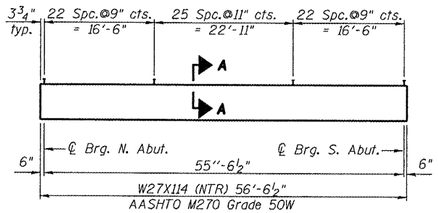
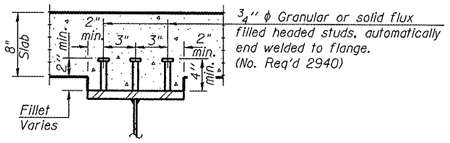
ROUTE ID.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 55	68-4B-1	MONTGOMERY	145	51
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
23 SHEETS

Contract #72A63

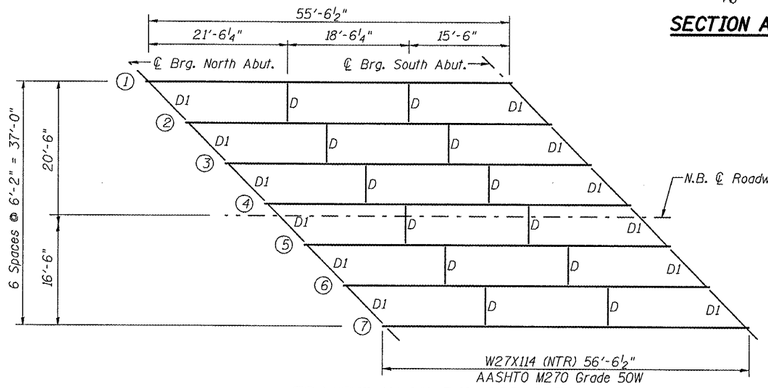


ELEVATION

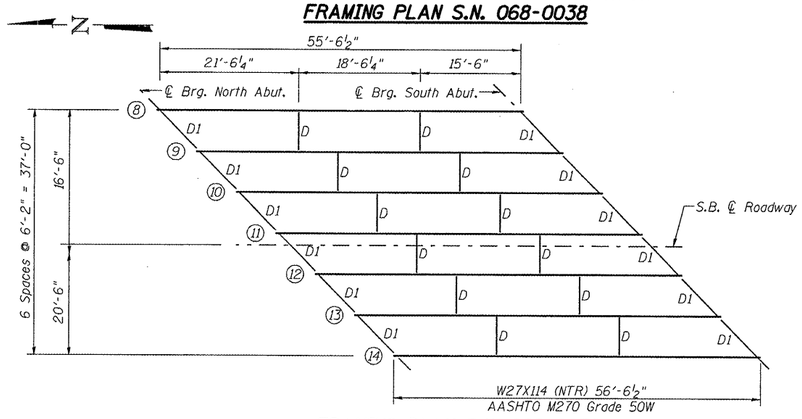


¾" ϕ Granular or solid flux filled headed studs, automatically end welded to flange. (No. Req'd 2940)

SECTION A-A



FRAMING PLAN S.N. 068-0038



FRAMING PLAN S.N. 068-0039

Note:
All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor bolts.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness. Zone 2.

INTERIOR GIRDER MOMENT TABLE		0.5 Sp. 1
I_s	(in^4)	4080
$I_c(n)$	(in^4)	11393
$I_c(3n)$	(in^4)	8346
S_s	(in^3)	299
$S_c(n)$	(in^3)	450
$S_c(3n)$	(in^3)	404
w_D	(k/')	0.763
M_{wD}	('k)	296
s_{wD}	(k/')	0.414
M_{swD}	('k)	160
M_L	('k)	405
M_{Imp}	('k)	112
$\frac{5}{3}[M_L + M_{Imp}]$	('k)	863
M_a	('k)	1714
M_u	('k)	2276
f_s w_D non-comp	(ksi)	11.9
f_s w_D (comp)	(ksi)	4.8
f_s $\frac{5}{3}[M_L + M_{Imp}]$	(ksi)	23.0
f_s (Overload)	(ksi)	39.7
VR	(k)	42.9

* Compact section

INTERIOR GIRDER REACTION TABLE		Abut.
R_{wD}	(k)	32.8
R_L	(k)	33.3
Imp.	(k)	9.2
R_{Total}	(k)	75.3

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) 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 and Overload) 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 and Overload) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

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

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

s_{wD}: Un-factored long-term composite (superimposed) dead load (kips/ft.)

M_{swD}: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L: Un-factored live load moment (kip-ft.).

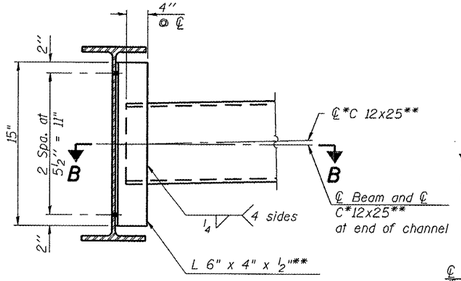
M_{Imp}: Un-factored moment due to impact (kip-ft.).

M_a: Factored design moment (kip-ft.).
$1.3\,[\,M_{wD} + M_{swD} + \frac{5}{3}(M_L + M_{Imp})]$

M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1.

f_s (Overload): Sum of stresses as computed from the moments below (ksi).
$M_{wD} + M_{swD} + \frac{5}{3}(M_L + M_{Imp})$

VR: Maximum + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

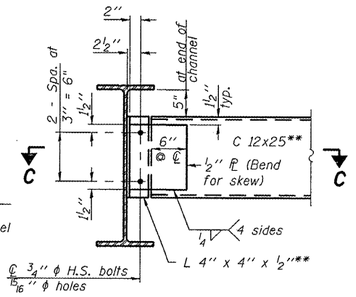


INTERIOR DIAPHRAGM-D

(24 Required)

Note:
Two hardened washers required for each set of oversized holes.

* Alternate C 12x30 Channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
** AASHTO M270 Grade 50W



END DIAPHRAGM-D1

(24 Required)

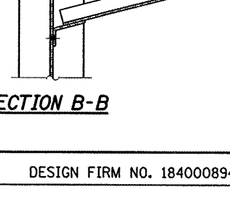
Note:
Two hardened washers required for each set of oversized holes.

** AASHTO M270 Grade 50W

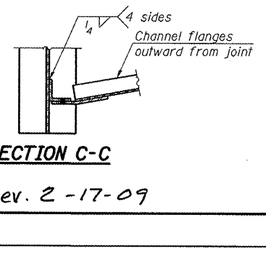
	N. Abut.	S. Abut.
Beam 1	630.00	629.92
Beam 2	630.12	630.04
Beam 3	630.22	630.14
Beam 4	630.31	630.23
Beam 5	630.26	630.18
Beam 6	630.16	630.08
Beam 7	630.04	629.96
Beam 8	629.94	629.86
Beam 9	630.05	629.97
Beam 10	630.13	630.05
Beam 11	630.16	630.08
Beam 12	630.06	629.98
Beam 13	629.94	629.86
Beam 14	629.81	629.73

TOP OF BEAM ELEVATIONS

(For Fabrication use Only)



SECTION B-B



SECTION C-C

2 Rev. 2-17-09

ILLINOIS DEPARTMENT OF TRANSPORTATION

FRAMING PLAN & STEEL DETAILS
I 55 OVER MACOUPIN CREEK
F.A.I. ROUTE 55 - SEC. 68-4B-1
MONTGOMERY COUNTY
STATION 1066+03.18
STRUCTURE NO. 068-0038 N.B.
STRUCTURE NO. 068-0039 S.B.

DATE: 04-08 DRAWN BY: MLO
REVISED: CHECKED BY: PBB