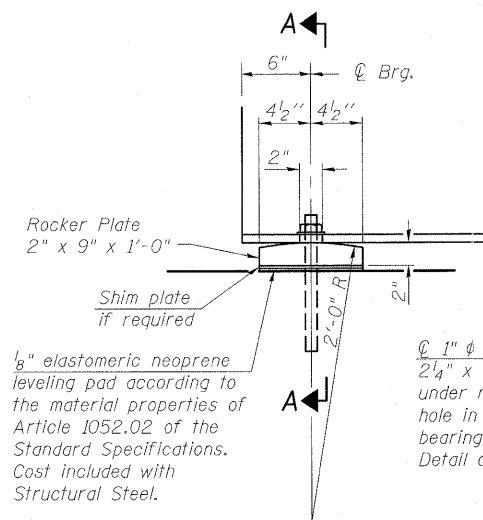
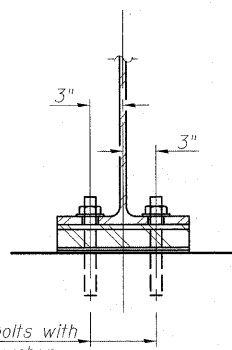


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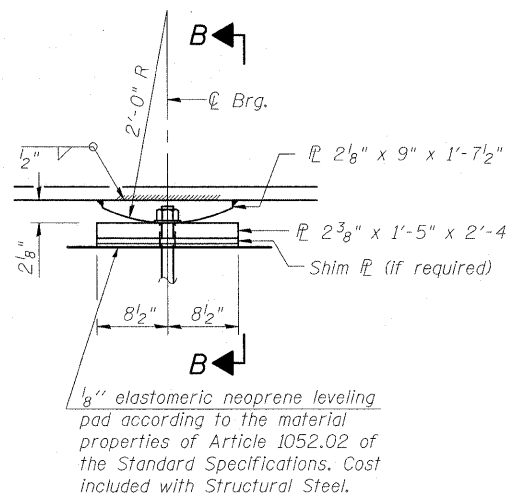


ELEVATION AT ABUTMENT

FIXED BEARING
(20 Required)

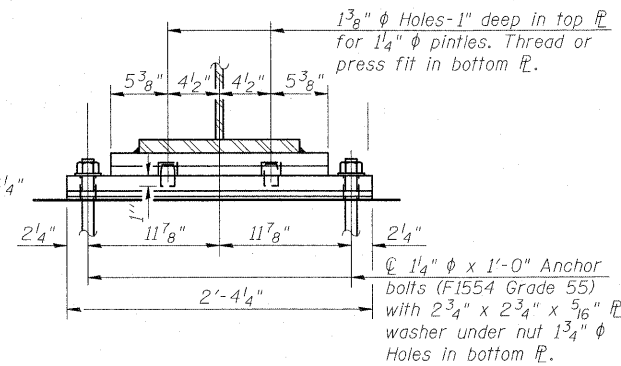


SECTION A-A



ELEVATION AT PIER

FIXED BEARING
(10 Required)

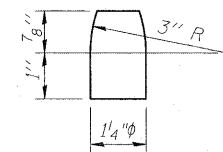


SECTION B-B

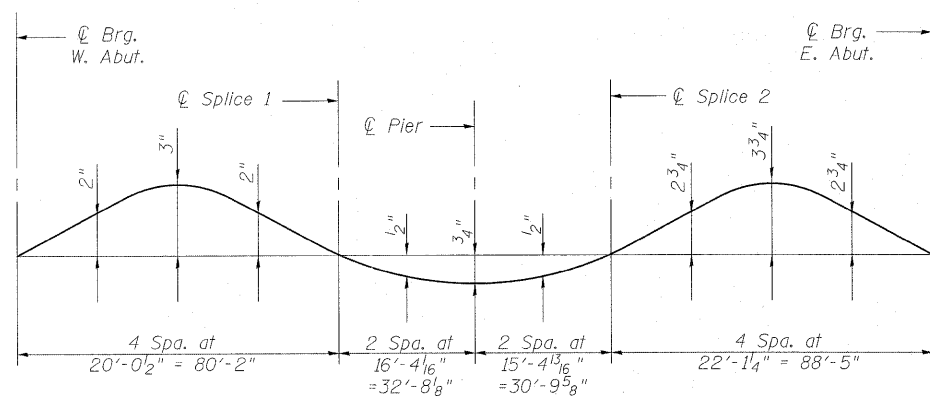
- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular 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.).
- MDC1: 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.).
- MDC2: 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.).
- MDW: 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.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + imp$
- $\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- $\phi_r M_{nc}$: 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).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + imp$
- Vr: Factored shear range computed according to Article 6.10.10.

Notes:

- 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.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims as shown on bearing details.
- The structural steel plates and pintles of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.



PINTLE



CAMBER DIAGRAM

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Pier	0.6 SP 2
I_s	(in ⁴)	24061	55206	24061
$I_c(n)$	(in ⁴)	59757	-	59757
$I_c(3n)$	(in ⁴)	44034	-	44034
S_s	(in ³)	966	2045	966
$S_c(n)$	(in ³)	1319	-	1319
$S_c(3n)$	(in ³)	1193	-	1193
DC1	(k/')	1.092	1.268	1.092
MDC1	(k)	766	2446	960
DC2	(k/')	0.235	0.235	0.235
MDC2	(k)	189	424	231
DW	(k/')	0.370	0.370	0.370
MDW	(k)	298	668	364
$M_L + imp$	(k)	1790	1866	1902
M_u (Strength I)	(k)	4774	7855	5363
$\phi_r M_n, \phi_r M_{nc}$	(k)	7385	8520	7390
f_s DC1	(ksi)	9.5	14.4	11.9
f_s DC2	(ksi)	1.9	2.5	2.3
f_s DW	(ksi)	3.0	3.9	3.7
f_s 1.3(L+IMP)	(ksi)	21.2	14.2	22.5
f_s (Service II)	(ksi)	35.6	35.0	40.4
f_s (Total)(Strength I)	(ksi)	-	-	-
Vr	(k)	29.6	-	30.4

INTERIOR GIRDER REACTION TABLE			
HL93 Loading			
	Abutment		Pier
	Span 1	Span 2	
R_{DC1} (k)	42.7	47.2	174.6
R_{DC2} (k)	9.5	10.5	34.6
R_{DW} (k)	15.0	16.5	54.5
$R_L + imp$ (k)	107.7	109.7	209.9
R_{Total} (k)	174.9	183.9	473.6

**STRUCTURAL STEEL &
BEARING DETAILS
STRUCTURE NO. 025-0106**

DESIGNED	A.C.S.
CHECKED	B.B.
DRAWN	W.J.S.
CHECKED	C.J.F.



**BERNARDIN
LOCHMUELLER &
ASSOCIATES, INC.**

3 Oak Drive
Mareville, IL 62969-5685
Local (618) 288-4665
Fax 618-288-4666

SHEET NO. 29	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	57/70	(25-3HB-2)B	EFFINGHAM	839	358
38 SHEETS	SN 025-0106		CONTRACT NO. 74293		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					