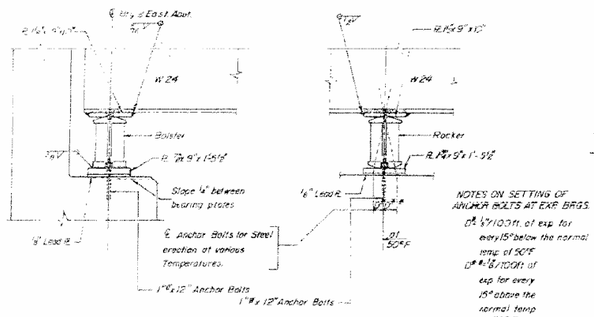
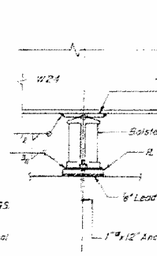
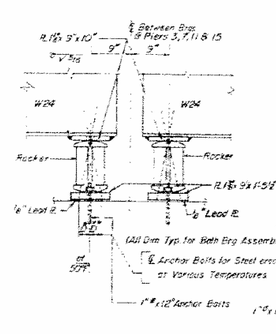
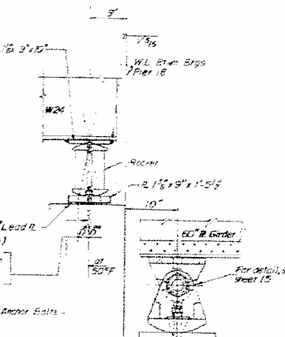
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.
(1) 1/100 ft. of exp. for every 15° below the normal temp. of 50°F
(2) 1/100 ft. of exp. for every 15° above the normal temp. at 50°F







INTERIOR BEAM MOMENT TABLE

UNIT A		Brgs 1&2 / 3&4	Piers 2,6 / 4,8	Brgs 5&6 / 7&8	Piers 5,9 / 13,17
I_s	(in⁴)	1630	1630	1630	1630
I_c	(in⁴)	6020	—	6020	—
S_s	(in³)	154	154	154	154
S_c	(in³)	250	—	250	—
R	(k/ℓ)	0.776	1.108	0.776	1.108
M_{LL}	(k-ft)	143.9	-238.7		50.5
f_s max	(ksi)	11.81*	-18.60*		3.97*
S_{SR}	(ft³)	0.324	—		0.324
M_{SR}	(k-ft)	68.2	—		42.2
M_L	(k-ft)	613.6	-268.6		511.5
Mimp	(k-ft)	183.5	-80.0		152.2
Total	(k-ft)	865.3	-348.6		705.5
f_s comp	(ksi)	41.53*	-21.15*		32.96*
f_s total	(ksi)	50**	-45.75*		37.09*
VR	(k)	41*	—		40.7

INTERIOR BEAM MOMENT TABLE

UNIT B		Brgs 4,7 / 8,12 & 15	Piers 6,8, 10,12 & 14	Brgs 9,10 / 13,14 & 16	Piers 9,13 @ 15
I_s	(in⁴)	1830	1830	1830	1830
I_c	(in⁴)	6020	—	6020	—
S_s	(in³)	154	154	154	154
S_c	(in³)	250	—	250	—
R	(+/ℓ)	0.776	1.108	0.776	1.108
M_{LL}	(k-ft)	139.0	-241.9	68.6	-185.1
f_s max	(ksi)	10.83*	-15.63*	5.35*	-14.27*
S_{SR}	(ft³)	0.324	—	0.324	—
M_{SR}	(k-ft)	68.6	—	42.6	—
M_L	(k-ft)	513.5	-269.9	513.8	-257.0
Mimp	(k-ft)	163.4	-87.5	154.7	-78.5
Total	(k-ft)	884.5	-350.4	720.1	-333.5
f_s comp	(ksi)	41.50*	-17.30*	34.56*	-25.93*
f_s total	(ksi)	50**	-46.93	50**	-40.26
VR	(k)	47.6	—	43.1	—

INTERIOR BEAM REACTION TABLE

UNIT A		E. Abut @ Pier 1	Piers 1,2, 3,5 & 6	Piers 7,8, 9,11 & 12	Piers 13,14, 15,17
R_{LL}	(k)	130	514		
R_{IL}	(k)	36.1	42.4		
Imp	(k)	10.8	12.7		
R total	(k)	65.9	106.5		

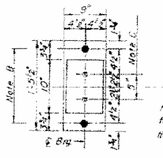
INTERIOR BEAM REACTION TABLE

UNIT B		Piers 3,7, 11 & 15	Piers 4,6,8, 10,12 & 14	Piers 9,13 @ 15
R_{LL}	(k)	18.9	52.9	45.2
R_{IL}	(k)	36.1	42.4	41.6
Imp	(k)	10.8	12.7	12.5
R total	(k)	65.8	108.0	93.1

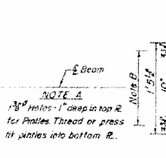
I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s total
I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s total
VR is the maximum ℄ + Impact shear range in span used to determine shear connector spacing
The load factor for (1.3) [℄ + f_s (℄ + Imp)] is included for computing moments and stresses.
* Computed by conventional elastic beam formula.
** Computed using plastic theory - section is compact for pos. + M moment.

STRUCTURAL STEEL - BRG'S & DIAP. - S
FA RTE 823 (SBI RTE. 15)
OVER LITTLE WABASH RIVER
WAYNE COUNTY
SECTION 22 BR-7
STA. 492+75

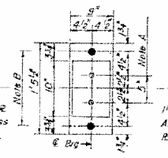
SECTION AT E. ABUT.



PLAN AT E. ABUT.



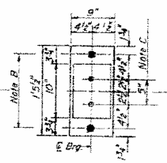
ELEVATION



PLAN AT PIERS 2,4,6, 8,10,12,14, & 16

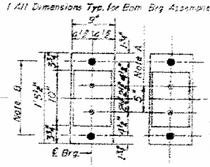
NOTE B
1⅛" holes for 1"ø x 12" Anchor Bolts, 2⅜ x 2⅜ x 5/16" R. Washer under nut

ELEVATION



PLAN AT PIERS 1,5,9, 13, & 17

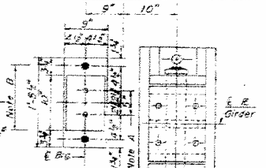
ELEVATION
(All Dimensions Typ. for Both Brg. Assemblies)



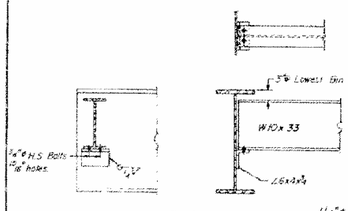
PLAN AT PIERS 3,7,11, & 15

NOTE C
1¾ holes 1" deep in top of R. only for ½" pintles.

ELEVATION

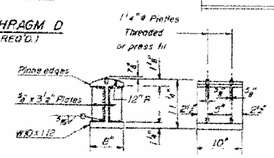


PLAN AT PIER 18

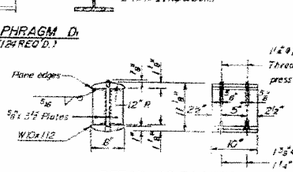


DIAPHRAGM D
(40 REQ'D.)

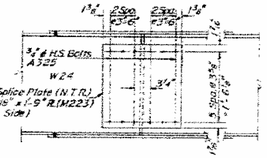
DIAPHRAGM D
(124 REQ'D.)



DETAIL OF BOLSTER AT ALL FIXED BRGS.
(30 REQ'D.)



DETAIL OF ROCKER AT ALL EXPANSION BRGS.
(85 REQ'D.)



DETAIL OF SPLICE
(Field Splice Units A & E)
(Typ. All Locations W-Beam)

PINTLE DETAIL

Notes: All contact surfaces of joints for the diaphragms shall be free of paint or lacquer.
All splice plates are to be M223 Grade 50.
All other structural steel items including bearing assemblies, diaphragms and other miscellaneous items shall be M-183.
N.T.R. - Notch Toughness Requirement.

DESIGNED	E.F.V.
CHECKED	G.E.P.
DRAWN	P.W.M.
CHECKED	E.F.V. & G.E.P.

FILE NAME = c:\pw_work\pwidot\steffenmk\d0403598\D774700-sht-plan.dgn	USER NAME = steffenmk	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 8/5/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN
STRUCTURE 096-0010

SCALE: N/A | SHEET 7 OF 11 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
823	07 BRIDGE PAINTING 2015-4	WAYNE	15	10
		CONTRACT NO. 74700		
		ILLINOIS FED. AID PROJECT		