

FRAMING PLAN

Note:
All beams are W30x124 AASHTO M270 Gr. 50W NTR.
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

INTERIOR GIRDER MOMENT TABLE		
0.5 Sp. 1		
I_s	(in ⁴)	5360
$I_c(n)$	(in ⁴)	14450
$I_c(3n)$	(in ⁴)	10650
S_s	(in ³)	355
$S_c(n)$	(in ³)	523
$S_c(3n)$	(in ³)	473
DC1	(k/')	0.815
M _{DC1}	(k)	424
DC2	(k/')	0.03
M _{DC2}	(k)	16
DW	(k/')	0.325
M _{DW}	(k)	169
M _{L + IM}	(k)	885
M _u (Strength I)	(k)	2352
$\phi_r M_n$	(k)	2782
f_s DC1	(ksi)	14.33
f_s DC2	(ksi)	0.40
f_s DW	(ksi)	4.29
f_s (L+IM)	(ksi)	20.31
f_s (Service II)	(ksi)	45.41
0.95R _n F _y	(ksi)	47.50
V _f	(k)	23.0

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) due to short-term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in⁴ and in³).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{L + IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L + IM}

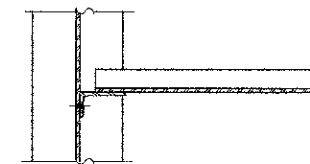
$\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
M_{DC1} + M_{DC2} + M_{DW} + 1.5 M_{L + IM}

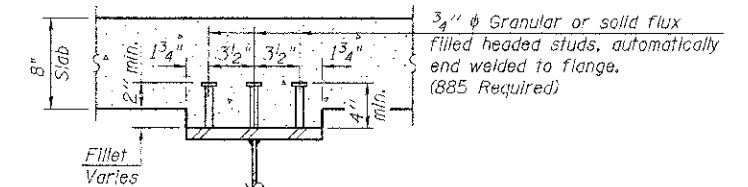
V_f: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

0.95R_nF_y: Composite stress capacity for Service II loading according to Article 6.10.4.2. (ksi)

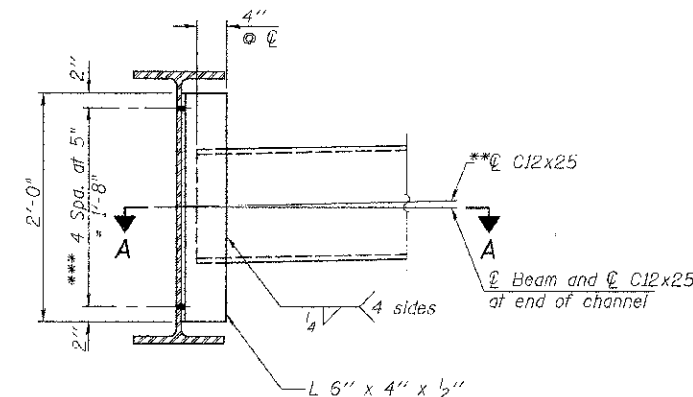
INTERIOR GIRDER REACTION TABLE		
Abutment		
R _{DC1}	(k)	26.3
R _{DC2}	(k)	1.0
R _{DW}	(k)	10.4
R _{L + IM}	(k)	72.5
R _{Total}	(k)	110.2



SECTION A-A



SECTION B-B



INTERIOR DIAPHRAGM D
(16 req'd)

Note:
Two hardened washers required for each set of oversized holes.
**Alternate channels (C12x30) are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.
***3/4" phi HS bolts, 1/16" phi holes

****** TOP OF BEAM ELEVATIONS**

LOCATION	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
W. Abut.	706.68	706.79	706.89	706.79	706.68
E. Abut.	706.68	706.79	706.89	706.79	706.68

****For fabrication only.

STRUCTURAL STEEL
COUNTY HIGHWAY 9 OVER
LOUIS CREEK TRIBUTARY
SEC. 08-00130-02-BR
IROQUOIS COUNTY
STATION 214+96.00

SHEET NO. 9 15 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	334	08-00130-02-BR	IROQUOIS	27	15
SN 038-3014			CONTRACT NO. 87524		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0344(113)		