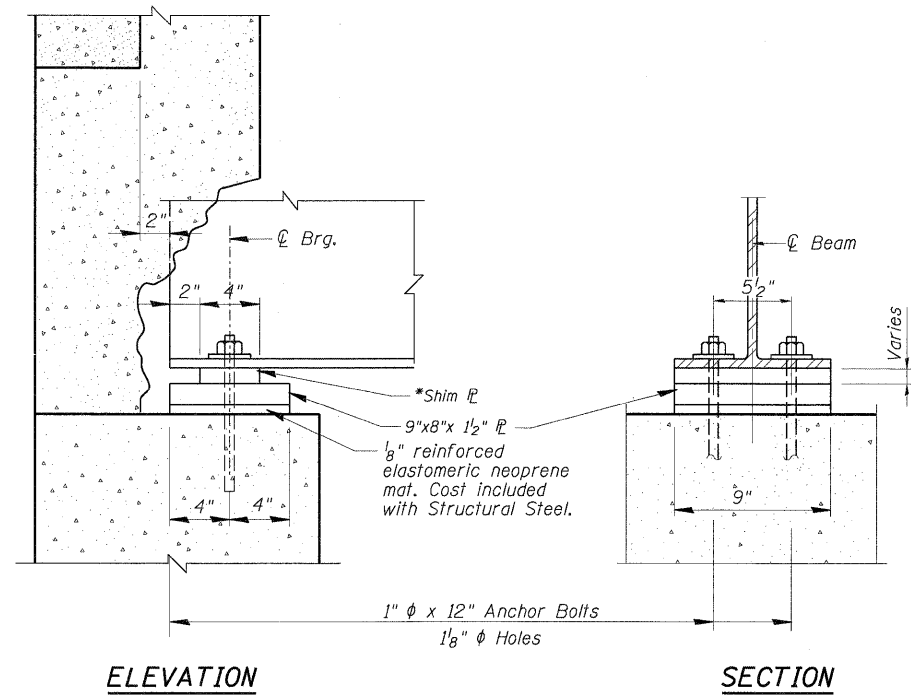
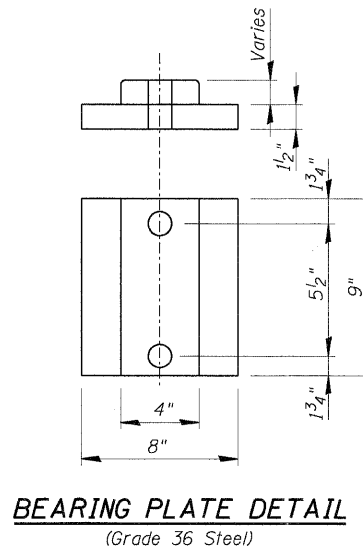


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



**BEARING DETAIL
AT EAST AND WEST ABUTMENT**



BEARING PLATE DETAIL
(Grade 36 Steel)

BEAM	W. ABUT.	E. ABUT.
1	3/4"	4 3/8"
2	1/4"	4 7/8"
3	1 3/4"	5 3/8"
4	1/4"	4 7/8"
5	3/4"	3 3/8"
6	3/4"	1 3/4"

* Shim Plates @ 4" x 9" x Thickness

SHIM PLATES THICKNESS AT ABUTMENTS

INTERIOR GIRDER MOMENT TABLE		
0.5 Sp. 1		
I_s	(in ⁴)	1830
$I_c(n)$	(in ⁴)	—
$I_c(3n)$	(in ⁴)	—
S_s	(in ³)	154
$S_c(n)$	(in ³)	—
$S_c(3n)$	(in ³)	—
S_i	(in ³)	—
D	(k/ft.)	0.63
M_D	(k)	68.2
s_D	(k/ft.)	0.4
M_{sD}	(k)	43.2
M_L	(k)	137.3
M (Imp)	(k)	41.2
$5/3 [M_L + M(Imp)]$	(k)	297.5
M_u	(k)	531.7
M_u	(k)	642.9
f_{sD} non-comp	(k.s.i.)	5.31
f_{sD} (non-comp)	(k.s.i.)	3.36
$f_{s5/3(L+Imp)}$	(k.s.i.)	23.15
f_s (Overload)	(k.s.i.)	31.82
f_s (Total)	(k.s.i.)	41.37
VR	(k)	37

INTERIOR GIRDER REACTION TABLE		
Abut.		
R_D	(k)	15.5
R_L	(k)	28.6
Imp.	(k)	8.6
R (Total)	(k)	52.7

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f (Total and Overload) due to non-composite dead loads (in₄ and in₃).

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

M_D : Un-factored moment due to non-composite dead load (kip-ft.).

s_D : Un-factored (superimposed) dead load (kips/ft.).

M_{sD} : Un-factored moment due to (superimposed) dead load (kip-ft.).

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

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

M_u : Factored design moment (kip-ft.).

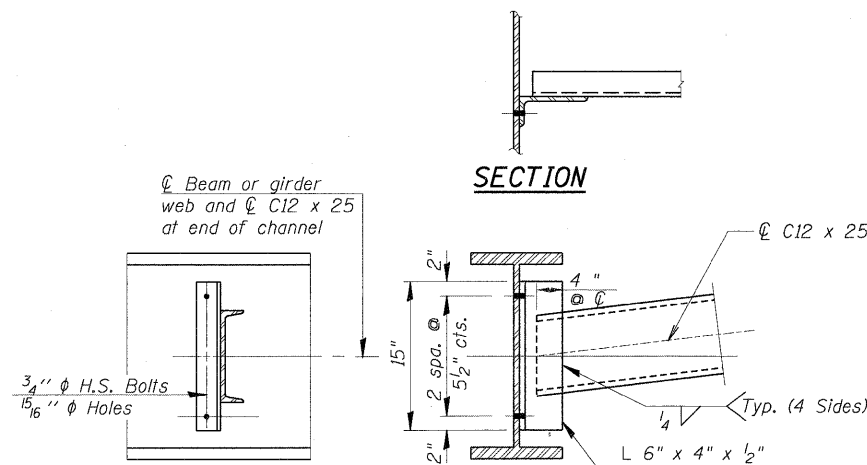
$1.3 [M_D + M_{sD} + \frac{5}{3} (M_L + M_{Imp})]$

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).
 $M_D + M_{sD} + \frac{5}{3} (M_L + M_{Imp})$

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

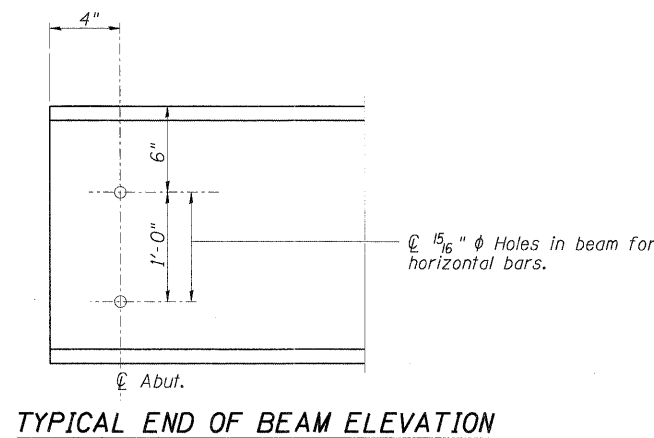
VR: Maximum $L +$ impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).



INTERIOR DIAPHRAGM
(5 Required-Grade 36 Steel)

Note:
Two hardened washers required for each set of oversize holes.

DESIGNED -	EXAMINED
CHECKED -	PASSED
DRAWN -	ENGINEER OF BRIDGE DESIGN
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES



TYPICAL END OF BEAM ELEVATION

STEEL DETAILS
EDGEWOOD DRIVE OVER
RATT CREEK
F.A.U. RTE. 4010
SECTION 09-00078-00-WR
MCHENRY COUNTY
STRUCTURE No. 056-3101
STA. 140+85.43

SHEET NO. S-13 SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	4010	09-00078-00-WR	McHENRY	128	71
CONTRACT NO. 63655					
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			