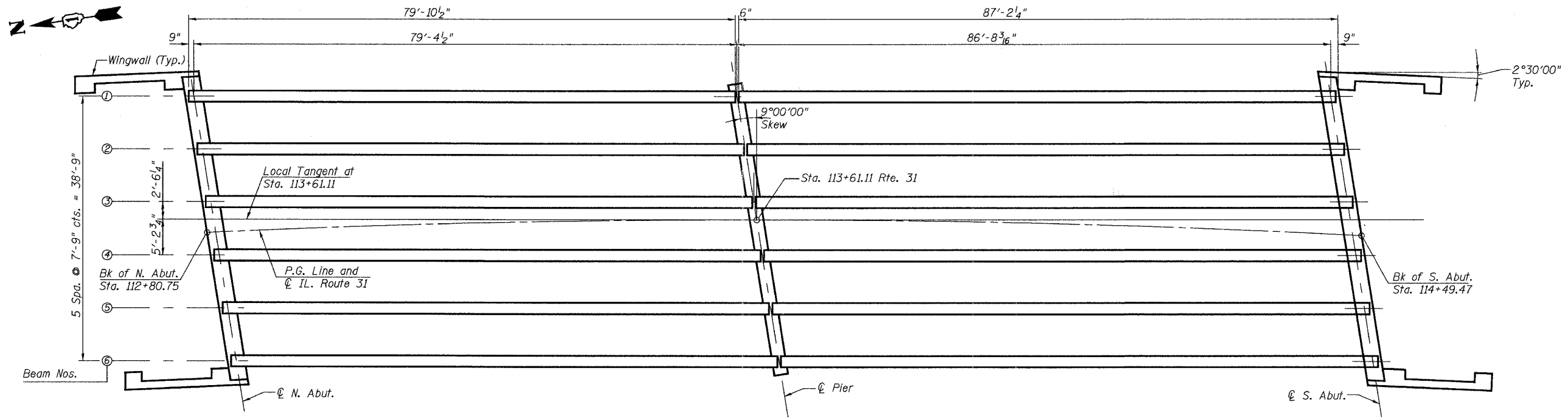


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 3887	06-00214-06-BR	KANE	55	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 8
25 SHEETS

CONTRACT NO. 83923



	0.4 Span 1	Pier	0.6 Span 2
I	213,721	213,721	213,721
I'	544,590	544,590	544,590
S_b	8,559	8,559	8,559
S_b'	13,188	13,188	13,188
S_t	7,362	7,362	7,362
S_t'	42,858	42,858	42,358
ℓ	1.42	1.42	1.42
$M\ell$	1,073	0	1,281
$s\ell$	0.49	0.49	0.49
$M_s\ell$	202	-420.4	274
$M\ell$	661	-590	725
M_{Imp}	162	-141.6	171

	North Abut.	Pier	South Abut.
$R\ell$	57	118	62
$R_s\ell$	14	51	17
$R\ell$	44	65	44
$Imp.$	11	16	11
R_{Total}	126	250	134

* The total $R_s\ell$, $R\ell$, and impact reactions are assumed to be distributed evenly to each beam support line at a pier regardless of the span ratios.

All beams are precast prestressed concrete I-Beam, 54"

- I : Non-composite moment of inertia of beam section (in. ⁴).
- I' : Composite moment of inertia of beam section (in. ⁴).
- S_b : Non-composite section modulus for the bottom fiber of the prestressed beam (in. ³).
- S_b' : Composite section modulus for the bottom fiber of the prestressed beam (in. ³).
- S_t : Non-composite section modulus for the top fiber of the prestressed beam (in. ³).
- S_t' : Composite section modulus for the top fiber of the prestressed beam (in. ³).
- ℓ : Un-factored non-composite dead load (kips/ft.).
- $M\ell$: Un-factored moment due to non-composite dead load conservatively taken at 0.5 of the span (kip-ft.).
- $s\ell$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
- $M_s\ell$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- $M\ell$: Un-factored live load moment on the composite section (kip-ft.).
- M_{Imp} : Un-factored moment due to impact on the composite section (kip-ft.).

DESIGNED ASL
CHECKED NPP
DRAWN SOI
CHECKED NPP

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ILLINOIS ROUTE 31 OVER NEW STEARNS ROAD
KANE COUNTY

FRAMING PLAN

F.A.U. 3887
STATION 113+61.11
SCALE:

SECTION 06-00214-06-BR
STRUCTURE NO. 045-2031
DATE: 00/00/2007

URS
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