

FRAMING PLAN

D is Interior Diaphragm. See Sheet S-10

**TOP OF BEAM ELEVATIONS
(FOR FABRICATION USE ONLY)**

BEAM NO.	℄ S. ABUT.	℄ N. ABUT.
Beam 1	718.02	717.92
Beam 2	718.18	718.04
Beam 3	718.31	718.13
Beam 4	718.32	718.09
Beam 5	718.21	717.94
Beam 6	718.07	717.76

INTERIOR BEAM MOMENT TABLE

		0.5 Span
I_s	(in ⁴)	9,040
$I_c(n)$	(in ⁴)	22,370
$I_c(3n)$	(in ⁴)	16,565
S_s	(in ³)	504
$S_c(n)$	(in ³)	710
$S_c(3n)$	(in ³)	645
Z	(in ³)	---
DL	(k/ft.)	0.865
M DL	(k)	638
s DL	(k/ft.)	0.483
Ms DL	(k)	356
M _{LL}	(k)	736
M (Imp)	(k)	183
5/3 [M _{LL} + M(Imp)]	(k)	1,532
M _a	(k)	3,283
M _u	(k)	3,580
f_s DL (non-comp)	(k.s.i.)	15.2
f_s DL (comp)	(k.s.i.)	6.6
f_s 5/3 (LL + Imp)	(k.s.i.)	25.9
f_s (Overload)	(k.s.i.)	47.7
f_s (Total)	(k.s.i.)	---
VR	(k)	64.6

Contract #83989

INTERIOR BEAM REACTION TABLE

		Abut.
R DL	(k)	51.7
R LL	(k)	51.8
Imp.	(k)	12.8
R (Total)	(k)	116.3

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.

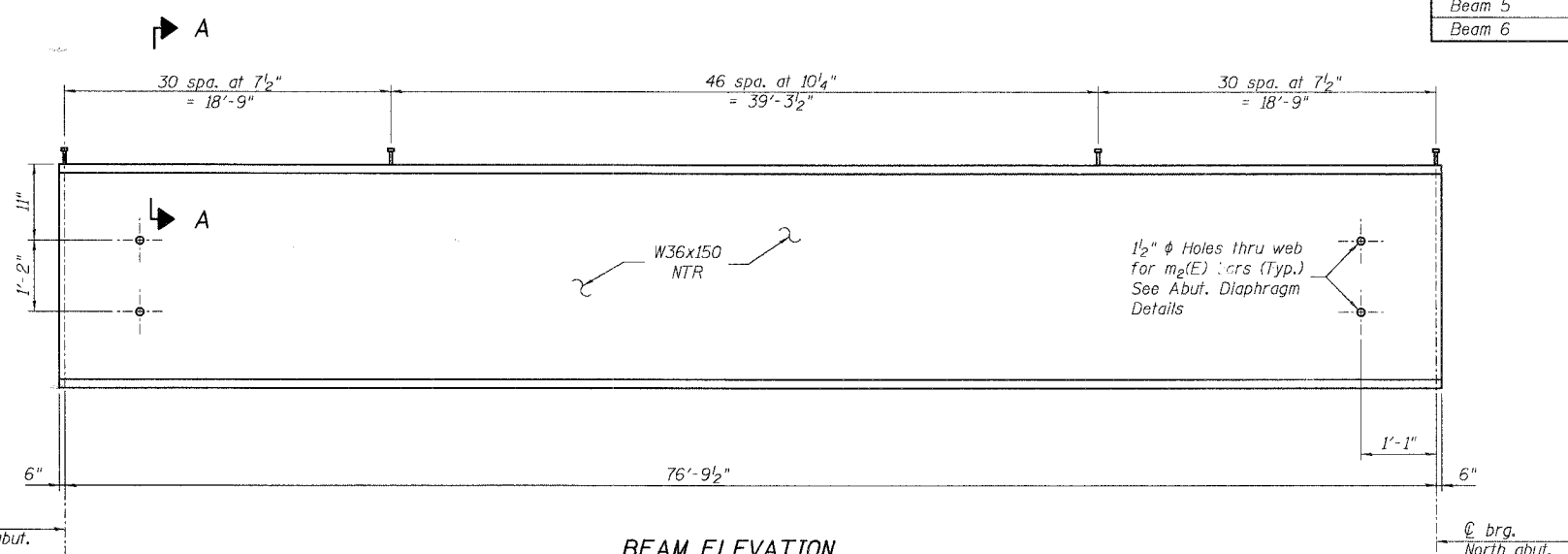
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

M_a (Applied Moment) = $1.3[MDL + MsDL + 5/3(MLL + M(Imp))]$

The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1

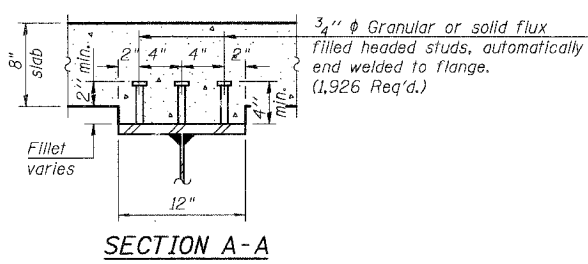
f_s (Overload) is the sum of the stresses due to MDL + MsDL + 5/3(MLL + M(Imp))

f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3[MDL + MsDL + 5/3(MLL + M(Imp))]$



BEAM ELEVATION

"NTR" denotes plates to which Notch Toughness Requirements are applicable



SECTION A-A

NOTES:

All structural steel shall be AASHTO M270 Grade 50.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
All diaphragms ("D" on plans) shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.
Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
For diaphragm and bearing details, see sheet S-10.

DESIGNED	AEU
CHECKED	RGD
DRAWN	WJH
CHECKED	AEU

Illinois Professional Design Firm # 184-000108

SEC GROUP, INC.
Smith Engineering Consultants • SEC Automation • SEC Planning
4500 Prime Parkway, McHenry, IL 60050
T. 815.385.1778 F. 815.385.1781
www.secgroupinc.com

ILLINOIS DEPARTMENT OF TRANSPORTATION

**STRUCTURAL STEEL
OLD MONEE ROAD (COUNTY HIGHWAY 48)
OVER THORN CREEK
WILL COUNTY**

**SECTION NO. 01-00133-08-BR
STRUCTURE NO. 099-3379**

DATE: 11-26-2007