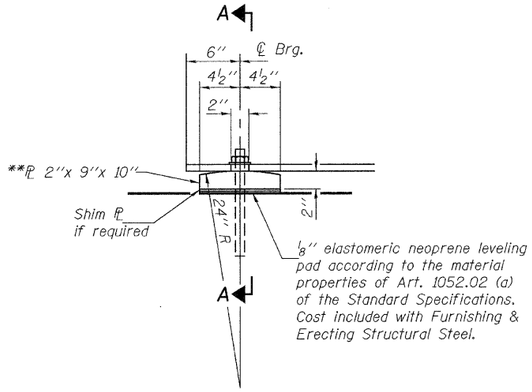
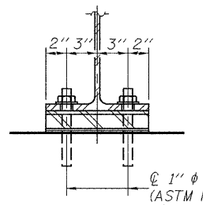
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



⅛" elastomeric neoprene leveling pad according to the material properties of Art. 1052.02 (a) of the Standard Specifications. Cost included with Furnishing & Erecting Structural Steel.

ELEVATION AT ABUTMENTS



℄ 1" ϕ x 1'-0" anchor bolts (ASTM F 1554 Grade 36) with 2¼"x 2¼"x 5/16" ℄ washer under nut. 1⅜"x 2" slotted hole in flange. 1½" ϕ holes in bearing ℄

SECTION A-A

FIXED BEARING

INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. 1 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in^4)	3620	3620	3620
$I_c(n)$	(in^4)	10616	———	10616
$I_c(3n)$	(in^4)	7796	———	7796
S_s	(in^3)	267	267	267
$S_c(n)$	(in^3)	411	———	411
$S_c(3n)$	(in^3)	370	———	370
DC1	(k/')	0.736	0.736	0.736
M_{DC1}	('k)	56	262	189
DC2	(k/')	0.150	0.150	0.150
M_{DC2}	('k)	17	40	52
DW	(k/')	0.300	0.300	0.300
M_{DW}	('k)	34	80	104
M_{L+Imp}	('k)	375	296	585
M_u(Strength I)	('k)	798	1014	1482
$\phi_f M_n$, $\phi_f M_{nc}$	('k)	2054	1232	2054
f_s DC1	(ksi)	2.5	11.8	8.5
f_s DC2	(ksi)	0.6	1.8	1.7
f_s DW	(ksi)	1.1	3.6	3.4
f_s 1.3(L+IM)	(ksi)	14.2	17.3	22.2
f_s (Service II)	(ksi)	18.4	34.5	35.8
V_f	(k)	21.6	———	19.9

INTERIOR BEAM REACTION TABLE			
		Abutments	Piers
R_{DC1}	(k)	9.5	47.6
R_{DC2}	(k)	2.3	9.4
R_{DW}	(k)	4.5	18.8
R_{L+Imp}	(k)	63.5	88.6
R_{Total}	(k)	79.8	164.4

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) 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) due to long-term composite (superimposed) 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+Imp}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

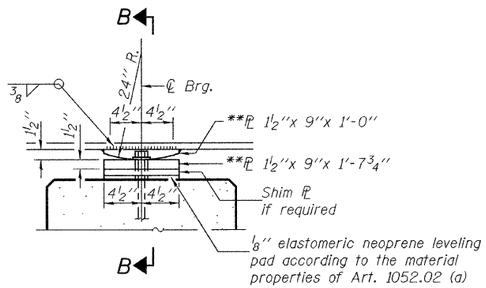
M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+Imp}$

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.3.3 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+Imp}$

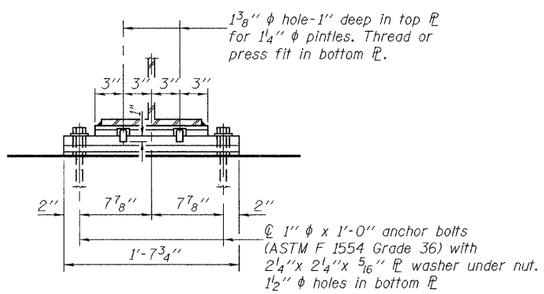
V_f: Factored shear range in span computed according to Art. 6.10.10.



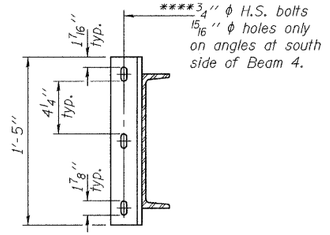
⅛" elastomeric neoprene leveling pad according to the material properties of Art. 1052.02 (a) of the Standard Specifications. Cost included with Furnishing & Erecting Structural Steel.

ELEVATION AT PIERS

FIXED BEARING



SECTION B-B



SECTION C-C

**PINTLE

**AASHTO M270 Grade 50.

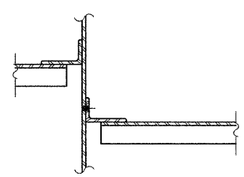
*TOP OF BEAM ELEVATIONS

Location	℄ Brg. E. Abut.	℄ Brg. Pier 1	℄ Brg. Pier 2	℄ Brg. W. Abut.
Beam 1	398.41	398.35	398.35	398.41
Beam 2	398.52	398.46	398.46	398.52
Beam 3	398.61	398.55	398.55	398.61
Beam 4	398.61	398.55	398.55	398.61
Beam 5	398.52	398.46	398.46	398.52
Beam 6	398.40	398.35	398.35	398.40

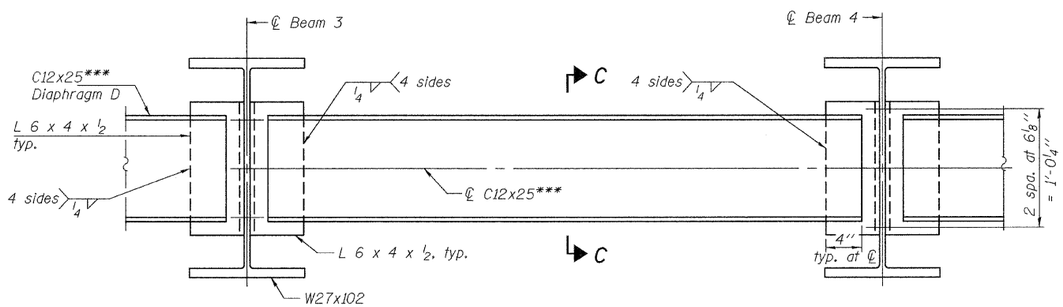
*For fabrication use only.

***Alternate channel C12x30 is permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no extra cost to the Department.

****Use 13/16" x 1 7/8" vertical slotted holes in connection angles 6 x 4 x ½ at south side of Beam 4 only. Provide 5/16" plate washers for slotted holes. The bolts for the slotted holes in angles on south side of Beam 4 shall be finger-tightened prior to the deck pour for Stage II Construction and then be fully tightened after completion of the deck pour for Stage II Construction.



PLAN VIEW
(Beam 4)



DIAPHRAGM D1
(Looking West) (13 Required)

Notes: 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.

All bearing plates and pintles shall be AASHTO M 270, Grade 50.

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=36 ksi). 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.

DESIGNED	Stephen M. Ryan
CHECKED	Jay D. Edwards
DRAWN	h.t. duong
CHECKED	SMR/JDE

Sep. 30, 2009
EXAMINED Thomas J. Domagalski
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

BEARING & STRUCTURAL STEEL DETAILS
STRUCTURE NO. 073-0037

SHEET NO. 17	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25 SHEETS	865	16B-2	PERRY	47	39
			CONTRACT NO. 78064		
	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

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