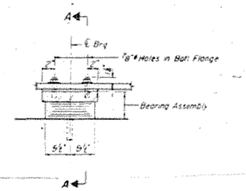
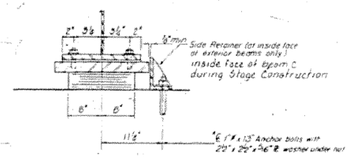
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 710	46 HBR-1	MACON	16	10
FED. ROAD DIST. NO. 7	ILLINOIS (PROJECT)			

Sheet 15 of 23

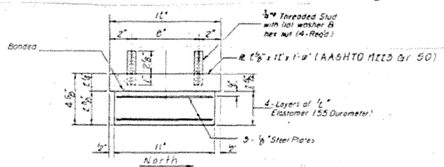


SECTION AT PIER 2



SECTION A-A

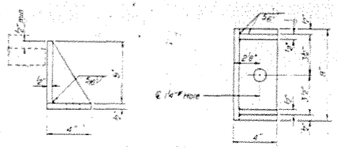
TYPE 1 ELASTOMERIC EXP. BRG.
(7 Required)



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

Shim plates, adjusting shim plates, side retainers and anchor bolts shall be considered "Structural Steel" and shall be included in the lump sum bid price for "furnishing and Erecting Structural Steel".



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates (3 Required)

*Note: After girders have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place. Anchor bolts at fixed bearings may be built into the masonry. See Sheet 16 for Anchor Bolt installation.

INTERIOR BEAM MOMENT TABLE

		0.4 SPAN 1	PIER 1	0.6 SPAN 2	PIER 2	0.6 SPAN 3
I℄	(in⁴)	6930	6930	6930	6930	6930
S℄	(in³)	329	329	329	329	329
Sbi	(in³)	18.0	15.9	19.0	15.9	15.9
W	(k/Ft.)	1.109	1.109	1.109	1.109	1.109
M℄	(Ft.K)	71	292	180	319	154
Mφ	(Ft.K)	211	234	306	339	296
M Imp	(Ft.K)	92	97	81	92	85
R1(M℄+I)(Ft.K)		454	501	644	509	434
Mfe	(Ft.K)	483	443	1071	1077	1054
Mbi	(Ft.K)	7	0	18	8	8
fs ℄	(KSI)	7.0	9.0	6.0	11.0	5.0
fs Sum(℄+I)	(KSI)	16.6	18.3	23.6	18.4	23.1
fw	(KSI)	5.5	4.4	10.7	6.3	6.0
fs + fw) Overload		23.6	22.7	30.3	29.1	29.3
fs (Total)	(KSI)	24.9	30.2	33.1	29.5	27.0
fs (Total) + fw	(KSI)	30.4	40.6	44.7	45.6	45.3
Fb	(KSI)	50.0	40.6	50.0	45.5	50.0

Fb = Maximum allowable stress Fbu or Fby computed according to AASHTO Guide Specifications for Horizontally Curved Highway Bridges Section 2.12(B) and 2.16.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).

Mo (Applied Moment) = 1.3 [M℄ + fs (M℄ + I)]

(fs + fw) (Overload) is the sum of the stress due to M℄ + fs (M℄ + I) + Mbi 1.3

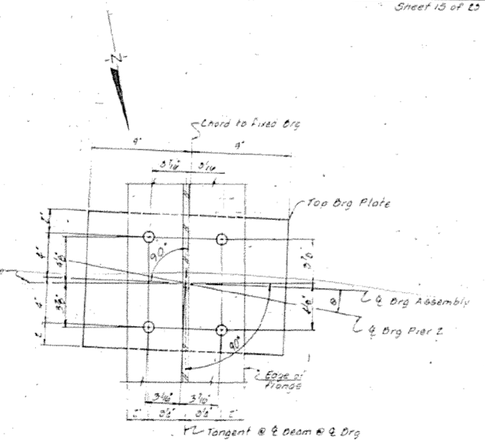
fs (Total) is the sum of the stress due to 1.3 [M℄ + fs (M℄ + I)]

Sbi is the section modulus for one flange for lateral flange bending.

Mbi is the lateral bending moment for flange (factored).

fw is the calculated normal stress at the edge of the flange due to lateral bending (factored).

M℄ and R1 have been increased due to the effect of centrifugal force and superelevation.



BEARING ORIENTATION DETAIL
PIER 2
See sheet 11 for values of θ

INTERIOR BEAM REACTION TABLE

	S Abut	Pier 1	Pier 2	N Abut
R D(K)	132	595	670	189
R L(K)	366	666	662	330
Emp(K)	103	136	131	106
Kroni(K)	579	1200	1263	667

BEARING DETAILS
FA 710 (US 51) OVER
LAKE SHORE DRIVE
SECTION 46 HBR-1
MACON COUNTY
STATION 107+09.49

COLLINS AND RICE
CONSULTING ENGINEERS
DESIGNED J.C.U. CHECKED F.S.
DRAWN K.B. DATE 12-6-88 JOB 6369

C B A 0 A B C

TAMERAN

•D7 BRIDGE PAINTING 2014-4

FILE NAME = c:\pw_work\pwidot\steffenmk\d0348346\D774629-sht-plan.dgn	USER NAME = steffenmk	DESIGNED -	REVISED -
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Default	PLOT DATE = 8/23/2013	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLAN
S.N. 058-0007

SCALE: N/A | SHEET 7 OF 13 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
710	•	MACON	16	10
		CONTRACT NO. 74629		
	ILLINOIS	FED. AID PROJECT		