



BEAM ELEVATION

BEAM		A	B	C	D	E	F
BEAM 1-7	SPAN 1	50'-11 1/2"	6"	5 1/2"	50'-0"	5 SPACES AT 11 5/8" = 4'-10"	7 SPACES AT 14" = 8'-2"
BEAM 1	SPAN 2	50'-5 1/2"	5 1/2"	6"	49'-6"	5 SPACES AT 11" = 4'-7"	7 SPACES AT 14" = 8'-2"
BEAM 2-7	SPAN 2	50'-9 1/2"	5 1/2"	6"	49'-10"	5 SPACES AT 11 3/8" = 4'-9"	7 SPACES AT 14" = 8'-2"
BEAM 1	SPAN 3	50'-1"	6"	5 1/2"	49'-1 1/2"	5 SPACES AT 10 1/2" = 4'-4 3/4"	7 SPACES AT 14" = 8'-2"
BEAM 2-7	SPAN 3	50'-9 1/2"	6"	5 1/2"	49'-10"	5 SPACES AT 11 3/8" = 4'-9"	7 SPACES AT 14" = 8'-2"

	0.5 Sp. 1, 2, or 3
I_s	3270
$I_c (n)$	9759
$I_c (3n)$	7214
S_s	242.9
$S_c (n)$	376.5
$S_c (3n)$	340.3
-	-
\bar{d}	0.704
$M\bar{d}$	219.9
$s\bar{d}$	0.400
$Ms\bar{d}$	125.6
$M\bar{t}$	587.0
$M (Imp)$	167.8
$5_3[M\bar{t} + M(Imp)]$	754.8
M_a	1430.4
M_u	1953.6
$fs\bar{d} (non-comp)$	10.86
$fs\bar{d} (comp)$	4.43
$fs 5_3(\bar{t} + Imp)$	24.06
$fs (Overload)$	39.35
$fs (Total)$	-
VR	48

	Span 1 2 & 3
$R\bar{d}$	27.6
$R\bar{t}$	37.5
$Imp.$	10.7
$R (Total)$	75.8

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing fs (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 10.38)

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) = $1.3[M\bar{d} + Ms\bar{d} + 5_3(M\bar{t} + M(Imp))]$.
The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.

fs (Overload) is the sum of the stresses due to $M\bar{d} + Ms\bar{d} + 5_3(M\bar{t} + M(Imp))$.

fs (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\bar{d} + Ms\bar{d} + 5_3(M\bar{t} + M(Imp))]$.

Note:
All W27X94 beams shall be NTR (notch toughness-zone 2) and shall be AASHTO M270 Grade 50.

FRAMING DETAILS - UNIT #2
FAS 259 C.H. 3
OVER FOX RIVER
LA SALLE COUNTY
STA. 20+15.00
STRUCTURE NO. 050-3562

DRAWN BY: LAG	CAD: BEAM2	REVISIONS		SCALE: AS NOTED	SHEET 42
		DATE	BY		
CHECKED BY: JKC	DATE: 02/03	3/08/04	NET	FILE NO.: 11174.01Y-1	OF 79