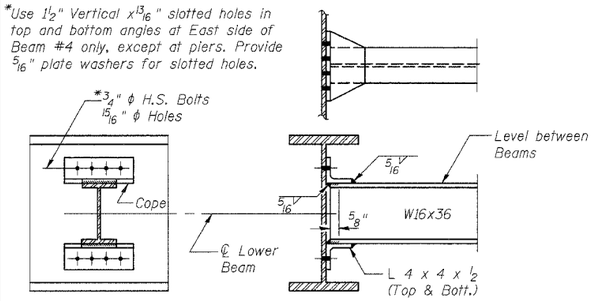
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

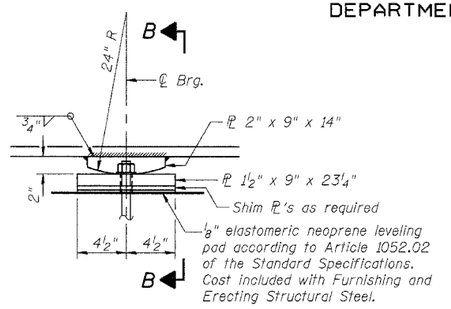
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

*Use $1\frac{1}{2}$" Vertical x $^{13}/_{16}$" slotted holes in top and bottom angles at East side of Beam #4 only, except at piers. Provide $^{5}/_{16}$" plate washers for slotted holes.

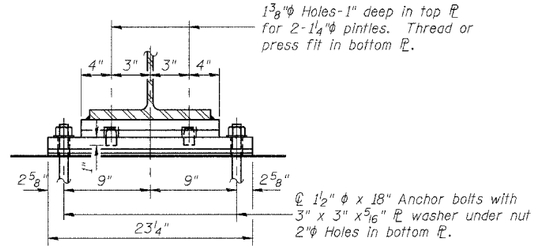


DIAPHRAGM D
85 Required

Note:
The bolts for the slotted holes in angles of Beam #4 shall only be finger tightened prior to the deck slab pouring for Stage II Construction and then be fully tightened after completion of the pouring. Two hardened washers shall be required over all oversize holes.



ELEVATION AT PIER
Bearings for Beam 4 will require $^{3}/_{8}$" shims in addition to construction tolerance shims.



SECTION B-B

INTERIOR BEAM MOMENT TABLE

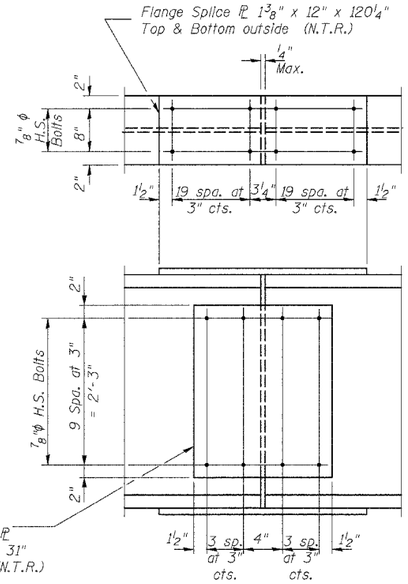
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.4 Sp. 4
Is	(in^4)	13200	13200	13200	13200	13200	13200	13200
Ic(n)	(in^4)	32093		32093		32093		32093
Ic(3n)	(in^4)	23103		23103		23103		23103
Ss	(in^3)	719	719	719	719	719	719	719
Sc(n)	(in^3)	1028		1028		1028		1028
Sc(3n)	(in^3)	919		919		919		919
D	(K/ft.)	0.954	1.445	0.954	1.445	0.954	1.445	0.954
MD	('K)	513	1049	217	793	308	767	215
sD	(K/ft.)	0.491		0.491		0.491		0.491
MsD	('K)	264		112		159		110
ML	('K)	613	508	495	461	479	412	419
M (Imp)	('K)	147	122	119	111	115	103	113
5/3(ML+M(Imp))	('K)	1267	1050	1023	953	990	858	887
Ma	('K)	2657	2729	1758	2270	1894	2112	1576
* Mu	('K)	5005		5005		5005		5005
fsD non-comp	(k.s.i.)	8.6	17.5	3.6	13.2	5.1	12.8	3.6
fsD (comp)	(k.s.i.)	3.4		1.5		2.1		1.4
fs5/3(L+M(Imp))	(k.s.i.)	14.8	17.5	11.9	15.9	11.6	14.3	10.4
fs (Overload)	(k.s.i.)	26.8	35.0	17.0	29.1	18.8	27.1	15.4
** fs (Total)	(k.s.i.)		45.5		37.8		35.2	
VR	(K)	54.6		45.2		50.6		54.6

* Compact, Braced section
** Non-compact section

INTERIOR BEAM REACTION TABLE

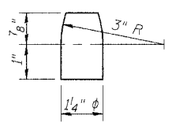
		N. Abut.	Pier 1	Pier 2	Pier 3	S. Abut.
RD	(K)	47.4	135.8	117.3	115.9	30.7
RL	(K)	39.6	57.4	54.8	52.2	37.5
Imp.	(K)	9.5	13.8	13.2	13.0	10.1
R (Total)	(K)	96.5	207.0	185.3	181.1	78.3

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).
VR is the maximum live Load + Impact shear range in span.
Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.
Ma (Applied Moment)=1.3[MD + MsD + 5/3(ML + I)].
Mu is the Full Plastic Moment Capacity for Compact, Braced section.
fs (Overload) is the sum of the stresses due to MD + MsD + 5/3(ML + I).
fs (Total) is the sum of the stresses due to 1.3[MD + MsD + 5/3(ML + I)].

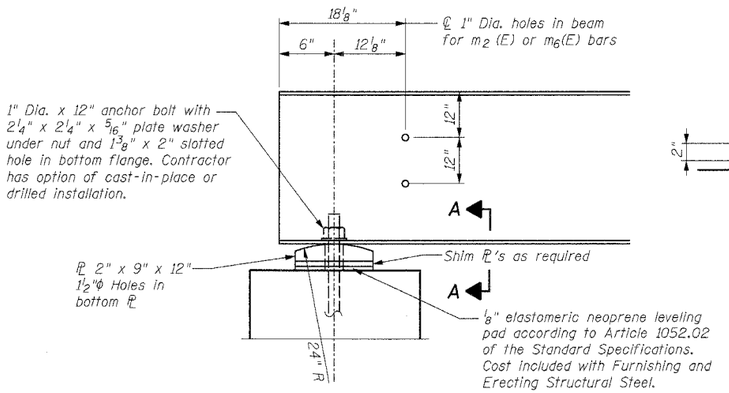


SPLICE

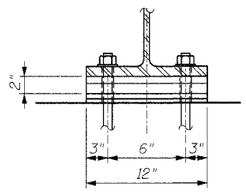
"N.T.R." Denotes notch toughness requirements. Structural steel designated with (N.T.R.) shall conform to the supplemental requirements for notch toughness (Zone 2). These components are the W36x210 beams and all splice plate material of the steel beams.



PINTLE



END OF BEAM ELEVATION
Bearings for Beam 4 will require $^{1}/_{4}$" shims in addition to construction tolerance shims.



SECTION A-A

TOP OF BEAM ELEVATIONS BEFORE DEFLECTIONS
(For Fabrication Only)

LOCATION	BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6
℄ Brg. N. Abut.	542.004	542.183	542.327	542.347	542.257	542.128
℄ Splice	542.660	542.841	542.984	543.013	542.923	542.795
℄ Pier 1	542.785	542.966	543.110	543.140	543.050	542.921
℄ Splice	542.954	543.135	543.279	543.310	543.220	543.092
℄ Pier 2	543.641	543.822	543.965	543.998	543.907	543.779
℄ Splice	543.770	543.952	544.095	544.128	544.037	543.908
℄ Pier 3	544.501	544.682	544.825	544.852	544.761	544.632
℄ Splice	544.641	544.822	544.965	544.991	544.899	544.771
℄ Brg. S. Abut.	545.229	545.409	545.552	545.571	545.480	545.350

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

BEARING DETAILS
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073