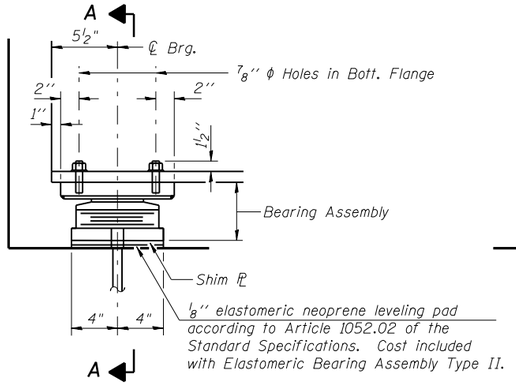
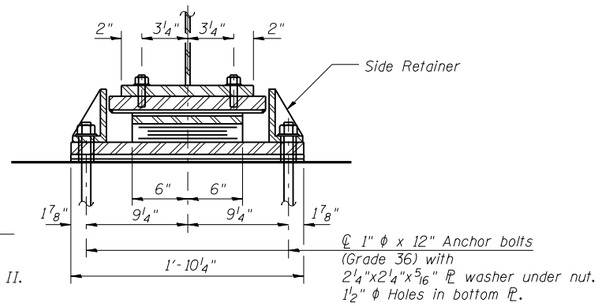
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 42 (IL 127)	106 (B-1)	Montgomery	61	44
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
20 SHEETS

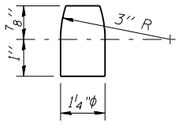
Contract #72150



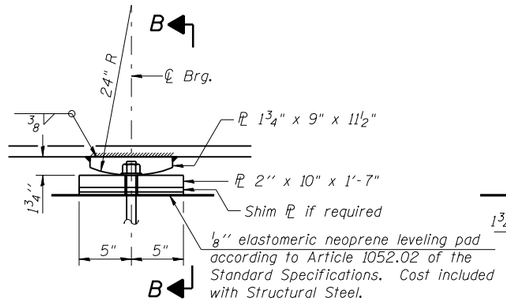
ELEVATION AT ABUTMENTS



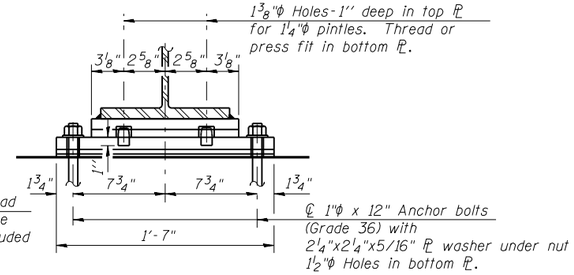
SECTION A-A



PINTLE

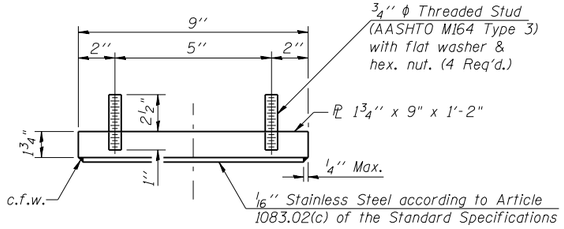


ELEVATION AT PIERS

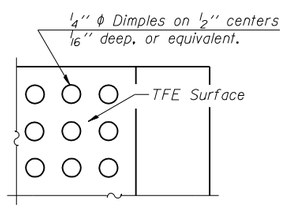


SECTION B-B

TYPE II ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



PLAN-TFE SURFACE

SHIM PLATES

	Beam 3
South Abut.	⅛"

Notes:

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 structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50W.

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=36 ksi). 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.

Anchor bolts for Type II bearings shall be placed in holes drilled through the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

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

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

The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

FIXED BEARING

INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in^4)	5770	5770	5770
$I_c(n)$	(in^4)	16313	-	16313
$I_c(3n)$	(in^4)	11831	-	11831
S_s	(in^3)	380	380	380
$S_c(n)$	(in^3)	580	-	580
$S_c(3n)$	(in^3)	520	-	520
ℓ	(k/')	0.828	1.278	0.828
$M\ell$	('k)	206	563	203
$s\ell$	(k/')	0.450	-	0.450
$M_s\ell$	('k)	126	-	145
ML	('k)	420	242	464
M_{Imp}	('k)	113	63	116
$\frac{5}{3}[ML + Imp]$	('k)	889	508	967
M_a	('k)	1586	1392	1708
* M_u	('k)	2540	-	2788
f_s ℓ non-comp	(ksi)	6.50	17.78	6.40
f_s ℓ (comp)	(ksi)	2.90	-	3.34
f_s $\frac{5}{3}[ML + M_{Imp}]$	(ksi)	18.39	16.04	20.00
f_s (Overload)	(ksi)	27.79	33.82	29.74
** f_s (Total)	(ksi)	-	43.97	-
VR	(k)	49.9		43.1

INTERIOR BEAM REACTION TABLE			
		Abut.	Pier
$R\ell$	(k)	29.2	96.1
RL	(k)	35.5	45.0
Imp.	(k)	9.6	8.6
R_{Total}	(k)	74.3	149.7

* Compact section
** Braced non-compact and partially braced section

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing fs (Total and Overload) 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 fs (Total and Overload) 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 fs (Total and Overload) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

ℓ: Un-factored non-composite dead load (kips/ft.).

$M\ell$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\ell$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\ell$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

ML: Un-factored live load moment (kip-ft.).

M_{Imp}: Un-factored moment due to impact (kip-ft.).

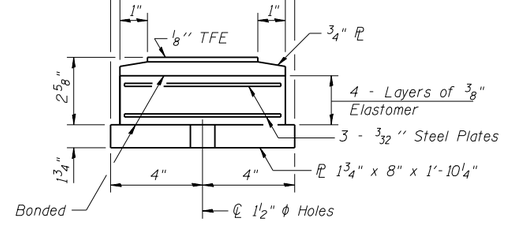
M_a: Factored design moment (kip-ft.). $1.3\ [M\ell + M_s\ell + \frac{5}{3}(ML + M_{Imp})]$

M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

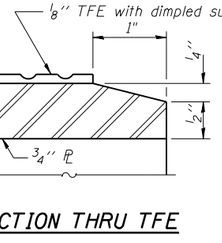
f_s (Overload): Sum of stresses as computed from the moments below (ksi). $M\ell + M_s\ell + \frac{5}{3}(ML + M_{Imp})$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi). $1.3\ [M\ell + M_s\ell + \frac{5}{3}(ML + M_{Imp})]$

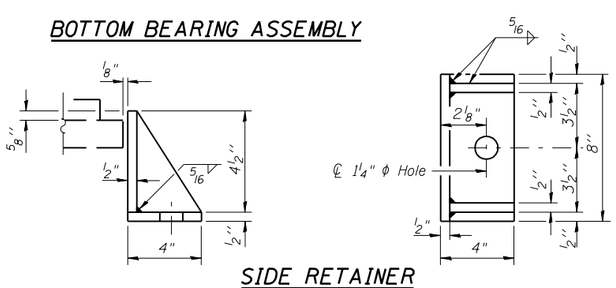
VR: Maximum L + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).



BOTTOM BEARING ASSEMBLY

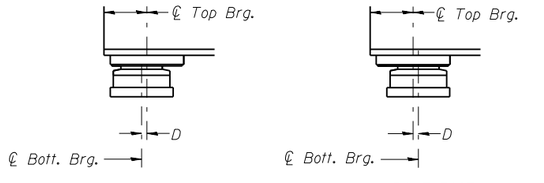


SECTION THRU TFE



SIDE RETAINER

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



SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12
Anchor Bolts 1" ϕ	Each	48

ILLINOIS DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
ILLINOIS ROUTE 127 OVER BEARCAT CREEK
F.A.P. ROUTE 42 - SECTION 106 (B-1)
MONTGOMERY COUNTY
STA. 126+58.45
STRUCTURE NO. 068-0506

REVISIONS	
NAME	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Chetham, Illinois

Designed By: RKM | Checked By: MTH | Drawn By: AJF
Date: 04/2007 | Files: 068-0506.DGN

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