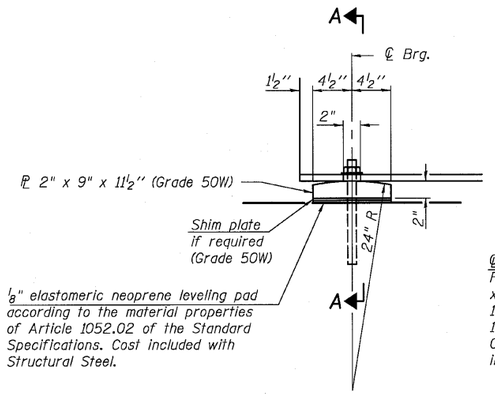
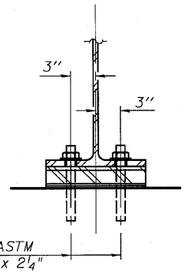
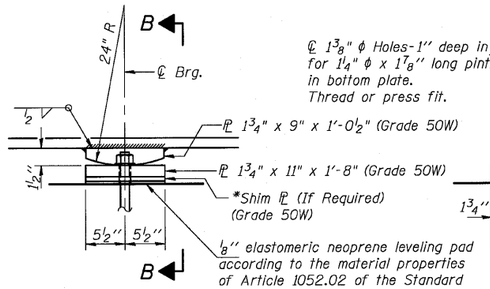


ELEVATION



SECTION A-A



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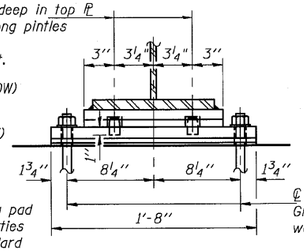
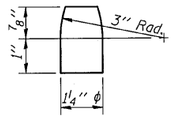


SECTION B-B



PINTLE

FIXED BEARING AT PIERS 1 AND 2

FIXED BEARING AT ABUTMENTS

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Piers	0.6 Sp. 2
I_s	(in^4)	5900	5900	5900
$I_c(n)$	(in^4)	16269	———	16269
$I_c(3n)$	(in^4)	12167	———	12167
S_s	(in^3)	359	359	359
$S_c(n)$	(in^3)	534	———	534
$S_c(3n)$	(in^3)	485	———	485
S_{xt}	(in^3)	———	———	———
DC1	(k/')	0.867	0.867	0.867
M_{DC1}	('k)	76	265	187
DC2	(k/')	0.15	0.15	0.15
M_{DC2}	('k)	13	45	32
DW	(k/')	0.33	0.33	0.33
M_{DW}	('k)	29	102	72
$M_{\ell} + IM$	('k)	439	481	548
M_u (Strength I)	('k)	923	1381	1341
* $\phi_f M_n$	('k)	2783	———	2683
f_s DC1	(ksi)	2.5	8.9	6.3
f_s DC2	(ksi)	0.3	1.5	0.8
f_s DW	(ksi)	0.7	3.4	1.8
f_s 1.3(M_{ℓ}+IM)	(ksi)	12.8	20.9	16.0
f_s (Service II)	(ksi)	16.3	34.7	24.7
** f_s (Total)(Strength I)	(ksi)	———	46.2	———
F_{cr} (Service II)	(ksi)	———	———	———
Vr	(k)	33	———	32
F_{cr}	(ksi)	———	———	———

* Compact Sections
** Non-Compact Sections

INTERIOR GIRDER REACTION TABLE			
		Abutments	Piers
R_{DC1}	(k)	11.7	52.4
R_{DC2}	(k)	2.0	9.0
R_{DW}	(k)	4.5	20.2
R_{ℓ}	(k)	49.5	96.4
R_I	(k)	13.2	21.9
R_{Total}	(k)	80.9	199.9

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.).
$M_{\ell} + IM$: Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).
M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{\ell} + IM$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article A6.10.7.1 (kip-ft.).
f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{\ell} + IM$
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{\ell} + IM$
Vr: Maximum factored shear range computed according to Article 6.10.10.

NOTES

Two ⅛ inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on the plans.

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.

BILL OF MATERIAL

ITEM	Unit	Total
Anchor Bolts, 1"ϕ	Each	96

BEARING DETAILS
STRUCTURE NO. 053-0187 (NB)
STRUCTURE NO. 053-0186 (SB)

Coombe-Bloxdorf P.C.
-CIVIL ENGINEERS-
-STRUCTURAL ENGINEERS-
-LAND SURVEYORS-
Design Firm License No. 184-002703

PROJECT NO. 05004-10
SCALE
DATE 8/10/10
DESIGN BY GB/MCB
DRAWN BY MML
CHECKED BY MCB

SHEET NO. 24
42 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(53-1) HBR & HBR-1	LIVINGSTON	102	48
		CONTRACT NO. 66856		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		