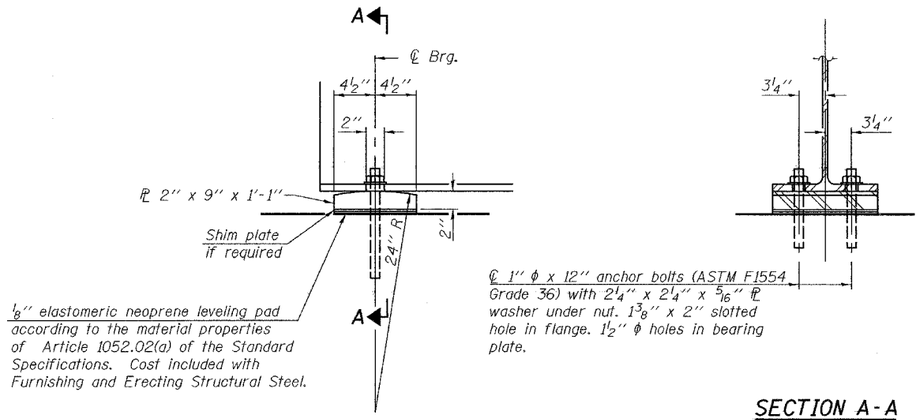
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1832	5BR-2	WASHINGTON	97	38
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 12
18 SHEETS

Contract #76949



ELEVATION AT ABUTMENT

SECTION A-A

FIXED BEARING

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.

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.

INTERIOR BEAM MOMENT TABLE		0.5 Sp.
I_s	(in^4)	4580
$I_c(n)$	(in^4)	12183
$I_c(3n)$	(in^4)	8715
S_s	(in^3)	371
$S_c(n)$	(in^3)	544
$S_c(3n)$	(in^3)	487
DC1	(k/')	0.773
M_{DC1}	('k)	365.5
DC2	(k/')	0.150
M_{DC2}	('k)	70.9
DW	(k/')	0.296
M_{DW}	('k)	139.8
M_{L+Imp}	('k)	708.3
M_U(Strength I)	('k)	1994.7
$\phi_f M_n$	('k)	2567.3
f_s DC1	(ksi)	11.82
f_s DC2	(ksi)	1.75
f_s DW	(ksi)	3.44
f_s 1.3(L+I)	(ksi)	20.31
f_s (Service II)	(ksi)	37.32
f_s (Total)(Strength I)	(ksi)	-
V_f	(k)	21.7

INTERIOR GIRDER REACTION TABLE HL93 Loading		
		Abut.
R_{DC1}	(k)	23.8
R_{DC2}	(k)	4.6
R_{DW}	(k)	9.1
R_{L+Imp}	(k)	67.0
R_{Total}	(k)	104.5

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.).

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).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+Imp}$

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

*TOP OF BEAM ELEVATIONS

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
West Abut.	439.88	439.99	440.08	440.08	439.99	439.88
East Abut.	439.86	439.97	440.06	440.06	439.97	439.86

*For Fabrication only

DESIGNED	Phillip R. Litchfield
CHECKED	Nicholas R. Barnett
DRAWN	Gregory D. Farmer
CHECKED	PRL/NRB

January 28, 2008
EXAMINED Thomas J. Domagalski
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
F.A.S. RTE. 1832 - SEC. 5BR-2
WASHINGTON COUNTY
STATION 1453+11.50
STRUCTURE NO. 095-0077

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