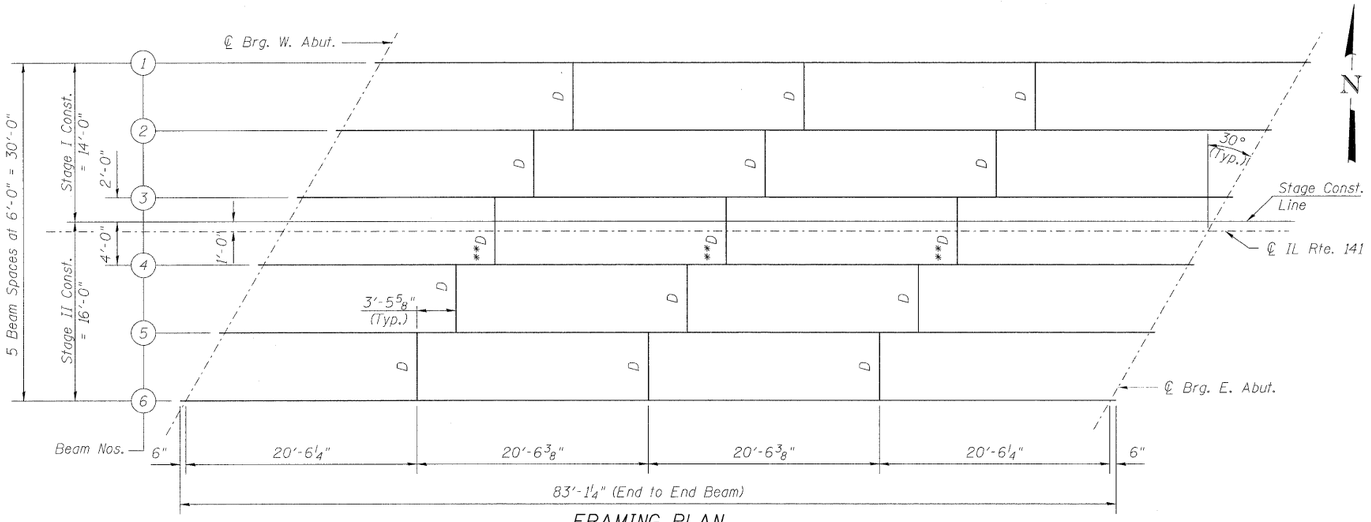
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

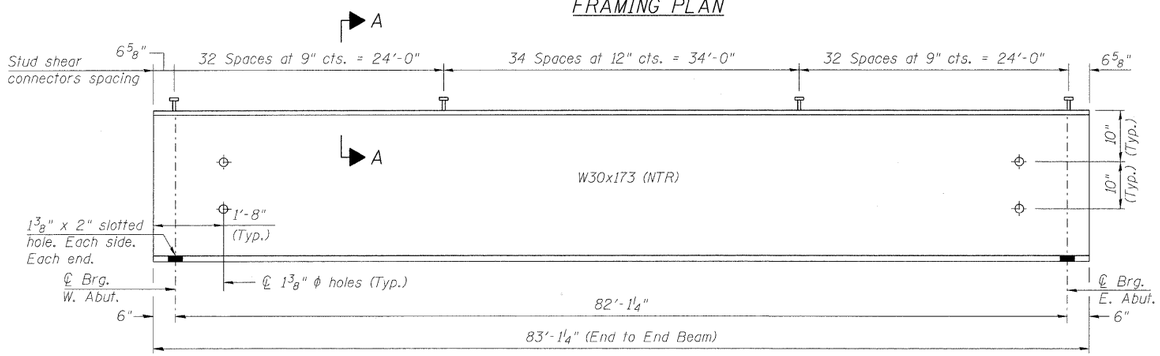


FRAMING PLAN

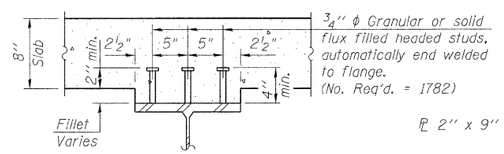
INTERIOR BEAM MOMENT TABLE		
		0.5 Span
I_s	(in^4)	8230
$I_c(n)$	(in^4)	23068
$I_c(3n)$	(in^4)	16026
S_s	(in^3)	541
$S_c(n)$	(in^3)	830
$S_c(3n)$	(in^3)	733
DC1	(k/')	0.838
M_{DC1}	('k)	706
DC2	(k/')	0.150
M_{DC2}	('k)	126
DW	(k/')	0.267
M_{DW}	('k)	225
M_{L+IM}	('k)	1139
M_u (Strength 1)	('k)	3371
$\phi_f M_n$	('k)	3692
f_s DC1	(ksi)	15.66
f_s DC2	(ksi)	2.06
f_s DW	(ksi)	3.68
f_s 1.3(L+IM)	(ksi)	21.41
f_s (Service II)	(ksi)	42.81
V_r	(k)	25.8

INTERIOR BEAM REACTION TABLE		
		Abut.
R_{DC1}	(k)	35.2
R_{DC2}	(k)	6.2
R_{DW}	(k)	11.0
R_{L+IM}	(k)	83.1
R_{Total}	(k)	135.5

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 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} + 1.3 M_{L+IM}
V_r: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.



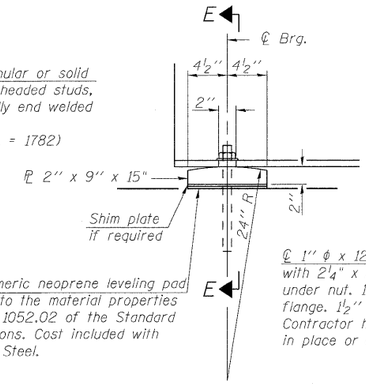
BEAM ELEVATION



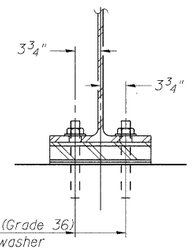
SECTION A-A

SHIM PLATES

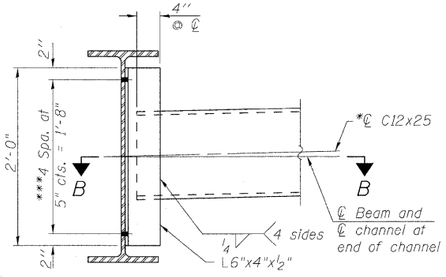
	Beam 3	Beam 4
West Abut.	1/8"	-
East Abut.	-	1/8"



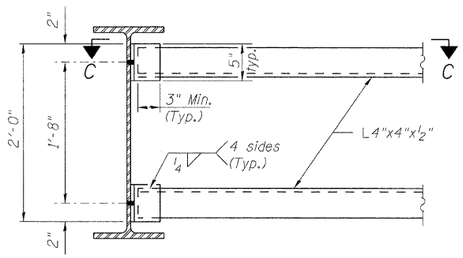
ELEVATION AT ABUTMENT



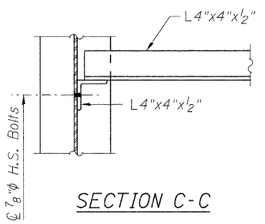
SECTION E-E



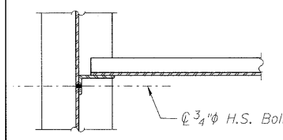
DIAPHRAGM D
(15 required)



** TEMPORARY BRACING DETAIL



SECTION C-C



SECTION B-B

TOP OF BEAM ELEVATIONS
(For Fabrication Only)

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
℄ Brg. W. Abut.	391.97	392.07	392.15	392.14	392.04	391.91
℄ Brg. E. Abut.	391.94	392.06	392.16	392.17	392.08	391.98

Notes:
Two hardened washers required for each set of oversized holes.
* C12x30 is permitted to facilitate material acquisition. Calculated weight of structural steel is based on C12x25. The alternate, if utilized, shall be provided at no additional cost to the Department.
** Temporary Bracing shall be provided during Stage II Construction and replaced with diaphragm after pouring Deck Closure Pour.
*** 3/4" ϕ H.S. Bolts. 15/16" ϕ Holes.

FIXED BEARING

NOTES:

1. All beams shall be W30x173 AASHTO M270 Grade 50W (NTR). All diaphragms and connecting angles shall be AASHTO M270 Grade 50W. All bearing plates shall be AASHTO M270 Grade 50W.
2. All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.
3. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
4. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
5. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
6. Structural steel for temporary bracing shall be AASHTO M270 Grade 36 and is not required to be painted. Cost included with Structural Steel.

FRAMING PLAN & STEEL DETAILS
STRUCTURE NO. 097-0073

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois
Designed By: SGL | Checked By: ESH | Drawn By: SGL
Date: 3/2009 | File: 097-0073.dgn

SHEET NO. 12
17 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
877	101B-1	WHITE	42	27
		CONTRACT NO. 78084		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

D-99-001-07