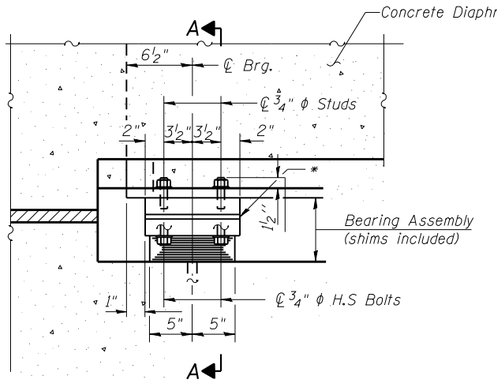
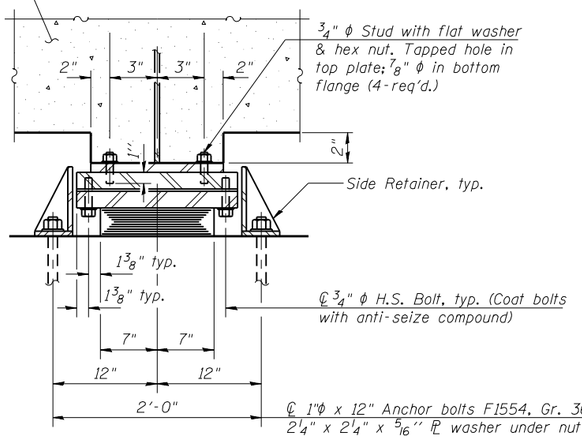
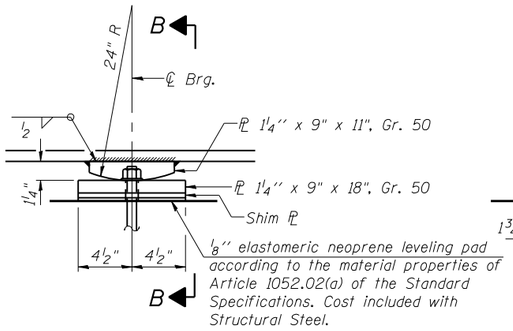


ELEVATION AT ABUTMENTS

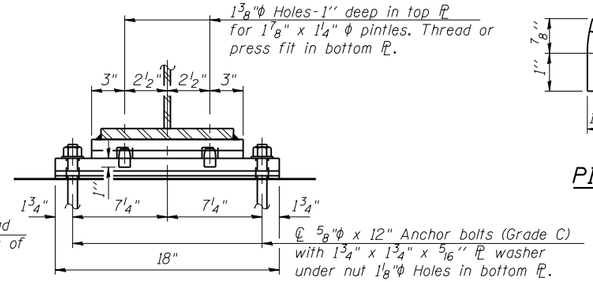


SECTION A-A

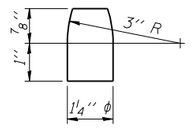
TYPE I ELASTOMERIC EXP. BEARING



ELEVATION AT PIERS



SECTION B-B



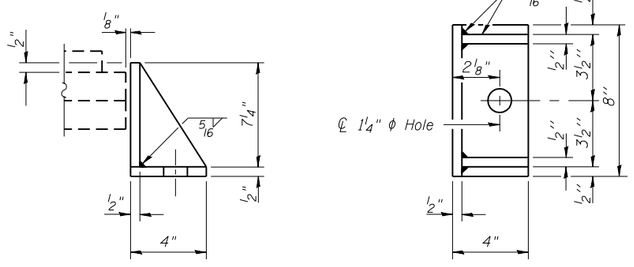
PINTLE

FIXED BEARING

BEARING ASSEMBLY

See Section A-A for ¾" ϕ Studs in Top Plate

*2" x 11" x 1'-7½" Fill Plate at N. Abut. only (5 req'd)
and shim ℙ if required.



SIDE RETAINER

Equivalent rolled angle with stiffeners
will be allowed in lieu of welded plates.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. 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.

Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.

Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

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.

The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

Shim plates shall not be placed under elastomeric bearing assembly.

BEAM MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Piers	0.5 Sp. 2
I_s	(in^4)	2850	2850	2850
$I_c(n)$	(in^4)	8326	-	8326
$I_c(3n)$	(in^4)	6157	-	6157
S_s	(in^3)	213	213	213
$S_c(n)$	(in^3)	328	-	328
$S_c(3n)$	(in^3)	296	-	296
DC1	(k/')	0.7	0.7	0.7
M_{DC1}	('k)	76	84	25
DC2	(k/')	0.18	0.18	0.18
M_{DC2}	('k)	21	21	12
DW	(k/')	0.25	0.25	0.25
M_{DW}	('k)	29	30	16
M_{L+IM}	('k)	378	165	314
M_u (Strength I)	('k)	826	464	620
$\phi_f M_n$, $\phi_f M_{nc}$	('k)	1675	872	1675
f_s DC1	(ksi)	4.3	4.7	1.4
f_s DC2	(ksi)	0.8	1.2	0.5
f_s DW	(ksi)	1.1	1.7	0.6
f_s 1.3(L+IM)	(ksi)	18.0	12.1	14.9
f_s (Service II)	(ksi)	24.2	19.7	17.4
V_f	(k)	17	-	13

BEAM REACTION TABLE			
		Abut.	Pier
R_{DC1}	(k)	10.5	29.0
R_{DC2}	(k)	2.7	6.9
R_{DW}	(k)	3.8	9.5
R_{L+IM}	(k)	58.0	91.7
R_{Total}	(k)	75.0	137.1

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f (Total-Strength I, and Service II) due to non-composite dead loads (in. and in.).

$I_c(n)$, $S_c(n)$: 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+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

$\phi_f M_n$: 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).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$

V_f: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

M_L and R_L: Include the effects of centrifugal force and superelevation similarly at all locations.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, ⅝"	Each	20
Anchor Bolts, 1"	Each	20
Elastomeric Bearing Assembly, Type 1	Each	10

FILE NAME = ...\093\0824-74217-014-bear--details.dgn
CB PROJECT NO 88053-5

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

USER NAME = _CFC_	DESIGNED - GB/MCB	REVISED -	
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PLOT DATE = 7/23/2013	CHECKED - MCB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 093-0024
SHEET NO. 14 OF 24 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1B	(12A)B-1	WABASH	52	36
		CONTRACT NO. 74217		
	ILLINOIS FED. AID PROJECT			