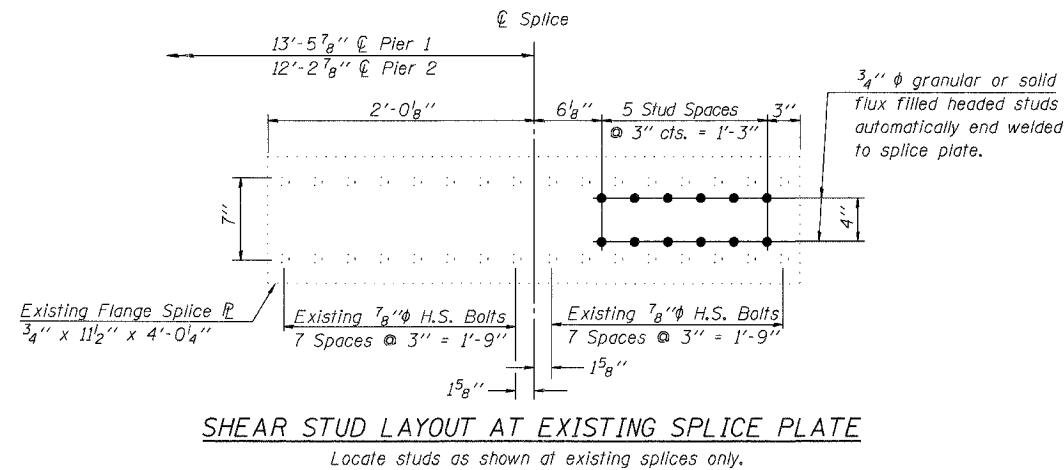
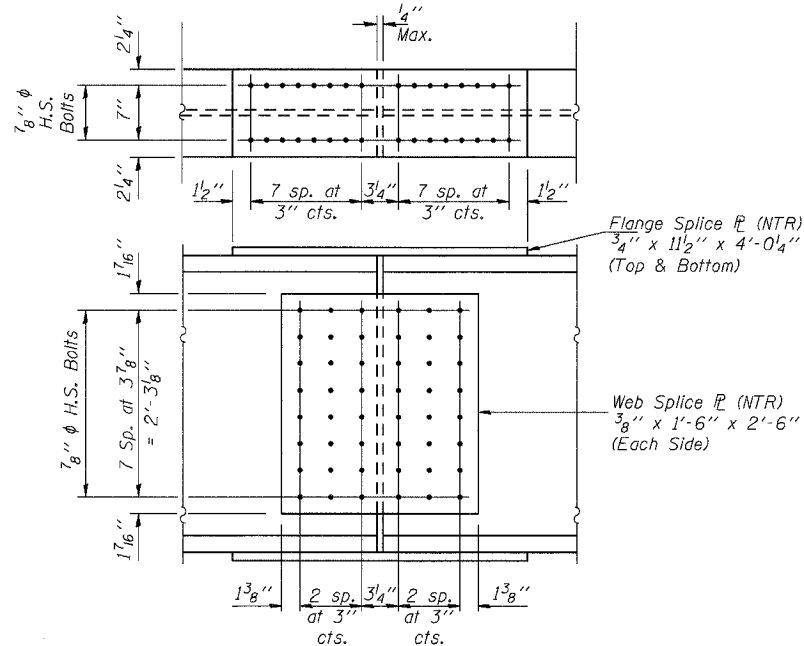
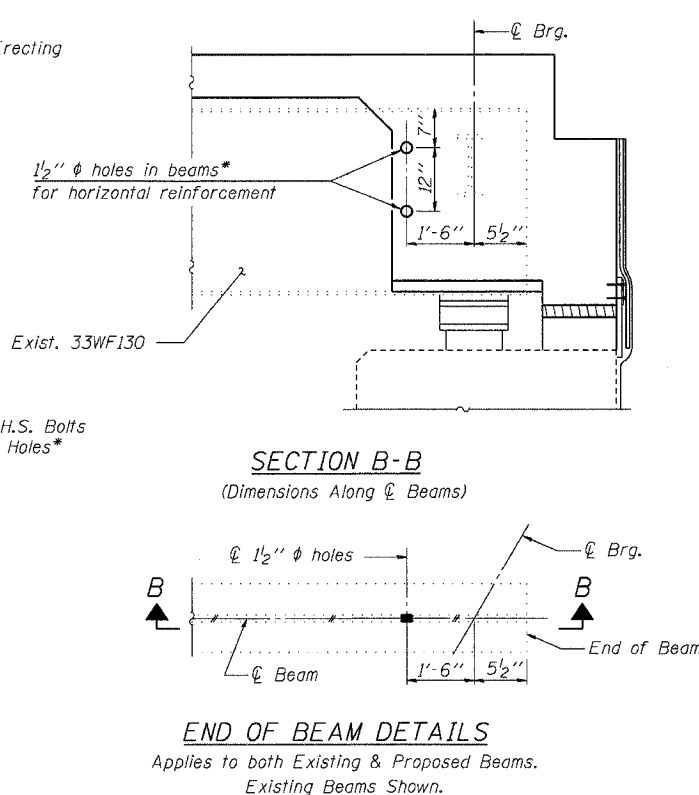
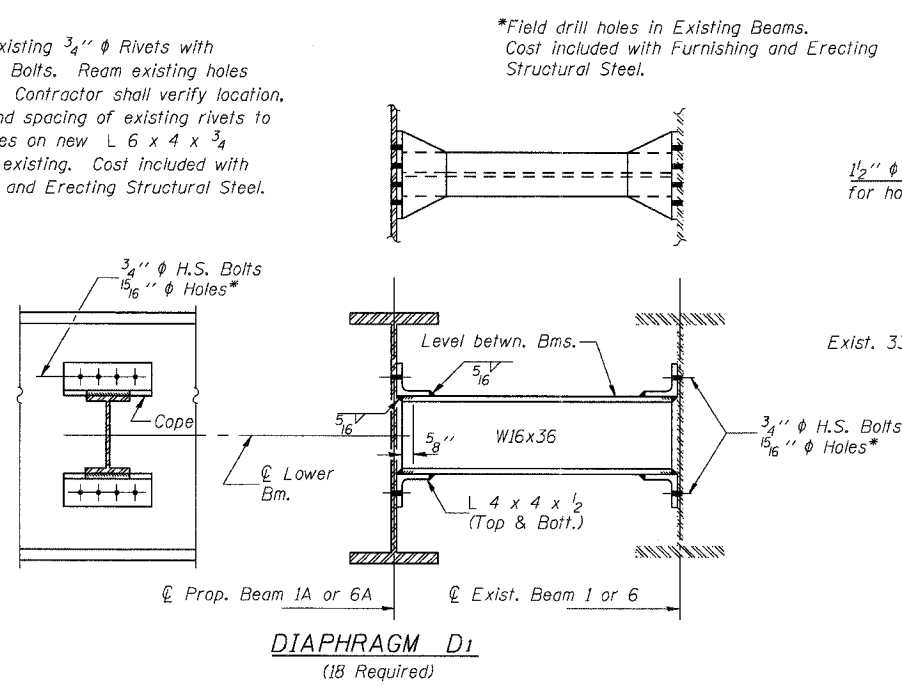
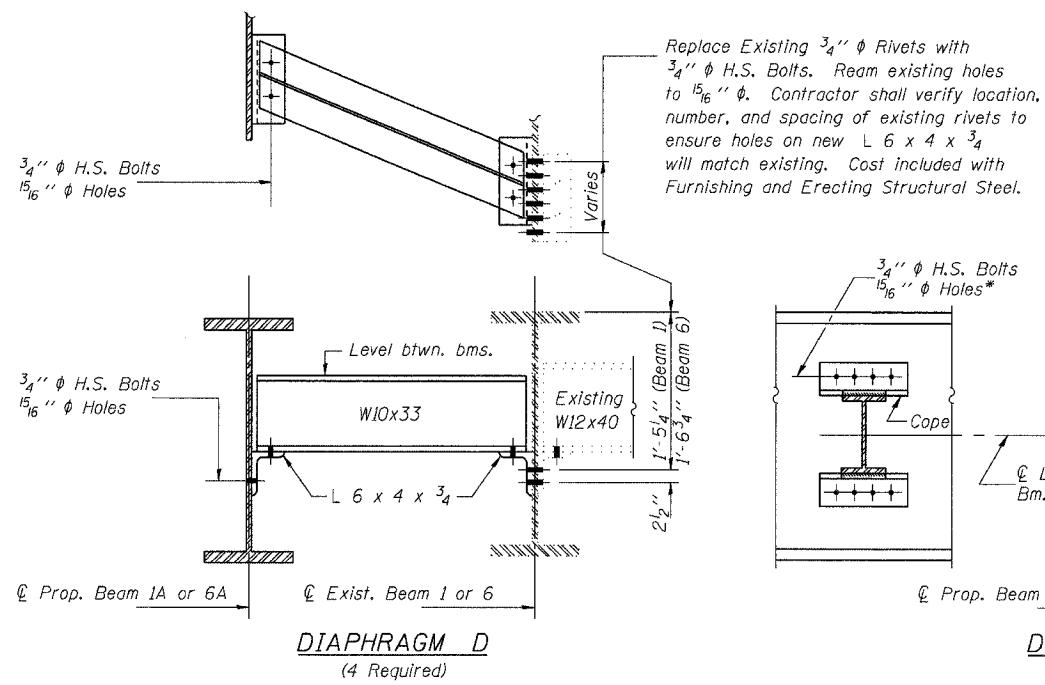


	Abuts.	Piers
Rℓ	(k) 46.4	61.8
Rℓ	(k) 32.1	37.9
Imp.	(k) 9.0	10.6
R (Total)	(k) 87.5	110.3

	0.4 Sp. 1 0.6 Sp. 4	Piers 1 & 2	0.5 Sp. 2
I <sub>s</sub>	(in <sup>4</sup> ) 6710	6710	6710
I <sub>c</sub> (n)	(in <sup>4</sup> ) 17200	---	17200
I <sub>c</sub> (3n)	(in <sup>4</sup> ) 12590	---	12590
S <sub>s</sub>	(in <sup>3</sup> ) 406	406	406
S <sub>c</sub> (n)	(in <sup>3</sup> ) 586	---	586
S <sub>c</sub> (3n)	(in <sup>3</sup> ) 529	---	529
ℓ	(k/ft.) 0.75	1.00	0.75
Mℓ	(k) 145	298	108
sℓ	(k/ft.) 0.25	---	0.25
M <sub>sℓ</sub>	(k) 55	---	53
Mℓ	(k) 316	170	323
M (Imp)	(k) 89	48	87
5 <sub>3</sub> [Mℓ + M(Imp)]	(k) 675	363	683
M <sub>a</sub>	(k) 1140	860	1100
M <sub>u</sub>	(k) 1520	---	1540
fsℓ non-comp (k.s.i.)	4.3	8.8	3.2
fsℓ (comp) (k.s.i.)	1.2	---	1.2
fs <sub>3</sub> (ℓ + Imp) (k.s.i.)	13.8	10.7	14.0
fs (Overload) (k.s.i.)	19.3	19.5	18.4
fs (Total) (k.s.i.)	---	25.4	---
VR	(k) 44.8	---	39.1

\*\*Compact, braced section.  
\*\*\*Non-compact, braced section.

I<sub>s</sub> and S<sub>s</sub> are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).  
I<sub>c(n)</sub> and S<sub>c(n)</sub> are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.  
I<sub>c(3n)</sub> and S<sub>c(3n)</sub> 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 in span.  
The Plastic Moment capacity (M<sub>u</sub>) is computed according to AASHTO 10.48.1 and 10.50.1.1.  
fs (Total) (Non-compact section) is the sum of the stresses due to 1.3[Mℓ + M<sub>sℓ</sub> + 5<sub>3</sub>(Mℓ + M(Imp))].  
fs (Overload) is the sum of the stresses due to Mℓ + M<sub>sℓ</sub> + 5<sub>3</sub>(Mℓ + M(Imp)).  
Mℓ - Moment due to dead loads on non-composite section.  
M<sub>sℓ</sub> - Moment due to dead loads on composite section.  
Mℓ - Moment due to live loads on non-composite or composite section.  
M (Imp) - Moment due to live load impact on non-composite or composite section.  
M<sub>a</sub> (Applied Moment) = 1.3[Mℓ + M<sub>sℓ</sub> + 5<sub>3</sub>(Mℓ + M(Imp))].



TOP OF BEAM ELEVATIONS

(Existing Beams 1-6 For Information Only; Proposed 1A & 6A For Fabrication Only)

Location	Beam 1A	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 6A
ℓ Brg. W. Abut.	453.77	453.84	453.97	454.09	454.22	454.34	454.47	454.54
ℓ Pier 1	453.72	453.79	453.92	454.04	454.17	454.29	454.42	454.49
ℓ Splice 1	453.71	453.78	453.91	454.03	454.16	454.28	454.41	454.48
ℓ Pier 2	453.71	453.78	453.91	454.03	454.16	454.28	454.41	454.48
ℓ Splice 2	453.71	453.78	453.91	454.03	454.16	454.28	454.41	454.48
ℓ Brg. E. Abut.	453.77	453.84	453.97	454.09	454.22	454.34	454.47	454.54

Note: Elevations have been taken from the existing plans and reduced by 0.40' to match the new bench mark datum.

Notes:  
Beams 1A & 6A (W33x130), L's and splice plates shall be AASHTO M270, Grade 36.  
"NTR" denotes members to which Notch Toughness Requirements, Zone 2 are applicable.  
Work this sheet with sheet 9 of 19.

DESIGNED Ruben V. Boehler  
CHECKED Tim S. Howard  
DRAWN TSH / RVB  
CHECKED Michael D. Cummins

**STRUCTURAL STEEL**

IL ROUTE 15 OVER SEVEN MILE CREEK  
F.A.P. ROUTE 821 SECTION (15-2)BR  
JEFFERSON COUNTY  
STA. 129+81.00  
S.N. 041-0027

CUMMINS ENGINEERING CORPORATION

JOB #: 2175  
FILE#: 2175ss  
DATE: 3/07/06