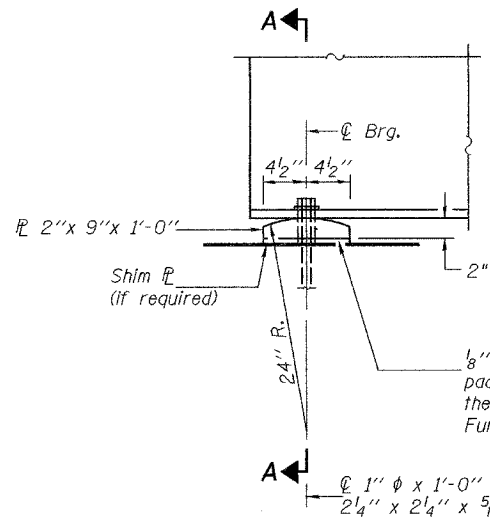


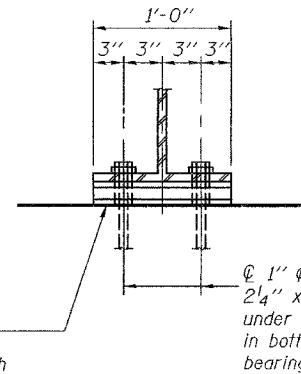
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 13 25 SHEETS
FAP 789	54BR-1	MADISON	62	37	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

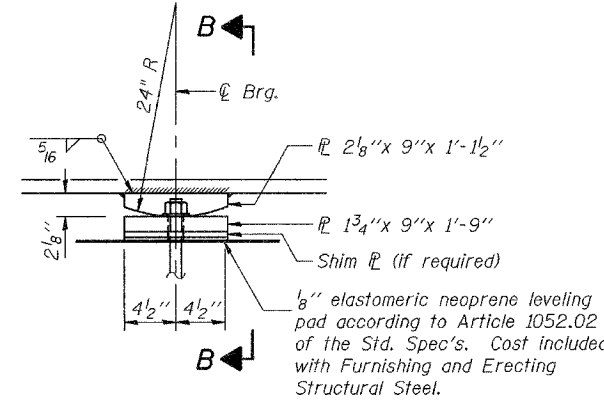
Contract #76864



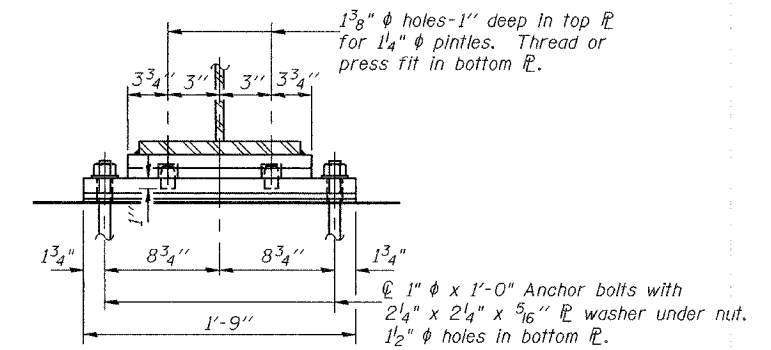
ELEVATION AT ABUTMENT



SECTION A-A



ELEVATION AT PIER



SECTION B-B

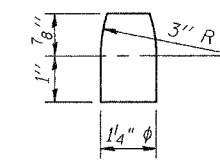
ABUTMENT BEARING
(12 Required)

	0.4 Sp. 1 & 0.6 Sp. 5	Pier 1 & Pier 4	0.5 Sp. 2 & Sp. 4	Pier 2 & Pier 3	0.5 Sp. 3
Is	9040	9040	9040	9040	9040
Ic (n)	22381		22381		22381
Ic (3n)	16370		16370		16370
Ss	504	504	504	504	504
Sc (n)	717		717		717
Sc (3n)	647		647		647
DC1	0.803	0.803	0.803	0.803	0.803
M DC1	281	469	218	446	229
DC2	0.150	0.150	0.150	0.150	0.150
M DC2	60	69	57	69	57
DW	0.329	0.329	0.329	0.329	0.329
M DW	132	150	126	152	125
M _l + Imp	819	454	823	450	833
Mu (Strength I)	2058	1692	1973	1659	2003
φ _r Mn	3652		3652		3652
f _s DC1	6.7	11.2	5.2	10.6	5.4
f _s DC2	1.1	1.6	1.1	1.6	1.1
f _s DW	2.4	3.6	2.3	3.6	2.3
f _s 1.3 (L+I)	17.8	14.0	17.9	13.9	18.1
f _s (Service II)	28.0	30.4	26.5	29.7	26.9
f _s (Total)(Strength I)		40.2		39.4	
Vsr	24.8		20.4		20.7

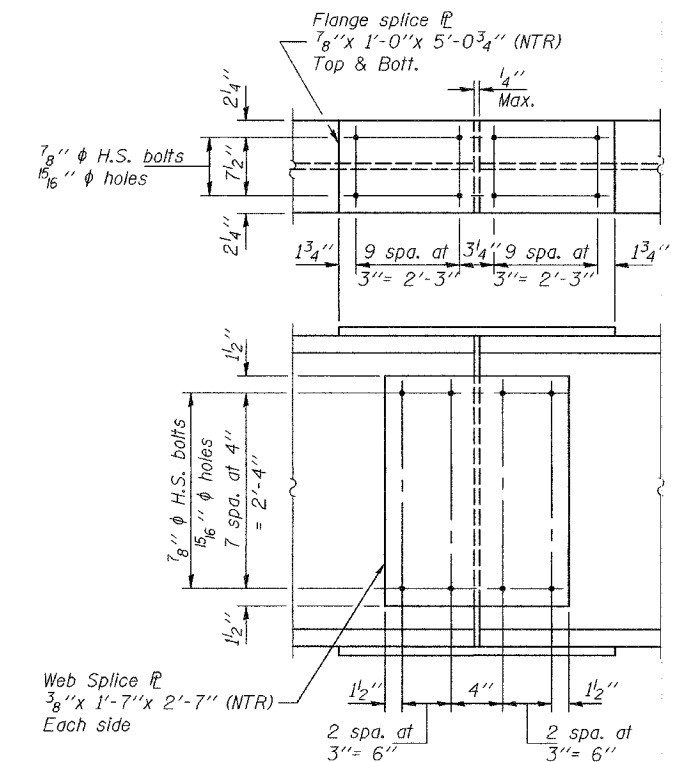
	W. Abut.	Pier 1 & Pier 4	Pier 2 & Pier 3	E. Abut.
R DC1	21.3	67.9	65.6	21.3
R DC2+DW	13.5	39.5	39.3	13.5
R _l	58.3	89.5	91.0	58.3
Imp.	14.5	16.5	16.5	14.5
R (Total)	107.6	213.4	213.4	107.6

- 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.).
- Mu (Strength I): Factored design moment (kip-ft.).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_l + Imp
- φ_r Mn: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- φ_r Mn_{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_l + 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_l + Imp
- Vsr: Maximum shear range in the span 0.75 (L + Imp).

FIXED BEARING
(24 Required)



PINTLE



SPLICE
(24 Required)

Notes: Two hardened washers shall be required over all 1/16 inch holes for diaphragms.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
Anchor bolts at all bearings may be built into the masonry. See sheet 14 of 25 for anchor bolt installation.

*TOP OF BEAM ELEVATIONS

Location	℄ Brg. W. Abut.	℄ Brg. Pier 1	℄ Splice 1	℄ Brg. Pier 2	℄ Splice 2	℄ Splice 3	℄ Brg. Pier 3	℄ Splice 4	℄ Brg. Pier 4	℄ Brg. E. Abut.
Beam 1	480.26	480.63	480.70	480.89	480.92	480.90	480.86	480.64	480.57	480.23
Beam 2	480.39	480.76	480.83	481.02	481.05	481.03	480.99	480.77	480.70	480.36
Beam 3	480.49	480.86	480.93	481.12	481.15	481.13	481.09	480.87	480.80	480.46
Beam 4	480.49	480.86	480.93	481.12	481.15	481.13	481.09	480.87	480.80	480.46
Beam 5	480.39	480.76	480.83	481.02	481.05	481.03	480.99	480.77	480.70	480.36
Beam 6	480.26	480.63	480.70	480.89	480.92	480.90	480.86	480.64	480.57	480.23

*For fabrication use only.

DESIGNED	Curt M. Evoy
CHECKED	Nick R. Barnett
DRAWN	h.t. duong
CHECKED	CME/NRB

Nov. 15, 2006
EXAMINED *Thomas J. Demagallo*
PASSED *Ralph E. Anderson*

STRUCTURAL STEEL DETAILS
F.A.P. RTE. 789 - SEC. 54BR-1
MADISON COUNTY
STATION 280+73
STRUCTURE NO. 060-0340