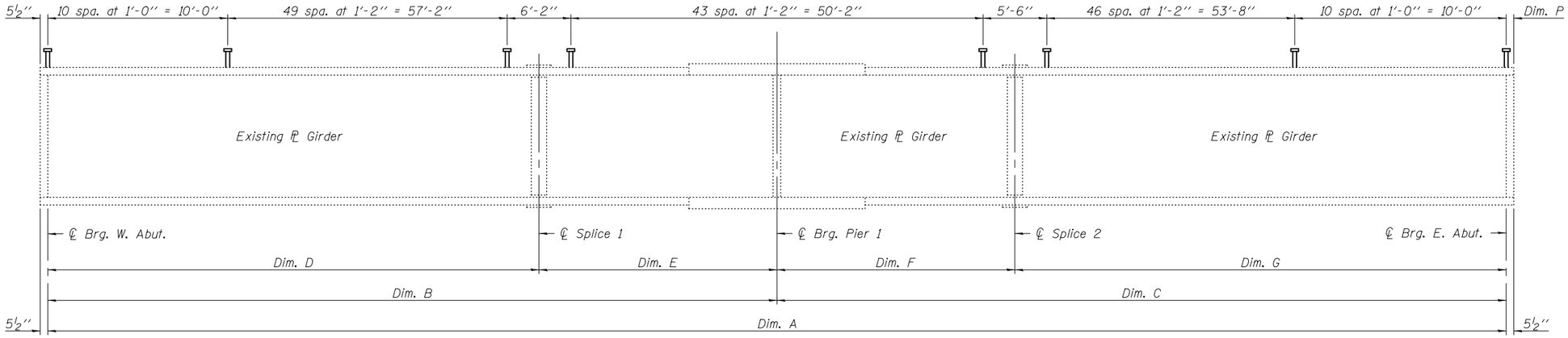
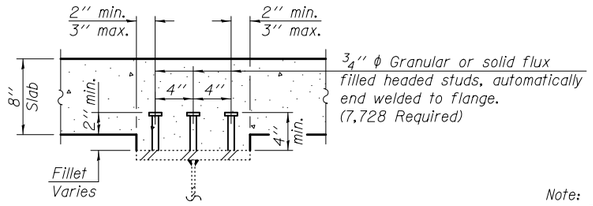


EXISTING BEAM ELEVATION



SHEAR CONNECTOR DETAIL

INTERIOR GIRDER REACTION TABLE				
		W. Abut.	Pier 1	E. Abut.
R_{ℓ}	(k)	43.5	152.5	40.6
R_L	(k)	41.7	68.6	41.6
R_I	(k)	9.4	15.5	9.5
R_{Total}	(k)	94.6	236.6	91.7

Note:
The values in the ''Interior Girder Reaction Table'' and the ''Interior Girder Moment Table'' are controlled by the W.B. Structure.

INTERIOR GIRDER MOMENT TABLE					
			0.4 Sp. 2	Pier 1	0.6 Sp. 3
I_s	(in^4)		19,684	42,004	18,884
$I_c(n)$	(in^4)		55,946	48,280	52,846
$I_c(3n)$	(in^4)		39,962	48,280	38,048
S_s	(in^3)		935	1,608	871
$S_c(n)$	(in^3)		1,336	2,041	1,249
$S_c(3n)$	(in^3)		1,220	2,041	1,140
ℓ	(k/')		0.956	0.954	0.952
M_{ℓ}	('k)		582	1,299	504
s_{ℓ}	(k/')		0.270	0.270	0.270
$M_{s\ell}$	('k)		177	346	156
M_L	('k)		781	760	748
M_{IM}	('k)		175	172	170
$\frac{5}{3}[M_L + I]$	('k)		1,594	1,553	1,531
M_a	('k)		3,060	4,157	2,849
* M_u	('k)		4,481	5,066	4,219
f_s ℓ non-comp	(ksi)		7.48	9.70	6.94
f_s ℓ (comp)	(ksi)		1.74	2.03	1.64
f_s $\frac{5}{3}[M_L + M_I]$	(ksi)		14.31	9.13	14.71
f_s (Overload)	(ksi)		23.53	20.85	23.29
** f_s (Total)	(ksi)		30.59	27.12	30.29
VR	(k)		48	55	47

* Compact section
** Braced non-compact and partially braced section

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in.^{4} and in.^{3}).
$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, ''n'', used for computing f_s (Total and Overload) due to short-term composite live loads (in.^{4} and in.^{3}).
$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, ''3n'', used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in.^{4} and in.^{3}).
ℓ: Un-factored non-composite dead load (kips/ft.).
M_{ℓ}: Un-factored moment due to non-composite dead load (kip-ft.).
s_{ℓ}: Un-factored long-term composite (superimposed) dead load (kips/ft.)
$M_{s\ell}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
M_L: Un-factored live load moment (kip-ft.).
M_I: Un-factored moment due to impact (kip-ft.).
M_a: Factored design moment (kip-ft.). $1.3\ [M_{\ell} + M_{s\ell} + \frac{5}{3}(M_L + M_I)]$
M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
f_s (Overload): Sum of stresses as computed from the moments below (ksi). $M_{\ell} + M_{s\ell} + \frac{5}{3}(M_L + M_I)$
f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi). $1.3\ [M_{\ell} + M_{s\ell} + \frac{5}{3}(M_L + M_I)]$
VR: Maximum $_L$ + impact shear range within the composite portion of the span for stud shear connector design (kips).

TABLE OF VARIABLE DIMENSIONS

Beam No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Dim. F	Dim. G	Dim. H	Dim. I	Dim. J	Dim. K	Dim. L	Dim. M	Dim. N	Dim. O	Dim. P
1	192'-7½''	97'-11¾''	94'-7¾''	70'-2 13/16''	27'-8 15/16''	28'-2 15/16''	66'-4 13/16''	25'-1 11/16''	24'-8''	49'-4''	23'-5 15/16''	24'-4⅛''	23'-3''	46'-6''	23'-9 9/16''	5''
2	192'-7 5/8''	97'-11 13/16''	94'-7 13/16''	70'-2 7/8''	27'-8 15/16''	28'-2 15/16''	66'-4⅞''	25'-0 1/16''	24'-8''	49'-4''	23'-7¾''	24'-2¼''	23'-3''	46'-6''	23'-11 1/16''	5⅛''
3	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-10 3/8''	24'-8''	49'-4''	23'-9 5/8''	24'-0 3/8''	23'-3''	46'-6''	24'-1 5/8''	5½''
4	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-8 5/16''	24'-8''	49'-4''	23'-11 1/16''	23'-10 5/16''	23'-3''	46'-6''	24'-3 1/16''	5½''
5	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-6¼''	24'-8''	49'-4''	24'-1¾''	23'-8¼''	23'-3''	46'-6''	24'-5¾''	5½''
6	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-4⅛''	24'-8''	49'-4''	24'-3⅞''	23'-6⅛''	23'-3''	46'-6''	24'-7⅞''	5½''
7	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-2 1/16''	24'-8''	49'-4''	24'-5 15/16''	23'-4 1/16''	23'-3''	46'-6''	24'-9 15/16''	5½''
8	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-0''	24'-8''	49'-4''	24'-8''	23'-2''	23'-3''	46'-6''	25'-0''	5½''
9	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	25'-0''	24'-4''	48'-8''	24'-4''	23'-6''	23'-7''	47'-2''	24'-0''	5½''
10	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-9 15/16''	24'-4''	48'-8''	24'-6 1/16''	23'-3 15/16''	23'-7''	47'-2''	24'-2 1/16''	5½''
11	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-7⅞''	24'-4''	48'-8''	24'-8⅛''	23'-1⅞''	23'-7''	47'-2''	24'-4⅛''	5½''
12	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-5⅞''	24'-4''	48'-8''	24'-10⅛''	22'-11⅞''	23'-7''	47'-2''	24'-6⅛''	5½''
13	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-3 13/16''	24'-4''	48'-8''	25'-0 3/16''	22'-9 13/16''	23'-7''	47'-2''	24'-8 3/16''	5½''
14	192'-8''	98'-0''	94'-8''	70'-3''	27'-9''	28'-3''	66'-5''	24'-1¾''	24'-4''	48'-8''	25'-2¼''	22'-7¾''	23'-7''	47'-2''	24'-10¼''	5½''
15	192'-7 5/8''	97'-11 13/16''	94'-7 13/16''	70'-2 7/8''	27'-8 15/16''	28'-2 15/16''	66'-4⅞''	23'-11¾''	24'-4''	48'-8''	25'-4 1/16''	22'-5 15/16''	23'-7''	47'-2''	24'-11 1/16''	5⅛''
16	192'-7½''	97'-11¾''	94'-7¾''	70'-2 13/16''	27'-8 15/16''	28'-2 15/16''	66'-4 13/16''	23'-9 11/16''	24'-4''	48'-8''	25'-5 15/16''	22'-4 1/16''	23'-7''	47'-2''	25'-1 9/16''	5''

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED K.A. KLUES	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED E.M. LAGEMANN	REVISED -	
	PLOT SCALE =	DRAWN C.A. BUETTNER	REVISED -	
	PLOT DATE = $DATE$	CHECKED E.M. LAGEMANN	REVISED -	

HORNER & SHIFRIN, INC. ENGINEERS

EXISTING STRUCTURAL STEEL – SPANS 2 & 3
STRUCTURE NOS. 072–0119 (E.B.) & 072–0120 (W.B.)
SHEET NO. 49 OF 62 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
474	(72-3HB-1),I	PEORIA	88	65
		CONTRACT NO. 68883		
	ILLINOIS FED. AID PROJECT			