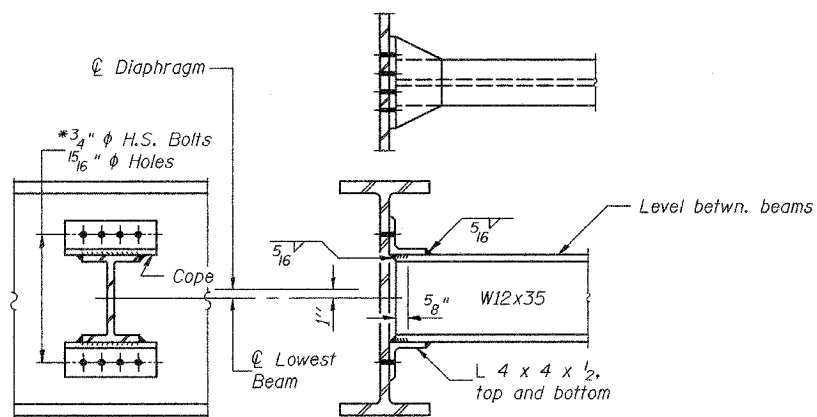


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 10 16 SHEETS
F.A.P. 310	81B-1	MORGAN	114	61	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			
Contract #72528					

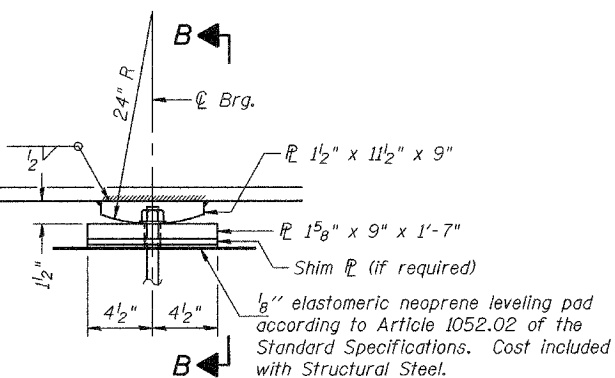
* $1/2''$ vertical x $1/16''$ slotted holes in top and bottom angles at West side of Beam 3 only except at Pier. The bolts for the slotted holes in angles at Beam 3 shall only be finger tightened prior to the Stage II deck pouring and then be fully tightened after completion of the pouring for Stage II Const. Each slotted hole shall have a $5/16''$ plate washer.

Two Hardened washers shall be required over all oversize holes for diaphragms.

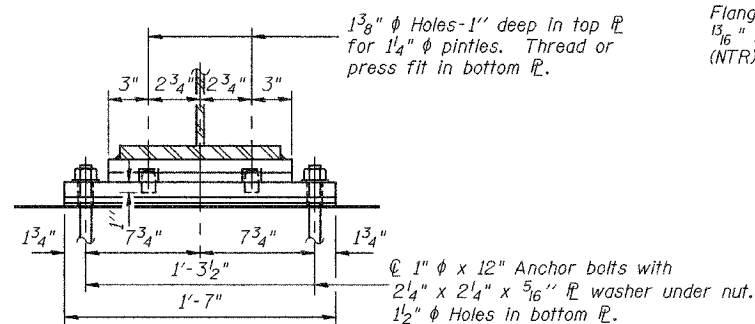


DIAPHRAGM D
40 required

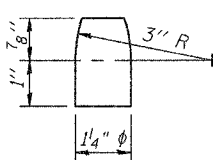
Note: "NTR" denotes members to which Notch Toughness Requirements are applicable.



ELEVATION AT PIER

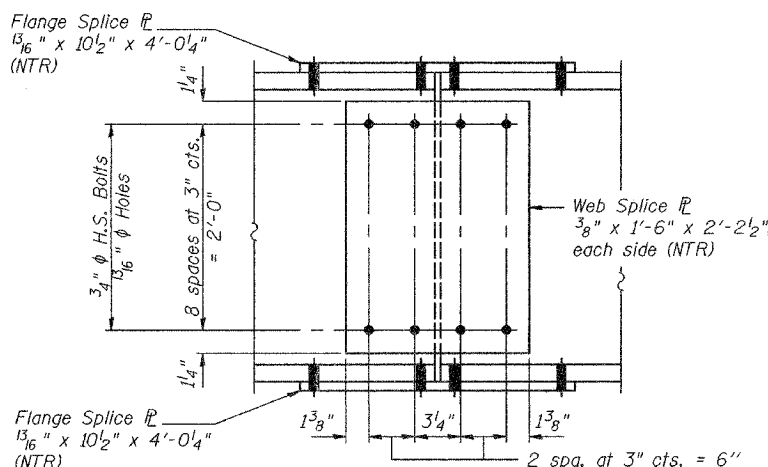
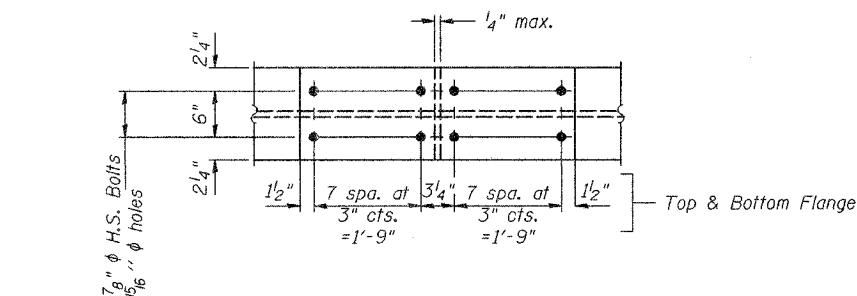


SECTION B-B

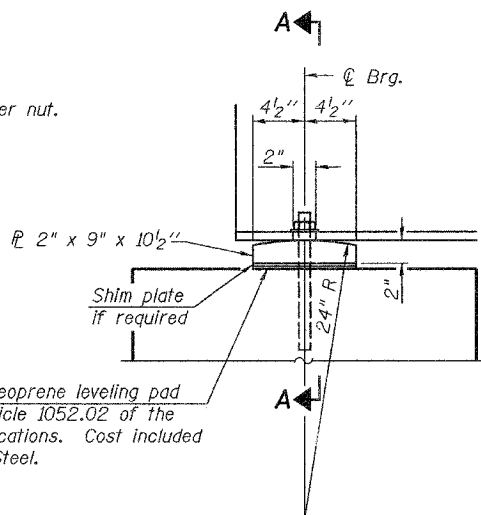


PINTLE

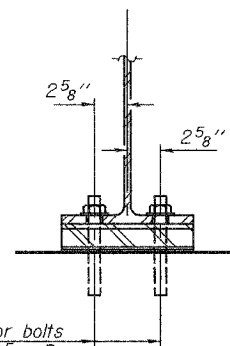
FIXED BEARING



SPLICE



ELEVATION AT ABUTMENT



SECTION A-A

ROCKER PLATE BEARING

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in ⁴)	4930	4930	4930
I_c (n)	(in ⁴)	13,953		13,953
I_c (3n)	(in ⁴)	10,365		10,365
S_s	(in ³)	329	329	329
S_c (n)	(in ³)	495		495
S_c (3n)	(in ³)	449		449
Z	(in ³)		378	
ϕ	(K/ft.)	0.846	1.37	0.846
$M\phi$	(K)	270	489	81
$s\phi$	(K/ft.)	0.524		0.524
$M_s\phi$	(K)	192		75
M_L	(K)	499	218	319
M (Imp)	(K)	153	61	93
$S_3(M_L + M(\text{Imp}))$	(K)	1053	464	687
M_a	(K)	1969	1238	1096
M_u	(K)	2639	1575	2639
$f_s\phi$ (non-comp)	(k.s.i.)	9.9	17.8	3.0
$f_s\phi$ (comp)	(k.s.i.)	5.1		2.0
$f_s\phi_3(M_L + M(\text{Imp}))$	(k.s.i.)	25.5	16.9	16.7
f_s (Overload)	(k.s.i.)	40.5	34.7	21.7
f_s (Total)	(k.s.i.)	-	-	-
VR	(K)	53.9		53.7

INTERIOR BEAM REACTION TABLE				
		N. Abut.	Pier	S. Abut.
$R\phi$	(K)	35.6	93.3	21.1
R_L	(K)	40.3	46.3	37.4
$Imp.$	(K)	10.7	13.5	10.9
R (Total)	(K)	86.6	153.1	69.4

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 $I_c(n)$ and $S_c(n)$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 $I_c(3n)$ and $S_c(3n)$ are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads.
 VR is the maximum Live Load + Impact shear range within the composite portion of the span.
 Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.
 M_a (Applied Moment) = $1.3[M\phi + M_s\phi + S_3(M_L + M(\text{Imp}))]$.
The Plastic Moment Capacity M_u is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to $M\phi + M_s\phi + S_3(M_L + I)$.
 f_s (Total) is the sum of the stresses due to $1.3[M\phi + M_s\phi + S_3(M_L + I)]$.
 $M\phi$ is the moment due to dead loads on non-composite section.
 $M_s\phi$ is the moment due to dead loads on composite section.
 M_L is the moment due to live load on non-composite or composite section.
 $M(\text{Imp})$ is the moment due to live load impact on non-composite or composite section.

Notes: See sheet 11 of 16 for Anchor Bolt installation.
All Structural Steel shall be AASHTO M270, Grade 50W.

DESIGNED	A.B.G.
CHECKED	W.A.B.
DRAWN	ØMG Frank Lowry
CHECKED	A.B.G. & W.A.B.

September 30, 2005
 EXAMINED *Thomas J. Demagala*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
 F.A.P. ROUTE 310 - SECTION 81B-1
 MORGAN COUNTY
 STATION 140+34.43
 STRUCTURE NO. 069-0504