



FRAMING PLAN

INTERIOR GIRDER MOMENT TABLE

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.6 Sp. 4
I_s	6,680	6,680	6,680	6,680	6,680	6,680	6,680
$I_c (n)$	17,020	-	17,020	-	17,020	-	17,020
$I_c (3n)$	12,596	-	12,596	-	12,596	-	12,596
S_s	436	436	436	436	436	436	436
$S_c (n)$	622	-	622	-	622	-	622
$S_c (3n)$	566	-	566	-	566	-	566
Z	-	500	-	500	-	500	-
ϕ	1.00	1.55	1.00	1.55	1.00	1.55	1.00
$M\phi$	449	776	254	549	248	765	444
$s\phi$	0.55	-	0.55	-	0.55	-	0.55
$M_s\phi$	269	-	173	-	170	-	265
M_t	642	309	567	289	563	306	637
M (Imp)	161	77	142	72	141	77	160
$5_3[M_t + M(\text{Imp})]$	1,339	644	1,182	602	1,173	638	1,329
M_a	2,674	1,846	2,092	1,496	2,069	1,824	2,649
M_u	3,015	2,083	3,015	2,083	3,015	2,083	3,015
$f_s\phi$ (non-comp)	12.4	21.4	7.0	15.1	6.8	21.1	12.2
$f_s\phi$ (comp)	5.7	-	3.7	-	3.6	-	5.6
$f_s 5_3 (t + \text{Imp})$	25.8	17.7	22.8	16.6	22.6	17.6	25.6
f_s (Overload)	43.9	39.1	33.5	31.7	33.1	38.6	43.5
f_s (Total)	-	-	-	-	-	-	-
VR	56.9	-	46.0	-	45.9	-	56.9

INTERIOR GIRDER REACTION TABLE

	W. Abut.	Pier 1	Pier 2	Pier 3	E. Abut.
$R\phi$	45.7	130.8	109.4	129.9	45.5
R_t	42.4	56.0	54.2	55.8	42.3
Imp.	10.6	14.0	13.6	14.0	10.6
R (Total)	98.7	200.8	177.2	199.7	98.4

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 $I_c (n)$ and $S_c (n)$ 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 10.3B)
 VR is the maximum Live Load + Impact shear range in span.
 Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
 M_a (Applied Moment) = $1.3[M\phi + M_s\phi + 5_3(M_t + M(\text{Imp}))]$.
The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to $M\phi + M_s\phi + 5_3(M_t + M(\text{Imp}))$.
 f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\phi + M_s\phi + 5_3(M_t + M(\text{Imp}))]$.

TOP OF BEAM ELEVATIONS (For Fabrication Use Only)

LOCATION	WEST ABUT.	EAST ABUT.	PIER 1	PIER 2	PIER 3	SPLICE 1W	SPLICE 2W	SPLICE 3W	SPLICE 4W	SPLICE 5W	SPLICE 6W
Beam 1W	638.71	641.77	639.48	640.37	641.19	639.35	639.66	640.25	640.48	641.05	641.29
Beam 2W	638.86	641.93	639.64	640.53	641.35	639.51	639.81	640.41	640.64	641.21	641.44
Beam 3W	639.02	642.09	639.80	640.68	641.51	639.67	639.97	640.57	640.79	641.37	641.60
Beam 4W	639.15	642.21	639.92	640.81	641.63	639.79	640.09	640.69	640.92	641.49	641.73
Beam 5W	639.26	642.32	640.03	640.92	641.74	639.90	640.21	640.80	641.03	641.60	641.84
Beam 6W	639.14	642.20	639.91	640.80	641.63	639.78	640.09	640.68	640.91	641.48	641.72
Beam 7W	639.01	642.08	639.79	640.67	641.50	639.66	639.96	640.56	640.78	641.36	641.59
Beam 8W	638.85	641.92	639.63	640.52	641.34	639.50	639.80	640.40	640.63	641.20	641.43
Beam 9W	638.70	641.76	639.47	640.36	641.18	639.34	639.65	640.24	640.47	641.04	641.28
Beam 10W	638.54	641.60	639.31	640.20	641.03	639.18	639.49	640.08	640.31	640.88	641.12

NOTES:
All material shall be AASHTO M270 Grade 50.
NTR indicates notch toughness requirements.
See Sheet SW-19 for typical beam elevation and framing details.

DESIGNED	AEU
CHECKED	RGD
DRAWN	WJH
CHECKED	NRF

SMITH ENGINEERING CONSULTANTS, INC.	
CIVIL/STRUCTURAL ENGINEERS AND SURVEYORS	
REVISIONS	
NAME	DATE

CITY OF AURORA

STEEL FRAMING PLAN
ILLINOIS AVENUE
OVER THE FOX RIVER
SECTION NO. 03-00247-00-BR
KANE COUNTY
STRUCTURE NO. 045-6009

DATE 7-28-2006