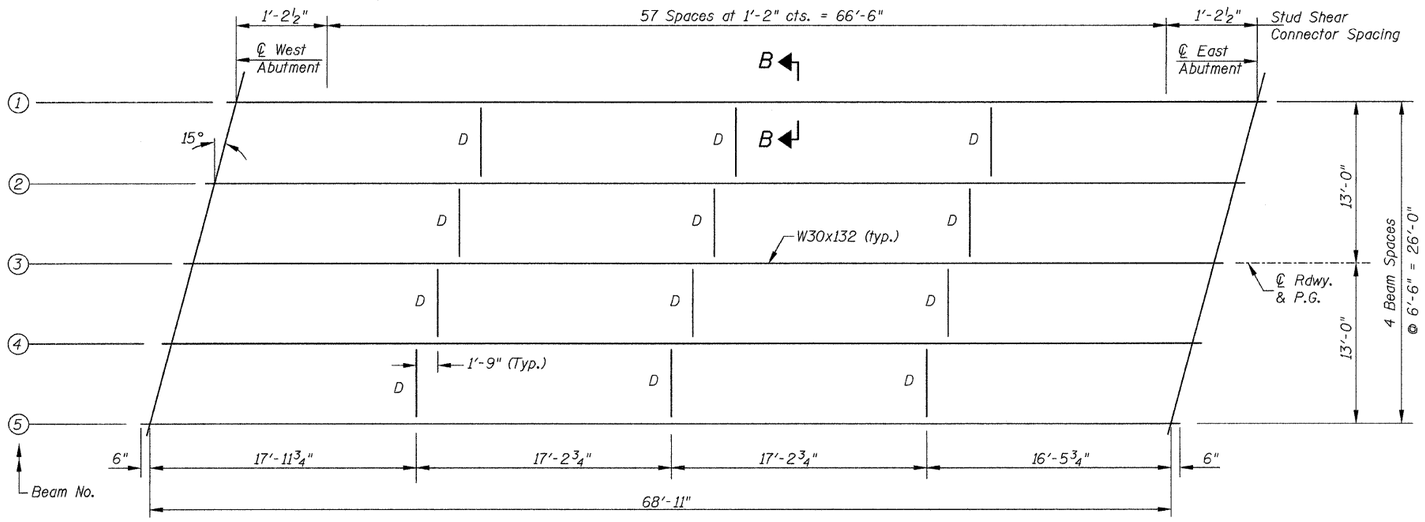
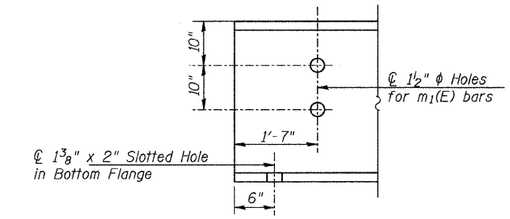
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 10	*	IROQUOIS	31	16
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-329(105)		

SHEET NO. 16 OF 15 SHEETS

*07-00216-01-BR CONTRACT #87401



FRAMING PLAN



TYPICAL END OF BEAM DETAIL

Note:
All beams are W30x132 AASHTO M270 Gr. 50W NTR.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements of Notch Toughness, Zone 2.

INTERIOR GIRDER MOMENT TABLE		0.5 Sp. 1
I_s	(in^4)	5770
$I_c(n)$	(in^4)	15278
$I_c(3n)$	(in^4)	11210
S_s	(in^3)	380
$S_c(n)$	(in^3)	557
$S_c(3n)$	(in^3)	503
DC1	(k/')	0.818
M_{DC1}	('k)	487
DC2	(k/')	0.020
M_{DC2}	('k)	12
DW	(k/')	0.325
M_{DW}	('k)	193
M_{L+IM}	('k)	965
M_u (Strength I)	('k)	2602
* $\phi_f M_n$	('k)	2898
f_s DC1	(ksi)	15.38
f_s DC2	(ksi)	0.29
f_s DW	(ksi)	4.60
f_s 1.3(L+IM)	(ksi)	27.03
f_s (Service II)	(ksi)	47.30
V_r	(k)	16.3

* Compact sections

INTERIOR GIRDER REACTION TABLE		Abutment
R_{DC1}	(k)	28.2
R_{DC2}	(k)	0.7
R_{DW}	(k)	11.2
R_{L+IM}	(k)	78.1
R_{Total}	(k)	118.2

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 ($in.^4$ and $in.^3$).

$I_c(n)$, $S_c(n)$: 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 ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: 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 ($in.^4$ and $in.^3$).

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.).

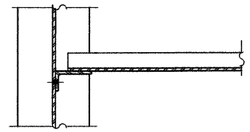
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

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

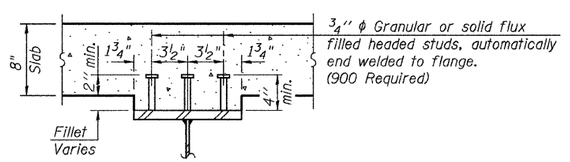
$\phi_f M_n$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$

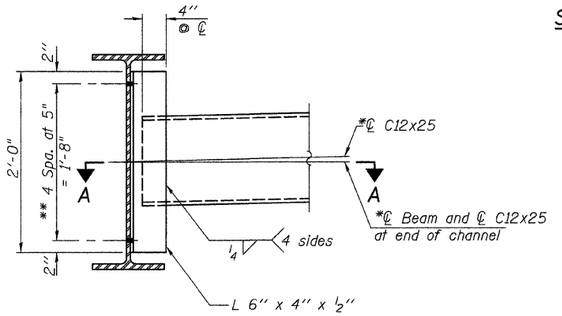
V_r: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.



SECTION A-A



SECTION B-B



INTERIOR DIAPHRAGM D

(12 req'd)

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels 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.
**¾" ϕ HS bolts, 15/16" ϕ holes

**TOP OF BEAM ELEVATIONS

LOCATION	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
W. Abut.	660.58	660.69	660.79	660.69	660.58
E. Abut.	660.58	660.69	660.79	660.69	660.58

**For fabrication only.

STRUCTURAL STEEL COUNTY HIGHWAY 10 OVER FOUNTAIN CREEK TRIBUTARY SEC. 07-00216-01-BR IROQUOIS COUNTY STATION 20+02.60

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