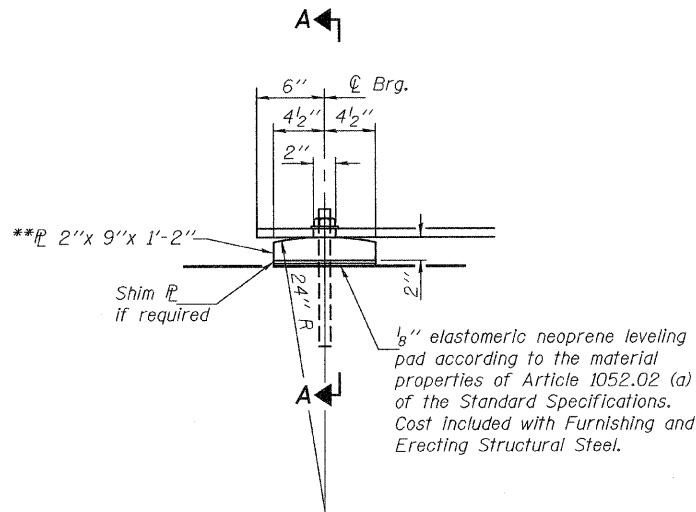
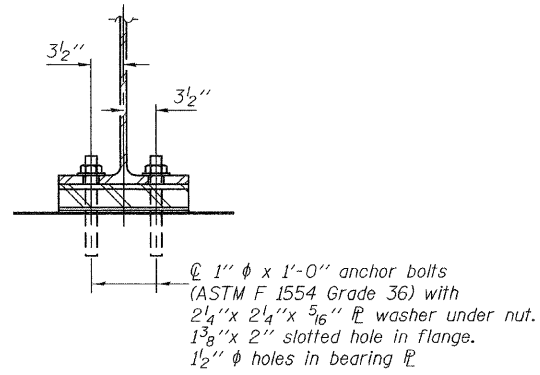


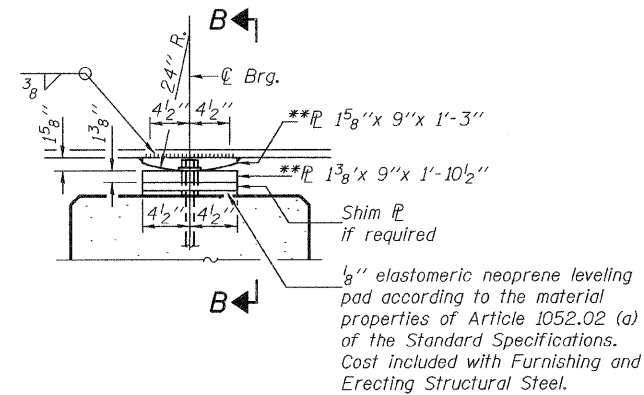
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



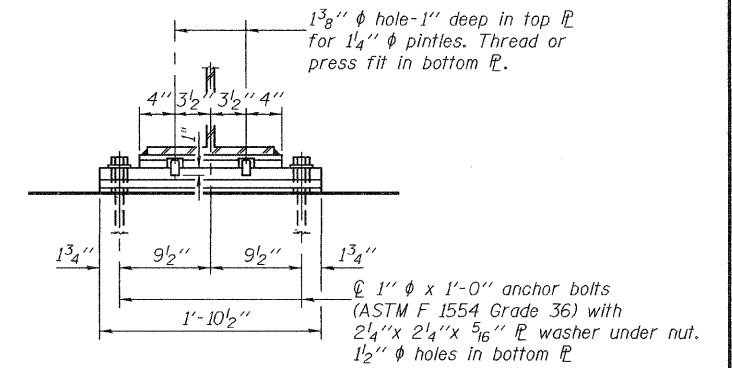
ELEVATION AT ABUTMENTS



SECTION A-A



ELEVATION AT PIER



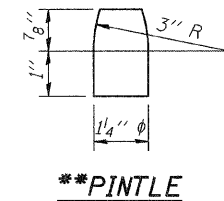
SECTION B-B

FIXED BEARING
(12 Required)

INTERIOR BEAM MOMENT TABLE			
	0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in ⁴)	5660	5660
$I_c(n)$	(in ⁴)	13976	13976
$I_c(3n)$	(in ⁴)	10043	10043
S_s	(in ³)	414	414
$S_c(n)$	(in ³)	584	584
$S_c(3n)$	(in ³)	524	524
Z	(in ³)	461	—
DC1	(k/')	0.699	0.699
M _{DC1}	(k)	234.4	334.3
DC2	(k/')	0.150	0.150
M _{DC2}	(k)	57.7	35.7
DW	(k/')	0.258	0.258
M _{DW}	(k)	99.3	61.4
M _{Σ + Imp}	(k)	606.7	498.6
M _u (Strength I)	(k)	1576	1174
$\phi_r M_n$, $\phi_r M_{nc}$	(k)	2734	2734
f_s DC1	(ksi)	6.8	3.8
f_s DC2	(ksi)	1.3	0.8
f_s DW	(ksi)	2.3	1.4
f_s 1.3($\frac{1}{2}$ +I)	(ksi)	16.2	13.3
f_s (Service II)	(ksi)	26.6	19.3
V _r	(k)	21.3	20.7

INTERIOR BEAM REACTION TABLE HL93 Loading			
	East Abut.	Pier	West Abut.
R _{DC1}	(k)	18.1	13.7
R _{DC2}	(k)	4.2	3.3
R _{DW}	(k)	7.2	5.6
R _{Σ + Imp}	(k)	60.5	57.2
R _{Total}	(k)	90.0	79.8

- 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 (in⁴ and in³).
- $I_c(n), S_c(n)$: 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 (in⁴ and in³).
- $I_c(3n), S_c(3n)$: 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 (in⁴ and in³).
- Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in³).
- 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_{Σ + 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_{Σ + Imp}
- $\phi_r M_n$: 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_{Σ + Imp}
- V_r: Factored shear range computed according to Article 6.10.10.



***TOP OF BEAM ELEVATIONS**

Location	Ø Brg. E. Abut.	Ø Splice	Ø Brg. Pier	Ø Brg. W. Abut.
Beam 1	443.59	443.65	443.65	443.68
Beam 2	443.68	443.73	443.74	443.77
Beam 3	443.76	443.81	443.82	443.85
Beam 4	443.76	443.81	443.82	443.85
Beam 5	443.68	443.73	443.74	443.77
Beam 6	443.59	443.65	443.65	443.68

*For fabrication use only.

Notes: 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, splice 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 (F_y=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.

BEARING & STRUCTURAL STEEL DETAILS
STRUCTURE NO. 013-0040

DESIGNED Phillip R. Litchfield	Sep. 9, 2010
CHECKED Ray Ahanchi	EXAMINED Thomas J. Donagale
DRAWN Gregory D. Farmer	PASSED Ralph E. Anderson
CHECKED PRL/GRA/JDE	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. 12	S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22 SHEETS	12	10B-1	CLAY	39	24
CONTRACT NO. 74004					
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT					