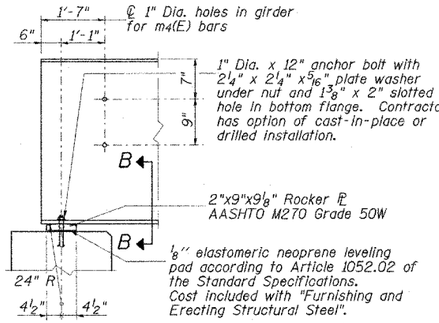
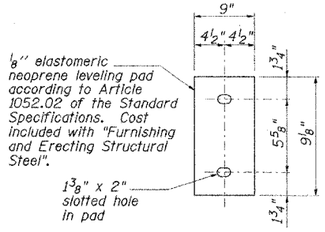
F.A.U. RTE.	SECTION *	COUNTY	TOTAL SHEETS	SHEET NO.
	05-00444-00-BR	SANGAMON	33	21
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

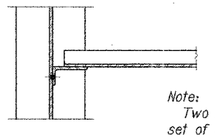
*CITY OF SPRINGFIELD SHEET 15 OF 24 SHEETS



END OF BEAM ELEVATION



PLAN
ELASTOMERIC NEOPRENE LEVELING PAD (ABUT.)
(20 Required)

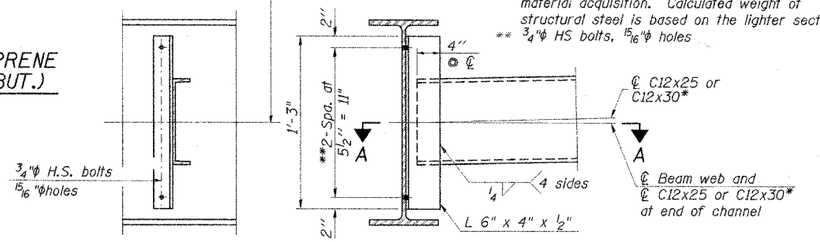


SECTION A-A

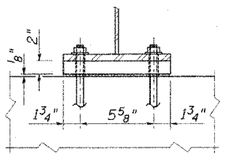
Note:
Two hardened washers required for each set of oversized holes.

* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.

** ¾"ϕ HS bolts, 15/16"ϕ holes



DIAPHRAGM D
(72 Required)

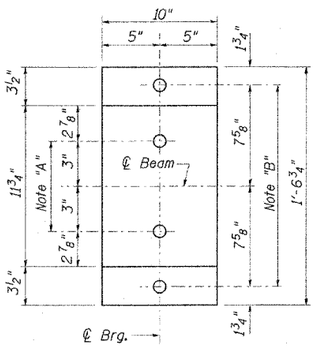


SECTION B-B

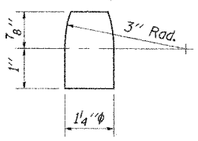
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade and diameter specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

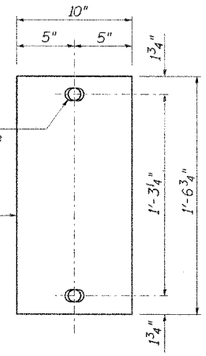
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.



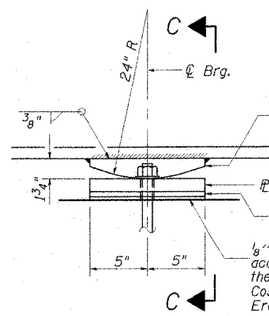
PLAN AT PIER



DETAIL OF PINTLE



PLAN - ELASTOMERIC NEOPRENE MAT (PIER)
(20 Required)

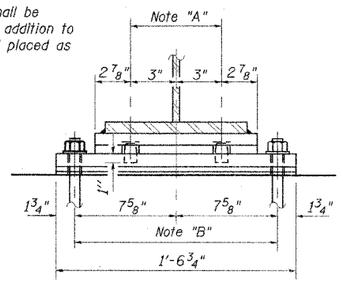


Note:
Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

ELEVATION AT PIER

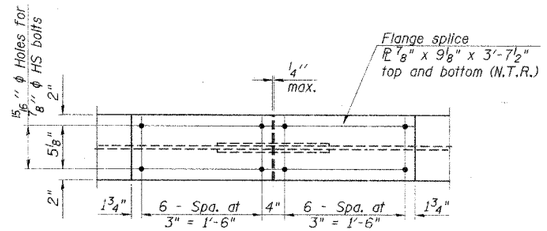
Note "A"
1 3/8"ϕ Holes-1" deep in top ℄ for 1¼" ϕ pintles. Thread or press fit in bottom ℄.

FIXED BEARING AT PIER 1 & PIER 2
(20 Required)

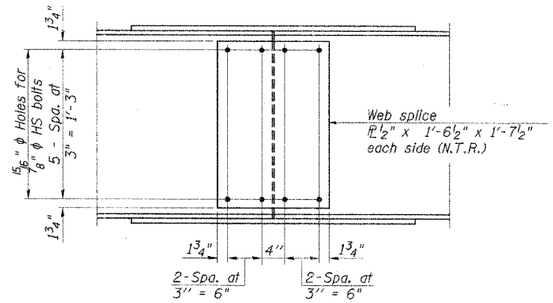


SECTION C-C

Note "B"
1" ϕ x 1'-0" Anchor bolts with 2¼" x 2¼" x 5/16" ℄ washer under nut
1½" ϕ Holes in bottom ℄.



PLAN



ELEVATION

SPLICE DETAIL
(20 Required)

Notes:
1. H.S. bolts for splices shall be 7/8"ϕ AASHTO M164 (ASTM A325) bolts.
2. All splice plate material shall be AASHTO M270 Grade 50 W (N.T.R.)
3. Load carrying components designed "N.T.R." shall conform to the supplemental requirements for notch toughness (Zone 2).

INTERIOR BEAM GIRDER MOMENT TABLE		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Span 2
I_s	(in^4)	2700	2700	2700
$I_c(n)$	(in^4)	8510	——	8510
$I_c(3n)$	(in^4)	6270	——	6270
S_s	(in^3)	222	222	222
$S_c(n)$	(in^3)	355	——	355
$S_c(3n)$	(in^3)	319	——	319
DC1	(k/')	0.777	0.965	0.777
M_{DC1}	('k)	125.9	253.3	98.9
DC2	(k/')	0.188	——	0.188
M_{DC2}	('k)	33.9	——	33.5
DW	(k/')	0.317	0.317	0.317
M_{DW}	('k)	58.0	70.0	56.0
M_{L+Imp}	('k)	501.4	275.3	515.2
M_U(Strength I)	('k)	1164.2	903.4	1151.1
$\phi_f M_n$	('k)	1811.4	——	1832.7
f_s DC1	(ksi)	6.81	13.69	5.35
f_s DC2	(ksi)	1.28	——	1.26
f_s DW	(ksi)	2.18	3.78	2.11
f_s 1.3(¼+1)	(ksi)	22.03	19.35	22.64
f_s (Service II)	(ksi)	32.30	36.82	31.35
f_s (Total)(Strength I)	(ksi)	——	48.83	——
V_r	(k)	19.5	——	15.8

INTERIOR BEAM REACTION TABLE HL93 Loading		N. Abut. or S. Abut.	Pier 1 or Pier 2
R_{DC1}	(k)	14.0	44.9
R_{DC2}	(k)	3.6	10.7
R_{DW}	(k)	6.1	18.0
R_{L+Imp}	(k)	61.7	88.2
R_{Total}	(k)	85.4	161.8

NOTES:

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

Vr: Factored shear range computed according to Article 6.10.10.

REVISIONS NAME	DATE

CMT
CRAWFORD MURPHY & TILLY, INC.
CONSULTING ENGINEERS
SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO
ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL

CITY OF SPRINGFIELD, ILLINOIS
FRAMING DETAILS & TABLES
FAU 8006-BRUNS LANE OVER SPRING CREEK
SECTION 05-00444-00-BR
SANGAMON COUNTY
STATION 115+77.50 S.N. 084-6017
SCALE: NONE DRAWN BY: GLD
DATE: 6/19/07 CHECKED BY: WK

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6/22/2007