

TOP OF WEB ELEVATIONS								
Beam No.	℄ Brg. West Abut.	℄ Splice #1	℄ Brg. Pier #1	℄ Splice #2	℄ Splice #3	℄ Brg. Pier 2	℄ Splice #4	℄ Brg. East Abut.
1	646.084	651.105	652.143	653.312	654.089	653.742	653.434	650.096
2	646.192	651.213	652.251	653.420	654.196	653.849	653.542	650.204
3	646.293	651.314	652.352	653.521	654.298	653.951	653.643	650.305
4	646.188	651.209	652.247	653.416	654.192	653.845	653.538	650.200
5	646.079	651.100	652.138	653.307	654.084	653.737	653.429	650.091
6	646.096	651.118	652.156	653.325	654.101	653.755	653.447	650.108

For Fabrication Only

INTERIOR BEAM MOMENT TABLE			
Units	0.4 Span 1 & 0.6 Span 3	Piers 1 & 2	0.5 Span 2
I_s	(in ⁴) 15587	37778	15587
I_c (n)	(in ⁴) 40431	—	40431
I_c (3n)	(in ⁴) 29014	—	29014
S_s	(in ³) 816	1608	816
S_c (n)	(in ³) 1118	—	1118
S_c (3n)	(in ³) 1023	—	1023
ϕ	(K/ft.) 0.90	1.65	0.90
$M \phi$	(K) 868	2881	487
$S \phi$	(K/ft.) 0.69	—	0.69
$M_s \phi$	(K) 723	—	522
$M \xi$	(K) 1060	1040	1021
M (Imp)	(K) 216	204	192.3
$S_3(M \xi + I)$	(K) 2126	2073	2023
M_a	(K) 4833	6441	3942
* M_u	(K) 5000	—	5397
$f_s \phi$ non-comp	(k.s.i.) 12.8	21.5	7.2
$f_s \phi$ comp	(k.s.i.) 8.5	—	6.1
$f_s S_3(M \xi + I)$	(k.s.i.) 22.8	15.5	21.7
f_s (Overload)	(k.s.i.) 44.1	37.0	35.0
** f_s (Total)	(k.s.i.) —	48.1	—
VR	(K) 54.0	—	46.4

* Compact Braced Section
** Non-Compact Braced Section

INTERIOR BEAM REACTION TABLE		
Units	E. & W. Abuts.	Piers 1 & 2
$R \phi$	(K) 71.3	230.4
$R \xi$	(K) 48.1	84.9
Imp.	(K) 9.8	16.6
R (Total)	(K) 129.2	331.9

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 f_s (Total & Overload).

$M \phi$ = Moment due to dead loads on non-composite section.

$M_s \phi$ = Moment due to dead loads on composite section.

$M \xi$ = Moment due to live loads on non-composite or composite section.

I = Live load impact

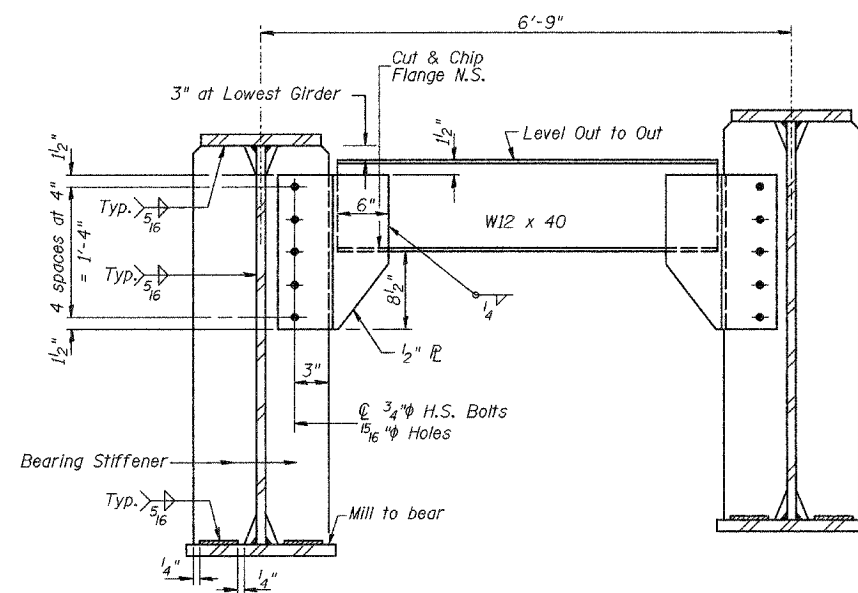
M_a (Applied Moment) = $1.3[M \phi + M_s \phi + S_3(M \xi + I)]$.

M_u = Full plastic moment capacity for compact, braced section.

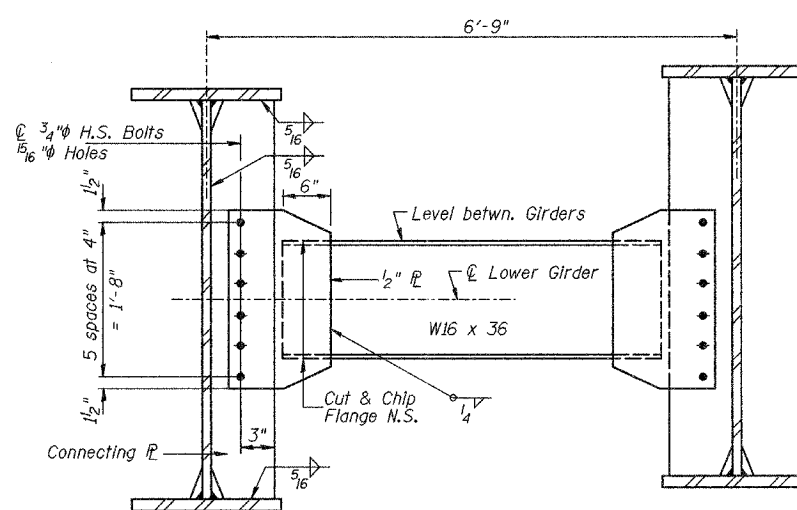
f_s (Overload) is the sum of the stresses due to $M \phi + M_s \phi + S_3(M \xi + I)$.

f_s (Total) is the sum of the stresses due to $1.3[M \phi + M_s \phi + S_3(M \xi + I)]$.

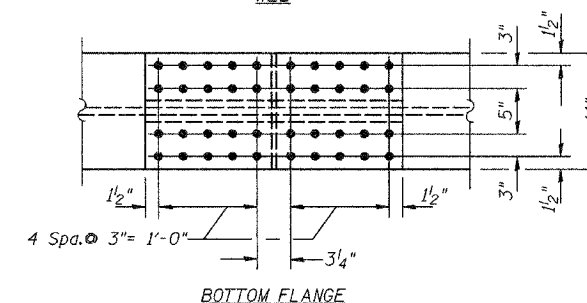
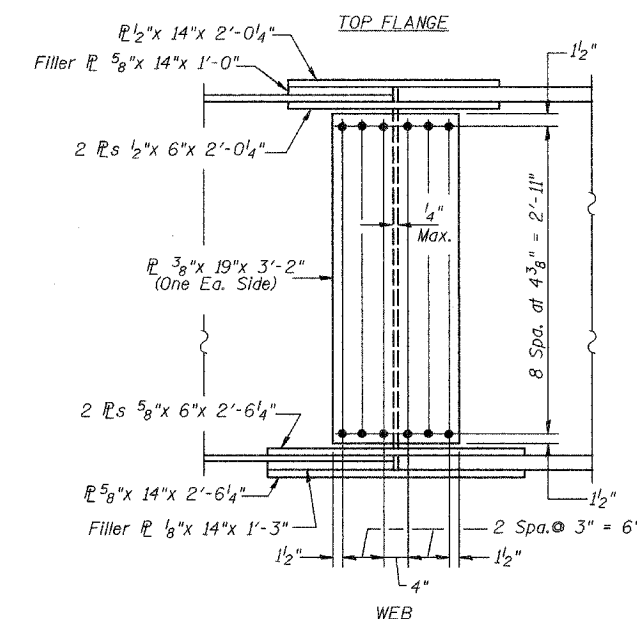
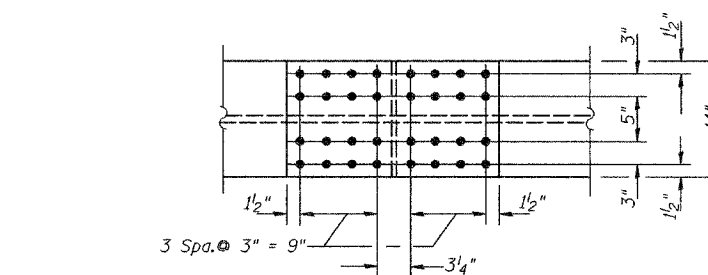
VR is the maximum Live Load + Impact shear range in span.



END DIAPHRAGM - D
(10 Req'd.)



INTERIOR DIAPHRAGM - D₁
(90 Req'd.)



FIELD SPLICE DETAIL
NTR Except Filler Plates

NOTES: Use 7/8" ϕ H.S. Bolts in all splices.
All splice plate material except filler plates, shall conform to the Supplemental Requirements for Notch Toughness Zone 2.
All structural steel shall be AASHTO M270 Grade 50W.
Use 3/4" H.S. Bolts with 15/16" ϕ holes in all cross frames. Two hardened washers shall be required over holes in cross frames.

DESIGNED	JOH
CHECKED	BRT
DRAWN	TRD
CHECKED	JOH

STRUCTURAL STEEL DETAILS
FAU ROUTE 6145 OVER
BNSF RAILROAD
SECTION 01-00590-00-BR (COUNTY)
LASALLE COUNTY
STATION 21+75.75
STR. NO. 050-8023

HUTCHISON ENGINEERING, INC.
JACKSONVILLE & JOLIET, ILLINOIS

Date: 3 / 10 / 2006