi$	Each	72

FILE NAME = 0720229-68697-020-Fixed Brg Details.dgn	USER NAME =	DESIGNED - BWP	REVISED -
BACON   FARMER   WORKMAN ENGINEERING & TESTING, INC.	PLOT SCALE =	CHECKED - CMV	REVISED -
433 NORTH COURT STREET MARENA, ILLINOIS 60457 PHONE - 815.977.9100	PLOT DATE = 3/18/2014	DRAWN - BJV	REVISED -
		CHECKED - BWP	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

FIXED BEARING DETAILS  
STRUCTURE NO. 072-0229

SHEET NO. 20 OF 34 SHEETS

F.A.S. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1388	(Z-1D-BR-1)BR	PEORIA	89	62
CONTRACT NO. 68697				
ILLINOIS FED. AID PROJECT				