

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	90-13HVB	TAZEWELL	1366	480
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 32
68 SHEETS

	0.5 Sp. 1	0.4 Sp. 2 or 4	Pier 2 or 3	0.5 Sp. 3	*0.3 Sp. 5	Pier 5	0.5 Sp. 6	Pier 6	*0.4 Sp. 7	0.5 Sp. 8
Is (10 ⁶ mm ⁴)	4786	25316	44825	25316	25316	44825	25316	44825	25316	5327
Ic (n) (10 ⁶ mm ⁴)	9922	43486	--	43486	--	--	43486	--	--	10718
Ic (3n) (10 ⁶ mm ⁴)	7416	33836	--	33836	--	--	33836	--	--	8023
Ss (10 ³ mm ³)	11182	31724	54006	31724	31724	54006	31724	54006	31724	12360
Sc (n) (10 ³ mm ³)	14338	37104	--	37104	--	--	37104	--	--	15693
Sc (3n) (10 ³ mm ³)	13149	34739	--	34739	--	--	34739	--	--	14378
Q (kN/m)	13.94	15.5	24.69	15.5	22.2	24.69	15.5	24.69	22.2	14.27
M _Q (kN-m)	340	1468	3701	618	202	3850	1575	4043	571	487
fs _Q (non-comp) (MPa)	30	47	69	20	7	71	50	75	18	39
s _Q (kN/m)	6.7	6.7	--	6.7	--	--	6.7	--	--	6.7
Ms _Q (kN-m)	163	642	--	318	--	--	726	--	--	229
fs _Q (comp) (MPa)	12	19	--	9	--	--	21	--	--	16
M _L (kN-m)	513	1432	1479	1274	797	1468	1435	1530	970	656
M (Imp) (kN-m)	150	293	295	248	196	264	258	274	225	183
fs(M+M(Imp)) (kN-m)	46	47	33	41	32	32	46	33	38	54
fs (Total) (MPa)	88	113	102	70	39	103	117	108	56	109
VR (kN)	230	283	--	303	291	--	299	--	285	239

	N. Abut. Shelf Span 1	Pier 1	Pier 2	Pier 3	Pier 4 North	Pier 4 South	Pier 5	Pier 6	Pier 7	Shelf Span 8 S. Abut.
R _Q (kN)	144	473	1002	1005	308	108	988	1024	360	173
R _L (kN)	177	236	376	376	201	190	363	371	219	184
Imp. (kN)	52	41	50	50	41	47	50	50	41	51
R (Total) (kN)	373	750	1428	1431	550	345	1401	1445	620	408

*These sections were not considered as composite because the ultimate strength provisions of AASHTO Article 10.38.5.1.2 for the design of the shear studs was not met. Only the fatigue provisions of AASHTO Article 10.38.5.1.1 have been satisfied.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
 Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)
 VR is the maximum Live Load + Impact shear range in span.
 M_Q - Moment due to loads on non-composite section.
 Ms_Q - Moment due to loads on composite section.
 M_L - Moment due to live load on non-composite or composite section.
 M (Imp) - Moment due to live load impact on non-composite or composite section.

Date	Designed AEU	WESTBOUND F.A.I. ROUTE 74 OVER CAMP STREET, FARM CREEK, AND TP&W RR F.A.I. RTE. 74 SECTION (90-13HVB) BY TAZEWELL COUNTY STATION 153+625.193 STRUCTURE NO. 090-0009	Sheet No. 32 of 68
Revisions	Drawn AEU		
	Checked NPP		
	Approved NPP		
Prepared By: BRW, Inc. A Division of URS		1701 Golf Rd., Suite 1000 Rolling Meadows, IL.	BRW Job No. 17049-071