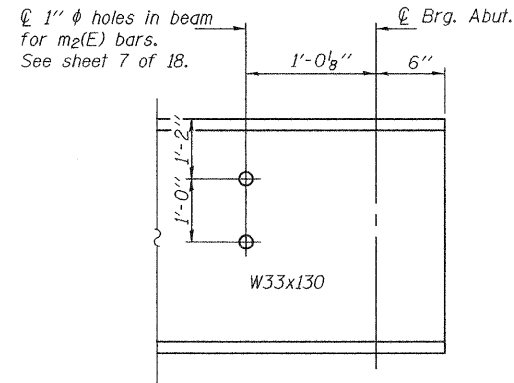
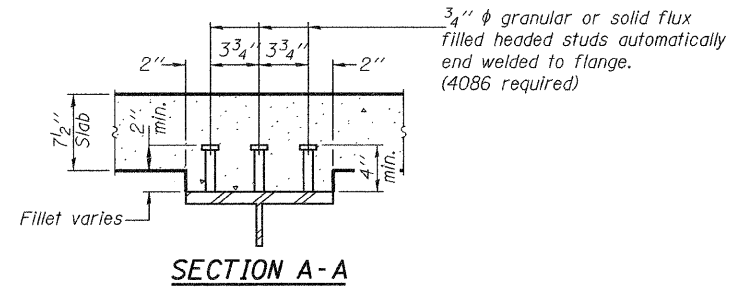
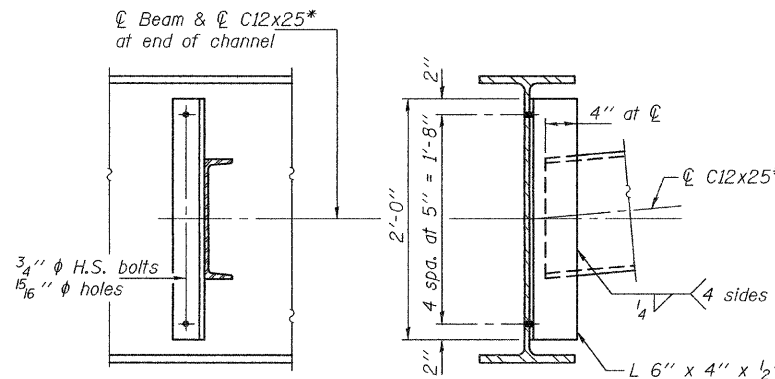
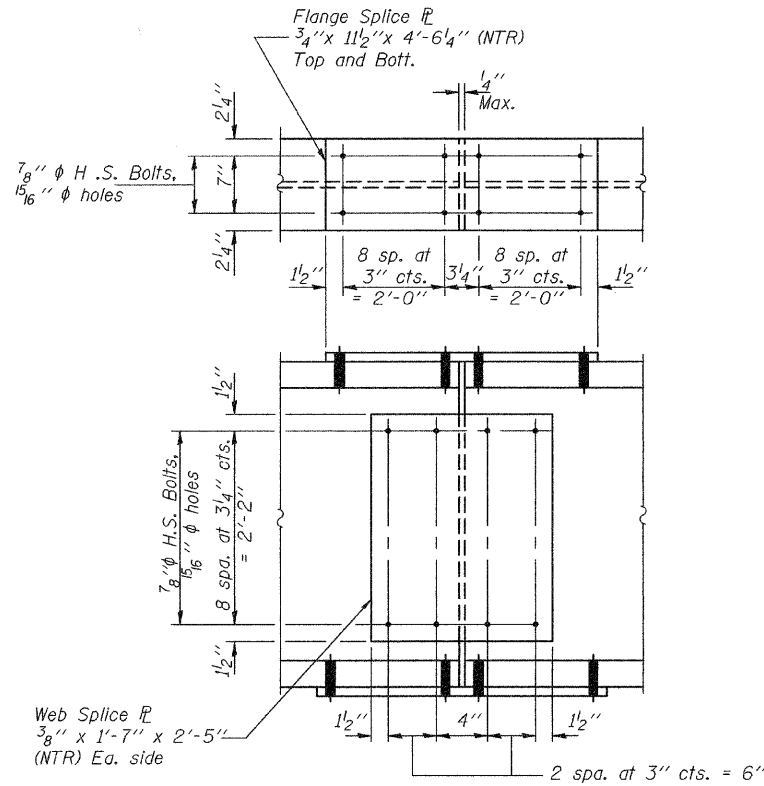


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in ⁴)	6710	6710	6710
I_c (n)	(in ⁴)	17945	---	17945
I_c (3n)	(in ⁴)	13296	---	13296
S_s	(in ³)	406	406	406
S_c (n)	(in ³)	594	---	594
S_c (3n)	(in ³)	539	---	539
Z	(in ³)	---	467	---
ϕ	(k/ft.)	0.849	1.366	0.849
$M\phi$	(k)	115	578	269
$s\phi$	(k/ft.)	0.517	---	0.517
$M_s\phi$	(k)	92	---	218
M_t	(k)	386	269	564
M (Imp)	(k)	106	71	135
$S_3[M_t + M(\text{Imp})]$	(k)	820	567	1165
Ma	(k)	1335	1490	2148
Mu	(k)	3070	1946	3070
$f_s\phi$ non-comp	(k.s.i.)	3.4	17.1	8.0
$f_s\phi$ (comp)	(k.s.i.)	2.0	---	4.9
$f_s^{5/8}$ (4 + Imp)	(k.s.i.)	16.6	16.8	23.5
f_s (Overload)	(k.s.i.)	22.0	33.9	36.4
VR	(k)	56.0	---	49.5



		Abufs.	Pier 1 or 2
$R\phi$	(k)	24.2	100.5
R_t	(k)	39.3	50.6
Imp.	(k)	10.8	12.9
R (Total)	(k)	74.3	164.0

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 $I_{c(3n)}$ and $S_{c(3n)}$ 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 within the composite portion of the span.
 Ma (Applied Moment) = $1.3[M\phi + M_s\phi + S_3(M_t + M(\text{Imp}))]$.
 The Plastic Moment Capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to $M\phi + M_s\phi + S_3(M_t + M(\text{Imp}))$.
 Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.
 M_t and R_t include the effects of centrifugal force.

*Alternate channels C12x30 may be used to facilitate material acquisition. The calculated weight of structural steel is based on the lighter section, C12x25. The alternate, if utilized, will be provided at no extra cost to the department.

*TOP OF BEAM ELEVATIONS

LOCATION	℄ Brg. E. Abut.	℄ Brg. Pier 1	℄ Splice 1	℄ Brg. Pier 2	℄ Splice 2	℄ Brg. W. Abut.
Beam 1	380.275	380.217	380.212	380.208	380.208	380.275
Beam 2	380.427	380.369	380.365	380.360	380.361	380.427
Beam 3	380.546	380.490	380.485	380.481	380.481	380.546
Beam 4	380.605	380.556	380.552	380.547	380.546	380.605
Beam 5	380.490	380.441	380.438	380.432	380.432	380.490
Beam 6	380.353	380.305	380.301	380.296	380.295	380.353

*For Fabrication use only

Notes: Two hardened washers shall be required over all 15/16 inch holes for diaphragms.
 Load carrying component designated "NTR" shall conform to the Supplement Requirements for Notch Toughness, Zone 2.
 All splice plates shall be AASHTO M270, Grade 50.
 All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

DESIGNED	Rebecca Mitchell
CHECKED	Mark D. Shaffer
DRAWN	AMC Amber Seiber
CHECKED	RLM/MDS

July 27, 2009
 EXAMINED *Thomas J. Domagalicki*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 039-0070 (E.B.)

SHEET NO. 13 22 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	331	(12-BY-1)-1	JACKSON	67	34
CONTRACT NO. 98641					
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT					