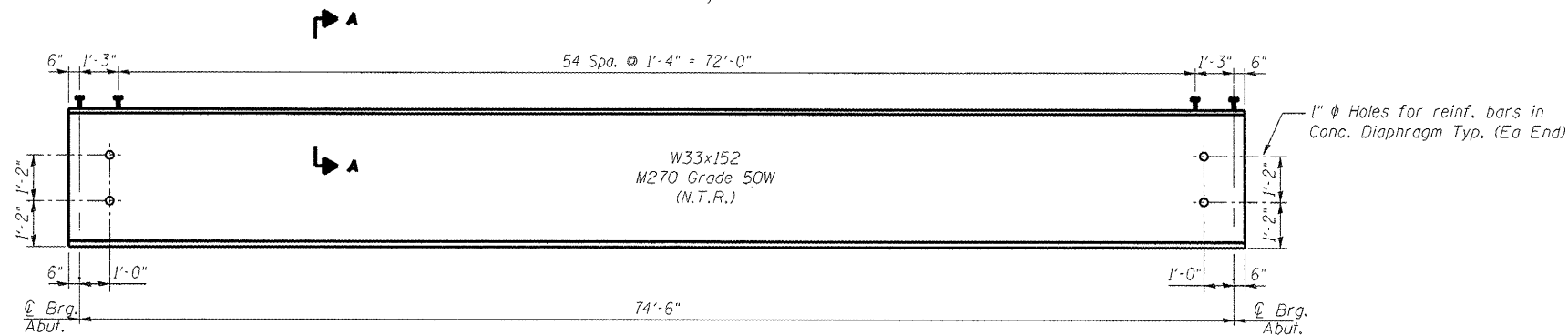


PLAN

*** TOP OF BEAM ELEVATIONS**

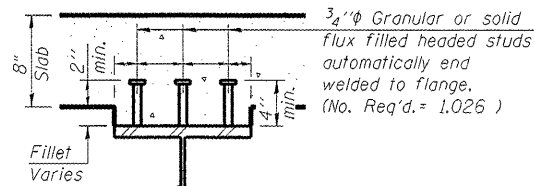
Beam Number	℄ Brg. S. Abut.	℄ Brg. N. Abut.
1	642.48	642.51
2	642.59	642.62
3	642.68	642.72
4	642.68	642.72
5	642.59	642.62
6	642.48	642.51

* For Fabrication only



BEAM ELEVATION

Note:
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.



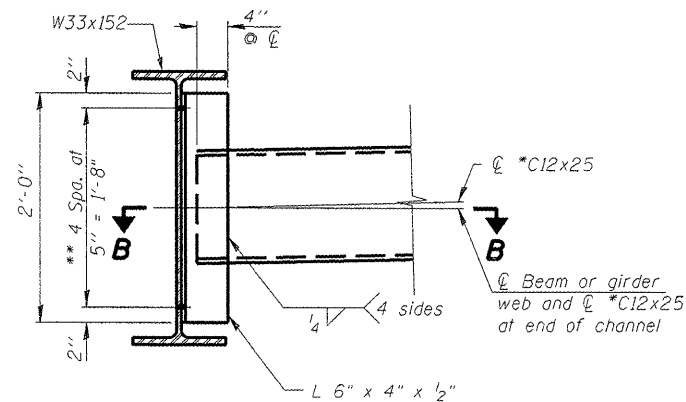
SECTION A-A

General 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 rods.

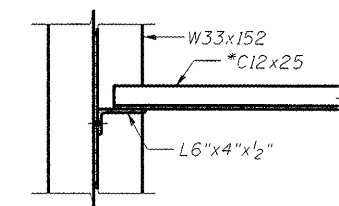
I_s	(in ⁴)	8,160
$I_c(n)$	(in ⁴)	20,780
$I_c(3n)$	(in ⁴)	14,979
S_s	(in ³)	487.0
$S_c(n)$	(in ³)	702.2
$S_c(3n)$	(in ³)	629.1
DC1	(k/ft)	0.769
MDC1	(k)	534.2
DC2	(k/ft)	0.15
MDC2	(k)	104.0
DW	(k/ft)	0.266
MDW	(k)	185.0
$M_L + Imp$	(k)	1,006.9
$M_U(Strength I)$	(k)	2,837.5
$\phi_f M_n$	(k)	3,464.7
$f_s DC1$	(ksi)	13.32
$f_s DC2$	(ksi)	1.98
$f_s DW$	(ksi)	3.53
$f_s 1.3(L+I)$	(ksi)	22.36
$f_s (Service II)$	(ksi)	41.19
$f_s (Total)(Strength I)$	(ksi)	54.52
Vf	(k)	23.4

		Abut.
RDC1	(k)	28.6
RDC2	(k)	5.55
RDW	(k)	9.95
$R_L + Imp$	(k)	72.1
RTotal	(k)	116.2

- 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.).
- MDC1: 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.).
- MDC2: 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.).
- MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- $M_L + Imp$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- $M_U(Strength I)$: Factored design moment (kip-ft.).
 $1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_L + Imp$
- $\phi_f M_n$: 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).
 $MDC1 + MDC2 + MDW + 1.3 M_L + Imp$
- $f_s (Total)(Strength I)$: Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_L + Imp$
- Vf: Factored shear range computed according to Article 6.10.10.



INTERIOR DIAPHRAGM



SECTION B-B

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

* C12x30 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.

** 3/4" φ HS bolts, 15/16" φ holes

REVISIONS	
NAME	DATE

S D I STRUCTURE DESIGNS, INCORPORATED
ARCHITECTS & ENGINEERS
PH: (773) 638-1780 • www.structuredesigninc.com

ILLINOIS DEPARTMENT OF TRANSPORTATION

STEEL FRAMING PLAN AND DETAILS

ILL. RTE. 251
OVER SANDY CREEK
F.A.S. 253 SEC. 68 BR-1
MARSHALL COUNTY

STA. 133+80.00 S.N. 062-0085

DESIGNED BY: S.G. DRAWN BY: T.C.S.
DATE: 11-20-08 CHECKED BY: O.A.O.