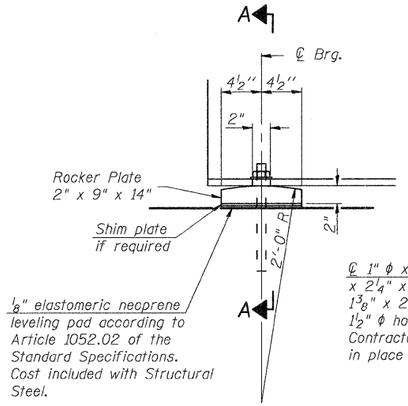
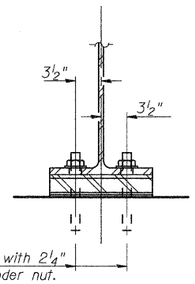
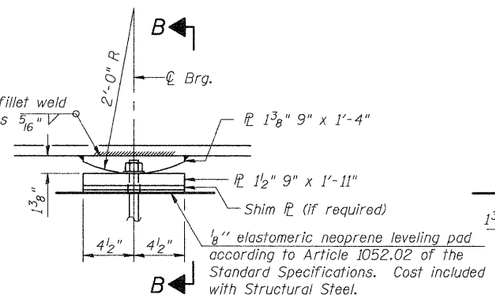
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT ABUTMENT

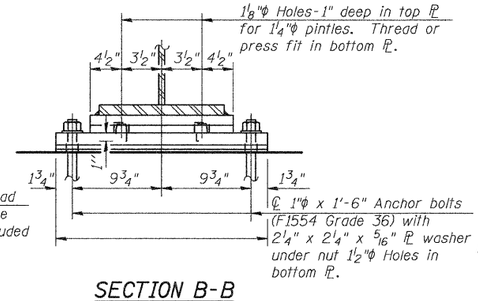


SECTION A-A



ELEVATION AT PIER

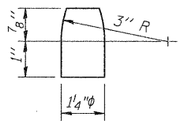
FIXED BEARING
(12 Required)



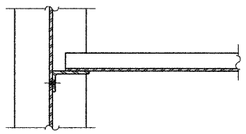
SECTION B-B

FIXED BEARING
(12 Required)

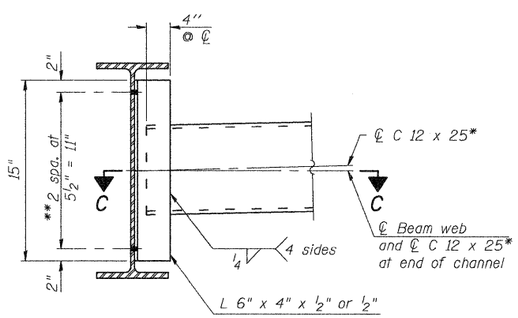
I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.^{4} and in.^{3}).
$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the 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}).
Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (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.).
$\phi_f M_{nc}$: 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_{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.



*** PINTLE



SECTION C-C



INTERIOR DIAPHRAGM
(30 Required)

* Alternate C 12 x 30 channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized shall be provided at no extra cost to the Department.
** ¾" ϕ HS bolts, 15/16" ϕ holes
*** AASHTO M270 Grade 50

Notes:
Two hardened washers required for each set of oversized holes.
Anchor bolts at fixed bearings may be built into the masonry.

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or 2	0.5 SP 2
I_s	(in^4)	6310	6310	6310
$I_c(n)$	(in^4)	15187	-	15187
$I_c(3n)$	(in^4)	10998	-	10998
S_s	(in^3)	458	458	458
$S_c(n)$	(in^3)	636	-	636
$S_c(3n)$	(in^3)	573	-	573
DC1	(k/')	0.78	0.74	0.74
M_{DC1}	('k)	73	291	205
DC2	(k/')	0.15	0.15	0.15
M_{DC2}	('k)	17	49	47
DW	(k/')	0.292	0.292	0.292
M_{DW}	('k)	33	95	92
M_{L+Imp}	('k)	430	371	647
M_u(Strength I)	('k)	915	1214	1584
$\phi_f M_n$, $\phi_f M_{nc}$	('k)	2989	-	2989
f_s DC1	(ksi)	1.9	7.6	5.4
f_s DC2	(ksi)	0.4	1.3	1.0
f_s DW	(ksi)	0.7	2.5	1.9
f_s 1.3(L+I)	(ksi)	10.5	12.6	15.9
f_s (Service II)	(ksi)	13.5	24.0	24.1
f_s (Total)(Strength I)	(ksi)	-	31.9	-
V_f	(k)	11.1	-	9.9

INTERIOR GIRDER REACTION TABLE HL93 Loading			
		Abut.	Pier 1 or 2
R_{DC1}	(k)	11.0	51.6
R_{DC2}	(k)	2.3	9.9
R_{DW}	(k)	4.5	19.1
R_{L+Imp}	(k)	50.2	74.7
R_{Total}	(k)	68.0	155.3

STRUCTURAL STEEL
KINMUNDY/LOUISVILLE ROAD
OVER ILLINOIS CENTRAL RR
STA. 475+50.44

DESIGNED	B.B.
CHECKED	C.J.F.
DRAWN	J.G.
CHECKED	C.J.F. & B.B.

BERNARDIN LOCHMUELLER & ASSOCIATES, INC.
3 Oak Drive
Maryville, IL 62062-5635
Local-(618) 288-4665
Fax 618-288-4666

SHEET NO. 11	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22 SHEETS	2703	(9-VBR)B	CLAY	65	33
		SN 013-0044	CONTRACT NO. 74136		
	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		