STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 42	139BR	BOND	59	47
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 14
19 SHEETS

Contract #76391

INTERIOR GIRDER MOMENT TABLE		
		0.5 Span
I_s	(in^4)	15566
$I_c(n)$	(in^4)	37524
$I_c(3n)$	(in^4)	27408
S_s	(in^3)	823
$S_c(n)$	(in^3)	1097
$S_c(3n)$	(in^3)	1008
DC1	(k/')	0.907
M_{DC1}	('k)	828.8
DC2	(k/')	0.150
M_{DC2}	('k)	137.1
DW	(k/')	0.363
M_{DW}	('k)	331.2
M_{L+Imp}	('k)	1353.3
M_u(Strength I)	('k)	4072.5
$\phi_f M_n$	('k)	5317.9
f_s DC1	(ksi)	12.08
f_s DC2	(ksi)	1.63
f_s DW	(ksi)	3.94
f_s 1.3(L+I)	(ksi)	19.24
f_s (Service II)	(ksi)	36.89
f_s (Total)(Strength I)	(ksi)	
V_f	(k)	26.5

INTERIOR GIRDER REACTION TABLE HL93 Loading		
		Abutment
R_{DC1}	(k)	38.8
R_{DC2}	(k)	6.4
R_{DW}	(k)	15.5
R_{L+Imp}	(k)	85.7
R_{Total}	(k)	146.4

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.).

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 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.

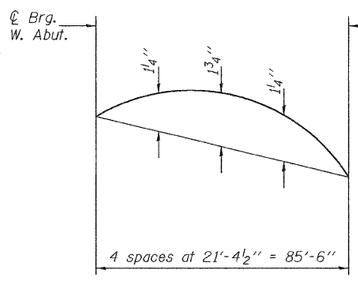
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Two $\frac{1}{8}$ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

Two hardened washers required for each set of oversized holes.

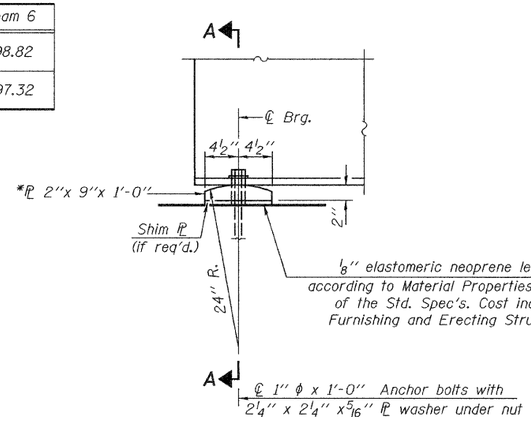


CAMBER DIAGRAM

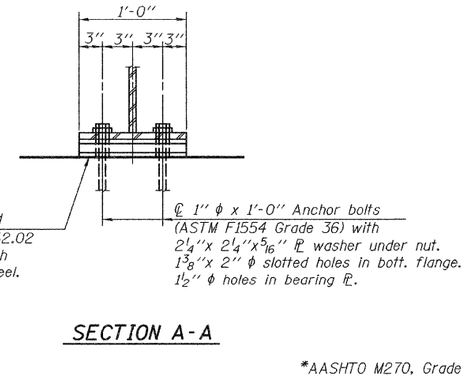
**TOP OF WEB ELEVATIONS

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
℄ Brg. W. Abut.	498.82	498.96	499.07	499.07	498.96	498.82
℄ Brg. E. Abut.	497.32	497.46	497.58	497.58	497.46	497.32

**For fabrication use only.



ELEVATION AT ABUTMENTS



SECTION A-A

FIXED BEARING
(12 Required)

*AASHTO M270, Grade 50.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1" ϕ	Each	24

DESIGNED	Phillip R. Litchfield
CHECKED	Nick R. Barnett
DRAWN	R. Sommer ØML
CHECKED	P.R.L./N.R.B.

November 7, 2008
EXAMINED Thomas J. Domagalski
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
F.A.P. ROUTE 42 - SECTION 139BR
BOND COUNTY
STATION 2049+33.51
STRUCTURE NO. 003-0061

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