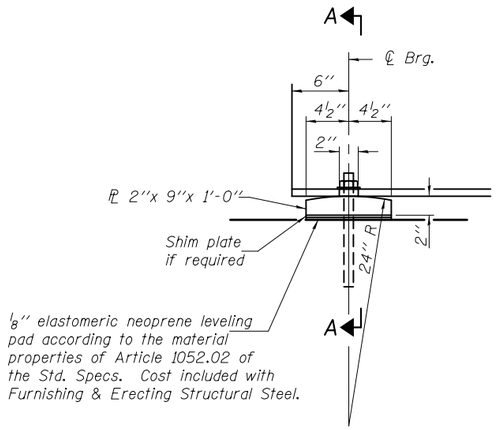
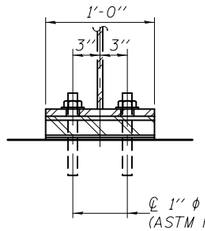


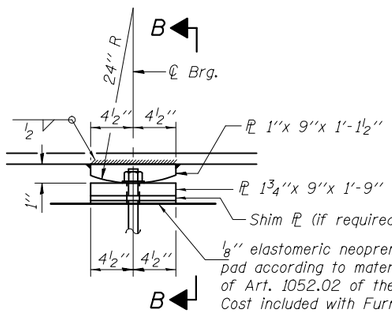
ELEVATION AT ABUTMENT



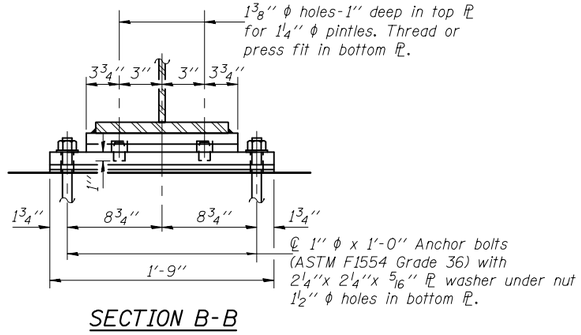
℄ 1″ ϕ x 1′-0″ Anchor bolts (ASTM F1554 Grade 36) with 2¼″x 2¼″x 5/16″ ℄ washer under nut. 1 3/8″x 2″ slotted hole in flange. 1½″ ϕ holes in bearing plate.

SECTION A-A

FIXED BEARING
(12 Required)



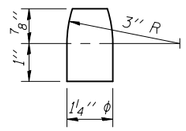
ELEVATION AT PIER



℄ 1″ ϕ x 1′-0″ Anchor bolts (ASTM F1554 Grade 36) with 2¼″x 2¼″x 5/16″ ℄ washer under nut 1½″ ϕ holes in bottom ℄.

SECTION B-B

FIXED BEARING
(12 Required)



PINTLE

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 0.6 Sp. 3	0.5 Sp. 2	Piers 1 & 2
I_s	(in^4)	20737	12425	23627
$I_{c(n)}$	(in^4)	47665	34604	52039
$I_{c(3n)}$	(in^4)	34611	24908	37931
$I_{c(cr)}$	(in^4)	———	———	28658
S_s	(in^3)	1042	676	997
$S_{c(n)}$	(in^3)	1361	964	2903
$S_{c(3n)}$	(in^3)	1248	880	1511
$S_{c(cr)}$	(in^3)	———	———	1062
DC1	(k/′)	0.920	0.847	0.945
M_{DC1}	(′k)	665.3	274.8	1032.2
DC2	(k/′)	0.150	0.150	0.150
M_{DC2}	(′k)	107.2	56.1	170.8
DW	(k/′)	0.329	0.329	0.329
M_{DW}	(′k)	235.2	123.1	374.6
M_{L+IM}	(′k)	1233.2	955.0	1300.9
M_u (Strength I)	(′k)	3476.3	2269.5	4342.2
$\phi_f M_n$	(′k)	6475.3	4878.7	———
f_s DC1	(ksi)	7.7	4.9	12.4
f_s DC2	(ksi)	1.0	0.8	1.9
f_s DW	(ksi)	2.3	1.7	4.2
f_s (L+IM)	(ksi)	10.9	11.9	14.7
f_s (Service II)	(ksi)	25.2	22.9	37.6
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5
f_s (Total)(Strength I)	(ksi)	———	———	49.9
$\phi_f F_n$	(ksi)	———	———	50.0
Vf	(k)	56.2	44.1	61.3

INTERIOR GIRDER REACTION TABLE			
		Abuts.	Piers
R_{DC1}	(k)	35	105.1
R_{DC2}	(k)	5.7	17.4
R_{DW}	(k)	12.5	38.1
R_{L+IM}	(k)	80.9	148.3
R_{Total}	(k)	134.1	308.9

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) in uncracked sections 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) in uncracked sections due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

$I_{c(cr)}$, $S_{c(cr)}$: 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 dead loads (in.⁴ and 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.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (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_{DC1} / S_{nc}

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_{c(3n)}$ or $M_{DC2} / S_{c(cr)}$ 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).
$M_{DW} / S_{c(3n)}$ or $M_{DW} / S_{c(cr)}$ as applicable.

f_s (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).
$M_{L+IM} / S_{c(n)}$ or $M_{L+IM} / S_{c(cr)}$ as applicable.

f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_{sL+IM}$

$0.95R_hF_yf$: 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).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_{sL+IM}$

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7.2 (ksi).

Vr: Maximum factored shear range computed according to Article 6.10.10.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). 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 Grade 50W.**

Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

** See Special Provision for Structural Steel for Bridges.

*TOP OF GIRDER WEB ELEVATIONS

Location	℄ Brg. W. Abut.	℄ Splice 1	℄ Brg. Pier 1	℄ Splice 2	℄ Splice 3	℄ Brg. Pier 2	℄ Splice 4	℄ Brg. E. Abut.
Girder 1	685.78	685.86	685.91	685.91	685.95	685.97	685.93	685.92
Girder 2	685.90	685.98	686.03	686.03	686.07	686.09	686.05	686.04
Girder 3	686.00	686.08	686.13	686.14	686.17	686.19	686.15	686.15
Girder 4	686.00	686.08	686.13	686.14	686.17	686.19	686.15	686.15
Girder 5	685.90	685.98	686.03	686.03	686.07	686.09	686.05	686.04
Girder 6	685.78	685.86	685.91	685.91	685.95	685.97	685.93	685.92

*For fabrication use only.

DESIGNED - Michael D. Rolape	EXAMINED	Thomas J. Domagalski, ENGINEER OF BRIDGE DESIGN	DATE - OCTOBER 5, 2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEARING DETAILS STRUCTURE NO. 057-0244	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - Nicholas R. Barnett						315	121 BR-2	MCLEAN	144	66
DRAWN - h.t. duong	PASSED	Carl Puzey, ENGINEER OF BRIDGES AND STRUCTURES						CONTRACT NO. 70552		
CHECKED - MDR/NRB					SHEET NO. 18 OF 30 SHEETS			ILLINOIS FED. AID PROJECT		