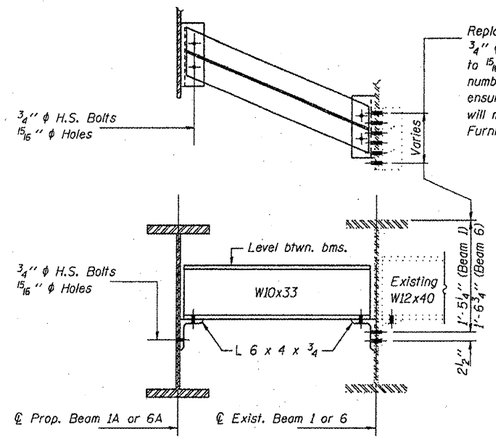
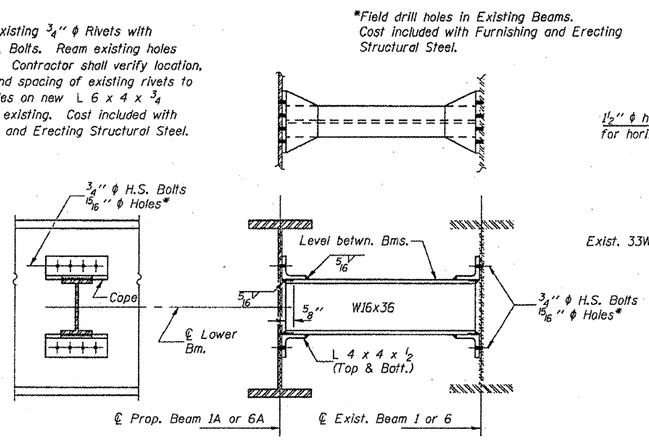
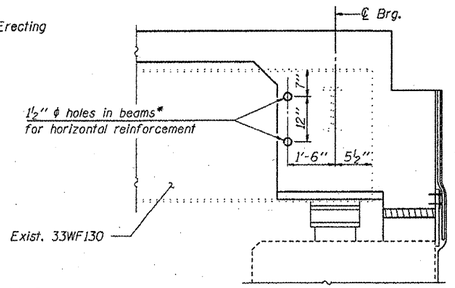



DIAPHRAGM D
(4 Required)

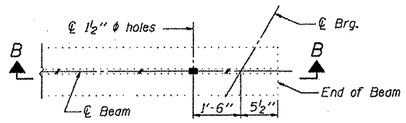



DIAPHRAGM D1
(18 Required)

Note:
Two hardened washers shall be required over all oversize holes for diaphragms.




SECTION B-B
(Dimensions Along ℄ Beams)




END OF BEAM DETAILS
Applies to both Existing & Proposed Beams.
Existing Beams Shown.

| INTERIOR BEAM REACTION TABLE | | | |
|---|---|---|---|
| | | Abuts. | Piers |
| RD | (k) | 46.4 | 61.8 |
| RL | (k) | 32.1 | 37.9 |
| Imp. | (k) | 9.0 | 10.6 |
| R (Total) | (k) | 87.5 | 110.3 |

| INTERIOR BEAM MOMENT TABLE | | | | |
|---|---|---|---|---|
| | | 0.4 Sp. 1<br>0.6 Sp. 4 | Piers 1 & 2 | 0.5 Sp. 2 |
| Is | (in⁴) | 6710 | 6710 | 6710 |
| Ic (n) | (in⁴) | 17200 | —— | 17200 |
| Ic (3n) | (in⁴) | 12590 | —— | 12590 |
| Ss | (in³) | 406 | 406 | 406 |
| Sc (n) | (in³) | 586 | —— | 586 |
| Sc (3n) | (in³) | 529 | —— | 529 |
| wD | (k/ft.) | 0.75 | 1.00 | 0.75 |
| MD | ('k) | 145 | 298 | 108 |
| sD | (k/ft.) | 0.25 | —— | 0.25 |
| MsD | ('k) | 55 | —— | 53 |
| ML | ('k) | 316 | 170 | 323 |
| M (Imp) | ('k) | 89 | 48 | 87 |
| 5/3[ML+M(Imp)] | ('k) | 675 | 363 | 683 |
| Ma | ('k) | 1140 | 860 | 1100 |
| ** Mu | ('k) | 1520 | —— | 1540 |
| fsD non-comp | (k.s.i.) | 4.3 | 8.8 | 3.2 |
| fsD (comp) | (k.s.i.) | 1.2 | —— | 1.2 |
| fs 5/3 (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.

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

$Ic_{(n)}$ and $Sc_{(n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$Ic_{(3n)}$ and $Sc_{(3n)}$ 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 in span.

The Plastic Moment capacity (Mu) 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 $1.3[M_D + M_{sD} + \frac{5}{3}(M_L + M(Imp))]$.

fs (Overload) is the sum of the stresses due to $M_D + M_{sD} + \frac{5}{3}(M_L + M(Imp))$.

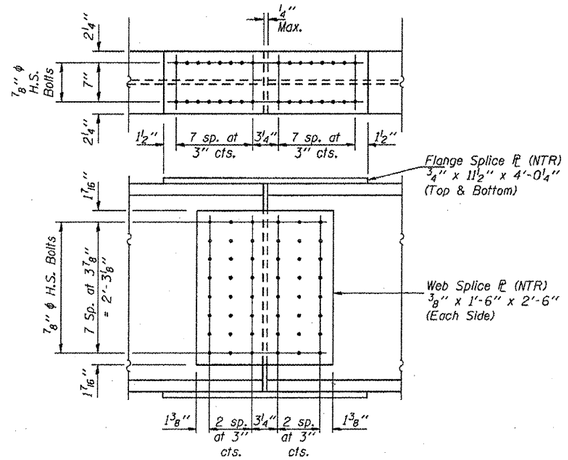
$M_D$ - Moment due to dead loads on non-composite section.

$M_{sD}$ - Moment due to dead loads on composite section.

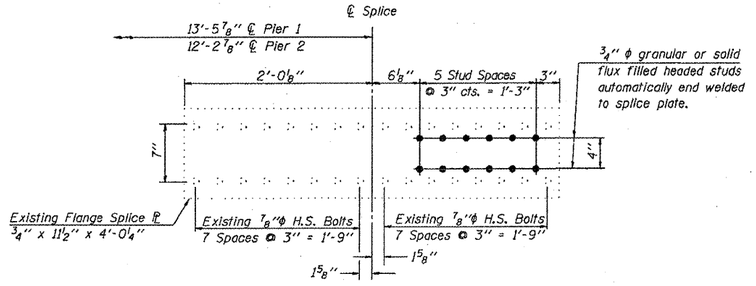
$M_L$ - Moment due to live loads on non-composite or composite section.

M (Imp) - Moment due to live load impact on non-composite or composite section.

Mo (Applied Moment) $= 1.3[M_D + M_{sD} + \frac{5}{3}(M_L + M(Imp))]$.




DETAIL OF PROPOSED SPLICE 1 & 2
(4 Required)




SHEAR STUD LAYOUT AT EXISTING SPLICE PLATE
Locate studs as shown at existing splices only.

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 |
|---|---|---|---|---|---|---|---|---|
| ℄ Brg. W. Abut. | 453.77 | 453.84 | 453.97 | 454.09 | 454.22 | 454.34 | 454.47 | 454.54 |
| ℄ Pier 1 | 453.72 | 453.79 | 453.92 | 454.04 | 454.17 | 454.29 | 454.42 | 454.49 |
| ℄ Splice 1 | 453.71 | 453.78 | 453.91 | 454.03 | 454.16 | 454.28 | 454.41 | 454.48 |
| ℄ Pier 2 | 453.71 | 453.78 | 453.91 | 454.03 | 454.16 | 454.28 | 454.41 | 454.48 |
| ℄ Splice 2 | 453.71 | 453.78 | 453.91 | 454.03 | 454.16 | 454.28 | 454.41 | 454.48 |
| ℄ 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 |

BRIDGE NO. 2

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