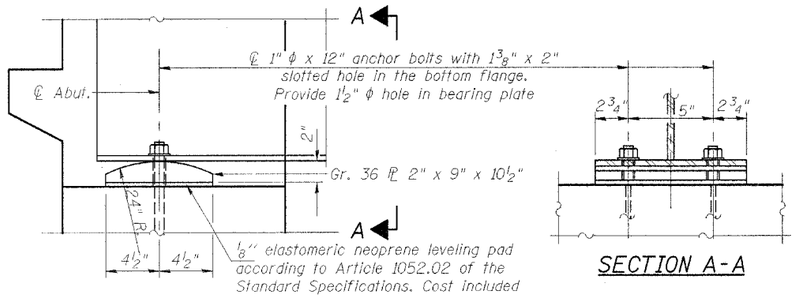
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte. 327	13B-2	Marion	78	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
17 SHEETS

Contract #94964



BEARING AT INTEGRAL ABUTMENTS

NOTE

Anchor bolts at abutments and piers may be built into the masonry.
See sheet 11 of 17 for Anchor Bolt installation.

INTERIOR GIRDER MOMENT TABLE-HL93 LOADING				
		0.4Sp. 1 or 0.6Sp. 3	Pier 1 or Pier 2	0.5Sp. 2
Is	in^4	3990	3990	3990
Ic(n)	in^4	11495	—	11495
Ic (3n)	in^4	8658	—	8658
Ss	in^3	269	269	269
Sc(n)	in^3	409	—	409
Sc(3n)	in^3	372	—	372
Z	in^3	—	—	—
DC1	k/ft	0.82	0.82	0.82
M DC1	k-ft	108.7	239.2	139.3
DC2	k/ft	0.15	0.15	0.15
M DC2	k-ft	23.0	36.6	33.2
DW	k/ft	0.36	0.36	0.36
M DW	k-ft	55.3	87.9	79.6
M LL+Imp	k-ft	522.7	329.1	627.2
Ma (Strength I)	k-ft	1162.3	1052.6	1432.6
Mr	k-ft	2280	—	2280
fs DC1	ksi	4.9	10.7	6.2
fs DC2	ksi	0.7	1.6	1.1
fs DW	ksi	1.8	3.9	2.6
fs 1.3(LL+I)	ksi	19.9	19.1	23.9
fs (Ser II)	ksi	27.3	35.3	33.8
fs (Total)(Strength I)	ksi	—	46.9	—
Vsr	k	25.5	—	24.0

Interior Girder Reaction Table-HL93 Loading		
	Abutment	Pier
R DC1	13.7	48.5
R DC2+DW	8.6	30.1
R LL	49.8	72.9
R Imp	16.5	24.1
R Total	88.6	175.6

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs due to non-composite loads.

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing fs due to short-term composite loads.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing fs due to longterm composite loads.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

DC1 is the dead load acting on the non-composite section.

DC2 is the dead load acting on the long-term composite section.

DW is the dead load acting on the long-term composite section due to wearing surface.

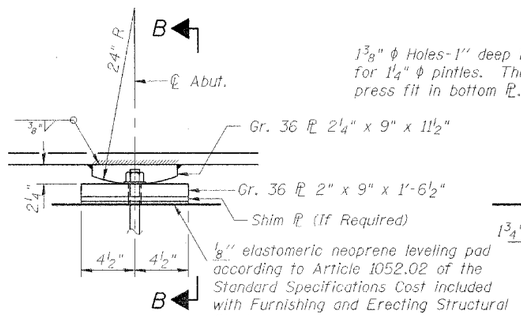
Ma (Strength I)=1.25 M(DC1+DC2)+1.5 M DW +1.75 M(LL+Imp)

Mr is the full plastic moment capacity computed in accordance with 6.10.6.2.2 and 6.10.7.1.

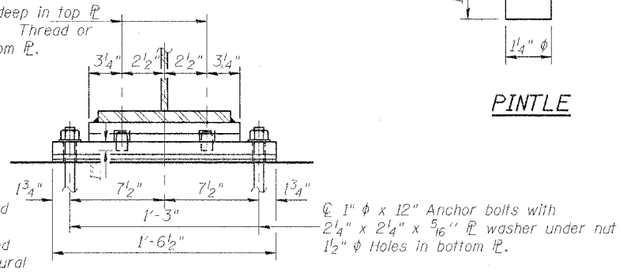
fs (Service II) is the sum of the stresses due to DC1+DC2+DW+1.3(LL+Imp)

fs (Total) (Strength I) (Non-Compact Section) is the sum of the stresses due to 1.25(DC1+DC2)+1.5DW+1.75(LL+Imp)

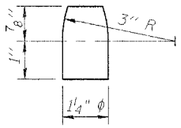
Vsr is the maximum shear range in the span due to truck load only (0.75LL+Imp)



ELEVATION AT PIER

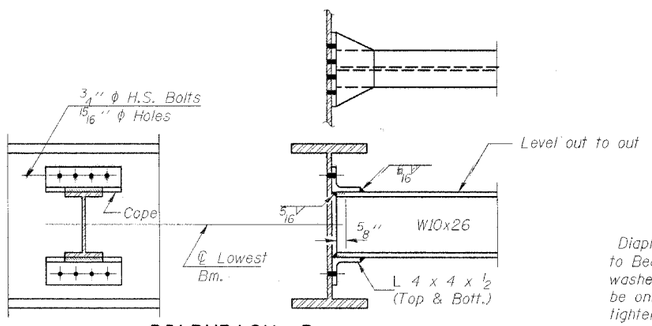


SECTION B-B



PINTLE

FIXED BEARING AT PIERS

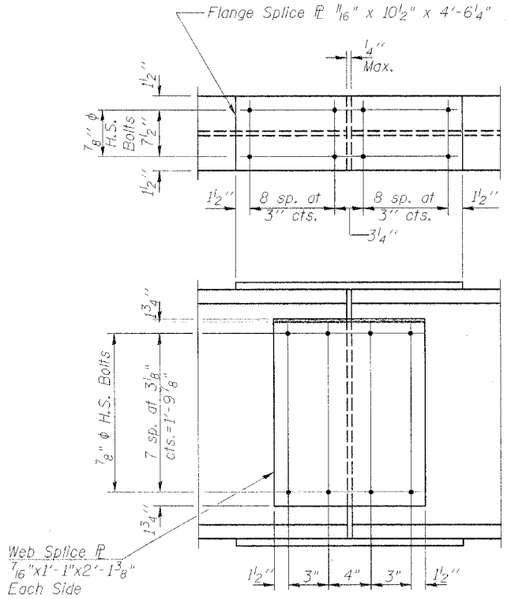


DIAPHRAGM D
32 Required

Note:
Two hardened washers shall be required over all oversize holes for diaphragms.

Diaphragm D_1 is similar to D except the connecting angles adjacent to Beam 3 shall have 7/8" (H) x 1 1/2" (V) slotted holes with 1/4" plate washers covering entire slot. The bolts for the slotted holes shall be only finger tightened prior to pouring the deck slab and then tightened after completion of the pour.

DIAPHRAGM D_1
8 Required



SPLICE

High Strength bolts shall conform to AASHTO M-164 specifications (ASTM A325). Bolts 7/8" ϕ, open holes 15/16" ϕ.

Work this sheet with 9 of 17.

DESIGNED	-
CHECKED	-
DRAWN	TFG
CHECKED	CME/BD/MCB

COOMBE-BLOXDORF, P.C.
Engineers / Land Surveyors
Springfield, Illinois
Design Firm License No. 184-002703

STRUCTURAL STEEL DETAILS
F.A.P. ROUTE 327 - SEC. 13B-2
MARION COUNTY
STATION 336+33.00
STRUCTURE NO. 061-0090